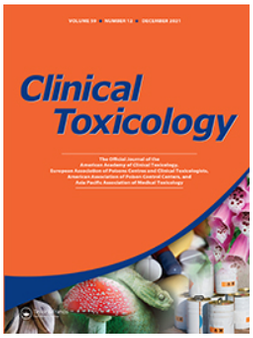

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2020 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS): 38th Annual Report

David D. Gummin, James B. Mowry, Michael C. Beuhler, Daniel A. Spyker, Alvin C. Bronstein, Laura J. Rivers, Nathaniel P. T. Pham & Julie Weber

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NPDS REPORT 2020

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2020 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS): 38th Annual Report

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ABSTRACT

Introduction: This is the 38th Annual Report of the American Association of Poison Control Centers' (AAPCC) National Poison Data System (NPDS). As of 1 January, 2020, all 55 of the nation's poison centers (PCs) uploaded case data automatically to NPDS. The upload interval was 6.15 [4.60, 8.62] (median [25%, 75%]) minutes, effectuating a near real-time national exposure and information database and surveillance system.

Methods: We analyzed the case data tabulating specific indices from NPDS. The methodology was similar to that of previous years. Where changes were introduced, the differences are identified. Cases with medical outcomes of death were evaluated by a team of medical and clinical toxicologist reviewers using an ordinal scale of 1-6 to assess the Relative Contribution to Fatality (RCF) of the exposure.

Results: In 2020, 3,316,738 closed encounters were logged by NPDS: 2,128,198 human exposures, 66,745 animal exposures, 1,116,568 information requests, and 5,160 human confirmed nonexposures. Total encounters showed a 28.9% increase from 2019, while health care facility (HCF) human exposure cases decreased by 10.6%. While all information requests increased by 218.0%, medication identification (Drug ID) requests decreased by 31.5%, and human exposure cases decreased by 0.928%. Medical Information requests showed a 32.6-fold increase, reflecting COVID-19 pandemic calls to PCs. Human exposures with less serious outcomes have decreased 1.90% per year since 2008, while those with more serious outcomes (moderate, major or death) have increased 4.59% per year since 2000.

Consistent with the previous year, the top 5 substance classes most frequently involved in all human exposures were analgesics (10.3%), household cleaning substances (8.37%), cosmetics/personal care products (6.53%), antidepressants (5.30%), and sedatives/hypnotics/antipsychotics (4.92%). As a class, antidepressant exposures increased most rapidly, by 1,793 cases/year (5.84%/year) over the past 10 years for cases with more serious outcomes.

The top 5 most common exposures in children age 5 years or less were cosmetics/personal care products (11.8%), household cleaning substances (11.3%), analgesics (7.57%), foreign bodies/toys/miscellaneous (6.71%), and dietary supplements/herbals/homeopathic (6.44%). Drug identification requests comprised 2.89% of all information contacts. NPDS documented 4,488 human exposures resulting in death; 3,869 (86.2%) of these were judged as related (RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).

Conclusions: These data support the continued value of PC expertise and need for specialized medical toxicology information to manage more serious exposures. Unintentional and intentional exposures continue to be a significant cause of morbidity and mortality in the US. The near real-time status of NPDS represents a national public health resource to collect and monitor US exposure cases and information contacts. The continuing mission of NPDS is to provide a nationwide infrastructure for surveillance for all types of exposures (e.g., foreign body, infectious, venomous, chemical agent, or commercial product), and the identification and tracking of significant public health events. NPDS is a model system for the near real-time surveillance of national and global public health.

NOTE: Comparison of exposure or outcome data from previous AAPCC Annual Reports is problematic. In particular, the identification of fatalities (attribution of a death to the exposure) differed from pre-2006 Annual Reports (see Fatality Case Review – Methods). Death cases were described as all cases resulting in death and those determined to be exposure-related fatalities. Likewise, Table 22 (Exposure cases by Generic Category) since year 2006 restricts the breakdown of included deaths to single-substance cases to improve precision and avoid misinterpretation.

Introduction

This is the 38th Annual Report of the American Association of Poison Control Centers' (AAPCC; http://www.aapcc.org) National Poison Data System (NPDS) [1]. Fifty-five regional poison centers (PCs) serving the entire population of the 50 United States, American Samoa, District of Columbia, Federated States of Micronesia, Guam, Puerto Rico, and the US Virgin Islands submitted information and exposure case data collected during the course of providing patient-specific exposure management and poison information for entire year of 2020.

NPDS is the data warehouse for the nation's PCs. Poison centers place emphasis on exposure management, accurate data collection and coding, and responding to the continuing need for poison-related public and professional education. The PC's healthcare professionals are available free of charge to users, 24 hours a day, every day of the year. Poison centers respond to questions from the public, health care professionals, and public health agencies. The continuous staff dedication at the PCs is manifest as the number of exposure and information encounters averaging close to 3.4 million annually since the year 2000. Poison center encounters involve either an exposed human or animal (Exposure case) or a request for information with no person or animal exposed to any foreign body, viral, bacterial, venom, chemical agent or commercial product (Information request). A unique feature of PC case management is the use of follow-up calls to monitor case progress, provide ongoing treatment recommendations, and to determine the medical outcome of the case.

The NPDS Products Database

The NPDS products database contains over 456,000 products ranging from viral and bacterial agents to commercial chemical and drug products. The products database is maintained and continuously updated by data analysts at the Micromedex Poisindex® System (IBM Micromedex® Healthcare Series [Internet database], Greenwood Village, CO: IBM Watson Health). A robust generic coding system categorizes the product data into 1,115 active generic codes. These generic codes collapse into Pharmaceutical (553) and Non-Pharmaceutical (562) groups. These two groups are divided into Major (68) and Minor (188) categories. The generic coding schema undergoes continuous improvement through the work of the AAPCC – Micromedex Joint Coding Committee. The group consists of AAPCC members and IBM Watson Health editorial and lexicon staff working to meet best terminology practices. The generic code system provides enhanced report granularity as reflected in Appendix B (Table 22). The following generic code was introduced in 2020.

Generic Codes Added in 2020*.
Nonbenzodiazepine Hypnotics

*Because the new code was added during 2020, the number of cases for this generic code in Appendix B (Table 22) do not reflect the entire year. For completeness, certain categories require customized data retrieval until they have been in place for more than 1 calendar year.

PoisonHelp.org

Since the advent of the smart phone in 2006, consumers increasingly turn to web-based resources to obtain poisoning and other health-related information. This raised concern among toxicologists and poison prevention specialists about the type and quality of web-based information available to the average American. In response to this trend, in 2015 the AAPCC devised an online tool for consumers to obtain simple individualized poisoning information as an alternative to directly contacting a poison center, but that would guide the consumer to a poison center when poison specialist input would be more appropriate. The platform launched during National Poison Prevention Week in 2016 with initial goals that included a system that would be credible, fast, easy to use, readily accessible from a variety of devices, and available free of charge to consumers. The first open contacts and data collection began in 2017.

PoisonHelp.org is an interactive website that provides critical triage and information on how to manage exposures to potentially toxic products, poisons, and medications. Users are prompted to answer a few questions regarding a human exposure to any of 1,115 generic substances that encompass now more than 456,000 unique products. Recommendations are vetted by specially trained physicians, pharmacists, and nurses from our nation's 55 poison control centers. The website can be accessed from any computer or mobile device and is free, confidential, and available 24/7.

Appendix D contains contact data obtained during the years of PoisonHelp.org activity. Tables in Appendix D show substances queried and demographics of those who queried the site. Activity continues to increase over time, as is evidenced in the cumulative contact count depicted in Figures D-1A and D-1B.

Methods

Characterization of Participating Poison Centers and Population Served

All 55 US PCs are accredited, and all submitted data to AAPCC through 31 December 2020. The entire population of the 50 United States, American Samoa, the District of Columbia, Federated States of Micronesia, Guam, Marshall Islands, Northern Marianas, Puerto Rico, and the US Virgin Islands was served by the US PC network in 2020 [2].

The average number of human exposure cases managed per day by all US PCs was 5,815. Similar to other years, higher volumes were observed in the warmer months, with a mean of 6,238 cases per day in July compared with 5,123 per day in December. On average, US PCs experienced a new encounter involving a human exposure every 14.8 seconds.

Encounter Management – Specialized Poison Exposure Emergency Providers

Poison center Managing Directors are primarily responsible for patient care/information service operations, clinical

education, and supervising staff instruction. Most are PharmDs or RNs with American Board of Applied Toxicology (ABAT) certification in clinical toxicology. Medical direction is provided by Medical Directors who are board-certified physician medical toxicologists. At some PCs, the Managing and Medical Director roles are held by the same individual.

Encounters with US PCs are managed by healthcare professionals who have received specialized training in toxicology to allow for assessment, triage, management and monitoring of toxic emergencies. These providers include medical and clinical toxicologists, registered nurses (RNs), pharmacists (PharmD or BS), physicians and physician assistants. Most commonly, RNs and pharmacists make up the contingent of "Specialists in Poison Information" (SPIs) or "Certified Specialists in Poison Information" (CSPIs) in the US. These (C)SPIs triage lay public callers to the most appropriate level of care and provide health care professionals with the most up-to-date management recommendations to care for their poisoned/overdosed patients. For a SPI to become nationally certified as a CSPI, (s)he must log a minimum of 1,200 hours in a PC and handle 2,000 human exposure cases prior to being considered eligible to take the certification examination. RNs, pharmacists, physicians and physician assistants are the only individuals eligible to sit for the CSPI examination. Of note is the lack of an appropriate, core toxicology training within most graduate medical education curricula to allow these medical professionals to be prepared for PC patient management operations. These individuals must receive significant additional training beyond their degree programs to become (C)SPIs. Such training is only offered within the PCs. "Poison Information Providers" (PIPs) are allied healthcare professionals who are allowed to manage information-type and lower acuity cases while working under the supervision of a CSPI and have been utilized to a lesser degree by PCs in recent years. Poison centers undergo a rigorous accreditation process administered by the AAPCC and must submit an annual accreditation report and an extensive reaccreditation application every 7 years.

NPDS – Near Real-time Data Capture

Extensively enhanced over its predecessor, the Toxic Exposure Surveillance System (TESS), which began collecting data in 1983 and near real-time data since 2003, NPDS was launched on 12 April 2006. NPDS is the data repository for all US PCs and includes all case information collected by its predecessor. In 2020, all 55 US PCs uploaded case data automatically to NPDS in near real-time, making NPDS one of the few operational systems of its kind. Poison center staff record cases contemporaneously in 1of 5 electronic medical record systems. Each PC uploads case data automatically. The time to upload data for all PCs is 6.15 [4.60, 8.62] (median [25%, 75%]) minutes creating a near real-time national exposure database and surveillance system.

The web-based NPDS software facilitates the detection, analysis, and reporting of surveillance anomalies. System software offers a myriad of surveillance uses allowing AAPCC, its member centers and public health agencies to utilize NPDS exposure data. Users can access regional data for their own areas and view national aggregate data. Custom surveillance definitions are available, along with ad hoc reporting tools. Information in the NPDS database is dynamic. Each year the database is locked prior to extraction of annual report data to ensure consistent, reproducible reports. Additional information including autopsy data on fatalities may be added after the lock date as an addendum to the fatality abstract. The 2020 database was locked on 2 August 2021 at 05:25 PM EDT.

Note: NPDS entries are called human or animal "Exposure cases," rather than "calls," because a single call may describe more than one case and because the management of an NPDS case often requires more than a single telephone call or contact. The information in this report reflects only individual case entries that are not duplicates, and only those cases that have been designated by the regional PC as being "Closed." A case is closed when the PC has determined that no further follow-up/recommendations are required or when no further information is available. Exposure cases are followed to obtain the most precise medical outcome possible, when appropriate to do so. Depending on the case specifics, most cases are "closed" within a few hours of the initial contact. Cases involving complex hospitalized patients or resulting in death may remain open for months while data continue to be collected. Follow-up contacts provide a proven mechanism for monitoring the appropriateness of management recommendations, enabling continual updates of case information, augmenting patient guidelines, providing poison prevention education, and obtaining final medical outcomes to make the data collected as accurate and complete as possible.

Statistical Methods

All tables except Tables 1A, 3B, 17B, D-1, D-2A, D-2B, D-2C, and D-2D were generated directly by the NPDS web-based application and can thus be reproduced by each PC. The analyses for Figures 1-4 were done using SAS JMP® Pro version 15.2.1 (SAS Institute, Cary, NC) and summary counts were generated by the NPDS web-based application. The analyses for Figures 5-10, Table 17B, and Figures D-1A and D-1B were created using Microsoft Excel 365 (Microsoft, Redmond, WA) with the RegressItPC add-in (RegressIt™, version 2021.06.18).

NPDS Surveillance

As previously noted, all active US PCs upload case data automatically to NPDS. This unique near real-time upload is the foundation of the NPDS surveillance system, making both spatial and temporal case volume and case-based surveillance possible. NPDS allows creation of volume and case-based definitions. Definitions can be applied to national, regional, state, or ZIP code coverage areas. Geocentric definitions can also be created, which use cases reported from a geographic location regardless of which PC managed the case. This functionality is available to every PC as well as the

AAPCC surveillance team. Poison centers also have the ability to share NPDS near real-time surveillance technology with external organizations such as their state and local health departments or other regulatory agencies. Another NPDS feature is the ability to generate system alerts on adverse drug events and other drug or commercial products of public health interest such as contaminated food or product recalls. Thus, NPDS can provide near real-time adverse event monitoring, surveillance, response and situational awareness.

Surveillance definitions can be created to monitor a variety of parameters (i.e., volume or case based) on any desired substance or commercial product in the Micromedex® products database; and/or set of clinical effects or other parameters. The products database contains over 456,000 entries ranging from viral and bacterial agents to commercial chemical and drug products. Surveillance definitions may be constructed using volume or case-based definitions with a variety of mathematical options and historical baseline periods from 1 to 5 years. NPDS surveillance tools include:

- Volume Alert Surveillance Definitions
  - Total Encounter Volume
  - Human Exposure Case Volume
  - Animal Exposure Case Volume
  - Information Request Volume
  - Clinical Effects Volume (signs and symptoms, or laboratory abnormalities)
  - Syndromic Surveillance Volume - allows Boolean based definitions utilizing various NPDS data fields to be run based on historical trends for user defined periods of interest
- Case Based Surveillance Definitions utilizing various NPDS data fields linked in Boolean expressions
  - Substance
  - Clinical Effects
  - Species
  - Medical Outcome and others

Incoming data are monitored continuously, and anomalous signals generate an automated email alert to the AAPCC's surveillance team, designated PC or public health agency staff. These anomaly alerts are reviewed daily by the AAPCC surveillance team, the PC, or the public health agency that created the surveillance definition. When reports of potential public health significance are detected, additional information is obtained from reporting PCs via the NPDS surveillance correspondence system or phone. The PC then can alert respective local or state health department (if not already done). Public health issues are brought to the attention of the Health Studies Branch, National Center for Environmental Health, Centers for Disease Control and Prevention (HSB/NCEH/CDC).

AAPCC surveillance team clinical and medical toxicologists review surveillance definitions on a regular basis to fine-tune the queries. The CDC, as well as state and local health departments with NPDS access granted by their respective PCs, also have the ability to create surveillance definitions for routine surveillance tasks or to respond to emerging public health events.

Emerging Trends

Since the 2007 annual report, the authors have highlighted recent interesting and sometimes alarming trends in NPDS data. Past trends have compared NPDS findings to other datasets such as Google Trends as well as various CDC reports. The overwhelming trends identified in 2020 related to the COVID-19 pandemic.

The AAPCC Rapid Coding Committee released a *COVID-19-Confirmed* product code (7325206) on 23-Jan-2020, a *COVID-19-Not Confirmed* product code (7324190) on 12-Mar-2020, and also a *CORONAVIRUS DISEASE 2019 (COVID-19)* product code on 30-May-2020, to support pandemic surveillance. Explored contacts also included those identified using the generic code for *Viral Diseases* (0310027) in which a NULL product code occurred. Because of inter-center differences in the interpretation of the coding of cases with single substance COVID-19, counts are expressed here as information requests plus exposure cases.

We also looked at the types of substances that might be associated with COVID-19 cases and how both human exposures and information requests for these substances might have changed over time. Three broad categories of substances were identified: Cleaners/Disinfectants (cleaners [ammonia, general, industrial, wall/floor/tile], bleaches, disinfectants, and rubbing alcohols), Hand sanitizers, and Treatment/Prophylaxis for the illness (aquarium parasiticides, azithromycin, chloroquine/hydroxychloroquine, colloidal silver, colchicine, COVID-19 monoclonal antibodies, COVID-19 vaccines, famotidine, antiretrovirals, and ivermectin) using a combination of product and generic codes (available upon request).

The change in case volume for 2020 was compared with historical case volumes, using an NPDS toxicosurveillance method to identify call volume anomalies. The average number of cases over a 14-day period surrounding each day of interest was calculated for years 2017-2019 (preceding 3-year average) and compared with total volume for human exposure cases and information requests, with and without cases containing a COVID-19 code. For this comparison, only the three COVID-19 product specific codes were used to define COVID-19 cases. An adjustment was made for 29-Feb-2020 using a 15-day average surrounding 28-Feb and 1-Mar because of the leap year.

Findings for this section are presented in **Emerging Trends – COVID-19 Impact on Poison Centers**.

2020 Preview Wrap Up

Last year, we initiated a new section to highlight one or more public health concerns occurring in the next year for our readers and to emphasize the realtime nature of NPDS. This section complimented the Emerging Trends section, which generally reflects issues identified through the end of the publication year, by comparing data from other reporting entities. For 2020, we examined methanol exposures and poisonings associated with hand sanitizers. The Food and Drug Administration's Center for Drug Evaluation and Research (FDA CDER) initiated a request with the AAPCC,

and NPDS emergency codes were generated on June 23, 2020. A report was developed to explore case epidemiology. To provide the earliest and strongest signal, the epidemiology curve included exposure and non-exposure contacts, open and closed cases, and single and multiple substance reports. The initial dataset included cases reported up to 17-Sep-2020; this wrap-up extends the data collection to 31-Aug-2021. For this analysis, seven product codes were used including Hand Sanitizer (Methanol-containing) (8250865) as were six (6) additional product codes for products implicated in FDA initiated recalls for methanol contaminated hand sanitizers (7769825, 7027330, 8314819, 8314893, 8314695, 8312748). To capture additional potential methanol hand sanitizer cases, a focused search was designed to find human exposure cases that had one of the 4 hand sanitizer generic codes as a substance, were not ocular exposures, and which exhibited clinical effects characteristic of methanol toxicity (acidosis, anion gap increased, blurred vision, papilledema, photophobia, or visual defect). Duplicate cases identified in the original search strategy were removed.

Findings for this section are presented in **2020 Preview Wrap Up – Methanol Containing Hand Sanitizers**.

Fatality Case Review and Abstract Selection

NPDS fatality cases are recorded as Death or Death (Indirect report). Medical outcome of Death means that the PC was notified of the death of the case in which PC personnel were involved in some aspect of the management. Deaths (Indirect Report) are deaths that the PC acquired, typically from medical examiners or media, but did not manage or answer any questions related specifically to that case.

The definitions used for the Relative Contribution to Fatality (RCF) classification are defined in Appendix F, and the methods to select abstracts for publications are described in Appendix C. Although PCs may report death as an outcome, the death might not necessarily result from the exposure. We define exposure-related fatality as a death judged by the AAPCC Fatality Review Team to be at least contributory to the exposure (RCF 1-3). The AAPCC fatality review process was first published in detail in the 2008 NPDS Annual Report [1].

Pediatric Fatality Case Review

A focused Pediatric Fatality Review team comprised of 6 toxicologists with pediatric expertise evaluated cases for patients under 19 years of age. The panel reviewed the documentation of all such cases, with specific focus on the conditions behind the poisoning exposure and finding commonalities which might inform efforts at prevention. The reviewed pediatric fatality cases exhibited a bimodal age distribution. Exposures causing death in children $\leq$ 5 years of age were mostly coded as "Unintentional-General," while those in ages >13 years were mostly "Intentional." As has been true for several years, the circumstances of the case are often not captured in the reason code or the narrative. The pediatric fatality review team encourages that additional detail be obtained from law enforcement or child protective services, postmortem investigation, and regarding the means by which the child accessed the substances responsible for the fatality.

Results

Information Requests to Poison Centers

Data from 1,116,568 information requests to PCs in 2020 (Table 1C) were entered into NPDS, including requests in optional reporting categories such as medical information (755,103), prevention/safety/education (16,513), administrative (26,963), and caller referral (100,978). Total information requests to PCs increased 218.0% from 2019 (351,163 requests) to 2020 (1,116,568 requests) as shown in Figure 1.

Figure 2 shows that all Medication Identification (Drug ID) requests have decreased dramatically since mid-2008.

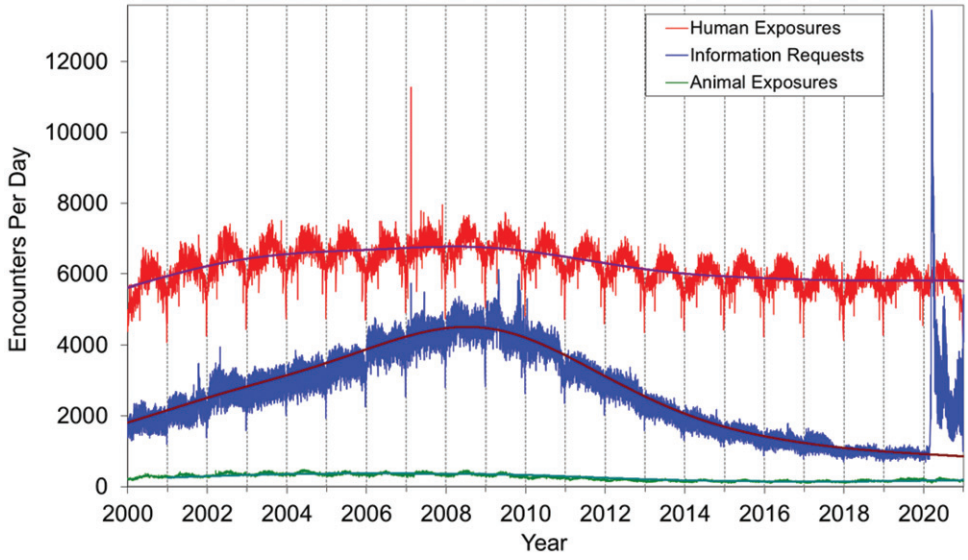

Figure 1. Human Exposure Cases, Information Requests and Animal Exposure Cases by Day since 1 January 2000. Smoothing spline fits using lambda = 1200 for human exposures had associated RSqr = 0.478, information requests RSqr = 0.925 (through 2019) and animal exposures RSqr = 0.876.

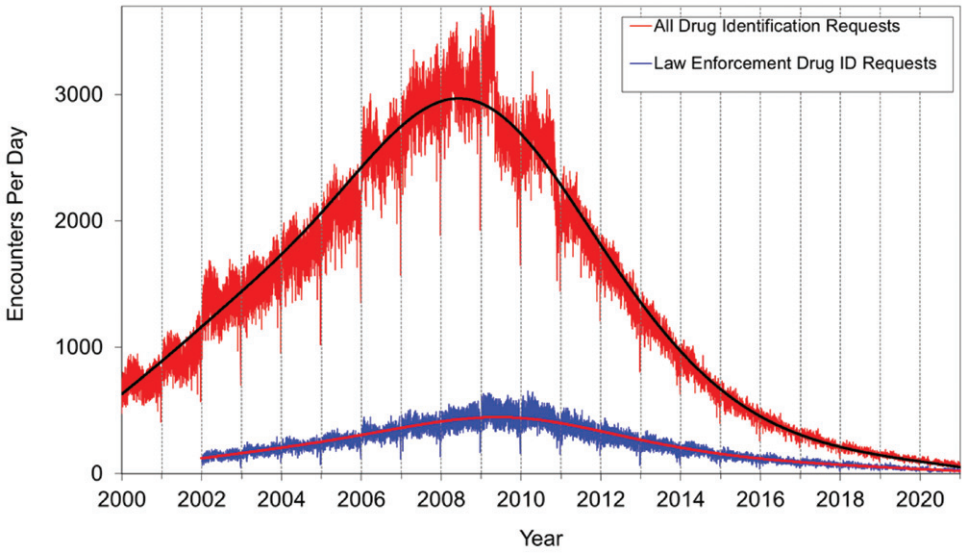

Figure 2. All Drug Identification and Law Enforcement Drug Identification Requests by Day since 1 January 2000. Smoothing spline fits used lambda = 1200, all drug identification requests had associated RSqr = 0.971 and law enforcement drug ID requests RSqr = 0.900.

Answering Drug ID requests is optional for PCs and some have stopped answering these requests. Law enforcement Drug ID requests also showed a decline. Drug ID requests fell to 6th most frequent information request for 2020, comprising 32,291 requests with PCs during the year. Of these, 16,221 (50.2%) were identified as drugs with known abuse potential. However, these cases were categorized based on the drug's abuse potential without knowledge of whether abuse was intended.

Medical Information requests increased 3255% from 2019 (22,505) to 2020 (755,103) due to Poison Center responses to the COVID-19 pandemic. The most common Medical Information requests were Other Medical (47.7%), Diagnostic or treatment recommendations for diseases or conditions - non-toxicology (30.1%) and Explanation of disease states (15.3%).

While the number of Drug information requests decreased 5.90% from 2019 (70,179 requests) to 2020 (66,039 requests), the percentage of these decreased to 5.91% of all information requests due to the large number of COVID-19 related medical information requests. The most common drug information requests were about drug-drug interactions, followed by other drug information, questions about dosage, inquiries of adverse effects (without a known exposure), and medication availability. Environmental inquiries comprised 1.00% of all information requests. Of these environmental inquiries, specific questions related to cleanup of mercury (thermometers and other) were most common, followed by pesticides, and air quality.

Of all the information requests, poison information comprised 4.24% of the requests with inquiries involving general toxicity the most common followed by questions involving other poison questions, safe use of household products, food preparation handling practices, and food poisoning.

Exposure Cases Logged at Poison Centers

In 2020, participating PCs logged 3,316,738 total encounters including 2,128,198 closed human exposure cases (Table 1A), 66,745 animal exposures (Table 1B), 1,116,568 information requests (Table 1C), 5,160 human confirmed non-exposures, and 67 animal confirmed non-exposures. An additional 13 cases were still open at the time the database was locked. The cumulative AAPCC database now contains over 75 million human exposure case records (Table 1A). A total of 21,086,161 information requests have been logged into the AAPCC database since the year 2000.

Figure 1 shows the human exposures, information requests and animal exposures by day since 1 January 2000. Smoothing spline fit of these data shows departure from linearity (declining rate of cases since mid-2007) for Human Exposure cases with some flattening over the last 3 years. Animal Exposure cases have been declining since mid-2005. Information requests had been declining until early 2020; see Emerging Trends: COVID-19 Impact on Poison Centers for details about the dramatic increase.

A hallmark of PC case management is the use of follow-up contacts to monitor case progress and medical outcome. PCs made close to 2,690,000 follow-up contacts in 2020. (Note: there exists some variation in the way that this number is determined between the 5 data entry systems presently used by AAPCC members). Follow-up was performed in 43.3% of human exposure cases. One follow-up contact was made in 20.0% of human exposure cases and multiple follow-ups (range 2-133) were performed in 23.4% of cases. For human exposure cases in which follow-up contacts were documented, an average of 2.72 contacts per case were done. Figure 3 shows a graphic summary and analyses of Health Care Facility (HCF) exposure and HCF information requests. HCF exposure cases slightly departs from linearity but continues to increase at a steady rate, while the rate of HCF information requests has declined since early 2005 but leveled off since late 2013. This increasing use of the PCs for the more serious cases (HCF exposures) is important in the face of the overall decline in exposure and information encounters.

Tables 22A (Nonpharmaceuticals) and 22B (Pharmaceuticals) found in Appendix B provide summary demographic data on

Table 1A. AAPCC Population Served and Reported Exposures (1983-2020)

Year	No. of participating centers	Population served (in millions)	Human exposures	Exposures per thousand population
1983	16	43.1	251,012	5.8
1984	47	99.8	730,224	7.3
1985	56	113.6	900,513	7.9
1986	57	132.1	1,098,894	8.3
1987	63	137.5	1,166,940	8.5
1988	64	155.7	1,368,748	8.8
1989	70	182.4	1,581,540	8.7
1990	72	191.7	1,713,462	8.9
1991	73	200.7	1,837,939	9.2
1992	68	196.7	1,864,188	9.5
1993	64	181.3	1,751,476	9.7
1994	65	215.9	1,926,438	8.9
1995	67	218.5	2,023,089	9.3
1996	67	232.3	2,155,952	9.3
1997	66	250.1	2,192,088	8.8
1998	65	257.5	2,241,082	8.7
1999	64	260.9	2,201,156	8.4
2000	63	270.6	2,168,248	8.0
2001	64	281.3	2,267,979	8.1
2002	64	291.6	2,380,028	8.2
2003	64	294.7	2,395,582	8.1
2004	62	293.7	2,438,643	8.3
2005	61	296.4	2,424,180	8.2
2006	61	299.4	2,403,539	8.0
2007	61	305.6	2,482,041	8.1
2008	61	308.5[b]	2,491,049	8.1
2009	60	310.9[b]	2,479,355	8.0
2010	60[a]	313.3[b]	2,384,825	7.6
2011	57[c]	315.7[b]	2,334,004	7.4
2012	57	318.0[b]	2,275,141	7.2
2013	57[d]	320.2[e]	2,188,013	6.8
2014	56[d]	322.9[e]	2,165,142	6.7
2015	55[f]	325.4[e]	2,168,371	6.7
2016	55	327.0[e]	2,159,032	6.6
2017	55	330.4[e]	2,115,186	6.4
2018	55	330.0[e]	2,099,751	6.3
2019	55	334.0[e]	2,148,141	6.4
2020	55	336.4[e]	2,128,198	6.3
Total			**75,101,189**	

[a]As of 1 July 2010 there were 60 Participating Centers.
[b]AAPCC Total as of 1 July Mid Year US Census (2012 data for 50 United States, District of Columbia and Puerto Rico; 2011 data for Guam; 2010 data for American Samoa, Federated States of Micronesia, and the US Virgin Islands).
[c]As of 1 July 2011 there were 57 Participating Centers.
[d]One Participating Center closed in September 2013. Its data is included in the 2013 totals but not in the 2014 data.
[e]AAPCC Total as of 1 July Mid Year US Census (data for 50 United States, District of Columbia and Puerto Rico, Guam, American Samoa, Federated States of Micronesia, and the US Virgin Islands) (2).
[f]One Participating Center closed in July 2014. Its data is included in the 2014 totals but not in the 2015 data.

patient age, reason for exposure, medical outcome, and use of an HCF for all 2,128,198 human exposure cases, presented by substance categories. The Pharmaceuticals category includes both licit and illicit drugs.

Column 1: Name of the major, minor generic categories and their associated generic substances. Note that for pharmaceuticals, the generic category or generic substance listed is for the initial FDA approved indication and may not reflect current indications or uses for the pharmaceutical.

Column 2: Number of Case Mentions (all exposures) in grey shading, displays the number of times the specific generic code was reported in any human exposure case. If a human exposure case has multiple instances of a specific generic code it is only counted once.

Column 3: Number of Single Exposures displays the number of human exposure cases that identified only 1 substance (1 case, 1 substance).

The succeeding columns (Age, Reason, Treatment Site, and Outcome) show selected detail from these single-substance exposure cases. Death cases include both cases that have the outcome of Death or Death (indirect report). These death cases are not limited by the RCF.

Table 1B. Non-Human Exposures by Animal Type.

Animal	N	%
Dog	59,799	89.59
Cat	5,910	8.85
Bird	234	0.35
Rodent / lagomorph	176	0.26
Horse	122	0.18
Sheep / goat	43	0.06
Cow	40	0.06
Aquatic	26	0.04
Other	395	0.59
Total	**66,745**	**100.00**

Tables 22A and 22B (Appendix B) restrict the breakdown columns to single-substance cases. Prior to 2007, when multi-substance exposures were included, a relatively innocuous substance could be mentioned in a death column when, for example, the death was attributed to an antidepressant, opioid, or cyanide. The restriction of the breakdowns to single-substance exposures should increase precision and reduce misrepresentation of the results in this by-substance table. Single substance cases reflect the majority (87.7%) of all exposures. In contrast, only 44.7% of fatalities are single substance exposures (Table 5).

Tables 22A and 22B (Appendix B) tabulate 2,557,819 exposures, of which 1,866,592 were single-substance exposures, including 976,640 (47.7%) nonpharmaceuticals and 889,952 (52.3%) pharmaceuticals. In 23.4% of single-substance exposures that involved pharmaceutical substances, the reason for exposure was intentional, compared to only 3.92% when the exposure involved a nonpharmaceutical substance. Correspondingly, treatment in an HCF was provided in a higher percentage of exposures that involved pharmaceutical substances (32.5%) compared with nonpharmaceutical substances (14.7%). Exposures to pharmaceuticals also had more severe outcomes. Of single-substance exposure-related fatal cases, 1,507 (77.0%) were pharmaceuticals compared with 450 (23.0%) nonpharmaceuticals.

Age and Gender Distributions

The age and gender distribution of human exposures is outlined in Table 3A. Children younger than 3 years of age were involved in 30.3% of exposures and children $\leq$ 5 years accounted for 41.7% of human exposures. A male predominance was found among cases involving children $\leq$ 12 years, but this gender distribution was reversed in teenagers and adults, with females comprising the majority of reported

Table 1C. Distribution of Information Requests.

Information request type	N	% of Info. requests
Drug identification		
Public inquiry: Drug sometimes involved in abuse	8,932	0.80
Public inquiry: Drug not known to be abused	6,922	0.62
Public inquiry: Unknown abuse potential	271	0.02
Public inquiry: Unable to identify	3,128	0.28
HCP inquiry: Drug sometimes involved in abuse	292	0.03
HCP inquiry: Drug not known to be abused	369	0.03
HCP inquiry: Unknown abuse potential	32	0.00
HCP inquiry: Unable to identify	217	0.02
Law Enf. Inquiry: Drug sometimes involved in abuse	6,997	0.63
Law Enf. Inquiry: Drug not known to be abused	3,115	0.28
Law Enf. Inquiry: Unknown abuse potential	176	0.02
Law Enf. Inquiry: Unable to identify	1,133	0.10
Other drug ID	707	0.06
Subtotal	**32,291**	**2.89**
Drug information		
Adverse effects (no known exposure)	5,070	0.45
Brand / generic name clarifications	355	0.03
Calculations	85	0.01
Compatibility of parenteral medications	200	0.02
Compounding	111	0.01
Contraindications	988	0.09
Dietary supplement, herbal, and homeopathic	468	0.04
Dosage	8,515	0.76
Dosage form / formulation	939	0.08
Drug use during breast-feeding	880	0.08
Drug-drug interactions	18,988	1.70
Drug-food interactions	1,394	0.12
Foreign drug	27	0.00
Generic substitution	94	0.01
Indications / therapeutic use	3,789	0.34
Medication administration	3,921	0.35
Medication availability	4,351	0.39
Medication disposal	778	0.07
Pharmacokinetics	749	0.07
Pharmacology	321	0.03
Regulatory	821	0.07
Stability / storage	1,263	0.11
Therapeutic drug monitoring	228	0.02
Other drug info	11,704	1.05
Subtotal	**66,039**	**5.91**
Environmental information		
Air quality	1,021	0.09
Carbon monoxide - no known patient(s)	419	0.04
Carbon monoxide alarm use	396	0.04
Chem / bioterrorism / weapons (suspected or confirmed)	16	0.00
Clarification of media reports of environmental contamination	30	0.00
Clarification of substances involved in a HAZMAT incident - no known victim(s)	57	0.01
General questions about contamination of air and / or soil	174	0.02
HAZMAT planning	40	0.00
Lead - no known patient(s)	259	0.02
Mercury thermometer cleanup	1,256	0.11
Mercury (excluding thermometers) cleanup	709	0.06
Notification of a HAZMAT incident - no known patient(s)	398	0.04
Pesticide application by a professional pest control operator	302	0.03
Pesticides (other)	1,484	0.13
Potential toxicity of chemicals in the environment	979	0.09
Radiation	54	0.00
Safe disposal of chemicals	1,010	0.09
Water purity / contamination	437	0.04
Other environmental	2,142	0.19
Subtotal	**11,183**	**1.00**
Medical information		
Dental questions	139	0.01
Diagnostic or treatment recommendations for diseases or conditions - non-toxicology	226,967	20.33
Disease prevention	46,640	4.18
Explanation of disease states	115,580	10.35
General first-aid	3,882	0.35
Interpretation of non-toxicology laboratory reports	447	0.04
Medical terminology questions	205	0.02
Rabies - no known patient(s)	283	0.03

(*continued*)

Table 1C. Distribution of Information Requests.

Information request type	N	% of Info. requests
Sunburn management	1,093	0.10
Other medical	359,867	32.23
Subtotal	**755,103**	**67.63**
Occupational information		
Occupational treatment /first-aid guidelines - no known patient(s)	298	0.03
Information on chemicals in the workplace	108	0.01
MSDS interpretation	34	0.00
Occupational MSDS requests	155	0.01
Routine toxicity monitoring	10	0.00
Safe handling of workplace chemicals	98	0.01
Other occupational	449	0.04
Subtotal	**1,152**	**0.10**
Poison information		
Analytical toxicology	529	0.05
Carcinogenicity	74	0.01
Food poisoning - no known patient(s)	1,750	0.16
Food preparation / handling practices	5,633	0.50
General toxicity	21,213	1.90
Mutagenicity	22	0.00
Plant toxicity	1,075	0.10
Recalls of non-drug products (including food)	556	0.05
Safe use of household products	6,360	0.57
Toxicology information for legal use / litigation	116	0.01
Other poison	9,993	0.89
Subtotal	**47,321**	**4.24**
Prevention / Safety / Education		
Confirmation of poison center number	9,654	0.86
General (non-poison) injury prevention requests	417	0.04
Media requests	542	0.05
Poison prevention material requests	4,081	0.37
Poison prevention week date inquiries	34	0.00
Professional education presentation requests	90	0.01
Public education presentation requests	114	0.01
Other prevention	1,581	0.14
Subtotal	**16,513**	**1.48**
Teratogenicity information		
Teratogenicity	369	0.03
Subtotal	**369**	**0.03**
Other information		
Other	57,053	5.11
Subtotal	**57,053**	**5.11**
Substance Abuse		
Drug screen information	911	0.08
Effects of illicit substances - no known patient(s)	78	0.01
New trend information	76	0.01
Withdrawal from illicit substances - no known patient(s)	145	0.01
Other substance abuse	393	0.04
Subtotal	**1,603**	**0.14**
Administrative		
Expert witness requests	25	0.00
Faculty activities	18	0.00
Funding	11	0.00
Personnel issues	100	0.01
Poison center record request	183	0.02
Product replacement / malfunction (issues intended for the manufacturer)	424	0.04
Scheduling of poison center rotations	60	0.01
Other administration	26,142	2.34
Subtotal	**26,963**	**2.41**
Caller Referred		
Immediate referral - animal poison center or veterinarian	36,276	3.25
Immediate referral - drug identification	317	0.03
Immediate referral - drug information	158	0.01
Immediate referral - health department	25,675	2.30
Immediate referral - medical advice line	5,842	0.52
Immediate referral - pediatric triage service	59	0.01
Immediate referral - pesticide hotline	258	0.02
Immediate referral - pharmacy	488	0.04
Immediate referral - poison center	7,660	0.69
Immediate referral - private physician	4,768	0.43
Immediate referral - psychiatric crisis line	196	0.02
Immediate referral - teratology information program	255	0.02
Other call referral	19,026	1.70
Subtotal	**100,978**	**9.04**
Total	**1,116,568**	**100.00**

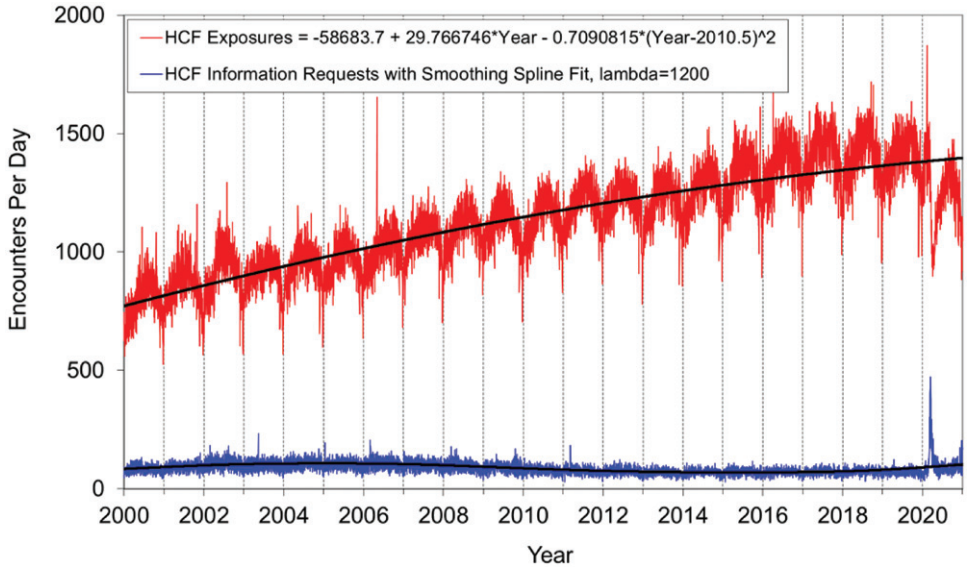

Figure 3. Health Care Facility (HCF) Exposure Cases and HCF Information Requests by Day since 1 January 2000. Both linear and second order (quadratic) terms were statistically significant ($p < 0.001$) for regression of HCF human exposure with associated RSqr = 0.728 and RSqr = 0.740 respectively. The quadratic coefficient is negative meaning the case counts are increasing slower than linearly. Smoothing spline fit with lambda = 1200 for HCF information requests had associated RSqr = 0.267.

Table 5. Number of Substances Involved in Human Exposure Cases

No. of Substances	Human exposures		Fatal exposures[a]	
	N	%	N	%
1	1,866,591	87.71	641	44.70
2	167,636	7.88	357	24.90
3	52,510	2.47	201	14.02
4	21,136	0.99	94	6.56
5	9,600	0.45	58	4.04
6	4,482	0.21	36	2.51
7	2,480	0.12	13	0.91
8	1,404	0.07	12	0.84
>=9	2,359	0.11	22	1.53
Total	**2,128,198**	**100.00**	**1,434**	**100.00**

[a]Includes cases with RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory. This excludes reports with outcome of Death, indirect.

exposures. The overall rate of poison exposures reported to PCs is 633/100,000 population (Table 3B). The highest rates of poison exposures are in 1-year-old children (6,780/100,000 population) and 2-year-old children (6,398/100,000 population). Rates declined with age from 419/100,000 population in children 6–12 to 367/100,000 population in adults ≥20 years.

Caller Site and Exposure Site

As shown in Table 2, of the 2,128,198 human exposure cases reported, 71.3% of cases originated from a residence (own or other) while 93.4% of exposures occurred at a residence (own or other). Another 21.5% of cases were made from an HCF. Beyond residences, exposures occurred in the workplace (1.63% of cases), schools (0.630%), HCF (0.282%), and restaurants or food services (0.140%).

Exposures in Pregnancy

Exposure during pregnancy occurred in 6,199 women (0.291% of all human exposures). Of those with known pregnancy duration (n = 5,832), 46.7% occurred in the first trimester, 29.2% in the second trimester, and 24.2% beyond the second trimester. Most (74.1%) were unintentional exposures and 18.2% were intentional exposures. There were 3 deaths of pregnant females recorded in 2020 (Fatality cases 483, 1233, 3216).

Chronicity

Most human exposures, 1,811,071 (85.1%), were acute cases (single, repeated or continuous exposure occurring over 8 hours or less) compared to 1,149 (25.6%) acute cases among the 4,488 fatalities. Chronic exposures (continuous or repeated exposures occurring over more than 8 hours) comprised 2.42% (51,479) of all human exposures. Acute-on-chronic exposures (single exposure that was preceded by a continuous, repeated, or intermittent exposure occurring over a period greater than 8 hours) numbered 216,208 (10.2%).

Reason for Exposure

The reason category for most human exposures was unintentional (76.9%), including: unintentional general (48.3%), therapeutic error (13.0%), and unintentional misuse (8.57%) (Table 6A).

Scenarios

Of the total 276,768 cases involving therapeutic errors (Table 6A) the most common scenarios for all ages included: inadvertent double-dosing (33.1%), wrong medication taken or given (16.1%), other incorrect dose (15.1%), doses given/taken too close together (10.6%), and inadvertent exposure to someone else's medication (9.12%). The types of therapeutic errors observed are different for each age group and are summarized in Table 6B.

Table 3A. Age and Gender Distribution of Human Exposures

	Male		Female		Unknown gender		Total		Cumulative total	
Age (y)	N	% of age group total	N	% of age group total	N	% of age group total	N	% of total exposures	N	%
Children (<20)										
< 1	51,643	51.76	47,680	47.79	454	0.46	99,777	4.69	99,777	4.69
1	146,057	51.98	134,286	47.79	650	0.23	280,993	13.2	380,770	17.89
2	138,137	52.17	125,891	47.55	751	0.28	264,779	12.44	645,549	30.33
3	72,876	55.21	58,619	44.41	499	0.38	131,994	6.20	777,543	36.54
4	37,727	56.56	28,615	42.90	363	0.54	66,705	3.13	844,248	39.67
5	22,636	57.4	16,550	41.97	248	0.63	39,434	1.85	883,682	41.52
Unknown ≤5	1,288	48.42	1,124	42.26	248	9.32	2,660	0.12	886,342	41.65
Child 6-12	67,290	55.72	52,576	43.54	896	0.74	120,762	5.67	1,007,104	47.32
Teen 13-19	60,607	35.39	110,025	64.24	629	0.37	171,261	8.05	1,178,365	55.37
Unknown Child	1,766	39.69	1,687	37.92	996	22.39	4,449	0.21	1,182,814	55.58
Subtotal	**600,027**	**50.73**	**577,053**	**48.79**	**5,734**	**0.48**	**1,182,814**	**55.58**	**1,182,814**	**55.58**
Adults (≥20)										
20-29	87,838	44.58	108,872	55.25	332	0.17	197,042	9.26	1,379,856	64.84
30-39	76,775	44.64	94,994	55.24	205	0.12	171,974	8.08	1,551,830	72.92
40-49	50,522	41.29	71,724	58.61	119	0.1	122,365	5.75	1,674,195	78.67
50-59	46,402	39.85	69,940	60.07	96	0.08	116,438	5.47	1,790,633	84.14
60-69	37,585	38.12	60,898	61.77	104	0.11	98,587	4.63	1,889,220	88.77
70-79	23,975	36.32	41,976	63.59	59	0.09	66,010	3.10	1,955,230	91.87
80-89	10,922	34.75	20,468	65.13	37	0.12	31,427	1.48	1,986,657	93.35
≥90	2,602	32.3	5,440	67.53	14	0.17	8,056	0.38	1,994,713	93.73
Unknown adult	43,644	37.65	69,765	60.19	2,501	2.16	115,910	5.45	2,110,623	99.17
Subtotal	**380,265**	**40.99**	**544,077**	**58.64**	**3,467**	**0.37**	**927,809**	**43.6**	**2,110,623**	**99.17**
Other										
Unknown age	6,075	34.57	8,305	47.25	3,195	18.18	17,575	0.83	2,128,198	100
Total	**986,367**	**46.35**	**1,129,435**	**53.07**	**12,396**	**0.58**	**2,128,198**	**100**	**2,128,198**	**100**

Table 3B. Population-Adjusted Exposures by Age Group

Age Group	Exposures/ 100k population	Number of Exposures[a]	Population[b]
Children (<20)			
< 1	2,405	99,777	4,147,923
1	6,780	280,993	4,144,632
2	6,398	264,779	4,138,383
3	3,197	131,994	4,128,690
4	1,646	66,705	4,052,133
5	967	39,434	4,076,234
Child 6-12	419	120,762	28,814,079
Teen 13-19	575	171,261	29,787,295
Subgroup	1,420	**1,182,814**	83,289,369
Adults (≥20)			
20-29	429	197,042	45,921,659
30-39	379	171,974	45,346,808
40-49	298	122,365	41,001,744
50-59	272	116,438	42,773,718
60-69	250	98,587	39,496,260
70-79	262	66,010	25,160,966
80-89	296	31,427	10,604,896
90+	289	8,056	2,788,175
Subgroup	367	**927,809**	253,094,226
Overall Total	633	**2,128,198**	336,383,595

[a]Number of Exposures excludes unknown ages from the individual age categories, but includes them in the Subtotals and Overall Total (see Table 3A).
[b]AAPCC Total as of 1 July 2020, 336,383,595 (see Table 1A) [2].

Reason by Age

Intentional exposures accounted for 18.3% of human exposures. Suicidal intent was suspected in 12.5% of cases, intentional misuse in 2.57%, and intentional abuse in 2.31%. Unintentional exposures outnumbered intentional exposures in all age groups with the exception of ages 13-19 years (Table 7). In contrast, of the 1,434 reported fatalities with RCF 1-3, the major reason reported for children ≤ 5 years was unintentional, while most fatalities in adults (≥20 years) were intentional (Table 8).

Table 2. Site of Call and Site of Exposure, Human Exposure Cases

	Site of caller		Site of exposure	
Site	N	%	N	%
Residence				
Own	1,494,555	70.23	1,950,393	91.65
Other	22,990	1.08	37,107	1.74
Workplace	20,048	0.94	34,584	1.63
Health care facility	456,924	21.47	6,001	0.28
School	5,238	0.25	13,414	0.63
Restaurant / food service	268	0.01	2,990	0.14
Public area	6,156	0.29	20,323	0.95
Other	114,325	5.37	24,700	1.16
Unknown	7,694	0.36	38,686	1.82

Route of Exposure

Ingestion was the route of exposure in 81.9% of cases (Table 9), followed in frequency by inhalation/nasal (7.57%), dermal (7.24%), and ocular routes (4.25%). For the 1,434 exposure-related fatalities, ingestion (81.0%), unknown (14.4%), inhalation/nasal (9.14%), and parenteral (3.70%) were the predominant exposure routes. Each exposure case may have more than one route.

Clinical Effects

The NPDS database allows for the coding of up to 169 individual clinical effects (signs, symptoms, or laboratory

Table 6A. Reason for Human Exposure Cases.

Reason	N	% Human exposures
Unintentional		
Unintentional - General	1,026,904	48.3
Unintentional - Therapeutic error	276,768	13.0
Unintentional - Misuse	182,404	8.6
Unintentional - Environmental	61,887	2.9
Unintentional - Bite / sting	38,744	1.8
Unintentional - Occupational	26,113	1.2
Unintentional - Food poisoning	18,864	0.9
Unintentional - Unknown	4,446	0.2
Subtotal	**1,636,130**	**76.9**
Intentional		
Intentional - Suspected suicide	266,779	12.5
Intentional - Misuse	54,610	2.6
Intentional - Abuse	49,242	2.3
Intentional - Unknown	18,134	0.9
Subtotal	**388,765**	**18.3**
Adverse Reaction		
Adverse reaction - Drug	38,969	1.8
Adverse reaction - Other	12,538	0.6
Adverse reaction - Food	6,791	0.3
Subtotal	**58,298**	**2.7**
Unknown		
Unknown reason	25,499	1.2
Subtotal	**25,499**	**1.2**
Other		
Other - Contamination / tampering	10,451	0.5
Other - Malicious	6,879	0.3
Other - Withdrawal	2,176	0.1
Subtotal	**19,506**	**0.9**
Total	**2,128,198**	**100**

abnormalities) for each case. Each clinical effect can be further defined as related, not related, or unknown if related. Clinical effects were coded in 824,049 (38.7%) cases (17.6% had 1 effect, 9.86% had 2 effects, 5.29% had 3 effects, 2.66% had 4 effects, 1.32% had 5 effects, and 1.98% had >5 effects coded). Of clinical effects coded, 77.6% were deemed related to the exposure, 9.18% were considered not related, and 13.2% were coded as unknown if related.

Case Management Site

The majority of cases reported to PCs were managed outside of a HCF (68.7%), usually at the site of exposure, primarily the patient's own residence (Table 10). Treatment in a HCF was rendered in 28.2% of cases. Only 1.33% of cases were referred to a HCF but refused referral.

Of the 600,935 cases managed in a HCF, 267,586 (44.5%) were treated and released, 84,269 (14.0%) were admitted to a critical care unit, 81,842 (13.6%) were admitted to a non-critical unit, and 86,922 (14.5%) were admitted directly to a psychiatric facility.

The percentage of patients treated in a HCF varied considerably with age. Only 10.8% of children $\leq$ 5 years and 18.7% of children between 6 and 12 years were managed in a HCF compared to 66.6% of teenagers (13-19 years) and 43.3% of adults (age $\geq$ 20 years).

Table 6B. Scenarios for Therapeutic Errors[a] by Age[b].

Scenario	N	<=5 y (Row %)	6-12 y (Row %)	13-19 y (Row %)	>=20 y (Row %)	Unknown child (Row %)	Unknown adult (Row %)	Unknown age (Row %)
Inadvertently took/given medication twice	91,652	11.98	9.52	5.50	65.45	0.08	7.03	0.43
Wrong medication taken/given	44,560	12.35	9.60	5.46	66.06	0.05	6.10	0.38
Other incorrect dose	41,782	24.41	9.55	6.99	53.72	0.11	4.77	0.45
Medication doses given/taken too close together	29,345	11.08	7.30	5.98	68.19	0.07	7.02	0.36
Inadvertently took/given someone else's medication	25,247	12.31	16.34	5.97	59.56	0.06	5.43	0.34
Other/unknown therapeutic error	18,172	14.25	8.36	6.37	61.84	0.13	8.29	0.75
Incorrect dosing route	12,610	6.76	3.16	5.04	71.24	0.13	12.85	0.83
Confused units of measure	5,347	52.14	12.66	4.13	27.66	0.06	2.99	0.36
Health professional/iatrogenic error (pharmacist/nurse/physician)	5,005	19.60	7.77	6.47	60.70	0.18	4.70	0.58
Incorrect formulation or concentration given	4,685	44.61	16.69	4.74	30.12	0.28	3.37	0.19
More than 1 product containing same ingredient	4,560	7.21	11.29	9.74	62.94	0.09	8.18	0.55
Drug interaction	3,541	2.99	5.20	5.34	68.23	0.20	17.11	0.93
Dispensing cup error	2,597	68.04	13.17	2.54	14.52	0.08	1.66	0.00
10-fold dosing error	1,693	65.33	6.32	2.24	23.69	0.24	2.01	0.18
Incorrect formulation or concentration dispensed	1,273	41.79	13.75	5.89	34.64	0.08	3.46	0.39
Exposure through breast milk	176	90.91	0.00	0.00	4.55	3.41	1.14	0.00

[a]All cases with a scenario category of therapeutic error regardless of reason
[b]Of the human exposure cases reported to U.S. Poison Centers in 2020, 434,616 (20.4%) were coded to 1 or more of 54 scenarios.

Table 7. Distribution of Reason for Exposure by Age

	<=5 y		6-12 y		13-19 y		>=20 y		Unknown child		Unknown adult		Unknown age		Total	
Reason	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %	N	%
Unintentional	879,370	57.14	100,984	6.56	53,781	3.49	493,336	32.05	3,904	0.25	93,119	6.05	11,636	0.76	1,636,130	76.88
Intentional	14	0.00	15,172	4.00	110,042	29.00	251,046	66.15	210	0.06	9,057	2.39	3,224	0.85	388,765	18.27
Adverse reaction	2,852	5.7	2,187	4.37	3,711	7.42	40,291	80.58	131	0.26	8,168	16.34	958	1.92	58,298	2.74
Unknown	2,873	12.4	1,144	4.94	2,350	10.14	15,561	67.17	66	0.28	2,265	9.78	1,240	5.35	25,499	1.20
Other	1,233	7.67	1,275	7.94	1,377	8.57	11,665	72.60	138	0.86	3,301	20.55	517	3.22	19,506	0.92
Total	**886,342**	**44.14**	**120,762**	**6.01**	**171,261**	**8.53**	**811,899**	**40.44**	**4,449**	**0.22**	**115,910**	**5.77**	**17,575**	**0.88**	**2,128,198**	**100**

Table 8. Distribution of Reason for Exposure and Age for Fatalities[a].

Reason	<=5 y	6 - 12 y	13 - 19 y	>=20 y	Unknown child	Unknown adult	Unknown age	Total
Unintentional								
Unintentional - General	11	0	0	21	0	0	0	32
Unintentional - Environmental	5	3	0	31	0	2	1	42
Unintentional - Occupational	0	0	0	5	0	0	0	5
Unintentional - Therapeutic error	1	0	0	41	0	0	0	42
Unintentional - Misuse	0	1	0	20	0	0	0	21
Unintentional - Bite / sting	1	0	0	3	0	0	0	4
Unintentional – Food poisoning	0	0	0	1	0	0	0	1
Unintentional - Unknown	0	0	0	7	0	0	0	7
Subtotal	18	4	0	129	0	2	1	154
Intentional								
Intentional - Suspected suicide	0	2	42	676	0	3	0	723
Intentional - Misuse	0	0	1	58	0	1	0	60
Intentional - Abuse	0	0	16	191	0	2	1	210
Intentional - Unknown	0	0	3	89	0	0	0	92
Subtotal	0	2	62	1,014	0	6	1	1,085
Other								
Other - Malicious	1	0	0	2	0	0	0	3
Other - Withdrawal	0	0	0	2	0	0	0	2
Subtotal	1	0	0	4	0	0	0	5
Adverse reaction								
Adverse reaction - Drug	0	0	0	45	0	0	0	45
Adverse reaction - Other	0	0	0	1	0	0	0	1
Subtotal	0	0	0	46	0	0	0	46
Unknown								
Unknown reason	2	1	6	134	0	1	0	144
Subtotal	2	1	6	134	0	1	0	144
Total	21	7	68	1,327	0	9	2	1,434

[a]Includes cases with RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory. This excludes reports with outcome of Death, indirect.

Table 9. Route of Exposure for Human Exposure Cases

	Human exposures			Fatal exposures[a]		
Route	N	% of All Routes	% of All Cases	N	% of All Routes	% of All Cases
Ingestion	1,742,694	77.69	81.89	1,161	72.70	80.96
Inhalation/nasal	161,146	7.18	7.57	131	8.20	9.14
Dermal	153,998	6.87	7.24	12	0.75	0.84
Ocular	90,388	4.03	4.25	2	0.13	0.14
Bite/sting	38,800	1.73	1.82	4	0.25	0.28
Unknown	28,100	1.25	1.32	206	12.90	14.37
Parenteral	19,297	0.86	0.91	53	3.32	3.70
Other	3,844	0.17	0.18	11	0.69	0.77
Otic	1,696	0.08	0.08	0	0.00	0.00
Vaginal	1,204	0.05	0.06	0	0.00	0.00
Aspiration (with ingestion)	1,128	0.05	0.05	16	1.00	1.12
Rectal	916	0.04	0.04	1	0.06	0.07
Total Number of Routes	**2,243,211**	**100**	**105.4**	**1,597**	**100**	**111.37[b]**

[a]Includes cases with RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory. This excludes reports with outcome of Death, indirect.
[b]Each exposure case may have more than one route.

Table 10. Management Site of Human Exposures

Site of management	N	%
Managed on site, non-health care facility	1,461,148	68.7
Managed in healthcare facility		
Treated/evaluated and released	267,586	12.6
Admitted to psychiatric facility	86,922	4.1
Admitted to critical care unit	84,269	4.0
Admitted to noncritical care unit	81,842	3.9
Patient lost to follow-up / left AMA	80,316	3.8
Subtotal (managed in HCF)	**600,935**	**28.2**
Other	15,385	0.7
Refused referral	28,286	1.3
Unknown	22,444	1.1
Total	**2,128,198**	**100.0**

Medical Outcome

Table 11 displays the medical outcome of human exposure cases distributed by age. Older age groups exhibit a greater number of severe medical outcomes. Table 12 compares medical outcome and reason for exposure and shows a greater frequency of serious outcomes in intentional exposures.

The duration of effect is required for all cases which report at least 1 clinical effect and have a medical outcome of minor, moderate or major effect (n = 525,631; 24.7% of exposures). Table 13 demonstrates an increasing duration of the clinical effects observed with more severe outcomes.

Table 11. Medical Outcome of Human Exposure Cases by Patient Age[a].

	<=5 y		6-12 y		13-19 y		>=20 y		Unknown child		Unknown adult		Unknown age		Total	
Outcome	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
No effect	194,060	21.89	21,874	18.11	32,252	18.83	99,381	12.24	588	13.22	10,679	9.21	2,397	13.63	361,231	16.97
Minor effect	71,467	8.06	17,714	14.67	47,110	27.51	165,837	20.43	399	8.97	13,417	11.58	2,190	12.46	318,134	14.95
Moderate effect	10,019	1.13	5,138	4.25	31,416	18.34	118,136	14.55	50	1.12	2,663	2.30	478	2.72	167,900	7.89
Major effect	1,292	0.15	472	0.39	4,713	2.75	32,797	4.04	12	0.27	227	0.20	84	0.47	39,597	1.86
Death	37	0.00	9	0.01	90	0.05	1,849	0.23	0	0.00	16	0.01	5	0.03	2,006	0.09
No follow-up, nontoxic	115,790	13.06	12,164	10.07	5,207	3.04	38,083	4.69	560	12.59	12,627	10.89	1,271	7.23	185,702	8.73
No follow-up, minimal toxicity	468,270	52.83	57,912	47.96	35,285	20.6	274,084	33.76	2,226	50.03	59,284	51.15	5,802	33.01	902,863	42.42
No follow-up, potentially toxic	17,312	1.95	3,412	2.83	11,347	6.63	48,385	5.96	531	11.94	12,649	10.91	4,880	27.76	98,516	4.63
Unrelated effect	8,075	0.91	2,058	1.70	3,760	2.20	30,999	3.82	82	1.84	4,329	3.73	464	2.64	49,767	2.34
Death, indirect report	20	0.00	9	0.01	81	0.05	2,348	0.29	1	0.02	19	0.02	4	0.02	2,482	0.12
Total	**886,342**	**100**	**120,762**	**100**	**171,261**	**100**	**811,899**	**100**	**4,449**	**100**	**115,910**	**100**	**17,575**	**100**	**2,128,198**	**100**

[a]Total number of cases where Death was an outcome (2,006 + 2,482) is greater than the number of fatalities (1,434) judged to be exposure-related (RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).

Table 12. Medical Outcome by Reason for Exposure in Human Exposures[a].

	Unintentional		Intentional		Other		Adverse reaction		Unknown		Total	
Outcome	N	%	N	%	N	%	N	%	N	%	N	%
No effect	289,983	17.72	64,775	16.66	2,549	13.07	1,997	3.43	1,927	7.56	361,231	16.97
Minor effect	195,065	11.92	104,407	26.86	3,129	16.04	12,977	22.26	2,556	10.02	318,134	14.95
Moderate effect	45,262	2.77	108,206	27.83	1,514	7.76	7,756	13.30	5,162	20.24	167,900	7.89
Major effect	3,911	0.24	31,566	8.12	306	1.57	1,191	2.04	2,623	10.29	39,597	1.86
Death	207	0.01	1,360	0.35	12	0.06	111	0.19	316	1.24	2,006	0.09
No follow-up, nontoxic	177,126	10.83	3,199	0.82	1,169	5.99	1,465	2.51	2,743	10.76	185,702	8.73
No follow-up, minimal toxicity	840,587	51.38	30,561	7.86	7,001	35.89	20,640	35.40	4,074	15.98	902,863	42.42
No follow-up, potentially toxic	54,450	3.33	33,945	8.73	2,234	11.45	3,701	6.35	4,186	16.42	98,516	4.63
Unrelated effect	29,389	1.80	8,549	2.20	1,587	8.14	8,452	14.50	1,790	7.02	49,767	2.34
Death, indirect report	150	0.01	2,197	0.57	5	0.03	8	0.01	122	0.48	2,482	0.12
Total	**1,636,130**	**100**	**388,765**	**100**	**19,506**	**100**	**58,298**	**100**	**25,499**	**100**	**2,128,198**	**100**

[a]Total number of cases where Death was an outcome (2,006 + 2,482) is greater than the number of fatalities (1,434) judged to be exposure-related (RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).

Table 13. Duration of Clinical Effects by Medical Outcome

	Minor effect		Moderate effect		Major effect	
Duration of effect	N	%	N	%	N	%
<=2 hours	94,933	29.84	6,324	3.77	1,493	3.77
>2 hours, <=8 hours	94,434	29.68	36,918	21.99	5,316	13.43
>8 hours, <=24 hours	57,308	18.01	60,885	36.26	8,997	22.72
>24 hours, <=3 days	18,398	5.78	31,444	18.73	11,951	30.18
>3 days, <=1 week	3,821	1.20	7,825	4.66	6,020	15.20
>1 week, <=1 month	1,279	0.40	1,691	1.01	1,839	4.64
>1 month	374	0.12	456	0.27	304	0.77
Anticipated permanent	155	0.05	121	0.07	450	1.14
Unknown	47,432	14.91	22,236	13.24	3,227	8.15
Total	**318,134**	**100**	**167,900**	**100**	**39,597**	**100**

Decontamination Procedures and Specific Antidotes

Tables 14 and 15 outline the use of 112 decontamination procedures, specific physiological antagonists (antidotes), and measures to enhance elimination in the treatment of patients reported in the NPDS database. These should be interpreted as minimum frequencies because of the limitations of telephone data gathering.

Table 14. Decontamination and Therapeutic Interventions

Therapy	N	%
Decontamination Only	1,006,399	47.29
Therapeutic Intervention Only	259,544	12.20
Decontamination and Therapeutic Intervention	103,017	4.84
Not Coded	759,238	35.68
Total	**2,128,198**	**100**

Ipecac-induced emesis for poisoning continues to decline as shown in Tables 16A and 16B. Ipecac was administered in only 16 (0.00181%) pediatric exposures in 2020. A progressive decrease in ipecac syrup use and availability over the last 2 decades likely reflects ipecac use guidelines issued in 1997 by the American Academy of Clinical Toxicology and the European Association of Poisons Centres and Clinical Toxicologists, updated in 2004 [3,4]. In a separate report, the

Table 15. Therapy Provided in Human Exposures by Age.

Therapy	<=5 y	6-12 y	13-19 y	>=20 y	Unknown child	Unknown adult	Unknown age	Total
Decontamination								
Cathartic	125	84	670	1,162	0	3	1	2,045
Charcoal, multiple doses	61	26	340	579	0	2	0	1,008
Charcoal, single dose	3,946	1,021	11,153	16,429	2	80	15	32,646
Dilute/irrigate/wash	417,684	43,083	25,455	199,786	1,460	40,361	4,119	731,948
Food/snack	114,435	10,535	5,893	34,730	618	7,786	547	174,544
Fresh air	5,247	3,376	4,143	46,616	547	14,621	1,426	75,976
Ipecac	16	9	10	30	0	4	1	70
Lavage	20	4	106	325	0	0	0	455
Other emetic	7,249	853	1,733	7,400	13	606	87	17,941
Whole bowel irrigation	70	27	221	810	0	1	2	1,131
Other Therapies								
2-PAM	5	3	6	46	0	0	2	62
Alkalinization - Systemic	62	64	1,120	5,628	0	14	1	6,889
Alkalinization - Urinary	45	51	668	1,569	0	3	2	2,338
Amyl nitrite	0	0	0	1	0	0	0	1
Antiarrhythmic	10	9	98	872	0	2	1	992
Antibiotics	1,485	596	1,293	14,318	9	397	42	18,140
Anticonvulsants[a]	128	40	320	1,950	0	7	3	2,448
Antiemetics	1,175	1,027	10,381	18,101	4	77	10	30,775
Antifungals	5	2	6	65	0	2	0	80
Antihistamines	1,795	1,229	1,983	10,124	18	1,005	89	16,243
Antihypertensives	22	19	181	3,010	0	10	1	3,243
Antipsychotics	12	58	981	6,047	0	19	8	7,125
Antivenom (Immune Fab fragment) – Not Specified	185	257	228	2,077	0	7	1	2,755
Antivenom (Immune Fab) - Centruroides (Scorpion)	156	42	12	123	0	2	0	335
Antivenom (Immune Fab) - Latrodectus	3	2	0	17	0	0	0	22
Antivenom - Elapidae	1	4	4	38	0	1	0	48
Antivenom - Latrodectus	1	3	2	13	0	0	0	19
Antivenom/antitoxin (Non-Fab) – Not Specified	6	26	14	164	1	2	0	213
Antivirals	17	2	14	90	0	3	0	126
Atropine	127	47	197	1,619	0	3	2	1,995
BAL	6	0	1	7	0	0	0	14
Benzodiazepines	1,129	857	9,197	35,653	0	135	32	47,003
Blood Products	34	8	56	935	0	2	1	1,036
Botulinum antitoxim	6	0	0	16	0	0	0	22
Bronchodilators	229	169	346	3,976	6	177	27	4,930
Calcium	4,654	390	540	4,489	0	79	9	10,161
Cardioversion	3	4	23	266	0	1	0	297
Colony Stimulating Factors	1	0	0	12	0	0	0	13
Continuous Renal Replacement Therapy (CRRT)	8	4	41	640	0	2	0	695
CPR	102	13	258	2,085	1	9	3	2,471
Deferiprone	0	0	0	2	0	0	0	2
Deferoxamine	10	3	34	24	0	0	0	71
Digoxin Immune Fab	4	0	1	376	0	1	0	382
Direct-acting Oral Anticoagulant Reversal Agents	0	0	0	4	0	0	0	4
DMPS	1	0	0	1	0	0	0	2
DTPA - Calcium	1	0	0	0	0	0	0	1
ECMO	15	1	35	97	0	0	0	148
EDTA	29	1	1	4	0	0	0	35
Ethanol	0	0	2	40	0	3	0	45
Extracorp. procedure (other)	2	3	3	34	0	0	0	42
Fluids, IV	5,386	3,378	34,930	111,171	5	321	110	155,301
Flumazenil	51	18	152	856	0	3	0	1,080
Folate	11	5	65	3,153	0	7	4	3,245
Fomepizole	108	23	119	2,106	0	15	4	2,375
Glucagon	41	14	129	2,017	0	3	1	2,205
Glucarpidase	0	0	0	3	0	0	0	3
Glucose, > 5%	427	61	447	4,544	0	16	5	5,500
Granulocyte Stimulating Growth Factors	0	0	0	1	0	0	0	1
Hemodialysis	11	10	105	2,403	0	10	4	2,543
Hemoperfusion	0	0	2	29	0	0	0	31
High Dose Insulin/Glucose	2	1	37	592	0	1	0	633
Hydroxocobalamin	14	8	8	131	0	1	1	163
Hyperbaric oxygen	32	43	30	284	1	9	1	400
Hypothermia Protocol	2	0	14	257	0	2	2	277
Insulin	12	16	154	2,260	0	5	3	2,450
Intubation	484	145	1,833	17,110	1	95	25	19,693
L-Carnitine	8	14	80	554	0	2	1	659
Leucovorin	5	2	7	156	0	0	0	170
Lipid Emulsion Therapy	10	4	59	313	0	0	0	386
Magnesium	33	123	2,056	10,159	0	14	3	12,388
Methylene blue	16	4	44	244	0	0	1	309
Molecular Adsorbant Recirculating System (MARS)	0	0	0	9	0	1	0	10

(*continued*)

Table 15. Therapy Provided in Human Exposures by Age – Continued.

Therapy	<=5 y	6-12 y	13-19 y	>=20 y	Unknown child	Unknown adult	Unknown age	Total
NAC, IV	188	608	7,804	16,381	0	45	13	25,039
NAC, PO	17	54	624	1,362	0	3	0	2,060
Nalmefene	0	0	2	19	0	0	0	21
Naloxone	1,411	203	2,453	23,374	3	141	48	27,633
Neuromuscular blocker	68	17	252	1,823	0	6	1	2,167
Octreotide	92	9	39	478	0	0	1	619
Opioid analgesia	300	258	715	7,057	0	25	5	8,360
Other	18,325	5,045	8,711	54,244	78	3,208	743	90,354
Oxygen	1,526	678	3,786	40,514	6	302	58	46,870
Pacemaker	1	0	3	283	0	0	0	287
Penicillamine	1	0	0	1	0	0	0	2
Physostigmine	12	32	211	264	0	1	1	521
Phytonadione	26	9	138	672	0	0	0	845
Plasmapheresis	3	1	9	18	0	0	0	31
Potassium	247	339	4,610	17,481	0	20	11	22,708
Potassium iodide	2	1	17	67	0	2	0	89
Propofol	65	55	922	9,088	0	38	6	10,174
Prussian blue	0	0	0	2	0	0	0	2
Pyridoxine	8	2	34	639	0	5	1	689
Rabies immune globulin	32	30	36	214	2	7	3	324
Rabies vaccine	42	46	45	281	2	14	4	434
Raxibacumab	2	1	1	7	0	0	0	11
Sedation (other)	405	184	1,744	12,436	0	59	16	14,844
Silibinin	0	0	1	9	0	0	0	10
Smallpox vaccine	2	0	0	0	0	0	0	2
Sodium bicarbonate - metabolic acidosis	30	23	316	2,216	0	6	1	2,592
Sodium bicarbonate - nebulized	3	1	17	117	0	1	0	139
Sodium nitrite	0	0	0	8	0	1	0	9
Sodium thiosulfate	2	1	3	25	0	1	0	32
Steroids	569	289	501	4,573	6	326	36	6,300
Succimer	110	14	11	47	0	0	0	182
Surgical intervention	185	66	67	446	1	3	2	770
Thiamine	10	5	126	4,807	0	12	4	4,964
Transplantation	2	0	6	18	0	1	0	27
Vasopressors	121	70	610	8,071	0	30	6	8,908
Ventilation, Non-invasive (CPAP, BiPAP)	61	14	147	3,116	0	10	0	3,348
Ventilator	479	151	1,899	17,332	1	98	26	19,986

[a]Excludes benzodiazepines.

American Academy of Pediatrics concluded not only that ipecac should no longer be used routinely as a home treatment strategy, but also recommended disposal of home ipecac stocks [5]. A decline was also observed since the early 1990s for reported use of activated charcoal. While not as dramatic as the decline in use of ipecac, reported use of activated charcoal decreased from 3.66% of pediatric cases in 1993 to just 0.452% in 2020.

Top Substances in Human Exposures

Table 17A presents the 25 most common substance categories, listed by frequency of human exposure. This ranking provides an indication where prevention efforts might be focused, as well as the types of more serious exposures PCs regularly manage (resulting in death, major effect or moderate effect). It is relevant to know whether exposures to these substances are increasing or decreasing.

To better understand these relationships, we examined exposures with more serious outcomes per year over the last 10 years for the change over time for each of the 68 major generic categories via least squares linear regression. The serious outcome exposure cases per year over this period were increasing for 42, static for 7, and decreasing for 19 of the 68 categories with data for the entire time period. The change over time for the 10 yearly values was statistically significant ($p < 0.05$) for 35 of the 68 categories. Table 17B shows the 25 categories which were increasing the most rapidly over the past 10 years. Statistical significance of the linear regressions can be verified by noting the 95% confidence interval on the rate of increase excludes zero for all but 4 of the 25 categories. Figures 4 show the change over time and linear regressions for the top 4 increasing categories in Table 17B for the 10-year period.

Tables 17C and 17D present exposure results for children and adults, respectively, and show the differences between substance categories involved in pediatric and adult exposures.

Table 17E reports the 16 categories of substances most frequently involved in pediatric ($\leq$ 5 years) fatalities in 2020.

Table 17F reports the 25 Drug ID categories most frequently queried in 2020, highlighting the value of Drug ID information to the AAPCC, public health, public safety, and regulatory agencies. Internet based resources do not afford the caller the option to speak with a health care professional, if needed. Proper resources to continue this vital public service are essential, especially since the top 10 substance categories include antibiotics, drugs with widespread use and

Table 16A. Decontamination Trends (1985-2020).

Year	Human exposures	Ipecac administered (% of all exposures)	Activated charcoal administered (% of all exposures)	Exposures involving children ≤5 y (% of all exposures)	Ipecac administered (% of child exposures)	Activated charcoal administered (% of child exposures)
1985	886,389	132,947 (14.999)	41,063 (4.6)	568,691 (64.2)	94,919 (16.6908)	14,718 (2.59)
1986	1,095,228	145,516 (13.286)	56,481 (5.2)	690,137 (63.0)	99,688 (14.4447)	18,191 (2.64)
1987	1,164,648	117,840 (10.118)	60,310 (5.2)	730,228 (62.7)	83,443 (11.427)	18,507 (2.53)
1988	1,364,113	114,654 (8.4050)	88,876 (6.5)	843,106 (61.8)	80,749 (9.5776)	26,118 (3.10)
1989	1,578,968	110,545 (7.0011)	101,368 (6.4)	963,924 (61.0)	79,192 (8.2156)	30,345 (3.15)
1990	1,646,946	98,986 (6.0103)	108,341 (6.6)	999,751 (60.7)	73,469 (7.3487)	31,579 (3.16)
1991	1,836,364	94,877 (5.1666)	129,092 (7.0)	1,099,179 (59.9)	73,069 (6.6476)	36,177 (3.29)
1992	1,862,796	79,493 (4.2674)	135,625 (7.3)	1,094,256 (58.7)	63,486 (5.8018)	38,937 (3.56)
1993	1,747,147	65,078 (3.7248)	127,893 (7.3)	978,560 (56.0)	50,834 (5.1948)	35,791 (3.66)
1994	1,926,992	51,356 (2.6651)	138,247 (7.2)	1,042,651 (54.1)	41,489 (3.9792)	35,670 (3.42)
1995	2,023,089	47,359 (2.3409)	155,880 (7.7)	1,070,472 (52.9)	38,372 (3.5846)	38,095 (3.56)
1996	2,155,952	39,376 (1.8264)	157,331 (7.3)	1,137,263 (52.7)	32,622 (2.8685)	37,986 (3.34)
1997	2,192,088	32,098 (1.4643)	156,213 (7.1)	1,150,931 (52.5)	26,536 (2.3056)	35,856 (3.12)
1998	2,241,082	26,653 (1.1893)	152,134 (6.8)	1,180,989 (52.7)	22,247 (1.8838)	34,302 (2.90)
1999	2,201,156	21,942 (0.9968)	145,853 (6.6)	1,154,799 (52.5)	18,326 (1.5869)	33,812 (2.93)
2000	2,168,248	18,177 (0.8383)	145,911 (6.7)	1,142,796 (52.7)	15,239 (1.3335)	31,554 (2.76)
2001	2,267,979	16,058 (0.7080)	149,442 (6.6)	1,169,478 (51.6)	13,389 (1.1449)	30,367 (2.60)
2002	2,380,028	13,555 (0.5695)	149,527 (6.3)	1,227,381 (51.6)	11,163 (0.9095)	30,340 (2.47)
2003	2,395,582	9,284 (0.3875)	140,412 (5.9)	1,245,584 (52.0)	7,310 (0.5869)	28,888 (2.32)
2004	2,438,643	4,701 (0.1928)	135,969 (5.6)	1,250,536 (51.3)	3,366 (0.2692)	28,335 (2.27)
2005	2,424,180	3,027 (0.1249)	123,263 (5.1)	1,233,695 (50.9)	1,999 (0.1620)	26,338 (2.13)
2006	2,403,539	2,176 (0.0905)	111,351 (4.6)	1,223,815 (50.9)	1,337 (0.1092)	23,843 (1.95)
2007	2,482,041	1,740 (0.0701)	106,010 (4.3)	1,271,595 (51.2)	1,052 (0.0827)	22,829 (1.80)
2008	2,491,049	1,205 (0.0484)	97,297 (3.9)	1,292,754 (51.9)	641 (0.0496)	21,286 (1.65)
2009	2,479,355	658 (0.0265)	84,805 (3.4)	1,290,784 (52.1)	330 (0.0256)	19,168 (1.48)
2010	2,384,825	360 (0.0200)	74,431 (3.1)	1,207,575 (50.6)	163 (0.0100)	16,581 (1.37)
2011	2,334,004	262 (0.0100)	66,770 (2.9)	1,144,729 (49.1)	98 (0.0100)	13,930 (1.22)
2012	2,275,141	193 (0.0100)	57,888 (2.5)	1,102,307 (48.5)	83 (0.0100)	11,284 (1.02)
2013	2,188,013	134 (0.0100)	50,459 (2.3)	1,049,475 (48.0)	42 (0.0000)	9,334 (0.89)
2014	2,165,142	132 (0.0061)	46,030 (2.1)	1,031,927 (47.7)	41 (0.0040)	7,977 (0.77)
2015	2,168,371	105 (0.0048)	42,712 (2.0)	1,017,369 (46.9)	29 (0.0029)	6,965 (0.68)
2016	2,159,032	88 (0.0041)	40,633 (1.9)	1,002,344 (46.4)	22 (0.0022)	6,333 (0.63)
2017	2,115,186	64 (0.0030)	39,985 (1.9)	956,871 (45.2)	12 (0.0013)	5,743 (0.60)
2018	2,099,751	63 (0.0030)	36,807 (1.8)	927,487 (44.2)	21 (0.0023)	5,006 (0.54)
2019	2,148,141	61 (0.0028)	35,541 (1.7)	920,148 (42.8)	12 (0.0013)	4,633 (0.50)
2020	2,128,198	70 (0.0033)	33,654 (1.6)	886,342 (41.6)	16 (0.0018)	4,007 (0.45)

Table 16B. Decontamination Trends: Total Human and Pediatric Exposures <=5 Years[a].

	Human exposures		Exposures children <=5 y	
Therapy	N	%	N	%
Activated charcoal administered	33,654	1.58	4,007	0.45
Cathartic	2,045	0.10	125	0.01
Ipecac administered	70	0.00	16	0.00
Lavage	455	0.02	20	0.00
Other Emetic	17,941	0.84	7,249	0.82
Whole Bowel Irrigation	1,131	0.05	70	0.01
Total	**55,296**	**2.60**	**11,487**	**1.30**

[a]Human exposures = 2,128,198; Pediatric exposures = 886,342.

abuse potential, such as opioids and benzodiazepines, and drugs with the potential for serious toxicity.

Table 17G reports the 25 substance categories most frequently reported in exposures involving pregnant patients.

Changes Over Time

Total encounters peaked in 2008 at 4,333,012 including 2,491,049 human exposure cases and 1,703,762 information contacts. Total encounters increased 28.9% from 2,573,180 in 2019 to 3,316,738 in 2020. Information requests increased by 218.0% from 351,163 in 2019 to 1,116,568 in 2020, with a 31.5% decrease in drug identification requests, a 52.2% increase in HCF information requests, and a 32.6-fold increase in medical information requests reflecting COVID-19 pandemic calls to the poison centers. Human exposures decreased by 0.928% from 2,148,141 to 2,128,198 cases over the same time period.

Figure 5 shows the year-to-year change through 2020 as a percentage of year 2000 for human exposure cases broken down into cases with more serious outcomes (death, major effect, and moderate effect) and less serious outcomes (minor effect, no effect, not followed (non-toxic), not followed (minimal toxicity possible), unable to follow (potentially toxic), and unrelated effect). Since 2000, cases with more serious outcomes have increased by 4.59% (95% CI [4.32%, 4.87%]) per year from 108,148 cases in 2000 to 209,503 cases in 2020. Cases with less serious outcomes have decreased since 2008 by 1.98% [-2.36%, -1.43%] per year from 2,339,460 in 2008 to 1,916,213 cases in 2020. The decrease in less serious exposures has largely driven the overall decrease in human exposures since 2008, though less serious exposures decreased only 0.834% from 2019 to 2020. We see a consistent increase in exposure

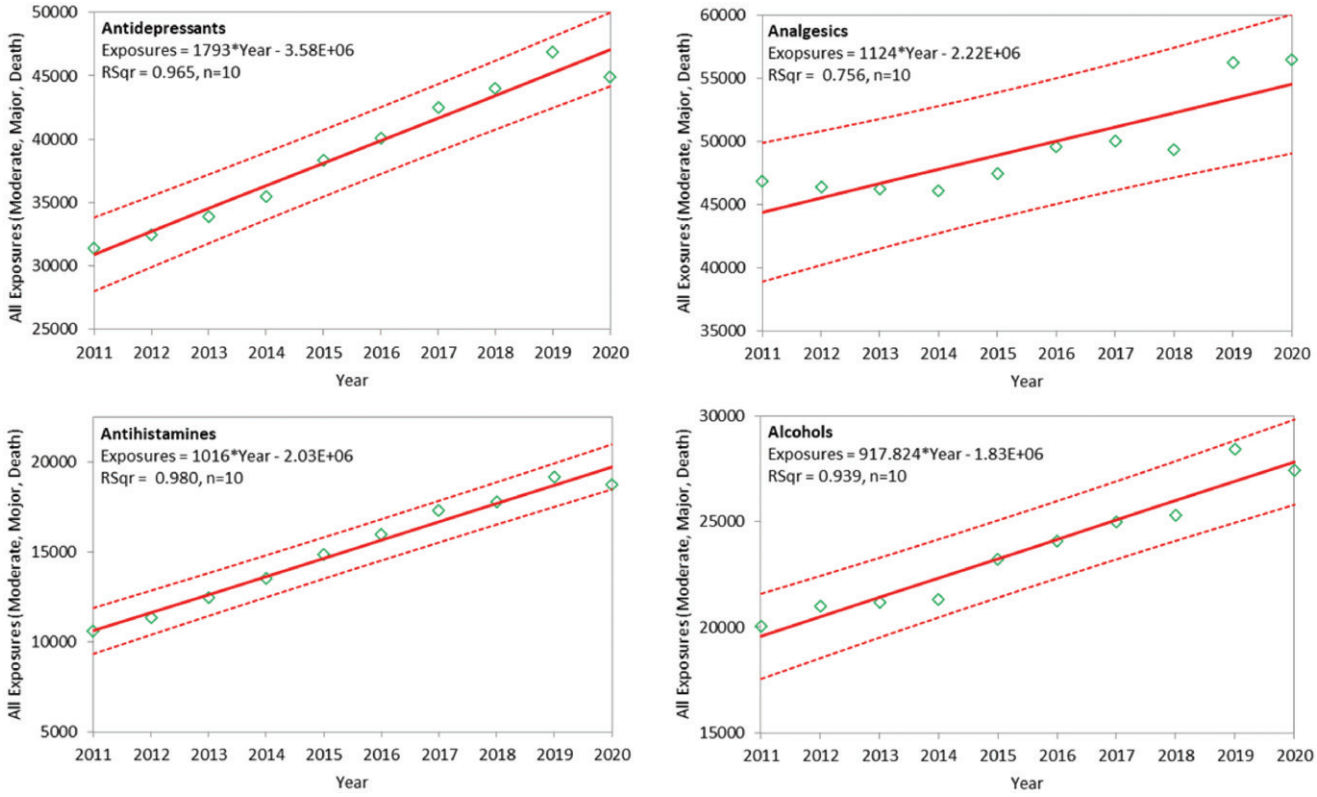

Figure 4. Substance Categories with the Greatest Rate of Exposure Increase since 1 January 2010 for More Severe Outcomes (Top 4). Solid lines show least-squares linear regressions for the human exposure cases per year for that category (◇). Broken lines show 95% confidence interval on the regression.

Table 17A. Substance Categories Most Frequently Involved in Human Exposures (Top 25).

Substance (Major Generic Category)	All substances	%[a]	Single substance exposures	%[b]
Analgesics	265,479	10.32	166,482	8.92
Cleaning Substances (Household)	215,338	8.37	186,618	10.00
Cosmetics/Personal Care Products	168,025	6.53	158,756	8.51
Antidepressants	136,266	5.30	61,294	3.28
Sedative/Hypnotics/Antipsychotics	126,448	4.92	47,042	2.52
Cardiovascular Drugs	116,829	4.54	48,917	2.62
Antihistamines	107,175	4.17	71,456	3.83
Foreign Bodies/Toys/Miscellaneous	87,603	3.41	84,486	4.53
Dietary Supplements/Herbals/Homeopathic	84,191	3.27	73,006	3.91
Alcohols	76,091	2.96	25,362	1.36
Pesticides	75,931	2.95	70,831	3.79
Stimulants and Street Drugs	70,518	2.74	40,260	2.16
Vitamins	66,599	2.59	54,508	2.92
Anticonvulsants	63,170	2.46	25,041	1.34
Topical Preparations	61,302	2.38	59,322	3.18
Hormones and Hormone Antagonists	55,279	2.15	35,416	1.90
Plants	52,343	2.03	49,741	2.66
Gastrointestinal Preparations	47,242	1.84	33,095	1.77
Chemicals	47,031	1.83	39,606	2.12
Antimicrobials	43,825	1.70	33,932	1.82
Infectious and Toxin-Mediated Diseases	43,704	1.70	34,163	1.83
Bites and Envenomations	42,765	1.66	42,115	2.26
Cold and Cough Preparations	40,310	1.57	26,204	1.40
Fumes/Gases/Vapors	38,222	1.49	35,182	1.88
Electrolytes and Minerals	32,134	1.25	25,702	1.38

[a]Percentages are based on the total number of substances reported in all exposures (N = 2,572,585).
[b]Percentages are based on the total number of single substance exposures (N = 1,866,592).

cases from HCFs (Figure 3), as well as for the most severe exposures (Figure 5), while there is a continued trend toward decreasing cases involving less severe exposures.

Emerging Trends – COVID-19 Impact on Poison Centers

NDPS's public health surveillance system reports on chemical and poison exposures along with their associated illnesses. An underutilized capability of NPDS is to track public health outbreaks of infectious diseases. Generally, infectious disease cases in NPDS are associated with a vector (such as a mosquito bite, bat bite, etc.) that transmits the infectious disease to humans. In more recent years, NPDS has been used to register cases due to infectious diseases without a specified transmission vector. The first of these was the H1N1 (Swine Flu) pandemic in 2009-2010. From April 2009 to April 2010, NPDS reported a total of 41,798 contacts, with a small peak in May 2009 and a large peak in October 2009 to January 2010.

The COVID 19 pandemic has had worldwide impact. Poison centers are no exception. Every poison center was affected, with varying responses to the duties imposed by the served populace. From 21-Jan-2020 to 31-Dec-2020, PCs fielded 799,934 cases with at least one COVID-19 product code or the generic code for Viral Diseases (0310027) along with a NULL product code (Figure 6). A further 145,071 cases were fielded from 1-Jan 2021 to 31-Aug-2021; importantly, these numbers do not include COVID-19 vaccine-related cases. Three peaks are seen (April 2020, July 2020 and November-December 2020), roughly corresponding to the peaks in COVID-19 cases reported in the United States, although not with the same magnitude of change (https://ourworldindata.org/coronavirus/country/united-states). For the three groups of substances that appear associated with

Table 17B. Substance Categories with the Greatest Rate of Exposure Increase (Top 25).

Substance (Major Generic Category)	Increase in serious exposures per year[a] Mean	95% CI[b]	All substances in 2020
Antidepressants	1,793	[1516, 2071]	44,907
Analgesics	1,124	[603, 1645]	56,477
Antihistamines	1,016	[897, 1136]	18,762
Alcohols	918	[727, 1108]	27,426
Anticonvulsants	856	[622, 1091]	18,278
Cardiovascular Drugs	813	[619, 1007]	23,263
Unknown Drug	670	[571, 769]	10,534
Stimulants and Street Drugs	663	[175, 1150]	25,375
Hormones and Hormone Antagonists	187	[90, 284]	6,332
Gastrointestinal Preparations	160	[111, 209]	3,371
Muscle Relaxants	90	[-33, 214]	9,476
Dietary Supplements/Herbals/Homeopathic	83	[46, 119]	2,910
Sedative/Hypnotics/Antipsychotics	70	[-375, 516]	46,456
Fumes/Gases/Vapors	61	[23, 99]	3,904
Other/Unknown Nondrug Substances	61	[4, 118]	1,968
Tobacco/Nicotine/eCigarette Products	60	[4, 115]	518
Infectious and Toxin-Mediated Diseases	55	[-56, 167]	2,150
Weapons of Mass Destruction	51	[38, 64]	485
Cosmetics/Personal Care Products	50	[3, 97]	3,206
Electrolytes and Minerals	46	[38, 53]	1,273
Narcotic Antagonists	42	[32, 52]	512
Cleaning Substances (Household)	37	[-52, 126]	8,114
Diuretics	35	[14, 56]	1,460
Miscellaneous Foods	30	[17, 44]	606
Vitamins	30	[21, 40]	1,189

[a]Serious exposures have outcomes of Moderate, Major or Death.
[b]Increase and confidence intervals are based on least squares linear regression of the number of calls per year for 2011-2020.

Table 17D. Substance Categories Most Frequently Involved in Adult (≥20 years) Exposures (Top 25)[a].

Substance (Major Generic Category)	All substances	%[b]	Single substance exposures	%[c]
Analgesics	134,918	10.71	66,565	8.98
Sedative/Hypnotics/Antipsychotics	97,968	7.78	32,111	4.33
Cleaning Substances (Household)	91,678	7.28	70,633	9.53
Antidepressants	86,922	6.90	33,069	4.46
Cardiovascular Drugs	84,010	6.67	29,386	3.97
Alcohols	58,458	4.64	12,899	1.74
Anticonvulsants	47,714	3.79	16,487	2.22
Cosmetics/Personal Care Products	42,113	3.34	37,656	5.08
Antihistamines	41,581	3.30	19,514	2.63
Pesticides	38,140	3.03	34,400	4.64
Stimulants and Street Drugs	37,332	2.96	16,356	2.21
Hormones and Hormone Antagonists	35,258	2.80	20,442	2.76
Infectious and Toxin-Mediated Diseases	31,862	2.53	25,586	3.45
Chemicals	31,075	2.47	25,374	3.42
Fumes/Gases/Vapors	29,466	2.34	26,905	3.63
Bites and Envenomations	28,682	2.28	28,218	3.81
Antimicrobials	21,711	1.72	15,192	2.05
Gastrointestinal Preparations	18,506	1.47	8,646	1.17
Muscle Relaxants	18,012	1.43	6,716	0.91
Cold and Cough Preparations	17,804	1.41	9,378	1.27
Topical Preparations	17,520	1.39	16,598	2.24
Hydrocarbons	16,944	1.35	15,750	2.13
Other/Unknown Nondrug Substances	15,268	1.21	12,966	1.75
Unknown Drug	14,991	1.19	9,009	1.22
Plants	13,842	1.10	12,749	1.72

[a]Includes all adults with actual or estimated ages ≥20 years old. Results also include "Unknown Adult" but do not include "Unknown Age".
[b]Percentages are based on the total number of substances reported in adult exposures (N = 1,259,216).
[c]Percentages are based on the total number of single substance adult exposures (N = 741,023).

Table 17C. Substance Categories Most Frequently Involved in Pediatric (≤5 years) Exposures (Top 25)[a].

Substance (Major Generic Category)	All substances	%[b]	Single substance exposures	%[c]
Cosmetics/Personal Care Products	109,327	11.82	105,877	12.33
Cleaning Substances (Household)	104,459	11.30	99,991	11.64
Analgesics	69,955	7.57	63,669	7.41
Foreign Bodies/Toys/Miscellaneous	62,004	6.71	60,448	7.04
Dietary Supplements/Herbals/Homeopathic	59,575	6.44	56,727	6.60
Vitamins	45,537	4.92	40,667	4.73
Topical Preparations	39,819	4.31	38,995	4.54
Antihistamines	39,807	4.31	36,200	4.21
Pesticides	31,141	3.37	30,256	3.52
Plants	31,018	3.35	29,892	3.48
Gastrointestinal Preparations	23,689	2.56	21,338	2.48
Cardiovascular Drugs	18,888	2.04	12,399	1.44
Arts/Crafts/Office Supplies	17,529	1.90	16,968	1.98
Electrolytes and Minerals	17,257	1.87	15,753	1.83
Essential Oils	15,947	1.72	15,043	1.75
Antimicrobials	15,780	1.71	14,743	1.72
Hormones and Hormone Antagonists	14,800	1.60	11,773	1.37
Deodorizers	14,561	1.57	14,393	1.68
Cold and Cough Preparations	12,549	1.36	11,305	1.32
Stimulants and Street Drugs	12,503	1.35	11,240	1.31
Antidepressants	11,801	1.28	8,767	1.02
Chemicals	10,314	1.12	9,440	1.10
Other/Unknown Nondrug Substances	10,280	1.11	9,779	1.14
Alcohols	9,871	1.07	9,516	1.11
Tobacco/Nicotine/eCigarette Products	9,597	1.04	9,525	1.11

[a]Includes all children with actual or estimated ages ≤ 5 years old. Results do not include "Unknown Child" or "Unknown Age".
[b]Percentages are based on the total number of substances reported in pediatric exposures (N = 924,615).
[c]Percentages are based on the total number of single substance pediatric exposures (N = 859,042).

Table 17E. Substance Categories Most Frequently Involved in Pediatric (≤ 5 years) Deaths[a].

Substance (Major Generic Category)	All substances	%[b]	Single substance exposures	%[c]
Analgesics	14	18.92	7	15.91
Fumes/Gases/Vapors	13	17.57	6	13.64
Cardiovascular Drugs	8	10.81	2	4.55
Batteries	5	6.76	5	11.36
Chemicals	4	5.41	1	2.27
Alcohols	3	4.05	1	2.27
Cold and Cough Preparations	3	4.05	3	6.82
Stimulants and Street Drugs	3	4.05	1	2.27
Unknown Drug	3	4.05	3	6.82
Dietary Supplements/Herbals/Homeopathic	2	2.70	2	4.55
Pesticides	2	2.70	2	4.55
Anesthetics	1	1.35	1	2.27
Antidepressants	1	1.35	1	2.27
Antimicrobials	1	1.35	1	2.27
Bites and Envenomations	1	1.35	1	2.27
Cleaning Substances (Household)	1	1.35	1	2.27
Diuretics	1	1.35	0	0.00
Electrolytes and Minerals	1	1.35	1	2.27
Essential Oils	1	1.35	1	2.27
Hormones and Hormone Antagonists	1	1.35	1	2.27
Hydrocarbons	1	1.35	1	2.27
Miscellaneous Drugs	1	1.35	1	2.27
Muscle Relaxants	1	1.35	0	0.00
Other/Unknown Nondrug Substances	1	1.35	1	2.27
Sedative/Hypnotics/Antipsychotics	1	1.35	0	0.00

[a]Includes all children with actual or estimated ages ≤ 5 years old. Results do not include "Unknown Child" or "Unknown Age". Includes death and death, indirect regardless of RCF.
[b]Percentages are based on the total number of substances reported in pediatric fatalities (N = 74).
[c]Percentages are based on the total number of single substance pediatric fatalities (N = 44).

Table 17F. Substance Categories Most Frequently Identified in Drug Identification Calls (Top 25).

Substance (Major Generic Category)	All substances	%[a]
Analgesics	10,849	29.43
Sedative/Hypnotics/Antipsychotics	6,615	17.94
Unknown Drug	3,313	8.99
Cardiovascular Drugs	2,713	7.36
Anticonvulsants	1,871	5.08
Antidepressants	1,808	4.90
Stimulants and Street Drugs	1,535	4.16
Antimicrobials	1,321	3.58
Muscle Relaxants	1,289	3.50
Antihistamines	1,259	3.42
Hormones and Hormone Antagonists	793	2.15
Gastrointestinal Preparations	700	1.90
Information Calls	642	1.74
Diuretics	414	1.12
Infectious and Toxin-Mediated Diseases	399	1.08
Miscellaneous Drugs	356	0.97
Cold and Cough Preparations	216	0.59
Anticoagulants	117	0.32
Asthma Therapies	92	0.25
Electrolytes and Minerals	92	0.25
Vitamins	86	0.23
Other/Unknown Nondrug Substances	77	0.21
Anticholinergic Drugs	67	0.18
Weapons of Mass Destruction	42	0.11
Dietary Supplements/Herbals/Homeopathic	34	0.09

[a]Percentages are based on the total number of substances reported in all drug identification calls (N = 36,865).

Table 17G. Substance Categories Most Frequently Involved in Pregnant Exposures[a] (Top 25).

Substance (Major Generic Category)	All substances	%[b]	Single substance exposures	%[c]
Cleaning Substances (Household)	819	11.42	583	10.62
Analgesics	792	11.04	501	9.13
Fumes/Gases/Vapors	500	6.97	465	8.47
Pesticides	343	4.78	313	5.70
Antidepressants	285	3.97	143	2.61
Antihistamines	262	3.65	165	3.01
Bites and Envenomations	260	3.63	260	4.74
Cosmetics/Personal Care Products	249	3.47	222	4.04
Sedative/Hypnotics/Antipsychotics	237	3.30	115	2.10
Vitamins	237	3.30	179	3.26
Infectious and Toxin-Mediated Diseases	207	2.89	172	3.13
Chemicals	173	2.41	130	2.37
Plants	168	2.34	159	2.90
Foreign Bodies/Toys/Miscellaneous	159	2.22	149	2.71
Antimicrobials	147	2.05	111	2.02
Hormones and Hormone Antagonists	140	1.95	116	2.11
Alcohols	139	1.94	72	1.31
Gastrointestinal Preparations	137	1.91	105	1.91
Electrolytes and Minerals	133	1.85	111	2.02
Stimulants and Street Drugs	133	1.85	62	1.13
Cardiovascular Drugs	121	1.69	82	1.49
Other/Unknown Nondrug Substances	107	1.49	95	1.73
Paints and Stripping Agents	105	1.46	94	1.71
Miscellaneous Foods	105	1.46	99	1.80
Hydrocarbons	102	1.42	93	1.69

[a]Includes all patient classified as pregnant and all female patients with a 'duration of pregnancy' greater than 0.
[b]Percentages are based on the total number of substances reported in pregnant exposures (N = 7,171).
[c]Percentages are based on the total number of single substance pregnant exposures (N = 5,489).

COVID-19 cases, human exposure cases had two peaks: one around March 31st to April 3rd associated with increased exposures to cleaning/disinfectant agents (primarily bleaches) and one around July 15th, associated with a smaller peak in cleaning/disinfecting agents (primarily bleaches) and in hand sanitizer exposures (Figure 7).

Information requests for these substance groups showed three peaks: one around April 3rd to April 24th associated with an increase in cleaners/disinfectants (primarily bleaches) and chloroquine/hydroxychloroquine; one around June 23rd to July 24th associated with an increase in hand sanitizer and bleach calls; and a large peak around December 22nd to Dec 30th associated with treatment/prophylactic agents (primarily COVID-19 vaccines) (Figure 8).

As can be seen in Figure 9, there was very little change in total daily human exposure cases during 2020, with or without COVID-19 cases, compared with the 14-day average surrounding each day over the preceding 3 years. Total human exposure cases at HCFs showed a rapid decrease starting March 9th, with a nadir on April 2nd, then slowly recovering toward the 3-year 14-day average. While a second nadir was evident on December 25th, this increased to pre-pandemic numbers by the second quarter of 2021. For human exposures, only one day (whether inclusive or exclusive of COVID-19 human cases) was more than 3 standard deviations above the 3-year average, however the number of HCF human exposure cases were below the 3-year average on 121 days beginning March 9th through the end of 2020. Cases seem to be once again decreasing in August 2021 (data not shown). These trends may reflect fewer non-COVID-19 cases presenting to HCFs, as was particularly evident early in the pandemic.[6] The 218% increase in information requests compared to the prior 3-year average was a direct result of COVID-19 related requests (Figure 9). For all information requests, 297 days had frequencies more than 3 standard deviations above the 3-year average around those days. For information requests that did not include COVID-19 coding, no day had counts more than 3 standard deviations above the 3-year average, while 3 days had counts less than 3 standard deviations below the 3-year average. In conclusion, it appears that while 2020 was a busy year for poison centers, this increase was due to the inclusion of COVID-19 cases, as there was a decline in human exposures for the latter half of the year.

2020 Preview Wrap Up – Methanol Containing Hand Sanitizers

For the 3,097 cases received from May 7th (Start Date of first report) through August 31st, 2021 using the previously described search strategy: 88.5% were exposures, 37.4% were chronic, 16.1% were unknown age $\geq$ 20 years, 55.8% were female, 74.6% were dermal exposures, 33.4% were not followed with minimal clinical effects possible, 8.1% had serious medical outcomes (223 cases with 21 deaths and 26 major effects), and 77% were managed on site (non-health care facility). The COVID-19 product code was reported along with the sanitizer in 11.2% of the cases. An additional 625 potential human exposure cases to hand sanitizers with clinical effects characteristic of methanol poisoning were identified. There was no consistent pattern, and the largest number of daily cases was 7. From June 27th, 2020 to June

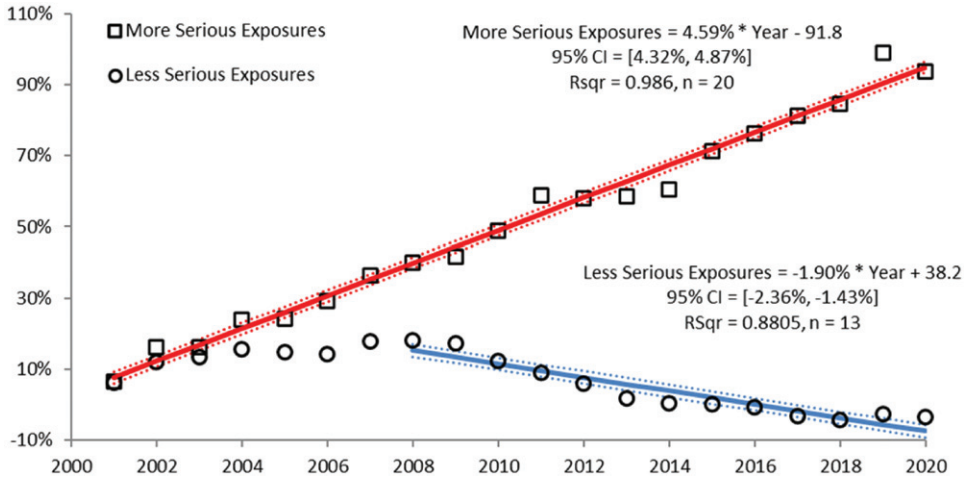

Figure 5. Change in Encounters by Outcome from Year 2000. The figure shows the percent change from baseline (year 2000) for human exposure cases divided among the 10 medical outcomes. The more serious exposures (major, moderate and death) increased. The less serious exposures (no effect, minor effect, not followed (non-toxic), not followed (minimal toxicity possible), unable to follow (potentially toxic) and unrelated effect) decreased after 2008. Solid lines show least-squares linear regressions for the change in more serious exposures per year (□) and less serious exposures (○). Broken lines show 95% confidence intervals on the regression.

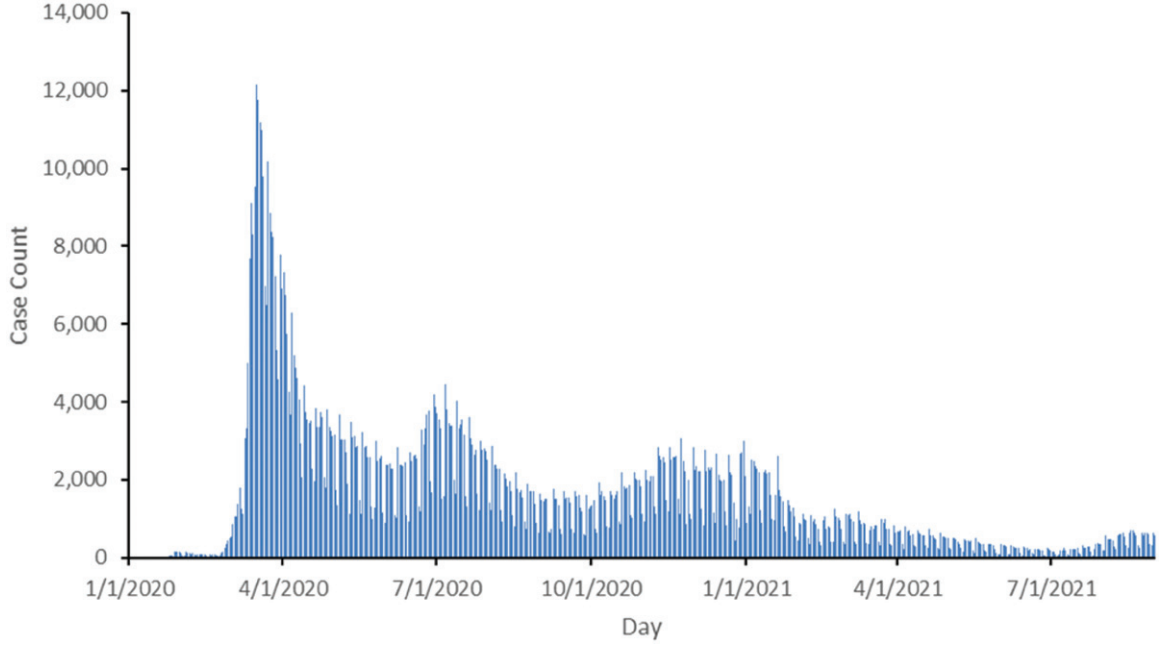

Figure 6. COVID-19 Human Cases and Information Requests Reported to NPDS From January 1, 2020 to August 31, 2021. Frequency of human cases and information requests by day with any COVID-19 product code or Viral Diseases (0310027) with a NULL product code.

6th, 2021, the FDA released 34 Recalls, Market Withdrawals, & Safety Alerts (https://www.fda.gov/safety/recalls-market-withdrawals-safety-alerts) concerning methanol contaminated hand sanitizers. As can be seen in Figure 10, the peak frequency for this exposure was during July 2020 after which it returned close to its baseline. Addition of the potential cases from clinical effects did not affect the overall frequency distribution, although those cases also showed a peak in July 2020, but with much lower numbers. However, the frequency of cases based on the clinical effect remained elevated compared to January to June 2020.

The cooperation among the FDA, CDC and the AAPCC to manage with this hazard is indicative of public health best practices.[7]

Distribution of Suicides

Table 19A shows modest variation in the distribution of suicides and pediatric deaths over the past 2 decades as reported to the NPDS national database. Within the last decade, the percent of exposures determined to be suspected suicides ranged from 22.6% to 45.8% and the percent of

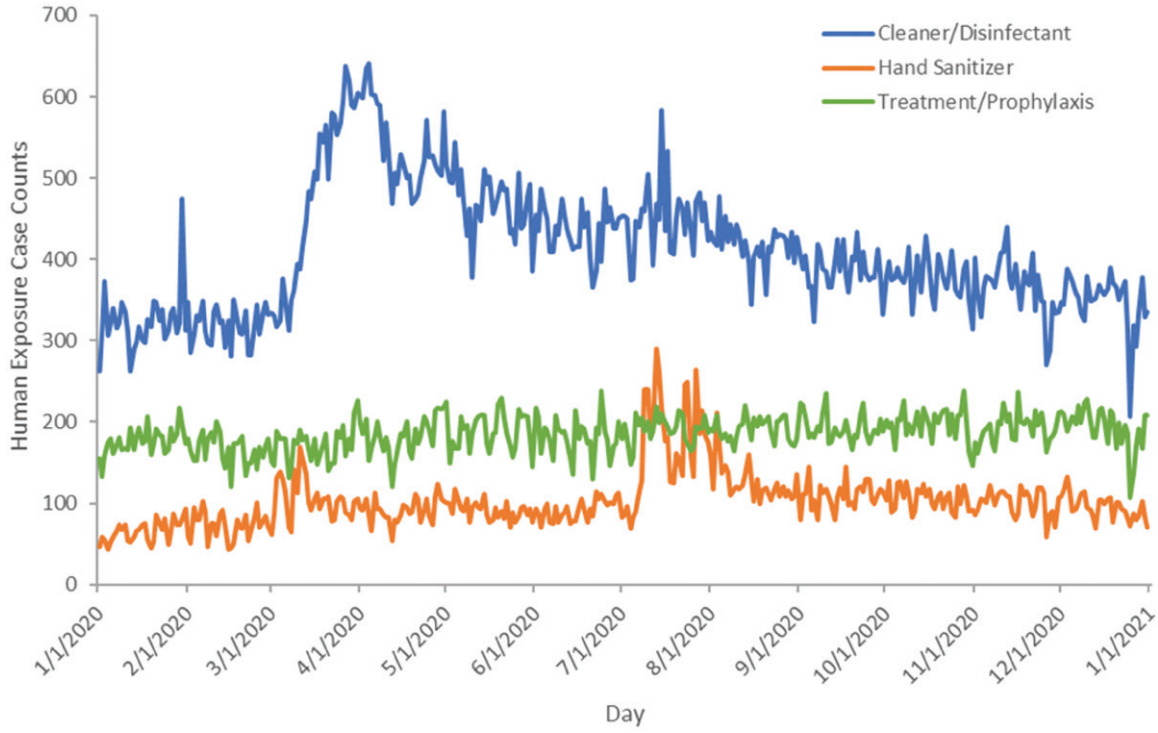

Figure 7. Human Exposure Cases for Summary Substance Categories, January 1, 2020 to December 31, 2020. Frequency of human exposure cases by day for summary substance categories (Cleaner/Disinfectant, Hand Sanitizer, Treatment/Prophylaxis).

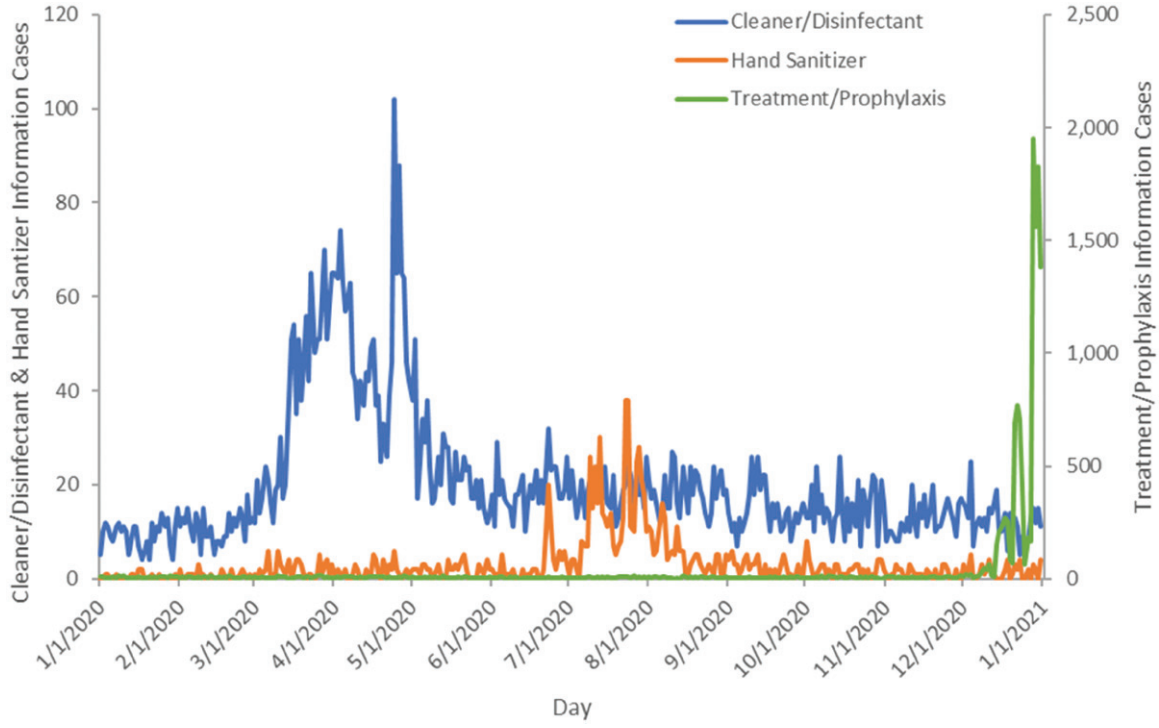

Figure 8. Information Requests for Summary Substance Categories, January 1, 2020 to December 31, 2020. Frequency of information requests by day for summary substance categories. The right Y-Axis scale is for the Cleaner/Disinfectant (blue) and Hand Sanitizer (orange) categories. The left Y-Axis scale is for the Treatment/Prophylaxis (green) category.

pediatric cases has ranged from 0.779% to 2.29%. The relatively large changes seen for 2011, 2012, 2017, 2018, and 2020 reflect the large increase in indirect death reports in those years (peaking at 2,482 in year 2020). Analyses of suicides and pediatric deaths for Direct and Indirect reports are shown in Table 19B. For a more detailed review of trends in adolescent suicides, the reader is referred to the 2018 NPDS Annual Report [1].

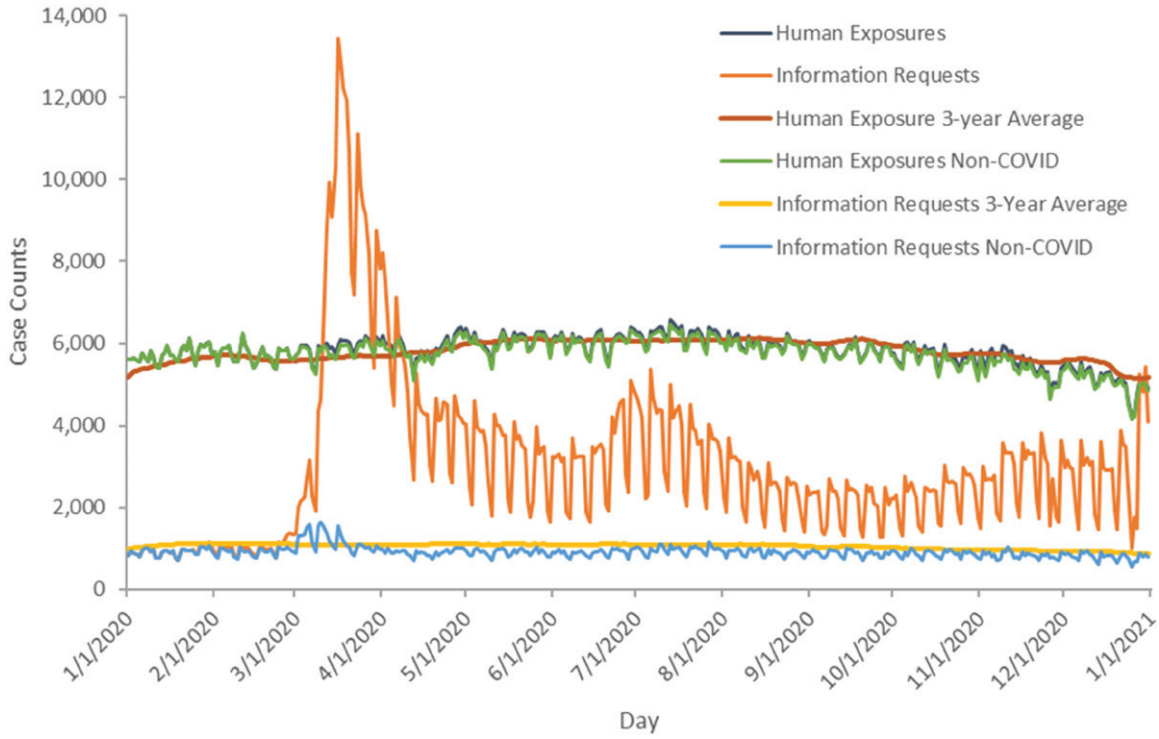

Figure 9. Human Exposure Cases and Information Requests from January 1, 2020 to December 31, 2020 Compared to the 3-Year 14-Day Average. Frequency of human exposure cases and information requests by day compared to the 3-year 14-day average around each date for 2017 through 2019.

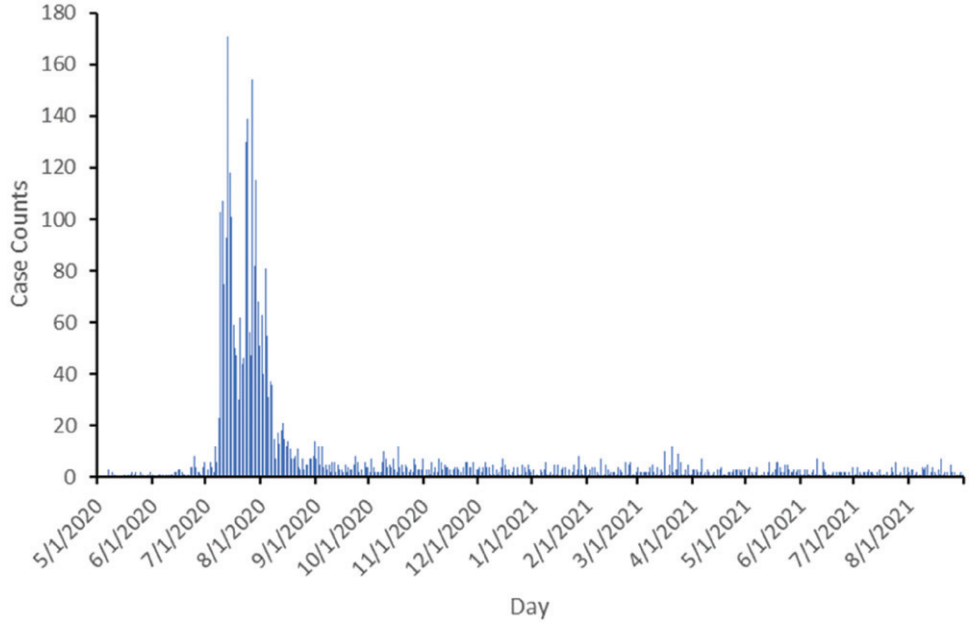

Figure 10. Exposures per Day – All methanol-containing hand sanitizer cases, May 1, 2020 through August 31, 2021. The figure shows the frequency of methanol-containing hand sanitizers human exposure cases by day.

Plant Exposures

Table 20 provides the number of times a specific plant was reported to NPDS (n = 52,343). The 25 most commonly involved plant species and categories account for 42.0% of all reported plant exposures. Three of the top 5 categories in the table are essentially synonymous for unknown plant and comprise 9.02% (4,723) of all plant exposures. For a variety of reasons, it was not possible to make a precise identification in these 3 groups. The most frequent plant exposures where positive plant identification was made were (descending order): Pokeweed (*Phytolacca americana*), Cherry Pit,

Table 19A. Comparisons of Death Data (1985-2020)[a]

	Total fatalities		Suicides		Pediatric deaths[b]	
Year	N	% of cases	N	% of deaths	N	% of deaths
1985	328	0.036	174	53.05	20	6.10
1986	406	0.037	223	54.93	15	3.69
1987	398	0.034	227	57.04	22	5.53
1988	544	0.040	296	54.41	30	5.51
1989	590	0.037	323	54.75	24	4.07
1990	553	0.032	320	57.87	21	3.80
1991	764	0.042	408	53.40	44	5.76
1992	705	0.038	395	56.03	29	4.11
1993	626	0.036	338	53.99	27	4.31
1994	766	0.040	410	53.52	26	3.39
1995	724	0.036	405	55.94	20	2.76
1996	726	0.034	358	49.31	29	3.99
1997	786	0.036	418	53.18	25	3.18
1998	775	0.035	421	54.32	16	2.06
1999	873	0.040	472	54.07	24	2.75
2000	921	0.042	477	51.79	20	2.17
2001	1,085	0.048	553	50.97	27	2.49
2002	1,170	0.049	635	54.27	27	2.31
2003	1,109	0.046	592	53.38	35	3.16
2004	1,190	0.049	642	53.95	27	2.27
2005	1,438	0.059	674	46.87	32	2.23
2006	1,515	0.063	705	46.53	39	2.57
2007	1,597	0.064	737	46.15	47	2.94
2008	1,756	0.070	797	45.39	39	2.22
2009	1,544	0.062	779	50.45	37	2.40
2010	1,730	0.072	779	45.03	55	3.18
2011	2,765	0.118	865	31.28	42	1.52
2012	2,937	0.129	890	30.30	46	1.57
2013	2,477	0.113	785	31.69	51	2.06
2014	1,835	0.085	790	43.05	34	1.85
2015	1,831	0.084	814	44.46	42	2.29
2016	1,977	0.091	906	45.83	44	2.23
2017	3,208	0.151	954	29.74	25	0.78
2018	3,111	0.148	953	30.63	51	1.64
2019	2,619	0.122	909	34.71	31	1.18
2020	4,488	0.210	1,013	22.57	57	1.27

[a]Human exposures with medical outcome of death or death, indirect regardless of RCF.
[b]Includes all children with actual or estimated ages $\leq$ 5 years old. Results do not include "Unknown Child" or "Unknown Age". Includes death and death, indirect regardless of RCF.

Poison Ivy *(Toxicodendron radicans)*, *Ilex* species, Apple Seed or Fruit, *Spathiphyllum* species, and *Nerium oleander*.

Deaths and Exposure-related Fatalities

A listing of cases (Table 21, Appendix A) and summary of cases (Tables 4, 5, 8, 9, and 18) are provided for fatal cases with reasonable confidence that the death was a result of the exposure (exposure-related fatalities; RCF of 1, 2 or 3 and no death, indirect cases). Tables 11, 12, 17E, 19 and 22 consider all deaths (direct and indirect), irrespective of the RCF. Beginning in 2010, deaths recorded as Indirect Report were no longer reviewed by the AAPCC fatality review team and the RCF was determined by the reporting PC. Table 19C indicates which cases are included in 12 tables reporting fatalities.

There were 2,006 deaths, and 2,482 indirect deaths. Of these 4,488 cases, 3,869 were judged exposure-related fatalities (RCF = 1 - Undoubtedly responsible, 2 - Probably responsible, or 3 - Contributory). The remaining 619 cases were judged as follows: 142 as RCF 4 - Probably not responsible, 76 as RCF 5 - Clearly not responsible, and 401 as RCF 6 - Unknown. Deaths are sorted in Table 21 (Appendix A) according to the category, then substance deemed most likely responsible for the death (Cause Rank), and then by patient age. The Cause Rank permits the PC to judge 2 or more substances as indistinguishable in terms of cause, for example, 2 substances which appear equally likely to have caused the death could have Substance Rank of 1,2 and Cause Rank of 1,1. Additional agents implicated in the death are listed below the primary agent in the order of their contribution to the fatality.

As shown in Table 5, a single substance was implicated in 88.1% of reported human exposures, and 11.9% of patients were exposed to $\geq$ 2 drugs or products. The exposure-related fatalities involved a single substance in 641 cases (44.7%), 2 substances in 357 cases (24.9%), 3 in 201 cases (14.0%), and 4 or more in the balance of cases.

In Table 21 (Appendix A), the Annual Report ID number [bracketed] indicates that the abstract for that case is included in Appendix C. The letters following the Annual Report ID number indicate: i = Death, Indirect report (occurred in 2,435, 62.9% of cases), p = prehospital cardiac and/or respiratory arrest (occurred in 555, 14.34% of cases), h = hospital records reviewed (occurred in 1,230, or 31.8% of cases), a = autopsy report reviewed (occurred in 2,735, or 70.7% of cases). The distribution of NPDS RCF was: 1 = Undoubtedly responsible in 2,243 cases (58.0%), 2 = Probably responsible in 1,185 cases (30.6%), 3 = Contributory in 411 cases (11.4%). The denominator for these Table 21 percentages is 3,869.

All Fatalities – All Ages

Table 4 presents the age and gender distribution for the 1,434 exposure-related fatalities (excluding death, indirect). The age distribution of reported fatalities showed a slight decrease in deaths among children (<20 years old) compared to 2019, with 96 cases representing 6.7% of fatalities. This was an absolute decrease of 4 fatalities (4.00% decrease) in that age group. The age distribution of reported fatalities in adults ($\geq$ 20 years) was similar to prior years with 1,336 of 1,434 (93.2%) fatal cases occurring in that age group and 2 (0.1%) occurring in Unknown Age patients. While children $\leq$ 5 years old were involved in the majority of exposures, the deaths in this group comprised just 1.5% of the exposure-related fatalities. The number of deaths in this age group increased by 6 from 2019. Most (60.3%) of the fatalities occurred in 20 to 59-year-old individuals, in line with prior years, although 32.2% occurred in older individuals (>60 years old).

Table 21 (Appendix A) lists each of the 3,869 human fatalities (RCF 1, 2, 3; including death, indirect) along with all the substances involved for each case. The substance listed in column 3 of Table 21 (alternate name) was chosen to be the most specific generic name based upon the Poisindex® product name and generic code selected for that substance. Alternate names are maintained in the NPDS for each substance involved in a fatality. The cross-references at the end of each major category section in Table 21 list all cases that identify the substance as other than the primary substance. This alternate

Table 19B. Comparisons of Direct and Indirect Death Data (2000-2020)[a].

	All deaths			Suicides					Pediatric deaths				
Year	Total	Direct	Indirect	Total	% of deaths	Direct	% of direct	Indirect	Total	% of deaths	Direct	% of direct	Indirect
2000	864	845	19	448	51.85	443	52.43	5	18	2.08	18	2.13	0
2001	1,066	952	114	542	50.84	503	52.84	39	26	2.44	24	2.52	2
2002	850	739	111	455	53.53	436	59.00	19	24	2.82	15	2.03	9
2003	867	826	41	464	53.52	454	54.96	10	29	3.34	22	2.66	7
2004	955	898	57	516	54.03	501	55.79	15	25	2.62	21	2.34	4
2005	1,423	1,332	91	666	46.80	656	49.25	10	32	2.25	26	1.95	6
2006	1,515	1,415	100	705	46.53	687	48.55	18	39	2.57	32	2.26	7
2007	1,597	1,502	95	737	46.15	712	47.40	25	47	2.94	41	2.73	6
2008	1,756	1,535	221	797	45.39	750	48.86	47	39	2.22	32	2.08	7
2009	1,544	1,452	92	779	50.45	748	51.52	31	37	2.40	31	2.13	6
2010	1,730	1,455	275	779	45.03	732	50.31	47	55	3.18	47	3.23	8
2011	2,765	1,503	1,262	865	31.28	758	50.43	107	42	1.52	31	2.06	11
2012	2,937	1,507	1,430	890	30.30	759	50.36	131	46	1.57	30	1.99	16
2013	2,477	1,552	925	785	31.69	698	44.97	87	51	2.06	43	2.77	8
2014	1,835	1,559	276	790	43.05	757	48.56	33	34	1.85	23	1.48	11
2015	1,831	1,670	161	814	44.46	784	46.95	30	42	2.29	34	2.04	8
2016	1,977	1,852	125	906	45.83	885	47.79	21	44	2.23	37	2.00	7
2017	3,208	1,832	1,376	954	29.74	821	44.81	133	25	0.78	19	1.04	6
2018	3,111	1,821	1,290	953	30.63	823	45.19	130	51	1.64	32	1.76	19
2019	2,619	1,923	696	909	34.71	855	44.46	54	31	1.18	22	1.14	9
2020	4,488	2,006	2,482	1,013	22.57	880	43.87	133	57	1.27	37	1.84	20

[a]Human exposures with medical outcome of death or death, indirect regardless of RCF.

Table 20. Frequency of Plant Exposures (Top 25)[a].

	Botanical name or Category	AAPCC Generic Code Name	N
1	*Phytolacca americana (L.)*	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	3,184
2	Cherry Pit	Amygdalin and/or Cyanogenic Glycosides	2,890
3	Unknown Botanical Name	Unknown Toxic Types or Unknown if Toxic	2,172
4	Berry (N.O.S)	Unknown Toxic Types or Unknown if Toxic	1,369
5	Plants-general-unknown	Unknown Toxic Types or Unknown if Toxic	1,182
6	Poison ivy	Skin Irritants (Excluding Oxalate Containing Plants)	1,015
7	*Ilex* spp. (N.O.S.)	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	994
8	Apple Seed	Amygdalin and/or Cyanogenic Glycosides	735
9	Plants-oxalates	Oxalates	732
10	*Spathiphyllum* spp.	Oxalates	677
11	Plants-solanine	Solanine	655
12	*Nerium oleander* (L.)	Cardiac Glycosides (Excluding Drugs)	566
13	Unknown Botanical Name	Non-Toxic	563
14	Plants-cyanogenic glycosides	Amygdalin and/or Cyanogenic Glycosides	559
15	Unknown Botanical Name	Oxalates	537
16	*Euphorbia tirucalli* (L.)	Skin Irritants (Excluding Oxalate Containing Plants)	526
17	*Epipremnum areum*	Oxalates	484
18	Unknown Botanical Name	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	446
19	Unknown Botanical Name	Amygdalin and/or Cyanogenic Glycosides	438
20	Unknown Botanical Name	Skin Irritants (Excluding Oxalate Containing Plants)	412
21	*Nandina domestica Thumb* spp.	Amygdalin and/or Cyanogenic Glycosides	409
22	*Solanum dulcamara* (L.)	Solanine	394
23	*Colocasia esculenta* (L.)	Oxalates	391
24	*Phaseolus vulgaris (Botanic name)*	Unknown Toxic Types or Unknown if Toxic	317
25	Plants-cardiac glycosides	Cardiac Glycosides (Excluding Drugs)	314

[a]Number of substances related to a human exposure with a Major Generic Category of Plant. Unknown Botanical Name represents substances with a Major Generic Category of Plant and a NULL substance code. Total = 52,343.

name may not agree with the AAPCC generic categories used in the summary tables (including Appendix B (Table 22)).

Table 18 lists the top 25 minor generic substance categories associated with reported fatalities and the number of single substance exposure fatalities for that category. Miscellaneous sedative/hypnotics/antipsychotics, pharmaceutical and illegal opioid preparations, acetaminophen alone, miscellaneous alcohols, and miscellaneous stimulants and street drugs lead this list, followed by calcium antagonists, beta blockers, miscellaneous antidepressants, miscellaneous unknown drug, selective serotonin reuptake inhibitors (SSRIs), and acetaminophen combinations. Note that Table 18 is sorted by all substances to which a patient was exposed (i.e., a patient exposed to an opioid may have also been exposed to 1 or more other products) and shows single substance exposures in the right-hand column.

The first ranked substance (Appendix A, Table 21) was a pharmaceutical in 3,328 (86.0%) of the 3,869 fatalities. These 3,328 first ranked pharmaceuticals included:

> 1,887 analgesics (870 fentanyl, N.O.S, 251 heroin, 197 acetaminophen, 139 narcotic, N.O.S., 136 fentanyl, 64 oxycodone, 48 methadone, 28 salicylate, 25 acetaminophen/hydrocodone, 25 morphine, 22 acetaminophen/oxycodone, 12 hydrocodone).

Table 19C. Detail of Cases Included in Fatality Tables.

Table	Fatalities Included	RCF	N
4	Death only	1,2,3	1,434
5	Death only	1,2,3	1,434
8	Death only	1,2,3	1,434
9	Death only	1,2,3	1,434
11	Death and Death (indirect report)	All	4,488
12	Death and Death (indirect report)	All	4,488
17E	Pediatric Death and Death (indirect report)	All	74
18	Death only	1,2,3	1,434
19A	Death and Death (indirect report)	All	4,488
19B	Death and Death (indirect report)	All	4,488
21	Death and Death (indirect report)	1,2,3	3,869
22	Death and Death (indirect report) - Single substance deaths only	All	1,957

Table 4. Distribution of Age[a] and Gender for Fatalities[b].

Age (y)	Male	Female	Unknown	Total (%)	Cumulative total (%)
< 1 year	1	1	0	2 (0.1%)	2 (0.1%)
1 year	3	5	0	8 (0.6%)	10 (0.7%)
2 years	3	1	1	5 (0.4%)	15 (1.1%)
3 years	2	2	0	4 (0.3%)	19 (1.3%)
4 years	2	0	0	2 (0.1%)	21 (1.5%)
Child 6-12 years	3	4	0	7 (0.5%)	28 (2.0%)
Teen 13-19 years	36	32	0	68 (4.7%)	96 (6.7%)
20-29 years	93	58	1	152 (10.6%)	248 (17.3%)
30-39 years	106	105	0	211 (14.7%)	459 (32.0%)
40-49 years	103	120	0	223 (15.6%)	682 (47.6%)
50-59 years	141	138	0	279 (19.5%)	961 (67.0%)
60-69 years	102	133	0	235 (16.4%)	1,196 (83.4%)
70-79 years	63	72	0	135 (9.4%)	1,331 (92.8%)
80-89 years	25	37	0	62 (4.3%)	1,393 (97.1%)
> = 90 years	10	20	0	30 (2.1%)	1,423 (99.2%)
Unknown adult	8	0	1	9 (0.6%)	1,432 (99.9%)
Unknown age	1	1	0	2 (0.1%)	1,434 (100.0%)
Total	**702**	**729**	**3**	**1,434 (100.0%)**	**1,434 (100.0%)**

[a]Age includes cases with both actual and estimated ages as shown in Table 21.
[b]Includes cases with RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory. This excludes reports with outcome of Death, indirect.

641 stimulants/street drugs (497 methamphetamine, 82 cocaine, 16 amphetamine, 8 phencyclidine, 7 marijuana, 7 methylenedioxymethamphetamine (MDMA), 5 *Mitragyna speciosa korthals*).

263 cardiovascular drugs (82 amlodipine, 24 metoprolol, 17 propranolol, 15 digoxin, 15 verapamil, 14 diltiazem, 11 carvedilol, 10 verapamil (ER).

143 unknown drug (142 drug, N.O.S, 1 neuroleptic malignant).

116 antidepressants (33 bupropion, 18 amitriptyline, 9 bupropion (ER), 8 nortriptyline, 7 venlafaxine, 6 lithium, 6 trazadone).

90 sedative/hypnotic/antipsychotics (27 quetiapine, 15 alprazolam, 9 olanzapine, 5 zolpidem, 4 benzodiazepine, 4 clonazepam).

The exposure was acute (A) in 902 (23.3%), acute on chronic (A/C) in 389 (10.1%), chronic (C) in 196 (5.07%), and unknown (U) in 2382 (61.6%) of fatalities.

A total of 1,547 tissue concentrations for 1 or more related analytes were reported in 743 cases. Most of these (1,406) involved fatalities with RCF of 1-3 and are listed in Appendix A (Table 21). Of note, all tissue concentrations are available to the PCs through the NPDS Enterprise Reports. The most frequent of the 154 analytes included: 302 acetaminophen (APAP), 139 ethanol, 78 salicylate, 72 fentanyl, 34 carboxyhemoglobin, 30 methanol, 28 diphenhydramine, 25 gabapentin, 24 ethylene glycol, 24 norfentanyl, 23 methamphetamine, 21 iron, 18 benzoylecgonine, and 18 amphetamine.

Table 18. Categories Associated with Largest Number of Fatalities (Top 25)[a].

Substance (Minor Generic Category)	All substances	%[b]	Single substance exposures	%[c]
Miscellaneous Sedative/Hypnotics/Antipsychotics	334	10.27	13	2.03
Pharmaceutical and Illegal Opioid Preparations	263	8.09	42	6.55
Acetaminophen Alone	242	7.44	107	16.69
Miscellaneous Alcohols	223	6.86	28	4.37
Miscellaneous Stimulants and Street Drugs	199	6.12	43	6.71
Calcium Antagonist	176	5.41	41	6.40
Beta Blockers	122	3.75	12	1.87
Miscellaneous Antidepressants	101	3.11	10	1.56
Miscellaneous Unknown Drug	98	3.01	30	4.68
Selective Serotonin Reuptake Inhibitors (SSRI)	95	2.92	1	0.16
Acetaminophen Combinations	87	2.68	28	4.37
Miscellaneous Cardiovascular Drugs	79	2.43	21	3.28
Sedating Antihistamines	78	2.40	8	1.25
Hypoglycemic, Single Agent	77	2.37	16	2.50
Anticonvulsants: Gamma Aminobutyric Acid and Analogs	72	2.21	4	0.62
Miscellaneous Chemicals	72	2.21	37	5.77
Nonsteroidal Antiinflammatory Drugs	72	2.21	4	0.62
Miscellaneous Fumes/Gases/Vapors	70	2.15	36	5.62
Miscellaneous Muscle Relaxants	59	1.81	3	0.47
Miscellaneous Anticonvulsants	53	1.63	2	0.31
Acetylsalicylic Acid Alone	52	1.60	18	2.81
Serotonin Norepinephrine Reuptake Inhibitors (SNRI)	50	1.54	1	0.16
Cannabinoids and Analogs	41	1.26	2	0.31
Angiotensin Converting Enzyme Inhibitor	38	1.17	0	0.00
Tricyclic Antidepressants (TCA)	36	1.11	9	1.4

[a]Numbers represent total exposures associated with 1,434 fatalities (with RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory and no death, indirect cases); each fatality may have had exposure to more than one substance.
[b]Percentages are based on the total number of substances reported in fatal exposures (N = 3,252).
[c]Percentages are based on the total number of single substance fatal exposures (N = 641).

Route of exposure was: Ingestion only in 1,110 cases (28.7%), Inhalation/nasal in 200 cases (5.17%), and Parenteral in 115 cases (2.97%). Most other exposures recorded a combination of routes or an unknown route.

The Intentional exposure reason was: Suspected suicide in 850 cases (22.0%), Abuse in 2,188 cases (56.5%), Misuse in 73 cases (1.89%), and Unknown in 150 cases (3.88%). Unintentional exposure reasons were: Environmental in 92 cases (2.38%), Misuse in 78 cases (2.02%), General in 47 cases (1.21%), Therapeutic error in 46 cases (1.19%), Occupational in 9 cases (0.233%), Unknown in 18 cases (0.465%), Bite/Sting in 6 cases (0.155%) and Food Poisoning in 1 case (0.0258%). Adverse drug reaction was the reason in 47 cases (1.21%).

Pediatric fatalities – age ≤ 5 years

Although children younger than 6 years were involved in the majority of exposures, they comprised only 57 (1.27%) of the 4,488 fatalities. These numbers are similar to those reported since 1985 (Table 19A, all RCFs and includes indirect deaths). Table 8 (RCF 1, 2 or 3, excludes indirect deaths) shows the

percentage of fatalities in children ≤ 5 years related to total pediatric exposures was 21/886,342 (0.00237%). By comparison, 1,327/811,899 (0.163%) of all adult exposures involved a fatality. Of the 21 pediatric fatalities in Table 8, 18 (85.7%) were reported as unintentional, 2 were coded as unknown (9.52%) and 1 was coded as other - malicious (4.76%) (Table 8).

The 40 fatalities in children ≤ 5 years detailed in Appendix A (Table 21) (includes death, indirect reports and RCF 1-3) included 20 nonpharmaceuticals and 20 pharmaceuticals. The first ranked substances associated with these fatalities included: analgesics (10), fumes/gases/vapors (9), batteries (5), chemicals (2), pesticides (2), cold and cough preparations (2), stimulants and street drugs (2), anesthetics (1), antidepressants (1), antimicrobials (1), bites and envenomations (1), cardiovascular drugs (1), electrolytes and minerals (1), essential oils (1), and miscellaneous drugs (1).

Pediatric fatalities – ages 6-12 years

n the age range 6 to 12 years, 15 fatalities are listed in Appendix A (Table 21) (includes death, indirect reports and RCF 1-3) included: fumes/gases/vapors (9), antidepressants (2), chemicals (2), analgesics (1), and pesticides (1). In the 7 deaths with RCF 1-3 (no indirect reports), the exposure reasons were: 3 unintentional - environmental, 1 unintentional – misuse, 2 intentional – suspected suicide, and 1 unknown (Table 8).

Adolescent fatalities – ages 13-19 years

In the age range 13 to 19 years, there were 68 reported fatalities with RCF 1-3, a decrease of 5 (-6.85%) from 2019. Reasons included 62 intentional, and 6 unknown reason. (Table 8). The 147 fatalities listed in Appendix A (Table 21) (includes death, indirect reports and RCF 1-3) included 132 pharmaceuticals and 15 nonpharmaceuticals. The first ranked pharmaceuticals associated with these fatalities included: analgesics (81), antidepressants (11), unknown drug (11), stimulants and street drugs (10), cardiovascular drugs (7), hormones and hormone antagonists (5), antihistamines (2), muscle relaxants (2), sedative/hypnotics/antipsychotics (2), and asthma therapies (1). The first ranked nonpharmaceutical associated with these fatalities included: fumes/gases/vapors (8), chemicals (5), cleaning substances (household) (1), and pesticides (1).

Pregnancy and Fatalities

There were 3 deaths in pregnant women reported to NPDS in 2020. A total of 54 deaths of pregnant women have been reported between 2000 and 2020. The majority (46 of 54, 85.2%) were intentional exposures (misuse, abuse or suspected suicide).

AAPCC Surveillance Results

Key components of the NPDS surveillance system include the automated monitoring tools available to the NPDS user community. Since Surveillance Anomaly 1, generated at 2:00 pm EDT on 17 September 2006, over 444,000 anomalies have been detected and reported. Nearly 2,700 were confirmed as representing public health significance with PCs working collaboratively with local health departments and, in some instances the CDC, on the identified issues.

At the time of this report, 1,762 surveillance definitions run continuously, monitoring case and clinical effects volumes and a variety of case-based definitions from food poisoning to nerve agents. These definitions represent the surveillance work by many PCs, health departments, the AAPCC, the Health Studies Branch (Division of Environmental Hazards and Health Effects, National Center for Environmental Health), and CDC. NPDS has also been used for surveillance during mass gathering events, such as the Super Bowl.

The methodology for automating surveillance continues to be improved in efforts to detect the index case of any relevant public health event. Algorithms for identifying the index case vary greatly regarding the substance to be identified. No individual algorithm works for every application. The magnitude and penetrance of NPDS are critical to epidemiologic surveillance and to the ability to substantiate situational awareness for clinicians, policymakers, and public health officials nationwide. Typically, NPDS surveillance detects the response to an event, rather than predicting an event. This fosters situational awareness that is undoubtedly beneficial to public health activities.

Discussion

The exposure cases and information requests reported by PCs in 2020 do not reflect the full extent of PC efforts, which also include poison prevention activities, partnership with public health entities, and public and health care professional education programs.

NPDS exposure data may be considered "numerator data" in the absence of a true denominator; that is, we do not know the number of actual exposures that occur in the population. NPDS data covers only those exposures that are reported to PCs since most poison exposures and poisoning deaths are not universally reportable events.

NPDS 2000-2020 encounter volume data clearly demonstrate an overall trend toward decreasing exposure cases. This decline has been apparent since mid-2007 and reflects the decreasing use of the PC for less serious exposures. However, during this same period, exposures with a more serious outcome (death, major, moderate) and HCF cases have continued to slightly increase. Possible contributors to the declining PC utilization include declining US birth rate (especially since exposure rates are much higher in children ≤ 5 years of age), increasing use of text rather than voice communication, lack of familiarity with poison center services and increasing use of and reliance on internet resources. To meet our public health goals, PCs will need to understand and provide access via the public's 21st century communication preferences. We are concerned that failure to respond to these changes may result in a regression in the pattern of seeking care, with more people seeking medical care at HCFs for exposures that could have been managed on-site by a PC. Likewise, minor exposures may progress to more serious morbidity and mortality because of incorrect internet information or the absence of PC management. The net effect could be

more serious poisoning outcomes because fewer people took advantage of PC services, with a resultant increased burden on the national healthcare infrastructure as may be reflected in the increased number of cases managed in a HCF this year. PoisonHelp.org was created to provide appropriate management and triage of poisoning cases by members of the public who do not initially contact a poison center.

Unlike other data sources, NPDS offers the ability to provide a near real-time view of these public health issues without the need for data source extrapolations. A limitation of NPDS data has been the perceived lack of fatality case volume compared to other reporting sources. However, when change over time is studied, NPDS is clearly consistent with other public health fatality analyses. One of the issues leading to this concern is the fact that medical record systems seldom have common output streams. This is particularly apparent with the various electronic medical record systems available. It is important to build a federated approach similar to the one modeled by NPDS to allow data sharing, for example, between hospital emergency departments and other medical record systems, including medical examiner offices, nationwide. Enhancements to NPDS could promote interoperability between NPDS and electronic medical records systems to better trend poison-related morbidity and mortality in the US and internationally.

Summary

Unintentional and intentional exposures continue to be a significant cause of morbidity and mortality in the US. The near real-time status of NPDS represents a national public health resource to collect and monitor US exposure cases and information requests.

Changes in 2020 encounters from 2019 are shown in Figures 1, 3, and 4, and include:

- Total encounters (all exposure cases and information requests) increased by 28.9%.
- All information requests increased 218.0%, Drug ID requests decreased 31.5%, and human exposures decreased 0.928%.
- HCF information requests increased 52.2%. Managed exposure cases reported from an HCF decreased 6.85%, attenuating the steady increase since 2000.
- Human exposures with less serious outcomes decreased 0.834% as well as those with more serious outcomes (moderate, major or death) decreasing 2.61% compared to an overall 4.59% yearly increase since 2000. The most rapidly increasing substance categories resulting in more serious outcomes over the past decade are antidepressants, antihistamines, stimulants and street drugs, and anticonvulsants.

These data support the continued value of PC expertise and need for specialized medical toxicology information to manage the more severe exposures, despite the slight decrease in cases involving HCF exposures. In addition to telephonic services, PCs must consider newer communication approaches that match current, and future, public preferences. The continuing mission of NPDS is to provide a nationwide infrastructure for public health surveillance for all types of exposures, public health event identification, resilience, response and situational awareness tracking. NPDS is a model system for the nation and global public health.

Disclaimer

The American Association of Poison Control Centers (AAPCC; http://www.aapcc.org) maintains the national database of information logged by the country's regional Poison Centers (PCs) serving all 50 United States, Puerto Rico, the US territories of Guam, American Samoa, the Federated States of Micronesia, the US Virgin Islands, and the District of Columbia. Case records in this database are from self-reported encounters: they reflect only information provided when the public or healthcare professionals report an actual or potential exposure to a substance (e.g., an ingestion, inhalation, or topical exposure, etc.) or request information/educational materials. Exposures do not necessarily represent a poisoning or overdose. The AAPCC is not able to verify the accuracy of every report made to member centers. Additional exposures may go unreported to PCs and data referenced from the AAPCC should not be construed to represent the complete incidence of national exposures to any substance(s).

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References

[1] National Poison Data System: Annual reports 1983-2019 [Internet]. Arlington (VA): American Association of Poison Control Centers. Available at: http://www.aapcc.org/annual-reports/ Sep 30, 2020.

[2] US Census Bureau: International Data Base (IDB) Mid-Year Population by Single Year Age Groups – Custom Region (American Samoa, Federated States of Micronesia, Guam, Puerto Rico, United States, US Virgin Islands). Accessed at https://www.census.gov/programs-surveys/international-programs/data/tools.html Aug 5, 2021.

[3] American Academy of Clinical Toxicology; European Association of Poisons Centres and Clinical Toxicologists. Position statement: ipecac syrup. J Toxicol Clin Toxicol. 1997;35:699–709.

[4] American Academy of Clinical Toxicology; European Association of Poisons Centres and Clinical Toxicologists. Position paper: ipecac syrup. J Toxicol Clin Toxicol. 2004;42:133–143.

[5] American Academy of Pediatrics Policy Statement. Poison treatment in the home. Pediatrics. 2003;112:1182–1185.

[6] Boserup B, McKenney M, Elkbuli A. The impact of the COVID-19 pandemic on emergency department visits and patient safety in the United States. Am J Emerg Med. 2020;38(9):1732–1736.

[7] Yip L, Bixler D, Brooks DE, et al. Serious Adverse Health Events, Including Death, Associated with Ingesting Alcohol-Based Hand Sanitizers Containing Methanol – Arizona and New Mexico, May–June 2020. MMWR Morb Mortal Wkly Rep 2020;69:1070–3.

Appendix A

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
Non-Pharmaceutical Exposures										
Alcohols										
1ph	21 y M				A	Unk	Int-A	3		
		ethanol	1	1					ethanol	198 mg/dL In Blood (unspecified) @ Unknown
2ai	22 y M				U	Unk	Int-A	1		
		ethanol	1	1						
		marijuana	2	2						
3ai	25 y M				C	Unk	Int-A	1		
		ethanol	1	1						
4ai	26 y M				U	Unk	Int-A	3		
		ethanol	1	1						
5ai	26 y M				U	Unk	Int-A	1		
		ethanol	1	1						
		carbon monoxide	2	2						
6ha	26 y M				A/C	Ingst	Int-M	3		
		ethanol	1	1					ethanol	97 mg/dL In Blood (unspecified) @ Unknown
7ai	27 y M				C	Unk	Int-A	3		
		ethanol	1	1						
		marijuana, N.O.S.	2	2						
[8ha]	29 y M				A/C	Ingst	Int-A	1		
		ethanol	1	1					ethanol	292 mg/dL In Serum @ 1 h (pe)
9h	29 y F				C	Ingst+ Unk	Int-S	3		
		ethanol	1	1						
		viral disease (COVID-19-Confirmed)	2	2						
10ai	29 y M				C	Ingst	Int-A	3		
		ethanol	1	1						
11ai	30 y M				U	Unk	Int-A	2		
		ethanol	1	1						
12ai	30 y M				U	Unk	Int-A	1		
		ethanol	1	1						
13h	30 y F				A	Ingst	Int-U	1		
		methanol	1	1					methanol	330 mg/dL In Blood (unspecified) @ Unknown
		hand sanitzer (unknown)	2	2						
		ethanol (non-beverage)	3	3						
		automatic dishwasher detergent (tablet N.O.S.)	4	4						
14	30 y M				A	Ingst	Int-S	2		
		methanol	1	1						
15ai	30 y M				U	Ingst	Int-A	1		
		ethanol	1	1						
16pa	31 y M				A	Unk	Int-A	2		
		ethanol	1	1						
		cocaine	2	2						
17ai	31 y M				U	Unk	Unt-M	1		
		methanol	1	1						
		ethanol	2	2						
18ai	31 y M				C	Ingst	Int-A	3		
		ethanol	1	1						
19ai	32 y M				U	Unk	Int-A	2		
		ethanol	1	1						
		fentanyl, N.O.S.	2	2						
		oxycodone	3	3						
20ai	32 y M				U	Unk	Int-A	3		
		ethanol	1	1						
21ph	32 y M				A	Ingst+ Par	Int-A	1		
		ethanol	1	1					ethanol	626 mg/dL In Blood (unspecified) @ Unknown
		diphenhydramine	2	2						
		propofol	3	3						
22ai	32 y M				U	Unk	Int-U	1		
		ethanol	1	1						
23pha	32 y F				A	Ingst	Unk	1		
		ethanol	1	1					ethanol	233 mg/dL In Blood (unspecified) @ Unknown
		metaxalone	4	2						
		lorazepam	3	3					lorazepam	37 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	2	4					diazepam	2400 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	2	4					oxazepam	72 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	2	4					nordiazepam	950 ng/mL In Blood (unspecified) @ Unknown
		midazolam	5	5					midazolam	53 ng/mL In Blood (unspecified) @ Unknown
		temazepam	6	6					temazepam	450 ng/mL In Blood (unspecified) @ Unknown
		propranolol	7	7						
24ai	33 y F				U	Unk	Int-A	1		
		ethanol	1	1						
25ha	33 y F				A	Ingst+ Unk	Int-A	1		
		methanol	1	1					methanol	403 mg/dL In Blood (unspecified) @ 24 h (pe)
		methanol	1	1					methanol	610 mg/dL In Blood (unspecified) @ Unknown
		methamphetamine	2	2					methamphetamine	41 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	2	2					amphetamine	8.3 ng/mL In Blood (unspecified) @ Unknown
26ai	34 y M				U	Unk	Int-A	1		
		ethanol	1	1						
27ha	34 y M				C	Ingst+ Unk	Int-S	3		
		ethanol	1	1						
		ethanol	2	2						
		drug, N.O.S.	3	3						
28ai	35 y M				U	Unk	Int-A	1		
		ethanol	1	1						
		aripiprazole	2	2						
29ai	35 y F				C	Ingst+ Unk	Int-A	1		
		ethanol	1	1						
		gabapentin	2	2						
30ai	35 y F				C	Unk	Int-A	1		
		ethanol	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
31ha	35 y F				U	Ingst	Int-A	3		
		ethanol	1	1					ethanol	71 mg/dL In Blood (unspecified) @ Unknown
		drug, N.O.S.	2	2						
32ha	35 y F				A	Ingst	Int-S	2		
		ethanol	1	1					ethanol	270 mg/dL In Whole Blood @ Autopsy
		ethanol	1	1					ethanol	320 mg/dL In Whole Blood @ Autopsy
		ethanol	1	1					ethanol	410 mg/dL In Vitreous @ Autopsy
33pai	35 y F				U	Ingst	Int-A	1		
		ethanol	1	1						
34ai	36 y M				U	Unk	Int-A	1		
		methanol	1	1						
35ai	36 y M				C	Unk	Int-A	3		
		ethanol	1	1						
		marijuana, N.O.S.	2	2						
36ai	36 y M				C	Unk	Int-A	3		
		ethanol	1	1						
37ai	36 y M				U	Ingst	Int-A	1		
		ethanol	1	1						
38ai	37 y M				C	Unk	Int-A	1		
		ethanol	1	1						
39ha	37 y F				U	Ingst	Oth-W	3		
		ethanol	1	1						
40ai	37 y F				U	Unk	Int-U	1		
		ethanol	1	1						
		cocaine	2	2						
41ai	37 y F				C	Ingst	Int-A	1		
		ethanol	1	1						
42ai	38 y M				U	Unk	Unt-M	1		
		ethanol	1	1						
		fentanyl, N.O.S.	2	2						
		marijuana	3	3						
43p	38 y M				A	Ingst+ Inhal	Int-A	2		
		ethanol	1	1						
		drug, N.O.S.	2	2						
44h	39 y M				A	Ingst	Int-S	1		
		methanol	1	1					methanol	67 mg/dL In Blood (unspecified) @ Unknown
45ai	40 y F				U	Unk	Int-A	1		
		ethanol	1	1						
46ai	40 y M				A/C	Unk	Int-A	1		
		ethanol	1	1						
47h	40 y F				A	Ingst	Int-U	3		
		ethanol	1	1					ethanol	103 mg/dL In Blood (unspecified) @ Unknown
48ai	40 y M				C	Ingst	Int-A	1		
		ethanol	1	1						
49h	41 y M				A	Ingst	Int-S	1		
		methanol	1	1						
		alcohol, N.O.S.	2	2						
50ai	41 y M				C	Ingst	Int-A	1		
		ethanol	1	1						
51h	41 y M				U	Ingst	Unk	2		
		methanol	1	1					methanol	274 mg/dL In Blood (unspecified) @ Unknown
52ai	43 y M				U	Unk	Int-A	1		
		ethanol	1	1						
		marijuana	2	2						
53ai	43 y F				C	Unk	Int-A	1		
		ethanol	1	1						
54ai	44 y M				U	Unk	Int-A	3		
		ethanol	1	1						
55h	45 y M				C	Ingst	Int-A	2		
		ethanol	1	1						
		acetaminophen	2	2					acetaminophen (apap)	19.5 mcg/mL In Serum @ Unknown
56ai	45 y M				U	Ingst	Int-A	1		
		ethanol	1	1						
57ai	45 y M				U	Unk	Unt-M	2		
		ethanol	1	1						
58ai	45 y M				U	Unk	Int-A	1		
		ethanol	1	1						
		chlordiazepoxide	2	2						
59ha	45 y M				A	Ingst	Int-S	1		
		ethanol	1	1					ethanol	163 mg/dL In Blood (unspecified) @ 10 m (pe)
		tramadol	2	2					tramadol	355 mcg/L In Blood (unspecified) @ Autopsy
		tramadol	2	2					tramadol	4350 mcg/L In Blood (unspecified) @ Autopsy
		tramadol	2	2					tramadol	530 mcg/L In Blood (unspecified) @ 10 m (pe)
		tramadol	2	2					o-demethyl tramadol	600 mcg/L In Blood (unspecified) @ Autopsy
		cyclobenzaprine	3	3						
		trazodone	4	4					trazodone	300 mcg/L In Blood (unspecified) @ 10 m (pe)
		acetaminophen	5	5					acetaminophen (apap)	46 mcg/mL In Blood (unspecified) @ 10 m (pe)
60ai	46 y M				C	Ingst	Int-A	3		
		ethanol	1	1						
61ai	46 y M				U	Unk	Int-A	1		
		ethanol	1	1						
62ai	46 y M				U	Unk	Int-A	3		
		ethanol	1	1						
		chlordiazepoxide	2	2						
63ha	46 y F				A	Ingst+ Inhal	Int-U	2		
		ethanol	1	1						
		methylenedioxymethamphetamine (MDMA)	2	2						
		marijuana	3	3						
64ai	46 y F				C	Unk	Int-A	1		
		ethanol	1	1						
		methadone	2	2						
		alprazolam	3	3						
65pha	46 y F				U	Ingst	Int-A	2		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		alcohol, unknown	1	1					ethanol	527 mg/dL In Blood (unspecified) @ Unknown
66ai	47 y M				U	Unk	Int-U	3		
		ethanol	1	1						
67ha	47 y M				A	Ingst	Unk	2		
		ethanol	1	1						
		ethylene glycol	2	1						
68h	47 y F				C	Ingst	Unt-U	3		
		ethanol	1	1					ethanol	0 mg/dL In Blood (unspecified) @ Unknown
69pha	47 y F				U	Ingst	Int-A	2		
		ethanol	1	1					ethanol	227 mcg/dL In Blood (unspecified) @ Unknown
70ph	48 y M				A	Ingst	Int-S	2		
		ethanol	1	1						
		morphine	2	2						
		alprazolam	3	3						
71ai	48 y M				U	Unk	Int-A	2		
		ethanol	1	1						
72ai	48 y F				U	Unk	Int-A	2		
		ethanol	1	1						
		marijuana	2	2						
73h	48 y F				U	Unk	Unk	1		
		methanol	1	1					methanol	142 mg/dL In Serum @ Unknown
74ai	49 y M				C	Unk	Int-A	2		
		ethanol	1	1						
75ai	49 y M				U	Unk	Int-A	3		
		ethanol	1	1						
		methamphetamine	2	2						
		carisoprodol	3	3						
76ai	49 y M				U	Unk	Int-A	2		
		ethanol	1	1						
77ai	50 y M				U	Unk	Int-A	1		
		ethanol	1	1						
78ai	50 y M				C	Unk	Int-A	1		
		ethanol	1	1						
79ha	50 y M				A/C	Ingst	Int-A	3		
		ethanol	1	1					ethanol	297 mg/dL In Blood (unspecified) @ Unknown
		ethanol	1	1					ethanol	297 mg/dL In Serum @ Unknown
80ai	50 y M				C	Ingst+ Unk	Int-A	3		
		ethanol	1	1						
		Non Drug Substance (N.O.S.)	2	2						
81	51 y M				A/C	Ingst	Int-S	2		
		ethanol	4	1						
		mirtazapine	2	2						
		calcium antagonist	1	3						
		naltrexone	3	4						
		omeprazole	5	5						
82ai	51 y F				U	Unk	Int-A	1		
		ethanol	1	1						
83ai	51 y M				U	Unk	Int-A	2		
		ethanol	1	1						
84ai	51 y M				C	Unk	Int-A	3		
		ethanol	1	1						
85ha	51 y F				A	Ingst	Unk	1		
		methanol	1	1					methanol	21 mg/dL In Blood (unspecified) @ 69 h (pe)
		methanol	1	1					methanol	288 mg/dL In Blood (unspecified) @ 4.5 h (pe)
		methanol	1	1					methanol	338 mg/dL In Blood (unspecified) @ 10 m (pe)
		methanol	1	1					methanol	56 mg/dL In Blood (unspecified) @ 38 h (pe)
86ai	51 y M				U	Unk	Int-A	1		
		ethanol	1	1						
87ai	51 y M				U	Unk	Int-A	2		
		ethanol	1	1						
		methamphetamine	2	2						
88ai	51 y M				U	Unk	Int-A	2		
		ethanol	1	1						
89ha	51 y M				A/C	Ingst	Int-U	1		
		ethanol	1	1						
		drug, N.O.S.	2	2						
90ai	51 y M				U	Ingst+ Unk	Int-A	1		
		ethanol	1	1						
		Non Drug Substance (N.O.S.)	2	2						
91ai	52 y M				C	Unk	Int-A	3		
		ethanol	1	1						
92h	52 y M				A	Ingst	Int-A	1		
		methanol	1	1						
93ai	53 y M				C	Unk	Int-A	3		
		ethanol	1	1						
94ph	53 y M				U	Ingst	Int-A	1		
		methanol	1	1						
95h	54 y M				A	Ingst	Unk	3		
		ethanol	1	1					ethanol	141 mg/dL In Blood (unspecified) @ Unknown
96pai	54 y M				A	Ingst	Int-S	2		
		ethanol	1	1					ethanol	330 mg/dL In Blood (unspecified) @ Autopsy
		diphenhydramine	2	2					diphenhydramine	13000 ng/mL In Blood (unspecified) @ Autopsy
97h	54 y M				C	Ingst	Int-A	2		
		ethanol	1	1						
98ai	55 y M				C	Unk	Int-A	2		
		ethanol	1	1						
99ai	55 y F				C	Unk	Int-A	3		
		ethanol	1	1						
100ai	55 y M				C	Unk	Int-A	3		
		ethanol	1	1						
101ai	55 y M				U	Unk	Int-A	1		
		ethanol	1	1						
102pha	55 y M				U	Ingst	Int-A	2		
		ethanol	1	1					ethanol	318 mg/dL In Blood (unspecified) @ Unknown
103ai	55 y F				U	Unk	Int-U	2		
		ethanol	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
104h	55 y F				U	Unk	Unk	3		
		ethanol	1	1					ethanol	357 mg/dL In Blood (unspecified) @ Unknown
105ai	56 y M				U	Unk	Int-A	3		
		ethanol	1	1						
106ha	56 y F				A/C	Ingst	Int-S	2		
		alcohol, N.O.S.	1	1					ethanol	280 mg/dL In Serum @ Unknown
		acetaminophen/hydrocodone	3	2						
		oxycodone	2	2					oxymorphone	7.1 ng/mL In Blood (unspecified) @ Unknown
		oxycodone	2	2					oxycodone	700 ng/mL In Blood (unspecified) @ Unknown
107ai	56 y M				C	Ingst	Int-A	3		
		ethanol	1	1						
108ai	56 y M				U	Unk	Int-A	3		
		ethanol	1	1						
109ai	56 y F				C	Ingst	Int-A	3		
		ethanol	1	1						
110ai	57 y F				U	Unk	Int-A	1		
		ethanol	1	1						
111ai	57 y F				U	Unk	Int-A	1		
		ethanol	1	1						
112ai	57 y M				C	Ingst	Int-A	1		
		ethanol	1	1						
113ai	57 y M				C	Ingst	Int-A	1		
		ethanol	1	1						
114ph	57 y M				A/C	Ingst	Int-U	2		
		isopropanol	2	1						
		metformin	1	1						
115ph	57 y F				A	Unk	Unk	3		
		ethanol	1	1					ethanol	283 mg/dL In Blood (unspecified) @ Unknown
116p	57 y F				A	Ingst	Int-S	2		
		alcohol, N.O.S.	1	1						
		beta blocker	3	1						
		analgesic, unknown	2	2						
117ai	57 y M				C	Unk	Int-A	3		
		ethanol	1	1						
118ai	57 y M				C	Ingst	Int-A	1		
		ethanol	1	1						
119h	58 y F				A/C	Ingst	Int-A	2		
		ethanol	1	1					ethanol	162 mg/dL In Serum @ Unknown
120h	58 y F				A	Ingst	Int-A	2		
		isopropanol	1	1					isopropanol	15 mg/dL In Serum @ Unknown
		isopropanol	1	1					acetone	41 mcg/dL In Serum @ Unknown
		ethanol	2	2					ethanol	31 mcg/dL In Serum @ Unknown
121ai	58 y M				U	Unk	Int-A	2		
		ethanol	1	1						
122ai	58 y M				U	Unk	Int-A	3		
		ethanol	1	1						
		hyperthermia	2	2						
123ai	59 y M				U	Unk	Int-A	2		
		ethanol	1	1						
124ai	59 y F				U	Unk	Int-A	3		
		ethanol	1	1						
		methanol	2	2						
125ai	59 y M				C	Unk	Int-A	2		
		ethanol	1	1						
		drug, N.O.S.	2	2						
126ai	59 y M				C	Ingst	Int-A	1		
		ethanol	1	1						
127ai	59 y F				C	Ingst	Int-A	1		
		ethanol	1	1						
128ai	59 y F				U	Ingst	Int-A	1		
		ethanol	1	1						
129ai	60 y M				C	Unk	Int-A	3		
		ethanol	1	1						
130pha	60 y M				A/C	Ingst	Int-A	2		
		ethanol	1	1					ethanol	567 mg/dL In Blood (unspecified) @ Unknown
		barbiturate (long acting)	2	2					phenobarbital	2.4 mg/L In Blood (unspecified) @ Unknown
		benzodiazepine	3	3					nordiazepam	37 ng/mL In Blood (unspecified) @ Unknown
131ai	60 y M				C	Unk	Int-A	3		
		ethanol	1	1						
132ai	60 y M				U	Unk	Int-A	1		
		ethanol	1	1						
133ai	60 y M				U	Unk	Int-A	3		
		ethanol	1	1						
134ai	60 y M				U	Unk	Int-A	1		
		ethanol	1	1						
135h	60 y M				C	Ingst+ Unk	Int-A	2		
		ethanol	1	1					ethanol	53 mg/dL In Serum @ Unknown
		acetaminophen	2	2						
136ai	60 y M				U	Unk	Int-A	1		
		methanol	1	1						
137ai	60 y F				U	Unk	Int-A	2		
		ethanol	1	1						
138ai	60 y M				U	Ingst+ Unk	Int-A	1		
		ethanol	1	1						
		trazodone	2	2						
		hydroxyzine	3	3						
139h	60 y M				C	Ingst	Int-A	3		
		ethanol	1	1					ethanol	97 mg/dL In Blood (unspecified) @ Unknown
140ai	61 y M				U	Unk	Int-A	3		
		ethanol	1	1						
		bupropion	2	2						
		marijuana	3	3						
141ai	61 y F				C	Unk	Int-A	1		
		ethanol	1	1						
		bupropion	2	2						
		lorazepam	3	3						
142ai	61 y F				C	Unk	Int-A	1		
		ethanol	1	1						
		Non Drug Substance (N.O.S.)	2	2						
143h	61 y M				A	Ingst	Unt-G	2		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		ethanol	1	1						
144h	61 y F				C	Ingst	Int-S	3		
		alcohol, N.O.S.	1	1						
		drug, N.O.S.	2	2						
145pha	61 y F				A/C	Ingst	Int-S	1		
		isopropanol	1	1					isopropanol	172 mg/dL In Blood (unspecified) @ Unknown
		isopropanol	1	1					acetone	53 mg/dL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	100 mg/dL In Blood (unspecified) @ Unknown
146ai	62 y M				U	Unk	Int-A	2		
		ethanol	1	1						
147h	62 y M				U	Ingst+ Unk	Int-A	3		
		ethanol	4	1						
		ethylene glycol	2	2						
		methanol	1	3						
		viral disease (COVID-19-Not Confirmed)	3	4						
148pa	62 y M				C	Ingst	Int-A	3		
		ethanol	1	1						
149ai	62 y M				C	Unk	Int-A	2		
		ethanol	1	1						
150ai	62 y M				C	Ingst	Int-A	1		
		ethanol	1	1						
151ai	63 y M				C	Unk	Int-A	3		
		ethanol	1	1						
152ai	63 y M				U	Unk	Int-A	3		
		ethanol	1	1						
153h	63 y M				A/C	Ingst	Int-U	3		
		ethanol	1	1					ethylene glycol	0 mg/L In Blood (unspecified) @ Unknown
		ethanol	1	1					ethanol	136 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen	2	2						
154h	63 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
155ai	63 y M				U	Unk	Int-A	3		
		ethanol	1	1						
		marijuana	2	2						
156ai	64 y M				C	Unk	Int-A	3		
		ethanol	1	1						
157ai	64 y M				U	Unk	Int-A	3		
		ethanol	1	1						
158h	64 y M				A	Inhal+ Unk	Unt-E	2		
		ethanol	1	1						
		natural gas	2	1						
159ai	64 y M				U	Unk	Int-A	2		
		ethanol	1	1						
160ai	64 y M				C	Unk	Int-A	3		
		ethanol	1	1						
161h	64 y F				U	Ingst	Unk	1		
		methanol	1	1					methanol	123 mg/mL In Blood (unspecified) @ 12 h (pe)
162ai	64 y M				C	Ingst	Int-A	1		
		ethanol	1	1						
163ai	64 y M				C	Ingst	Int-A	3		
		ethanol	1	1						
164ai	65 y M				U	Unk	Int-A	3		
		ethanol	1	1						
165ai	65 y M				C	Ingst	Int-A	1		
		ethanol	1	1						
166ai	65 y F				U	Unk	Int-A	3		
		ethanol	1	1						
167ai	66 y M				C	Unk	Int-A	3		
		ethanol	1	1						
168ai	66 y M				U	Unk	Int-A	3		
		ethanol	1	1						
169ai	66 y F				C	Ingst	Int-A	3		
		ethanol	1	1						
170ai	66 y F				U	Ingst	Int-A	1		
		ethanol	1	1						
171ai	67 y M				C	Ingst	Int-A	1		
		ethanol	1	1						
172ai	68 y F				U	Unk	Int-A	3		
		ethanol	1	1						
173h	69 y M				A	Ingst	Int-S	3		
		alcohol, N.O.S.	1	1						
		soap	2	2						
174ai	70 y M				U	Unk	Int-U	1		
		methanol	1	1						
		ethanol	2	2						
175ai	70 y M				C	Ingst	Int-A	1		
		ethanol	1	1						
176ai	73 y M				C	Unk	Int-A	3		
		ethanol	1	1						
177ai	73 y M				C	Ingst	Int-A	1		
		ethanol	1	1						
178ai	74 y M				C	Ingst	Int-A	1		
		ethanol	1	1						
179h	75 y M				C	Ingst	Oth-W	2		
		ethanol	1	1						
		ethanol	2	2						
180h	78 y F				A	Unk	Int-S	3		
		ethanol	1	1					ethanol	198 mg/dL In Blood (unspecified) @ Unknown
		drug, N.O.S.	2	2						
181ai	79 y M				C	Unk	Int-A	3		
		ethanol	1	1						
182ai	80 y M				U	Unk	Int-A	3		
		ethanol	1	1						
183ai	82 y M				C	Unk	Int-A	3		
		ethanol	1	1						
184ai	82 y M				C	Ingst	Int-A	3		
		ethanol	1	1						
185ai	83 y M				C	Ingst	Int-A	3		
		ethanol	1	1						
186ai	83 y M				U	Unk	Unt-M	2		
		ethanol	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
187pi	Unknown age F				U	Ingst	Unk	2		
		methanol	1	1						
See Also case 194, 227, 241, 248, 256, 266, 267, 273, 278, 288, 296, 297, 312, 314, 317, 325, 364, 366, 367, 386, 392, 410, 417, 420, 456, 468, 488, 504, 523, 533, 541, 544, 552, 554, 555, 568, 574, 576, 581, 587, 600, 628, 631, 635, 649, 666, 669, 672, 680, 691, 700, 709, 712, 713, 715, 719, 722, 729, 732, 733, 734, 741, 751, 752, 771, 775, 777, 783, 788, 792, 794, 803, 805, 812, 813, 821, 826, 831, 833, 836, 838, 841, 848, 856, 859, 860, 875, 885, 888, 896, 902, 910, 911, 912, 914, 915, 916, 924, 925, 934, 938, 945, 951, 960, 961, 972, 973, 982, 986, 988, 992, 1002, 1010, 1014, 1015, 1023, 1027, 1028, 1032, 1034, 1035, 1037, 1040, 1044, 1054, 1056, 1058, 1070, 1078, 1080, 1084, 1086, 1089, 1092, 1094, 1100, 1101, 1102, 1110, 1119, 1122, 1123, 1128, 1129, 1132, 1133, 1137, 1147, 1161, 1162, 1168, 1172, 1178, 1183, 1187, 1194, 1200, 1201, 1212, 1215, 1216, 1218, 1219, 1224, 1228, 1236, 1238, 1240, 1241, 1249, 1256, 1259, 1269, 1270, 1272, 1274, 1275, 1276, 1281, 1282, 1287, 1293, 1295, 1305, 1316, 1326, 1328, 1331, 1335, 1342, 1346, 1352, 1357, 1360, 1363, 1364, 1366, 1370, 1379, 1385, 1387, 1389, 1402, 1408, 1414, 1417, 1422, 1423, 1430, 1440, 1448, 1452, 1456, 1458, 1459, 1465, 1467, 1469, 1477, 1485, 1486, 1491, 1494, 1495, 1497, 1499, 1514, 1521, 1524, 1528, 1530, 1531, 1533, 1539, 1542, 1551, 1558, 1566, 1567, 1570, 1571, 1572, 1573, 1579, 1585, 1587, 1594, 1595, 1597, 1598, 1601, 1602, 1606, 1607, 1608, 1625, 1628, 1630, 1635, 1638, 1639, 1642, 1650, 1652, 1679, 1696, 1699, 1700, 1702, 1705, 1708, 1717, 1731, 1733, 1736, 1738, 1741, 1747, 1749, 1755, 1756, 1759, 1778, 1780, 1784, 1790, 1796, 1797, 1806, 1808, 1814, 1815, 1818, 1820, 1822, 1825, 1828, 1830, 1835, 1838, 1839, 1843, 1844, 1845, 1853, 1854, 1857, 1858, 1865, 1868, 1879, 1880, 1884, 1886, 1897, 1899, 1904, 1908, 1914, 1916, 1919, 1922, 1941, 1942, 1948, 1949, 1955, 1958, 1959, 1966, 1971, 1975, 1976, 1979, 1980, 1983, 1989, 2008, 2022, 2024, 2025, 2028, 2050, 2055, 2060, 2080, 2082, 2087, 2097, 2106, 2112, 2123, 2125, 2128, 2133, 2134, 2137, 2154, 2174, 2177, 2183, 2190, 2193, 2203, 2226, 2240, 2248, 2265, 2267, 2278, 2284, 2293, 2304, 2326, 2334, 2342, 2343, 2351, 2368, 2395, 2403, 2431, 2443, 2444, 2448, 2455, 2475, 2489, 2495, 2497, 2503, 2512, 2514, 2525, 2526, 2527, 2535, 2536, 2540, 2543, 2545, 2548, 2551, 2558, 2560, 2562, 2564, 2590, 2592, 2593, 2595, 2598, 2608, 2614, 2615, 2633, 2647, 2651, 2654, 2656, 2664, 2666, 2687, 2688, 2693, 2694, 2696, 2699, 2703, 2704, 2708, 2714, 2721, 2724, 2731, 2734, 2736, 2738, 2739, 2740, 2745, 2750, 2755, 2758, 2767, 2773, 2778, 2779, 2780, 2784, 2788, 2789, 2802, 2817, 2837, 2907, 2908, 2909, 2915, 2918, 2924, 2970, 2981, 2986, 2992, 2997, 3002, 3015, 3018, 3019, 3024, 3025, 3028, 3031, 3036, 3038, 3040, 3056, 3065, 3073, 3087, 3100, 3101, 3104, 3108, 3118, 3133, 3147, 3148, 3150, 3151, 3154, 3156, 3179, 3180, 3186, 3191, 3203, 3205, 3207, 3210, 3212, 3225, 3237, 3244, 3245, 3252, 3253, 3257, 3271, 3278, 3281, 3290, 3306, 3316, 3318, 3330, 3331, 3333, 3334, 3341, 3342, 3344, 3349, 3355, 3362, 3375, 3377, 3380, 3383, 3404, 3405, 3407, 3432, 3440, 3441, 3451, 3456, 3460, 3461, 3465, 3467, 3483, 3490, 3491, 3500, 3503, 3512, 3519, 3527, 3528, 3539, 3544, 3550, 3556, 3561, 3568, 3574, 3576, 3593, 3608, 3616, 3626, 3628, 3632, 3643, 3648, 3662, 3663, 3665, 3670, 3675, 3687, 3689, 3699, 3700, 3707, 3708, 3710, 3712, 3713, 3715, 3720, 3758, 3767, 3769, 3839, 3845, 3856								
Automotive/Aircraft/Boat Products										
188	21 y F				A	Ingst+ Unk	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
		drug, N.O.S.	2	2						
189h	23 y M				U	Ingst	Int-U	2		
		ethylene glycol (antifreeze)	1	1						
190ph	25 y M				U	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	8 mg/dL In Blood (unspecified) @ Unknown
		substance (non-drug), N.O.S.	2	2						
		drug, N.O.S.	3	3						
191ha	47 y M				U	Ingst	Int-U	2		
		ethylene glycol (antifreeze)	1	1						
192h	48 y F				A	Ingst	Int-S	1		
		methanol	1	1					methanol	137 mg/dL In Blood (unspecified) @ Unknown
193h	49 y M				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1						
		acetaminophen	2	2						
194h	50 y M				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1					ethanol	0 mg/mL In Blood (unspecified) @ Unknown
		ethylene glycol (antifreeze)	1	1					ethylene glycol	34 mg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
195h	51 y F				A	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
196pi	52 y F				A	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
197ph	53 y M				A	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
198h	57 y M				A	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
199a	57 y F				A	Ingst	Unk	2		
		methanol	1	1					methanol	373 mg/dL In Serum @ Unknown
200ha	60 y M				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	470 mg/dL In Blood (unspecified) @ Unknown
[201pha]	66 y F				A	Ingst	Int-S	1		
		brake fluid	1	1						
		mirtazapine	2	2						
		hydrocarbon	3	3						
202h	66 y M				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	130 mg/dL In Blood (unspecified) @ Unknown
		ethylene glycol (antifreeze)	1	1					ethylene glycol	513 mg/dL In Blood (unspecified) @ Unknown
203	66 y M				A	Ingst	Int-S	1		
		brake fluid	1	1						
204h	79 y M				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	190.7 mg/dL In Serum @ Unknown
		ethylene glycol (antifreeze)	1	1					ethylene glycol	26.3 mg/dL In Serum @ Unknown
		ethylene glycol (antifreeze)	1	1					ethylene glycol	75.6 mg/dL In Serum @ Unknown
See Also case 3622										
Batteries										
205i	3 y F				A	Ingst	Unt-G	1		
		battery, disc (lithium)	1	1						
206pai	15 m F				A	Ingst	Unt-G	1		
		battery, disc (lithium)	1	1						
[207h]	16 m F				A	Ingst	Unt-G	1		
		battery, disc (lithium)	1	1						
208h	17 m F				A	Ingst	Unt-G	1		
		battery, disc	1	1						
209i	19 m M				A	Ingst	Unt-G	1		
		battery, disc (lithium)	1	1						
Bites and Envenomations										
[210h]	3 y F				A	B-S	Unt-B	1		
		envenomation (crotalinae)	1	1						
[211pha]	58 y M				A	B-S	Unt-B	2		
		envenomation (Crotalus viridis oreganus)	1	1						
212pi	59 y M				A	B-S	Unt-B	1		
		envenomation (hymenoptera)	1	1						
213ai	61 y F				A	B-S	Unt-B	3		
		bite (canine)	1	1						
[214h]	67 y M				A	B-S	Unt-B	2		
		envenomation (Crotalus viridis)	1	1						
215h	67 y M				A	B-S	Unt-B	1		
		envenomation (crotalid)	1	1						
Chemicals										
[216pa]	3 y F				A	Inhal	Oth-M	1		
		chloroform	1	1					chloroform	34 mg/L In Blood (unspecified) @ Autopsy
		chloroform	1	1					chloroform	5 mg/kg In Lung @ Autopsy
217ph	3 y M				A	Inhal	Unt-E	3		
		cyanide	1	1						
		carbon monoxide	2	2					carboxyhemoglobin	8.3 % In Blood (unspecified) @ 1 h (pe)
218ph	7 y M				A	Inhal	Unt-E	2		
		cyanide	1	1						
		carbon monoxide	2	2						
219ph	11 y F				A	Inhal	Unt-E	1		
		cyanide	1	1					carboxyhemoglobin	12 % In Blood (unspecified) @

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										Unknown
		carbon monoxide	2	2						
220ph	16 y M				A	Unk	Int-S	2		
		sodium nitrate	1	1						
221ph	17 y F				A	Ingst	Int-S	2		
		sodium nitrate	1	1						
222pha	18 y M				U	Ingst	Unk	1		
		sodium nitrate	1	1						
223ph	19 y M				A	Ingst	Int-S	1		
		nitrates	1	1					methemoglobin	30 % In Blood (unspecified) @ Unknown
224pha	19 y M				A	Ingst	Int-S	1		
		sodium nitrite	1	1					nitrite	4100 µmol/L In Whole Blood @ Unknown
[225h]	21 y M				A	Ingst	Int-S	1		
		sodium azide	1	1						
226ph	21 y M				A	Ingst	Int-S	1		
		sodium nitrate	1	1						
227ha	22 y M				A	Ingst+ Unk	Int-S	1		
		sodium nitirite	1	1						
		morphine	2	2					morphine (free)	12 ng/mL In Blood (unspecified) @ 10 m (pe)
		morphine	2	2					codeine (free)	5.1 ng/mL In Blood (unspecified) @ 10 m (pe)
		escitalopram	3	3						
		diphenhydramine	4	4					doxylamine	130 ng/mL In Blood (unspecified) @ 10 m (pe)
		diphenhydramine	4	4					diphenhydramine	67 ng/mL In Blood (unspecified) @ 10 m (pe)
		ethanol	5	5					ethanol	40 mg/dL In Blood (unspecified) @ 10 m (pe)
228ph	22 y F				A	Ingst	Int-S	2		
		sodium nitrate	1	1						
229ai	22 y F				U	Unk	Int-S	1		
		sodium nitrate	1	1						
230ha	22 y M				A	Ingst	Int-S	2		
		sodium nitrate	1	1					methemoglobin	30 % In Blood (unspecified) @ Unknown
[231pha]	22 y M				A	Ingst	Int-S	1		
		nitrites	1	1					methemoglobin	30 % In Blood (unspecified) @ Unknown
232ai	23 y F				U	Unk	Int-A	1		
		nitrites	1	1						
		marijuana	2	2						
		metoclopramide	3	3						
233p	23 y F				U	Unk	Int-S	1		
		sodium nitrate	1	1						
234ph	23 y F				A	Ingst	Int-S	2		
		sodium nitirite	1	1						
235pha	24 y M				A	Ingst	Int-U	1		
		sodium nitrate	1	1						
236ph	24 y M				A	Ingst	Int-S	1		
		sodium nitrite	1	1					methemoglobin	83.5 % In Whole Blood @ 1 h (pe)
237pha	25 y M				U	Inhal+ Unk	Int-S	1		
		sodium nitrate	1	1					methemoglobin	80 % In Blood (unspecified) @ Autopsy
238p	25 y M				A	Ingst	Int-S	1		
		sodium nitrate	1	1					methemoglobin	48.7 % In Serum @ Unknown
		bupropion	2	2						
		lithium	3	3						
239ph	26 y M				A	Ingst	Int-S	2		
		sodium nitrate	1	1						
240ha	27 y F				A	Ingst	Int-S	1		
		sodium nitirite	1	1						
241ai	28 y M				U	Unk	Int-S	1		
		sodium nitirite	1	1						
		pentobarbital	2	2						
		ethanol	3	3						
242h	28 y F				A	Ingst+ Unk	Int-S	2		
		sodium nitrite	1	1						
		drug, N.O.S.	2	2						
243h	29 y M				A	Ingst	Int-A	2		
		ethylene glycol	1	1					ethylene glycol	31 mg/dL In Blood (unspecified) @ Unknown
244p	29 y F				A	Ingst	Int-S	2		
		nitrites	1	1						
245pa	29 y M				A	Ingst	Int-S	1		
		sodium nitirite	1	1					methemoglobin	54 % In Whole Blood @ Autopsy
[246pa]	30 y M				A	Inhal+ Oc+ Derm	Unt-O	1		
		ammonia (anhydrous)	1	1						
247ai	30 y F				U	Unk	Int-S	1		
		nitrates	1	1						
248h	32 y M				A	Ingst	Unk	2		
		ethylene glycol	1	1						
		ethanol	2	2						
249ph	32 y F				A	Ingst	Int-S	2		
		sodium nitrite	1	1						
250pha	32 y M				A	Inhal	Int-A	1		
		ethyl chloride	1	1						
251ph	32 y M				A	Inhal	Unt-E	1		
		cyanide	1	1						
		carbon monoxide	2	2					carboxyhemoglobin	46 % In Blood (unspecified) @ Unknown
252h	33 y M				A	Ingst	Int-S	1		
		ethylene glycol	1	1						
253ha	35 y M				A	Ingst	Int-S	1		
		sodium nitrate	1	1					methemoglobin	18.9 % In Blood (unspecified) @ Autopsy
		olanzapine	3	2					olanzapine	85.6 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	2	3					fluoxetine	210 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	2	3					norfluoxetine	350 ng/mL In Blood (unspecified) @ Autopsy
254pa	36 y M				U	Unk	Int-U	1		
		hydrocarbon (fluorinated)	1	1					1,1-difluoroethane	37 mg/L In Blood (unspecified) @ Autopsy
255ai	40 y M				U	Unk	Int-S	1		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		ethylene glycol	1	1						
		gabapentin	2	2						
		clonazepam	3	3						
		alprazolam	4	4						
		marijuana, N.O.S.	5	5						
256h	41 y M				A	Ingst	Int-S	1		
		hydrochloric acid	1	1						
		ethanol	2	2						
257phi	42 y F				A	Ingst	Unk	1		
		ethylene glycol	1	1					ethylene glycol	150.38 mg/dL In Whole Blood @ 1.5 h (pe)
		ethylene glycol	1	1					ethylene glycol	37.61 mg/dL In Whole Blood @ 15.5 h (pe)
258a	45 y M				A/C	Ingst	Int-S	1		
		ethylene glycol	1	1					ethylene glycol	187 mg/dL In Blood (unspecified) @ Unknown
		gabapentin	2	2					gabapentin	7.4 mcg/mL In Blood (unspecified) @ Unknown
259ai	47 y M				U	Unk	Unk	1		
		ethylene glycol	1	1						
260h	47 y F				U	Ingst	Int-S	1		
		ethylene glycol	1	1					ethylene glycol	233 mg/dL In Blood (unspecified) @ 6 h (pe)
		ethylene glycol	1	1					ethylene glycol	400 mg/dL In Blood (unspecified) @ 5 m (pe)
261pha	49 y F				A	Ingst	Unt-E	2		
		cyanide	1	1						
		carbon monoxide	2	2					carboxyhemoglobin	48 % In Blood (unspecified) @ Unknown
262h	49 y F				A	Ingst	Int-S	2		
		sodium nitirite	1	1						
		clonazepam	2	2						
263h	49 y F				A	Ingst	Int-S	1		
		hydrochloric acid	1	1						
264ai	50 y F				U	Unk	Unt-M	1		
		ethylene glycol	1	1						
265h	51 y M				A	Ingst	Int-U	1		
		ethylene glycol	1	1						
266ai	51 y M				U	Ingst+ Unk	Int-S	1		
		sodium nitirite	1	1						
		ethanol	2	2						
267h	53 y F				A	Ingst	Int-S	2		
		ethylene glycol	1	1						
		ethanol	2	2						
268ha	54 y F				A	Ingst	Int-S	1		
		ethylene glycol	1	1						
269h	55 y M				U	Ingst	Int-U	2		
		ethylene glycol	1	1					ethylene glycol	16 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen	2	2					acetaminophen (apap)	71 mcg/mL In Blood (unspecified) @ Unknown
270h	56 y M				A	Ingst	Int-S	3		
		ethylene glycol	1	1					ethylene glycol	452.2 mcg/mL In Blood (unspecified) @ Unknown
		diphenhydramine	2	2						
		melatonin	3	3						
		quetiapine	4	4						
		naproxen	5	5						
271ph	58 y M				A	Ingst	Unk	2		
		ethylene glycol	1	1						
272ha	58 y F				U	Unk	Unk	1		
		ethylene glycol	1	1					ethylene glycol	110 mg/dL In Serum @ Unknown
		drug, N.O.S.	2	2						
273ph	58 y M				A	Inhal	Unt-E	1		
		cyanide	1	1						
		carbon monoxide	2	2					carboxyhemoglobin	29 % In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	375 mg/dL In Blood (unspecified) @ Unknown
274	59 y M				A	Ingst	Int-S	1		
		nitrates	1	1						
275h	59 y M				U	Unk	Int-U	1		
		ethylene glycol	1	1					ethylene glycol	134 mg/dL In Blood (unspecified) @ Unknown
276h	61 y M				U	Ingst	Unk	1		
		ethylene glycol	1	1					ethylene glycol	122 mg/dL In Serum @ 14 h (pe)
277h	61 y F				A	Ingst	Unk	1		
		ethylene glycol	1	1					ethylene glycol	19 mg/dL In Serum @ Unknown
278h	63 y M				A	Ingst	Unk	2		
		chemical, N.O.S.	1	1						
		ethanol	2	2					ethanol	384 mg/dL In Blood (unspecified) @ Unknown
279ha	64 y M				A	Ingst+ Derm	Unt-G	2		
		hydrochloric acid	1	1						
280h	65 y F				U	Ingst	Int-U	1		
		ethylene glycol	1	1					ethylene glycol	1.6 mg/dL In Blood (unspecified) @ Unknown
		ethylene glycol	1	1					acetaminophen (apap)	22.7 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	2	2						
281h	65 y F				A	Ingst+ Inhal	Int-S	1		
		copper acetoarsenite	1	1					arsenic	1 mg/L In Whole Blood @ 1 d (pe)
		Lortab	2	2						
		diazepam	3	3						
282ha	80 y M				U	Derm	Unk	3		
		sulfuric acid	1	1						
283ha	86 y F				A	Ingst	Unt-G	1		
		sodium chlorite	1	1						
284h	86 y M				C	Ingst	Unt-T	2		
		magnesium oxide	1	1					magnesium	17 mmol/L In Serum @ Unknown
285	20+ y U				A	Unk	Int-S	2		
		cyanide	1	1						
286phi	Unknown adult (>=20 yrs) M				A	Ingst	Int-S	2		
		cyanide	1	1						
See Also case 67, 147, 320, 336, 395, 415, 440, 447, 449, 451, 457, 1001, 2105, 2705, 2952, 3403										
Cleaning Substances (Household)										
287h	14 y F				C	Ingst	Int-M	3		
		bleach (chlorate)	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
[288pha]	27 y M				A	Ingst+ Aspir	Unt-G	2		
		laundry detergent (pod)	1	1						
		ethanol	2	2					ethanol	12 mg/dL In Serum @ Unknown
289pa	35 y M				A	Inhal+ Derm	AR-O	1		
		hypochlorite	1	1						
		methamphetamine	2	2					amphetamine	0.29 mg/L In Blood (unspecified) @ Autopsy
		methamphetamine	2	2					methamphetamine	2.6 mg/L In Blood (unspecified) @ Autopsy
		marijuana	3	3					thc (tetrahydrocannabinol)	1.5 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	3	3					carboxy-thc	28 ng/mL In Blood (unspecified) @ Autopsy
290ph	42 y F				A	Par	Int-S	2		
		laundry (prewash)	1	1						
[291h]	44 y F				A	Ingst	Unt-M	1		
		cleaner (ammonium bifluoride/sulfuric acid)	1	1						
292h	50 y M				A	Inhal	Unt-G	2		
		sodium hydroxide/sodium hypochlorite	1	1						
293h	51 y M				A	Ingst	Int-S	1		
		drain cleaner (sulfuric acid)	1	1						
294h	55 y M				A	Ingst	Unt-G	2		
		cleaner (alkali/anionic/nonionic)	1	1						
295	58 y F				A	Ingst	Int-S	1		
		drain cleaner (sodium hydroxide/sodium hypochlorite)	1	1						
296h	59 y M				A	Ingst	Int-S	2		
		drain cleaner (sodium hydroxide/sodium hypochlorite/sodium silicate)	1	1						
		ethanol	2	2						
297h	59 y F				A	Ingst	Int-S	2		
		toilet bowl cleaner (acid)	1	1						
		ethanol	2	2						
298ph	70 y F				A	Ingst	Unt-G	3		
		cleaner (anionic/nonionic)	1	1						
299h	72 y M				A	Ingst	Int-S	1		
		drain cleaner (alkali)	1	1						
		acetaminophen	2	2					acetaminophen (apap)	101.2 mcg/mL In Blood (unspecified) @ Unknown
		diltiazem	3	3						
		laundry detergent	4	4						
300h	72 y M				A	Ingst	Int-S	2		
		toilet bowl cleaner (acid)	1	1						
301	78 y M				A	Ingst	Unt-G	3		
		laundry detergent, liquid	1	1						
302h	79 y F				A	Ingst	Int-S	1		
		hypochlorite	1	1						
303h	82 y F				A	Ingst+ Aspir	Unt-G	2		
		laundry detergent (pod)	1	1						
304h	92 y F				A	Ingst	Unk	2		
		cleaner (anionic/nonionic)	1	1						
305	94 y M				A	Ingst	Int-S	1		
		drain cleaner (sodium hydroxide)	1	1						
306h	97 y F				A	Ingst+ Aspir	Unt-G	2		
		disinfectant (isopropanol/pine oil)	1	1						
See Also case 13, 2464, 3137										
Cosmetics/Personal Care Products										
307pha	24 y M				A	Ingst	Int-S	3		
		hand sanitizer (ethanol)	1	1					ethanol	330 mg/dL In Blood (unspecified) @ Unknown
308h	27 y M				A	Ingst	Int-A	1		
		hand sanitizer (methanol)	1	1					methanol	240 mg/dL In Blood (unspecified) @ Unknown
309h	30 y M				A	Ingst	Int-S	1		
		hand sanitizer (methanol)	1	1					methanol	159 mg/dL In Serum @ Unknown
		gabapentin	2	2						
		venlafaxine	3	3						
		quetiapine	4	4						
310ph	32 y M				A	Ingst	Int-U	2		
		hand sanitizer (methanol)	1	1						
311h	35 y M				U	Ingst+ Par	Int-U	1		
		hand sanitizer (methanol)	1	1					methanol	198 mg/dL In Blood (unspecified) @ Unknown
		ibuprofen	2	2						
		sodium bicarbonate	3	3						
312ha	36 y M				U	Ingst	Int-A	1		
		hand sanitizer (methanol)	1	1					methanol	0.165 % (wt/Vol) In Blood (unspecified) @ Unknown
		ethanol	2	2						
313	38 y F				A	Ingst	Unk	1		
		hand sanitizer (methanol)	1	1					methanol	441 mg/dL In Blood (unspecified) @ Unknown
314h	39 y M				A	Ingst	Int-A	1		
		hand sanitizer (methanol)	1	1					methanol	278 mg/dL In Blood (unspecified) @ Unknown
		ethanol	2	2						
315a	41 y F				A	Ingst	Int-M	1		
		hand sanitizer (methanol)	1	1						
		propanolol	2	2						
		ethanol (non-beverage)	3	3					acetone	6.5 mg/mL In Blood (unspecified) @ Unknown
316ha	41 y F				A	Ingst	Int-A	1		
		hand sanitizer (methanol)	1	1					methanol	0.309 % (wt/Vol) In Blood (unspecified) @ Unknown
317ai	42 y F				C	Ingst	Int-A	3		
		ethanol (hand sanitizer)	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
318h	42 y F				A	Ingst	Int-A	2		
		hand sanitzer (unknown)	1	1						
[319ha]	47 y F				U	Ingst	Int-A	1		
		diethyltoluamide	2	1						
		hand sanitizer (methanol)	1	1					methanol	0.278 % (wt/Vol) In Blood (unspecified) @ Unknown
320h	48 y M				A	Ingst+ Inhal	Int-U	2		
		hand sanitizer (methanol)	1	1						
		compressed gas	2	2						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
[321ha]	48 y M				A	Ingst+ Inhal	Int-A	1		
		hand sanitizer (methanol)	1	1					methanol	194 mg/dL In Serum @ Unknown
		viral disease (COVID-19-Confirmed)	2	2						
322	49 y M				A	Ingst	Int-S	2		
		hand sanitizer (methanol)	1	1						
323pha	51 y M				A	Ingst	Int-U	1		
		hand sanitizer (methanol)	1	1					methanol	500 mg/dL In Blood (unspecified) @ Unknown
324h	52 y F				A	Ingst	Int-A	1		
		hand sanitizer (methanol)	1	1					methanol	406 mg/dL In Blood (unspecified) @ 5 h (pe)
		viral disease (COVID-19-Not Confirmed)	2	2						
[325ha]	53 y M				A	Ingst	Int-A	1		
		hand sanitizer (methanol)	1	1						
		ethanol	2	2					ethanol	34 mg/dL In Blood (unspecified) @ Unknown
326h	54 y M				A	Ingst	Int-A	1		
		hand sanitizer (methanol)	1	1					methanol	396 mg/dL In Blood (unspecified) @ Unknown
		hand sanitizer (methanol)	1	1					methanol	89 mg/dL In Blood (unspecified) @ Unknown
327h	55 y M				C	Ingst	Int-A	1		
		hand sanitizer (methanol)	1	1					methanol	165 mg/dL In Blood (unspecified) @ Unknown
		hand sanitizer (methanol)	1	1					methanol	419 mg/dL In Blood (unspecified) @ Unknown
		hand sanitizer (methanol)	1	1					methanol	44 mg/dL In Blood (unspecified) @ Unknown
328ph	65 y M				A	Ingst	Int-A	2		
		hand sanitizer (methanol)	1	1					methanol	72 mg/dL In Blood (unspecified) @ Unknown
329h	92 y M				A	Ingst	Unt-G	2		
		soap	1	1						
See Also case 13, 173, 2589										
Essential Oils										
330h	82 y M				A	Ingst	Unt-M	2		
		peppermint oil/spearmint oil	1	1						
331ha	15 m M				A	Ingst+ Oc+ Derm	Unt-G	2		
		oils (citronella)	1	1						
Fumes/Gases/Vapors										
332pi	1 y F				A	Inhal	Unt-G	3		
		carbon monoxide	1	1						
333pha	2 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	55 % In Blood (unspecified) @ Unknown
		carbon monoxide	2	2						
334pi	2 y F				A	Inhal	Unt-G	1		
		carbon monoxide	1	1						
335pi	2 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
[336ph]	2 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		cyanide	2	2						
		carbon monoxide	3	3						
[337ph]	2 y U				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
338ph	4 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
339pi	5 y F				A	Inhal	Unt-G	3		
		carbon monoxide	1	1						
340i	6 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
341pi	6 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
342pi	6 y M				U	Inhal	Unt-U	3		
		carbon monoxide	1	1						
343pha	7 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1					carboxyhemoglobin	14.4 % In Blood (unspecified) @ Unknown
344pi	8 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
345pi	10 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
346pi	11 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
347i	11 y M				A	Inhal	Oth-M	3		
		carbon monoxide	1	1						
348pi	12 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
349pi	13 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
350pi	13 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
351pi	15 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
352pi	15 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
353pi	15 y M				A	Inhal	Unt-U	3		
		carbon monoxide	1	1						
354pi	17 y M				A	Inhal	Unt-U	3		
		carbon monoxide	1	1						
355pi	17 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
356pi	19 y F				A	Inhal	Unt-G	3		
		carbon monoxide	1	1						
357ph	21 y M				C	Inhal+ Unk	Int-S	3		
		carbon monoxide	1	1						
		hyperthermia	2	2						
358pi	21 y F				A	Inhal	Unt-G	3		
		carbon monoxide	1	1						
359pi	21 y M				A	Inhal	Unt-O	1		
		hydrogen sulfide	1	1						
360pi	21 y M				A	Inhal	Unk	1		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		carbon monoxide	1	1						
361ph	24 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	60.9 % In Serum @ Unknown
362pi	24 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
363pi	25 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
364pha	25 y M				A	Ingst+ Inhal	Int-S	1		
		carbon monoxide	1	1					carboxyhemoglobin	48.4 % In Blood (unspecified) @ Unknown
		carbon monoxide	1	1					carboxyhemoglobin	8 % In Vitreous @ Autopsy
		ethanol	2	2					ethanol	112 mg/dL In Vitreous @ Autopsy
		ethanol	2	2					ethanol	145 mg/dL In Blood (unspecified) @ Unknown
365ph	26 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	57.4 % In Serum @ Unknown
366ai	28 y F				A	Inhal+ Unk	Int-S	1		
		carbon monoxide	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
367ai	29 y M				A	Inhal+ Unk	Int-S	1		
		carbon monoxide	1	1						
		ethanol	2	2						
		alprazolam	3	3						
368pi	30 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
369pi	30 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
370h	33 y F				A	Inhal	Int-S	2		
		fume-gas-vapor, N.O.S.	1	1						
371ph	34 y F				A	Inhal	Int-S	2		
		carbon monoxide	1	1					carboxyhemoglobin	21.5 % In Blood (unspecified) @ Unknown
		carbon monoxide	1	1					carboxyhemoglobin	54 % In Blood (unspecified) @ Unknown
[372pa]	34 y F				A	Inhal	Unk	1		
		chlorine gas	1	1						
373ph	36 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
374pi	37 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
375ph	37 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	50 % In Blood (unspecified) @ 5 m (pe)
376ph	37 y F				A	Inhal	Unk	1		
		carbon monoxide	1	1					carboxyhemoglobin	50 % In Blood (unspecified) @ Unknown
377pai	38 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
378pha	39 y M				A	Inhal	Int-S	1		
		propane	1	1						
379ai	40 y M				A	Inhal	Int-S	1		
		carbon monoxide	1	1						
380pi	43 y M				U	Inhal	Unt-O	1		
		hydrogen sulfide	1	1						
381pi	43 y F				A	Inhal	Int-S	1		
		carbon monoxide	1	1						
382pi	45 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
383pi	45 y F				A	Inhal	Unt-G	3		
		carbon monoxide	1	1						
384ai	47 y F				A	Inhal	Int-S	1		
		carbon monoxide	1	1						
[385ph]	47 y M				A	Inhal	Unt-O	1		
		hydrogen sulfide	1	1						
386ai	47 y M				A	Inhal+ Unk	Int-S	1		
		carbon monoxide	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
387p	47 y M				A	Inhal	Unt-O	2		
		hydrogen sulfide	1	1						
388pi	48 y M				A	Inhal	Unt-O	1		
		hydrogen sulfide	1	1						
389pai	50 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
390pai	50 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
391ai	51 y F				A	Inhal+ Unk	Int-A	1		
		carbon monoxide	1	1						
		methamphetamine	2	2						
392pha	51 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	30.3 % In Blood (unspecified) @ 5 m (pe)
		carbon monoxide	1	1					carboxyhemoglobin	7 % In Whole Blood @ 6 h (pe)
		ethanol	2	2					ethanol	140 mg/dL In Serum @ Unknown
393ph	52 y M				A	Ingst+ Inhal	Int-S	1		
		carbon monoxide	1	1					carboxyhemoglobin	33 % In Serum @ Unknown
		drug, N.O.S.	2	2						
		acetaminophen	3	3					acetaminophen (apap)	97 mcg/mL In Plasma @ Unknown
394p	52 y M				A/C	Inhal	Unt-E	2		
		carbon monoxide	1	1						
395h	52 y M				A	Inhal	Unt-O	1		
		chlorine gas	1	1						
		chemical, N.O.S.	2	2						
396ph	52 y M				A	Inhal+ Unk	Unk	1		
		carbon monoxide	1	1						
		heroin	2	2						
397h	53 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1					carboxyhemoglobin	13.2 % In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
398pi	53 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
399pi	53 y M				U	Inhal	Unt-E	2		
		carbon monoxide	1	1						
400pi	54 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
401i	55 y M				A	Inhal	Unt-E	3		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
402pi	56 y M				U	Inhal	Unk	1		
		carbon monoxide	1	1						
403h	56 y F				U	Inhal	Unt-E	1		
		carbon monoxide	1	1						
404p	57 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
405	58 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
406ph	58 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
407ph	58 y M				A	Inhal	Int-S	1		
		carbon monoxide	1	1					carboxyhemoglobin	45.6 % In Blood (unspecified) @ Unknown
408ph	59 y M				A	Inhal	Int-S	2		
		carbon monoxide	1	1					carboxyhemoglobin	20 % In Blood (unspecified) @ Unknown
		carbon monoxide	1	1					carboxyhemoglobin	5.6 % In Blood (unspecified) @ Unknown
409pi	59 y F				A	Inhal	Unt-G	3		
		carbon monoxide	1	1						
410ai	59 y F				A	Ingst+ Inhal	Int-S	1		
		carbon monoxide	1	1						
		ethanol	2	2						
411p	60 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
412p	60 y F				A	Inhal	Unt-M	2		
		chloramine gas	1	1						
		chlorine gas	2	2						
413ph	60 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
414pi	61 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
415h	61 y M				A	Inhal+ Derm	Unt-E	3		
		carbon monoxide	1	1					carboxyhemoglobin	20.6 % In Blood (unspecified) @ Unknown
		cyanide	2	2						
416pha	61 y M				A	Inhal	Unt-E	3		
		carbon monoxide	1	1						
417h	62 y M				A	Ingst+ Inhal	Unt-E	2		
		carbon monoxide	1	1						
		metformin	2	1						
		ethanol	3	3					ethanol	0.13 g/dL In Blood (unspecified) @ Unknown
418ai	62 y M				A	Inhal+ Unk	Int-S	1		
		carbon monoxide	1	1						
		marijuana (concentrate)	2	2						
419pi	63 y M				A	Inhal	Unt-U	3		
		carbon monoxide	1	1						
420ai	63 y F				A	Ingst+ Inhal	Int-S	1		
		carbon monoxide	1	1						
		ethanol	2	2						
421ph	65 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	5.8 % In Blood (unspecified) @ 6 h (pe)
		carbon monoxide	1	1					carboxyhemoglobin	52 % In Blood (unspecified) @ 1 h (pe)
		carbon monoxide	2	2						
422pi	65 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
423pi	65 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
424pi	66 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
425pi	66 y M				A	Inhal	Unt-G	1		
		carbon monoxide	1	1						
426pi	69 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
427pi	69 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
428ph	70 y M				A	Inhal	Unt-E	3		
		carbon monoxide	1	1					carboxyhemoglobin	50 % In Blood (unspecified) @ Unknown
429p	70 y M				A	Inhal	Unk	2		
		carbon monoxide	1	1						
430pi	71 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
431ph	71 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1					carboxyhemoglobin	4.4 % In Blood (unspecified) @ Unknown
		carbon monoxide	1	1					carboxyhemoglobin	41.9 % In Blood (unspecified) @ Unknown
		carbon monoxide	2	2						
432ha	72 y M				A	Inhal+ Derm	Unk	2		
		carbon monoxide	1	1						
		hyperthermia	2	2						
433pi	74 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
434pi	74 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
435i	74 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
436ph	77 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
437pi	78 y M				A	Inhal	Unt-E	2		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		carbon monoxide	1	1						
438i	78 y M				A	Inhal	Unt-M	3		
		carbon monoxide	1	1						
439p	79 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
440ph	81 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1					carboxyhemoglobin	23.9 % In Blood (unspecified) @ Unknown
		cyanide	2	2					cyanide	10 mcg/mL In Blood (unspecified) @ Unknown
441phi	81 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
442pi	82 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
443ph	84 y F				U	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	43 % In Blood (unspecified) @ Unknown
444ph	85 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1					carboxyhemoglobin	38.5 % In Blood (unspecified) @ Unknown
445pi	86 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
446ai	87 y M				U	Unk	Int-S	1		
		carbon monoxide	1	1						
		metoprolol	2	2						
		loperamide	3	3						
447ph	91 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1					carboxyhemoglobin	30 % In Serum @ 1 h (pe)
448ai	94 y F				A	Unk	Unt-E	1		
		carbon monoxide	1	1						
449h	95 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1					carboxyhemoglobin	20.7 % In Blood (unspecified) @ Unknown
		cyanide	2	2						
450pi	23 m F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
451ph	80+ y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	21.4 % In Blood (unspecified) @ Unknown
		cyanide	2	2						
452p	Unknown adult (>=20 yrs) M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
453pi	Unknown adult (>=20 yrs) F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
454pi	Unknown adult (>=20 yrs) M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
455pi	Unknown adult (>=20 yrs) M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
456pa	Unknown adult (>=20 yrs) M				U	Inhal	Int-S	1		
		carbon monoxide	1	1						
		ethanol	2	2						
457ha	Unknown adult (>=20 yrs) M				A	Inhal	Unt-E	3		
		carbon monoxide	1	1						
		cyanide	2	2						
458pi	Unknown adult (>=20 yrs) M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
459pi	Unknown adult (>=20 yrs) U				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
460pi	Unknown adult (>=20 yrs) M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
461p	Unknown adult (>=20 yrs) U				A	Inhal	Int-S	1		
		hydrogen sulfide	1	1						
462pi	Unknown adult (>=20 yrs) F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
463p	Unknown adult (>=20 yrs) M				A	Inhal	Int-S	2		
		carbon monoxide	1	1						
464hi	Unknown adult (>=20 yrs) M				U	Inhal	Unt-E	2		
		carbon monoxide	1	1						
465p	Unknown adult (>=20 yrs) M				A	Inhal	Int-M	2		
		carbon monoxide	1	1						
466p	Unknown age F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
467pi	Unknown age U				U	Inhal	Unk	3		
		carbon monoxide	1	1						
See Also case 5, 158, 217, 218, 219, 251, 261, 273, 998										
Heavy Metals										
468ai	42 y M				U	Unk	Int-A	1		
		arsenic	1	1						
		amphetamine	2	2						
		ethanol	3	3						
469pai	60 y M				A	Derm	Unt-O	1		
		chromic acid	1	1						
470h	76 y F				U	Unk	Int-M	3		
		magnesium	1	1						
See Also case 2721										
Hydrocarbons										
471ai	27 y M				U	Unk	Int-A	1		
		hydrocarbon, fluorinated	1	1						
472ai	27 y M				A/C	Inhal	Int-A	2		
		hydrocarbon, fluorinated	1	1						
473h	27 y M				A	Inhal	Int-A	2		
		hydrocarbon, halogenated	1	1						
474ai	29 y F				U	Unk	Unk	1		
		hydrocarbon, fluorinated	1	1						
475ai	29 y F				U	Unk	Unt-M	1		
		hydrocarbon, fluorinated	1	1						
476ph	29 y F				A	Inhal+ Unk	Int-A	2		
		hydrocarbon, fluorinated	1	1					acetaminophen (apap)	12.3 mg/dL In Serum @ Unknown
		acetaminophen	2	2						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
477h	30 y M				A	Inhal	Int-A	2		
		hydrocarbon, fluorinated	1	1						
478ai	30 y F				U	Unk	Int-A	1		
		hydrocarbon, fluorinated	1	1						
		aripiprazole	2	2						
		alprazolam	3	3						
479p	31 y F				A	Inhal	Int-A	3		
		hydrocarbon, fluorinated	1	1						
480h	31 y M				A/C	Inhal	Int-A	1		
		fluorinated hydrocarbon	1	1						
481ha	32 y M				A	Inhal	Int-A	2		
		fluorinated hydrocarbon	1	1					1,1-difluoroethane	9.5 mg/mL In Blood (unspecified) @ Unknown
482pi	32 y M				A	Inhal	Int-A	2		
		hydrocarbon, fluorinated	1	1						
483ha	33 y F-Pregnant				C	Inhal	Int-A	2		
		hydrocarbon, fluorinated	1	1						
484a	35 y M				U	Inhal	Int-A	1		
		hydrocarbon (fluorinated)	1	1					1,1-difluoroethane	39 mcg/mL In Whole Blood @ Autopsy
485ai	35 y F				U	Unk	Int-A	1		
		hydrocarbon, fluorinated	1	1						
		mirtazapine	2	2						
		hydroxyzine	3	3						
486ha	38 y F				C	Inhal	Int-A	2		
		hydrocarbon (fluorinated)	1	1						
		hydrocarbon, fluorinated	2	2					1,1-difluoroethane	9.1 mcg/mL In Whole Blood @ Autopsy
[487ha]	41 y M				A/C	Inhal	Int-A	1		
		hydrocarbon, fluorinated	1	1					1,1-difluoroethane	34 mcg/mL In Blood (unspecified) @ Autopsy
488ai	42 y M				U	Unk	Int-A	1		
		hydrocarbon, fluorinated	1	1						
		clonazepam	2	2						
		ethanol	3	3						
489ha	45 y M				U	Inhal	Int-A	2		
		hydrocarbon, fluorinated	1	1						
490pha	46 y F				A	Inhal	Int-A	1		
		hydrocarbon, fluorinated	1	1						
		cocaine	2	2						
491ph	51 y M				A	Inhal	Int-A	2		
		hydrocarbon, fluorinated	2	1						
		hydrocarbon (inhalation)	1	2					ethanol	160 mg/dL In Serum @ Unknown
492ai	52 y M				U	Unk	Int-A	1		
		hydrocarbon, fluorinated	1	1						
493	64 y F				A	Ingst+ Aspir	Int-S	1		
		gasoline	1	1						
See Also case 201, 769, 3014, 3319										
Industrial Cleaners										
494ha	48 y M				A	Ingst	Unt-M	1		
		cleaner (acid)	1	1						
		cocaine	2	2					benzoylecognine	0.37 mcg/mL In Blood (unspecified) @ 30 m (pe)
[495ha]	70 y M				A	Ingst	Unt-M	1		
		cleaner (acid)	1	1						
See Also case 1958										
Infectious and Toxin-Mediated Diseases										
496pai	50 y M				A	Inhal	Unt-E	2		
		viral disease (COVID-19-Not Confirmed)	6	1						
		cocaine	1	2					cocaine	41 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	1	2					benzoylecognine	820 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	2	3					methamphetamine	180 ng/mL In Blood (unspecified) @ Autopsy
		amphetamine	3	4					amphetamine	9.8 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	4	5					fentanyl	21 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	4	5					norfentanyl	5.9 ng/mL In Blood (unspecified) @ Autopsy
		trazodone	5	6					trazodone	0.092 mcg/mL In Blood (unspecified) @ Autopsy
497h	54 y M				A	Ingst+ Par	AR-D	3		
		viral disease (COVID-19-Confirmed)	1	1						
		duloxetine (ER)	2	2						
		dexmedetomidine	3	3						
[498pha]	62 y F				A	Ingst	Unt-F	1		
		paralytic shellfish	1	1						
499h	67 y F				C	Ingst	Unt-M	3		
		viral disease (COVID-19-Not Confirmed)	1	1						
		acetaminophen	2	2					acetaminophen (apap)	46 mcg/mL In Blood (unspecified) @ 1 h (pe)
		salicylate	3	3					salicylate	2.8 mg/dL In Blood (unspecified) @ 6 h (pe)
500i	92 y F				U	Inhal	Unt-G	2		
		viral disease (COVID-19-Confirmed)	1	1						
See Also case 9, 147, 283, 321, 324, 636, 1160, 1434, 2068, 2370, 2512, 2572, 2603, 2619, 2816, 3024, 3049, 3071, 3123, 3128, 3793										
Mushrooms										
501pai	60 y M				U	Ingst	Oth-M	3		
		mushroom (unknown)	1	1						
		mushroom (non-toxic)	2	2						
Other/Unknown Nondrug Substances										
502h	30 y M				U	Unk	Int-A	2		
		substance (non-drug), N.O.S.	2	1						
		THC homolog	1	2						
503h	38 y M				A	Oth+ Unk	Int-A	1		
		hyperthermia	1	1						
		methamphetamine	2	2						
504h	71 y F				A	Ingst	Int-U	3		
		substance (non-drug), N.O.S.	1	1					ethanol	100 mg/mL In Serum @ Unknown
		ethanol	2	2						
See Also case 80, 90, 122, 142, 190, 238, 357, 432, 891, 1145, 1149, 1195, 1433, 1471, 1728, 1764, 2149, 2207, 2426, 2445, 2611, 3000, 3039, 3100, 3118, 3122, 3133, 3141, 3150, 3152, 3161, 3176, 3237, 3238, 3248, 3262, 3282, 3308, 3321, 3337, 3350, 3351, 3363, 3373, 3385, 3388, 3393, 3394, 3406, 3418, 3419, 3420, 3424, 3437, 3442, 3458, 3461, 3475, 3478, 3492, 3523, 3525, 3527, 3528, 3536, 3537, 3551, 3554, 3576, 3577, 3578, 3609, 3615, 3619, 3621, 3638, 3646, 3670, 3671, 3672, 3676, 3693, 3707, 3711, 3716, 3794										
Paints and Stripping Agents										
505ph	41 y F				A	Inhal	Int-A	2		
		paint (aerosol)	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
[506h]	46 y M				A	Ingst+ Inhal+ Aspir+ Derm	Unt-O	1		
		stripping agent	1	1						
Pesticides										
[507]	2 y M				A	Ingst	Unt-G	1		
		diquat	1	1						
508ph	3 y M				A	Ingst+ Aspir	Unk	2		
		pyrethroids	1	1						
[509ha]	8 y M				A	Ingst	Unt-M	2		
		diquat	1	1						
510ha	18 y M				U	Ingst+ Unk	Int-S	1		
		dinitrophenol	1	1						
		Mitragyna speciosa korthals	2	2					mitragynine	470 ng/mL In Blood (unspecified) @ Autopsy
		pyrazolam	3	3					pyrazolam	7.8 ng/mL In Blood (unspecified) @ Autopsy
		caffeine	4	4					caffeine	1 mcg/mL In Blood (unspecified) @ Autopsy
[511h]	29 y F				U	Par	Int-A	2		
		pyrethroids	1	1						
[512h]	30 y M				A	Ingst	Int-M	1		
		dinitrophenol	1	1						
513ha	44 y M				A	Ingst+ Par	Unk	1		
		paraquat	1	1						
		metoprolol	2	2						
514h	46 y M				U	Unk	Unk	1		
		insecticide, N.O.S.	4	1						
		cocaine	3	2					benzoylecognine	1.1 mg/L In Blood (unspecified) @ Unknown
		heroin	1	3					morphine	0.11 mg/L In Blood (unspecified) @ Unknown
		hydromorphone	2	4					hydromorphone	0.02 mg/L In Blood (unspecified) @ Unknown
515	47 y M				A	Ingst	Int-S	2		
		glyphosate	1	1						
[516ha]	47 y M				A	Ingst	Int-S	1		
		glyphosate	1	1					glyphosate	95000 ng/mL In Blood (unspecified) @ Unknown
517h	50 y M				A	Ingst	Unt-M	1		
		paraquat	1	1						
518h	54 y M				A	Ingst	Unt-G	1		
		herbicide, N.O.S.	1	1						
519h	54 y M				A	Ingst	Int-S	2		
		rodenticide, N.O.S.	1	1						
520ha	56 y M				A	Ingst	Int-S	1		
		glyphosate	1	1						
521ph	57 y M				A	Ingst	Int-S	1		
		aluminum phosphide	1	1						
[522h]	58 y F				A	Ingst	Int-S	2		
		aldicarb	1	1						
		drug, N.O.S.	2	2						
523h	59 y M				A	Ingst	Int-S	2		
		glyphosate	1	1						
		ethanol	2	2					ethanol	252 mg/dL In Serum @ Unknown
[524h]	60 y M				A	Ingst	Int-S	1		
		paraquat	1	1						
525pha	62 y F				A	Ingst+ Aspir	Int-S	1		
		strychnine	1	1					strychnine	0.73 mcg/mL In Whole Blood @ Autopsy
526ha	63 y M				A	Ingst	Int-S	1		
		glyphosate	1	1						
527h	65 y M				A	Ingst	Int-S	2		
		glyphosate	1	1						
528h	70 y M				A	Ingst	Int-S	2		
		glyphosate	1	1						
[529ha]	75 y M				A	Ingst	Unt-M	1		
		paraquat	1	1						
530ph	76 y M				A	Ingst	Int-S	2		
		glyphosate	1	1						
531h	85 y M				A	Ingst	Unt-G	2		
		copper sulfate	1	1					methemoglobin	3.7 % In Blood (unspecified) @ Unknown
532ph	50+ y M				A	Ingst	Int-S	1		
		phosphine	1	1						
See Also case 319, 2195, 2758, 3177										
Plants										
533ai	26 y M				U	Unk	Int-A	1		
		plant, mitragyna	1	1						
		flualprazolam	2	2						
		ethanol	3	3						
534ai	31 y M				U	Unk	Int-A	1		
		plant, mitragyna	1	1						
[535ha]	43 y F				A	Ingst	Unt-M	2		
		Aleurites moluccana	1	1						
		plant, cardiac glycoside	2	2						
536ai	51 y F				U	Unk	Int-A	1		
		plant, mitragyna	1	1						
		sertraline	2	2						
537i	56 y F				C	Ingst	AR-O	3		
		Aleurites fordii	1	1						
538ha	67 y F				A	Ingst	Int-S	1		
		Nerium oleander	1	1					digoxin	1.1 ng/mL In Blood (unspecified) @ Unknown
		trazodone	2	2					mcpp (meta-chlorophenylpiperazine)	0.6 mcg/mL In Blood (unspecified) @ Autopsy
		trazodone	2	2					trazodone	2.3 mcg/mL In Urine (quantitative only) @ Unknown
		trazodone	2	2					mcpp (meta-chlorophenylpiperazine)	2.5 mcg/mL In Urine (quantitative only) @ Unknown
		trazodone	2	2					trazodone	3.2 mcg/mL In Blood (unspecified) @ Autopsy
		temazepam	3	3					temazepam	20000 ng/mL In Urine (quantitative only) @ Unknown
		temazepam	3	3					temazepam	3900 ng/mL In Blood (unspecified) @ Autopsy
		lorazepam	4	4					lorazepam	2400 ng/mL In Urine (quantitative only) @ Unknown
		lorazepam	4	4					lorazepam	270 ng/mL In Blood (unspecified)

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										@ Autopsy
		lorazepam	4	4					oxazepam	320 ng/mL In Blood (unspecified) @ Autopsy
		lorazepam	4	4					oxazepam	4600 ng/mL In Urine (quantitative only) @ Unknown
		diphenhydramine	5	5					diphenhydramine	3300 ng/mL In Urine (quantitative only) @ Unknown
		diphenhydramine	5	5					diphenhydramine	440 ng/mL In Blood (unspecified) @ Autopsy
See Also case 554, 707, 789, 953, 999, 1004, 1115, 1125, 1191, 1292, 1329, 1333, 1385, 1556, 1714, 1742, 1874, 2111, 3147, 3151										
Weapons of Mass Destruction										
539ai	57 y M				U	Inhal+ Unk	Int-A	1		
		substance (non-powder), N.O.S.	1	1						
		metoprolol	2	2						
		loperamide	3	3						
540ai	70 y M				A	Unk	Int-A	2		
		powder, N.O.S.	1	1						
Pharmaceutical Exposures										
Analgesics										
541ai	2 y M				U	Unk	Unk	1		
		fentanyl, N.O.S.	1	1						
		isopropanol	2	2						
[542pa]	2 y M				A	Ingst	Unt-G	2		
		fentanyl (non-prescription N.O.S.)	1	1						
		hydralazine	2	2						
543ai	3 y F				U	Unk	Unk	1		
		methadone	1	1						
544ai	3 y M				A	Unk	Unt-G	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
545ai	3 y M				U	Unk	Unk	1		
		fentanyl, N.O.S.	1	1						
		fentanyl analogs (despropionyl fentanyl)	2	2						
546ph	4 y M				A	Ingst	Unt-G	2		
		methadone	1	1						
547ph	12 y F				A	Ingst	Int-S	2		
		acetaminophen/codeine	1	1						
		tamsulosin	2	2						
		ondansetron	3	3						
		levothyroxine	4	4						
		nabumetone	5	5						
		ibuprofen	6	6						
		naproxen	7	7						
548ph	13 y F				A	Ingst	Int-S	1		
		oxycodone	1	1						
549ha	13 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	86 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	90 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen	2	2					acetaminophen (apap)	28.5 mcg/mL In Blood (unspecified) @ Unknown
550ai	14 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
551pha	15 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1					norfentanyl	0.78 ng/mL In Blood (unspecified) @ Unknown
		fentanyl, N.O.S.	1	1					fentanyl	2.4 ng/mL In Blood (unspecified) @ Unknown
552ai	16 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		marijuana	3	3						
553ai	16 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
554pha	16 y M				U	Unk	Int-A	2		
		fentanyl	1	1						
		benzodiazepine	2	2						
		acetaminophen/oxycodone	3	3						
		ethanol	4	4						
		plant, mitragyna	5	5					mitragynine	12 ng/mL In Blood (unspecified) @ Autopsy
555ai	16 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
556ai	16 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		chlorpheniramine	2	2						
		marijuana, N.O.S.	3	3						
557h	16 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	68 mcg/mL In Serum @ Unknown
558ai	16 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
559h	16 y F				A	Ingst	Int-S	2		
		colchicine	1	1						
		indomethacin	2	2						
560pha	16 y M				U	Inhal+ Unk	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	128.7 ng/mL In Blood (unspecified) @ Unknown
		fentanyl, N.O.S.	1	1					norfentanyl	284 ng/mL In Blood (unspecified) @ Unknown
		amphetamine	2	2						
		marijuana	3	3						
561ha	16 y M				A	Ingst	Int-A	2		
		fentanyl (non-prescription N.O.S.)	1	1						
		promethazine	2	2						
562ai	16 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
563ai	16 y M				U	Unk	Int-U	1		
		fentanyl, N.O.S.	1	1						
		benzodiazepine	2	2						
564ai	16 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
565ph	16 y F				A/C	Ingst	Int-S	2		
		oxycodone	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		fluoxetine	2	2						
566ai	17 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
567ai	17 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
568ai	17 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		ethanol	3	3						
569ai	17 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
570ai	17 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
571pha	17 y M				U	Ingst	Int-A	2		
		fentanyl, N.O.S.	1	1					fentanyl	1.5 ng/mL In Blood (unspecified) @ 24 h (pe)
		fentanyl, N.O.S.	1	1					norfentanyl	1.5 ng/mL In Blood (unspecified) @ 24 h (pe)
572ai	17 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
573ai	17 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		etizolam	2	2						
		alprazolam	3	3						
574pha	17 y F				U	Ingst	Int-S	1		
		fentanyl (non-prescription N.O.S.)	1	1						
		alprazolam	3	2						
		ethanol	2	3						
575ai	17 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
576pha	17 y M				C	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	2.5 ng/mL In Blood (unspecified) @ Unknown
		marijuana	2	2					delta-9-thc	1.2 ng/mL In Blood (unspecified) @ Unknown
		marijuana	2	2					11-oh-thc (11-hydroxy-delta-9-tetrahydrocannabinol)	1.9 ng/mL In Blood (unspecified) @ Unknown
		marijuana	2	2					delta-9-carboxy-thc	48 ng/mL In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	11 mg/dL In Serum @ Unknown
577ha	17 y F				A/C	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	114 mcg/mL In Blood (unspecified) @ Unknown
578ph	17 y M				A	Unk	Unk	1		
		oxycodone	1	1						
579ai	17 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
580ai	17 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
581ai	18 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
582ai	18 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
583ai	18 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
584ai	18 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
585ai	18 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
586ai	18 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		hydroxyzine	2	2						
587ai	18 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		marijuana	3	3						
588ai	18 y M				U	Unk	Unt-M	1		
		fentanyl, N.O.S.	1	1						
589ai	18 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana (concentrate)	2	2						
590ai	18 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
591ai	18 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
592ai	18 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		fluoxetine	2	2						
		marijuana	3	3						
593ph	18 y F				A	Ingst+ Unk	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	214 mcg/mL In Blood (unspecified) @ 18 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	266 mcg/mL In Blood (unspecified) @ 12 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	441 mcg/mL In Blood (unspecified) @ 3 h (pe)
		tramadol	2	2						
		benzodiazepine	3	3						
		cocaine	4	4						
594ai	18 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
595h	18 y M				A	Unk	Int-A	1		
		fentanyl	1	1						
		midazolam	2	2						
		cocaine	3	3						
		marijuana	4	4						
		gabapentin	5	5						
596ai	18 y M				U	Unk	Int-A	3		
		fentanyl, N.O.S.	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		escitalopram	2	2						
		topiramate	3	3						
597ai	18 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		amphetamine	2	2						
598ai	18 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
599ai	18 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		escitalopram	2	2						
600h	18 y F				U	Ingst+ Unk	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	8.4 mcg/mL In Serum @ Unknown
		ethanol	2	2					ethanol	42.2 mg/dL In Serum @ Unknown
601ph	18 y M				U	Unk	Unk	2		
		narcotic, N.O.S.	1	1						
		benzodiazepine	2	2						
602ph	19 y F				A	Unk	Int-A	2		
		fentanyl	1	1						
603ai	19 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
604ai	19 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
605ai	19 y M				U	Unk	Int-A	1		
		heroin	1	1						
		doxylamine	2	2						
		marijuana	3	3						
606ai	19 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
607pa	19 y F				U	Ingst	Int-U	1		
		fentanyl	1	1					norfentanyl	1.4 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	11.7 ng/mL In Blood (unspecified) @ Autopsy
608ai	19 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		tramadol	2	2						
		marijuana	3	3						
609ai	19 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
		diphenhydramine	3	3						
610ai	19 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
611ai	19 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		morphine	2	2						
		lorazepam	3	3						
612ai	19 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
613ai	19 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
614ai	19 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
615ai	19 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
616ai	19 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
617ai	19 y F				U	Unk	Unk	3		
		oxycodone	1	1						
		clonazepam	2	2						
		diphenhydramine	3	3						
618ai	19 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		olanzapine	3	3						
619ai	19 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		etizolam	3	3						
620ai	19 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
621ai	19 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		lysergic acid diethylamide (LSD)	3	3						
622ai	19 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
623ai	19 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		acetaminophen	2	2						
624ai	19 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		cocaine	3	3						
625ai	19 y M				U	Unk	Int-U	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
626ai	19 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
627pha	19 y M				A/C	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		etizolam	3	3						
628pai	19 y M				A	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	0.015 mg/L In Whole Blood @ Autopsy
		heroin	2	2					morphine (free)	65 mcg/L In Whole Blood @ Autopsy
		amphetamine	3	3						
		ethanol	4	4					ethanol	20 mg/dL In Whole Blood @ Autopsy
		ethanol	4	4					ethanol	30 mg/dL In Whole Blood @

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										Autopsy
		ethanol	4	4					ethanol	50 mg/dL In Vitreous @ Autopsy
		ethanol	4	4					ethanol	70 mg/dL In Urine (quantitative only) @ Autopsy
629ai	20 y M				U	Unk	Int-S	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
630ai	20 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
631ai	20 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		marijuana, N.O.S.	3	3						
632ai	20 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		marijuana	3	3						
633ai	20 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
634ai	20 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
635ai	20 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		marijuana, N.O.S.	3	3						
636h	20 y M				U	Unk	Int-A	3		
		fentanyl, N.O.S.	1	1						
		viral disease (COVID-19-Not Confirmed)	2	2						
		marijuana	3	3						
637ai	20 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
638ai	20 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		trazodone	2	2						
		hydroxyzine	3	3						
639ai	20 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		marijuana, N.O.S.	3	3						
640ai	20 y M				A	Par	Int-A	2		
		heroin	1	1						
641ai	20 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		marijuana, N.O.S.	3	3						
642ai	20 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
643ai	20 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
		aripiprazole	3	3						
644ai	20 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		diphenhydramine	2	2						
		marijuana, N.O.S.	3	3						
645ai	20 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
646ai	20 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
647h	20 y F				C	Ingst	Unt-T	2		
		acetaminophen	1	1					acetaminophen (apap)	24.7 mcg/mL In Blood (unspecified) @ Unknown
648h	20 y F				A/C	Ingst	Unt-T	1		
		acetaminophen	1	1					acetaminophen (apap)	131 mcg/mL In Blood (unspecified) @ 1 h (pe)
649ai	21 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
650ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		lorazepam	2	2						
		marijuana	3	3						
651ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		sertraline	2	2						
		hydroxyzine	3	3						
		dicyclomine	4	4						
652ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		citalopram	2	2						
		hydroxyzine	3	3						
653ai	21 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		hydroxyzine	2	2						
		citalopram	3	3						
654ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
655ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
656ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		marijuana	3	3						
657ai	21 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
658ai	21 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
659ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
660ai	21 y M				U	Unk	Int-A	1		
		heroin	1	1						
661ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		amphetamine (hallucinogenic)	2	2						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		alprazolam	3	3						
662ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
663ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
664ai	21 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
665ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
666ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
667ai	21 y M				U	Unk	Int-A	2		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		marijuana	3	3						
668ai	21 y F				A/C	Unk	Int-A	2		
		heroin	1	1						
669ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		marijuana	3	3						
670ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		marijuana, N.O.S.	3	3						
671ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
672ai	21 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		citalopram	2	2						
		ethanol	3	3						
673ai	21 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
674ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
675ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		benzodiazepine	2	2						
676ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
677ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		loperamide	2	2						
		marijuana, N.O.S.	3	3						
678ai	21 y M				U	Unk	Int-U	1		
		fentanyl, N.O.S.	1	1						
679ph	21 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		benzodiazepine	2	2						
		marijuana	3	3						
680ai	21 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
681ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		fentanyl analogs (despropionyl fentanyl)	2	2						
		methamphetamine	3	3						
682pa	21 y M				A/C	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	25 ng/mL In Blood (unspecified) @ Autopsy
683ph	21 y M				A/C	Ingst	Int-A	2		
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	32.8 mcg/mL In Blood (unspecified) @ Unknown
684ai	21 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
685ai	21 y F				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
686ai	21 y F				A/C	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
687ai	22 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
688ai	22 y F				U	Unk	Int-A	1		
		heroin	1	1						
689ai	22 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
690ai	22 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
691ai	22 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		marijuana	3	3						
692ai	22 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
693ai	22 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
694ai	22 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
695ai	22 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		marijuana	3	3						
696ai	22 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		oxymorphone	3	3						
697ai	22 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
698ai	22 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		chlorpheniramine	2	2						
		dextromethorphan	3	3						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
699ai	22 y M				U	Unk	Int-S	1		
		fentanyl, N.O.S.	1	1						
		quetiapine	2	2						
700i	22 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		etizolam	2	2						
		ethanol	3	3						
701ai	22 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		etizolam	2	2						
		marijuana, N.O.S.	3	3						
702ai	22 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
703ai	22 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		etizolam	2	2						
		alprazolam	3	3						
704ai	22 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		doxylamine	2	2						
		marijuana, N.O.S.	3	3						
705ai	22 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		marijuana, N.O.S.	3	3						
706ai	22 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
707ai	22 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		plant, mitragyna	2	2						
708ai	22 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
709ai	22 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
710ai	22 y M				U	Unk	Int-U	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
711ai	22 y M				U	Unk	Int-S	1		
		fentanyl, N.O.S.	1	1						
712ai	22 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		flualprazolam	3	3						
		etizolam	4	4						
		ethanol	5	5						
713ai	22 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
714pha	22 y M				U	Ingst+ Par	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	16 ng/mL In Blood (unspecified) @ 5 m (pe)
		benzodiazepine	2	2						
		marijuana	3	3						
715pha	22 y M				A	Unk	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
716ai	22 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		heroin	2	2						
		methamphetamine	3	3						
717ai	22 y F				A	Inhal	Int-A	2		
		heroin	1	1						
718ai	22 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
719ai	22 y M				A	Ingst	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		ethanol	3	3						
720ai	22 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		morphine	2	2						
		codeine	3	3						
		clonazepam	4	4						
721ai	22 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		tramadol	2	2						
		alprazolam	3	3						
722ai	22 y F				U	Ingst+ Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
723ai	22 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		trazodone	2	2						
		oxycodone	3	3						
		clonazepam	4	4						
724ai	23 y F				U	Unk	Int-A	1		
		methadone	1	1						
		methamphetamine	2	2						
725ai	23 y M				U	Unk	Int-A	1		
		heroin	1	1						
		codeine	2	2						
726ai	23 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		alprazolam	3	3						
727ai	23 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
728ai	23 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		acetaminophen	3	3						
729ai	23 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
730ai	23 y M				U	Unk	Unt-M	2		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
731ai	23 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
732ai	23 y F				U	Ingst+ Unk	Int-A	1		
		fentanyl	1	1						
		duloxetine (ER)	2	2						
		ethanol	3	3						
733ai	23 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		marijuana	3	3						
734ai	23 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
735ai	23 y F				U	Unk	Unk	2		
		narcotic, N.O.S.	1	1						
736ai	23 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
737ai	23 y M				U	Unk	Int-A	1		
		methadone	1	1						
738ai	23 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		cocaine	3	3						
739ai	23 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
740ai	23 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		marijuana, N.O.S.	3	3						
741ai	23 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
742ai	23 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
743ai	23 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		acetaminophen	2	2						
		marijuana	3	3						
744ai	23 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
745ai	23 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		bupropion	2	2						
		sertraline	3	3						
746pa	23 y M				A	Ingst+ Unk	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	0.023 mg/L In Whole Blood @ Autopsy
		cocaine	2	2						
		amphetamine (hallucinogenic)	3	3						
747ai	23 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		diazepam	2	2						
748ai	23 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		marijuana, N.O.S.	3	3						
749ai	23 y F				U	Unk	Int-A	2		
		fentanyl	1	1						
		heroin	2	2						
750ai	23 y F				U	Unk	Int-A	2		
		fentanyl, N.O.S.	1	1						
751ai	23 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
752ai	23 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
753ai	23 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		phenylethylamine	2	2						
754ai	23 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana (oral)	2	2						
755ai	23 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
756ai	23 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
757ai	23 y M				A	Par	Int-A	2		
		heroin	1	1						
758ph	23 y F				A	Ingst+ Inhal	Int-A	1		
		heroin	1	1						
759ai	23 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
760ai	23 y F				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
761ai	23 y M				U	Unk	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
		ketamine	3	3						
762ai	23 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
763ai	23 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
764ai	23 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
765ai	23 y M				A	Inhal	Int-A	2		
		oxycodone	1	1						
766p	23 y M				A	Ingst	Int-A	2		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		fentanyl	1	1						
		alprazolam	2	2						
767ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		methamphetamine	3	3						
768ai	24 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
769ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		hydrocarbon, fluorinated	3	3						
770ai	24 y M				U	Unk	Int-A	1		
		heroin	1	1						
771ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						
772ai	24 y M				U	Unk	Int-A	2		
		morphine	1	1						
		oxycodone	2	2						
		clonazepam	3	3						
773ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		promethazine	3	3						
774ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
775ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
776ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		cocaine	3	3						
777ai	24 y M				U	Unk	Int-A	1		
		heroin	1	1						
		ethanol	2	2						
778ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		marijuana	3	3						
779ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
780ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
781ai	24 y M				U	Unk	Int-A	1		
		methadone	1	1						
		diazepam	2	2						
		citalopram	3	3						
782ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		dextromethorphan	2	2						
		chlorpheniramine	3	3						
783ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		marijuana, N.O.S.	3	3						
784ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
785ai	24 y F				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
786ai	24 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
787ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
788ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						
789ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		plant, mitragyna	3	3						
790ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		marijuana	3	3						
791	24 y M				A	Ingst	Int-S	3		
		acetaminophen/oxycodone	1	1						
792ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
793ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		amphetamine (hallucinogenic)	2	2						
		alprazolam	3	3						
794ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		marijuana, N.O.S.	3	3						
795pha	24 y M				U	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	3.2 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	1	1					norfentanyl	6.6 ng/mL In Blood (unspecified) @ Unknown
796ai	24 y M				U	Unk	Int-U	1		
		fentanyl, N.O.S.	1	1						
797ai	24 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		marijuana	3	3						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
798ai	24 y F				U	Unk	Int-A	1		
		oxycodone	1	1						
		quetiapine	2	2						
		clonazepam	3	3						
799ai	24 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
800ai	24 y M				A	Unk	Int-A	2		
		fentanyl	1	1						
		cocaine	2	2						
801ai	24 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
802ai	24 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
803ai	24 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
804ph	24 y M				A/C	Inhal	Int-A	2		
		acetaminophen/oxycodone	1	1						
805ai	25 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
806ai	25 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		gabapentin	2	2						
807ai	25 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
808ai	25 y F				U	Unk	Int-A	1		
		heroin	1	1						
		alprazolam	2	2						
		marijuana	3	3						
809ai	25 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		sertraline	2	2						
		aripiprazole	3	3						
810ai	25 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		cocaethylene	3	3						
811ai	25 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
812ai	25 y M				U	Ingst+ Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
813ai	25 y M				U	Unk	Unt-M	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		marijuana	3	3						
814ai	25 y M				U	Unk	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
		methamphetamine	3	3						
		alprazolam	4	4						
815ai	25 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana (concentrate)	2	2						
816ai	25 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
817ai	25 y M				U	Par	Int-A	2		
		heroin	1	1						
818ai	25 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		doxepin	2	2						
819ai	25 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
820pa	25 y M				U	Unk	Int-A	1		
		heroin	1	1					morphine (total)	39 ng/mL In Blood (unspecified) @ Autopsy
821ai	25 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						
822ai	25 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		amphetamine	2	2						
823ai	25 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		bupropion	2	2						
		acetaminophen	3	3						
824ai	25 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		marijuana	3	3						
825i	25 y F				U	Ingst	Int-A	1		
		fentanyl, N.O.S.	1	1						
826ai	25 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		amitriptyline	2	2						
		ethanol	3	3						
827ai	25 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		cocaine	3	3						
828ai	25 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		marijuana, N.O.S.	3	3						
829ai	25 y M				U	Unk	Oth-M	3		
		fentanyl, N.O.S.	1	1						
		zonisamide	2	2						
		marijuana, N.O.S.	3	3						
830ai	25 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		diphenhydramine	2	2						
		gabapentin	3	3						
831ai	25 y M				U	Unk	Int-A	1		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
832ai	25 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		clonazepam	2	2						
		marijuana, N.O.S.	3	3						
833ai	25 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						
834ai	25 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
835ai	25 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		cocaine	3	3						
836ai	25 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
837ai	25 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
838ai	25 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		fentanyl analogs (despropionyl fentanyl)	2	2						
		ethanol	3	3						
839pai	25 y M				A	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	0.024 mg/L In Whole Blood @ Autopsy
		fentanyl analogs (despropionyl fentanyl)	2	2						
840ai	25 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		heroin	2	2						
		alprazolam	3	3						
841ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
842ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
843ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		metoprolol	2	2						
		trazodone	3	3						
844ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		trazodone	2	2						
		aripiprazole	3	3						
845ai	26 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		trazodone	2	2						
846ai	26 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		trazodone	2	2						
		citalopram	3	3						
847ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		gabapentin	2	2						
848ai	26 y M				U	Unk	Int-A	1		
		heroin	1	1						
		ethanol	2	2						
		marijuana	3	3						
849ai	26 y M				U	Inhal	Int-A	2		
		heroin	1	1						
850ai	26 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		dextromethorphan	3	3						
851ai	26 y F				U	Par	Int-A	2		
		narcotic, N.O.S.	1	1						
852ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		Mitragyna speciosa korthals	2	2						
853h	26 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	80.5 mg/dL In Serum @ Unknown
854ai	26 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		risperidone	3	3						
855ph	26 y F				A	Par	Int-U	2		
		fentanyl	1	1						
		narcotic, N.O.S.	2	2						
856ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana (concentrate)	2	2						
		ethanol	3	3						
857ai	26 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
858ai	26 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
859ai	26 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						
860ai	26 y F				U	Ingst+ Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
861ai	26 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		benzodiazepine	2	2						
862ai	26 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		hydroxyzine	2	2						
		gabapentin	3	3						
863ai	26 y F				A/C	Inhal	Int-A	2		
		narcotic, N.O.S.	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
864ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
865ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
866ai	26 y M				U	Unk	Int-A	2		
		heroin	1	1						
867ai	26 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
868ai	26 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		sertraline	2	2						
		marijuana	3	3						
869h	26 y M				C	Ingst	Unt-T	3		
		salicylate	1	1					salicylate	20.6 mg/dL In Blood (unspecified) @ 18 h (pe)
		salicylate	1	1					salicylate	39.7 mg/dL In Blood (unspecified) @ 5 h (pe)
		salicylate	1	1					salicylate	49 mg/dL In Blood (unspecified) @ 15 m (pe)
		salicylate	1	1					salicylate	6.3 mg/dL In Blood (unspecified) @ 31 h (pe)
870h	26 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	52 mg/dL In Blood (unspecified) @ Unknown
871ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		phencyclidine	2	2						
872ai	26 y F				U	Unk	Int-A	1		
		heroin	1	1						
		trazodone	2	2						
		duloxetine (ER)	3	3						
873ai	26 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
874ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
875ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
876ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		marijuana	3	3						
877ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
878ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		amphetamine	2	2						
879ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
880ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		flualprazolam	2	2						
		marijuana, N.O.S.	3	3						
881ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
882ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		clonazepam	3	3						
883ai	26 y F				U	Unk	Int-A	1		
		heroin	1	1						
884ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methadone	2	2						
		alprazolam	3	3						
885ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
886ai	26 y M				U	Inhal+ Unk	Int-A	2		
		heroin	1	1						
887ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		fentanyl analogs (carfentanil)	2	2						
		fentanyl analogs (despropionyl fentanyl)	3	3						
888ai	26 y F				U	Unk	Int-U	2		
		fentanyl	1	1						
		ethanol	2	2						
		fentanyl analogs (despropionyl fentanyl)	3	3						
889ai	26 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		fentanyl analogs (despropionyl fentanyl)	2	2						
890ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
891ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		hyperthermia	3	3						
892ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
893ai	26 y M				U	Unk	Unk	1		
		fentanyl	1	1						
894ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
895ai	26 y F				U	Unk	Int-A	1		
		methadone	1	1						
		oxycodone	2	2						
		clonidine	3	3						
896ai	26 y M				U	Ingst+ Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
897ai	26 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
898ai	26 y M				A	Unk	Int-A	2		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		narcotic, N.O.S.	1	1						
899ai	26 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
900ai	26 y M				U	Unk	Int-U	1		
		heroin	1	1						
		methamphetamine	2	2						
901ai	26 y F				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
902ai	27 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
903ai	27 y M				U	Unk	Int-A	1		
		heroin	1	1						
904ph	27 y F				A/C	Par	Int-A	2		
		heroin	1	1						
905ai	27 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
906ai	27 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		etizolam	3	3						
907ai	27 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
908ai	27 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		bupropion	2	2						
		marijuana	3	3						
909ai	27 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
910ai	27 y M				U	Ingst+ Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
911ai	27 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
912ai	27 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
913ai	27 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
914ai	27 y M				U	Ingst+ Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
915ai	27 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
916ai	27 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
		marijuana	3	3						
917ai	27 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
		marijuana	3	3						
918ai	27 y F				A	Ingst+ Unk	Int-S	2		
		narcotic, N.O.S.	1	1						
		gabapentin	2	2						
		clonazepam	3	3						
		fluoxetine	4	4						
919ai	27 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
920ai	27 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		alprazolam	3	3						
921ai	27 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
922ai	27 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
923a	27 y F				A/C	Unk	Int-A	1		
		narcotic, N.O.S.	1	1						
		cocaine	2	2						
924ai	27 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
925ai	27 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		marijuana, N.O.S.	3	3						
926ai	27 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		heroin	2	2						
		loperamide	3	3						
927ai	27 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
928ai	27 y F				U	Unk	Int-A	1		
		narcotic, N.O.S.	1	1						
929ai	27 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		trazodone	2	2						
		marijuana, N.O.S.	3	3						
930a	27 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	64 mcg/mL In Blood (unspecified) @ Unknown
		diphenhydramine	2	3					diphenhydramine	490 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	3	5					alprazolam	15 ng/mL In Blood (unspecified) @ Unknown
		aripiprazole	4	6					aripiprazole	50 ng/mL In Blood (unspecified) @ Unknown
		amphetamine	5	7					amphetamine	100 ng/mL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		escitalopram	7	7					escitalopram	230 ng/mL In Blood (unspecified) @ Unknown
		ibuprofen	8	8						
		phentermine	6	8					phentermine	21 ng/mL In Blood (unspecified) @ Unknown
931ai	27 y M				U	Unk	Int-U	1		
		fentanyl, N.O.S.	1	1						
932ai	27 y F				U	Unk	Int-A	1		
		heroin	1	1						
		alprazolam	2	2						
933ai	27 y M				U	Par	Int-A	2		
		heroin	1	1						
934pa	27 y M				A	Unk	Unk	1		
		buprenorphine	1	1					buprenorphine	1.5 ng/mL In Blood (unspecified) @ Autopsy
		buprenorphine	1	1					norbuprenorphine	5.7 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	130 mg/dL In Vitreous @ Autopsy
		ethanol	2	2					ethanol	170 mg/dL In Urine (quantitative only) @ Autopsy
		ethanol	2	2					ethanol	80 mg/dL In Blood (unspecified) @ Autopsy
935	27 y M				C	Ingst	Int-M	2		
		acetaminophen	1	1					acetaminophen (apap)	85.3 mcg/mL In Blood (unspecified) @ Unknown
936phi	27 y M				A	Ingst	Unk	2		
		oxycodone	1	1						
937ai	27 y F				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
938ai	27 y M				U	Ingst+ Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
939ai	27 y M				U	Unk	Int-A	1		
		narcotic, N.O.S.	1	1						
		amphetamine	2	2						
		amphetamine (hallucinogenic)	3	3						
940ai	27 y M				A	Unk	Int-A	2		
		heroin	1	1						
941ai	28 y M				U	Unk	Int-A	1		
		heroin	1	1						
		fentanyl, N.O.S.	2	2						
		carbamazepine	3	3						
942ai	28 y F				U	Unk	Int-A	2		
		heroin	1	1						
943ai	28 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
944ai	28 y M				U	Unk	Int-A	1		
		morphine	1	1						
		marijuana	2	2						
945ai	28 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		marijuana	3	3						
946ai	28 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		marijuana	3	3						
947ai	28 y M				U	Unk	Unt-M	2		
		fentanyl, N.O.S.	1	1						
		quetiapine	2	2						
		marijuana	3	3						
948ai	28 y F				U	Unk	Unt-M	1		
		buprenorphine	1	1						
		risperidone	2	2						
		clonazepam	3	3						
949ai	28 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
950ai	28 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		gabapentin	3	3						
951ai	28 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						
952ai	28 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
953ai	28 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		plant, mitragyna	2	2						
		trazodone	3	3						
954ai	28 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxymorphone	2	2						
955ai	28 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		morphine	2	2						
		methamphetamine	3	3						
956ai	28 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
957ai	28 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
958ai	28 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
959ai	28 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		sertraline	3	3						
960ai	28 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
961ai	28 y M				U	Unk	Int-A	2		
		heroin	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		cocaine	2	2						
		ethanol	3	3						
962ai	28 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		duloxetine (ER)	2	2						
		gabapentin	3	3						
963ai	28 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
964pha	28 y M				U	Par	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	7.9 ng/mL In Blood (unspecified) @ 1 m (pe)
965ai	28 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
966ai	28 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		gabapentin	2	2						
		clonazepam	3	3						
		alprazolam	4	4						
		marijuana, N.O.S.	5	5						
967ai	28 y F				U	Par	Int-A	2		
		heroin	1	1						
968ai	28 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
969ph	28 y F				U	Ingst	Int-S	2		
		hydromorphone	1	1						
970ai	28 y F				U	Unk	Int-M	1		
		fentanyl, N.O.S.	1	1						
		gabapentin	2	2						
		olanzapine	3	3						
971pa	28 y M				U	Inhal+ Unk	Unk	1		
		fentanyl (non-prescription N.O.S.)	1	1						
		drug, N.O.S.	2	2						
972ai	28 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		methamphetamine	3	3						
		phentermine	4	4						
		ethanol	5	5						
973ai	28 y M				U	Unk	Int-A	1		
		methadone	1	1						
		ethanol	2	2						
		marijuana, N.O.S.	3	3						
974ai	28 y M				A	Unk	Int-A	2		
		heroin	1	1						
975ai	28 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
976ai	28 y M				A	Par	Int-A	2		
		heroin	1	1						
977pha	28 y M				A	Ingst	Int-U	2		
		narcotic, N.O.S.	1	1						
978ai	28 y M				A/C	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
979ai	28 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		phenylethylamine	3	3						
980ai	28 y M				U	Ingst	Unk	2		
		oxycodone	1	1						
981ai	28 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
982ai	28 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
983ai	28 y F				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
984ai	28 y M				U	Unk	Int-A	2		
		heroin	1	1						
985p	28 y M				A	Par	Int-A	2		
		heroin	1	1						
		methamphetamine	2	2						
		gabapentin	3	3						
986ai	28 y M				U	Ingst+ Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		hydroxyzine	2	2						
		ethanol	3	3						
987ai	28 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		heroin	2	2						
		methamphetamine	3	3						
988ai	28 y M				U	Ingst+ Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
989ai	29 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
990ai	29 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		oxycodone	3	3						
991ai	29 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
992ai	29 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		isopropanol	2	2						
993ai	29 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		gabapentin	2	2						
994ai	29 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		gabapentin	2	2						
		citalopram	3	3						
995ai	29 y M				U	Unk	Int-A	1		
		heroin	1	1						
		alprazolam	2	2						
		marijuana	3	3						
996ai	29 y M				U	Unk	Int-A	1		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		methadone	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
997ai	29 y M				U	Unk	Int-A	1		
		heroin	1	1						
998pha	29 y M				A	Ingst+ Unk	Unk	1		
		fentanyl	1	1						
		nitrous oxide	2	2						
		THC homolog	3	3						
999ai	29 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		oxymorphone	3	3						
		plant, mitragyna	4	4						
1000ai	29 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1001pha	29 y M				U	Ingst	Int-S	1		
		fentanyl	1	1					norfentanyl	1.8 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	1	1					fentanyl	4.8 ng/mL In Blood (unspecified) @ Unknown
		ethylene glycol	6	2					ethylene glycol	7 mg/dL In Blood (unspecified) @ Unknown
		lorazepam	2	2						
		fentanyl analogs (beta-hydroxyfentanyl)	3	3						
		fentanyl analogs (despropionyl fentanyl)	4	4						
		marijuana	5	5					delta-9-thc	2.4 ng/mL In Blood (unspecified) @ Unknown
1002ai	29 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1003ai	29 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		lamotrigine	2	2						
		gabapentin	3	3						
1004ai	29 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		plant, mitragyna	2	2						
		clobazam	3	3						
1005ai	29 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
1006ai	29 y M				A/C	Par	Int-A	2		
		heroin	1	1						
1007ai	29 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		marijuana (concentrate)	3	3						
1008ai	29 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
1009ai	29 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
1010ai	29 y M				U	Unk	Int-A	1		
		heroin	1	1						
		ethanol	2	2						
1011hai	29 y M				U	Unk	Int-A	1		
		methadone	1	1						
		diazepam	2	2						
1012ai	29 y F				U	Unk	Unk	2		
		oxycodone	1	1						
		amitriptyline	2	2						
		gabapentin	3	3						
1013ai	29 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		escitalopram	3	3						
1014ai	29 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1015ai	29 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1016ai	29 y M				U	Unk	Int-A	2		
		fentanyl	1	1						
1017ai	29 y M				A	Par	Int-A	2		
		narcotic, N.O.S.	1	1						
1018ai	29 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		heroin	2	2						
		gabapentin	3	3						
1019ai	29 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1020ai	29 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		trazodone	3	3						
1021ai	29 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
1022ai	29 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		marijuana	3	3						
1023ai	29 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1024ai	29 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1025ai	29 y M				U	Unk	Int-A	2		
		fentanyl, N.O.S.	1	1						
1026pa	29 y F				U	Unk	Int-A	2		
		fentanyl, N.O.S.	1	1					fentanyl	0.028 mg/L In Whole Blood @ Autopsy
		xylazine	2	2						
		methamphetamine	3	3					methamphetamine	0.1 mg/L In Whole Blood @ Autopsy

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1027ai	29 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1028ai	29 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		buprenorphine	2	2						
		ethanol	3	3						
1029ai	29 y M				U	Par	Int-A	2		
		heroin	1	1						
1030ai	29 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1031ai	29 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		levetiracetam	2	2						
1032ai	29 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1033ai	29 y M				U	Par	Int-A	2		
		narcotic, N.O.S.	1	1						
1034ai	29 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		quetiapine	2	2						
		ethanol	3	3						
1035ai	29 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		marijuana, N.O.S.	3	3						
1036ai	29 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1037pha	29 y F				A	Ingst+ Unk	Int-U	1		
		fentanyl	1	1					fentanyl	2.4 ng/mL In Blood (unspecified) @ 5 m (pe)
		citalopram	3	2					citalopram	240 ng/mL In Blood (unspecified) @ 5 m (pe)
		ethanol	2	3						
1038ph	29 y F				A	Unk	Int-A	2		
		heroin	1	1						
1039ai	29 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1040ai	29 y M				U	Ingst+ Unk	Int-S	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1041pha	29 y F				A	Inhal	Int-A	1		
		fentanyl	1	1						
1042ai	29 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1043p	29 y M				A	Inhal	Int-A	1		
		fentanyl, N.O.S.	1	1						
1044ai	29 y F				U	Ingst+ Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		venlafaxine	2	2						
		ethanol	3	3						
1045ai	29 y M				U	Par	Int-A	2		
		narcotic, N.O.S.	1	1						
1046ai	29 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1047ai	30 y M				U	Unk	Int-A	2		
		heroin	1	1						
1048ai	30 y M				U	Unk	Int-A	1		
		methadone	1	1						
		methamphetamine	2	2						
1049ai	30 y M				A	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1050ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1051ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		morphine	3	3						
1052ai	30 y M				U	Unk	Int-A	1		
		morphine	1	1						
		alprazolam	2	2						
		clonazepam	3	3						
1053ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		diazepam	3	3						
1054h	30 y F				A	Ingst	Int-U	1		
		acetaminophen	1	1					acetaminophen (apap)	108.2 mcg/mL In Serum @ 1 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	11 mcg/mL In Serum @ 5 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	27 mcg/mL In Serum @ 4 d (pe)
		diphenhydramine	2	2						
		heroin	3	3						
		ethanol	4	4					ethanol	49 mg/dL In Blood (unspecified) @ Unknown
1055ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1056ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		risperidone	2	2						
		ethanol	3	3						
1057ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1058ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1059ai	30 y F				U	Unk	Unk	1		
		codeine	1	1						
		diltiazem	2	2						
		fluoxetine	3	3						
1060ai	30 y M				U	Unk	Unt-U	2		
		methadone	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		alprazolam	2	2						
		marijuana	3	3						
1061ai	30 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
1062ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1063ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1064ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1065ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
1066ai	30 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
1067ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1068h	30 y F				A/C	Ingst+ Unk	Int-A	3		
		hydromorphone	1	1						
		amphetamine (hallucinogenic)	2	2						
1069ai	30 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
1070ai	30 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		duloxetine (ER)	2	2						
		ethanol	3	3						
1071ai	30 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		sertraline	2	2						
		olanzapine	3	3						
1072ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		marijuana	3	3						
1073ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1074ai	30 y M				A	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1075h	30 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	76.7 mcg/mL In Serum @ 2 d (pe)
1076ai	30 y F				U	Unk	Int-A	1		
		heroin	1	1						
		etizolam	2	2						
		marijuana	3	3						
1077ai	30 y M				U	Par	Int-U	2		
		heroin	1	1						
1078ha	30 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1						
		ethanol	2	2						
1079ai	30 y M				U	Par	Int-A	2		
		heroin	1	1						
1080ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1081ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		heroin	2	2						
		amphetamine	3	3						
1082ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
1083ai	30 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1084h	30 y F				U	Ingst	Unk	2		
		acetaminophen	1	1					salicylate	14 mg/dL In Serum @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	243 mcg/mL In Serum @ Unknown
		acetaminophen	1	1					ethanol	75 mg/dL In Serum @ Unknown
		ethanol	2	2						
		salicylate	3	3						
1085ai	30 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1086pha	30 y M				A	Ingst+ Unk	Int-S	2		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2					ethanol	75 ng/mL In Blood (unspecified) @ Unknown
1087ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		olanzapine	3	3						
1088ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1089ai	30 y M				U	Unk	Int-A	3		
		methadone	1	1						
		gabapentin	2	2						
		ethanol	3	3						
1090ai	30 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1091ai	30 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
1092ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1093ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1094ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		marijuana, N.O.S.	3	3						
1095pha	30 y F				A	Par	Int-A	1		
		fentanyl	1	1					norfentanyl	1.4 ng/mL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		fentanyl	1	1					fentanyl	17 ng/mL In Blood (unspecified) @ Unknown
		methadone	2	2					methadone	68 ng/mL In Blood (unspecified) @ Unknown
		amphetamine	3	3					amphetamine	8.4 ng/mL In Blood (unspecified) @ Unknown
1096ai	30 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1097ai	30 y M				U	Unk	Int-A	2		
		heroin	1	1						
1098ai	30 y F				U	Unk	Int-A	2		
		heroin	1	1						
1099ai	30 y M				U	Par	Int-A	2		
		narcotic, N.O.S.	1	1						
1100ph	30 y F				U	Ingst+ Unk	Unk	2		
		methadone	1	1						
		alprazolam	2	2						
		ethanol	3	3					ethanol	29 mg/dL In Blood (unspecified) @ Unknown
1101ai	30 y F				U	Ingst+ Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cyclobenzaprine	2	2						
		ethanol	3	3						
1102pha	30 y M				A	Ingst+ Inhal	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
		phencyclidine	3	3						
		cocaine	4	4						
		oxycodone	5	5						
1103ai	30 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		gabapentin	2	2						
		etizolam	3	3						
1104ai	30 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1105ai	30 y F				U	Unk	Int-S	1		
		fentanyl, N.O.S.	5	1						
		bupropion	1	2						
		diphenhydramine	2	3						
		fluoxetine	3	4						
		alprazolam	4	5						
1106ai	30 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1107ai	30 y M				U	Unk	Int-A	2		
		heroin	1	1						
1108ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		diazepam	3	3						
1109ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		marijuana	3	3						
1110ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1111ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		hydroxyzine	3	3						
1112ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		cyclobenzaprine	3	3						
1113ai	31 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
1114ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1115ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		plant, mitragyna	2	2						
		diazepam	3	3						
1116ai	31 y M				A	Par	Int-A	2		
		heroin	1	1						
1117ai	31 y F				U	Unk	Unk	1		
		fentanyl, N.O.S.	1	1						
1118ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
1119ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1120ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
1121ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1122ai	31 y M				U	Unk	Int-S	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
		ethanol	3	3						
1123ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		sertraline	2	2						
		gabapentin	3	3						
		hydroxyzine	4	4						
		ethanol	5	5						
1124ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1125ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		plant, mitragyna	2	2						
1126ai	31 y M				U	Unk	Int-A	1		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		heroin	1	1						
1127ai	31 y F				A	Par	Int-A	2		
		heroin	1	1						
1128ai	31 y M				U	Unk	Int-A	1		
		oxycodone	1	1						
		ethanol	2	2						
1129ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		ethanol	3	3						
1130h	31 y F				C	Ingst	Int-M	2		
		acetaminophen	1	1					acetaminophen (apap)	60 mcg/mL In Serum @ 24 h (pe)
1131ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1132ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1133ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1134pa	31 y M				A/C	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	0.59 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	1	1					norfentanyl	1.6 ng/mL In Blood (unspecified) @ Unknown
1135ai	31 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		trazodone	2	2						
		citalopram	3	3						
1136ai	31 y M				A/C	Par+ Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1137ai	31 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		etizolam	2	2						
		ethanol	3	3						
1138ha	31 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	41 mcg/mL In Blood (unspecified) @ Unknown
1139ai	31 y F				U	Inhal+ Unk	Int-A	2		
		heroin	1	1						
		ketamine	2	2						
		marijuana	3	3						
1140ai	31 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		clonazepam	2	2						
		marijuana, N.O.S.	3	3						
1141ai	31 y M				U	Unk	Unt-U	1		
		fentanyl, N.O.S.	1	1						
1142ai	31 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		trazodone	2	2						
		marijuana, N.O.S.	3	3						
1143ai	31 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		cyclobenzaprine	3	3						
1144ai	31 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
1145ai	31 y M				U	Unk	Int-A	2		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		hyperthermia	3	3						
1146ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1147ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						
1148ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1149ai	31 y F				U	Unk	Int-A	2		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		carisoprodol	3	3						
		hyperthermia	4	4						
1150ai	31 y M				U	Par	Int-A	2		
		narcotic, N.O.S.	1	1						
1151ai	31 y M				U	Par	Int-A	2		
		heroin	1	1						
1152pha	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	17 ng/mL In Blood (unspecified) @ 1 h (pe)
		methamphetamine	2	2					methamphetamine	0.065 mg/L In Blood (unspecified) @ 1 h (pe)
1153pi	31 y M				A/C	Par	Int-A	1		
		fentanyl	1	1						
		heroin	2	2						
1154pi	31 y F				A/C	Par	Int-A	2		
		fentanyl	1	1						
		heroin	2	2						
1155h	31 y F				U	Ingst+ Inhal	Int-U	2		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	33 mcg/mL In Serum @ Unknown
		marijuana	2	2						
		cocaine	3	3						
		methadone	4	4						
1156ai	31 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1157ai	31 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
1158ai	31 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1159ai	31 y M				U	Par	Int-A	2		
		narcotic, N.O.S.	1	1						
1160h	31 y M				A	Ingst	Int-S	3		
		acetaminophen/oxycodone	4	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		charcoal	2	2						
		benzodiazepine	3	3						
		viral disease (COVID-19-Confirmed)	1	4						
1161ai	32 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1162ai	32 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		methamphetamine	3	3						
		ethanol	4	4						
1163ai	32 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
1164ai	32 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		methadone	3	3						
1165ai	32 y F				U	Unk	Int-S	1		
		fentanyl, N.O.S.	1	1						
		methadone	2	2						
		methamphetamine	3	3						
1166ai	32 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
1167ai	32 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
1168ai	32 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						
1169ai	32 y F				U	Unk	Int-A	2		
		heroin	1	1						
1170ai	32 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
1171ai	32 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		methadone	3	3						
		morphine	4	4						
1172ai	32 y M				U	Ingst+ Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		ethanol	3	3						
1173ai	32 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
1174ai	32 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		xylazine	2	2						
		marijuana	3	3						
1175ai	32 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		aripiprazole	3	3						
1176ai	32 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1177h	32 y M				U	Ingst	Int-S	1		
		colchicine	1	1						
1178ai	32 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		fluoxetine	3	3						
1179ai	32 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1180ai	32 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1181ai	32 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1182ai	32 y M				A	Ingst	Int-A	2		
		heroin	1	1						
1183ha	32 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	259 mcg/mL In Blood (unspecified) @ 4 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	310 mcg/mL In Blood (unspecified) @ Autopsy
		acetaminophen	1	1					acetaminophen (apap)	361 mcg/mL In Blood (unspecified) @ 45 m (pe)
		ethanol	2	2						
1184ai	32 y M				A/C	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1185ai	32 y F				U	Ingst	Int-A	2		
		heroin	1	1						
1186ai	32 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		marijuana, N.O.S.	3	3						
1187ai	32 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
		ethanol	3	3						
1188ai	32 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
1189ai	32 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		venlafaxine	2	2						
		lacosamide	3	3						
1190ai	32 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1191ai	32 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		morphine	2	2						
		methamphetamine	3	3						
		etizolam	4	4						
		plant, mitragyna	5	5						
		gabapentin	6	6						
1192ai	32 y F				U	Unk	Int-A	2		
		fentanyl, N.O.S.	1	1						
1193pai	32 y M				A	Inhal	Int-A	1		
		fentanyl, N.O.S.	1	1						
		fentanyl analogs (despropionyl fentanyl)	2	2						
		phencyclidine	3	3						
1194ai	32 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		cocaine	3	3						
1195ai	32 y M				U	Unk	Int-A	2		
		heroin	1	1						
		methamphetamine	2	2						
		hyperthermia	3	3						
1196pi	32 y M				A/C	Par	Int-A	2		
		fentanyl	1	1						
		heroin	2	2						
1197pai	32 y M				A	Par	Int-A	1		
		fentanyl, N.O.S.	1	1						
		fentanyl analogs (despropionyl fentanyl)	2	2						
		etizolam	3	3						
		quinine	4	4						
1198h	32 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1						
		ibuprofen	2	2						
1199ai	32 y M				A/C	Par+ Unk	Int-A	2		
		heroin	1	1						
1200ai	32 y M				U	Ingst+ Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						
1201ai	32 y M				U	Ingst+ Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1202ai	32 y F				U	Unk	Int-A	2		
		heroin	1	1						
1203ai	32 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1204ai	32 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1205ai	32 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1206ai	33 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		clonazepam	3	3						
1207ph	33 y F				A	Ingst+ Unk	Int-S	2		
		heroin	1	1						
		salicylate	2	2					salicylate	34.5 mg/dL In Blood (unspecified) @ Unknown
1208ai	33 y F				U	Unk	Int-A	2		
		methadone	1	1						
		paroxetine	2	2						
		promethazine	3	3						
1209ai	33 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		heroin	2	2						
		amitriptyline	3	3						
1210ai	33 y M				U	Unk	Int-A	1		
		oxycodone	1	1						
		cyclobenzaprine	2	2						
		oxymorphone	3	3						
1211ai	33 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methylphenidate	2	2						
		Mitragyna speciosa korthals	3	3						
1212ai	33 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
1213ai	33 y M				U	Unk	Int-A	2		
		heroin	1	1						
1214ha	33 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	64.9 mg/dL In Serum @ Unknown
		salicylate	1	1					salicylate	680 mcg/mL In Serum
		salicylate	1	1					salicylate	94.4 mg/dL In Serum @ Unknown
		valsartan	2	2						
		naproxen	3	3						
1215ai	33 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1216ai	33 y M				U	Unk	Unt-M	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		ethanol	3	3						
1217ai	33 y M				A	Par	Int-A	2		
		heroin	1	1						
1218ai	33 y F				U	Unk	Int-A	1		
		narcotic, N.O.S.	1	1						
		ethanol	2	2						
1219ai	33 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1220ai	33 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		methadone	3	3						
1221ai	33 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1222ai	33 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1223i	33 y F				U	Unk	Int-A	1		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		heroin	1	1						
		methamphetamine	2	2						
1224ai	33 y M				U	Unk	Int-A	1		
		heroin	1	1						
		ethanol	2	2						
1225ai	33 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana (concentrate)	2	2						
1226ai	33 y F				U	Unk	Int-A	1		
		methadone	1	1						
		methamphetamine	2	2						
		clonazepam	3	3						
1227ai	33 y M				U	Unk	Unk	2		
		narcotic, N.O.S.	1	1						
1228pha	33 y M				U	Ingst+ Unk	Int-U	1		
		fentanyl	1	1					norfentanyl	0.68 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	1	1					fentanyl	7.2 ng/mL In Blood (unspecified) @ Unknown
		methadone	2	2					methadone	29 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	3	3					lorazepam	30 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	3	3					alprazolam	6.5 ng/mL In Blood (unspecified) @ Unknown
		ethanol	4	4					ethanol	24 mg/dL In Blood (unspecified) @ Unknown
		heroin	5	5						
1229ai	33 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1230ai	33 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		oxymorphone	3	3						
1231ai	33 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		diphenhydramine	2	2						
1232ai	33 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1233pi	33 y F-Pregnant				A/C	Par	Int-A	1		
		heroin	1	1						
1234ai	33 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1235ai	33 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1236ai	33 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		buprenorphine	2	2						
		ethanol	3	3						
1237ai	33 y M				U	Unk	Int-A	1		
		heroin	1	1						
		marijuana, N.O.S.	2	2						
1238ai	33 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						
1239ai	33 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1240ai	33 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1241ai	33 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1242ai	33 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		fentanyl analogs (despropionyl fentanyl)	2	2						
		methamphetamine	3	3						
1243ai	33 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1244ai	33 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
1245ai	33 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		hydroxyzine	3	3						
1246pi	33 y M				A	Par	Int-A	2		
		fentanyl, N.O.S.	1	1					fentanyl	0.024 mg/L In Whole Blood @ Autopsy
		fentanyl analogs (despropionyl fentanyl)	2	2						
1247pha	33 y F				A	Par	Int-A	1		
		fentanyl	1	1					norfentanyl	0.75 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	1	1					fentanyl	2.6 ng/mL In Blood (unspecified) @ Unknown
		cocaine	2	2					benzoylecognine	560 ng/mL In Blood (unspecified) @ Unknown
		hydroxyzine	3	3					hydroxyzine	25 ng/mL In Blood (unspecified) @ Unknown
		sertraline	4	4					sertraline	11 ng/mL In Blood (unspecified) @ Unknown
		sertraline	4	4					desmethylsertraline	28 ng/mL In Blood (unspecified) @ Unknown
		zolpidem	5	5					zolpidem	8.9 ng/mL In Blood (unspecified) @ Unknown
1248ai	33 y F				U	Inhal	Int-A	2		
		fentanyl	1	1						
1249h	33 y M				A	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen (apap)	294 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	13 mg/dL In Blood (unspecified) @ Unknown
1250ai	33 y M				U	Unk	Int-A	1		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		heroin	1	1						
		methamphetamine	2	2						
1251ai	33 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		cocaine	3	3						
1252pha	33 y M				U	Unk	Oth-M	2		
		narcotic, N.O.S.	1	1						
1253ai	33 y F				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1254ai	33 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1255ai	33 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1256pha	33 y M				A	Ingst	Int-S	2		
		acetaminophen/oxycodone	1	1						
		ethanol	2	2					ethanol	210 mg/dL In Blood (unspecified) @ Unknown
		benzodiazepine	3	3						
1257ai	34 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1258ai	34 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		marijuana	3	3						
1259ai	34 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1260ai	34 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1261ai	34 y M				U	Unk	Int-A	1		
		heroin	1	1						
1262ai	34 y M				U	Unk	Int-A	1		
		heroin	1	1						
		marijuana	2	2						
1263ai	34 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
1264ai	34 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1265ai	34 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		aripiprazole	2	2						
		marijuana	3	3						
1266ai	34 y F				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1267ai	34 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		diphenhydramine	2	2						
		marijuana	3	3						
1268ai	34 y M				A	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1269ai	34 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1270ai	34 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
1271ai	34 y M				A	Par	Int-A	2		
		heroin	1	1						
1272ai	34 y F				U	Ingst+ Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1273ai	34 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		oxycodone	3	3						
1274ai	34 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		methanol	3	3						
1275ai	34 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1276ai	34 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
1277pai	34 y F				A	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	0.011 mg/L In Whole Blood @ Autopsy
		methamphetamine	2	2					methamphetamine	1.6 mg/L In Whole Blood @ Autopsy
		fentanyl analogs (despropionyl fentanyl)	3	3						
		amphetamine (hallucinogenic)	4	4						
1278ai	34 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		hydroxyzine	3	3						
1279ai	34 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		sildenafil	2	2						
1280ai	34 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		diphenhydramine	2	2						
		alprazolam	3	3						
1281ai	34 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1282h	34 y M				A	Ingst	Int-S	2		
		fentanyl	1	1						
		salicylate	2	2					salicylate	8 mg/dL In Serum
		propranolol	3	3					propranolol	0.82 mcg/mL In Serum @ Unknown
		propranolol	3	3					propranolol	2.6 mcg/mL In Blood (unspecified)

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										@ Autopsy
		ethanol	4	4					ethanol	41 mg/dL In Serum @ Unknown
		acetaminophen	5	5					acetaminophen (apap)	12 mcg/mL In Serum @ Unknown
		citalopram	6	6						
		methamphetamine	7	7						
		mirtazapine	8	8						
1283ai	34 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1284ai	34 y F				U	Unk	Int-A	1		
		narcotic, N.O.S.	1	1						
		amphetamine (hallucinogenic)	2	2						
1285ai	34 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
1286ai	34 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		risperidone	2	2						
		hydroxyzine	3	3						
1287ai	34 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1288ai	34 y F				U	Unk	Int-A	2		
		fentanyl, N.O.S.	1	1						
		codeine	2	2						
		alprazolam	3	3						
1289ai	34 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		morphine	2	2						
		codeine	3	3						
1290h	34 y M				A	Ingst	Int-M	2		
		acetaminophen	1	1						
		ibuprofen	2	2						
1291ai	34 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
1292ai	34 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		plant, mitragyna	2	2						
1293ai	34 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1294ai	34 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		fluoxetine	3	3						
1295ai	34 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		fentanyl analogs (despropionyl fentanyl)	2	2						
		ethanol	3	3						
1296ai	34 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		marijuana, N.O.S.	3	3						
1297h	34 y F				A	Ingst	Int-A	2		
		acetaminophen	1	1						
		levetiracetam	2	2						
1298ai	34 y M				A/C	Unk	Int-A	2		
		heroin	1	1						
1299pai	34 y M				C	Par	Int-A	1		
		heroin	1	1					morphine	153 ng/mL In Blood (unspecified) @ Autopsy
1300ai	34 y M				U	Par	Int-A	2		
		narcotic, N.O.S.	1	1						
1301pai	34 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	0.022 mg/L In Whole Blood @ Autopsy
		fentanyl analogs (despropionyl fentanyl)	2	2						
		fentanyl analogs (acrylfentanyl)	3	3						
		morphine	4	4						
		tramadol	5	5						
1302ai	34 y M				A	Inhal	Int-A	2		
		narcotic, N.O.S.	1	1						
1303pa	34 y M				A	Par	Int-A	1		
		fentanyl	1	1					fentanyl	15 ng/mL In Whole Blood @ Autopsy
1304ai	35 y M				A	Inhal	Int-A	2		
		heroin	1	1						
1305ai	35 y M				U	Unk	Int-A	1		
		methadone	1	1						
		ethanol	2	2						
1306ai	35 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		bupropion	3	3						
1307pha	35 y F				A/C	Ingst	Int-S	1		
		fentanyl	1	1					norfentanyl	0.62 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	1	1					fentanyl	11 ng/mL In Blood (unspecified) @ Unknown
		cocaine	2	2					benzoylecognine	400 ng/mL In Blood (unspecified) @ Unknown
		olanzapine	3	2					olanzapine	20 ng/mL In Blood (unspecified) @ Unknown
		eszopiclone	4	4					eszopiclone	46 ng/mL In Blood (unspecified) @ Unknown
		quetiapine	5	5						
		venlafaxine	6	6						
1308ai	35 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		citalopram	2	2						
		gabapentin	3	3						
1309ai	35 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
1310ai	35 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1311ai	35 y F				U	Unk	Unt-M	2		
		fentanyl, N.O.S.	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		oxycodone	2	2						
		diphenhydramine	3	3						
1312pa	35 y M				U	Ingst+ Unk	Int-A	2		
		methadone	1	1					eddp (2-ethylidene-1,5-dimethyl-3,3-diphenyl pyrrolidine)	36 ng/mL In Whole Blood @ Autopsy
		methadone	1	1					methadone	420 ng/mL In Whole Blood @ Autopsy
		methamphetamine	2	2					methamphetamine	94 ng/mL In Whole Blood @ Autopsy
		amphetamine	3	3					amphetamine	6 ng/mL In Whole Blood @ Autopsy
1313ai	35 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1314ai	35 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		cocaine	3	3						
1315ai	35 y M				U	Unk	Int-A	1		
		heroin	1	1						
1316ai	35 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						
1317ai	35 y M				U	Ingst+ Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1318ai	35 y M				U	Par	Unk	2		
		narcotic, N.O.S.	1	1						
1319pha	35 y F				A/C	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	0.019 mg/L In Whole Blood @ Unknown
		fentanyl, N.O.S.	1	1					fentanyl	0.024 mg/L In Whole Blood @ Autopsy
		methadone	2	2					methadone	0.4 mg/L In Whole Blood @ Autopsy
		methadone	2	2					methadone	0.6 mg/L In Whole Blood @ Autopsy
		fentanyl analogs (despropionyl fentanyl)	3	3						
1320ai	35 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		diazepam	3	3						
1321ai	35 y F				U	Unk	Int-A	3		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1322ai	35 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1323ai	35 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		hydroxyzine	3	3						
1324ai	35 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
1325ai	35 y M				U	Par	Int-A	2		
		heroin	1	1						
1326ai	35 y M				U	Unk	Int-S	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1327ph	35 y M				A	Ingst	Int-A	2		
		methadone	1	1						
1328pai	35 y M				A	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	0.013 mg/L In Whole Blood @ Autopsy
		fentanyl analogs (despropionyl fentanyl)	2	2						
		ethanol	3	3					ethanol	180 mg/dL In Whole Blood @ Autopsy
		ethanol	3	3					ethanol	190 mg/dL In Vitreous @ Autopsy
		ethanol	3	3					ethanol	190 mg/dL In Whole Blood @ Autopsy
		ethanol	3	3					ethanol	250 mg/dL In Urine (quantitative only) @ Autopsy
1329ai	35 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		plant, mitragyna	2	2						
		alprazolam	3	3						
1330ai	35 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
1331ai	35 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						
1332h	35 y F				U	Ingst	Unk	2		
		acetaminophen	1	1						
		ibuprofen	2	2						
1333ai	35 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methocarbamol	2	2						
		etizolam	3	3						
		plant, mitragyna	4	4						
1334ai	35 y M				U	Unk	Int-A	3		
		methadone	1	1						
		methamphetamine	2	2						
		hydroxyzine	3	3						
1335ai	35 y M				U	Unk	Int-A	2		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						
1336ai	35 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
		levetiracetam	2	2						
1337ai	35 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		gabapentin	2	2						
1338h	35 y F				C	Ingst	Int-A	3		
		acetaminophen/hydrocodone	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1339ai	35 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		marijuana	3	3						
1340ai	35 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		fentanyl analog (acetyl fentanyl)	2	2						
1341ai	35 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1342ai	35 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		heroin	2	2						
		ethanol	3	3						
1343ai	35 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
1344ai	35 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		heroin	2	2						
		methamphetamine	3	3						
1345pi	35 y M				U	Unk	Unk	2		
		heroin	1	1						
1346ha	35 y F				U	Ingst	Unk	1		
		acetaminophen	1	1						
		ethanol	2	2						
1347ai	35 y M				U	Ingst	Unk	2		
		narcotic, N.O.S.	1	1						
		methylenedioxymethamphetamine (MDMA)	2	2						
		drug, N.O.S.	3	3						
1348ai	35 y M				U	Inhal	Int-A	2		
		heroin	1	1						
1349ai	35 y M				A	Par	Int-A	2		
		narcotic, N.O.S.	1	1						
1350a	35 y F				A	Ingst	Int-S	2		
		ibuprofen	1	1						
1351ai	36 y M				A/C	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1352ai	36 y M				U	Unk	Int-A	1		
		methadone	1	1						
		ethanol	2	2						
1353ai	36 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1354ai	36 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
1355ai	36 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		olanzapine	2	2						
1356ai	36 y F				A	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1357ai	36 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						
1358ai	36 y M				U	Unk	Int-A	1		
		oxycodone	1	1						
		marijuana	2	2						
1359ai	36 y M				A/C	Ingst	Int-A	2		
		heroin	1	1						
1360ai	36 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1361ai	36 y M				U	Unk	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
		methamphetamine	3	3						
1362ai	36 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1363ai	36 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1364ai	36 y F				U	Unk	Int-U	2		
		acetaminophen	1	1						
		ethanol	2	2						
1365ai	36 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		diphenhydramine	3	3						
1366ai	36 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1367ai	36 y M				U	Unk	Int-A	1		
		heroin	1	1						
		fentanyl, N.O.S.	2	2						
1368ai	36 y M				U	Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
1369ai	36 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1370ai	36 y M				U	Unk	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
		ethanol	3	3						
1371ai	36 y M				A	Par	Int-A	2		
		narcotic, N.O.S.	1	1						
1372ai	36 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		gabapentin	2	2						
1373ai	36 y F				A	Par	Int-A	2		
		heroin	1	1						
1374ai	36 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1375ai	36 y F				U	Unk	Int-A	1		
		morphine	1	1						
		buprenorphine	2	2						
		lorazepam	3	3						
1376ai	36 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
1377ai	36 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		gabapentin	2	2						
1378ai	36 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		morphine	2	2						
		alprazolam	3	3						
1379ai	36 y M				U	Unk	Unk	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1380ai	36 y F				A/C	Par	Int-A	2		
		heroin	1	1						
1381ai	36 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1382ai	36 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
1383ai	36 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1384ai	36 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1385ai	36 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		plant, mitragyna	2	2						
		ethanol	3	3						
1386ai	36 y F				U	Par	Int-A	1		
		oxymorphone	1	1						
1387ai	36 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1388	36 y M				A/C	Ingst	Int-S	1		
		salicylates in combination, N.O.S.	1	1					salicylate	43 mg/dL In Serum @ 1 h (pe)
		salicylates in combination, N.O.S.	1	1					salicylate	46.8 mg/dL In Serum @ 2 h (pe)
		salicylates in combination, N.O.S.	1	1					salicylate	68 mg/dL In Serum @ 5 h (pe)
1389ai	36 y M				U	Unk	Int-U	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1390ai	36 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		marijuana, N.O.S.	3	3						
1391ai	36 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		marijuana	3	3						
1392ai	36 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1393ai	36 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1394h	36 y F				A	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	187 mcg/dL In Blood (unspecified) @ Unknown
1395a	36 y M				A	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
		cocaine	2	2						
1396ai	36 y M				A	Unk	Int-A	2		
		fentanyl	1	1						
1397ai	36 y M				U	Unk	Int-A	1		
		morphine	1	1						
		methamphetamine	2	2						
1398ai	37 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
1399ai	37 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1400pai	37 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
1401ai	37 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1402ai	37 y M				U	Unk	Int-A	1		
		heroin	1	1						
		ethanol	2	2						
1403ai	37 y M				A	Par	Int-A	2		
		narcotic, N.O.S.	1	1						
1404ai	37 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		heroin	2	2						
		methamphetamine	3	3						
1405ai	37 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		amphetamine (hallucinogenic)	2	2						
1406ai	37 y M				U	Unk	Int-A	1		
		oxymorphone	1	1						
		oxycodone	2	2						
		cyclobenzaprine	3	3						
1407ai	37 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		pseudoephedrine	3	3						
1408ai	37 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1409ai	37 y F				U	Unk	Int-A	1		
		fentanyl	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		cocaine	2	2						
1410ai	37 y M				U	Unk	Unk	1		
		acetaminophen	1	1						
1411ai	37 y M				U	Unk	Int-M	1		
		hydrocodone	1	1						
		diphenhydramine	2	2						
1412ai	37 y M				U	Unk	Int-A	1		
		oxycodone	1	1						
		cocaine	2	2						
		amphetamine	3	3						
1413ai	37 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		sertraline	2	2						
		aripiprazole	3	3						
1414ai	37 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1415ai	37 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1416ai	37 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		clonazepam	2	2						
1417pha	37 y M				A	Unk	Int-A	1		
		fentanyl	1	1						
		heroin	2	2						
		methamphetamine	3	3						
		ethanol	4	4						
1418pha	37 y F				U	Unk	Unk	1		
		heroin	1	1					morphine	27 ng/mL In Blood (unspecified) @ Unknown
		heroin	1	1					norfentanyl	6.6 ng/mL In Blood (unspecified) @ Unknown
		heroin	1	1					fentanyl	8.2 ng/mL In Blood (unspecified) @ Unknown
		heroin	1	1					6-mam (6-monoacetylmorphine)	9.1 ng/mL In Urine (quantitative only) @ Unknown
1419ph	37 y F				A	Ingst	Int-S	2		
		diphenhydramine/ibuprofen	1	1						
		bupropion	2	2						
		antihistamine	3	3						
1420ai	37 y F				U	Unk	Int-A	1		
		methadone	1	1						
		oxycodone	2	2						
		metoprolol	3	3						
		olanzapine	4	4						
		mirtazapine	5	5						
1421h	37 y F				C	Ingst	Int-M	2		
		acetaminophen	1	1						
1422ai	37 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1423ai	37 y M				U	Unk	Int-A	1		
		heroin	1	1						
		ethanol	2	2						
1424ai	37 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		trazodone	3	3						
1425ai	37 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1426ai	37 y F				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1427ai	37 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		chlordiazepoxide	2	2						
		clonazepam	3	3						
1428ph	37 y F				A	Ingst	Int-A	2		
		fentanyl	1	1						
		clonidine	2	2						
		promethazine	3	3						
1429ai	37 y M				A	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1430ai	37 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1431ai	37 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1432ai	37 y F				U	Unk	Unk	2		
		fentanyl	1	1						
		methadone	2	2						
1433ai	37 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		hyperthermia	3	3						
1434ai	37 y M				U	Unk	Int-A	3		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		viral disease (COVID-19-Confirmed)	3	3						
1435ai	37 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ibuprofen	2	2						
		acetaminophen	3	3						
1436ai	37 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		hydrocodone	2	2						
		marijuana, N.O.S.	3	3						
1437ai	37 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1438ai	37 y M				U	Unk	Int-A	3		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		hydroxyzine	3	3						
1439ai	37 y M				U	Unk	Int-A	3		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		fentanyl, N.O.S.	1	1						
		etizolam	2	2						
		marijuana, N.O.S.	3	3						
1440ai	37 y F				U	Ingst+ Inhal	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
1441ai	37 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		lorazepam	2	2						
1442pai	37 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		fentanyl analogs (despropionyl fentanyl)	2	2						
		methamphetamine	3	3						
1443ai	37 y M				U	Unk	Int-A	1		
		narcotic, N.O.S.	1	1						
		amphetamine	2	2						
1444ai	38 y M				U	Unk	Int-S	1		
		heroin	1	1						
		methamphetamine	2	2						
1445ai	38 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1446ai	38 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
1447ai	38 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1448ai	38 y F				U	Unk	Int-S	1		
		oxycodone	1	1						
		promethazine	2	2						
		ethanol	3	3						
1449ai	38 y F				U	Unk	Unk	2		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		doxylamine	3	3						
		amitriptyline	4	4						
		sertraline	5	5						
1450ai	38 y M				U	Unk	Int-A	1		
		heroin	1	1						
		codeine	2	2						
1451h	38 y F				U	Ingst	Unk	3		
		acetaminophen	1	1					acetaminophen (apap)	17.7 mcg/mL In Blood (unspecified) @ Unknown
1452ai	38 y M				U	Ingst+ Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
1453ai	38 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana (concentrate)	2	2						
		promethazine	3	3						
1454ai	38 y M				A	Unk	Int-A	2		
		heroin	1	1						
1455pai	38 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
		diphenhydramine	3	3						
1456ai	38 y M				U	Unk	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
		ethanol	3	3						
1457ai	38 y F				A/C	Par	Int-A	2		
		heroin	1	1						
1458ai	38 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1459ai	38 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		morphine	2	2						
		ethanol	3	3						
1460ai	38 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1461ai	38 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		oxycodone	3	3						
1462ai	38 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methadone	2	2						
		methamphetamine	3	3						
1463ai	38 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		trazodone	2	2						
		marijuana, N.O.S.	3	3						
1464ai	38 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		gabapentin	3	3						
1465ai	38 y M				U	Unk	Int-A	1		
		oxycodone	1	1						
		chlordiazepoxide	2	2						
		ethanol	3	3						
1466pi	38 y M				A	Unk	Int-S	1		
		fentanyl	1	1						
1467ai	38 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1468h	38 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	22 mcg/mL In Plasma @ 12 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	66 mcg/mL In Plasma @ 0 d (pe)
		carisoprodol	2	2						
		alprazolam	3	3						
		zolpidem	4	4						
		promethazine	5	5						
1469ai	38 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
		marijuana, N.O.S.	3	3						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1470ai	38 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1471ai	38 y M				U	Unk	Int-A	3		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		hyperthermia	3	3						
1472ai	38 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		fluoxetine	3	3						
1473h	38 y F				C	Ingst	Int-S	1		
		acetaminophen	1	1						
1474ai	38 y M				A	Ingst	Int-A	2		
		morphine	1	1						
1475pi	38 y M				A	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	0.019 mg/L In Whole Blood @ Autopsy
		fentanyl analogs (despropionyl fentanyl)	2	2						
1476ai	38 y M				A	Unk	Int-A	2		
		heroin	1	1						
1477ai	38 y M				U	Ingst+ Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		chlordiazepoxide	3	3						
		ethanol	4	4						
1478ai	38 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
1479	38 y M				A	Unk	Unk	2		
		acetaminophen	1	1						
		drug, N.O.S.	2	2						
1480h	38 y M				A	Ingst	Int-S	3		
		tramadol	1	1						
		acetaminophen/hydrocodone	2	2					acetaminophen (apap)	33 mcg/mL In Blood (unspecified) @ Unknown
		fluoxetine	3	3						
1481ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1482ai	39 y M				A	Unk	Int-A	2		
		heroin	1	1						
1483ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1484ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1485ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
1486ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		zolpidem	2	2						
		ethanol	3	3						
1487ai	39 y F				U	Unk	Unk	1		
		acetaminophen	1	1						
1488ai	39 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1489ai	39 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
1490ai	39 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
1491ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1492ai	39 y M				A	Par	Int-A	2		
		heroin	1	1						
1493ai	39 y M				U	Unk	Unt-M	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		morphine	3	3						
1494ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1495ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1496ai	39 y M				U	Unk	Int-A	1		
		narcotic, N.O.S.	1	1						
		methamphetamine	2	2						
1497ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						
1498ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		morphine	2	2						
1499i	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1500ai	39 y F				U	Inhal	Int-A	2		
		heroin	1	1						
		benzodiazepine	2	2						
1501ai	39 y M				U	Unk	Unk	1		
		hydrocodone	1	1						
		gabapentin	2	2						
		zolpidem	3	3						
1502ai	39 y M				A	Unk	Int-A	2		
		fentanyl	1	1						
		cocaine	2	2						
1503ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1504ai	39 y M				U	Par	Unk	2		
		narcotic, N.O.S.	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1505ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1506ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		morphine	2	2						
		methamphetamine	3	3						
1507ai	39 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1508ai	39 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		tadalafil	2	2						
1509ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		marijuana, N.O.S.	3	3						
1510ai	39 y M				U	Unk	Int-A	2		
		methadone	1	1						
1511ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		bupropion	2	2						
		mirtazapine	3	3						
1512ai	39 y M				A	Par	Int-A	2		
		heroin	1	1						
1513ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
1514ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		hydroxyzine	3	3						
1515ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1516ai	39 y F				U	Unk	Int-U	1		
		heroin	1	1						
		fentanyl, N.O.S.	2	2						
		fluoxetine	3	3						
		hydroxyzine	4	4						
1517ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		fentanyl analogs (despropionyl fentanyl)	2	2						
		cocaine	3	3						
1518pha	39 y M				U	Unk	Unk	1		
		fentanyl	1	1						
		cocaine	2	2						
1519ai	39 y M				U	Par	Int-A	2		
		narcotic, N.O.S.	1	1						
1520h	39 y M				A/C	Ingst	Int-S	2		
		salicylate	1	1					salicylate	101.2 mg/dL In Blood (unspecified) @ 28 h (pe)
		salicylate	1	1					salicylate	104 mg/dL In Blood (unspecified) @ 18.5 h (pe)
		salicylate	1	1					salicylate	125.8 mg/dL In Blood (unspecified) @ 27 h (pe)
		salicylate	1	1					salicylate	13.3 mg/dL In Blood (unspecified) @ 1 h (pe)
		salicylate	1	1					salicylate	44 mg/dL In Blood (unspecified) @ 4 h (pe)
		salicylate	1	1					salicylate	50.1 mg/dL In Blood (unspecified) @ 8 h (pe)
		salicylate	1	1					salicylate	52.5 mg/dL In Blood (unspecified) @ 9 h (pe)
		salicylate	1	1					salicylate	58.9 mg/dL In Blood (unspecified) @ 11 h (pe)
		salicylate	1	1					salicylate	63.3 mg/dL In Blood (unspecified) @ 14 h (pe)
		salicylate	1	1					salicylate	66 mg/dL In Blood (unspecified) @ 15.25 h (pe)
		salicylate	1	1					salicylate	69.2 mg/dL In Blood (unspecified) @ 22.3 h (pe)
		salicylate	1	1					salicylate	77.2 mg/dL In Blood (unspecified) @ 20.5 h (pe)
		amlodipine	2	2						
		metoprolol	3	3						
		topiramate	4	4						
		lamotrigine	5	5						
		metformin	6	6						
		losartan	7	7						
		clonazepam	8	8						
		gabapentin	9	9						
1521h	39 y M				A	Ingst+ Inhal	Int-A	3		
		fentanyl	1	1						
		cocaine	2	2						
		amphetamine	3	3						
		marijuana	4	4						
		ethanol	5	5					ethanol	59 mg/dL In Blood (unspecified) @ 5 h (pe)
1522ai	39 y M				U	Unk	Int-A	2		
		heroin	1	1						
1523ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1524ai	39 y M				U	Ingst+ Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
1525ai	39 y M				A	Par	Int-A	2		
		heroin	1	1						
1526ai	39 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		tramadol	2	2						
		alprazolam	3	3						
1527pa	39 y F				A	Unk	Int-A	1		
		tramadol	1	1					tramadol	1.4 mg/L In Whole Blood @ Autopsy
		amitriptyline	2	2					amitriptyline	0.2 mg/L In Blood (unspecified) @ Autopsy
		amitriptyline	2	2					nortriptyline	0.5 mg/L In Blood (unspecified) @

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										Autopsy
		doxepin	3	3					nordoxepin	0.08 mg/L In Blood (unspecified) @ Autopsy
		doxepin	3	3					doxepin	0.4 mg/L In Blood (unspecified) @ Autopsy
		doxepin	3	3					doxepin	0.5 mg/L In Blood (unspecified) @ Autopsy
1528ha	39 y M				A	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	350 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	490 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	245 ng/mL In Blood (unspecified) @ Unknown
		gabapentin	3	3					gabapentin	9.2 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	4	4					lorazepam	6.6 ng/mL In Blood (unspecified) @ Unknown
1529h	40 y M				A	Unk	Int-A	2		
		heroin	1	1						
1530ai	40 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						
1531ai	40 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		clonazepam	2	2						
		ethanol	3	3						
1532ai	40 y M				U	Unk	Int-S	1		
		heroin	1	1						
		amphetamine	2	2						
		sildenafil	3	3						
1533ai	40 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1534ai	40 y F				U	Unk	Unk	2		
		narcotic, N.O.S.	1	1						
1535ai	40 y M				U	Unk	Int-A	1		
		oxycodone	1	1						
		methadone	2	2						
1536ai	40 y M				U	Unk	Int-S	2		
		narcotic, N.O.S.	1	1						
1537ph	40 y M				U	Ingst	Int-U	2		
		narcotic, N.O.S.	1	1						
1538ai	40 y M				A	Ingst	Int-A	2		
		buprenorphine/naloxone	1	1						
		alprazolam	2	2						
1539ai	40 y M				U	Unk	Int-A	1		
		morphine	1	1						
		alprazolam	2	2						
		ethanol	3	3						
1540ai	40 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
[1541h]	40 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	116.5 mg/dL In Blood (unspecified) @ 3 h (pe)
		salicylate	1	1					salicylate	124.9 mg/dL In Blood (unspecified) @ 7.5 h (pe)
		salicylate	1	1					salicylate	92.2 mg/dL In Blood (unspecified) @ 1 h (pe)
1542ai	40 y M				U	Unk	Int-S	1		
		methadone	1	1						
		ethanol	2	2						
1543ai	40 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		hydrocodone	2	2						
		alprazolam	3	3						
1544ai	40 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		alprazolam	3	3						
1545h	40 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	74.7 mcg/mL In Blood (unspecified) @ 1 h (pe)
1546pa	40 y M				A	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	0.044 mg/L In Whole Blood @ Autopsy
		cocaine	2	2						
		amphetamine	3	3					amphetamine	0.3 mg/L In Whole Blood @ Autopsy
		fentanyl analogs (despropionyl fentanyl)	4	4						
1547ai	40 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		cocaine	3	3						
		carisoprodol	4	4						
1548ai	40 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		lorazepam	3	3						
1549ai	40 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		diazepam	2	2						
		clonazepam	3	3						
1550ai	40 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		topiramate	2	2						
		clonazepam	3	3						
1551ai	40 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1552pai	40 y M				A	Inhal	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	0.002 mg/L In Whole Blood @ Autopsy
		methadone	2	2					methadone	0.2 mg/L In Whole Blood @ Autopsy
		methadone	2	2					methadone	0.3 mg/L In Whole Blood @

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										Autopsy
		etizolam	3	3						
		morphine	4	4					morphine (free)	37 mcg/L In Whole Blood @ Autopsy
1553ai	40 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		buprenorphine	3	3						
1554h	40 y M				A/C	Ingst	Int-U	2		
		acetaminophen/diphenhydramine	1	1					acetaminophen (apap)	132 mg/L In Blood (unspecified) @ Unknown
1555h	40 y M				A	Ingst	Int-A	2		
		narcotic, N.O.S.	1	1						
		cocaine	2	2						
1556ai	40 y M				U	Unk	Int-A	1		
		methadone	1	1						
		plant, mitragyna	2	2						
		sertraline	3	3						
1557ai	40 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1558ai	40 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1559h	40 y M				A	Ingst	Int-M	2		
		acetaminophen	1	1					acetaminophen (apap)	189 mcg/mL In Serum @ Unknown
		ibuprofen	2	2						
1560ai	40 y M				A	Inhal	Int-A	2		
		narcotic, N.O.S.	1	1						
1561ai	40 y F				U	Ingst+ Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1562pha	40 y M				A	Par	Int-U	1		
		fentanyl	1	1						
1563ai	40 y F				A	Ingst	Int-A	2		
		narcotic, N.O.S.	1	1						
1564ai	41 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		gabapentin	3	3						
1565ai	41 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		diphenhydramine	2	2						
		alprazolam	3	3						
1566ai	41 y F				U	Unk	Int-A	2		
		oxycodone	1	1						
		cyclobenzaprine	2	2						
		ethanol	3	3						
1567ai	41 y F				U	Unk	Int-A	1		
		oxymorphone	1	1						
		gabapentin	2	2						
		ethanol	3	3						
1568ai	41 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		diphenhydramine	2	2						
1569ai	41 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		marijuana	3	3						
1570ai	41 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		hydroxyzine	2	2						
		ethanol	3	3						
1571ai	41 y M				U	Unk	Int-A	1		
		heroin	1	1						
		trazodone	2	2						
		ethanol	3	3						
1572ai	41 y M				U	Ingst+ Unk	Int-S	1		
		heroin	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1573ai	41 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1574ai	41 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		marijuana	3	3						
1575ai	41 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1576ai	41 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		carbamazepine	3	3						
1577ai	41 y U				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		oxymorphone	3	3						
1578ai	41 y M				U	Unk	Int-M	1		
		oxycodone	1	1						
		hydrocodone	2	2						
		quetiapine	3	3						
		gabapentin	4	4						
		duloxetine (ER)	5	5						
1579ai	41 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		diazepam	2	2						
		ethanol	3	3						
1580ha	41 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	49.8 mcg/mL In Blood (unspecified) @ Unknown
1581ai	41 y M				A	Inhal	Int-A	2		
		narcotic, N.O.S.	1	1						
1582ai	41 y M				U	Par	Unk	2		
		narcotic, N.O.S.	1	1						
1583pa	41 y M				A	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		cocaine	2	2						
1584ai	41 y M				A	Par	Int-A	2		
		heroin	1	1						
1585ai	41 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1586ai	41 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
1587ai	41 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1588ai	41 y M				U	Inhal	Int-A	2		
		heroin	1	1						
1589ai	41 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		gabapentin	3	3						
1590p	41 y M				A	Unk	Int-A	2		
		heroin	1	1						
1591pai	42 y F				A	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	0.008 mg/L In Whole Blood @ Autopsy
		fentanyl analogs (despropionyl fentanyl)	2	2						
		cocaine	3	3					cocaine	0.1 mg/L In Whole Blood @ Autopsy
1592pai	42 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1593h	42 y M				C	Ingst	Unt-M	3		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	86 mcg/mL In Blood (unspecified) @ Unknown
1594ai	42 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		marijuana	3	3						
1595ai	42 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1596ai	42 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1597ai	42 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		isopropanol	2	2						
1598ai	42 y M				U	Unk	Int-A	1		
		methadone	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1599ai	42 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		clonazepam	3	3						
1600ai	42 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		promethazine	2	2						
		alprazolam	3	3						
1601ai	42 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1602ai	42 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1603ai	42 y M				U	Unk	Int-A	1		
		heroin	1	1						
1604ai	42 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1605ai	42 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
1606ai	42 y M				U	Unk	Int-A	1		
		heroin	1	1						
		pseudoephedrine	2	2						
		ethanol	3	3						
1607ai	42 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1608ph	42 y M				A	Ingst	Int-S	2		
		ibuprofen/diphenhydramine	1	1						
		acetaminophen	2	2					acetaminophen (apap)	183 mcg/mL In Serum @ Unknown
		ethanol	3	3					ethanol	188 mg/dL In Serum @ Unknown
1609ai	42 y M				A/C	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1610ai	42 y M				U	Unk	Int-U	1		
		fentanyl, N.O.S.	1	1						
1611ai	42 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
1612h	42 y F				A	Ingst	Int-S	2		
		acetaminophen/hydrocodone	1	1						
		ibuprofen	2	2						
		benzodiazepine	3	3						
1613h	42 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
1614ai	42 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
1615ai	42 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
1616ai	43 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		fluoxetine	3	3						
1617ai	43 y F				U	Unk	Int-A	1		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		lamotrigine	3	3						
1618ai	43 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1619ai	43 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		marijuana	3	3						
1620ai	43 y M				U	Par	Int-A	2		
		heroin	1	1						
1621ai	43 y F				U	Unk	Unk	2		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		amphetamine	3	3						
1622ai	43 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1623ai	43 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		duloxetine (ER)	2	2						
1624ai	43 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
1625ai	43 y M				U	Ingst+ Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
1626ai	43 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
1627ai	43 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		tramadol	2	2						
1628ai	43 y F				U	Unk	Int-M	1		
		oxycodone	1	1						
		gabapentin	2	2						
		lorazepam	3	3						
		ethanol	4	4						
1629pha	43 y F				A/C	Ingst	Int-S	1		
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	101 mcg/mL In Blood (unspecified) @ 5 m (pe)
		acetaminophen/oxycodone	1	1					oxycodone (free)	940 ng/mL In Blood (unspecified) @ 5 m (pe)
		morphine	2	2					morphine (free)	35 ng/mL In Blood (unspecified) @ 5 m (pe)
1630ai	43 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						
1631ai	43 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		marijuana, N.O.S.	3	3						
1632ai	43 y F				A	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1633ai	43 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		risperidone	3	3						
1634ai	43 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1635ai	43 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1636ai	43 y M				U	Unk	Int-A	3		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1637ai	43 y F				U	Unk	Int-A	1		
		methadone	1	1						
		trazodone	2	2						
		gabapentin	3	3						
1638ai	43 y M				U	Unk	Int-A	2		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1639ai	43 y M				U	Unk	Int-S	1		
		heroin	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
1640ha	43 y F				A	Ingst	Int-M	1		
		acetaminophen	1	1						
1641ph	43 y M				U	Unk	Int-A	2		
		heroin	1	1						
1642pa	43 y M				A	Unk	Int-M	1		
		fentanyl	1	1					fentanyl	6.9 ng/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	0.025 g/dL In Blood (unspecified) @ Unknown
1643h	43 y F				A	Ingst	Int-S	2		
		buprenorphine	1	1						
		lithium	3	1						
		acetaminophen	4	2						
		venlafaxine (ER)	2	3						
1644ai	43 y M				U	Unk	Int-A	2		
		heroin	1	1						
1645ai	43 y M				U	Par	Int-A	2		
		heroin	1	1						
1646ph	43 y M				A	Ingst	Int-U	1		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	23 mcg/mL In Serum @ Unknown
1647h	43 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	142 mcg/mL In Serum @ Unknown
		drug, N.O.S.	2	2						
1648hi	43 y M				C	Ingst	Unk	1		
		acetaminophen (ER)	1	1						
1649ai	43 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1650ai	43 y F				U	Ingst+ Unk	Int-A	1		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1651ai	43 y M				A	Inhal	Int-A	2		
		oxycodone	1	1						
		drug, N.O.S.	2	2						
1652ai	43 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1653hi	43 y M				U	Ingst	Int-S	3		
		acetaminophen	1	1						
		ibuprofen	2	2						
		caffeine/salicylamide/salicylate	3	3						
1654h	43 y F				A/C	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	12 mcg/mL In Blood (unspecified) @ Unknown
1655pa	43 y M				A	Par	Int-A	1		
		fentanyl	1	1					fentanyl	11 ng/mL In Whole Blood @ Autopsy
		brorphine	2	2					brorphine	1.7 ng/mL In Whole Blood @ Autopsy
		heroin	3	3					morphine	15 ng/mL In Whole Blood @ Autopsy
		heroin	3	3					6-mam (6-monoacetylmorphine)	3 ng/mL In Whole Blood @ Autopsy
1656pha	44 y F				A	Ingst	Int-S	1		
		fentanyl (non-prescription N.O.S.)	1	1					fentanyl	10 ng/mL In Blood (unspecified) @ Unknown
		fentanyl (non-prescription N.O.S.)	1	1					norfentanyl	2 ng/mL In Blood (unspecified) @ Unknown
		quetiapine	2	1					quetiapine	1.3 ng/mL In Blood (unspecified) @ Unknown
1657ai	44 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		morphine	2	2						
1658ai	44 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cyclobenzaprine	2	2						
1659ai	44 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1660ai	44 y M				U	Unk	Int-A	1		
		heroin	1	1						
1661ai	44 y F				A	Par	Int-A	2		
		heroin	1	1						
1662ai	44 y M				U	Unk	Int-A	1		
		methadone	1	1						
		methamphetamine	2	2						
		bupropion	3	3						
1663ai	44 y F				U	Unk	Int-S	1		
		oxycodone	1	1						
		cyclobenzaprine	2	2						
		hydroxyzine	3	3						
1664ai	44 y F				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
		benzodiazepine	2	2						
1665ai	44 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
1666ai	44 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1667ai	44 y F				U	Inhal	Unk	2		
		heroin	1	1						
1668ai	44 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		marijuana	3	3						
1669pa	44 y M				A/C	Unk	Int-M	1		
		fentanyl	1	1					norfentanyl	1.1 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	1	1					fentanyl	5.7 ng/mL In Blood (unspecified) @ Unknown
		oxycodone	2	2					oxymorphone (free)	3.5 ng/mL In Blood (unspecified) @ Unknown
		oxycodone	2	2					oxycodone (free)	80 ng/mL In Blood (unspecified) @ Unknown
		gabapentin	3	3						
		alprazolam	4	4					alprazolam	43 ng/mL In Blood (unspecified) @ Unknown
1670ai	44 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		cocaine	3	3						
1671ha	44 y F				A/C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen (apap)	184 mcg/mL In Serum @ 5 m (pe)
1672ai	44 y M				A/C	Ingst	Int-A	2		
		methadone	1	1						
1673ai	44 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		cocaine	3	3						
1674ai	44 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		fluoxetine	3	3						
1675h	44 y M				U	Ingst	Int-S	2		
		acetaminophen	1	1						
1676ai	44 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1677ai	44 y M				A/C	Par	Int-A	2		
		heroin	1	1						
1678ai	44 y M				U	Unk	Int-A	2		
		fentanyl	1	1						
1679pha	44 y F				A	Ingst	Int-A	3		
		narcotic, N.O.S.	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		ethanol	2	2						
1680h	44 y F				A	Ingst	Int-A	3		
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	56 mcg/mL In Serum @ Unknown
		acetaminophen	2	2						
1681pi	44 y M				A	Ingst+ Inhal	Int-U	3		
		fentanyl, N.O.S.	1	1					fentanyl	0.004 mg/L In Whole Blood @ Autopsy
1682ai	44 y M				U	Unk	Int-A	1		
		methadone	1	1						
1683ai	44 y M				U	Unk	Int-A	1		
		heroin	1	1						
1684ai	44 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
1685ai	44 y M				U	Par	Int-A	2		
		heroin	1	1						
1686h	44 y F				C	Ingst	Int-U	2		
		acetaminophen	1	1					acetaminophen (apap)	55 mcg/mL In Plasma @ Unknown
1687ai	44 y M				U	Par	Int-A	2		
		narcotic, N.O.S.	1	1						
1688ai	45 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1689ai	45 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1690ai	45 y F				U	Unk	Int-A	1		
		methadone	1	1						
		alprazolam	2	2						
1691ai	45 y M				U	Unk	Unt-M	2		
		fentanyl	1	1						
		cyclobenzaprine	2	2						
1692ai	45 y F				U	Unk	Unt-M	1		
		methadone	1	1						
		alprazolam	2	2						
1693ai	45 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
1694ai	45 y F				U	Unk	Unt-M	1		
		hydromorphone	1	1						
		alprazolam	2	2						
1695ai	45 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		loperamide	3	3						
1696ai	45 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1697ai	45 y M				U	Unk	Unk	2		
		narcotic, N.O.S.	1	1						
1698ha	45 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	46 mcg/mL In Blood (unspecified) @ Unknown
1699ai	45 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						
1700ai	45 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1701ha	45 y F				U	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	262 mcg/mL In Blood (unspecified) @ Unknown
1702ai	45 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1703ai	45 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		sertraline	3	3						
1704ai	45 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		loperamide	2	2						
		gabapentin	3	3						
1705pa	45 y F				U	Unk	Int-A	1		
		heroin	1	1					codeine (free)	11 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					morphine (free)	16 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2						
1706h	45 y F				A	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen (apap)	164 mcg/mL In Serum @ 3 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	222 mcg/mL In Plasma @ 2 d (pe)
1707ai	45 y F				U	Unk	Int-A	1		
		narcotic, N.O.S.	1	1						
1708ai	45 y M				U	Ingst+ Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1709ai	45 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1710ai	46 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
[1711h]	46 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	67.8 mg/dL In Blood (unspecified) @ 1 h (pe)
		salicylate	1	1					salicylate	79.2 mg/dL In Blood (unspecified) @ 3 h (pe)
		salicylate	1	1					salicylate	88.1 mg/dL In Blood (unspecified) @ 6 h (pe)
		salicylate	1	1					salicylate	93 mg/dL In Blood (unspecified) @ 9 h (pe)
1712ai	46 y M				U	Unk	Int-S	1		
		morphine	1	1						
		tramadol	2	2						
		gabapentin	3	3						
		butalbital	4	4						
		dextromethorphan	5	5						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		doxylamine	6	6						
		promethazine	7	7						
		zolpidem	8	8						
1713ai	46 y F				U	Unk	Unt-M	1		
		fentanyl, N.O.S.	1	1						
		amitriptyline	2	2						
		gabapentin	3	3						
		duloxetine (ER)	4	4						
		ziprasidone	5	5						
1714ai	46 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		plant, mitragyna	3	3						
1715hi	46 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
1716ai	46 y M				A/C	Ingst	Int-U	2		
		oxycodone	1	1						
1717ph	46 y F				A	Ingst	Int-S	1		
		oxycodone	1	1					oxycodone (total)	236 ng/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	190 mg/dL In Blood (unspecified) @ Unknown
1718h	46 y F				U	Ingst+ Unk	Int-S	3		
		acetaminophen/opioid	1	1					acetaminophen (apap)	99 mcg/mL In Serum @ Unknown
		drug, N.O.S.	2	1						
1719	46 y F				A	Ingst+ Aspir	Int-S	1		
		tramadol	1	1					tramadol	1100 ng/mL In Blood (unspecified) @ Unknown
		tramadol	1	1					o-demethyl tramadol	580 ng/mL In Blood (unspecified) @ Unknown
		tramadol	1	1					gabapentin	6.6 mcg/mL In Blood (unspecified) @ Unknown
		gabapentin	2	2						
		heparin	3	3						
1720ai	46 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1721p	46 y F				A/C	Ingst	Int-S	2		
		acetaminophen/hydrocodone	1	1						
1722ai	46 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1723ai	46 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1724ai	46 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		aripiprazole	3	3						
1725ai	46 y M				U	Inhal	Int-A	2		
		narcotic, N.O.S.	1	1						
1726h	46 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	282 mcg/mL In Serum @ Unknown
1727h	46 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	136 mcg/mL In Blood (unspecified) @ 30 m (pe)
1728ai	46 y M				U	Unk	Int-A	2		
		fentanyl, N.O.S.	1	1						
		hyperthermia	2	2						
1729ai	46 y M				A	Par	Int-A	2		
		narcotic, N.O.S.	1	1						
1730ai	46 y F				A	Par	Int-A	2		
		heroin	1	1						
1731ai	46 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		fentanyl analogs (despropionyl fentanyl)	2	2						
		ethanol	3	3						
1732pai	46 y M				A	Unk	Int-A	1		
		oxycodone	1	1						
1733h	46 y F				C	Ingst	Int-U	1		
		acetaminophen	1	1					acetaminophen (apap)	81 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
		cocaine	3	3						
		marijuana	4	4						
1734ai	46 y F				U	Unk	Int-A	1		
		buprenorphine	1	1						
		duloxetine (ER)	2	2						
		pseudoephedrine	3	3						
1735ai	46 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		gabapentin	3	3						
1736phi	46 y M				A	Ingst	Int-A	2		
		fentanyl	1	1						
		cocaine	2	2						
		risperidone	3	3						
		trazodone	4	4						
		ethanol	5	5					ethanol	65 mg/dL In Blood (unspecified) @ Unknown
1737ai	46 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1738ai	46 y M				A	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
		ethanol	2	2						
1739h	47 y F				C	Ingst	Int-U	2		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	35 mcg/mL In Blood (unspecified) @ Unknown
1740ai	47 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1741ai	47 y M				U	Unk	Unt-M	2		
		fentanyl, N.O.S.	1	1						
		hydrocodone	2	2						
		trazodone	3	3						
		ethanol	4	4						
1742ai	47 y F				U	Unk	Int-A	1		
		oxycodone	1	1						
		plant, mitragyna	2	2						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		gabapentin	3	3						
1743ai	47 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		diphenhydramine	3	3						
		alprazolam	4	4						
1744ai	47 y F				U	Unk	Unk	1		
		morphine	1	1						
		cyclobenzaprine	2	2						
		paroxetine	3	3						
1745ai	47 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		methadone	3	3						
1746ai	47 y F				U	Unk	Unt-M	1		
		oxycodone	1	1						
		clonazepam	2	2						
		fluoxetine	3	3						
1747ai	47 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		clonazepam	2	2						
		ethanol	3	3						
1748ai	47 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		diphenhydramine	2	2						
		gabapentin	3	3						
1749pha	47 y M				A	Inhal	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	0.038 mg/L In Whole Blood @ Autopsy
		fentanyl analogs (despropionyl fentanyl)	2	2						
		ethanol	3	3					ethanol	70 mg/mL In Whole Blood @ Autopsy
		ethanol	3	3					ethanol	80 mg/mL In Urine (quantitative only) @ Autopsy
		ethanol	3	3					ethanol	80 mg/mL In Vitreous @ Autopsy
		cocaine	4	4						
		tramadol	5	5					tramadol	0.1 mg/L In Blood (unspecified) @ Autopsy
1750h	47 y F				C	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	139 mcg/mL In Blood (unspecified) @ Unknown
		bupropion (ER)	2	2						
1751ai	47 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		diphenhydramine	2	2						
		acetaminophen	3	3						
1752ai	47 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		cyclobenzaprine	3	3						
1753ai	47 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		diphenhydramine	2	2						
1754ai	47 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1755ha	47 y M				U	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	48 mcg/mL In Blood (unspecified) @ 1 h (pe)
1756ai	47 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		amitriptyline	3	3						
1757ai	47 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1758ai	47 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		gabapentin	2	2						
		diazepam	3	3						
1759ph	47 y F				A	Ingst	Int-U	2		
		fentanyl	1	1						
		barbiturate (long acting)	2	2						
		ethanol	3	3						
1760a	47 y F				U	Ingst	Unk	3		
		acetaminophen	1	1					acetaminophen (apap)	70.9 mcg/mL In Serum @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	80 mcg/mL In Serum @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	86.7 mcg/mL In Serum @ Unknown
1761ph	47 y M				U	Ingst	Int-S	2		
		acetaminophen/hydrocodone	1	1						
		glyburide	2	2						
1762pa	47 y M				A	Inhal	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	0.023 mg/L In Whole Blood @ Autopsy
		morphine	3	2					morphine (free)	23 mcg/L In Whole Blood @ Autopsy
		fentanyl analogs (despropionyl fentanyl)	2	3						
1763h	47 y M				A/C	Ingst	Int-S	2		
		acetaminophen/diphenhydramine	1	1					acetaminophen (apap)	128 mcg/mL In Blood (unspecified) @ Unknown
1764ai	47 y M				U	Unk	Int-M	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		hyperthermia	3	3						
1765	47 y M				U	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	252 mcg/mL In Plasma @ Unknown
1766pa	47 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	0.057 mg/L In Blood (unspecified) @ Autopsy
		fentanyl analogs (despropionyl fentanyl)	2	2						
		xylazine	3	3						
		methamphetamine	4	4					methamphetamine	0.09 mg/L In Blood (unspecified) @ Autopsy
		methadone	5	5					methadone	0.09 mg/L In Blood (unspecified) @ Autopsy
		cocaine	6	6						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		quinine	7	7						
		citalopram	8	8					citalopram	0.1 mg/L In Blood (unspecified) @ Autopsy
1767ai	47 y M				U	Par	Int-A	2		
		narcotic, N.O.S.	1	1						
1768	47 y F				A	Ingst	Int-S	3		
		acetaminophen/diphenhydramine	1	1					acetaminophen (apap)	194 mcg/mL In Blood (unspecified) @ 1 h (pe)
		acetaminophen	2	2						
		drug, N.O.S.	3	3						
1769ai	48 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1770ai	48 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		chlordiazepoxide	3	3						
1771ai	48 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		diphenhydramine	2	2						
1772ai	48 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1773ai	48 y M				U	Unk	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
		alprazolam	3	3						
1774hai	48 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		paroxetine	3	3						
1775	48 y M				U	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	61.8 mcg/mL In Serum @ Unknown
1776h	48 y M				A	Unk	Int-U	2		
		narcotic, N.O.S.	1	1					alprazolam	12.7 ng/mL In Blood (unspecified) @ Unknown
		narcotic, N.O.S.	1	1					temazepam	18.1 ng/mL In Urine (quantitative only) @ Unknown
		narcotic, N.O.S.	1	1					oxycodone	25.4 ng/mL In Urine (quantitative only) @ Unknown
		narcotic, N.O.S.	1	1					diazepam	28.5 ng/mL In Blood (unspecified) @ Unknown
		narcotic, N.O.S.	1	1					fentanyl	3.9 ng/mL In Urine (quantitative only) @ Unknown
		narcotic, N.O.S.	1	1					nordiazepam	31.7 ng/mL In Urine (quantitative only) @ Unknown
		narcotic, N.O.S.	1	1					alprazolam	61 ng/mL In Urine (quantitative only) @ Unknown
		narcotic, N.O.S.	1	1					alpha-oh-alprazolam	98.4 ng/mL In Urine (quantitative only) @ Unknown
		benzodiazepine	2	2						
1777ai	48 y M				U	Unk	Int-S	1		
		hydrocodone	1	1						
		acetaminophen	2	2						
		alprazolam	3	3						
1778ai	48 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		marijuana	3	3						
1779h	48 y F				C	Ingst	Int-M	1		
		acetaminophen (ER)	1	1					acetaminophen (apap)	154 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen (ER)	1	1					acetaminophen (apap)	83 mcg/mL In Blood (unspecified) @ Unknown
1780ai	48 y F				U	Unk	Int-A	1		
		heroin	1	1						
		carisoprodol	2	2						
		ethanol	3	3						
1781ha	48 y F				U	Ingst+ Unk	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	110 mcg/mL In Blood (unspecified) @ Unknown
		benzodiazepine	2	2					alprazolam	17 ng/mL In Blood (unspecified) @ Unknown
		narcotic, N.O.S.	3	3						
1782ai	48 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		clonazepam	3	3						
1783ai	48 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1784ai	48 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
1785ai	48 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1786ai	48 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		gabapentin	3	3						
1787ai	48 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		morphine	3	3						
1788ha	48 y F				A/C	Ingst	Int-S	1		
		acetaminophen/diphenhydramine	1	1					acetaminophen (apap)	111.2 mg/L In Serum @ 2 d (pe)
		acetaminophen/diphenhydramine	1	1					acetaminophen (apap)	12.9 mg/L In Serum @ 3 d (pe)
		acetaminophen/diphenhydramine	1	1					acetaminophen (apap)	377 mg/L In Serum @ 15 h (pe)
		trazodone	3	2						
		venlafaxine	2	2						
1789ai	48 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		marijuana, N.O.S.	3	3						
1790ai	48 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		ethanol	3	3						
1791ai	48 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		heroin	2	2						
		methamphetamine	3	3						
1792ai	48 y M				U	Unk	Int-A	2		
		fentanyl	1	1						
		methamphetamine	2	2						
1793ai	48 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1794h	48 y F				U	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen (apap)	42 mcg/mL In Blood (unspecified) @ Unknown
1795pa	48 y F				U	Ingst	Int-S	3		
		acetaminophen/oxycodone	1	1						
1796pai	48 y M				A	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	0.018 mg/L In Whole Blood @ Autopsy
		phencyclidine	2	2					phencyclidine	0.3 mg/L In Whole Blood @ Autopsy
		fentanyl analogs (despropionyl fentanyl)	3	3						
		ethanol	4	4					ethanol	110 mg/dL In Vitreous @ Autopsy
		ethanol	4	4					ethanol	110 mg/dL In Whole Blood @ Autopsy
1797ai	48 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						
1798ai	48 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1799ai	48 y F				U	Unk	Int-A	2		
		fentanyl, N.O.S.	1	1						
1800ai	48 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1801pa	48 y F				A/C	Unk	Int-A	1		
		fentanyl	1	1					norfentanyl	18 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	1	1					fentanyl	68 ng/mL In Blood (unspecified) @ Unknown
		heroin	2	2						
		methadone	3	3					methadone	99 ng/mL In Blood (unspecified) @ Unknown
1802pai	48 y M				A	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	0.047 mg/L In Whole Blood @ Autopsy
		fentanyl analogs (despropionyl fentanyl)	2	2						
		etizolam	3	3						
1803h	48 y F				A	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	252 mcg/mL In Blood (unspecified) @ Unknown
1804h	48 y F				U	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen (apap)	31 mcg/mL In Plasma @ Unknown
1805h	48 y M				A/C	Ingst	Int-S	3		
		acetaminophen/oxycodone	1	1						
		metoprolol	2	2						
1806ha	48 y F				U	Ingst	Int-U	1		
		acetaminophen	1	1					acetaminophen (apap)	127 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
1807ai	48 y M				C	Par	Int-A	2		
		heroin	1	1						
1808ai	49 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1809ai	49 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		butalbital	3	3						
1810ai	49 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		oxycodone	3	3						
1811pa	49 y M				A	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	0.02 mg/L In Whole Blood @ Autopsy
		fentanyl analogs (despropionyl fentanyl)	2	2						
1812ai	49 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		cocaine	3	3						
1813ai	49 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		gabapentin	3	3						
		alprazolam	4	4						
1814ha	49 y F				A	Ingst	Int-A	3		
		heroin	1	1						
		ethanol	2	2						
		ethanol	3	3						
1815ai	49 y M				U	Unk	Unk	1		
		oxycodone	1	1						
		diazepam	2	2						
		ethanol	3	3						
1816ai	49 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1817ha	49 y F				A	Ingst	Int-M	1		
		acetaminophen	2	1					acetaminophen (apap)	22.6 mcg/mL In Blood (unspecified) @ Unknown
		phenol	1	2						
1818pha	49 y F				A	Ingst+ Par	Int-A	1		
		heroin	1	1						
		amphetamine	2	2						
		benzodiazepine	3	3						
		ethanol	4	4						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1819ai	49 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1820ai	49 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1821ai	49 y M				U	Unk	Int-A	1		
		heroin	1	1						
		gabapentin	2	2						
1822ai	49 y F				U	Unk	Int-A	1		
		acetaminophen	1	1						
		alprazolam	2	2						
		ethanol	3	3						
1823h	49 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	448.5 mcg/mL In Blood (unspecified) @ Unknown
		escitalopram	2	2						
		zolpidem	3	3						
		hydroxyzine	4	4						
		levothyroxine	5	5						
1824ai	49 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		loperamide	2	2						
1825ai	49 y M				U	Unk	Int-A	1		
		morphine	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1826ai	49 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1827ai	49 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		gabapentin	3	3						
1828ai	49 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cyclobenzaprine	2	2						
		ethanol	3	3						
1829ai	49 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1830ai	49 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1831pa	49 y M				A/C	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	13 ng/mL In Blood (unspecified) @ Unknown
		cocaine	2	2					benzoylecognine	1600 ng/mL In Blood (unspecified) @ Unknown
1832ai	49 y M				A	Ingst	Int-A	2		
		acetaminophen/oxycodone	1	1						
1833ai	49 y F				A/C	Ingst+ Unk	Unk	2		
		methadone	1	1						
1834ai	49 y M				U	Inhal	Int-A	2		
		heroin	1	1						
1835ai	49 y F				U	Ingst+ Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
		ethanol	4	4						
1836ai	49 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
1837ai	49 y M				A	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1838ai	50 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1839ai	50 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1840ai	50 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1841ai	50 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		heroin	2	2						
		methamphetamine	3	3						
1842ai	50 y M				U	Unk	Int-A	3		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ketamine	3	3						
1843ai	50 y M				U	Unk	Int-A	1		
		heroin	1	1						
		marijuana (concentrate)	2	2						
		ethanol	3	3						
1844ai	50 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1845ai	50 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		marijuana	3	3						
1846ai	50 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
1847ai	50 y F				U	Unk	Unk	1		
		morphine	1	1						
		hydromorphone	2	2						
		diazepam	3	3						
1848ai	50 y M				U	Unk	Int-A	1		
		methadone	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
1849h	50 y F				A/C	Ingst	Int-S	2		
		acetaminophen/hydrocodone	1	1						
1850ai	50 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1851ai	50 y F				U	Unk	Int-A	1		
		hydrocodone	1	1						
		beta blocker	2	2						
		acetaminophen	3	3						
1852ai	50 y F				U	Unk	Int-A	1		
		methadone	1	1						
		amitriptyline	2	2						
		cyclobenzaprine	3	3						
1853ai	50 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1854ai	50 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1855ai	50 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cyclobenzaprine	2	2						
		gabapentin	3	3						
1856hi	50 y F				C	Ingst	Int-S	1		
		acetaminophen/diphenhydramine	1	1						
1857ha	50 y F				U	Ingst	Int-S	1		
		acetaminophen/diphenhydramine	1	1					acetaminophen (apap)	78 mcg/mL In Blood (unspecified) @ 2 d (pe)
		ethanol	2	2						
1858ai	50 y F				U	Unk	Int-S	1		
		acetaminophen	1	1						
		ethanol	2	2						
1859ha	50 y M				A/C	Ingst	Int-S	1		
		oxycodone	1	1						
1860ai	50 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1861ai	50 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methadone	2	2						
		methamphetamine	3	3						
1862ai	50 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		amphetamine	2	2						
		quetiapine	3	3						
1863ai	50 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1864ai	50 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1865ai	50 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1866ai	50 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1867ha	50 y M				A	Ingst	Unk	3		
		acetaminophen	1	1					acetaminophen (apap)	31 mcg/mL In Blood (unspecified) @ Unknown
1868ai	50 y M				U	Unk	Int-U	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1869	50 y F				C	Ingst	Int-U	3		
		acetaminophen	1	1					acetaminophen (apap)	225 mcg/mL In Blood (unspecified) @ Unknown
1870ai	50 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
1871	50 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	13 mcg/mL In Blood (unspecified) @ Unknown
1872pha	50 y F				A	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1					fentanyl	0.002 mg/L In Whole Blood @ Autopsy
		fentanyl, N.O.S.	1	1					fentanyl	0.008 mg/L In Whole Blood @ Unknown
		fentanyl analogs (despropionyl fentanyl)	2	2						
1873ai	50 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		tramadol	2	2						
		gabapentin	3	3						
1874ai	50 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		plant, mitragyna	2	2						
1875h	50 y F				C	Ingst	Unt-M	2		
		acetaminophen	1	1					acetaminophen (apap)	22.6 mcg/mL In Serum @ Unknown
1876ai	50 y F				U	Unk	Int-S	1		
		narcotic, N.O.S.	1	1						
		amphetamine	2	2						
		benzodiazepine	3	3						
1877ai	50 y M				A/C	Par	Int-A	2		
		heroin	1	1						
1878ph	50 y F				C	Par	Int-A	2		
		heroin	1	1						
1879ai	51 y M				U	Unk	Int-S	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1880ai	51 y M				U	Unk	Int-S	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1881ai	51 y F				U	Unk	Unk	1		
		oxycodone	1	1						
		acetaminophen	2	2						
		clonidine	3	3						
1882ai	51 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		lorazepam	2	2						
1883ai	51 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		methamphetamine	2	2						
		cocaine	3	3						
1884ai	51 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1885ai	51 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		hydrocodone	3	3						
1886ai	51 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		chlordiazepoxide	2	2						
		ethanol	3	3						
1887ai	51 y F				U	Unk	Int-S	1		
		oxycodone	1	1						
		lorazepam	2	2						
		duloxetine (ER)	3	3						
1888ai	51 y M				U	Unk	Int-A	1		
		heroin	1	1						
1889h	51 y F				U	Ingst	Unk	1		
		acetaminophen/diphenhydramine	1	1					acetaminophen (apap)	90 mcg/mL In Blood (unspecified) @ 15 m (pe)
		benzonatate	2	2						
1890ai	51 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1891ai	51 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1892ai	51 y M				U	Unk	Int-A	2		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		sildenafil	3	3						
1893pa	51 y F				A/C	Ingst	Int-S	1		
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	79 mcg/mL In Blood (unspecified) @ 10 m (pe)
		acetaminophen/oxycodone	1	1					oxycodone (free)	820 ng/mL In Blood (unspecified) @ 10 m (pe)
		zolpidem	2	2					zolpidem	2200 ng/mL In Blood (unspecified) @ 10 m (pe)
		alprazolam	3	3					alprazolam	240 ng/mL In Blood (unspecified) @ 10 m (pe)
1894ai	51 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		amitriptyline	2	2						
		fluoxetine	3	3						
1895h	51 y F				C	Ingst	Unt-M	1		
		acetaminophen	1	1					acetaminophen (apap)	24 mcg/mL In Serum @ Unknown
1896ha	51 y F				U	Ingst	Unk	3		
		acetaminophen	1	1						
1897ai	51 y M				U	Unk	Int-U	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		ethanol	3	3						
		gabapentin	4	4						
1898h	51 y F				C	Ingst	Unk	1		
		acetaminophen/diphenhydramine	1	1					acetaminophen (apap)	146.2 mcg/mL In Blood (unspecified) @ 10 m (pe)
		acetaminophen/diphenhydramine	1	1					acetaminophen (apap)	49 mcg/mL In Blood (unspecified) @ 9.5 h (pe)
1899h	51 y M				A	Ingst	Int-S	1		
		acetaminophen (ER)	1	1					acetaminophen (apap)	105 mcg/mL In Blood (unspecified) @ 3 d (pe)
		acetaminophen (ER)	1	1					acetaminophen (apap)	243 mcg/mL In Blood (unspecified) @ 2 d (pe)
		acetaminophen (ER)	1	1					acetaminophen (apap)	275 mcg/mL In Blood (unspecified) @ 4.5 h (pe)
		ethanol	2	2					ethanol	210 mg/dL In Blood (unspecified) @ Unknown
1900h	51 y M				U	Ingst	AR-D	3		
		acetaminophen	1	1						
1901ai	51 y M				U	Inhal	Int-A	2		
		heroin	1	1						
1902ai	51 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1903ha	51 y F				A/C	Ingst	Unk	3		
		tramadol	1	1					tramadol	1440 ng/mL In Blood (unspecified) @ Unknown
		tramadol	1	1					o-demethyl tramadol	378 ng/mL In Blood (unspecified) @ Unknown
		hydrocodone	2	2					hydrocodone	20.4 ng/mL In Blood (unspecified) @ Unknown
		hydrocodone	2	2					dihydrocodeine	3.4 ng/mL In Blood (unspecified) @ Unknown
		diphenhydramine	3	3					diphenhydramine	342 ng/mL In Blood (unspecified) @ Unknown
1904ai	51 y M				U	Ingst+ Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		loperamide	2	2						
		ethanol	3	3						
1905ai	51 y M				A	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1906ai	51 y M				U	Par	Int-A	2		
		heroin	1	1						
1907ai	52 y M				U	Unk	Unk	2		
		oxycodone	1	1						
		quetiapine	2	2						
		alprazolam	3	3						
1908ai	52 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1909ha	52 y F				A/C	Ingst	Unk	3		
		acetaminophen	1	1					acetaminophen (apap)	52 mcg/mL In Blood (unspecified) @ Unknown
1910ai	52 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
1911ai	52 y F				U	Unk	Unt-M	1		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
		acetaminophen	3	3						
1912ai	52 y M				U	Unk	Int-S	1		
		heroin	1	1						
		methamphetamine	2	2						
1913ai	52 y M				A	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1914ai	52 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cyclobenzaprine	2	2						
		ethanol	3	3						
1915ai	52 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		hydroxyzine	2	2						
1916ai	52 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		ethanol	3	3						
1917ai	52 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1918ai	52 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		bupropion	2	2						
		marijuana	3	3						
1919ai	52 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1920ai	52 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
1921ai	52 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
1922ai	52 y M				U	Unk	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
		ethanol	3	3						
1923ai	52 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1924ai	52 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1925h	52 y F				U	Ingst	Int-S	2		
		acetaminophen	1	1						
1926p	52 y F				A	Ingst	Int-S	3		
		acetaminophen	1	1						
1927ai	52 y M				U	Par	Int-U	2		
		heroin	1	1						
1928ai	52 y F				U	Inhal	Int-A	2		
		heroin	1	1						
1929ai	53 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		citalopram	3	3						
1930ai	53 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		trazodone	3	3						
1931p	53 y M				U	Inhal	Int-A	2		
		fentanyl, N.O.S.	1	1						
1932ai	53 y M				U	Unk	Int-A	1		
		heroin	1	1						
		fentanyl	2	2						
		methamphetamine	3	3						
1933h	53 y M				U	Unk	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	378 mcg/mL In Whole Blood @ Unknown
1934ai	53 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		tadalafil	3	3						
1935pa	53 y M				A/C	Unk	Int-M	1		
		fentanyl	1	1					fentanyl	0.68 ng/mL In Blood (unspecified) @ Unknown
		heroin	2	1						
		oxycodone	3	3					morphine (free)	17 ng/mL In Blood (unspecified) @ Unknown
		oxycodone	3	3					oxymorphone (free)	3.2 ng/mL In Blood (unspecified) @ Unknown
		oxycodone	3	3					oxycodone (free)	79 ng/mL In Blood (unspecified) @ Unknown
1936ai	53 y U				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		metoprolol	2	2						
		alprazolam	3	3						
1937ai	53 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1938ai	53 y M				A/C	Par	Int-A	2		
		heroin	1	1						
1939ai	53 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		phencyclidine	3	3						
1940h	53 y F				C	Ingst	Unt-T	3		
		acetaminophen	1	1					salicylate	1.2 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	16 mcg/mL In Blood (unspecified) @ Autopsy
		acetaminophen	1	1					acetaminophen (apap)	39 mcg/mL In Blood (unspecified) @ Unknown
		digoxin	2	2					digoxin	1 ng/mL In Blood (unspecified) @ Unknown
		salicylate	3	3						
1941ai	53 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		buprenorphine	2	2						
		ethanol	3	3						
1942ai	53 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1943ai	53 y M				U	Inhal	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
1944h	53 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen (apap)	94 mcg/mL In Blood (unspecified) @ Unknown
		metformin	2	2						
1945ai	53 y M				U	Unk	Int-A	2		
		fentanyl, N.O.S.	1	1						
		morphine	2	2						
		methamphetamine	3	3						
1946ai	53 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		oxycodone	3	3						
1947ai	53 y F				U	Unk	Int-U	1		
		morphine	1	1						
		butalbital	2	2						
		clonidine	3	3						
		diphenhydramine	4	4						
		gabapentin	5	5						
1948ai	53 y M				U	Unk	Int-A	3		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		methamphetamine	3	3						
1949ai	53 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
1950ai	53 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
1951ai	53 y M				U	Unk	Int-A	1		
		heroin	1	1						
		hydroxyzine	2	2						
		promethazine	3	3						
1952ai	53 y F				U	Unk	Int-U	2		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
1953ai	53 y M				U	Unk	Unk	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		fluoxetine	3	3						
1954h	53 y M				A	Ingst	Int-S	2		
		acetaminophen/hydrocodone	1	1						
1955ai	53 y M				U	Ingst+ Unk	Int-A	1		
		fentanyl	1	1						
		diazepam	2	2						
		ethanol	3	3						
1956h	53 y F				C	Ingst	Unt-T	1		
		acetaminophen/diphenhydramine	1	1					acetaminophen (apap)	18 mcg/mL In Blood (unspecified) @ 24 h (pe)
1957ai	53 y M				U	Unk	Int-A	2		
		heroin	1	1						
1958h	53 y M				U	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	328 mcg/mL In Blood (unspecified) @ Unknown
		lithium	2	2					lithium	4.7 mEq/L In Blood (unspecified) @ Unknown
		ethanol (denatured)	3	3						
		cleaner (hydrochloric acid)	4	4						
		doxylamine	5	5						
		ibuprofen	6	6						
		quetiapine	7	7						
		methylphenidate (extended release) (ER)	8	8						
		lamotrigine	9	9						
		aripiprazole	10	10						
		levothyroxine	11	11						
1959ai	53 y M				U	Ingst+ Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		heroin	2	2						
		methamphetamine	3	3						
		ethanol	4	4						
1960ai	53 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1961ai	53 y M				A	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1962ai	53 y F				A/C	Unk	Int-S	2		
		narcotic, N.O.S.	1	1						
1963ai	53 y F				U	Unk	Int-A	2		
		heroin	1	1						
1964h	53 y M				A	Ingst	Int-S	2		
		acetaminophen	1	1						
		ibuprofen	2	2						
		metoprolol	3	3						
1965h	54 y F				C	Ingst	Unt-T	1		
		acetaminophen	1	1						
1966ai	54 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1967h	54 y M				A/C	Ingst	Int-M	2		
		acetaminophen/salicylate	1	1					salicylate	4.1 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen/salicylate	1	1					acetaminophen (apap)	6.1 mcg/mL In Blood (unspecified) @ Unknown
1968ai	54 y M				U	Unk	Int-S	1		
		fentanyl, N.O.S.	1	1						
		amitriptyline	2	2						
		marijuana, N.O.S.	3	3						
1969ai	54 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1970h	54 y M				A	Ingst	Int-S	2		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminophen	1	1						
1971ai	54 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1972ai	54 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		heroin	2	2						
		cocaine	3	3						
		methamphetamine	4	4						
1973ai	54 y M				U	Unk	Unk	2		
		oxycodone	1	1						
1974ai	54 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		codeine	2	2						
		diphenhydramine	3	3						
1975ai	54 y F				U	Unk	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
		diazepam	3	3						
		mirtazapine	4	4						
		promethazine	5	5						
		hydroxyzine	6	6						
		ethanol	7	7						
1976ai	54 y M				U	Unk	Int-A	1		
		heroin	1	1						
		fentanyl, N.O.S.	2	2						
		ethanol	3	3						
1977h	54 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	162 mcg/mL In Blood (unspecified) @ 14 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	343 mcg/mL In Blood (unspecified) @ 10 m (pe)
		acetaminophen	1	1					acetaminophen (apap)	90 mcg/mL In Blood (unspecified) @ 25 h (pe)
		propranolol	2	2						
		quetiapine	3	3						
		gabapentin	4	4						
		eszopiclone	5	5						
1978ph	54 y M				A/C	Ingst	Int-S	2		
		acetaminophen	2	1					acetaminophen (apap)	10.5 mcg/mL In Blood (unspecified) @ 2 d (pe)
		acetaminophen	2	1					acetaminophen (apap)	227.7 mcg/mL In Blood (unspecified) @ 1 h (pe)
		acetaminophen	2	1					acetaminophen (apap)	23 mcg/mL In Blood (unspecified) @ 1 d (pe)
		quetiapine	1	2						
		cariprazine	3	3						
		carvedilol	4	4						
		alprazolam	5	5						
		topiramate	6	6						
		zolpidem	7	7						
		ramipril	8	8						
1979ai	54 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1980ai	54 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		ethanol	3	3						
1981ai	54 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
1982ai	54 y M				U	Unk	Int-U	3		
		heroin	1	1						
		hydroxyzine	2	2						
		promethazine	3	3						
1983pa	54 y M				A/C	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	6 ng/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	0.14 g/dL In Blood (unspecified) @ Unknown
		marijuana	3	3					delta-9-thc	3.7 ng/mL In Blood (unspecified) @ Unknown
		marijuana	3	3					11-oh-thc (11-hydroxy-delta-9-tetrahydrocannabinol)	4.4 ng/mL In Blood (unspecified) @ Unknown
		marijuana	3	3					delta-9-carboxy-thc	49 ng/mL In Blood (unspecified) @ Unknown
1984ai	54 y F				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
1985ai	54 y M				U	Unk	Int-S	2		
		narcotic, N.O.S.	1	1						
1986ai	54 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
1987ha	54 y F				A	Ingst	Int-S	1		
		tramadol	1	1					o-demethyl tramadol	1000 ng/mL In Blood (unspecified) @ Unknown
		tramadol	1	1					tramadol	7800 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	2	2					clonazepam	130 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	2	2					7-aminoclonazepam	200 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	3	3					alprazolam	150 ng/mL In Blood (unspecified) @ Unknown
		quetiapine	4	4					quetiapine	270 ng/mL In Blood (unspecified) @ Unknown
		diphenhydramine	5	5					diphenhydramine	280 ng/mL In Blood (unspecified) @ Unknown
		zolpidem	6	6					zolpidem	420 ng/mL In Blood (unspecified) @ Unknown
		trazodone	7	7					trazodone	0.13 mcg/mL In Blood (unspecified) @ Unknown
		hydroxyzine	8	8					hydroxyzine	760 ng/mL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		antihistamine/decongestant	9	9					doxylamine	120 ng/mL In Blood (unspecified) @ Unknown
1988a	54 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	16.2 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	186 mcg/mL In Blood (unspecified) @ Unknown
1989ai	54 y M				U	Ingst+ Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		tramadol	3	3						
		ethanol	4	4						
1990h	54 y F				U	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen (apap)	250.2 mg/L In Serum @ Unknown
		drug, N.O.S.	2	2						
1991ai	54 y M				U	Inhal	Int-A	2		
		heroin	1	1						
1992ai	55 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1993ai	55 y F				U	Unk	Int-A	1		
		heroin	1	1						
1994ha	55 y M				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen (apap)	145 mcg/mL In Blood (unspecified) @ Unknown
1995ai	55 y F				C	Unk	Int-A	1		
		narcotic, N.O.S.	1	1						
1996ha	55 y F				A/C	Ingst	Int-M	3		
		acetaminophen	1	1					acetaminophen (apap)	103.3 mcg/mL In Whole Blood @ 10 m (pe)
1997ai	55 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		buspirone	2	2						
1998h	55 y F				A/C	Ingst	AR-D	3		
		colchicine	1	1						
1999h	55 y M				A	Ingst	Int-S	2		
		tramadol	1	1						
		methadone	2	2						
		Mitragyna speciosa korthals	3	3						
2000ha	55 y M				A/C	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	164.6 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/decongestant/dextromethorphan	2	2						
2001ai	55 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		sildenafil	3	3						
2002ai	55 y F				A	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
2003ai	55 y M				U	Unk	Int-A	3		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
2004ai	55 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		bupropion	3	3						
2005ai	55 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		methamphetamine	3	3						
2006ai	55 y M				U	Par	Int-A	2		
		heroin	1	1						
2007ai	55 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		marijuana	3	3						
2008ai	55 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
2009ai	55 y M				A	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
2010ai	55 y M				U	Unk	Int-A	3		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
2011h	55 y M				U	Ingst	Int-S	3		
		acetaminophen	1	1						
		drug, N.O.S.	2	2						
2012ph	55 y F				A/C	Ingst	Int-S	2		
		methadone	1	1						
2013ai	55 y M				A	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
2014ai	55 y F				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
2015ai	55 y F				U	Inhal	Int-A	2		
		heroin	1	1						
2016pi	55 y M				A	Unk	Unk	2		
		methadone	1	1					methadone	0.7 mg/L In Whole Blood @ Autopsy
		methadone	1	1					methadone	0.9 mg/L In Whole Blood @ Autopsy
2017	55 y M				A	Ingst	Unt-M	3		
		acetaminophen	1	1					acetaminophen (apap)	402 mcg/mL In Serum @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	45 mcg/mL In Serum @ 30 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	78 mcg/mL In Serum @ 23 h (pe)
2018ai	56 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		oxycodone	3	3						
2019ph	56 y M				A	Par	Int-A	1		
		fentanyl, N.O.S.	1	1					morphine	0 ng/mL In Blood (unspecified) @ Unknown
		fentanyl, N.O.S.	1	1					hydromorphone	0 ng/mL In Blood (unspecified) @ Unknown
		fentanyl, N.O.S.	1	1					fentanyl	0 ng/mL In Urine (quantitative only) @ Unknown
		fentanyl, N.O.S.	1	1					norfentanyl	0 ng/mL In Urine (quantitative

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										only) @ Unknown
		fentanyl, N.O.S.	1	1					methadone	0 ng/mL In Urine (quantitative only) @ Unknown
		fentanyl, N.O.S.	1	1					eddp (2-ethylidene-1,5-dimethyl-3,3-diphenyl pyrrolidine)	0 ng/mL In Urine (quantitative only) @ Unknown
		fentanyl, N.O.S.	1	1					fentanyl	6.4 ng/mL In Blood (unspecified) @ Unknown
		methadone	2	2					4-anpp (despropionyl fentanyl)	0 ng/mL In Blood (unspecified) @ Unknown
		methadone	2	2					methadone	0 ng/mL In Urine (quantitative only) @ Unknown
		methadone	2	2					eddp (2-ethylidene-1,5-dimethyl-3,3-diphenyl pyrrolidine)	0 ng/mL In Urine (quantitative only) @ Unknown
		methadone	2	2					methadone	122 ng/mL In Blood (unspecified) @ Unknown
		oxazepam	3	3					oxazepam	0 ng/mL In Urine (quantitative only) @ Unknown
		morphine	4	4						
2020ai	56 y M				A	Unk	Int-A	2		
		heroin	1	1						
2021ai	56 y M				A	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
2022ai	56 y M				U	Unk	Unk	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
2023pha	56 y M				U	Ingst+ Oth+ Unk	Int-S	1		
		acetaminophen/hydrocodone	2	1						
		fentanyl	1	1					norfentanyl	1.4 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	1	1					fentanyl	10 ng/mL In Blood (unspecified) @ Unknown
		marijuana	3	2						
		amphetamine	4	3						
2024ai	56 y M				U	Unk	Int-A	1		
		heroin	1	1						
		sertraline	2	2						
		ethanol	3	3						
2025ai	56 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
2026ai	56 y M				U	Unk	Unt-M	1		
		methadone	1	1						
		heroin	2	2						
		trazodone	3	3						
2027ai	56 y M				U	Unk	Int-A	1		
		oxycodone	1	1						
2028ai	56 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
2029	56 y F				A/C	Ingst	Int-U	2		
		morphine	1	1						
2030ai	56 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
2031h	56 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	35.4 mcg/mL In Blood (unspecified) @ 27 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	92.5 mcg/mL In Blood (unspecified) @ 45 m (pe)
		alprazolam	2	2						
2032ai	56 y M				U	Unk	Int-S	1		
		oxycodone	1	1						
		marijuana, N.O.S.	2	2						
2033ph	56 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	634 mcg/mL In Blood (unspecified) @ Unknown
2034ai	56 y M				U	Unk	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
		methamphetamine	3	3						
2035ai	56 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
2036ha	56 y F				A	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2					benzoylecognine	4300 ng/mL In Blood (unspecified) @ Unknown
		bupropion	3	3					bupropion	43 ng/mL In Blood (unspecified) @ Unknown
		bupropion	3	3					hydroxybupropion	970 ng/mL In Blood (unspecified) @ Unknown
		aripiprazole	4	4					aripiprazole	160 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	5	5					7-aminoclonazepam	10 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	5	5					clonazepam	3 ng/mL In Blood (unspecified) @ Unknown
		gabapentin	6	6					gabapentin	21 ng/mL In Blood (unspecified) @ Unknown
2037ai	56 y F				U	Inhal	Int-A	2		
		narcotic, N.O.S.	1	1						
2038	56 y F				A	Ingst	Int-M	3		
		acetaminophen	1	1						
2039ai	56 y M				A/C	Unk	Int-A	2		
		heroin	1	1						
2040ph	57 y M				A	Ingst+ Inhal	Int-A	2		
		fentanyl	1	1						
		narcotic, N.O.S.	2	2						
		cocaine	3	3						
		marijuana	4	4						
2041ai	57 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		oxycodone	3	3						
2042ai	57 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
2043ai	57 y F				U	Unk	Int-A	1		
		heroin	1	1						
2044h	57 y F				U	Ingst	Int-U	3		
		acetaminophen	1	1					acetaminophen (apap)	67 mcg/mL In Blood (unspecified) @ Unknown
2045ai	57 y M				U	Unk	Unk	1		
		morphine	1	1						
2046ai	57 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		heroin	2	2						
		methamphetamine	3	3						
2047ai	57 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		heroin	2	2						
2048ai	57 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		bupropion	2	2						
		quetiapine	3	3						
2049h	57 y F				U	Ingst	Int-S	2		
		salicylate	1	1					salicylate	43.5 mg/dL In Blood (unspecified) @ 15 h (pe)
		salicylate	1	1					salicylate	68 mg/dL In Blood (unspecified) @ 30 m (pe)
		acetaminophen	2	2					acetaminophen (apap)	195 mcg/mL In Blood (unspecified) @ 30 m (pe)
2050ai	57 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
2051ai	57 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		bupropion	2	2						
		clonazepam	3	3						
2052h	57 y F				A/C	Ingst	Int-S	2		
		buprenorphine/naloxone (sublingual film)	1	1						
		clonazepam	2	2						
		acetaminophen	3	3					acetaminophen (apap)	4 mcg/mL In Blood (unspecified) @ 1 h (pe)
		methamphetamine	4	4						
2053ai	57 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		duloxetine (ER)	3	3						
2054ai	57 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
2055ai	57 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		citalopram	2	2						
		ethanol	3	3						
2056ai	57 y F				U	Unk	Int-S	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
2057ai	57 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		marijuana	3	3						
2058ai	57 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		marijuana, N.O.S.	3	3						
2059ai	57 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		gabapentin	3	3						
		nortriptyline	4	4						
		quetiapine	5	5						
2060ai	57 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		tramadol	2	2						
		hydrocodone	3	3						
		ethanol	4	4						
2061pa	57 y M				U	Unk	Unk	1		
		oxycodone	1	1					oxycodone	0.4 mg/L In Whole Blood @ Autopsy
		oxycodone	1	1					oxycodone	0.5 mg/L In Whole Blood @ Autopsy
		Mitragyna speciosa korthals	2	2						
2062	57 y F				A	Unk	Int-S	2		
		sumatriptan	1	1						
		ibuprofen	2	2						
2063phi	57 y M				A	Par	Unk	3		
		heroin	1	1						
2064h	57 y F				U	Ingst+ Derm	Unk	2		
		fentanyl (TD)	1	1						
		alprazolam	2	2						
2065pha	57 y F				A	Ingst	Int-S	2		
		narcotic, N.O.S.	1	1						
2066h	57 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	242.3 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	395.4 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	462.4 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	487.2 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	514 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	558 mcg/mL In Blood (unspecified) @ Unknown
2067h	57 y F				A	Ingst	Int-M	1		
		salicylate	1	1						
		naproxen	2	2						
		acetaminophen	3	3					acetaminophen (apap)	62.9 mcg/mL In Blood (unspecified) @ Unknown
2068ha	57 y M				A	Ingst+ Inhal	Int-S	3		
		salicylate	1	1					salicylate	86.4 mg/dL In Blood (unspecified)

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										@ Unknown
		viral disease (COVID-19-Confirmed)	2	2						
		ibuprofen	3	3						
2069ai	57 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		morphine	3	3						
2070ai	57 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		diazepam	2	2						
		alprazolam	3	3						
2071h	57 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	5.3 mcg/mL In Blood (unspecified) @ Unknown
		narcotic, N.O.S.	2	2						
		benzodiazepine	3	3						
2072ai	57 y M				U	Inhal	Int-A	2		
		heroin	1	1						
2073ai	57 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
2074h	57 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen (apap)	22.1 mcg/mL In Serum @ 28.25 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	88.3 mcg/mL In Serum @ 15 m (pe)
2075h	57 y F				A/C	Ingst	Int-M	3		
		acetaminophen	1	1						
		ibuprofen	2	2						
2076pa	57 y M				A	Par	Int-A	1		
		fentanyl	1	1					fentanyl	13 ng/mL In Whole Blood @ Autopsy
		brorphine	2	2					brorphine	0.44 ng/mL In Whole Blood @ Autopsy
2077ha	58 y M				U	Unk	Unk	2		
		salicylate	1	1					salicylate	850 mcg/mL In Blood (unspecified) @ Unknown
2078i	58 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2079ai	58 y M				U	Unk	Int-A	3		
		fentanyl, N.O.S.	1	1						
		diazepam	2	2						
		phentermine	3	3						
2080ai	58 y M				U	Unk	Int-A	3		
		hydrocodone	1	1						
		diazepam	2	2						
		ethanol	3	3						
2081ha	58 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen (apap)	131.9 mcg/mL In Blood (unspecified) @ 1 h (pe)
		acetaminophen/hydrocodone	2	2						
2082h	58 y M				U	Ingst	Int-A	2		
		acetaminophen	1	1					acetaminophen (apap)	106.4 mcg/mL In Blood (unspecified) @ 5 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	106.4 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	124.8 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	71.6 mcg/mL In Blood (unspecified) @ 16 m (pe)
		acetaminophen	1	1					acetaminophen (apap)	71.6 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	79.5 mcg/mL In Blood (unspecified) @ 13.5 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	79.5 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
2083ai	58 y M				U	Unk	Int-A	1		
		oxycodone	1	1						
		marijuana	2	2						
2084ha	58 y F				A/C	Ingst	Int-S	1		
		oxycodone	1	1					oxymorphone (free)	27 ng/mL In Whole Blood @ Unknown
		oxycodone	1	1					oxycodone (free)	950 ng/mL In Whole Blood @ Unknown
		venlafaxine	2	2					venlafaxine	2900 ng/mL In Whole Blood @ Unknown
		venlafaxine	2	2					o-desmethyl-venlafaxine	3100 ng/mL In Whole Blood @ Unknown
		ibuprofen	3	3						
		cannabidiol	4	4						
2085ai	58 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		diazepam	2	2						
		diphenhydramine	3	3						
2086ai	58 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		fluoxetine	3	3						
2087ai	58 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
2088ai	58 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		clonazepam	3	3						
2089pha	58 y F				A/C	Ingst	Int-S	1		
		acetaminophen/oxycodone	1	1					oxymorphone	12.9 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/oxycodone	1	1					oxymorphone	38 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/oxycodone	1	1					oxycodone	65 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/oxycodone	1	1					oxycodone	783 ng/mL In Blood (unspecified) @ Unknown
2090ai	58 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
2091ai	58 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		methocarbamol	3	3						
2092ai	58 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		amitriptyline	3	3						
2093pa	58 y M				U	Par	Int-A	2		
		heroin	1	1						
		atorvastatin	2	2						
		trazodone	3	3					trazodone	0.18 mcg/mL In Whole Blood @ Autopsy
		sertraline	4	4					sertraline	300 ng/mL In Whole Blood @ Autopsy
		sertraline	4	4					desmethylsertraline	510 ng/mL In Whole Blood @ Autopsy
		gabapentin	5	5					gabapentin	2.7 mcg/mL In Whole Blood @ Autopsy
		marijuana	6	6					delta-9-thc	100 ng/mL In Whole Blood @ Autopsy
		marijuana	6	6					delta-9-carboxy-thc	15 ng/mL In Whole Blood @ Autopsy
		marijuana	6	6					11-oh-thc (11-hydroxy-delta-9-tetrahydrocannabinol)	3.9 ng/mL In Whole Blood @ Autopsy
		fentanyl	7	7					fentanyl	12 ng/mL In Whole Blood @ Autopsy
		fentanyl	7	7					norfentanyl	2.1 ng/mL In Whole Blood @ Autopsy
2094ai	58 y M				U	Inhal	Int-A	2		
		narcotic, N.O.S.	1	1						
2095ai	58 y M				U	Unk	Int-A	2		
		oxycodone	1	1						
2096ai	59 y M				U	Unk	Int-S	1		
		acetaminophen	1	1						
2097ai	59 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		marijuana	3	3						
2098	59 y F				A	Ingst	Int-S	2		
		oxycodone	1	1						
		alprazolam	2	2						
		amitriptyline	3	3						
2099h	59 y F				U	Ingst	Int-U	3		
		acetaminophen	1	1						
2100ai	59 y M				U	Unk	Int-S	1		
		acetaminophen	1	1						
		salicylate	2	2						
		brompheniramine	3	3						
		dextromethorphan	4	4						
		pseudoephedrine	5	5						
2101ha	59 y F				U	Ingst	Int-S	1		
		oxycodone	2	1						
		acetaminophen	1	2					acetaminophen (apap)	49 mcg/mL In Blood (unspecified) @ Unknown
2102h	59 y M				A/C	Ingst	Int-A	3		
		acetaminophen	1	1					acetaminophen (apap)	28 mcg/mL In Blood (unspecified) @ 10 m (pe)
2103ai	59 y F				U	Unk	Unt-M	1		
		oxycodone	1	1						
		gabapentin	2	2						
		cyclobenzaprine	3	3						
2104ai	59 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		ephedrine	3	3						
2105ha	59 y F				U	Ingst+ Unk	Int-S	2		
		fentanyl, N.O.S.	1	1					fentanyl	34 ng/mL In Blood (unspecified) @ Unknown
		fentanyl, N.O.S.	1	1					norfentanyl	57 ng/mL In Blood (unspecified) @ Unknown
		duloxetine (ER)	2	2					duloxetine	930 ng/mL In Blood (unspecified) @ Unknown
		sertraline	3	3					sertraline	340 ng/mL In Blood (unspecified) @ Unknown
		hydroxyzine	4	4					hydroxyzine	250 ng/mL In Blood (unspecified) @ Unknown
		trazodone	5	5					trazodone	0.2 mcg/mL In Blood (unspecified) @ Unknown
		ethylene glycol	6	6					ethylene glycol	22 mg/dL In Blood (unspecified) @ Unknown
2106h	59 y M				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	67 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
2107ai	59 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
2108	59 y M				C	Ingst	Int-S	3		
		acetaminophen	1	1						
2109ai	59 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
2110a	59 y M				A	Ingst	Int-S	2		
		hydrocodone	1	1					hydrocodone (free)	24 ng/mL In Blood (unspecified) @ 10 m (pe)
		alprazolam	2	2					alprazolam	99 ng/mL In Blood (unspecified) @ 10 m (pe)
		cyclobenzaprine	3	3					cyclobenzaprine	39 ng/mL In Blood (unspecified) @ 10 m (pe)
2111ai	59 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		plant, mitragyna	2	2						
2112ai	59 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cyclobenzaprine	2	2						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		marijuana, N.O.S.	3	3						
		ethanol	4	4						
2113h	59 y M				A	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	21.4 mcg/mL In Blood (unspecified) @ 2 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	35.1 mcg/mL In Blood (unspecified) @ 1 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	46.8 mcg/mL In Blood (unspecified) @ 9 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	5.1 mcg/mL In Blood (unspecified) @ 3 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	53.9 mcg/mL In Blood (unspecified) @ 4 h (pe)
2114ai	59 y F				U	Inhal	Int-A	2		
		heroin	1	1						
2115ha	59 y F				U	Ingst	Int-S	1		
		morphine	1	1					morphine (free)	510 ng/mL In Blood (unspecified) @ Unknown
		quetiapine	2	2					quetiapine	2200 ng/mL In Blood (unspecified) @ Unknown
		hydroxyzine	3	3						
		gabapentin	4	4					gabapentin	34 mcg/mL In Blood (unspecified) @ Unknown
		oxycodone	5	5						
		nicotine	6	6						
2116h	59 y F				U	Ingst	Unk	3		
		acetaminophen	1	1						
		drug, N.O.S.	2	2						
2117ai	59 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2118h	59 y M				C	Ingst	Int-M	2		
		salicylate	1	1					salicylate	14.6 mg/dL In Serum @ Unknown
		salicylate	1	1					salicylate	31 mg/dL In Serum @ Unknown
		salicylate	1	1					salicylate	66 mg/dL In Serum @ Unknown
		salicylate	1	1					salicylate	8 mg/dL In Serum @ Unknown
2119ai	59 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
2120ai	59 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2121ai	59 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2122h	59 y M				A/C	Ingst+ Unk	Int-S	3		
		acetaminophen	2	1					acetaminophen (apap)	4.5 mcg/mL In Serum @ Unknown
		gabapentin	1	2						
2123h	59 y M				U	Ingst	Int-U	1		
		acetaminophen	1	1					acetaminophen (apap)	44 mcg/mL In Serum @ Unknown
		ethanol	2	2					ethanol	77 mg/dL In Serum @ Unknown
2124ai	59 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methadone	2	2						
2125h	60 y F				U	Ingst+ Unk	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	117 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	0.054 mg/mL In Blood (unspecified) @ Unknown
		salicylate	3	3					salicylate	7.4 mg/dL In Blood (unspecified) @ Unknown
2126ai	60 y M				U	Unk	Int-A	2		
		methadone	1	1						
2127h	60 y F				A/C	Ingst	Int-S	2		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	32 mcg/mL In Serum @ Unknown
		alprazolam	2	2						
		acetaminophen	3	3						
		acetaminophen/oxycodone	4	4						
2128ai	60 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
2129ai	60 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		methadone	2	2						
		oxycodone	3	3						
2130ai	60 y F				U	Unk	Int-A	2		
		fentanyl, N.O.S.	1	1						
		cyclobenzaprine	2	2						
		trazodone	3	3						
2131ai	60 y M				U	Unk	Int-A	2		
		heroin	1	1						
2132ai	60 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		heroin	2	2						
		methamphetamine	3	3						
2133ai	60 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		alprazolam	3	3						
2134ai	60 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
		marijuana	3	3						
2135ai	60 y M				U	Unk	Int-A	2		
		hydrocodone	1	1						
		oxycodone	2	2						
		tramadol	3	3						
2136ai	60 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
2137ha	60 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	11 mcg/mL In Serum @ 3 d (pe)
		ethanol	2	2						
		diphenhydramine	3	3					diphenhydramine	1.4 mg/L In Blood (unspecified) @ 15 m (pe)
2138ai	60 y M				U	Unk	Int-A	2		
		heroin	1	1						
2139h	60 y F				A	Ingst	Int-M	3		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminophen	1	1					acetaminophen (apap)	172 mcg/mL In Blood (unspecified) @ Unknown
2140h	60 y F				C	Ingst	Unt-M	2		
		salicylate	1	1						
		acetaminophen	2	2						
		ibuprofen	3	3						
		naproxen	4	4						
2141ai	60 y M				U	Unk	Unk	2		
		narcotic, N.O.S.	1	1						
2142ha	60 y M				C	Ingst	Unt-M	1		
		acetaminophen	1	1					acetaminophen (apap)	50 mcg/mL In Plasma @ Unknown
2143ai	60 y M				U	Unk	Int-A	1		
		oxycodone	1	1						
		diphenhydramine	2	2						
		alprazolam	3	3						
2144ai	60 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		amphetamine (hallucinogenic)	2	2						
2145	60 y F				A	Ingst	Int-S	2		
		acetaminophen/oxycodone	1	1						
		quetiapine (ER)	2	2						
2146ai	60 y M				U	Unk	Int-A	1		
		morphine	1	1						
		gabapentin	2	2						
		diphenhydramine	3	3						
2147ai	60 y F				U	Unk	Int-S	1		
		morphine	1	1						
		quetiapine	2	2						
		hydroxyzine	3	3						
		gabapentin	4	4						
2148ai	60 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		tramadol	2	2						
		marijuana, N.O.S.	3	3						
2149ai	60 y M				U	Unk	Int-A	2		
		fentanyl, N.O.S.	1	1						
		hyperthermia	2	2						
		chlordiazepoxide	3	3						
2150ai	60 y M				U	Unk	Int-A	1		
		heroin	1	1						
		cyclobenzaprine	2	2						
2151ai	60 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
2152hi	60 y F				C	Ingst	Unt-T	2		
		acetaminophen	1	1						
2153ai	60 y M				A/C	Unk	Int-A	2		
		heroin	1	1						
2154h	60 y F				A	Ingst	Int-S	3		
		acetaminophen/codeine	1	1						
		ethanol	2	2						
2155ai	60 y M				U	Unk	Int-A	1		
		morphine	1	1						
		methamphetamine	2	2						
2156ai	60 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
2157ai	60 y M				U	Unk	Int-A	1		
		narcotic, N.O.S.	1	1						
		benzodiazepine	2	2						
2158ai	60 y M				U	Derm	Unk	2		
		fentanyl (TD)	1	1						
2159ha	61 y M				A/C	Derm	Int-S	3		
		fentanyl (TD)	1	1						
2160ai	61 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		oxycodone	3	3						
2161h	61 y M				C	Ingst	Int-M	2		
		acetaminophen	1	1					acetaminophen (apap)	13.1 mcg/mL In Serum @ Unknown
		naproxen	2	2						
2162ai	61 y F				U	Ingst	Int-S	2		
		hydromorphone	1	1						
2163ai	61 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
2164ai	61 y M				U	Unk	Unk	2		
		narcotic, N.O.S.	1	1						
2165ha	61 y F				A	Ingst	Int-M	3		
		acetaminophen	1	1					acetaminophen (apap)	200 mcg/mL In Blood (unspecified) @ Unknown
		N-acetylcsysteine	2	2						
2166ph	61 y F				U	Unk	Int-U	2		
		acetaminophen/hydrocodone	2	1						
		tramadol	4	2						
		gabapentin	6	3						
		buspirone	5	4						
		hydroxyzine	3	5						
		duloxetine (ER)	7	6						
		doxepin	1	7						
		cilostazol	8	8						
		drug, N.O.S.	9	9						
2167ai	61 y F				U	Unk	Unt-M	1		
		oxycodone	1	1						
		trazodone	2	2						
		clonazepam	3	3						
2168ai	61 y M				U	Unk	Unk	1		
		acetaminophen	1	1						
2169ai	61 y M				A	Par	Int-A	2		
		heroin	1	1						
2170ai	61 y M				U	Inhal	Int-A	2		
		heroin	1	1						
2171h	61 y F				U	Ingst	Int-S	2		
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	219.3 mcg/mL In Serum @ Unknown
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	270 mcg/mL In Serum @ 2 d (pe)
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	629 mcg/mL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	629 mcg/mL In Serum @ 6 h (pe)
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	72 mcg/mL In Serum @ 3 d (pe)
2172ai	61 y M				U	Unk	Int-A	1		
		methadone	1	1						
		methamphetamine	2	2						
2173ha	61 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	81 mcg/mL In Blood (unspecified) @ Unknown
		naproxen	2	2						
2174ai	61 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		gabapentin	2	2						
		alprazolam	3	3						
		ethanol	4	4						
2175ai	61 y M				U	Par	Int-A	2		
		heroin	1	1						
2176ai	61 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		morphine	2	2						
		methamphetamine	3	3						
2177ai	61 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		hydroxyzine	2	2						
		clonazepam	3	3						
		carbamazepine	4	4						
		zolpidem	5	5						
		ethanol	6	6						
2178h	61 y F				A/C	Ingst	Int-S	2		
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	64.2 mg/dL In Blood (unspecified) @ Unknown
2179ha	61 y M				U	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen (apap)	16 mcg/mL In Serum @ 2 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	41 mcg/mL In Serum @ 1 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	66 mcg/mL In Serum @ Unknown
2180ai	61 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		marijuana, N.O.S.	3	3						
2181ha	61 y F				U	Unk	Unk	2		
		acetaminophen	1	1					acetaminophen (apap)	12 mcg/mL In Serum @ 16 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	44 mcg/mL In Serum @ 3 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	59 mcg/mL In Serum @ 1.5 h (pe)
2182ai	61 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		oxycodone	3	3						
2183	61 y F				A/C	Ingst	Int-M	2		
		acetaminophen	1	1						
		ethanol	2	2						
2184h	61 y F				C	Ingst	Unt-T	3		
		acetaminophen	1	1						
2185h	61 y M				A/C	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	195 mcg/mL In Plasma @ Unknown
2186ai	61 y M				U	Unk	Int-A	1		
		oxycodone	1	1						
		morphine	2	2						
		gabapentin	3	3						
2187ha	61 y F				A	Ingst	Int-S	1		
		colchicine	1	1						
		indomethacin	2	2						
		trazodone	3	3					trazodone	1.2 mcg/mL In Blood (unspecified) @ Autopsy
2188ai	61 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		morphine	2	2						
		methamphetamine	3	3						
2189ai	61 y M				U	Unk	Int-A	1		
		buprenorphine	1	1						
		morphine	2	2						
		gabapentin	3	3						
2190pai	61 y F				U	Ingst+ Unk	Unk	1		
		brorphine	1	1					brorphine	2 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	2	2					fentanyl	0.32 ng/mL In Blood (unspecified) @ Autopsy
		gabapentin	3	3					gabapentin	6.8 mcg/mL In Blood (unspecified) @ Autopsy
		ethanol	4	4					ethanol	27 mg/dL In Blood (unspecified) @ Autopsy
2191ai	61 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
2192ha	61 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	152 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	170 mcg/mL In Blood (unspecified) @ Autopsy
		acetaminophen	1	1					acetaminophen (apap)	50 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	64 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	75 mcg/mL In Blood (unspecified) @ Unknown
2193ai	62 y M				U	Unk	Int-A	1		
		oxycodone	1	1						
		hydrocodone	2	2						
		trazodone	3	3						
		ethanol	4	4						
2194h	62 y F				A	Ingst	Int-M	1		
		acetaminophen	1	1						
2195ai	62 y M				U	Unk	Int-A	1		
		methadone	1	1						
		organophosphate	2	2						
		citalopram	3	3						
2196ai	62 y M				U	Unk	Int-A	2		
		methadone	1	1						
2197ai	62 y M				U	Unk	Unt-M	2		
		heroin	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		methamphetamine	2	2						
2198pha	62 y F				A/C	Ingst	Int-U	2		
		acetaminophen/oxycodone	1	1					oxycodone	0.039 mg/L In Blood (unspecified) @ 6 h (pe)
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	33.2 mcg/mL In Blood (unspecified) @ 5 m (pe)
		gabapentin	2	2					gabapentin	9.3 mg/L In Blood (unspecified) @ 6 h (pe)
2199ai	62 y M				U	Unk	Int-A	1		
		methadone	1	1						
		methamphetamine	2	2						
2200h	62 y M				U	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	30.9 mcg/mL In Blood (unspecified) @ Unknown
2201ai	62 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		marijuana	2	2						
2202ai	62 y M				U	Unk	Int-A	1		
		heroin	1	1						
2203ai	62 y M				U	Unk	Int-A	1		
		oxycodone	1	1						
		ethanol	2	2						
2204h	62 y M				A	Ingst	Int-U	3		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
2205h	62 y M				C	Ingst	Unt-U	3		
		acetaminophen/hydrocodone	1	1						
2206ai	62 y M				U	Inhal	Int-A	2		
		heroin	1	1						
2207ai	62 y M				U	Unk	Int-A	1		
		morphine	1	1						
		Non Drug Substance (N.O.S.)	2	2						
2208ai	62 y M				U	Unk	Int-A	1		
		heroin	1	1						
2209ai	62 y M				U	Unk	Int-A	1		
		oxycodone	1	1						
		cyclobenzaprine	2	2						
		alprazolam	3	3						
2210ai	62 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
2211ha	62 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen (apap)	153 mcg/mL In Serum @ 9 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	193 mcg/mL In Serum @ 2 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	83 mcg/mL In Serum @ 21.5 h (pe)
2212ai	62 y F				A/C	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
2213h	62 y M				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen (apap)	136 mg/L In Serum @ 1 h (pe)
2214ai	62 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
2215h	62 y F				C	Ingst	Unt-T	3		
		salicylate	1	1					salicylate	17.56 mg/dL In Serum @ 20 h (pe)
		salicylate	1	1					salicylate	18.9 mg/dL In Serum @ 9 h (pe)
		salicylate	1	1					salicylate	39.3 mg/dL In Serum @ 5 m (pe)
		salicylate	1	1					acetaminophen (apap)	7.6 mcg/mL In Serum @ Unknown
		acetaminophen	2	2						
2216ai	63 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
2217ai	63 y F				U	Unk	Int-A	1		
		heroin	1	1						
		oxycodone	2	2						
		fentanyl, N.O.S.	3	3						
		methamphetamine	4	4						
2218h	63 y F				U	Ingst	Int-S	1		
		salicylate (EC)	1	1					salicylate	47.7 mg/dL In Serum @ Unknown
2219ai	63 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
		lorazepam	4	4						
		diphenhydramine	5	5						
2220ha	63 y F				C	Ingst	Int-A	2		
		fentanyl, N.O.S.	1	1					fentanyl	0.006 mg/L In Whole Blood @ Unknown
		fentanyl, N.O.S.	1	1					fentanyl	0.18 mg/L In Whole Blood @ Autopsy
		fentanyl analogs (despropionyl fentanyl)	2	2						
2221	63 y M				A/C	Ingst	Int-S	1		
		oxycodone	1	1						
		cyclobenzaprine	2	2						
2222ai	63 y M				U	Unk	Int-S	1		
		hydromorphone	1	1						
		tapentadol	2	2						
		benzodiazepine	3	3						
2223h	63 y M				U	Ingst	Unk	2		
		acetaminophen	1	1						
2224ai	63 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
2225ha	63 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	144 mcg/mL In Blood (unspecified) @ Unknown
		naproxen	2	2						
2226h	63 y M				U	Ingst	Int-U	3		
		acetaminophen	1	1					acetaminophen (apap)	41 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
2227ha	63 y M				U	Ingst	Int-S	2		
		salicylate	1	1					salicylate	76 mg/dL In Serum @ Unknown
		acetaminophen	2	2					acetaminophen (apap)	156 mcg/mL In Serum @ Unknown
2228ai	63 y F				U	Par	Int-A	2		
		heroin	1	1						
2229ai	63 y M				U	Unk	Int-A	2		
		heroin	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
2230ai	63 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
2231ai	63 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2232ai	63 y M				U	Unk	Int-A	3		
		morphine	1	1						
		codeine	2	2						
		marijuana, N.O.S.	3	3						
2233ai	63 y M				U	Unk	Int-A	1		
		heroin	1	1						
		oxycodone	2	2						
		gabapentin	3	3						
2234h	63 y F				A/C	Ingst	Int-S	1		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	77 mcg/mL In Serum @ Unknown
		diazepam	2	2						
2235ai	63 y F				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
2236ai	64 y F				U	Unk	Unk	2		
		acetaminophen	1	1						
2237ai	64 y M				U	Unk	Int-S	1		
		hydrocodone	1	1						
		oxycodone	2	2						
		diphenhydramine	3	3						
2238h	64 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	203 mcg/mL In Serum @ Unknown
2239h	64 y M				A	Ingst	Int-M	3		
		salicylate	1	1						
2240ai	64 y M				U	Ingst+ Unk	Unt-M	1		
		oxycodone	1	1						
		ethanol	2	2						
2241ai	64 y F				U	Unk	Int-M	1		
		morphine	1	1						
		hydromorphone	2	2						
		fluoxetine	3	3						
2242ai	64 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
2243h	64 y F				U	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	754 mcg/mL In Blood (unspecified) @ Unknown
2244h	64 y F				U	Ingst	Int-U	3		
		oxycodone	1	1						
2245h	64 y F				U	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	17 mcg/mL In Blood (unspecified) @ 21 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	33.7 mcg/mL In Blood (unspecified) @ 12 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	56.8 mcg/mL In Blood (unspecified) @ 10 m (pe)
		salicylate	2	2					salicylate	10.2 mg/dL In Blood (unspecified) @ 10 m (pe)
2246ai	64 y M				U	Unk	Int-S	1		
		oxycodone	1	1						
		zolpidem	2	2						
		gabapentin	3	3						
		duloxetine (ER)	4	4						
2247ai	64 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
2248ai	64 y F				U	Unk	Unk	1		
		fentanyl, N.O.S.	1	1						
		mirtazapine	2	2						
		ethanol	3	3						
2249	64 y F				U	Ingst	Int-S	3		
		salicylate	1	1						
2250ai	64 y M				U	Unk	Unk	2		
		methadone	1	1						
2251h	64 y F				A/C	Ingst	Int-M	2		
		acetaminophen	1	1						
2252h	64 y F				C	Ingst	Unt-M	3		
		acetaminophen	1	1					acetaminophen (apap)	20 mcg/mL In Serum @ Unknown
		acetaminophen/dextromethorphan/doxylamine/phenylephrine	2	2						
2253ha	65 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	179 mcg/mL In Blood (unspecified) @ 3 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	84.6 mcg/mL In Blood (unspecified) @ 2 d (pe)
2254ai	65 y F				U	Unk	Unk	2		
		oxycodone	1	1						
		trazodone	2	2						
		doxylamine	3	3						
2255ai	65 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		duloxetine (ER)	2	2						
2256h	65 y M				A	Ingst	Int-S	3		
		oxycodone	1	1						
2257ai	65 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		heroin	3	3						
2258h	65 y F				C	Ingst	Int-M	2		
		acetaminophen	1	1					acetaminophen (apap)	12 mcg/mL In Serum @ 1 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	38 mcg/mL In Serum @ 8 h (pe)
2259ai	65 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
2260p	65 y M				A	Ingst	Unk	3		
		salicylate	1	1						
2261ph	65 y F				A/C	Ingst	Int-S	2		
		ibuprofen	1	1						
		trazodone	2	2						
2262phai	65 y F				U	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	106.9 mcg/mL In Blood (unspecified) @ Unknown
2263ai	65 y M				A	Inhal	Int-A	2		
		narcotic, N.O.S.	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
2264h	65 y M				C	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen (apap)	54 mcg/mL In Serum @ Unknown
2265ai	65 y F				U	Ingst+ Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		ethanol	2	2						
2266ai	65 y M				U	Unk	Int-S	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
2267ai	65 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		alprazolam	2	2						
		ethanol	3	3						
2268ai	65 y M				A	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
2269h	65 y F				A	Ingst	Int-S	2		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	20.3 mcg/mL In Serum @ Unknown
2270a	65 y M				A/C	Ingst	Unt-T	3		
		ibuprofen	1	1						
		bismuth subsalicylate	2	2					salicylate	0.6 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen	3	3					acetaminophen (apap)	37 mcg/mL In Blood (unspecified) @ Unknown
2271ai	65 y M				U	Inhal	Unk	2		
		heroin	1	1						
2272pha	66 y F				U	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	640 mcg/mL In Blood (unspecified) @ Unknown
2273ai	66 y F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		diazepam	3	3						
2274	66 y F				A/C	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	600 mcg/mL In Blood (unspecified) @ 1 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	738 mcg/mL In Blood (unspecified) @ 8 h (pe)
		clonazepam	2	2						
2275ai	66 y F				U	Unk	Int-A	2		
		oxycodone	1	1						
2276ai	66 y F				U	Unk	Int-A	3		
		methadone	1	1						
		methamphetamine	2	2						
		gabapentin	3	3						
2277ai	66 y M				U	Unk	Int-A	1		
		methadone	1	1						
		codeine	2	2						
		morphine	3	3						
		hydromorphone	4	4						
2278ai	66 y M				U	Ingst+ Unk	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
		ethanol	4	4						
2279h	66 y F				A/C	Ingst	AR-D	3		
		acetaminophen	1	1						
2280h	66 y F				U	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	52 mcg/mL In Serum @ Unknown
		ibuprofen	2	2						
2281h	66 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	200 mcg/mL In Blood (unspecified) @ Unknown
2282ai	66 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		diphenhydramine	3	3						
		bupropion	4	4						
		hydroxyzine	5	5						
		trazodone	6	6						
2283ai	66 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		hydrocodone	2	2						
2284ai	66 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		cocaine	2	2						
		ethanol	3	3						
2285ha	66 y M				A/C	Ingst	Int-M	3		
		acetaminophen	1	1					acetaminophen (apap)	163.3 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	180 mcg/mL In Blood (unspecified) @ Autopsy
2286ph	66 y F				A/C	Ingst+ Derm	Int-S	2		
		fentanyl (TD)	1	1					fentanyl	0.52 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl (TD)	1	1					norfentanyl	0.54 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/hydrocodone	2	2					hydrocodone (free)	2000 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/hydrocodone	2	2					hydromorphone	5.2 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	3	3					7-aminoclonazepam	47 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	3	3					clonazepam	65 ng/mL In Blood (unspecified) @ Autopsy
		butalbital	4	4					butalbital	0.78 mcg/mL In Blood (unspecified) @ Autopsy
2287h	66 y F				U	Ingst	Unt-T	3		
		acetaminophen	1	1					acetaminophen (apap)	142 mcg/mL In Blood (unspecified) @ Unknown
2288ai	66 y F				U	Unk	Unt-M	1		
		fentanyl	1	1						
		morphine	2	2						
		oxycodone	3	3						
2289h	66 y M				U	Ingst	Unk	3		
		acetaminophen	1	1					acetaminophen (apap)	27 mcg/mL In Serum @ Unknown
		salicylate	2	2					salicylate	15.4 mg/dL In Serum @ Unknown
2290h	66 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen (apap)	100 mcg/mL In Blood

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										(unspecified) @ Unknown
2291h	67 y M				A/C	Ingst	Int-S	1		
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	115.6 mcg/mL In Serum @ 5 m (pe)
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	32 mcg/mL In Serum @ 26 h (pe)
		methadone	2	2						
		trazodone	3	3						
2292ai	67 y M				U	Unk	Int-S	1		
		oxycodone	1	1						
		hydrocodone	2	2						
		dextromethorphan	3	3						
		alprazolam	4	4						
		zolpidem	5	5						
		guaifenesin	6	6						
2293ph	67 y F				A	Ingst	Int-S	3		
		methadone	1	1						
		ethanol	2	2						
2294ai	67 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
2295ai	67 y F				U	Unk	Unt-M	3		
		fentanyl	1	1						
2296ai	67 y M				U	Unk	Int-A	1		
		methadone	1	1						
		clonazepam	2	2						
2297h	67 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	300 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen	1	1					acetaminophen (apap)	462.7 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	530 mg/dL In Blood (unspecified) @ Unknown
		salicylate	2	2					salicylate	2.5 mg/dL In Blood (unspecified) @ Unknown
2298	67 y F				C	Ingst	Int-U	3		
		acetaminophen	1	1					acetaminophen (apap)	169 mcg/mL In Serum @ Unknown
2299ai	67 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methadone	2	2						
		methamphetamine	3	3						
2300h	67 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	600 mcg/mL In Blood (unspecified) @ Unknown
		ibuprofen	2	2						
2301h	67 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
		carisoprodol	2	2						
		sertraline	3	3						
2302ai	67 y M				U	Unk	Unt-M	1		
		fentanyl	1	1						
		trazodone	2	2						
		duloxetine (ER)	3	3						
2303	67 y F				C	Ingst	Unt-M	3		
		acetaminophen	1	1						
2304ai	68 y M				U	Ingst+ Unk	Int-A	1		
		hydrocodone	1	1						
		cyclobenzaprine	2	2						
		ethanol	3	3						
2305h	68 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	222 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	336 mcg/mL In Blood (unspecified) @ Unknown
		drug, N.O.S.	2	2						
2306ai	68 y F				U	Unk	Int-A	1		
		narcotic, N.O.S.	1	1						
2307h	68 y F				C	Ingst	Unt-U	3		
		salicylate	1	1					salicylate	43.8 mg/dL In Blood (unspecified) @ Unknown
2308ha	68 y M				A	Ingst	Int-S	1		
		colchicine	1	1					colchicine	39 ng/mL In Blood (unspecified) @ Unknown
		ibuprofen	2	2						
		senna alkaloids	3	3						
2309h	68 y F				C	Ingst+ Oth	AR-D	3		
		morphine	1	1						
		baclofen	2	2						
2310ha	69 y M				U	Ingst+ Unk	Int-U	1		
		salicylate	1	1					salicylate	20.5 mg/dL In Blood (unspecified) @ 11 h (pe)
		salicylate	1	1					salicylate	22.8 mg/dL In Blood (unspecified) @ 15 h (pe)
		salicylate	1	1					salicylate	25 mg/dL In Blood (unspecified) @ 9 h (pe)
		salicylate	1	1					salicylate	83.2 mg/dL In Blood (unspecified) @ 10 m (pe)
		clonazepam	2	2					clonazepam	4.7 mcg/L In Blood (unspecified) @ Autopsy
		clonazepam	2	2					7-aminoclonazepam	63 mcg/L In Blood (unspecified) @ Autopsy
		fluoxetine	3	3					norfluoxetine	560 mcg/L In Blood (unspecified) @ Autopsy
		fluoxetine	3	3					fluoxetine	790 mcg/L In Blood (unspecified) @ Autopsy
2311ha	69 y M				A/C	Ingst+ Unk	Int-S	3		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	65 mcg/mL In Serum @ Unknown
2312h	69 y M				U	Ingst	Unk	3		
		salicylate	1	1					salicylate	62 mg/dL In Serum @ Unknown
2313	69 y F				A	Ingst	Int-S	3		
		salicylate	1	1					salicylate	48.9 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	51.6 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	59.5 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	78 mg/dL In Blood (unspecified) @ Unknown
2314ai	69 y F				U	Unk	Int-A	1		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
2315h	69 y M				A	Ingst	Unk	3		
		acetaminophen	1	1					acetaminophen (apap)	72 mcg/mL In Blood (unspecified) @ Unknown
2316h	69 y F				A	Ingst	Int-S	3		
		acetaminophen/oxycodone	1	1						
		morphine	2	2						
		baclofen	3	3						
2317ha	69 y F				U	Ingst	Int-U	2		
		oxycodone	1	1					oxycodone	0.27 mg/L In Blood (unspecified) @ Unknown
		diphenhydramine	2	2					diphenhydramine	0.051 mg/L In Blood (unspecified) @ Unknown
2318ai	69 y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
2319h	69 y M				C	Ingst	Unt-M	2		
		acetaminophen	1	1					acetaminophen (apap)	33 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	86 mcg/mL In Blood (unspecified) @ Unknown
2320h	69 y M				A	Ingst	Int-S	3		
		acetaminophen	1	1						
		aripiprazole	2	2						
		hydralazine	3	3						
		metoprolol	4	4						
		simvastatin	5	5						
		valproic acid (ER)	6	6						
		drug, N.O.S.	7	7						
2321ai	69 y F				U	Derm	Unk	2		
		fentanyl	1	1						
2322h	69 y F				A	Ingst	Int-S	1		
		acetaminophen/codeine	1	1					acetaminophen (apap)	15 mcg/dL In Blood (unspecified) @ Unknown
		acetaminophen/codeine	1	1					acetaminophen (apap)	208 mcg/dL In Blood (unspecified) @ Unknown
		acetaminophen/codeine	1	1					acetaminophen (apap)	423 mcg/dL In Blood (unspecified) @ Unknown
		acetaminophen/codeine	1	1					acetaminophen (apap)	78 mcg/dL In Blood (unspecified) @ Unknown
		zolpidem	2	2						
		lorazepam	3	3						
		diazepam	4	4						
		alprazolam	5	5						
2323h	70 y F				U	Ingst+ Unk	Int-S	2		
		fentanyl, N.O.S.	1	1						
		levetiracetam	2	2						
		acetaminophen	3	3						
2324ai	70 y F				U	Unk	Int-S	1		
		fentanyl, N.O.S.	1	1						
		morphine	2	2						
		dipyrone	3	3						
2325pha	70 y F				A	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	160 mcg/mL In Blood (unspecified) @ Unknown
		oxycodone	2	2					oxymorphone	2.9 ng/mL In Blood (unspecified) @ Unknown
		oxycodone	2	2					oxycodone (free)	990 ng/mL In Blood (unspecified) @ Unknown
		diazepam	3	3					nordiazepam	130 ng/mL In Blood (unspecified) @ Unknown
		diazepam	3	3					diazepam	160 ng/mL In Blood (unspecified) @ Unknown
		mirtazapine	4	4					mirtazapine	36 ng/mL In Blood (unspecified) @ Unknown
		levetiracetam	5	5					levetiracetam	41 mcg/mL In Blood (unspecified) @ Unknown
		gabapentin	6	6					gabapentin	30 mcg/mL In Blood (unspecified) @ Unknown
2326ai	70 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		sildenafil	3	3						
		ethanol	4	4						
2327ai	70 y F				U	Unk	Int-S	1		
		oxycodone	1	1						
		fluoxetine	2	2						
2328ai	70 y M				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		methamphetamine	2	2						
		gabapentin	3	3						
2329ai	70 y M				U	Ingst	Unk	1		
		hydrocodone	1	1						
		gabapentin	2	2						
2330ai	70 y M				U	Unk	Int-A	3		
		fentanyl, N.O.S.	1	1						
		marijuana, N.O.S.	2	2						
2331	70 y M				A	Ingst	Unk	2		
		acetaminophen	1	1						
2332ai	71 y F				U	Unk	Int-A	3		
		fentanyl, N.O.S.	1	1						
2333	71 y M				A	Ingst	Int-S	3		
		salicylate	1	1						
2334ph	71 y F				A/C	Ingst	Int-S	2		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	118.9 mcg/mL In Serum @ Unknown
		ethanol	2	2						
		oxycodone	3	3						
2335h	71 y F				A	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	80.6 mcg/mL In Blood (unspecified) @ Unknown
2336	71 y M				U	Ingst	Int-U	2		
		acetaminophen	1	1					acetaminophen (apap)	202 mcg/mL In Serum @ Unknown
		pantoprazole (ER)	2	2						
2337h	71 y M				U	Ingst	Int-U	3		
		salicylate	1	1					salicylate	34.9 mg/dL In Blood (unspecified)

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										@ Unknown
2338h	71 y F				C	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	33.3 mcg/mL In Serum @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	41.4 mcg/mL In Serum @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	71 mcg/mL In Serum @ Unknown
		salicylate	2	2					salicylate	11.2 mg/dL In Serum @ Unknown
2339h	71 y F				U	Ingst	Unk	3		
		acetaminophen	1	1					acetaminophen (apap)	18.8 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	200 mcg/mL In Blood (unspecified) @ Unknown
2340h	71 y F				A/C	Ingst	Int-S	1		
		salicylate	1	1					salicylate	102.4 mg/dL In Serum @ Unknown
2341ha	71 y F				C	Ingst	Unt-T	2		
		acetaminophen	1	1					acetaminophen (apap)	115 mcg/mL In Blood (unspecified) @ Unknown
2342ai	72 y F				U	Unk	Int-A	1		
		acetaminophen	1	1						
		hydrocodone	2	2						
		ethanol	3	3						
2343ph	72 y M				A/C	Ingst	Int-S	2		
		acetaminophen/hydrocodone	1	1						
		acetaminophen/oxycodone	2	2						
		triazolam	3	3						
		temazepam	4	4						
		zolpidem	5	5						
		trazodone	6	6						
		ethanol	7	7						
2344	72 y F				C	Ingst	Unt-M	3		
		acetaminophen	1	1						
2345	72 y F				C	Ingst	Int-M	2		
		acetaminophen	1	1					acetaminophen (apap)	22 mcg/mL In Serum @ Unknown
2346ph	72 y F				C	Ingst+ Unk	Int-U	2		
		acetaminophen	1	1						
		acetaminophen/hydrocodone	2	2						
2347ai	72 y M				U	Unk	Int-A	1		
		oxycodone	1	1						
		morphine	2	2						
		cyclobenzaprine	3	3						
2348h	73 y F				C	Ingst	Unt-T	3		
		acetaminophen/hydrocodone	1	1						
2349h	73 y M				A/C	Ingst	Unk	3		
		acetaminophen	1	1						
2350ai	73 y M				U	Unk	Int-U	1		
		oxycodone	1	1						
		diphenhydramine	2	2						
		fluoxetine	3	3						
2351h	73 y M				U	Ingst	Int-S	3		
		acetaminophen	1	1						
		alcohol, N.O.S.	2	2						
2352h	73 y M				U	Ingst+ Unk	Unk	2		
		acetaminophen/oxycodone	2	1					acetaminophen (apap)	3 mcg/mL In Serum @ Unknown
		drug, N.O.S.	1	1						
2353h	73 y M				U	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	15.5 mcg/mL In Blood (unspecified) @ 7 h (pe)
		iron	2	2					iron	583 mcg/dL In Serum @ 26 h (pe)
		iron	2	2					iron	869 mcg/dL In Serum @ 15 h (pe)
2354ai	74 y M				U	Unk	Unk	1		
		narcotic, N.O.S.	1	1						
2355ph	74 y M				A	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen (apap)	93 mcg/dL In Blood (unspecified) @ Unknown
		drug, N.O.S.	2	2						
2356pha	74 y F				U	Ingst	Unk	3		
		salicylate	1	1					salicylate	68 mg/dL In Blood (unspecified) @ 1 h (pe)
2357h	74 y F				C	Ingst	Unk	2		
		acetaminophen	1	1						
2358h	74 y M				U	Ingst	Int-S	3		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	0 mcg/mL In Blood (unspecified) @ 31 h (pe)
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	14.4 mcg/mL In Blood (unspecified) @ 23 h (pe)
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	204 mcg/mL In Blood (unspecified) @ 1 h (pe)
2359h	74 y F				U	Ingst	Int-U	2		
		hydromorphone	1	1						
		acetaminophen	2	2						
		zolpidem	3	3						
		sertraline	4	4						
		quetiapine	5	5						
		methotrexate	6	6						
		methocarbamol	7	7						
		gabapentin	8	8						
		duloxetine (ER)	9	9						
		salicylate	10	10						
		buprenorphine/naloxone (sublingual tablet)	11	11						
		apixiban	12	12						
		alprazolam	13	13						
2360h	75 y F				A/C	Ingst	Int-S	2		
		tramadol	1	1						
2361h	75 y F				A/C	Ingst	Unt-M	2		
		acetaminophen/butalbital/caffeine	1	1						
2362	75 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1						
2363ai	76 y M				U	Unk	Int-S	1		
		acetaminophen/oxycodone	1	1						
2364h	76 y M				A	Ingst	Int-S	2		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	149 mcg/mL In Serum @ 27 h (pe)
[2365ha]	76 y F				A/C	Ingst	Unt-T	1		
		colchicine	1	1					colchicine	13 ng/mL In Blood (unspecified) @ 28.5 h (pe)
2366ai	76 y M				U	Unk	Int-A	1		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		fentanyl, N.O.S.	1	1						
		cyclobenzaprine	2	2						
		gabapentin	3	3						
2367ai	77 y F				U	Unk	Unk	1		
		fentanyl, N.O.S.	1	1						
		oxycodone	2	2						
		etizolam	3	3						
		alprazolam	4	4						
2368ai	77 y M				U	Ingst+ Unk	Int-A	1		
		oxycodone	1	1						
		diazepam	2	2						
		butalbital	3	3						
		ethanol	4	4						
2369ha	77 y F				A/C	Ingst	Int-S	1		
		hydromorphone	1	1					hydromorphone	1000 ng/mL In Blood (unspecified) @ Unknown
		gabapentin	2	2					gabapentin	2.8 mcg/mL In Blood (unspecified) @ Unknown
		duloxetine (ER)	3	3					duloxetine	140 ng/mL In Blood (unspecified) @ Unknown
2370h	77 y F				C	Ingst	AR-D	3		
		acetaminophen	1	1						
		viral disease (COVID-19-Confirmed)	2	2						
2371ai	78 y F				U	Ingst+ Derm+ Unk	Unk	2		
		fentanyl (TD)	1	1						
2372i	78 y F				U	Ingst	Unk	2		
		acetaminophen	1	1						
		salicylate	2	2						
		metformin	3	3						
2373h	78 y F				A/C	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	58 ng/mL In Serum @ Unknown
2374h	78 y M				A/C	Ingst	Int-S	3		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	30 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	5 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	56 mcg/mL In Blood (unspecified) @ Unknown
		apixaban	2	2						
		sodium citrate	3	3						
2375h	78 y F				U	Unk	Unk	3		
		acetaminophen	1	1					acetaminophen (apap)	15 mcg/mL In Serum @ Unknown
		drug, N.O.S.	2	1						
2376h	78 y M				A	Ingst	Int-S	3		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	96.6 mcg/mL In Blood (unspecified) @ Unknown
		ibuprofen	2	2						
		sedative/hypnotic (OTC)	3	3						
2377i	79 y F				A	Ingst	Int-M	3		
		acetaminophen	1	1						
2378h	79 y M				U	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	170 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen	1	1					acetaminophen (apap)	334.8 mcg/mL In Blood (unspecified) @ Unknown
		eszopiclone	2	2						
		oxycodone	3	3					oxycodone	0.1 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	3	3					oxycodone	0.2 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	3	3					oxycodone	0.5 mg/L In Blood (unspecified) @ Autopsy
		tapentadol	4	4					tapentadol	0.7 mg/L In Blood (unspecified) @ Autopsy
		tapentadol	4	4					tapentadol	1.9 mg/L In Blood (unspecified) @ Autopsy
		hydrocodone	5	5					hydrocodone	0.1 mg/L In Blood (unspecified) @ Autopsy
		oxymorphone	6	6					oxymorphone	0.018 mg/L In Blood (unspecified) @ Autopsy
2379h	79 y F				U	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen (apap)	305 mcg/mL In Blood (unspecified) @ Unknown
2380h	80 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	534 mcg/mL In Blood (unspecified) @ Unknown
		fentanyl	2	2						
		tramadol	3	3						
2381h	80 y M				A/C	Ingst	Int-S	1		
		salicylate	1	1					salicylate	99.6 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	2	2					acetaminophen (apap)	105 mcg/mL In Blood (unspecified) @ Unknown
2382ha	81 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	103.8 mcg/mL In Blood (unspecified) @ Unknown
2383h	81 y F				U	Ingst	Int-U	2		
		acetaminophen	1	1						
2384h	81 y F				A/C	Ingst	Oth-M	2		
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	108 mcg/mL In Blood (unspecified) @ Unknown
2385h	82 y F				A	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	129 mg/L In Plasma @ Unknown
2386ai	83 y F				U	Unk	Unt-M	1		
		oxycodone	1	1						
		duloxetine (ER)	2	2						
		diazepam	3	3						
2387h	83 y F				A	Ingst	Unk	3		
		acetaminophen	1	1					acetaminophen (apap)	300 mcg/mL In Blood (unspecified) @ Unknown
2388ai	84 y M				U	Unk	Int-S	2		
		hydrocodone	1	1						
2389ai	84 y M				U	Unk	Int-S	1		
		oxycodone	1	1						
		morphine	2	2						
		hydrocodone	3	3						
2390a	85 y F				A	Ingst	Int-S	1		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminophen	1	1						
		metformin	2	2						
2391ha	85 y F				U	Ingst	Int-S	1		
		morphine (ER)	1	1					morphine	153 ng/mL In Blood (unspecified) @ Unknown
		sertraline	2	2					norsertraline	0.052 mg/L In Blood (unspecified) @ Autopsy
		sertraline	2	2					sertraline	0.69 mg/L In Blood (unspecified) @ Autopsy
		trazodone	3	3					trazodone	0.319 mg/L In Blood (unspecified) @ Autopsy
2392h	85 y M				C	Ingst	Unt-T	2		
		acetaminophen	1	1					acetaminophen (apap)	19.5 mcg/mL In Blood (unspecified) @ Unknown
2393ai	85 y M				U	Unk	Unk	2		
		narcotic, N.O.S.	1	1						
2394h	85 y F				A	Ingst	Int-S	3		
		acetaminophen	1	1						
2395h	88 y M				A	Ingst	Int-S	2		
		oxycodone	1	1						
		ethanol	2	2						
		lorazepam	3	3						
2396h	88 y M				U	Ingst	Unk	3		
		acetaminophen	1	1					acetaminophen (apap)	278.8 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	374 mcg/mL In Blood (unspecified) @ Unknown
2397h	89 y F				A/C	Ingst	Int-S	2		
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	35.7 mcg/mL In Serum @ Unknown
2398ai	89 y F				U	Unk	Unk	1		
		morphine	1	1						
2399	89 y F				C	Ingst	Unt-T	2		
		acetaminophen	1	1					acetaminophen (apap)	31.3 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	2	2						
2400ha	90 y F				U	Ingst	Int-S	3		
		acetaminophen/butalbital/caffeine	1	1					morphine	16 ng/mL In Vitreous @ Autopsy
		acetaminophen/butalbital/caffeine	1	1					acetaminophen (apap)	19 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/butalbital/caffeine	1	1					butalbital	9.6 mcg/mL In Vitreous @ Autopsy
2401h	90 y F				U	Ingst	Int-S	1		
		acetaminophen	2	1					acetaminophen (apap)	169 mcg/mL In Blood (unspecified) @ 2 d (pe)
		acetaminophen	2	1					acetaminophen (apap)	372.3 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/diphenhydramine	1	1						
2402pha	91 y F				A	Ingst	Unt-T	1		
		oxycodone	1	1					gabapentin	3.3 mcg/mL In Blood (unspecified) @ Autopsy
		oxycodone	1	1					oxycodone (free)	660 ng/mL In Blood (unspecified) @ Autopsy
		gabapentin	2	2						
		levetiracetam	3	3						
		phenytoin	4	4						
		dronabinol	5	5						
		lacosamide	6	6						
2403ph	91 y F				A	Ingst	Int-S	1		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	112.9 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
2404ai	91 y M				U	Ingst	Int-U	2		
		hydrocodone	1	1						
2405ai	95 y M				A/C	Ingst	AR-D	2		
		morphine	1	1						
2406h	95 y F				A/C	Ingst	Unt-G	3		
		acetaminophen	1	1					acetaminophen (apap)	9 mcg/mL In Plasma @ Unknown
2407h	15 m F				A	Ingst	Unt-G	2		
		fentanyl, N.O.S.	1	1						
[2408]	15 m F				A	Ingst	Unt-G	1		
		narcotic, N.O.S.	1	1						
2409i	16 m M				A	Par	Unt-T	3		
		morphine	1	1						
[2410pha]	18 m F				A	Ingst	Unk	1		
		methadone	1	1					methadone	0.34 mg/L In Blood (unspecified) @ 1 h (pe)
2411ai	20+ y F				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
2412ai	20+ y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
2413ai	30+ y M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
2414ai	40+ y M				U	Unk	Unk	2		
		narcotic, N.O.S.	1	1						
2415ai	40+ y M				A/C	Par	Int-A	2		
		narcotic, N.O.S.	1	1						
2416ai	40+ y M				A	Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
2417ai	40+ y M				A	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
2418ai	50+ y F				C	Unk	Int-A	2		
		heroin	1	1						
2419phi	Unknown child (<=19 yrs) M				A	Ingst+ Inhal	Int-A	2		
		fentanyl	1	1						
		alprazolam	2	2						
		cocaine	3	3						
2420ai	Unknown adult (>=20 yrs) M				A	Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
2421ph	Unknown adult (>=20 yrs) M				U	Ingst	Unk	3		
		acetaminophen	1	1						
2422p	Unknown adult (>=20 yrs) M				A	Inhal	Int-A	2		
		fentanyl	1	1						
2423pi	Unknown adult (>=20 yrs) F				U	Inhal+ Par	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		heroin	3	3						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
2424ai	Unknown adult (>=20 yrs) M				U	Unk	Int-A	2		
		narcotic, N.O.S.	1	1						
2425ai	Unknown adult (>=20 yrs) M				U	Par	Int-A	2		
		heroin	1	1						
2426ai	Unknown age F				U	Unk	Int-A	1		
		fentanyl, N.O.S.	1	1						
		hyperthermia	2	2						
See Also case 19, 42, 55, 59, 64, 70, 106, 116, 135, 153, 193, 227, 269, 270, 280, 281, 299, 311, 393, 396, 476, 496, 499, 514, 2431, 2435, 2436, 2444, 2447, 2468, 2475, 2482, 2497, 2501, 2502, 2503, 2506, 2517, 2524, 2525, 2528, 2532, 2535, 2536, 2539, 2546, 2547, 2549, 2553, 2557, 2564, 2568, 2570, 2577, 2596, 2612, 2613, 2617, 2632, 2633, 2649, 2662, 2666, 2670, 2674, 2675, 2685, 2687, 2693, 2694, 2697, 2700, 2706, 2707, 2721, 2723, 2738, 2739, 2744, 2746, 2749, 2750, 2756, 2758, 2761, 2768, 2771, 2774, 2777, 2779, 2780, 2781, 2783, 2784, 2793, 2799, 2806, 2818, 2822, 2825, 2833, 2845, 2850, 2861, 2864, 2866, 2868, 2870, 2871, 2872, 2873, 2882, 2892, 2901, 2907, 2922, 2923, 2928, 2929, 2951, 2953, 2969, 2970, 2973, 2977, 2978, 2981, 2984, 2985, 2986, 2990, 2991, 3007, 3009, 3011, 3014, 3016, 3021, 3028, 3043, 3070, 3073, 3077, 3078, 3086, 3087, 3088, 3097, 3105, 3106, 3107, 3108, 3113, 3115, 3119, 3121, 3123, 3129, 3131, 3139, 3143, 3149, 3158, 3163, 3178, 3179, 3184, 3185, 3191, 3195, 3197, 3201, 3207, 3211, 3213, 3215, 3227, 3231, 3240, 3245, 3254, 3256, 3257, 3277, 3283, 3292, 3293, 3296, 3297, 3300, 3302, 3306, 3310, 3313, 3314, 3319, 3327, 3328, 3354, 3360, 3361, 3367, 3371, 3375, 3378, 3380, 3385, 3387, 3396, 3410, 3446, 3449, 3455, 3473, 3475, 3481, 3490, 3494, 3504, 3516, 3518, 3525, 3526, 3531, 3558, 3562, 3596, 3601, 3610, 3614, 3615, 3620, 3630, 3631, 3636, 3640, 3653, 3659, 3661, 3680, 3681, 3685, 3699, 3708, 3710, 3715, 3741, 3751, 3755, 3764, 3771, 3805, 3812, 3858, 3862, 3867									
Anesthetics										
2427ha	26 y M				A	Ingst+ Par	AR-D	3		
		ketamine	1	1					ketamine	2136 ng/mL In Blood (unspecified) @ Unknown
		lysergic acid diethylamide (LSD)	2	2						
2428	28 y F				A	Par	AR-D	2		
		lidocaine	1	1						
2429	48 y M				U	Ingst	Int-A	2		
		ketamine	1	1						
2430a	54 y M				A	Par	Unt-T	3		
		ketamine	1	1					ketamine	1500 ng/mL In Whole Blood @ Unknown
		ketamine	1	1					norketamine	640 ng/mL In Whole Blood @ Unknown
2431ai	62 y M				U	Unk	Int-A	3		
		ketamine	1	1						
		morphine	2	2						
		oxycodone	3	3						
		ethanol	4	4						
[2432h]	73 y F				A	Par	AR-D	3		
		bupivacaine	1	1						
2433i	9 m M				A	Unk	Unk	1		
		ketamine	1	1						
See Also case 761, 1139, 1842, 3753										
Anticholinergic Drugs										
2434h	87 y M				C	Ingst	Unt-T	3		
		trospium	1	1						
See Also case 2781, 2977, 2989, 3052, 3165, 3434										
Anticoagulants										
2435h	79 y F				C	Ingst	AR-D	2		
		acetaminophen	2	1					acetaminophen (apap)	26 mcg/mL In Serum @ 11 h (pe)
		rivaroxaban	1	1						
2436h	83 y M				C	Ingst	AR-D	3		
		brilinta	1	1						
		metformin	2	2						
		salicylate	3	3						
See Also case 1719, 2166, 2359, 2374, 2638, 2717, 2746, 2815, 2854, 2861, 2870, 2872, 2888, 2892										
Anticonvulsants										
2437pha	27 y M				A/C	Ingst	Int-S	2		
		pregabalin	1	1						
		diltiazem	2	2						
		eszopiclone	3	3						
		methamphetamine	4	4						
2438ha	29 y F				A/C	Ingst	Int-U	1		
		gabapentin	1	1					gabapentin	43 mg/L In Serum @ 5 m (pe)
		cocaine	2	2					benzoylecognine	1 mg/L In Blood (unspecified) @ 5 m (pe)
2439ha	32 y M				A/C	Ingst	Int-S	1		
		topiramate	1	1					topiramate	6300 ng/mL In Whole Blood @ Autopsy
		gabapentin	2	2					gabapentin	31 mcg/mL In Whole Blood @ Autopsy
		duloxetine (ER)	3	3					duloxetine	700 ng/mL In Whole Blood @ Autopsy
		lamotrigine	4	4					lamotrigine	13 mcg/mL In Whole Blood @ Autopsy
		diphenhydramine	5	5					diphenhydramine	710 ng/mL In Whole Blood @ Autopsy
		caffeine	6	6					caffeine	0.2 mcg/mL In Whole Blood @ Autopsy
		propranolol	7	7						
		quetiapine	8	8						
		allopurinol	9	9						
		fenofibrate	10	10						
2440ph	33 y F				A/C	Ingst	Int-S	2		
		lacosamide	1	1						
		cenobamate	3	2						
		pregabalin	2	3						
		clobazam	4	4						
		duloxetine (ER)	5	5						
		mirtazapine	6	6						
		baclofen	7	7						
		linaclotide	8	8						
		midazolam	9	9						
2441h	36 y M				A	Ingst	Int-U	2		
		topiramate	1	1						
		methylenedioxymethamphetamine (MDMA)	2	2						
		lorazepam	3	3						
2442ha	36 y F				A/C	Ingst	Int-S	1		
		topiramate	1	1					topiramate	213 mcg/mL In Blood (unspecified) @ Unknown
		cyclobenzaprine	2	2					cyclobenzaprine	14.2 ng/mL In Blood (unspecified) @ Unknown
		bupropion	3	3						
		tizanidine	4	4						
2443h	37 y M				A/C	Ingst+ Unk	Int-S	2		
		levetiracetam	1	1						
		cobicistat/darunavir/emtricitabine/tenofovir	2	2						
		cocaine	3	3						
		ethanol	4	4					ethanol	171 mg/dL In Serum @ Unknown
2444ai	38 y F				U	Unk	Unk	3		
		carbamazepine	1	1						
		acetaminophen	2	2						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		lacosamide	3	3						
		levetiracetam	4	4						
		ethanol	5	5						
2445ai	38 y F				U	Ingst+ Unk	Unk	3		
		topiramate	1	1						
		hyperthermia	2	2						
		diphenhydramine	3	3						
2446ai	39 y M				U	Unk	Int-S	1		
		lacosamide	1	1						
2447h	39 y F				A/C	Ingst	Int-S	2		
		lamotrigine	1	1						
		escitalopram	2	2						
		topiramate	3	3						
		atomoxetine	4	4						
		acetaminophen	5	5						
2448ph	44 y F				A/C	Ingst	Int-S	2		
		gabapentin	1	1						
		ethanol	2	2						
2449ai	44 y M				U	Unk	Int-M	1		
		gabapentin	1	1						
		hydroxyzine	2	2						
		olanzapine	3	3						
2450ph	47 y M				U	Ingst	Int-S	2		
		gabapentin	1	1						
		escitaopram	2	2						
2451h	49 y F				A/C	Ingst	Int-S	2		
		gabapentin	3	1						
		fluoxetine	1	2						
		lisinopril	2	3						
		lorazepam	4	4						
2452h	50 y F				A/C	Ingst	AR-D	3		
		lacosamide	1	1						
		oxcarbazepine	2	2						
		clozapine	3	3						
		propofol	4	4						
2453h	52 y M				U	Ingst+ Aspir	Int-M	3		
		gabapentin	1	1						
2454h	53 y F				U	Ingst+ Unk	Int-S	2		
		topiramate	1	1					topiramate	7.7 mg/L In Blood (unspecified) @ Unknown
		quetiapine	2	2						
		cyclobenzaprine	3	3						
		bupropion	4	4						
		dextromethorphan	5	5						
2455pa	54 y F				U	Ingst	Int-S	2		
		lamotrigine	1	1						
		gabapentin	2	2						
		fluoxetine	3	3						
		ethanol	4	4						
2456h	56 y F				U	Ingst	Int-S	3		
		gabapentin	1	1						
2457ph	59 y F				A/C	Ingst	Int-S	2		
		lamotrigine	1	1						
		trazodone	2	2						
		zopiclone	3	3						
		lurasidone	4	4						
2458h	61 y M				A	Ingst	Int-S	2		
		gabapentin	1	1						
2459ha	61 y F				A/C	Ingst	Unk	3		
		phenytoin	1	1					phenytoin	46.6 mg/dL In Blood (unspecified) @ Unknown
2460	61 y M				A/C	Ingst	Int-S	1		
		valproic acid	1	1					valproic acid	988 mcg/mL In Blood (unspecified) @ Unknown
2461ph	62 y F				U	Ingst	Int-S	2		
		lamotrigine	1	1						
		levetiracetam	2	2						
		anticonvulsant	3	3						
		phenothiazine	4	4						
		citalopram	5	5						
2462h	64 y F				A/C	Ingst	Int-S	1		
		valproic acid	1	1						
		propranolol	2	2						
		metformin	3	3						
		amitriptyline	4	4						
		quetiapine	5	5						
2463h	69 y M				A	Ingst	Int-S	2		
		gabapentin	2	1						
		amlodipine	1	2						
2464ph	70 y F				A	Ingst	Int-S	2		
		valproic acid	1	1					valproic acid	300 mcg/mL In Blood (unspecified) @ Unknown
		drain cleaner	2	2						
		drug, N.O.S.	3	3						
2465h	70 y M				A/C	Ingst	Int-S	2		
		pregabalin	1	1						
2466h	82 y F				A	Ingst	Int-S	2		
		lamotrigine	1	1						
		clonazepam	2	2						
2467	83 y F				A	Ingst	Unk	3		
		valproic acid	1	1						
See Also case 29, 255, 258, 309, 595, 596, 806, 829, 830, 847, 862, 918, 941, 950, 962, 966, 970, 985, 993, 994, 1003, 1012, 1018, 1031, 1089, 1103, 1123, 1189, 1191, 1297, 1308, 1336, 1337, 1372, 1377, 1464, 1501, 1520, 1528, 1550, 1564, 1567, 1576, 1578, 1589, 1617, 1628, 1637, 1669, 1704, 1712, 1713, 1719, 1735, 1742, 1748, 1758, 1786, 1813, 1821, 1827, 1855, 1873, 1897, 1947, 1958, 1977, 1978, 2036, 2059, 2093, 2103, 2115, 2122, 2146, 2147, 2166, 2174, 2177, 2186, 2189, 2190, 2198, 2233, 2246, 2276, 2320, 2323, 2325, 2328, 2329, 2359, 2366, 2369, 2402, 2485, 2486, 2500, 2502, 2505, 2506, 2511, 2525, 2526, 2528, 2529, 2536, 2542, 2544, 2555, 2561, 2564, 2573, 2596, 2612, 2613, 2622, 2633, 2638, 2641, 2652, 2673, 2677, 2682, 2685, 2689, 2695, 2700, 2712, 2721, 2739, 2744, 2748, 2755, 2757, 2760, 2767, 2768, 2770, 2781, 2811, 2821, 2857, 2859, 2861, 2888, 2972, 2977, 2984, 2994, 2997, 3006, 3012, 3016, 3017, 3022, 3037, 3054, 3062, 3067, 3069, 3110, 3151, 3221, 3236, 3241, 3276, 3338, 3346, 3352, 3373, 3412, 3415, 3429, 3518, 3688										
Antidepressants										
2468ph	9 y M				A/C	Ingst	Unk	2		
		imipramine	1	1					acetaminophen (apap)	55 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	2	2						
2469h	11 y F				A	Ingst	Int-S	1		
		bupropion	1	1					hydroxybupropion	1800 ng/mL In Whole Blood @ Unknown
		bupropion	1	1					bupropion	3800 ng/mL In Whole Blood @ Unknown
2470pha	13 y F				U	Unk	Unk	1		
		bupropion	1	1					hydroxybupropion	1400 ng/mL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		bupropion	1	1					bupropion	5100 pg/mL In Blood (unspecified) @ Unknown
		lisdexamfetamine (ER)	2	2					amphetamine	250 ng/mL In Blood (unspecified) @ Unknown
		escitalopram	3	3					escitalopram	160 ng/mL In Blood (unspecified) @ Unknown
		aripiprazole	4	4					aripiprazole	60 ng/mL In Blood (unspecified) @ Unknown
2471pha	14 y F				U	Ingst	Int-S	1		
		venlafaxine	1	1						
		hydroxyzine	2	2						
		aripiprazole	3	3						
		escitalopram	4	4						
		clonidine	5	5						
		prazosin	6	6						
2472ai	15 y F				U	Unk	Int-S	1		
		bupropion	1	1						
		imipramine	2	2						
2473h	15 y F				A	Ingst	Int-S	1		
		bupropion	1	1						
2474ph	15 y M				A	Ingst	Int-S	2		
		bupropion (ER)	1	1						
2475pha	16 y F				A/C	Ingst	Int-S	1		
		amitriptyline	1	1					amitriptyline	1100 ng/mL In Blood (unspecified) @ Unknown
		amitriptyline	1	1					nortriptyline	130 ng/mL In Blood (unspecified) @ Unknown
		escitaopram	4	2					escitalopram	1700 ng/mL In Blood (unspecified) @ Unknown
		hydroxyzine	2	2					hydroxyzine	2500 ng/mL In Blood (unspecified) @ Unknown
		diphenhydramine	3	3					diphenhydramine	1700 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen	5	5					acetaminophen (apap)	110 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	6	6					ethanol	90 mg/dL In Blood (unspecified) @ Unknown
		marijuana	7	7					delta-9-carboxy-thc	150 ng/mL In Blood (unspecified) @ Unknown
2476h	16 y F				A	Ingst	Int-S	2		
		amitriptyline	1	1						
2477	16 y F				A/C	Ingst	Int-S	2		
		escitalopram	1	1						
		bupropion	2	2						
		lorazepam	3	3						
2478pa	17 y M				A	Ingst	Int-S	1		
		amitriptyline	1	1					amitriptyline	1000 ng/mL In Blood (unspecified) @ Unknown
		amitriptyline	1	1					nortriptyline	180 ng/mL In Blood (unspecified) @ Unknown
2479ph	19 y F				A/C	Ingst	Int-S	2		
		bupropion	1	1						
2480ph	19 y F				A	Ingst	Int-S	2		
		fluoxetine	1	1						
		aripiprazole	2	2						
		atomoxetine	3	3						
		trazodone	4	4						
2481ai	20 y F				U	Unk	Int-S	1		
		bupropion	1	1						
		promethazine	2	2						
		marijuana, N.O.S.	3	3						
2482ai	21 y M				U	Unk	Int-A	1		
		trazodone	1	1						
		fentanyl, N.O.S.	2	2						
2483pha	21 y F				A	Ingst	Int-S	1		
		citalopram	1	1					citalopram	5700 ng/mL In Blood (unspecified) @ Unknown
		hydroxyzine	2	2					hydroxyzine	1800 ng/mL In Blood (unspecified) @ Unknown
2484ha	22 y F				A	Ingst	Int-S	1		
		doxepin	1	1					doxepin	4.6 mg/L In Blood (unspecified) @ Unknown
2485ha	22 y F				A/C	Ingst	Int-S	1		
		bupropion (ER)	1	1						
		lamotrigine	2	2					lamotrigine	15.5 mcg/mL In Blood (unspecified) @ Unknown
		clonazepam	3	3						
2486h	23 y M				A/C	Ingst	Int-S	1		
		bupropion	1	1						
		quetiapine	2	2						
		escitalopram	3	3						
		lamotrigine	4	4						
2487h	23 y F				A	Ingst	Int-S	1		
		bupropion	1	1						
2488pi	23 y F				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		alprazolam	2	2						
2489hi	26 y M				A	Ingst	Int-S	2		
		bupropion (ER)	1	1						
		ethanol	2	2						
2490ph	26 y F				A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
		drug, N.O.S.	2	2						
2491pha	26 y F				A	Ingst	Int-S	1		
		bupropion	1	1					bupropion	4 mg/L In Whole Blood @ Autopsy
		bupropion	1	1					bupropion	4.4 mg/L In Whole Blood @ Autopsy
		propranolol	2	1					propranolol	1.8 mg/L In Whole Blood @ Autopsy
		propranolol	2	1					propranolol	4 mg/L In Whole Blood @ Autopsy
2492i	28 y F				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		trazodone	2	2						
		tizanidine	3	3						
		fluoxetine	4	4						
2493pha	28 y F				A/C	Ingst	Int-S	1		
		bupropion	1	1					bupropion	0.8 mg/L In Whole Blood @ Unknown

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		bupropion	1	1					bupropion	2.3 mg/kg In Liver @ Autopsy
		sertraline	2	2					norsertraline	0.2 mg/L In Whole Blood @ Unknown
		sertraline	2	2					sertraline	0.5 mg/L In Whole Blood @ Unknown
		sertraline	2	2					norsertraline	13 mg/kg In Liver @ Autopsy
		sertraline	2	2					sertraline	28 mg/kg In Liver @ Autopsy
2494ph	30 y M				A	Ingst	Int-S	2		
		duloxetine (ER)	1	1						
2495h	31 y F				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		paroxetine	2	2						
		hydroxyzine	3	3						
		ethanol	4	4						
		levothyroxine	5	5						
2496pa	32 y M				A/C	Ingst	Int-U	2		
		fluvoxamine	1	1					fluvoxamine	6188 ng/mL In Whole Blood @ Autopsy
		clonazepam	2	2					7-aminoclonazepam	51 ng/mL In Whole Blood @ Autopsy
		hydroxyzine	3	3					hydroxyzine	137 ng/mL In Whole Blood @ Autopsy
2497ph	33 y F				U	Ingst+ Unk	Unk	2		
		bupropion	1	1						
		drug, N.O.S.	4	1						
		doxepin	2	2						
		ethanol	3	2					ethanol	114 mg/dL In Serum @ 1 h (pe)
		methocarbamol	5	5						
		buspirone	6	6						
		acetaminophen	7	7						
2498ai	33 y M				U	Unk	Int-S	1		
		bupropion	1	1						
		zyrtec	2	2						
		hydroxyzine	3	3						
2499h	33 y F				A	Ingst	Int-S	2		
		bupropion (ER)	1	1						
2500ai	34 y F				U	Unk	Unt-M	1		
		amitriptyline	1	1						
		gabapentin	2	2						
		cyclobenzaprine	3	3						
2501ha	34 y F				U	Ingst	Int-S	1		
		bupropion	1	1					bupropion	5700 ng/mL In Blood (unspecified) @ Autopsy
		bupropion	1	1					hydroxybupropion	5800 ng/mL In Blood (unspecified) @ Autopsy
		diphenhydramine	2	2					diphenhydramine	1.423 mg/L In Blood (unspecified) @ Autopsy
		sertraline	3	3					desmethylsertraline	1200 ng/mL In Blood (unspecified) @ Autopsy
		sertraline	3	3					sertraline	3700 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/salicylate	4	4					acetaminophen (apap)	32.8 mcg/mL In Serum @ 6 h (pe)
		acetaminophen/salicylate	4	4					salicylate	9.7 mg/dL In Serum @ 6 h (pe)
2502h	34 y M				A/C	Ingst+ Par	Int-S	2		
		venlafaxine	1	1						
		acetaminophen/diphenhydramine	2	2					acetaminophen (apap)	17 mcg/mL In Plasma @ Unknown
		pregabalin	3	3						
		metformin	4	4						
		hydroxyzine	5	5						
2503h	35 y F				U	Ingst	Int-S	2		
		bupropion	1	1						
		metoprolol	2	2						
		duloxetine (ER)	3	3						
		methylphenidate	4	4						
		buprenorphine/naloxone	5	5						
		zyrtec	6	6						
		clonazepam	7	7						
		ethanol	8	8					ethanol	224 mg/dL In Blood (unspecified) @ Unknown
2504h	36 y F				C	Ingst	Unk	3		
		lithium	1	1						
2505h	37 y F				A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
		bupropion (ER)	2	2						
		venlafaxine	3	3						
		topiramate	4	4						
2506ai	37 y F				U	Unk	Unt-M	1		
		doxepin	1	1						
		oxycodone	2	2						
		duloxetine (ER)	3	3						
		gabapentin	4	4						
2507ha	37 y F				A/C	Ingst	Int-S	1		
		doxepin	1	1					desmethyldoxepin	1727 ng/mL In Blood (unspecified) @ Autopsy
		doxepin	1	1					doxepin	8074 ng/mL In Blood (unspecified) @ Autopsy
2508ph	38 y M				A	Ingst	Int-S	2		
		bupropion (ER)	1	1						
		escitalopram	2	2						
2509ha	38 y M				A/C	Ingst	Int-S	1		
		bupropion	1	1						
		escitalopram	2	2						
		methamphetamine	3	3						
		clonidine	4	4						
		prazosin	5	5						
2510ph	38 y M				A	Ingst	Int-U	2		
		amitriptyline	1	1						
		clonazepam	2	2						
		barbiturate, N.O.S.	3	3						
2511h	38 y F				A	Ingst	Int-S	2		
		amitriptyline	1	1						
		hydroxyzine	2	2						
		lamotrigine	3	3						
2512h	39 y F				A	Ingst	Unt-G	2		
		bupropion	1	1						
		quetiapine	2	2						
		ethanol	3	3						
		viral disease (COVID-19-Confirmed)	4	4						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
2513h	39 y F				C	Ingst	AR-D	3		
		lithium	1	1					lithium	4.5 mmol/L In Blood (unspecified) @ Unknown
2514ai	40 y F				U	Unk	Int-A	1		
		amitriptyline	1	1						
		benzodiazepine	2	2						
		diazepam	3	3						
		ethanol	4	4						
2515h	41 y F				U	Ingst	Unk	2		
		lithium	1	1					lithium	2.66 mEq/L In Blood (unspecified) @ Unknown
2516	42 y M				A	Ingst	Int-S	1		
		bupropion	1	1						
		diphenhydramine	2	2						
		antipsychotic (atypical)	3	3						
		metformin	4	4						
		antiviral (N.O.S.)	5	5						
2517h	43 y F				A/C	Ingst	Int-S	1		
		venlafaxine	1	1						
		bupropion	2	2						
		ibuprofen	3	3						
2518h	44 y F				A/C	Ingst	Int-S	2		
		desvenlafaxine (ER)	1	1						
		drug, N.O.S.	2	2						
		clonazepam	3	3						
2519pha	44 y F				A	Ingst	Int-S	1		
		bupropion	1	1					hydroxybupropion	11000 ng/mL In Blood (unspecified) @ Autopsy
		bupropion	1	1					bupropion	25000 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	2	2					fluoxetine	2000 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	2	2					norfluoxetine	2500 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	3	3					methamphetamine	120 ng/mL In Blood (unspecified) @ Autopsy
2520ha	44 y F				A/C	Ingst	Int-S	1		
		bupropion (ER)	1	1					bupropion	3.1 mg/L In Blood (unspecified) @ Unknown
		duloxetine (ER)	2	2					duloxetine	0.27 mg/L In Blood (unspecified) @ Unknown
		trazodone	3	3					trazodone	0.17 mg/L In Blood (unspecified) @ Unknown
2521ph	45 y F				U	Ingst	Int-S	2		
		escitalopram	1	1						
		diphenhydramine	2	2						
2522ha	45 y F				U	Unk	Int-S	1		
		bupropion	1	1						
		alprazolam	2	2						
2523h	45 y F				A/C	Ingst	Int-S	1		
		bupropion	1	1						
2524h	46 y F				U	Inhal+ Par	Int-A	3		
		bupropion (ER)	1	1						
		heroin	2	2						
2525a	46 y M				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		venlafaxine	2	2						
		gabapentin	3	3						
		acetaminophen	4	4					acetaminophen (apap)	14.4 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/aspirin/caffeine	5	5					salicylate	6.6 mg/dL In Blood (unspecified) @ Unknown
		tizanidine	6	6						
		naproxen	7	7						
		vitamin D	8	8						
		ethanol	9	9					ethanol	342 mg/dL In Blood (unspecified) @ Unknown
2526ha	46 y F				U	Ingst+ Unk	Int-S	1		
		escitalopram	1	1					escitalopram	4300 ng/mL In Blood (unspecified) @ Unknown
		venlafaxine	4	2						
		diphenhydramine	5	3						
		lamotrigine	3	4						
		ethanol	2	5					ethanol	64 mg/dL In Blood (unspecified) @ Unknown
2527h	46 y F				U	Ingst	Int-S	2		
		venlafaxine	1	1						
		ethanol	2	2						
2528h	47 y F				A/C	Ingst	Int-S	2		
		bupropion (ER)	1	1						
		quetiapine	2	2						
		clonidine	3	3						
		prazosin	4	4						
		lamotrigine	5	5						
		sertraline	6	6						
		alprazolam	7	7						
		buspirone	8	8						
		acetaminophen	9	9						
		naproxen	10	10						
		clonazepam	11	11						
		phenylephrine	12	12						
2529pa	47 y F				C	Ingst	Int-U	1		
		venlafaxine	1	1					venlafaxine	2200 ng/mL In Whole Blood @ Autopsy
		quetiapine	2	2					quetiapine	380 ng/mL In Whole Blood @ Autopsy
		olanzapine	3	3					olanzapine	250 ng/mL In Whole Blood @ Autopsy
		topiramate	4	4					topiramate	2200 ng/mL In Whole Blood @ Autopsy
2530ai	48 y F				U	Unk	Int-S	1		
		nortriptyline	1	1						
		verapamil	2	2						
2531h	48 y F				A	Ingst	Int-S	2		
		amitriptyline	1	1						
2532ai	48 y M				U	Unk	Int-A	3		
		sertraline	1	1						
		oxycodone	2	2						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		lorazepam	3	3						
2533ha	49 y F				A/C	Ingst+ Par	Int-S	2		
		venlafaxine (ER)	1	1						
		insulin (aspart)	2	2						
		insulin (detemir) (ER)	3	3						
2534ph	49 y F				A	Ingst	Int-S	2		
		venlafaxine	1	1						
		lisinopril	2	2						
2535h	50 y M				U	Ingst	Int-S	2		
		bupropion	1	1						
		naproxen	2	2						
		ethanol	3	3						
2536ai	50 y F				U	Unk	Int-S	1		
		sertraline	1	1						
		lamotrigine	2	2						
		tramadol	3	3						
		lorazepam	4	4						
		ethanol	5	5						
2537ha	50 y F				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		escitalopram	2	2						
		metformin	3	3						
		diuretic, unknown	4	4						
		lisinopril	5	5						
		atorvastain	6	6						
2538h	51 y F				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		metoprolol	2	2						
2539h	51 y M				A/C	Ingst	Int-S	2		
		nortriptyline	2	1						
		acetaminophen	1	2						
2540ai	51 y F				U	Ingst+ Unk	Int-A	1		
		bupropion	1	1						
		trazodone	2	2						
		ethanol	3	3						
2541ph	51 y F				A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
2542ph	52 y M				C	Ingst	Int-S	2		
		lithium	1	1					lithium	2.95 mmol/L In Blood (unspecified) @ Unknown
		olanzapine	2	2						
		gabapentin	3	3						
		benzodiazepine	4	4						
		lamotrigine	5	5						
		trazodone	6	6						
2543ph	53 y F				A/C	Ingst	Int-S	1		
		bupropion	1	1						
		alcohol, N.O.S.	2	2						
2544h	53 y M				A/C	Ingst	Int-S	1		
		bupropion	1	1						
		venlafaxine	2	2						
		modafinil	3	3						
		lisinopril	4	4						
		cyclobenzaprine	5	5						
		topiramate	6	6						
2545	54 y F				U	Ingst	Int-S	2		
		escitalopram	1	1					ethanol	115 mg/dL In Blood (unspecified) @ Unknown
		ethanol	2	2						
2546ai	54 y M				U	Unk	Unt-M	1		
		doxepin	1	1						
		tramadol	2	2						
		diazepam	3	3						
2547h	54 y F				U	Ingst	Unk	2		
		amitriptyline	1	1						
		amphetamine	2	2						
		narcotic, N.O.S.	3	3						
2548pha	54 y F				A/C	Ingst	Int-S	1		
		citalopram	1	1					citalopram	1184 ng/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	365 mg/dL In Blood (unspecified) @ Unknown
		bupropion	3	3					bupropion	637 ng/mL In Blood (unspecified) @ Unknown
		venlafaxine	4	4						
2549pha	55 y F				U	Ingst+ Unk	Int-S	1		
		lithium	6	1					lithium	1.7 mEq/L In Blood (unspecified) @ Unknown
		oxycodone	1	1					oxycodone	1400 ng/mL In Plasma @ Autopsy
		oxymorphone	2	2					oxymorphone	42 ng/mL In Blood (unspecified) @ Autopsy
		quetiapine	4	2					quetiapine	1100 ng/mL In Blood (unspecified) @ Autopsy
		morphine	3	3					morphine	68 ng/mL In Blood (unspecified) @ Autopsy
		cyclobenzaprine	5	5					cyclobenzaprine	370 ng/mL In Blood (unspecified) @ Autopsy
2550ph	56 y F				A	Ingst	Int-S	2		
		nortriptyline	1	1						
2551pha	56 y M				A	Ingst	Int-S	2		
		trazodone	1	1					trazodone	12612 ng/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	260 mg/dL In Blood (unspecified) @ Unknown
2552ai	56 y F				U	Unk	Int-S	1		
		bupropion	1	1						
		methamphetamine	2	2						
		risperidone	3	3						
2553h	58 y M				A/C	Ingst	Int-S	1		
		bupropion (ER)	1	1						
		baclofen	2	2						
		tramadol	3	3						
		beta blocker	4	4						
		donepezil/memantine (ER)	5	5						
		ezetimibe	6	6						
		clonazepam	7	7						
		lithium	8	8					lithium	0.4 mEq/L In Serum @ Unknown
2554	59 y F				A/C	Ingst+ Par	Int-S	2		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		amitriptyline	1	1						
		insulin (aspart)	2	2						
2555ha	59 y F				U	Ingst	Int-S	1		
		mirtazapine	1	1					11-oh-thc (11-hydroxy-delta-9-tetrahydrocannabinol)	1.1 ng/mL In Blood (unspecified) @ Unknown
		mirtazapine	1	1					delta-9-carboxy-thc	10 ng/mL In Blood (unspecified) @ Unknown
		mirtazapine	1	1					acetone	14 mg/dL In Blood (unspecified) @ Unknown
		mirtazapine	1	1					clonazepam	17 ng/mL In Blood (unspecified) @ Unknown
		mirtazapine	1	1					delta-9-thc	2.2 ng/mL In Blood (unspecified) @ Unknown
		mirtazapine	1	1					mirtazapine	38 ng/mL In Blood (unspecified) @ Unknown
		mirtazapine	1	1					gabapentin	48 mcg/mL In Blood (unspecified) @ Unknown
		mirtazapine	1	1					7-aminoclonazepam	67 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	2	2						
		gabapentin	3	3						
		marijuana, N.O.S.	4	4						
2556	59 y M				A	Ingst	Int-S	2		
		venlafaxine	1	1						
		rosuvastatin	2	2						
2557pha	59 y F				A	Ingst	Int-S	3		
		amitriptyline	1	1					nortriptyline	138 ng/mL In Blood (unspecified) @ Unknown
		amitriptyline	1	1					amitriptyline	405 ng/mL In Blood (unspecified) @ Unknown
		hydroxyzine	2	2					hydroxyzine	41.6 ng/mL In Blood (unspecified) @ Unknown
		ibuprofen	3	3					ibuprofen	14.2 mcg/mL In Blood (unspecified) @ Unknown
2558h	59 y F				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		lisinopril	2	2						
		alcohol, N.O.S.	3	3						
2559ai	61 y F				U	Unk	Unk	1		
		sertraline	1	1						
2560pha	61 y F				A/C	Ingst+ Unk	Int-S	1		
		fluoxetine	2	1					fluoxetine	4100 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	3	2					ethanol	9 mg/dL In Blood (unspecified) @ Autopsy
		quetiapine	1	3						
2561ai	62 y F				U	Unk	Int-S	1		
		nortriptyline	1	1						
		trazodone	2	2						
		methocarbamol	3	3						
		topiramate	4	4						
		metoclopramide	5	5						
2562h	62 y M				A/C	Ingst	Int-S	3		
		lithium	1	1					lithium	3.6 mEq/L In Blood (unspecified) @ Unknown
		diltiazem	2	2						
		ethanol	3	3					ethanol	122 mg/dL In Blood (unspecified) @ Unknown
2563h	63 y F				A	Ingst	Unk	2		
		venlafaxine	1	1						
2564p	64 y M				A/C	Ingst	Int-S	2		
		trazodone	1	1						
		acetaminophen/hydrocodone	2	2					ethanol	159 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	2	2					acetaminophen (apap)	75 mcg/mL In Blood (unspecified) @ Unknown
		gabapentin	3	3						
		ethanol	4	4						
		valproic acid	5	5					valproic acid	40.7 mg/dL In Blood (unspecified) @ Unknown
2565ph	67 y F				A	Ingst	Int-S	3		
		amitriptyline	1	1						
		lisinopril	2	2						
2566h	68 y F				U	Ingst+ Aspir	Int-S	3		
		amitriptyline	1	1						
		alprazolam	2	2						
		zolpidem	3	3						
2567ha	68 y M				U	Ingst	Int-S	1		
		nortriptyline	1	1					nortriptyline	2000 ng/mL In Blood (unspecified) @ Unknown
		doxepin	2	2					doxepin	310 ng/mL In Blood (unspecified) @ Unknown
		aripiprazole	3	3					aripiprazole	56 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	4	4					alprazolam	71 ng/mL In Blood (unspecified) @ Unknown
		triazolam	5	5					triazolam	36 ng/mL In Blood (unspecified) @ Unknown
		memantine	6	6						
2568h	69 y F				A/C	Unk	Int-S	2		
		mirtazapine	1	1					sertraline	120 ng/mL In Blood (unspecified) @ Unknown
		mirtazapine	1	1					mirtazapine	220 ng/mL In Blood (unspecified) @ Unknown
		mirtazapine	1	1					diphenhydramine	2200 ng/mL In Blood (unspecified) @ Unknown
		mirtazapine	1	1					oxymorphone	3.5 ng/mL In Blood (unspecified) @ Unknown
		mirtazapine	1	1					benzoylecognine	350 ng/mL In Blood (unspecified) @ Unknown
		mirtazapine	1	1					oxycodone (free)	400 ng/mL In Blood (unspecified) @ Unknown
		mirtazapine	1	1					desmethylsertraline	67 ng/mL In Blood (unspecified) @ Unknown
		oxycodone	2	2						
		diphenhydramine	3	3						
		sertraline	4	4						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		cocaine	5	5						
2569ha	69 y M				A/C	Ingst	Int-U	1		
		amitriptyline	1	1					nortriptyline	0.65 mg/L In Blood (unspecified) @ Unknown
		amitriptyline	1	1					amitriptyline	1.4 mg/L In Blood (unspecified) @ Unknown
		amitriptyline	1	1					amitriptyline	80 mg/kg In Liver @ Autopsy
		amitriptyline	1	1					nortriptyline	80 mg/kg In Liver @ Autopsy
		metoprolol	2	2					metoprolol	0.11 mg/L In Blood (unspecified) @ Unknown
		metoprolol	2	2					metoprolol	1.2 mg/kg In Liver @ Autopsy
		olanzapine	3	3						
2570ha	70 y M				U	Ingst	Int-S	1		
		trazodone	1	1					tramadol	0.2 mg/L In Blood (unspecified) @ Unknown
		trazodone	1	1					trazodone	0.65 mg/L In Blood (unspecified) @ Unknown
		tramadol	2	2						
2571h	71 y F				A	Ingst	Int-S	2		
		trazodone	1	1						
2572h	72 y M				A/C	Ingst	AR-D	3		
		trazodone	1	1						
		sertraline	2	2						
		viral disease (COVID-19-Confirmed)	3	3						
2573a	72 y F				A/C	Ingst	Int-S	1		
		nortriptyline	1	1					nortriptyline	670 ng/mL In Blood (unspecified) @ Unknown
		quetiapine	2	2					quetiapine	2100 ng/mL In Blood (unspecified) @ Unknown
		bupropion	3	3					hydroxybupropion	400 ng/mL In Blood (unspecified) @ Unknown
		lamotrigine (ER)	4	4					lamotrigine	21 mcg/mL In Blood (unspecified) @ Unknown
		valproic acid	5	5					valproic acid	88 mcg/mL In Blood (unspecified) @ Unknown
2574ai	73 y M				U	Unk	Int-S	1		
		nortriptyline	1	1						
		venlafaxine	2	2						
		clonazepam	3	3						
		zolpidem	4	4						
2575a	73 y M				C	Ingst	Int-U	3		
		mirtazapine	1	1					mirtazapine	58 ng/mL In Whole Blood @ Autopsy
		olanzapine	2	2					olanzapine	180 ng/mL In Whole Blood @ Autopsy
		lorazepam	3	3					lorazepam	9.6 ng/mL In Whole Blood @ Autopsy
2576ha	76 y F				A	Ingst	Int-S	1		
		venlafaxine (ER)	1	1					venlafaxine	8600 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	2	2					clonazepam	8074 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	2	2					7-aminoclonazepam	9.4 ng/mL In Blood (unspecified) @ Unknown
		mirtazapine	3	3					mirtazapine	1700 ng/mL In Blood (unspecified) @ Unknown
2577ai	85 y F				U	Unk	Int-S	1		
		fluvoxamine	1	1						
		temazepam	2	2						
		hydrocodone	3	3						
2578pa	87 y F				A/C	Ingst	Int-S	2		
		nortriptyline	1	1						
2579h	90 y F				A/C	Ingst	Int-S	2		
		mirtazapine	1	1						
		sitagliptin	2	2						
2580h	97 y M				A/C	Ingst	Int-S	2		
		citalopram	1	1						
2581h	98 y F				A	Ingst	Int-S	2		
		doxepin	1	1						
[2582h]	17 m M				A	Ingst	Unt-G	2		
		bupropion	1	1						
2583ha	20+ y F				A	Ingst	Int-S	1		
		amitriptyline	1	1					amitriptyline	19200 ng/mL In Blood (unspecified) @ Unknown
		amitriptyline	1	1					nortriptyline	3400 mg/mL In Blood (unspecified) @ Unknown
		cyclobenzaprine	2	2					cyclobenzaprine	21 ng/mL In Blood (unspecified) @ Unknown
		bupropion	3	3					bupropion	191 ng/mL In Blood (unspecified) @ Unknown
		bupropion	3	3					hydroxybupropion	452 ng/mL In Blood (unspecified) @ Unknown
See Also case 59, 81, 138, 140, 141, 201, 227, 238, 253, 309, 485, 496, 497, 536, 538, 565, 592, 596, 599, 638, 651, 652, 653, 672, 723, 732, 745, 781, 809, 818, 823, 826, 843, 844, 845, 846, 868, 872, 908, 918, 929, 930, 953, 959, 962, 994, 1012, 1013, 1020, 1037, 1044, 1059, 1070, 1071, 1105, 1123, 1135, 1142, 1178, 1189, 1208, 1209, 1247, 1282, 1294, 1306, 1307, 1308, 1413, 1419, 1420, 1424, 1449, 1463, 1472, 1480, 1511, 1516, 1527, 1556, 1571, 1578, 1616, 1623, 1637, 1643, 1662, 1674, 1703, 1713, 1734, 1736, 1741, 1744, 1746, 1750, 1756, 1766, 1774, 1788, 1823, 1852, 1887, 1894, 1918, 1929, 1930, 1953, 1958, 1968, 1975, 1987, 2004, 2024, 2026, 2036, 2048, 2051, 2053, 2055, 2059, 2084, 2086, 2092, 2093, 2098, 2105, 2130, 2166, 2167, 2187, 2193, 2195, 2241, 2246, 2248, 2254, 2255, 2261, 2282, 2291, 2301, 2302, 2310, 2325, 2327, 2343, 2350, 2359, 2369, 2386, 2391, 2439, 2440, 2442, 2447, 2450, 2451, 2454, 2455, 2457, 2461, 2462, 2585, 2586, 2604, 2606, 2610, 2613, 2614, 2615, 2638, 2645, 2648, 2649, 2652, 2655, 2657, 2658, 2665, 2675, 2678, 2682, 2685, 2699, 2700, 2707, 2709, 2710, 2715, 2723, 2728, 2729, 2732, 2735, 2738, 2739, 2744, 2747, 2749, 2752, 2757, 2767, 2776, 2778, 2781, 2786, 2789, 2799, 2810, 2816, 2817, 2821, 2822, 2828, 2829, 2854, 2859, 2869, 2872, 2873, 2877, 2878, 2882, 2888, 2901, 2905, 2951, 2971, 2974, 2977, 2997, 3002, 3006, 3007, 3012, 3013, 3016, 3022, 3023, 3027, 3030, 3032, 3033, 3037, 3042, 3043, 3048, 3049, 3051, 3052, 3054, 3061, 3064, 3065, 3066, 3067, 3075, 3076, 3085, 3151, 3169, 3172, 3235, 3241, 3250, 3256, 3263, 3287, 3296, 3303, 3340, 3352, 3354, 3362, 3370, 3371, 3397, 3411, 3412, 3418, 3513, 3544, 3573, 3610, 3617, 3639, 3659, 3672, 3681, 3856									
Antihistamines										
2584h	18 y M				A	Ingst	Int-S	1		
		diphenhydramine	1	1						
2585h	18 y M				U	Ingst	Int-S	1		
		diphenhydramine	1	1						
		escitalopram	2	2						
2586ph	21 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
		bupropion	2	2						
2587ha	21 y M				A	Ingst	Int-U	1		
		diphenhydramine	1	1					diphenhydramine	5200 ng/mL In Blood (unspecified) @ Unknown
		diazepam	2	2					nordiazepam	61 ng/mL In Blood (unspecified) @ Unknown
2588ph	23 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1						
2589ph	24 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1						
		hydrogen peroxide	2	2						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
2590ai	28 y F				U	Unk	Int-S	1		
		diphenhydramine	1	1						
		ethanol	2	2						
2591ph	28 y M				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
2592h	30 y F				A/C	Ingst	Int-S	2		
		hydroxyzine	1	1						
		drug, N.O.S.	2	2						
		ethanol	3	3					ethanol	275 mg/dL In Serum @ Unknown
2593ai	30 y M				U	Ingst+ Unk	Int-S	1		
		diphenhydramine	1	1						
		ethanol	2	2						
2594pha	31 y F				A	Ingst+ Unk	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	2400 ng/mL In Blood (unspecified) @ Unknown
		amphetamine	2	2					amphetamine	150 ng/mL In Blood (unspecified) @ Unknown
2595pha	31 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	12.9 ng/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	0.146 g/dL In Blood (unspecified) @ Unknown
2596ai	32 y M				U	Unk	Int-S	1		
		diphenhydramine	1	1						
		gabapentin	2	2						
		methadone	3	3						
2597ph	32 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
2598ha	34 y M				A	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	1700 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	80 mg/dL In Blood (unspecified) @ Unknown
2599ph	36 y M				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
2600p	36 y F				U	Ingst	Int-S	3		
		promethazine	1	1						
2601p	38 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
2602ha	42 y M				A	Ingst	Int-U	3		
		diphenhydramine	1	1					diphenhydramine	0.91 mcg/mL In Blood (unspecified) @ Autopsy
		methamphetamine	2	2						
2603ai	42 y F				U	Unk	Int-S	3		
		diphenhydramine	1	1						
		viral disease (COVID-19-Confirmed)	2	2						
2604pha	43 y F				U	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	12000 ng/mL In Blood (unspecified) @ Unknown
		sertraline	2	2						
		lurasidone	3	3						
		citalopram	4	4					citalopram	500 ng/mL In Blood (unspecified) @ Unknown
2605ai	47 y F				U	Unk	Int-S	1		
		diphenhydramine	1	1						
2606pa	48 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
		alprazolam	2	2						
		trazodone	3	3						
		hydroxyzine	4	4						
		buspirone	5	5						
2607pa	51 y M				A	Ingst	Int-A	3		
		diphenhydramine	1	1					diphenhydramine	1600 ng/mL In Whole Blood @ Autopsy
2608ai	59 y M				U	Unk	Int-S	1		
		hydroxyzine	1	1						
		ethanol	2	2						
2609ph	64 y M				A	Ingst	Int-S	1		
		diphenhydramine	1	1						
		antipsychotic (atypical)	2	2						
2610ai	73 y F				U	Unk	Unt-M	1		
		diphenhydramine	1	1						
		sertraline	2	2						
2611ai	73 y F				U	Unk	Int-S	1		
		diphenhydramine	1	1						
		Non Drug Substance (N.O.S.)	2	2						
2612ha	84 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	1313 ng/mL In Blood (unspecified) @ Unknown
		hydrocodone	2	2					hydrocodone	41 ng/mL In Blood (unspecified) @ Unknown
		gabapentin	3	3					gabapentin	1422 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen	4	4					acetaminophen (apap)	6395 ng/mL In Blood (unspecified) @ Unknown
2613ha	60+ y M				U	Ingst	Int-S	3		
		diphenhydramine	1	1					diphenhydramine	226 ng/mL In Blood (unspecified) @ Unknown
		escitalopram	2	1						
		risperidone	3	2						
		gabapentin	4	3						
		acetaminophen	5	4					acetaminophen (apap)	67 mcg/L In Plasma @ Unknown
See Also case 21, 96, 138, 227, 270, 366, 485, 538, 556, 561, 586, 609, 617, 638, 644, 651, 652, 653, 698, 773, 782, 830, 862, 930, 986, 1054, 1105, 1111, 1123, 1208, 1231, 1245, 1247, 1267, 1270, 1278, 1280, 1286, 1311, 1323, 1334, 1365, 1411, 1419, 1428, 1438, 1448, 1453, 1455, 1468, 1485, 1514, 1516, 1565, 1568, 1570, 1600, 1639, 1663, 1712, 1743, 1748, 1751, 1753, 1771, 1784, 1823, 1903, 1915, 1947, 1951, 1974, 1975, 1982, 1987, 2085, 2100, 2105, 2115, 2137, 2143, 2146, 2147, 2166, 2177, 2219, 2237, 2282, 2317, 2350, 2439, 2445, 2449, 2471, 2475, 2481, 2483, 2495, 2496, 2498, 2501, 2502, 2503, 2511, 2516, 2521, 2526, 2557, 2568, 2640, 2655, 2673, 2696, 2707, 2713, 2743, 2767, 2771, 2772, 2796, 2798, 2808, 2811, 2822, 2839, 2901, 2915, 2919, 2923, 2974, 2977, 2994, 3016, 3042, 3065, 3117, 3154, 3195, 3221, 3277, 3340, 3352, 3361, 3375, 3414, 3449, 3481, 3497, 3518, 3564, 3592, 3617, 3632, 3647, 3663, 3705										
Antimicrobials										
2614ha	24 y M				A	Ingst	Int-S	3		
		antiretrovirals	3	1						
		venlafaxine	1	2						
		ethanol	2	3					ethanol	247 mg/dL In Blood (unspecified) @ Unknown
2615h	47 y F				A/C	Ingst	Int-S	1		
		hydroxychloroquine	1	1						
		duloxetine (ER)	2	2						
		sulfasalazine	3	3						
		prednisone	4	4						
		ethanol	5	5						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
2616ph	50 y F				U	Ingst	Int-S	2		
		sulfamethoxazole/trimethoprim	1	1						
		benzonatate	2	2						
		cephalexin	3	3						
2617h	53 y M				A	Ingst+ Par	AR-D	3		
		ciprofloxacin	1	1						
		ketorolac	2	2						
2618ph	67 y F				A	Ingst	Int-S	1		
		hydroxychloroquine	1	1						
[2619ha]	68 y M				A	Ingst+ Oth	Int-M	1		
		chloroquine	1	1					chloroquine	17000 ng/mL In Blood (unspecified) @ 2 h (pe)
		viral disease (COVID-19-Not Confirmed)	2	2						
2620ai	69 y M				U	Unk	Unt-U	1		
		chloroquine	1	1						
		diazepam	2	2						
2621h	70 y F				A	Par	AR-D	2		
		piperacillin/tazobactam	1	1						
2622h	76 y M				C	Unk	Unt-T	3		
		valacyclovir	1	1						
		gabapentin	2	2						
2623hi	18 d F				A/C	Par	Unt-T	3		
		ganciclovir	1	1					ganciclovir	79 mcg/mL In Blood (unspecified) @ 16 d (pe)
See Also case 1197, 1766, 2443, 2516, 2707, 2866, 3016, 3054, 3225										
Antineoplastics										
2624h	47 y F				A	Ingst	Int-U	1		
		antineoplastic drug	1	1						
2625h	51 y F				A/C	Ingst	Unt-T	2		
		methotrexate	1	1						
2626h	66 y M				C	Par	AR-D	2		
		methotrexate	1	1						
2627h	72 y F				A/C	Ingst	Unt-T	2		
		methotrexate	1	1						
2628h	74 y F				C	Par	AR-D	2		
		methotrexate	1	1						
2629h	82 y F				C	Ingst	AR-D	2		
		methotrexate	1	1						
2630h	83 y F				C	Ingst	Unt-T	1		
		methotrexate	1	1					methotrexate	0.05 mmol/L In Blood (unspecified) @ Unknown
2631i	86 y F				A	Ingst	Unt-T	2		
		methotrexate	1	1						
See Also case 2359, 2746										
Asthma Therapies										
2632ai	13 y F				U	Unk	Oth-M	1		
		theophylline	1	1						
		phenylethylamine	2	2						
		ibuprofen	3	3						
		nicotine	4	4						
2633h	41 y M				A/C	Ingst+ Inhal	Int-A	2		
		theophylline	4	1					theophylline	2.5 mcg/mL In Blood (unspecified) @ Unknown
		indomethacin	7	2						
		gabapentin	9	3						
		alcohol, N.O.S.	3	4					ethanol	65 mg/dL In Blood (unspecified) @ Unknown
		Roflumilast	2	5						
		ropinirole	6	6						
		meloxicam	8	7						
		benzonatate	1	8						
		ranolazine (ER)	5	9						
2634ai	70 y M				C	Unk	Int-A	3		
		sympathomimetic	1	1						
2635	74 y F				C	Ingst	AR-D	3		
		theophylline	1	1					theophylline	44.7 mcg/mL In Blood (unspecified) @ Unknown
See Also case 2675, 3434										
Cardiovascular Drugs										
2636phi	1 y M				A	Ingst	Unt-G	1		
		flecainide	1	1						
2637ph	13 y F				A	Ingst	Int-S	2		
		flecainide	1	1						
		prednisone	2	2						
2638hi	15 y M				A	Ingst	Int-S	1		
		labetalol	1	1						
		clonazepam	2	2						
		alprazolam	3	3						
		sertraline	4	4						
		pregabalin	5	5						
		losartan	6	6						
		lisinopril	7	7						
		rivaroxaban	8	8						
2639ph	16 y F				U	Ingst	Int-S	1		
		propranolol	1	1						
2640ai	17 y M				U	Unk	Int-S	1		
		metoprolol	1	1						
		metformin	2	2						
		diphenhydramine	3	3						
		doxylamine	4	4						
2641ha	18 y F				A	Ingst	Int-S	1		
		verapamil (ER)	1	1					verapamil	1300 ng/mL In Blood (unspecified) @ Autopsy
		metoprolol	2	2					metoprolol	4300 ng/mL In Blood (unspecified) @ Autopsy
		gabapentin	3	3					gabapentin	22 mcg/mL In Blood (unspecified) @ Autopsy
2642ha	18 y F				A	Ingst	Int-S	2		
		amlodipine	1	1						
[2643pha]	19 y F				U	Ingst	Int-S	1		
		flecainide	1	1						
2644ha	20 y F				A	Ingst	Int-S	1		
		metoprolol	1	1						
		glipizide	2	2						
		amlodipine	3	3						
		methamphetamine	4	4						
2645h	21 y F				A	Ingst	Int-S	2		
		verapamil	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		sertraline	2	2						
2646h	21 y M				A	Ingst	Int-S	1		
		cardiovascular drug, N.O.S.	1	1						
2647ha	22 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		ethanol	3	2						
		prednisone	2	3						
2648	24 y F				A	Ingst	Int-S	2		
		metoprolol (ER)	1	1						
		bupropion	2	2						
2649ha	25 y M				A/C	Ingst	Int-S	2		
		verapamil	1	1					verapamil	1.7 mg/L In Blood (unspecified) @ Unknown
		trazodone	2	2						
		sumatriptan	3	3						
2650h	27 y M				A	Ingst	Int-S	2		
		propranolol	1	1						
2651ai	28 y F				U	Ingst+ Unk	Int-S	1		
		propranolol	1	1						
		quetiapine	2	2						
		ethanol	3	3						
2652h	28 y F				U	Ingst	Unk	2		
		carvedilol	1	1						
		amlodipine	2	2						
		bupropion	3	3						
		citalopram	4	4						
		hydrochlorothiazide	5	5						
		gabapentin	6	6						
2653h	28 y M				A	Ingst	Int-S	2		
		cardiovascular drug, N.O.S.	1	1						
2654ph	30 y F				A/C	Ingst	Int-S	2		
		propranolol	1	1						
		ethanol	2	2						
2655pha	30 y F				A	Ingst	Int-S	1		
		metoprolol	1	1						
		calcium antagonist	2	2						
		hydroxyzine	3	3					hydroxyzine	1100 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	4	4					norfluoxetine	180 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	4	4					fluoxetine	350 ng/mL In Blood (unspecified) @ Autopsy
		sedative-hypnotic-antianxiety-antipsychotic drug, N.O.S.	5	5						
		methamphetamine	6	6					methamphetamine	110 ng/mL In Blood (unspecified) @ Autopsy
2656h	31 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		ethanol	2	2					ethanol	82 mg/dL In Blood (unspecified) @ Unknown
		losartan	3	3						
2657h	32 y M				A	Ingst	Int-S	2		
		amlodipine	1	1						
		clonidine	2	2						
		hydrochlorothiazide	3	3						
		bupropion	4	4						
2658ph	32 y F				A	Ingst	Int-S	2		
		propranolol	1	1						
		bupropion	2	2						
		tizanidine	3	3						
		antipsychotic (atypical)	4	4						
2659ph	32 y F				U	Ingst	Int-S	2		
		metoprolol	1	1						
2660ph	32 y F				A	Ingst	Int-S	2		
		beta blocker	1	1						
		drug, N.O.S.	2	2						
2661h	33 y M				A	Ingst	Int-S	1		
		amlodipine	1	1						
2662h	33 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		indomethacin	2	2						
2663h	33 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1						
2664pha	33 y F				A/C	Ingst	Int-S	2		
		propranolol	1	1					propranolol	5147 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	150 mg/dL In Blood (unspecified) @ Autopsy
2665h	33 y F				A	Ingst	Int-S	2		
		beta blocker	1	1						
		escitalopram	2	2						
		tizanidine	3	3						
		benzodiazepine	4	4						
2666h	33 y F				U	Ingst	Int-S	2		
		propranolol	1	1						
		ethanol	2	2					ethanol	164 mg/dL In Serum @ Unknown
		salicylate	3	3					salicylate	22 mg/mL In Serum @ Unknown
		acetaminophen	4	4					acetaminophen (apap)	2.9 mcg/mL In Serum @ Unknown
2667h	34 y M				U	Ingst	Int-S	2		
		amlodipine	1	1						
		metformin	2	2						
		potassium chloride	3	3						
		losartan	4	4						
2668ha	34 y F				U	Ingst	Int-S	1		
		labetalol	1	1					labetalol	4900 ng/mL In Whole Blood @ Autopsy
2669ha	35 y M				A	Ingst	Int-S	2		
		amlodipine	1	1						
2670h	36 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		hydrochlorothiazide/lisinopril	2	2						
		ibuprofen	3	3						
2671ph	36 y M				A	Ingst	Int-S	2		
		propranolol	1	1						
2672h	36 y F				A	Ingst	Int-U	3		
		diltiazem (ER)	1	1						
		alprazolam	2	2						
2673a	38 y F				A/C	Ingst	Int-S	1		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		propranolol	1	1					propranolol	2500 ng/mL In Blood (unspecified) @ Autopsy
		carbamazepine	2	2					carbamazepine	17 mcg/mL In Blood (unspecified) @ Autopsy
		hydroxyzine	3	3					hydroxyzine	240 ng/mL In Blood (unspecified) @ Autopsy
		gabapentin	4	4					gabapentin	6.5 mcg/mL In Blood (unspecified) @ Autopsy
2674ha	39 y M				A/C	Ingst	Int-M	1		
		propranolol	1	1					propranolol	410 ng/mL In Serum @ 2 h (pe)
		amlodipine	2	2					amlodipine	230 ng/mL In Serum @ 2 h (pe)
		chlorpromazine	3	3						
		clonazepam	4	4					7-aminoclonazepam	100 ng/mL In Serum @ 2 h (pe)
		clonazepam	4	4					clonazepam	25 ng/mL In Serum @ 2 h (pe)
		nabumetone	5	5						
2675ha	40 y F				A/C	Ingst	Unt-T	3		
		amlodipine	1	1						
		metoprolol (ER)	2	2						
		atenolol	3	3						
		clonidine	4	4						
		methadone	5	5						
		venlafaxine (ER)	6	6						
		lurasidone	7	7						
		lisinopril	8	8						
		montelukast	9	9						
		formoterol/mometasone	10	10						
		atorvastatin	11	11						
2676h	40 y F				A	Ingst	Int-S	2		
		verapamil	1	1						
2677ha	41 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	0.67 mg/L In Blood (unspecified) @ 1 h (pe)
2678h	41 y F				A	Ingst	Int-S	2		
		beta blocker	1	1						
		venlafaxine	2	2						
		clonazepam	3	3						
2679h	41 y M				A/C	Ingst+ Aspir	Int-S	2		
		amlodipine	1	1						
		quetiapine	2	2						
2680	41 y M				A	Ingst	Int-S	2		
		metoprolol	1	1						
2681h	42 y F				A/C	Ingst	Int-S	1		
		metoprolol	1	1						
2682ha	43 y M				A	Ingst	Int-S	1		
		amlodipine	1	1						
		prazosin	2	2						
		gabapentin	3	3						
		sertraline	4	4						
		quetiapine	5	5						
2683h	43 y F				A	Ingst	Int-S	2		
		amlodipine	1	1						
		benzodiazepine	2	2						
2684	44 y F				A	Ingst	Int-S	2		
		calcium antagonist	1	1						
		olanzapine	2	2						
		cocaine	3	3						
2685ha	44 y M				A	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	81 ng/mL In Whole Blood @ 2 h (pe)
		bupropion	2	2					bupropion	34 ng/mL In Whole Blood @ 2 h (pe)
		bupropion	2	2					hydroxybupropion	790 ng/mL In Whole Blood @ 2 h (pe)
		duloxetine (ER)	3	3					duloxetine	200 ng/mL In Whole Blood @ 2 h (pe)
		cyclobenzaprine	4	4					cyclobenzaprine	150 ng/mL In Whole Blood @ 2 h (pe)
		naltrexone	5	5						
		prednisone	6	6						
		naproxen	7	7					naproxen	170 mcg/mL In Whole Blood @ 2 h (pe)
		gabapentin	8	8					gabapentin	16 mmol/L In Whole Blood @ 2 h (pe)
		levothyroxine	9	9						
2686ha	45 y F				A/C	Ingst+ Unk	Int-S	1		
		diltiazem	1	1					diltiazem	1.1 mcg/mL In Serum @ 4.25 h (pe)
		methamphetamine	2	2					methamphetamine	0.45 mcg/mL In Serum @ Unknown
2687ai	45 y F				U	Ingst+ Unk	Int-S	1		
		clonidine	1	1						
		naproxen	2	2						
		ethanol	3	3						
2688ai	45 y F				U	Unk	Int-S	1		
		clonidine	1	1						
		ethanol	2	2						
		alprazolam	3	3						
2689p	45 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		gabapentin	2	2						
		hydrochlorothiazide/triampterene	3	3						
2690h	45 y M				A/C	Ingst	Int-S	2		
		verapamil	1	1						
2691hi	46 y F				A	Ingst	Int-S	3		
		diltiazem	1	1						
		metoprolol	2	2						
		omeprazole	3	3						
2692h	47 y F				A	Ingst	Int-S	2		
		amlodipine	1	1						
2693h	47 y F				A	Ingst	Int-S	2		
		metoprolol	1	1						
		ethanol	2	2						
		acetaminophen	3	3						
2694pha	47 y F				A	Ingst	Int-S	1		
		beta blocker	1	1						
		acetaminophen/diphenhydramine	2	2					acetaminophen (apap)	248.6 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	3	3						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
2695ha	47 y M				A/C	Ingst	Int-S	2		
		labetalol	1	1						
		levetiracetam	3	2						
		nifedipine	2	2						
		minoxidil	4	4						
2696ai	47 y F				U	Unk	Int-S	1		
		metoprolol	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
2697h	47 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		lisinopril	2	2						
		ibuprofen	3	3						
2698a	48 y F				A	Ingst	Int-S	1		
		diltiazem	1	1						
		metoprolol	2	2						
2699h	48 y M				A/C	Ingst+ Par	Int-S	1		
		diltiazem	1	1						
		mirtazapine	2	2						
		insulin (regular)	3	3						
		ethanol	4	4					ethanol	212 mg/dL In Blood (unspecified) @ Unknown
2700h	48 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		nifedipine	2	2						
		carvedilol	3	3						
		hydralazine	4	4						
		acetaminophen/hydrocodone	5	5						
		lisinopril	6	6						
		gabapentin	7	7						
		metolazone	8	8						
		bumetanide	9	9						
		sertraline	10	10						
		levothyroxine	11	11						
		atorvastain	12	12						
2701h	48 y F				A/C	Ingst	Int-S	2		
		calcium antagonist	1	1						
		olanzapine	2	2						
		lorazepam	3	3						
2702h	48 y M				A	Ingst	Int-S	1		
		metoprolol	1	1						
		lisinopril	2	2						
2703h	48 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		ethanol	2	2					ethanol	258 mg/dL In Serum @ Unknown
2704	48 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		lisinopril	2	2						
		ethanol	3	3					ethanol	137 mg/dL In Plasma @ Unknown
2705ha	48 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	110 ng/mL In Blood (unspecified) @ Autopsy
		carvedilol	2	2						
		ammonium nitrite/sodium nitrite	3	3						
		lisinopril	4	4						
2706ai	49 y F				U	Unk	Unk	1		
		verapamil	1	1						
		morphine	2	2						
		hydrocodone	3	3						
2707ph	49 y M				A/C	Ingst	Int-S	2		
		verapamil (ER)	1	1						
		levothyroxine	2	2						
		acetaminophen/hydrocodone	3	3						
		promethazine	4	4						
		bisoprolol/hydrochlorothiazide	5	5						
		diphenhydramine	6	6						
		duloxetine (ER)	7	7						
		amlodipine	8	8						
		atorvastatin	9	9						
		atenolol	10	10						
		amoxicillin	11	11						
		antihyperlipidemic	12	12						
		ropinirole	13	13						
		amitriptyline	14	14						
		acetaminophen/diphenhydramine	15	15						
2708ai	49 y M				U	Unk	Int-S	1		
		flecainide	1	1						
		lorazepam	2	2						
		ethanol	3	3						
2709h	49 y M				A/C	Ingst	Int-S	2		
		amlodipine/olmesartan	1	1						
		metoprolol	2	2						
		lisinopril	3	3						
		quetiapine	4	4						
		sertraline	5	5						
2710h	49 y F				A	Ingst	Int-S	1		
		diltiazem	1	1						
		fluoxetine	2	2						
2711ha	49 y F				A/C	Ingst	Int-S	1		
		verapamil (ER)	1	1					norverapamil	0.36 mg/L In Blood (unspecified) @ Unknown
		verapamil (ER)	1	1					verapamil	1.3 mg/L In Blood (unspecified) @ Unknown
		verapamil	2	2						
2712h	50 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		clonazepam	2	2						
		levothyroxine	3	3						
		pregabalin	4	4						
		simvastatin	5	4						
		pioglitazone	6	5						
2713h	50 y M				A	Ingst	Int-S	2		
		amlodipine	1	1						
		hydroxyzine	2	2						
2714h	50 y F				A	Ingst	Int-S	1		
		amlodipine	1	1						
		ethanol	2	2					ethanol	331 mg/dL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
2715h	50 y M				U	Ingst	Int-S	1		
		amlodipine	1	1						
		quetiapine	2	2						
		citalopram	3	3						
2716ai	51 y F				U	Unk	Int-S	1		
		propranolol	1	1						
		tizanidine	2	2						
2717ha	51 y M				A/C	Ingst	Int-S	1		
		metoprolol	1	1						
		glipizide	2	2						
		metformin	3	3						
		clonidine	4	4						
		spironolactone	5	5						
		atorvastain	6	6						
		thrombolytics	7	7						
2718	51 y F				A	Ingst	Int-S	2		
		verapamil	1	1						
2719h	51 y M				A/C	Ingst	Int-S	2		
		calcium antagonist	1	1						
2720ai	51 y M				U	Unk	Int-S	1		
		amlodipine	1	1						
2721ha	52 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		metoprolol	3	2						
		potassium chloride	2	2					potassium	6 mmol/L In Serum @ Unknown
		meloxicam	4	3						
		gabapentin	5	4						
		ethanol	6	5					ethanol	380 mg/dL In Serum @ 15 m (pe)
2722h	52 y F				C	Ingst	Unt-T	3		
		sotalol	1	1						
2723ha	52 y M				A/C	Ingst	Int-S	1		
		metoprolol	1	1					metoprolol	10 mg/L In Blood (unspecified) @ Unknown
		acetaminophen	2	2					acetaminophen (apap)	204 mcg/mL In Serum @ 1 h (pe)
		acetaminophen	2	2					acetaminophen (apap)	210 mg/L In Blood (unspecified) @ Unknown
		alprazolam	3	3					alprazolam	0.26 mg/L In Blood (unspecified) @ Unknown
		zolpidem	4	4					zolpidem	0.88 mg/L In Blood (unspecified) @ Unknown
		amlodipine	5	5						
		baclofen	6	6						
		trazodone	7	7						
		lithium	8	8						
2724h	52 y M				U	Ingst	Int-S	2		
		metoprolol	1	1						
		ethanol	2	2					ethanol	178 mg/dL In Blood (unspecified) @ Unknown
2725h	52 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
2726h	52 y M				A/C	Ingst	Unt-G	2		
		amlodipine	1	1						
2727	52 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		levothyroxine	2	2						
2728ai	53 y F				U	Unk	Unt-M	1		
		metoprolol	1	1						
		amitriptyline	2	2						
		quetiapine	3	3						
2729ai	53 y F				U	Unk	Int-U	1		
		beta blocker	1	1						
		amitriptyline	2	2						
		quetiapine	3	3						
2730h	53 y M				A/C	Ingst	Unt-T	2		
		verapamil	1	1						
		clonidine	2	2						
		losartan	3	3						
2731ha	53 y F				U	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	2.8 mg/L In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	130 mg/dL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	220 mg/dL In Serum @ 1 h (pe)
2732h	53 y F				C	Ingst	Int-S	2		
		amlodipine	1	1						
		venlafaxine	2	2						
		clonazepam	3	3						
2733ha	53 y M				A	Ingst	Int-S	1		
		amlodipine	1	1						
[2734ha]	53 y F				A/C	Ingst	Int-S	1		
		amlodipine/hydrochlorothiazide/olmesartan	1	1						
		ethanol	2	2					ethanol	435 mg/dL In Serum @ Unknown
2735ha	53 y M				A	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	45 ng/mL In Blood (unspecified) @ 2 h (pe)
		fluoxetine	2	2					fluoxetine	1700 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	2	2					norfluoxetine	220 ng/mL In Blood (unspecified) @ Autopsy
		drug, N.O.S.	3	3						
2736h	54 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		ethanol	2	2						
2737a	54 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1					amlodipine	690 ng/mL In Blood (unspecified) @ Autopsy
		aripiprazole	2	2					aripiprazole	270 ng/mL In Blood (unspecified) @ Autopsy
2738h	54 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		sertraline	2	2						
		chlorthalidone	3	3						
		acetaminophen	6	4					acetaminophen (apap)	29 mcg/mL In Serum @ 4.5 h (pe)
		pantoprazole	5	5						
		ethanol	4	6					ethanol	52 mg/dL In Serum @ 4.5 h (pe)
2739h	54 y F				A/C	Ingst	Int-S	2		
		beta blocker	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		antipsychotic (atypical)	2	2						
		quetiapine	3	3						
		antihistamine (N.O.S.)	4	4						
		carisoprodol	5	5						
		fluoxetine	6	6						
		pregabalin	7	7						
		benzodiazepine	8	8						
		ibuprofen	9	9						
		ethanol	10	10					ethanol	179 mg/dL In Serum @ Unknown
2740	54 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		ethanol (non-beverage)	2	2						
2741	54 y F				A/C	Ingst	Int-S	2		
		verapamil (ER)	1	1						
2742h	54 y F				A/C	Ingst	Int-S	2		
		calcium antagonist	1	1						
2743h	54 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		pimozide	2	2						
		hydroxyzine	3	3						
2744h	55 y F				A/C	Ingst	Int-S	2		
		clonidine	1	1						
		quetiapine	2	2						
		trazodone	3	3						
		duloxetine (ER)	4	4						
		pregabalin	5	5						
		zolpidem	6	6						
		acetaminophen/hydrocodone	7	7						
		diazepam	8	8						
2745h	55 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		ethanol	2	2					ethanol	162 mg/dL In Plasma @ 30 m (pe)
2746h	55 y F				A/C	Ingst	Int-S	2		
		sotalol	1	1						
		glipizide	2	2						
		diltiazem	3	3						
		clopidogrel	4	4						
		salicylate	5	5						
		anastrozole	6	6						
2747h	55 y M				A/C	Ingst+ Aspir	Int-S	2		
		amlodipine	1	1						
		metoprolol (ER)	2	2						
		fluoxetine	3	3						
		risperidone	4	4						
		insulin	5	5						
2748h	55 y F				A	Ingst	Int-S	2		
		amlodipine	1	1						
		metformin	2	2						
		pregabalin	3	3						
		hydrochlorothiazide	4	4						
2749h	55 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		metoprolol	2	2						
		paroxetine	3	3						
		buspirone	4	4						
		atorvastain	5	5						
		ibuprofen	6	6						
2750h	56 y M				A	Ingst	Unk	2		
		beta blocker	3	1					metoprolol	490 ng/mL In Blood (unspecified) @ 2 h (pe)
		amlodipine	4	2						
		salicylate	1	3						
		ethanol	2	4					salicylate	18.4 mg/dL In Serum @ Unknown
		ethanol	2	4					ethanol	243 mg/dL In Serum @ Unknown
2751h	56 y F				A/C	Ingst	Int-S	2		
		clonidine	1	1						
		quetiapine	2	2						
2752h	56 y F				U	Ingst	Int-S	2		
		metoprolol	1	1						
		fluoxetine	2	2						
		drug, N.O.S.	3	3						
2753hai	56 y M				U	Ingst	Int-S	1		
		diltiazem	1	1					diltiazem	12000 ng/mL In Blood (unspecified) @ Unknown
		metoprolol	2	1						
2754h	56 y F				A	Ingst	Int-S	2		
		labetalol	1	1						
		losartan	2	2						
		levothyroxine	3	3						
		metformin	4	4						
2755	56 y F				A	Ingst	Int-S	2		
		amlodipine	1	1						
		tizanidine	2	2						
		lisinopril	3	3						
		gabapentin	4	4						
		ethanol	5	5					ethanol	215 mg/dL In Blood (unspecified) @ 4 h (pe)
2756hi	57 y F				A/C	Ingst	Int-S	3		
		atenolol	1	1						
		quetiapine	2	2						
		tramadol	3	3						
		clonazepam	4	4						
		aripiprazole	5	5						
		pioglitazone	6	6						
2757ha	57 y F				A/C	Ingst+ Unk	Int-S	1		
		propranolol	1	1					propranolol	3900 ng/mL In Blood (unspecified) @ Unknown
		lamotrigine	2	2					lamotrigine	28 mcg/mL In Blood (unspecified) @ Unknown
		marijuana	3	3					delta-9-carboxy-thc	7.3 ng/mL In Blood (unspecified) @ Unknown
		chlorophenhylpiperazine	4	4					meta-chlorophenylpiperazine (mcpp)	0.11 mcg/mL In Blood (unspecified) @ Unknown
		trazodone	5	5					trazodone	2.8 mcg/mL In Blood (unspecified) @ Unknown
		citalopram	6	6					citalopram	540 ng/mL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
2758ha	57 y M				A	Ingst	Int-S	1		
		amlodipine	1	1						
		acetaminophen	2	2					acetaminophen (apap)	235 mcg/mL In Blood (unspecified) @ Unknown
		organophosphate	3	3						
		ethanol	4	4					ethanol	93 mg/dL In Blood (unspecified) @ Unknown
2759h	57 y M				A/C	Ingst	Int-S	3		
		amlodipine	1	1						
		carvedilol	2	2						
		lisinopril	3	3						
2760h	57 y F				A	Ingst	Int-S	2		
		diltiazem	1	1						
		baclofen	2	2						
		gabapentin	3	3						
		cyclobenzaprine	4	4						
		nitroglycerin	5	5						
2761p	57 y M				U	Ingst	Int-S	2		
		nifedipine (ER)	1	1						
		beta blocker	2	2						
		salicylate	3	3						
		buspirone	4	4						
2762h	58 y M				A	Ingst	Int-S	3		
		amlodipine	1	1						
2763h	58 y F				A	Ingst	Int-S	2		
		amlodipine	1	1						
		carvedilol	2	2						
		losartan	3	3						
2764h	58 y F				A	Ingst	Int-S	2		
		verapamil	1	1						
2765	58 y F				A/C	Ingst	Int-S	1		
		amlodipine/olmesartan	1	1						
2766h	58 y M				A	Ingst	Int-S	1		
		amlodipine	1	1						
		antacid (N.O.S.)	2	2						
2767h	58 y M				A/C	Ingst	Int-S	3		
		lisinopril	1	1						
		prazosin	2	2						
		hydroxyzine	3	3						
		mirtazapine	4	4						
		gabapentin	5	5						
		ethanol	6	6						
2768h	58 y F				U	Unk	Unk	2		
		amlodipine	1	1						
		drug, N.O.S.	6	1						
		valproic acid	2	2						
		metformin	3	3						
		narcotic, N.O.S.	4	4						
		lisinopril	5	5						
2769h	58 y F				A/C	Ingst+ Inhal	Int-S	2		
		amlodipine	1	1						
2770h	59 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		clonazepam	2	2						
		gabapentin	3	3						
		lisinopril	4	4						
2771ai	59 y M				U	Unk	Int-S	1		
		diltiazem	1	1						
		oxycodone	2	2						
		acetaminophen/hydrocodone	3	3						
		hydroxyzine	4	4						
		diphenhydramine	5	5						
2772h	59 y F				A/C	Ingst	Int-S	1		
		metoprolol	1	1					metoprolol	1.1 mg/L In Blood (unspecified) @ Autopsy
		metoprolol	1	1					metoprolol	2.4 mg/L In Blood (unspecified) @ Autopsy
		amlodipine	2	2						
		diphenhydramine	3	3					diphenhydramine	0.3 mg/L In Blood (unspecified) @ Autopsy
		midazolam	4	4					midazolam	0.032 mg/L In Blood (unspecified) @ Autopsy
2773ph	59 y M				A/C	Ingst	Int-S	2		
		metoprolol	1	1					ethanol	214 mg/dL In Serum @ Unknown
		ethanol	2	2						
2774h	59 y F				A	Ingst	Int-S	2		
		amlodipine/benazpril	1	1						
		acetaminophen	2	2					acetaminophen (apap)	398 mcg/mL In Blood (unspecified) @ 16 h (pe)
		acetaminophen	2	2					acetaminophen (apap)	400 mcg/mL In Blood (unspecified) @ 16 h (pe)
		acetaminophen	2	2					acetaminophen (apap)	48 mcg/mL In Blood (unspecified) @ 3 d (pe)
2775ha	60 y M				A/C	Ingst	Unk	1		
		amlodipine/benazpril	1	1						
		hydrochlorothiazide	2	1					hydrochlorothiazide	17000 ng/mL In Blood (unspecified) @ Unknown
2776h	60 y F				A/C	Ingst	Int-S	2		
		propranolol	1	1						
		venlafaxine	2	2						
		levothyroxine	3	3						
		estradiol	4	4						
2777h	60 y M				A/C	Ingst	Int-S	1		
		amlodipine/benazpril	1	1						
		hydralazine	2	2						
		acetaminophen/caffeine/salicylate	3	3						
		lisinopril	4	4						
2778h	61 y F				A/C	Ingst	Int-S	3		
		clonidine	1	1						
		trazodone	2	2						
		quetiapine	3	3						
		ethanol	4	4						
2779ai	61 y M				U	Unk	Int-S	1		
		metoprolol	1	1						
		hydromorphone	2	2						
		ethanol	3	3						
2780h	61 y M				A/C	Ingst	Int-S	2		
		clonidine	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		salicylate	2	2						
		acetaminophen	3	3						
		dicyclomine	4	4						
		ethanol	5	5						
2781h	61 y F				A/C	Ingst	Int-S	2		
		amlopidipine	1	1						
		atenolol	2	2						
		sertraline	3	3						
		clonazepam	4	4						
		cariprazine	5	5						
		salicylate	6	6						
		valproic acid (ER)	7	7						
		ziprasidone	8	8						
		benztropine	9	9						
		buspirone	10	10						
		omeprazole (ER)	11	11						
		atorvastatin	12	12						
2782	61 y F				A	Ingst	AR-D	3		
		cardiac glycoside	1	1						
		beta blocker	2	2						
2783h	61 y F				U	Ingst+ Unk	Int-S	1		
		amlodipine	1	1						
		acetaminophen	2	2						
		drug, N.O.S.	3	3						
2784h	61 y M				U	Ingst	Int-S	2		
		carvedilol	1	1						
		alprazolam	2	2						
		acetaminophen/hydrocodone	3	3						
		tizanidine	4	4						
		ropinirole	5	5						
		alcohol, N.O.S.	6	6						
2785h	61 y M				A/C	Ingst	Int-S	2		
		carvedilol	1	1						
		tizanidine	2	2						
2786h	61 y M				A/C	Ingst	Int-S	2		
		metoprolol	1	1						
		prazosin	2	2						
		lisinopril	3	3						
		tamsulosin	4	4						
		duloxetine (ER)	5	5						
		omeprazole	6	6						
2787h	61 y M				U	Ingst	Int-S	1		
		amlodipine	1	1						
		cyclobenzaprine	2	2						
2788ha	62 y M				U	Ingst	Int-S	1		
		verapamil (ER)	1	1					verapamil	600 ng/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	0.13 g/dL In Blood (unspecified) @ Unknown
2789ai	62 y M				U	Unk	Unk	3		
		metoprolol	1	1						
		citalopram	2	2						
		ethanol	3	3						
2790h	62 y F				U	Ingst	Unk	3		
		diltiazem (ER)	1	1						
		amlodipine	2	2						
		metoprolol	3	3						
		temazepam	4	4						
[2791h]	62 y F				A/C	Ingst	Int-S	1		
		metoprolol	1	1						
2792h	62 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		metoprolol	2	2						
		losartan	3	3						
		hydrochlorothiazide	4	4						
2793	62 y F				A	Ingst	Int-S	2		
		amlodipine	1	1						
		oxycodone	2	2						
		hydromorphone	3	3						
2794ph	63 y M				U	Ingst	Unt-U	2		
		sildenafil	1	1						
2795a	63 y M				A/C	Ingst	Int-M	1		
		propranolol	1	1						
		lisinopril	2	2						
2796ha	63 y M				U	Ingst	Int-S	1		
		amlodipine	1	1						
		hydroxyzine	2	2					hydroxyzine	1300 ng/mL In Whole Blood @ 2 h (pe)
2797h	63 y F				A/C	Ingst	Int-S	1		
		amlopidipine	1	1						
		metoprolol	2	2						
2798ha	63 y F				A/C	Ingst	Int-S	1		
		metoprolol	1	1					mexilitine	200 ng/mL In Blood (unspecified) @ Unknown
		losartan	2	2						
		amlodipine	3	3					amlodipine	230 ng/mL In Blood (unspecified) @ Unknown
		hydroxyzine	4	4						
		lorazepam	5	5						
2799	63 y F				U	Ingst	Int-S	2		
		metoprolol	1	1						
		hydralazine	2	2						
		terazosin	3	3						
		venlafaxine	4	4						
		acetaminophen/hydrocodone	5	5						
		fluoxetine	6	6						
		doxylamine	7	7						
		meclizine	8	8						
		diuretic, unknown	9	9						
		meloxicam	10	10						
2800ha	63 y F				A/C	Ingst	Unt-G	1		
		amlodipine	1	1					amlodipine	480 ng/mL In Blood (unspecified) @ Autopsy
		amlodipine	1	1					amlodipine	750 ng/mL In Blood (unspecified) @ Autopsy
		nebivolol	2	2						
		clonazepam	3	3						
2801h	63 y M				C	Ingst	AR-D	2		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		propranolol	1	1						
		propranolol (ER)	2	2						
		diltiazem	3	3						
2802	64 y M				A	Ingst	Int-S	2		
		verapamil	1	1						
		carvedilol	2	2						
		ethanol	3	3						
2803h	64 y M				U	Ingst	Int-S	2		
		verapamil	1	1						
		cyclobenzaprine	2	2						
2804h	64 y M				A	Ingst	Int-S	2		
		amlodipine	1	1						
2805	64 y M				A	Ingst	Int-S	1		
		amlodipine	1	1						
2806h	65 y M				A	Ingst	Int-S	2		
		carvedilol	1	1						
		acetaminophen/hydrocodone	2	2						
2807h	65 y F				A/C	Ingst	Int-S	3		
		verapamil (ER)	1	1						
		atenolol	2	2						
		olmesartan	3	3						
		lipid emulsion	4	4						
2808pha	66 y F				A	Ingst	Int-S	1		
		carvedilol	1	1						
		diphenhydramine	2	2					diphenhydramine	3900 ng/mL In Blood (unspecified) @ Unknown
2809h	66 y F				A/C	Ingst	Unt-T	2		
		flecainide	1	1						
2810a	66 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		escitalopram	2	2						
		lisinopril	3	3						
2811h	66 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		lisinopril	2	2						
		famotidine	3	3						
		quetiapine	4	4						
		gabapentin	5	5						
		alprazolam	6	6						
2812	67 y F				A/C	Ingst	AR-D	3		
		flecainide	1	1						
2813h	67 y F				C	Ingst	AR-D	3		
		digoxin	1	1					digoxin	2.9 ng/mL In Blood (unspecified) @ Unknown
2814h	67 y F				A	Ingst	Int-S	2		
		beta blocker	1	1						
		antihyperlipidemic	2	2						
		amlodipine	3	3						
2815h	67 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		carvedilol	2	2						
		hydralazine	3	3						
		isosorbide dinitrate	4	4						
		clopidogrel	5	5						
2816ph	67 y F				A/C	Ingst+ Unk	Int-S	2		
		propranolol	1	1						
		isosorbide	2	2						
		fluoxetine	3	3						
		levothyroxine	4	4						
		pantoprazole	5	5						
		furosemide	6	6						
		viral disease (COVID-19-Confirmed)	7	7						
2817h	67 y F				A/C	Ingst	Int-S	1		
		carvedilol	1	1						
		rosuvastatin	2	2						
		ethanol	3	3					ethanol	295 mg/dL In Blood (unspecified) @ Unknown
		venlafaxine	4	4					venlafaxine	2127 ng/mL In Whole Blood @ Autopsy
		cyclobenzaprine	5	5					cyclobenzaprine	11 ng/mL In Blood (unspecified) @ Autopsy
2818h	68 y F				A	Ingst	Int-S	3		
		beta blocker	1	1						
		tizanidine	2	2						
		oxycodone	3	3						
		benzodiazepine	4	4						
2819h	68 y F				A/C	Ingst	Int-S	2		
		propranolol	2	1						
		amlodipine	1	2						
		lisinopril	3	3						
2820h	69 y F				U	Ingst	Unk	3		
		digoxin	1	1					digoxin	5 ng/mL In Serum @ Unknown
2821h	69 y F				A	Ingst	Int-S	2		
		amlodipine	1	1						
		lithium	2	2						
		memantine	3	3						
		donepazil	4	4						
		lamotrigine	5	5						
2822h	69 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		lisinopril	2	2						
		bupropion	3	3						
		tramadol	4	4						
		hydroxyzine	5	5						
		cyclobenzaprine	6	6						
		venlafaxine	7	7						
		trazodone	8	8						
2823ha	69 y F				A	Ingst	Int-S	2		
		nifedipine (ER)	1	1					nifedipine	78 ng/mL In Blood (unspecified) @ Unknown
2824ph	69 y F				U	Ingst	Int-S	2		
		calcium antagonist	1	1						
2825h	70 y F				U	Ingst+ Unk	AR-D	3		
		digoxin	2	1					digoxin	2.3 ng/mL In Blood (unspecified) @ Unknown
		iron	1	2					iron	161 mcg/dL In Blood (unspecified) @ Unknown
		salicylate	3	3					salicylate	1.2 mg/dL In Blood (unspecified)

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										@ Unknown
2826h	70 y M				C	Ingst	Unk	1		
		digoxin	1	1					digoxin	8.3 ng/mL In Serum @ Unknown
[2827h]	70 y F				C	Ingst	AR-D	3		
		digoxin	1	1						
2828h	70 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		bupropion	2	2						
		losartan	3	3						
		citalopram	4	4						
2829h	70 y F				A	Ingst	Int-S	2		
		calcium antagonist	1	1						
		bupropion	2	2						
		losartan	3	3						
2830h	70 y M				A/C	Ingst	Int-S	2		
		nifedipine (ER)	1	1						
		hydralazine	2	2						
2831h	71 y M				A	Ingst	Int-S	2		
		amlodipine/benazpril	1	1						
		metformin	2	2						
2832h	72 y F				A/C	Ingst	Int-S	2		
		verapamil (ER)	1	1						
		atenolol	2	2						
2833h	72 y M				A/C	Ingst	Int-S	2		
		atenolol	1	1						
		tramadol	2	2						
		clonazepam	3	3						
2834ai	72 y F				U	Unk	AR-D	1		
		verapamil	1	1						
2835h	72 y F				A	Ingst+ Oth	Int-U	2		
		amlodipine	1	1						
		carvedilol	2	2						
		clonidine (TD)	3	3						
[2836ha]	72 y F				A	Ingst	Unt-T	1		
		amlodipine	1	1					amlodipine	100 ng/mL In Blood (unspecified) @ Unknown
2837h	73 y F				A	Ingst	Int-S	2		
		metoprolol (ER)	1	1						
		amlodipine	2	2						
		ethanol	3	3					ethanol	138 mg/dL In Blood (unspecified) @ Unknown
2838ha	73 y M				A/C	Ingst	Int-S	1		
		nitroglycerin	2	1						
		diltiazem	1	2					diltiazem	7300 ng/mL In Whole Blood @ Autopsy
		beta blocker	3	3					metoprolol	2200 ng/mL In Whole Blood @ Autopsy
2839h	73 y F				A	Ingst	Int-S	3		
		benazepril	1	1						
		diphenhydramine	2	2						
2840h	73 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1						
2841ha	73 y F				A/C	Ingst	Int-S	1		
		verapamil (ER)	1	1					verapamil	0.86 mcg/mL In Blood (unspecified) @ Unknown
2842h	73 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
2843ha	73 y M				A/C	Ingst	Int-S	1		
		atenolol	1	1					atenolol	12000 ng/mL In Blood (unspecified) @ 30 m (pe)
2844	73 y M				A/C	Ingst	Int-S	2		
		carvedilol	1	1						
		amlodipine	2	2						
		lisinopril	3	3						
2845h	74 y M				A/C	Ingst	Int-S	2		
		nitroglycerin	1	1						
		allopurinol	2	2						
		atorvastain	3	3						
		acetaminophen	4	4						
		colchicine	5	5						
		furosemide	6	6						
		salicylate	7	7						
		ibuprofen	8	8						
2846h	74 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1						
2847ha	74 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	700 ng/mL In Blood (unspecified) @ Unknown
2848h	75 y F				A	Ingst	Int-S	2		
		carvedilol	1	1						
		ropinirole	2	2						
		amiodarone	3	3						
		clonazepam	4	4						
2849h	75 y M				A/C	Ingst	Unt-T	2		
		diltiazem (ER)	1	1						
2850ha	75 y F				A	Ingst	Int-S	2		
		metoprolol	2	1						
		amlodipine	1	2						
		alprazolam	3	3						
		isosorbide (ER)	4	4						
		tramadol	5	5						
		losartan	6	6						
		simvastatin	7	7						
2851ph	76 y F				C	Ingst	AR-D	2		
		digoxin	1	1					digoxin	4 ng/mL In Blood (unspecified) @ Unknown
2852h	76 y M				C	Ingst	AR-D	3		
		digoxin	1	1						
2853h	76 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		metoprolol (ER)	2	2						
2854h	76 y F				A	Ingst	Int-S	2		
		diltiazem	1	1						
		apixiban	2	2						
		sertraline	3	3						
2855h	77 y M				A	Ingst	Int-S	2		
		lisinopril	1	1						
		tamsulosin	2	2						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		carvedilol	3	3						
2856h	77 y M				A/C	Ingst	Int-S	2		
		diltiazem (ER)	1	1						
2857h	77 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1					amlodipine	80 ng/mL In Whole Blood @ 2 d (pe)
		pregabalin	2	2					pregabalin	5.4 mg/L In Whole Blood @ 2 d (pe)
2858ph	77 y F				C	Ingst	AR-D	2		
		digoxin	1	1						
2859ha	78 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		carvedilol	2	2						
		brexpiprazole	3	3						
		lamotrigine	4	4					lamotrigine	23 mcg/mL In Blood (unspecified) @ Autopsy
		trazodone	5	5					mcpp (meta-chlorophenylpiperazine)	0.057 mcg/mL In Blood (unspecified) @ Autopsy
		trazodone	5	5					trazodone	1.8 mcg/mL In Blood (unspecified) @ Autopsy
2860h	78 y M				C	Ingst	Unt-T	3		
		digoxin	1	1					digoxin	2.1 ng/mL In Blood (unspecified) @ 10 m (pe)
2861ha	78 y M				A/C	Ingst	Int-S	1		
		flecainide	1	1					flecainide	4.2 mcg/mL In Blood (unspecified) @ Unknown
		oxycodone	2	2					oxycodone	110 ng/mL In Blood (unspecified) @ Unknown
		gabapentin	3	3					gabapentin	21 mcg/mL In Blood (unspecified) @ Unknown
		warfarin	4	4						
2862ph	78 y M				A	Ingst	Int-S	2		
		calcium antagonist	1	1						
[2863ha]	78 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1					verapamil	1900 ng/mL In Blood (unspecified) @ Unknown
2864ai	79 y M				U	Unk	Unk	2		
		amlodipine	1	1						
		acetaminophen	2	2						
2865h	79 y F				A	Ingst	AR-D	3		
		cardiac glycoside	1	1					digoxin	3.2 ng/mL In Blood (unspecified) @ Unknown
2866h	80 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		acetaminophen	2	2					acetaminophen (apap)	86 mcg/mL In Blood (unspecified) @ Unknown
		lisinopril/hydrochlorothiazide	3	2						
		Fosamax	4	3						
		sulfamethasoxazole/trimethoprim	5	4						
		simvastatin	6	5						
2867a	80 y M				C	Ingst	AR-D	3		
		digoxin	1	1					digoxin	3 ng/mL In Serum @ Unknown
2868ph	81 y F				A/C	Ingst	Int-S	2		
		carvedilol	1	1						
		clonidine	2	2						
		repaglinide	3	3						
		acetaminophen/codeine	4	4					acetaminophen (apap)	47.8 mcg/mL In Blood (unspecified) @ Unknown
		sedative-hypnotic-anti-anxiety-anti-psychotic, N.O.S.	5	5						
		potassium chloride	6	6						
		atorvastain	7	7						
		pantoprazole	8	8						
		vitamin D	9	9						
2869h	81 y F				A	Ingst	Int-S	2		
		amlodipine	1	1						
		trazodone	2	2						
2870h	81 y F				A	Ingst	Int-S	1		
		diltiazem (ER)	1	1						
		warfarin	2	2						
		ibuprofen	3	3						
2871h	82 y M				A/C	Ingst+ Unk	Int-S	2		
		carvedilol	1	1						
		acetaminophen	2	2						
2872h	82 y F				A/C	Ingst	Unt-T	3		
		diltiazem (ER)	1	1						
		glipizide	2	2						
		metoprolol	3	3						
		apixiban	4	4						
		amlodipine	5	5						
		salicylate	6	6						
		duloxetine (ER)	7	7						
		pioglitazone	8	8						
		potassium chloride	9	9						
2873h	83 y F				A/C	Ingst	Int-S	1		
		diltiazem	1	1						
		digoxin	2	2					digoxin	0.8 ng/mL In Blood (unspecified) @ 1 d (pe)
		acetaminophen	3	3					acetaminophen (apap)	12.3 mcg/mL In Serum @ 5 d (pe)
		acetaminophen	3	3					acetaminophen (apap)	19.4 mcg/mL In Serum @ 4 d (pe)
		acetaminophen	3	3					acetaminophen (apap)	212 mcg/mL In Serum @ 1 d (pe)
		acetaminophen	3	3					acetaminophen (apap)	33 mcg/mL In Serum @ 3 d (pe)
		acetaminophen	3	3					acetaminophen (apap)	66.5 mcg/mL In Serum @ 2 d (pe)
		trazodone	4	4						
		salicylate	5	5						
2874h	83 y F				A	Ingst	Unt-T	2		
		verapamil (ER)	1	1						
2875h	83 y F				C	Ingst	AR-D	3		
		digoxin	1	1					digoxin	6.8 ng/mL In Serum @ Unknown
2876h	83 y F				A/C	Ingst	Unt-T	2		
		flecainide	1	1						
2877h	83 y F				A/C	Ingst	Int-S	1		
		propafenone	1	1						
		escitalopram	2	2						
		alprazolam	3	3						
2878h	83 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		trazodone	2	2						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		alprazolam	3	3						
		lisinopril	4	4						
		levothyroxine	5	5						
2879	84 y M				A	Ingst	Int-S	2		
		amlodipine	1	1						
2880h	84 y M				A	Ingst	Int-S	2		
		amlodipine	1	1						
		tamsulosin	2	2						
2881a	84 y M				A/C	Ingst	Int-S	2		
		metoprolol (ER)	1	1						
2882h	85 y M				A/C	Ingst	Int-S	2		
		nadolol	1	1						
		amlodipine	2	2						
		mexiletine	3	3						
		dipyridamole/salicylate	4	4						
		acetaminophen	5	5						
		sertraline	6	6						
		atorvastain	7	7						
2883h	85 y M				A	Ingst	AR-D	3		
		digoxin	1	1					digoxin	2.95 mg/dL In Blood (unspecified) @ Unknown
2884ha	87 y F				A	Ingst	Unk	1		
		hydralazine	1	1					hydralazine	97 mcg/mL In Blood (unspecified) @ Unknown
2885h	88 y M				A	Ingst	Int-S	2		
		carvedilol	1	1						
		atorvastatin	2	2						
2886	88 y F				A/C	Ingst	Unt-T	2		
		diltiazem	1	1						
		metoprolol	2	2						
2887h	88 y M				A/C	Ingst	Unk	2		
		diltiazem	1	1						
2888h	90 y F				A	Ingst	Unt-T	1		
		labetalol	1	1						
		bumetanide	2	2						
		clopidogrel	3	3						
		hydralazine	4	4						
		isosorbide (ER)	5	5						
		phenytoin (ER)	6	6						
		nifedipine (ER)	7	7						
		spironolactone	8	8						
		sertraline	9	9						
2889ha	91 y F				A/C	Ingst	Int-S	1		
		digoxin	1	1					digoxin	26.5 ng/mL In Blood (unspecified) @ Unknown
		diltiazem	2	2						
2890	92 y F				U	Ingst	Unk	2		
		digoxin	1	1						
2891h	92 y M				A/C	Ingst	Unt-G	2		
		diltiazem (ER)	1	1						
2892ai	93 y M				U	Unk	Int-S	1		
		metoprolol	1	1						
		oxycodone	2	2						
		warfarin	3	3						
2893ha	93 y M				A/C	Ingst	Int-S	1		
		digoxin	1	1					digoxin	19 ng/mL In Whole Blood @ 5 h (pe)
		diltiazem	2	2						
		furosemide	3	3						
2894h	93 y F				C	Ingst	Unt-G	3		
		metoprolol (ER)	1	1						
2895h	94 y F				A/C	Ingst	Unt-T	2		
		verapamil (ER)	1	1						
2896h	95 y M				A/C	Ingst+ Aspir	Int-S	2		
		amlodipine	1	1						
		tamsulosin	2	2						
		pantoprazole (ER)	3	3						
		atorvastain	4	4						
2897h	95 y F				A/C	Ingst	Unt-U	2		
		diltiazem	1	1						
[2898ha]	96 y F				A/C	Ingst	Unk	1		
		amlodipine	1	1					amlodipine	2 mg/L In Whole Blood @ Autopsy
2899h	96 y F				A/C	Ingst	Int-U	2		
		diltiazem	1	1						
See Also case 23, 81, 116, 299, 315, 446, 513, 539, 542, 547, 843, 895, 1059, 1214, 1279, 1282, 1420, 1428, 1508, 1520, 1532, 1805, 1851, 1881, 1892, 1934, 1936, 1940, 1947, 1964, 1977, 1978, 2001, 2093, 2320, 2326, 2437, 2439, 2451, 2462, 2463, 2471, 2491, 2503, 2509, 2528, 2530, 2534, 2537, 2538, 2544, 2553, 2556, 2558, 2562, 2565, 2569, 2633, 2912, 2922, 2923, 2932, 2944, 2946, 2954, 2963, 2969, 2982, 2989, 3052, 3053, 3062, 3063, 3067, 3085, 3151, 3224, 3272, 3352, 3467, 3513, 3667, 3803, 3859										
Cold and Cough Preparations										
2900pi	5 y F				A	Ingst	Oth-M	2		
		antihistamine/dextromethorphan	1	1					diphenhydramine	756 mg/mL In Blood (unspecified) @ Autopsy
		antihistamine/dextromethorphan	1	1					dextromethorphan	807 mg/mL In Blood (unspecified) @ Autopsy
2901h	30 y F				U	Ingst	Int-S	2		
		benzonatate	1	1						
		duloxetine (ER)	2	2						
		hydroxyzine	3	3						
		acetaminophen	4	4					acetaminophen (apap)	150 mcg/mL In Serum @ Unknown
		levothyroxine	5	5						
2902ai	31 y M				U	Unk	Unt-M	1		
		dextromethorphan	1	1						
2903ph	35 y F				A	Ingst	Int-S	2		
		benzonatate	1	1						
2904h	36 y F				A	Ingst	Int-S	3		
		dextromethorphan/guaifenesin	1	1						
2905pha	37 y F				A	Ingst	Int-S	1		
		dextromethorphan/guaifenesin	1	1					dextro / levo methorphan	320 ng/mL In Blood (unspecified) @ Unknown
		dextromethorphan/guaifenesin	1	1					dextromethorphan	81 ng/mL In Unknown @ Unknown
		olanzapine	2	2					olanzapine	63 ng/mL In Unknown @ Unknown
		tranylcypromine	3	3						
2906ha	42 y F				A/C	Ingst	Int-S	1		
		dextromethorphan	1	1					dextrorphan / levorphanol	400 ng/mL In Blood (unspecified) @ Unknown
		dextromethorphan	1	1					dextro / levo methorphan	830 ng/mL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		guaifensin	2	2					guaifenesin	10 mcg/mL In Blood (unspecified) @ Unknown
		caffeine	3	3						
2907ph	54 y F				A/C	Ingst	Int-S	2		
		benzonatate	1	1						
		Tramadol	2	2						
		ethanol	3	3						
[2908ha]	55 y F				A/C	Ingst+ Unk	Int-A	1		
		dextromethorphan/guaifenesin (ER)	1	1					dextromethorphan	1700 mcg/L In Blood (unspecified) @ 10 m (pe)
		ethanol	2	2					ethanol	0.036 g/dL In Blood (unspecified) @ 10 m (pe)
2909ai	68 y M				U	Unk	Int-S	1		
		doxylamine	1	1						
		ethanol	2	2						
[2910ha]	10 m M				A	Ingst	Unt-G	1		
		benzonatate	1	1						
See Also case 605, 698, 704, 730, 782, 850, 1407, 1449, 1606, 1712, 1734, 1889, 1987, 2000, 2100, 2252, 2254, 2292, 2454, 2528, 2616, 2633, 2640, 2739, 2799, 2923, 3032, 3118, 3219, 3310, 3535, 3553, 3564, 3675										
Diagnostic Agents										
2911ai	57 y M				A	Par	AR-O	2		
		iodine	1	1						
Diuretics										
2912ha	28 y M				A/C	Ingst	Int-S	3		
		hydrochlorothiazide	1	1						
		lisinopril	2	2						
		amlodipine	3	3						
		drug, N.O.S.	4	4					midazolam	110 ng/mL In Blood (unspecified) @ Autopsy
		drug, N.O.S.	4	4					hydromorphone	22 ng/mL In Blood (unspecified) @ Autopsy
		drug, N.O.S.	4	4					lorazepam	82 ng/mL In Blood (unspecified) @ Autopsy
See Also case 2537, 2652, 2657, 2689, 2700, 2717, 2738, 2748, 2775, 2792, 2799, 2816, 2845, 2888, 2893, 2963, 3221										
Electrolytes and Minerals										
2913h	78 y M				A/C	Ingst	Unt-T	3		
		magnesium hydroxide	1	1						
[2914h]	14 m M				A	Ingst	Unt-G	1		
		iron	1	1					iron	1000 mcg/dL In Blood (unspecified) @ 8 h (pe)
		iron	1	1					iron	103 mcg/dL In Blood (unspecified) @ 131 h (pe)
		iron	1	1					iron	116 mcg/dL In Blood (unspecified) @ 104 h (pe)
		iron	1	1					iron	116 mcg/dL In Blood (unspecified) @ 116 h (pe)
		iron	1	1					iron	119 mcg/dL In Blood (unspecified) @ 1 h (pe)
		iron	1	1					iron	135 mcg/dL In Blood (unspecified) @ 102 h (pe)
		iron	1	1					iron	153 mcg/dL In Blood (unspecified) @ 61 h (pe)
		iron	1	1					iron	155 mcg/dL In Blood (unspecified) @ 64 h (pe)
		iron	1	1					iron	162 mcg/dL In Blood (unspecified) @ 94 h (pe)
		iron	1	1					iron	174 mcg/dL In Blood (unspecified) @ 50 h (pe)
		iron	1	1					iron	174 mcg/dL In Blood (unspecified) @ 68 h (pe)
		iron	1	1					iron	180 mcg/dL In Blood (unspecified) @ 90 h (pe)
		iron	1	1					iron	191 mcg/dL In Blood (unspecified) @ 55 h (pe)
		iron	1	1					iron	2000 mcg/dL In Blood (unspecified) @ 2 h (pe)
		iron	1	1					iron	225 mcg/dL In Blood (unspecified) @ 84 h (pe)
		iron	1	1					iron	440 mcg/dL In Blood (unspecified) @ 37 h (pe)
		iron	1	1					iron	63 mcg/dL In Blood (unspecified) @ 164 h (pe)
		iron	1	1					iron	69 mcg/dL In Blood (unspecified) @ 19.5 h (pe)
See Also case 311, 2353, 2667, 2825, 2868, 2872, 3805										
Gastrointestinal Preparations										
2915ai	28 y M				U	Unk	Int-A	1		
		loperamide	1	1						
		chlorpheniramine	2	2						
		ethanol	3	3						
2916ai	28 y M				U	Unk	Unt-M	1		
		loperamide	1	1						
2917ph	28 y M				U	Ingst	Int-M	2		
		loperamide	1	1						
2918ph	28 y M				A	Ingst	Int-S	2		
		dicyclomine	1	1						
		ethanol	2	2						
2919ai	29 y F				U	Unk	Int-S	1		
		loperamide	1	1						
		diphenhydramine	2	2						
2920ph	78 y F				A	Ingst	Int-S	2		
		loperamide	1	1						
See Also case 81, 232, 446, 539, 547, 651, 677, 926, 1695, 1704, 1824, 1904, 2270, 2308, 2336, 2440, 2561, 2691, 2738, 2766, 2780, 2781, 2786, 2816, 2868, 2896, 3049, 3052										
Hormones and Hormone Antagonists										
2921h	15 y M				A/C	Ingst	Int-S	1		
		metformin	1	1						
2922h	15 y M				A	Ingst	Int-S	1		
		empagliflozin/metformin	1	1						
		quetiapine (ER)	2	2						
		lisdexamfetamine (ER)	3	3						
		ibuprofen	4	4						
		lisinopril	5	5						
		melatonin	6	6						
2923ha	16 y M				A	Ingst+ Unk	Int-S	2		
		metformin	5	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		metoprolol	1	1						
		diphenhydramine	2	2					diphenhydramine	2700 ng/mL In Blood (unspecified) @ 2 h (pe)
		ibuprofen	7	2						
		doxylamine	3	3					doxylamine	1100 ng/mL In Blood (unspecified) @ 2 h (pe)
		insulin	6	3						
		lisinopril	4	4						
2924	16 y M				A	Ingst	Int-S	1		
		metformin	1	1						
		ethanol	2	2						
2925ha	17 y F				A	Ingst	Int-S	1		
		metformin	1	1					metformin	31 mcg/mL In Blood (unspecified) @ Unknown
		clobazam	2	2						
		quetiapine	3	3						
2926h	30 y M				A/C	Par	Int-S	2		
		insulin	1	1						
2927h	38 y M				A/C	Ingst	Int-S	2		
		metformin	1	1						
		insulin (glargine) (ER)	2	2						
		haloperidol	3	3						
2928h	39 y F				U	Ingst	Unk	2		
		glipizide	1	1						
		oxycodone	2	2						
2929pha	43 y M				A	Ingst	Int-S	1		
		oral hypoglycemic (sulfonylurea)	1	1						
		tramadol	2	2					tramadol	340 ng/mL In Blood (unspecified) @ Unknown
		tramadol	2	2					o-demethyl tramadol	40 ng/mL In Blood (unspecified) @ Unknown
		metformin	3	3					metformin	240 mcg/mL In Blood (unspecified) @ Unknown
		ibuprofen	4	4						
		sitagliptin	5	5						
		meloxicam	6	6					metaxalone	17 mcg/mL In Blood (unspecified) @ Unknown
2930h	44 y F				A/C	Ingst+ Par	Int-S	2		
		insulin	1	1						
		clonazepam	2	2						
2931	44 y M				A/C	Par	Int-S	1		
		insulin (glargine) (ER)	1	1						
2932h	44 y F				A/C	Ingst	Int-S	1		
		metformin	1	1						
		hydrochlorothiazie/losartan	2	2						
2933p	44 y F				A/C	Par	Int-S	1		
		insulin	1	1						
2934h	45 y F				A	Ingst	Int-S	2		
		metformin	1	1						
2935h	48 y F				A/C	Ingst	Int-S	2		
		metformin	1	1						
2936h	50 y F				U	Par	Int-S	2		
		insulin	1	1						
		drug, N.O.S.	2	2						
2937ha	50 y F				C	Ingst	AR-D	3		
		metformin	1	1						
2938	55 y M				A/C	Ingst	Int-U	2		
		metformin	1	1						
2939ph	59 y M				A	Ingst	Int-S	2		
		dapagliflozin/saxagliptin/metformin	1	1						
2940h	60 y F				C	Ingst	AR-D	2		
		levothyroxine	1	1						
2941ai	61 y F				U	Unk	Int-S	1		
		insulin	1	1						
2942h	63 y F				A/C	Ingst	Int-U	2		
		metformin	1	1						
2943h	64 y M				C	Ingst	AR-D	2		
		metformin	1	1						
2944ha	64 y F				A/C	Ingst	Int-S	2		
		metformin	1	1						
		olanzapine	2	2						
		methocarbamol	3	3						
		lisinopril	4	4						
2945	64 y M				A/C	Ingst	Int-S	2		
		metformin	1	1						
2946h	68 y F				A	Ingst	Int-S	1		
		metformin	1	1						
		brexpiprazole	2	2						
		hydralazine	3	3						
2947h	68 y F				A	Ingst	Int-S	2		
		metformin	1	1						
		glipizide	2	2						
		drug, N.O.S.	3	3						
2948h	68 y F				A/C	Ingst+ Par	Int-S	1		
		insulin (glargine) (ER)	1	1						
		glipizide	2	2						
		drug, N.O.S.	3	3						
2949	68 y F				A	Ingst	AR-D	2		
		glipizide	2	1						
		metformin	1	1						
2950h	69 y M				C	Ingst	AR-D	3		
		metformin	1	1					metformin	2.7 mcg/mL In Blood (unspecified) @ Unknown
2951h	69 y F				A/C	Ingst	Int-S	2		
		metformin	1	1						
		bupropion	2	2						
		buspirone	3	3						
		lorazepam	4	4						
		clonazepam	5	5						
		fluoxetine	6	6						
		mirtazapine	7	7						
		olanzapine	8	8						
		alprazolam	9	9						
		tramadol	10	10						
2952h	69 y M				A	Ingst+ Unk	Unk	3		
		metformin	1	1						
		propylene glycol	2	2					propylene glycol	9.9 mg/dL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
2953	70 y M				U	Ingst	Int-S	2		
		metformin	1	1						
		acetaminophen	2	2						
2954h	71 y F				A	Ingst	Int-S	2		
		metformin	1	1						
		losartan	2	2						
		drug, N.O.S.	3	3						
2955	73 y F				A/C	Ingst	Unk	2		
		metformin	1	1						
2956	79 y M				U	Ingst	Unk	2		
		metformin	1	1						
2957ha	81 y M				U	Ingst	Int-S	1		
		metformin	1	1					metformin	130 mcg/mL In Blood (unspecified) @ 1 h (pe)
2958ai	81 y M				U	Unk	Int-S	1		
		metformin	1	1						
2959ai	82 y M				U	Unk	Int-S	1		
		metformin	1	1						
2960h	82 y M				U	Ingst+ Unk	Int-M	3		
		metformin	1	1						
		drug, N.O.S.	2	2						
2961h	86 y M				A/C	Ingst	Unk	3		
		glipizide	1	1						
2962ai	91 y M				U	Unk	Int-S	1		
		insulin	1	1						
2963	94 y M				A/C	Ingst	Int-S	2		
		metformin	1	1						
		hydrochlorothiazide	2	2						
		levothyroxine	3	3						
		atorvastain	4	4						
See Also case 114, 417, 547, 1520, 1761, 1823, 1944, 1958, 2372, 2390, 2436, 2462, 2495, 2502, 2516, 2533, 2537, 2554, 2579, 2615, 2637, 2640, 2644, 2647, 2667, 2685, 2699, 2700, 2707, 2712, 2717, 2727, 2746, 2747, 2748, 2754, 2756, 2768, 2776, 2816, 2831, 2868, 2872, 2878, 2901, 2990, 3016, 3033, 3063, 3066, 3069, 3777, 3850										
Miscellaneous Drugs										
2964h	59 y M				C	Ingst	AR-D	3		
		disulfiram	1	1						
		cyclobenzaprine	2	2						
2965pi	64 y M				U	Unk	Int-S	2		
		laxative (emollient)	1	1						
2966h	72 y M				A	Unk	AR-D	3		
		rasburicase	1	1					methemoglobin	22 % In Blood (unspecified) @ 21 h (pe)
[2967ha]	79 y M				A	Oth	Unt-T	3		
		tranexamic acid	1	1						
[2968ha]	9 m F				A	Oth	Unt-T	1		
		lipid emulsion	1	1						
See Also case 2165, 2439, 2447, 2480, 2553, 2567, 2633, 2707, 2784, 2807, 2821, 2845, 2848, 2860, 2866, 3022, 3085										
Muscle Relaxants										
2969h	13 y F				U	Ingst	Int-S	2		
		methocarbamol	1	1					salicylate	41.3 mg/dL In Serum @ Unknown
		ibuprofen	3	2						
		salicylate	2	2						
		simvastatin	4	3						
2970ph	14 y F				A	Ingst+ Inhal	Int-S	2		
		baclofen	1	1						
		acetaminophen	2	2					acetaminophen (apap)	126 mcg/dL In Blood (unspecified) @ Unknown
		quetiapine	3	3						
		ethanol	4	4						
2971ha	33 y F				A/C	Ingst	Unt-T	3		
		baclofen	1	1					baclofen	1.6 mcg/mL In Serum @ Unknown
		amitriptyline	2	2					amitriptyline	52 ng/mL In Serum @ Unknown
		amitriptyline	2	2					nortriptyline	61 ng/mL In Serum @ Unknown
		venlafaxine	3	3					venlafaxine	210 ng/mL In Serum @ Unknown
		venlafaxine	3	3					o-desmethyl-venlafaxine	370 ng/mL In Serum @ Unknown
2972h	34 y M				A	Ingst	Int-S	2		
		baclofen	1	1						
		gabapentin	2	2						
2973h	38 y F				A	Ingst+ Unk	Int-S	2		
		cyclobenzaprine	1	1						
		heroin	2	2						
2974ph	39 y F				A/C	Ingst	Int-S	3		
		baclofen	3	1						
		hydroxyzine	1	2						
		fluoxetine	2	3						
2975h	45 y M				U	Ingst	Int-S	2		
		baclofen	1	1						
		clonazepam	2	2						
2976h	47 y M				A	Ingst	Int-S	1		
		baclofen	1	1						
2977h	51 y F				A/C	Ingst	Int-S	2		
		baclofen	1	1						
		oxybutynin	2	2						
		meloxicam	3	3						
		sertraline	4	4						
		gabapentin	5	5						
		zyrtec	6	6						
2978h	51 y M				C	Ingst	Int-M	2		
		cyclobenzaprine	1	1						
		tramadol	2	2						
		acetaminophen/codeine	3	3						
		celecoxib	4	4						
		indomethacin	5	5						
		meloxicam	6	6						
2979ha	52 y F				A/C	Ingst	Int-S	1		
		tizanidine	1	1					tizanidine	58 ng/mL In Blood (unspecified) @ Unknown
		diazepam	2	2					nordiazepam	530 ng/mL In Blood (unspecified) @ Unknown
		diazepam	2	2					diazepam	96 ng/mL In Blood (unspecified) @ Unknown
2980h	55 y F				A/C	Ingst	Int-S	2		
		baclofen	1	1						
2981h	56 y F				A/C	Ingst	Int-S	2		
		baclofen	1	1						
		ethanol	2	2					ethanol	139 mg/dL In Serum @ Unknown
		tizanidine	3	3						
		acetaminophen/hydrocodone	4	4					acetaminophen (apap)	126.9 mcg/mL In Serum @

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										Unknown
		alprazolam	5	5						
2982	60 y F				A	Ingst	Int-S	3		
		tizanidine	1	1						
		propranolol	2	2						
2983h	67 y M				A/C	Ingst	Int-S	3		
		baclofen	1	1					baclofen	0.16 mcg/mL In Blood (unspecified) @ Unknown
2984h	67 y M				A/C	Ingst	Int-S	2		
		baclofen	1	1						
		hydromorphone	2	2						
		gabapentin	3	3						
2985ph	68 y F				A/C	Ingst	Int-S	2		
		baclofen	1	1						
		tramadol	2	2						
2986ha	68 y F				A/C	Ingst+ Unk	Int-S	1		
		tizanidine	1	1						
		tramadol	2	2						
		cyclobenzaprine	3	3						
		ethanol	4	4					ethanol	0.151 g/dL In Blood (unspecified) @ Autopsy
		ethanol	4	4					ethanol	0.153 g/dL In Blood (unspecified) @ Autopsy
		ethanol	4	4					cyclobenzaprine	160 mcg/L In Blood (unspecified) @ Autopsy
		ethanol	4	4					cyclobenzaprine	60 mcg/L In Blood (unspecified) @ Autopsy
2987ai	71 y M				U	Unk	Int-S	1		
		tizanidine	1	1						
2988h	79 y F				C	Ingst	Int-S	2		
		carisoprodol	1	1						
		alprazolam	2	2						
See Also case 23, 59, 75, 1101, 1112, 1143, 1149, 1210, 1333, 1406, 1468, 1547, 1566, 1658, 1663, 1691, 1744, 1752, 1780, 1828, 1852, 1855, 1914, 2091, 2103, 2110, 2112, 2130, 2150, 2209, 2221, 2301, 2304, 2309, 2316, 2347, 2359, 2366, 2440, 2442, 2454, 2492, 2497, 2500, 2525, 2544, 2549, 2553, 2561, 2583, 2658, 2665, 2685, 2716, 2723, 2739, 2755, 2760, 2784, 2785, 2787, 2803, 2817, 2818, 2822, 2944, 2964, 3051, 3059, 3370, 3496, 3562, 3713, 3777										
Sedative/Hypnotics/Antipsychotics										
[2989pha]	13 y M				A/C	Ingst	Int-S	1		
		clozapine	1	1					clozapine	3638 mcg/L In Serum @ Unknown
		clozapine	1	1					norclozapine	621 mcg/L In Serum @ Unknown
		clonidine	2	2						
		benztropine	3	3						
2990ph	15 y M				A	Ingst	Int-S	1		
		benzodiazepine	1	1						
		tramadol	2	2						
		naproxen	3	3						
		thyroid preparation	4	4						
2991ph	21 y M				A	Ingst	Int-U	3		
		alprazolam	1	1						
		acetaminophen/oxycodone	2	2						
2992ai	23 y F				U	Ingst+ Unk	Int-S	1		
		quetiapine	1	1						
		ethanol	2	2						
2993i	24 y M				U	Unk	Unk	1		
		alprazolam	1	1						
2994ai	25 y M				U	Unk	Unt-M	1		
		clonazepam	1	1						
		hydroxyzine	2	2						
		gabapentin	3	3						
2995ai	25 y M				U	Unk	Int-A	1		
		alprazolam	1	1						
		marijuana, N.O.S.	2	2						
2996ph	25 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
2997ha	25 y M				A/C	Ingst	Int-S	1		
		zolpidem	1	1					zolpidem	208 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	74 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	3	3						
		gabapentin	4	4					gabapentin	1.3 mg/L In Blood (unspecified) @ Autopsy
		gabapentin	4	4					gabapentin	1.6 mg/L In Blood (unspecified) @ Autopsy
		sertraline	5	5					sertraline	0.4 mg/L In Blood (unspecified) @ Autopsy
		sertraline	5	5					sertraline	0.63 mg/L In Blood (unspecified) @ Autopsy
2998ha	25 y F				U	Ingst+ Unk	Int-S	1		
		lorazepam	1	1						
		amphetamine	2	2					amphetamine	168 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	3	3					methamphetamine	3580 ng/mL In Blood (unspecified) @ Autopsy
2999h	28 y M				A	Ingst	Int-S	2		
		risperidone	1	1						
3000p	28 y M				A	Ingst+ Unk	Int-A	2		
		alprazolam	1	1						
		lithium	2	2					lithium	0.81 mEq/L In Serum @ Unknown
		cocaine	3	3						
		marijuana	4	4						
3001ph	29 y M				U	Ingst	Int-U	2		
		lorazepam	1	1						
3002h	29 y M				A/C	Ingst	Int-S	2		
		olanzapine	1	1						
		sertraline	2	2						
		ethanol	3	3						
3003h	29 y F				A	Ingst	Int-S	2		
		haloperidol	1	1						
		antipsychotic (atypical)	2	2						
3004ph	30 y M				A	Inhal	Int-S	2		
		pentobarbital	1	1						
3005ha	30 y M				A/C	Ingst	Int-S	3		
		olanzapine	1	1						
		diazepam	2	2						
		clonazepam	3	3						
3006ph	31 y F				A/C	Ingst	Int-S	2		
		buspirone	1	1						
		topiramate	2	2						
		bupropion	3	3						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
3007pha	31 y M				A	Ingst	Int-A	1		
		alprazolam	1	1						
		fentanyl	2	2					fentanyl	1.4 ng/mL In Blood (unspecified) @ Unknown
		citalopram	3	3					desmethylcitalopram	23 ng/mL In Blood (unspecified) @ Unknown
		citalopram	3	3					citalopram	85 ng/mL In Blood (unspecified) @ Unknown
		antipsychotic (atypical)	4	4					9-hydroxyrisperidone	6.6 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	5	5					nordiazepam	27 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	5	5					diazepam	29 ng/mL In Blood (unspecified) @ Unknown
3008h	31 y M				A	Ingst	Int-S	2		
		quetiapine	1	1						
3009pai	32 y F				U	Ingst	Int-U	1		
		quetiapine	1	1						
		heroin	2	2					4-anpp (despropionyl fentanyl)	0.1 ng/mL In Blood (unspecified) @ Autopsy
		heroin	2	2					fentanyl	22.9 ng/mL In Blood (unspecified) @ Autopsy
		heroin	2	2					norfentanyl	6.9 ng/mL In Blood (unspecified) @ Autopsy
[3010h]	33 y F				A/C	Ingst	Int-S	1		
		quetiapine	1	1					quetiapine	1200 ng/mL In Blood (unspecified) @ 2 h (pe)
		quetiapine	1	1					quetiapine	38000 ng/mL In Blood (unspecified) @ Autopsy
3011ai	34 y M				U	Unk	Int-A	1		
		alprazolam	1	1						
		hydromorphone	2	2						
		fentanyl	3	3						
3012a	34 y M				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		lurasidone	2	2						
		carbamazepine	3	3						
		clonazepam	4	4						
		mirtazapine	5	5						
		buspirone	6	6						
3013	34 y M				A/C	Ingst	Int-S	2		
		ziprasidone	1	1						
		bupropion	2	2						
3014h	35 y M				A	Ingst+ Inhal	Int-A	2		
		alprazolam	1	1						
		petroleum distillate	2	2						
		narcotic, N.O.S.	3	3						
3015ai	36 y M				U	Unk	Int-A	1		
		clonazepam	1	1						
		chlordiazepoxide	2	2						
		ethanol	3	3						
3016ph	36 y F				A/C	Ingst	Int-S	2		
		olanzapine	1	1						
		hydroxyzine	2	2						
		venlafaxine (ER)	3	3						
		citalopram	4	4						
		tramadol	5	5						
		gabapentin	6	6						
		acyclovir	7	7						
		prednisone	8	8						
3017ha	37 y F				A/C	Ingst	Int-M	2		
		quetiapine	1	1						
		quetiapine	2	2						
		topiramate	3	3						
3018h	37 y F				U	Ingst	Int-S	2		
		olanzapine	1	1						
		ethanol	2	2						
3019ha	38 y F				A	Ingst	AR-D	3		
		alprazolam	1	1						
		ethanol	2	2						
3020pha	38 y F				A	Ingst	Int-S	1		
		quetiapine	1	1					quetiapine	150 ng/mL In Blood (unspecified) @ Autopsy
3021	41 y M				A/C	Ingst	Int-S	3		
		quetiapine	1	1						
		narcotic, N.O.S.	2	2						
		phencyclidine	3	3						
		marijuana	4	4						
		benzodiazepine	5	5						
3022pha	41 y M				A	Ingst	Int-S	1		
		risperidone	1	1					risperidone	12 ng/mL In Blood (unspecified) @ 30 m (pe)
		risperidone	1	1					9-hydroxyrisperidone	7.8 ng/mL In Blood (unspecified) @ 30 m (pe)
		alprazolam	2	2					alprazolam	12 ng/mL In Blood (unspecified) @ 30 m (pe)
		bupropion	3	3					bupropion	37 ng/mL In Blood (unspecified) @ 30 m (pe)
		bupropion	3	3					hydroxybupropion	960 ng/mL In Blood (unspecified) @ 30 m (pe)
		atomoxetine	4	4					atomoxetine	1100 ng/mL In Blood (unspecified) @ 30 m (pe)
		oxcarbazepine	5	5					10-hydroxycarbazepine	7.3 mcg/mL In Blood (unspecified) @ 30 m (pe)
3023ai	42 y F				U	Unk	Int-S	1		
		quetiapine	1	1						
		duloxetine (ER)	2	2						
3024h	42 y M				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		ethanol	2	2					ethanol	181 mg/dL In Serum @ 1 h (pe)
		viral disease (COVID-19-Not Confirmed)	3	3						
3025ha	42 y M				A/C	Ingst	Int-S	2		
		olanzapine	1	1					olanzapine	110 ng/mL In Serum @ Unknown
		olanzapine	1	1					olanzapine	130 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	175 mg/dL In Serum @ Unknown
3026ai	43 y M				U	Unk	Int-A	1		
		benzodiazepine	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
3027ph	43 y F				A/C	Ingst	Int-S	2		
		quetiapine (ER)	1	1						
		paroxetine	2	2						
3028ai	44 y M				U	Unk	Unk	2		
		alprazolam	1	1						
		buprenorphine	2	2						
		ethanol	3	3						
		marijuana, N.O.S.	4	4						
3029ph	44 y M				A	Unk	Unk	2		
		olanzapine	2	1						
		drug, N.O.S.	1	2						
3030ai	48 y F				U	Unk	Int-S	1		
		quetiapine	1	1						
		alprazolam	2	2						
		sertraline	3	3						
3031h	48 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
		ethanol	2	2						
		benzodiazepine	3	3						
3032ai	49 y F				U	Unk	Int-S	1		
		quetiapine	1	1						
		duloxetine (ER)	2	2						
		dextromethorphan	3	3						
3033ph	49 y M				A/C	Ingst	Int-S	2		
		alprazolam	1	1						
		fluvoxamine	2	2						
		quetiapine	3	3						
		haloperidol	5	4						
		levothyroxine	4	5						
3034pha	49 y M				U	Ingst	Int-S	2		
		alprazolam	1	1						
3035ai	50 y M				U	Unk	Int-A	1		
		benzodiazepine	1	1						
3036ai	50 y M				U	Unk	Int-A	1		
		lorazepam	1	1						
		clobazam	2	2						
		ethanol	3	3						
3037ha	51 y F				A	Ingst	Int-S	1		
		quetiapine	1	1					quetiapine	1700 ng/mL In Blood (unspecified) @ Unknown
		venlafaxine	2	2					venlafaxine	180 ng/mL In Blood (unspecified) @ Unknown
		venlafaxine	2	2					o-desmethyl-venlafaxine	720 ng/mL In Blood (unspecified) @ Unknown
		topiramate	3	3					topiramate	26000 ng/mL In Blood (unspecified) @ Unknown
		risperidone	4	4					risperidone	130 ng/mL In Blood (unspecified) @ Unknown
		risperidone	4	4					9-hydroxyrisperidone	180 ng/mL In Blood (unspecified) @ Unknown
		lorazepam	5	5					lorazepam	160 ng/mL In Blood (unspecified) @ Unknown
3038ph	51 y M				U	Unk	Int-U	2		
		alprazolam	1	1						
		suvorexant	2	2						
		ethanol	3	3						
3039h	51 y F				A/C	Ingst	Unk	3		
		zolpidem	1	1						
		substance (non-drug), N.O.S.	2	2						
3040ai	52 y M				U	Unk	Int-A	1		
		clonazepam	1	1						
		ethanol	2	2						
3041ha	52 y F				A/C	Ingst	Int-S	1		
		phenobarbital	1	1					phenobarbital	41 mcg/mL In Blood (unspecified) @ Unknown
		benzodiazepine	2	2						
		drug, N.O.S.	3	3						
3042ai	53 y F				U	Unk	Int-S	1		
		diazepam	1	1						
		diphenhydramine	2	2						
		fluvoxamine	3	3						
3043pa	55 y F				A	Ingst	Int-A	2		
		benzodiazepine	1	1						
		antipsychotic (atypical)	2	2						
		sertraline	3	3						
		antipsychotic (atypical)	4	4						
		fentanyl (non-prescription N.O.S.)	5	5						
3044hai	56 y F				U	Ingst	Unk	3		
		clozapine	1	1					clozapine	2400 ng/mL In Blood (unspecified) @ Autopsy
3045pa	56 y F				C	Ingst	Int-U	3		
		olanzapine	1	1					olanzapine	750 mcg/mL In Whole Blood @ Autopsy
3046ai	57 y F				U	Unk	Int-S	1		
		phenobarbital	1	1						
3047h	59 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
3048ph	60 y F				A/C	Ingst	Int-S	2		
		alprazolam (ER)	1	1						
		zolpidem	2	2						
		fluoxetine	3	3						
		amphetamine/dextroamphetamine	4	4						
3049h	61 y F				A/C	Ingst	Unk	2		
		quetiapine	1	1						
		escitalopram	2	2						
		ondansetron	3	3						
		viral disease (COVID-19-Confirmed)	4	4						
3050pha	63 y F				A	Ingst	Unt-G	1		
		pentobarbital	1	1					pentobarbital	46 mg/L In Blood (unspecified) @ 5 m (pe)
3051pha	64 y M				A/C	Ingst	Int-S	3		
		clozapine	1	1					norclozapine	1100 ng/mL In Blood (unspecified) @ Unknown
		clozapine	1	1					clozapine	3400 ng/mL In Blood (unspecified) @ Unknown
		cyclobenzaprine	2	2					cyclobenzaprine	47 ng/mL In Blood (unspecified) @ Unknown
		citalopram	3	3						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
3052h	65 y F				A	Ingst	AR-D	2		
		phenothiazine	1	1						
		paroxetine	2	2						
		amlodipine	3	3						
		docusate sodium	4	4						
		quetiapine	5	5						
		benztropine	6	6						
		clonazepam	7	7						
3053i	66 y F				A/C	Ingst	Int-S	3		
		quetiapine	1	1						
		lisinopril	2	2						
3054h	66 y F				A/C	Ingst	AR-D	2		
		quetiapine	1	1						
		fluoxetine	2	2						
		trazodone	3	3						
		amantadine	4	4						
		valproic acid	5	5						
3055	66 y F				A/C	Ingst	Int-S	3		
		quetiapine	1	1						
3056ai	66 y M				U	Ingst+ Unk	Int-A	1		
		diazepam	1	1						
		ethanol	2	2						
3057hi	67 y M				A	Ingst	Unk	3		
		diazepam	1	1						
3058ai	68 y F				U	Unk	Int-M	1		
		clonazepam	1	1						
		zolpidem	2	2						
3059ai	68 y F				U	Unk	Unk	1		
		alprazolam	1	1						
		cyclobenzaprine	2	2						
		eszopiclone	3	3						
3060ph	69 y M				A	Ingst	Int-S	3		
		zolpidem	1	1						
3061	69 y M				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		risperidone	2	2						
		fluoxetine	3	3						
3062ph	70 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		amlodipine	2	2						
		ezetimibe	3	3						
		ziprasidone	4	4						
		alprazolam	5	5						
		gabapentin	6	6						
3063	70 y M				A/C	Ingst+ Par	Int-S	2		
		quetiapine	1	1						
		metoprolol	2	2						
		insulin	3	3						
		lisinopril	4	4						
3064pa	70 y F				C	Ingst	Int-U	3		
		olanzapine	1	1					olanzapine	680 ng/mL In Whole Blood @ Autopsy
		sertraline	2	2					sertraline	1500 ng/mL In Whole Blood @ Autopsy
		sertraline	2	2					desmethylsertraline	3400 ng/mL In Whole Blood @ Autopsy
		quetiapine	3	3					quetiapine	630 ng/mL In Whole Blood @ Autopsy
3065ai	71 y F				U	Unk	Int-S	1		
		quetiapine	1	1						
		citalopram	2	2						
		hydroxyzine	3	3						
		ethanol	4	4						
3066h	71 y M				A	Ingst	Int-S	3		
		zolpidem	1	1						
		metformin	2	2						
		alprazolam	3	3						
		amitriptyline	4	4						
3067h	71 y F				A	Ingst	Int-S	2		
		olanzapine	1	1						
		sertraline	2	2						
		lisinopril	3	3						
		gabapentin	4	4						
		benzodiazepine	5	5						
3068h	72 y F				A	Ingst	Int-S	1		
		barbiturate (long acting)	1	1						
3069h	74 y F				A	Ingst+ Par	Unt-U	2		
		quetiapine	1	1						
		pregabalin	2	2						
		insulin	3	3						
3070h	74 y F				U	Ingst	Int-S	3		
		antipsychotic (atypical)	1	1						
		ibuprofen	2	2						
3071	74 y F				A/C	Par+ Oth	Unt-T	1		
		propofol	1	1						
		viral disease (COVID-19-Confirmed)	2	2						
3072h	76 y M				A	Ingst	Int-S	2		
		alprazolam	1	1						
3073ai	81 y M				U	Unk	Int-S	1		
		zolpidem	1	1						
		acetaminophen	2	2						
		ethanol	3	3						
3074h	83 y F				U	Ingst	Int-M	2		
		alprazolam	1	1					alpha-oh-alprazolam	646 ng/mL In Blood (unspecified) @ Unknown
3075ai	86 y F				U	Unk	Int-S	1		
		quetiapine	1	1						
		venlafaxine	2	2						
		alprazolam	3	3						
3076	87 y M				A/C	Ingst	Int-S	3		
		temazepam	1	1						
		trazodone	2	2						
		dexmedetomidine	3	3						
3077	90 y M				A	Ingst	Int-S	2		
		quetiapine	1	1						
		acetaminophen	2	2					acetaminophen (apap)	60 mcg/mL In Blood (unspecified) @ Unknown
		clonazepam	3	3						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
3078p	91 y F				A	Ingst	Unk	2		
		pentobarbital	1	1						
		benzodiazepine	2	2						
		meperidine	3	3						
		acetaminophen/hydrocodone	4	4						
See Also case 21, 23, 28, 58, 62, 64, 70, 130, 141, 241, 253, 255, 262, 270, 281, 309, 367, 478, 488, 497, 510, 533, 538, 554, 563, 566, 568, 573, 574, 593, 595, 601, 609, 611, 617, 618, 619, 627, 639, 643, 650, 661, 667, 675, 679, 695, 699, 700, 701, 703, 705, 712, 714, 720, 721, 723, 726, 731, 740, 747, 766, 769, 772, 776, 780, 781, 786, 793, 798, 808, 809, 814, 828, 832, 840, 844, 854, 858, 861, 867, 880, 882, 884, 906, 913, 917, 918, 920, 930, 932, 943, 947, 948, 958, 966, 970, 977, 995, 996, 1001, 1004, 1011, 1020, 1034, 1052, 1053, 1056, 1060, 1065, 1066, 1071, 1072, 1076, 1087, 1100, 1103, 1105, 1108, 1115, 1120, 1129, 1137, 1140, 1160, 1175, 1188, 1191, 1197, 1206, 1216, 1226, 1228, 1247, 1256, 1265, 1280, 1286, 1288, 1291, 1307, 1320, 1329, 1333, 1343, 1355, 1375, 1378, 1391, 1407, 1413, 1416, 1420, 1427, 1439, 1441, 1446, 1449, 1455, 1465, 1468, 1477, 1478, 1486, 1490, 1500, 1501, 1520, 1526, 1528, 1531, 1538, 1539, 1543, 1544, 1548, 1549, 1550, 1552, 1565, 1578, 1579, 1599, 1600, 1611, 1612, 1614, 1628, 1633, 1656, 1664, 1669, 1690, 1692, 1694, 1712, 1713, 1724, 1736, 1743, 1746, 1747, 1758, 1759, 1770, 1773, 1776, 1777, 1781, 1782, 1789, 1802, 1809, 1813, 1815, 1818, 1822, 1823, 1835, 1847, 1848, 1862, 1870, 1876, 1882, 1886, 1887, 1893, 1907, 1921, 1936, 1947, 1955, 1958, 1975, 1977, 1978, 1980, 1987, 1997, 2004, 2019, 2031, 2036, 2048, 2051, 2052, 2054, 2059, 2064, 2070, 2071, 2079, 2080, 2085, 2088, 2098, 2107, 2109, 2110, 2115, 2127, 2133, 2143, 2145, 2147, 2149, 2156, 2157, 2166, 2167, 2174, 2177, 2209, 2219, 2222, 2224, 2234, 2246, 2267, 2273, 2274, 2278, 2286, 2292, 2296, 2310, 2314, 2320, 2322, 2325, 2343, 2359, 2367, 2368, 2376, 2378, 2386, 2395, 2419, 2437, 2439, 2440, 2441, 2449, 2451, 2452, 2454, 2457, 2461, 2462, 2466, 2470, 2471, 2477, 2480, 2485, 2486, 2488, 2496, 2497, 2503, 2510, 2512, 2514, 2516, 2518, 2522, 2528, 2529, 2532, 2536, 2542, 2546, 2549, 2552, 2553, 2555, 2560, 2566, 2567, 2569, 2573, 2574, 2575, 2576, 2577, 2587, 2604, 2606, 2609, 2613, 2620, 2638, 2651, 2655, 2658, 2665, 2672, 2674, 2675, 2678, 2679, 2682, 2683, 2684, 2688, 2701, 2708, 2709, 2712, 2715, 2723, 2728, 2729, 2732, 2737, 2739, 2743, 2744, 2747, 2749, 2751, 2756, 2761, 2770, 2772, 2778, 2781, 2784, 2790, 2798, 2800, 2811, 2818, 2833, 2848, 2850, 2859, 2868, 2877, 2878, 2905, 2922, 2925, 2927, 2930, 2944, 2946, 2951, 2970, 2975, 2979, 2980, 2981, 2988, 3096, 3101, 3102, 3104, 3110, 3113, 3128, 3143, 3149, 3166, 3169, 3173, 3178, 3199, 3203, 3236, 3246, 3248, 3250, 3253, 3256, 3290, 3292, 3293, 3301, 3313, 3323, 3327, 3333, 3346, 3352, 3354, 3378, 3387, 3436, 3438, 3443, 3467, 3490, 3492, 3507, 3531, 3543, 3592, 3618, 3630, 3681, 3685, 3704, 3751, 3764, 3777, 3800, 3857, 3861, 3868								
Serums, Toxoids, Vaccines										
[3079h]	67 y F				C	Par	Unt-T	2		
		immune globulin (human)	1	1						
[3080h]	79 y M				A	Par	AR-D	1		
		botulinum toxin	1	1						
Stimulants and Street Drugs										
3081ph	15 y F				A	Ingst	Int-A	2		
		cocaine	1	1						
[3082ha]	15 y F				A	Unk	Unk	1		
		cocaine	1	1					benzoylecognine	2.128 mg/L In Blood (unspecified) @ Autopsy
[3083pha]	16 y M				A	Unk	Int-A	1		
		methylenedioxymethamphetamine (MDMA)	1	1					mdma (3,4-methylenedioxymethamphetamine)	1 mg/L In Whole Blood @ Unknown
3084ph	17 y M				U	Ingst	Int-U	2		
		methylenedioxymethamphetamine (MDMA)	1	1						
3085ph	17 y M				A	Ingst	Int-A	3		
		lysergic acid diethylamide (LSD)	1	1						
		bupropion (ER)	2	2						
		lithium	3	3						
		guanfacine	4	4						
		N-acetylcysteine	5	5						
3086ha	17 y M				U	Unk	Int-U	3		
		cocaine	1	1					benzoylecognine	1000 ng/mL In Blood (unspecified) @ Unknown
		marijuana	2	2					delta-9-carboxy-thc	6.7 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	3	3					fentanyl	1.6 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	3	3					norfentanyl	1.7 ng/mL In Blood (unspecified) @ Unknown
3087pha	17 y M				A	Ingst+ Unk	Int-A	1		
		cocaine	1	1					benzoylecognine	1801 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	2	2					norfentanyl	1.2 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	2	2					fentanyl	7 ng/mL In Blood (unspecified) @ Unknown
		ethanol	3	3						
3088ai	19 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		morphine	2	2						
		codeine	3	3						
3089ai	19 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3090ph	19 y M				A	Ingst	Int-A	2		
		methylenedioxymethamphetamine (MDMA)	1	1						
		marijuana	2	2						
3091pha	21 y F				U	Unk	Unk	2		
		cocaine	1	1						
3092ph	21 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
3093pha	21 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
3094	21 y M				A	Ingst	Int-U	1		
		methamphetamine	1	1						
3095ai	21 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3096ai	21 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		benzodiazepine	2	2						
3097ai	22 y M				U	Unk	Unt-M	1		
		methamphetamine	1	1						
		fentanyl	2	2						
		heroin	3	3						
3098ai	22 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3099h	22 y F				A	Ingst+ Unk	Int-A	2		
		methylenedioxymethamphetamine (MDMA)	1	1						
		drug, N.O.S.	2	2						
3100ai	22 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		hyperthermia	2	2						
		ethanol	3	3						
3101ai	23 y F				U	Unk	Int-A	1		
		cocaine	1	1						
		benzodiazepine	2	2						
		ethanol	3	3						
3102ph	23 y F				A	Ingst	Int-A	2		
		THC homolog	1	1						
		benzodiazepine	2	2						
		drug, N.O.S.	3	3						
3103ai	23 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana	2	2						
3104ai	23 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		benzodiazepine	2	2						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		ethanol	3	3						
3105ai	23 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ibuprofen	2	2						
3106p	23 y M				A	Inhal	Int-A	2		
		marijuana	1	1						
		narcotic, N.O.S.	2	2						
3107pha	23 y M				A	Inhal	Int-A	1		
		cocaine	1	1						
		fentanyl, N.O.S.	2	2					fentanyl	0.008 mg/L In Whole Blood @ Autopsy
		fentanyl analogs (despropionyl fentanyl)	3	3						
3108ai	24 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		fentanyl, N.O.S.	2	2						
		ethanol	3	3						
3109ai	24 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
3110ai	24 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		clozapine	2	2						
		gabapentin	3	3						
3111ai	24 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana, N.O.S.	2	2						
3112ai	24 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana, N.O.S.	2	2						
3113pha	24 y F				A	Ingst	Unk	2		
		cocaine	1	1						
		benzodiazepine	2	2						
		narcotic, N.O.S.	3	3						
3114h	24 y M				A	Ingst	Int-A	2		
		methamphetamine	1	1						
		amphetamine (hallucinogenic)	2	2						
3115ai	25 y M				U	Unk	Int-A	1		
		marijuana	1	1						
		fentanyl, N.O.S.	2	2						
3116	25 y M				A	Unk	Int-A	2		
		methamphetamine	1	1						
3117pha	25 y M				A	Unk	Int-A	1		
		methamphetamine	1	1					methamphetamine	11580 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	1	1					amphetamine	79 ng/mL In Blood (unspecified) @ Unknown
		diphenhydramine	2	2					diphenhydramine	16 ng/mL In Blood (unspecified) @ Unknown
3118ai	25 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		Non Drug Substance (N.O.S.)	2	2						
		pseudoephedrine	3	3						
		ethanol	4	4						
3119h	25 y M				A	Unk	Int-A	2		
		amphetamine	1	1						
		heroin	2	2						
		gamma-hydroxybutyric acid	3	3						
3120ai	25 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3121ph	25 y F				A	Ingst	Int-M	2		
		methamphetamine	1	1						
		acetaminophen	2	2						
3122ai	25 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hyperthermia	2	2						
3123ai	26 y F				U	Unk	Int-A	3		
		methamphetamine	1	1						
		fentanyl, N.O.S.	2	2						
		viral disease (hantavirus)	3	3						
3124ai	26 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana	2	2						
3125h	26 y M				A	Ingst+ Unk	Int-A	2		
		methylenedioxymethamphetamine (MDMA)	1	1						
		methamphetamine	2	2						
		cocaine	3	3						
		amphetamine (hallucinogenic), cathinone	4	4						
3126ai	26 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana, N.O.S.	2	2						
3127	26 y M				A	Ingst	Int-M	1		
		methamphetamine	1	1						
3128ph	26 y M				A/C	Ingst+ Unk	Int-A	2		
		Mitragyna speciosa korthals	1	1						
		etizolam	2	2						
		viral disease (COVID-19-Confirmed)	3	3						
3129pha	26 y M				A	Ingst+ Unk	Int-A	1		
		cocaine	2	1					benzoylecognine	0.36 mg/L In Blood (unspecified) @ 5 m (pe)
		fentanyl, N.O.S.	1	1					fentanyl	2.9 ng/mL In Blood (unspecified) @ 5 m (pe)
		methamphetamine	3	3					methamphetamine	0.45 mg/L In Blood (unspecified) @ 5 m (pe)
3130h	27 y F				A	Unk	Int-A	2		
		methamphetamine	1	1						
3131ai	27 y M				U	Unk	Unt-M	1		
		methamphetamine	1	1						
		heroin	2	2						
3132pa	27 y M				A	Ingst+ Aspir	Int-S	1		
		caffeine	1	1					caffeine	120 mcg/mL In Whole Blood @ Autopsy
3133ai	27 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		hyperthermia	2	2						
		ethanol	3	3						
3134ph	27 y M				A	Ingst	Int-U	2		
		marijuana	1	1						
		phencyclidine	2	2						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
3135ph	27 y M				A	Unk	Unk	2		
		methamphetamine	1	1						
3136ai	27 y M				A	Ingst	Int-A	2		
		phencyclidine	1	1						
		drug, N.O.S.	2	2						
3137ph	28 y M				A	Ingst+ Oth	Int-M	2		
		cocaine	1	1						
		laundry detergent (pod)	2	2						
3138ph	28 y M				U	Ingst+ Aspir	Int-A	2		
		methamphetamine	1	1						
3139ai	28 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		narcotic, N.O.S.	2	2						
3140h	28 y M				A	Ingst	Int-A	1		
		lysergic acid diethylamide (LSD)	2	1						
		methamphetamine	1	2						
3141ai	28 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		Non Drug Substance (N.O.S.)	2	2						
3142ai	29 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
3143ai	29 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		methadone	2	2						
		alprazolam	3	3						
3144ai	29 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
3145h	29 y F				A	Ingst	Int-S	2		
		amphetamine/dextroamphetamine	1	1						
3146ha	29 y F				A	Unk	Int-U	2		
		methamphetamine	1	1					methamphetamine	2.9 mg/L In Blood (unspecified) @ Unknown
3147ai	29 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		plant, mitragyna	2	2						
		ethanol	3	3						
3148h	29 y M				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		marijuana, N.O.S.	2	2						
		ethanol	3	3						
3149h	29 y M				A	Ingst+ Unk	Int-U	3		
		methamphetamine	1	1						
		lysergic acid diethylamide (LSD)	2	2						
		hydrocodone	3	3						
		diazepam	4	4						
3150ai	29 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		hyperthermia	2	2						
		ethanol	3	3						
3151pha	29 y M				U	Ingst+ Unk	Int-S	1		
		amphetamine	1	1					amphetamine	2323 ng/mL In Blood (unspecified) @ Unknown
		sertraline	2	2					desmethylsertraline	142 ng/mL In Blood (unspecified) @ Unknown
		sertraline	2	2					sertraline	798 ng/mL In Blood (unspecified) @ Unknown
		gabapentin	3	3					gabapentin	49.1 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	4	4					ethanol	0.027 % (wt/Vol) In Blood (unspecified) @ Unknown
		plant, mitragyna	5	5					mitragynine	11.5 ng/mL In Blood (unspecified) @ Unknown
		atenolol	6	6						
3152ai	29 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hyperthermia	2	2						
3153ai	29 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3154ai	29 y F				U	Ingst+ Unk	Int-A	1		
		methamphetamine	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
3155ai	29 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3156pai	29 y F				U	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		ethanol	2	2					ethanol	0.69 mg/kg In Liver @ Autopsy
3157ai	30 y F				U	Unk	Int-A	3		
		methamphetamine	1	1						
3158ai	30 y M				U	Unk	Unt-M	1		
		methamphetamine	1	1						
		cocaine	2	2						
		heroin	3	3						
3159pha	30 y M				A	Ingst	Int-A	1		
		cocaine	1	1					cocaine	34 ng/mL In Blood (unspecified) @ Unknown
		cocaine	1	1					benzoylecognine	7900 ng/mL In Blood (unspecified) @ Unknown
3160ai	30 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana, N.O.S.	2	2						
3161ai	30 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hyperthermia	2	2						
3162ai	30 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3163ai	30 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		morphine	2	2						
		marijuana, N.O.S.	3	3						
3164ai	31 y F				U	Unk	Int-A	1		
		cocaine	1	1						
		methamphetamine	2	2						
3165ai	31 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		trihexyphenidyl	2	2						
3166h	31 y M				A	Unk	Int-S	2		
		Mitragyna speciosa korthals	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		benzodiazepine	2	2						
		marijuana	3	3						
3167ai	31 y M				U	Unk	Int-M	1		
		methamphetamine	1	1						
		gamma-hydroxybutyric acid	2	2						
3168ph	31 y M				A	Inhal	Int-A	2		
		cocaine	1	1						
3169h	31 y F				A/C	Ingst	Int-S	2		
		methamphetamine	1	1						
		bupropion (ER)	2	2						
		escitaopram	3	3						
		lorazepam	4	4						
3170ai	31 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3171ai	31 y M				U	Unk	Int-U	3		
		methamphetamine	1	1						
3172pha	31 y M				A	Unk	Int-S	2		
		cocaine	1	1						
		paroxetine	2	1						
3173ai	31 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		alprazolam	2	2						
3174ai	31 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3175ai	31 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ephedrine	2	2						
3176ai	31 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		hyperthermia	2	2						
3177	31 y F				U	Ingst+ Unk	Int-S	2		
		amphetamine	1	1						
		rodenticide, N.O.S.	2	2						
3178ai	32 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		alprazolam	2	2						
		fentanyl, N.O.S.	3	3						
3179ai	32 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		methadone	2	2						
		ethanol	3	3						
3180h	32 y M				A	Ingst	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
3181pha	32 y F				A	Unk	Int-A	1		
		THC homolog, 5F-AMB-PICA	1	1						
		cocaine	2	2						
3182ai	32 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3183ai	32 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3184ai	32 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		fentanyl, N.O.S.	2	2						
		marijuana	3	3						
3185ai	32 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		methadone	2	2						
3186ai	32 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
3187pha	32 y M				C	Inhal	Int-A	3		
		cocaine	1	1					benzoylecognine	744 ng/mL In Blood (unspecified) @ Unknown
3188	32 y M				A	Unk	Int-A	2		
		phencyclidine	2	1						
		THC homolog	1	2						
3189ai	32 y M				U	Unk	Int-S	1		
		methamphetamine	1	1						
3190ai	33 y M				U	Unk	Int-A	1		
		cocaine	1	1						
3191ai	33 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
		fentanyl, N.O.S.	3	3						
3192ai	33 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3193ai	33 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3194ai	33 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3195ai	33 y F				U	Unk	Unt-M	1		
		cocaine	1	1						
		oxycodone	2	2						
		diphenhydramine	3	3						
3196ai	33 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
3197ai	33 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		methamphetamine	2	2						
		morphine	3	3						
[3198ha]	33 y F				A	Ingst	Int-S	3		
		armodafinil	1	1						
3199ph	33 y M				A	Ingst+ Unk	Unk	2		
		cocaine	1	1						
		benzodiazepine	2	2						
3200ai	33 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3201ai	33 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		codeine	2	2						
3202ai	34 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3203ai	34 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		aripiprazole	2	2						
		ethanol	3	3						
3204ai	34 y F				U	Unk	Int-A	1		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		methamphetamine	1	1						
3205ai	34 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		methanol	2	2						
3206ai	34 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3207ai	34 y M				U	Ingst+ Unk	Int-A	1		
		methamphetamine	1	1						
		morphine	2	2						
		ethanol	3	3						
3208h	35 y M				A	Ingst	Int-A	2		
		amphetamine/dextroamphetamine	1	1						
		energy drink (caffeine)	2	2						
3209ai	35 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3210ai	35 y M				U	Unk	Int-A	2		
		methylenedioxymethamphetamine (MDMA)	1	1						
		isopropanol	2	2						
		marijuana	3	3						
3211ai	35 y M				U	Unk	Int-A	1		
		amphetamine	1	1						
		narcotic, N.O.S.	2	2						
3212ai	35 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		isopropanol	2	2						
		marijuana	3	3						
3213ai	36 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		methadone	2	2						
3214ai	36 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3215ai	36 y F				U	Unk	Unt-M	1		
		methamphetamine	1	1						
		heroin	2	2						
3216ai	36 y F-Pregnant				U	Unk	Int-A	3		
		cocaine	1	1						
3217ai	36 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3218pai	36 y M				U	Inhal+ Unk	Int-A	1		
		methamphetamine	1	1					amphetamine	1 mg/L In Whole Blood @ Autopsy
		methamphetamine	1	1					methamphetamine	6.5 mg/L In Whole Blood @ Autopsy
3219a	36 y F				A/C	Unk	Int-A	1		
		phencyclidine	1	1					phencyclidine	220 ng/mL In Blood (unspecified) @ Unknown
		cocaine	2	2					benzoylecognine	2700 ng/mL In Blood (unspecified) @ Unknown
		dextromethorphan	3	3					dextromethorphan	39 ng/mL In Blood (unspecified) @ Unknown
3220ai	36 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3221ph	36 y F				A/C	Ingst	Int-S	2		
		Mitragyna speciosa korthals	1	1						
		pregabalin	2	2						
		promethazine	3	3						
		hydrochlorothiazide/triampterene	4	4						
3222pa	37 y F				U	Unk	Unk	3		
		marijuana	1	1					delta-9-thc	1.1 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	1	1					delta-9-carboxy-thc	6.2 ng/mL In Blood (unspecified) @ Autopsy
3223ai	37 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3224ai	37 y F				C	Unk	Int-A	1		
		methamphetamine	1	1						
		metoprolol	2	2						
		tadalafil	3	3						
3225ai	37 y M				U	Unk	Unt-M	2		
		cocaine	1	1						
		ethanol	2	2						
		levamisole	3	3						
3226ai	37 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3227p	37 y M				A	Unk	Int-A	1		
		cocaine	1	1					cocaine	0.2 mg/L In Whole Blood @ Autopsy
		fentanyl, N.O.S.	2	2					fentanyl	0.006 mg/L In Whole Blood @ Autopsy
3228phi	37 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		marijuana, N.O.S.	3	2						
		amphetamine	2	3						
3229h	37 y M				U	Ingst	Int-A	2		
		cocaine	1	1						
3230h	37 y F				A	Ingst	Int-S	1		
		gamma-hydroxybutyric acid	1	1						
3231ai	37 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		morphine	2	2						
		fentanyl, N.O.S.	3	3						
3232ai	37 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3233pi	37 y F				U	Inhal	Int-A	2		
		methamphetamine	1	1						
		cocaine	2	2						
		marijuana	3	3						
3234ai	37 y M				C	Unk	Int-A	3		
		methamphetamine	1	1						
3235ai	37 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		bupropion	2	2						
		sertraline	3	3						
3236ai	37 y M				U	Unk	Int-U	3		
		marijuana	1	1						
		olanzapine	2	2						
		levetiracetam	3	3						
3237ai	37 y M				U	Unk	Int-A	2		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		methamphetamine	1	1						
		hyperthermia	2	2						
		ethanol	3	3						
3238ai	37 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		hyperthermia	2	2						
3239ai	38 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		marijuana	2	2						
3240i	38 y M				U	Unk	Int-A	3		
		cocaine	1	1						
		oxycodone	2	2						
		oxymorphone	3	3						
3241ai	38 y F				U	Unk	Unt-M	2		
		amphetamine	1	1						
		amitriptyline	2	2						
		gabapentin	3	3						
3242ai	38 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		amphetamine	2	2						
		methamphetamine	3	3						
3243ai	38 y M				U	Unk	Int-A	1		
		phencyclidine	1	1						
		marijuana, N.O.S.	2	2						
3244ai	38 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		marijuana, N.O.S.	2	2						
		ethanol	3	3						
3245ai	38 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		morphine	2	2						
		ethanol	3	3						
3246ai	38 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		etizolam	2	2						
		clonazepam	3	3						
3247ai	38 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3248ai	38 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		hyperthermia	2	2						
		benzodiazepine	3	3						
3249ai	38 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		amphetamine (hallucinogenic)	2	2						
3250ai	38 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		bupropion	2	2						
		aripiprazole	3	3						
3251ai	38 y F				U	Unk	Int-A	3		
		methamphetamine	1	1						
3252ai	39 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		ethanol	2	2						
3253ai	39 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		alprazolam	2	2						
		ethanol	3	3						
3254ai	39 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		fentanyl, N.O.S.	2	2						
3255pa	39 y M				U	Unk	Int-A	1		
		methamphetamine	1	1					methamphetamine	2400 ng/mL In Blood (unspecified) @ Autopsy
3256pha	39 y F				U	Ingst	Unk	1		
		methamphetamine	1	1					amphetamine	130 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	1	1					methamphetamine	4500 ng/mL In Blood (unspecified) @ Autopsy
		bupropion	2	2						
		trazodone	3	3						
		venlafaxine	4	4						
		diazepam	5	5						
		methadone	6	6						
3257ai	39 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
		cocaine	2	2						
		tramadol	3	3						
		ethanol	4	4						
3258ai	39 y M				U	Unk	Unt-U	1		
		amphetamine	1	1						
		methamphetamine	2	2						
		marijuana	3	3						
3259ha	39 y M				A	Unk	Int-S	1		
		methamphetamine	1	1					methamphetamine	3156 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	1	1					amphetamine	78 ng/mL In Blood (unspecified) @ Unknown
3260ai	39 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ephedrine	2	2						
		marijuana (oral)	3	3						
3261ai	39 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3262ai	39 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		hyperthermia	2	2						
3263h	39 y M				A	Unk	Int-U	1		
		stimulant/street drug, N.O.S	1	1						
		tianeptine	2	2						
3264h	39 y M				A	Rec	Int-M	1		
		methamphetamine	1	1						
3265ai	39 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		methamphetamine	2	2						
3266ph	39 y F				A	Inhal	Int-A	2		
		cocaine	1	1						
3267ai	39 y F				U	Unk	Int-A	1		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		phencyclidine	1	1						
3268ai	39 y M				U	Unk	Int-M	1		
		methamphetamine	1	1						
3269ai	39 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
3270ai	40 y F				U	Unk	Unk	1		
		methamphetamine	1	1						
3271ai	40 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
3272ai	40 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		metoprolol	2	2						
3273ai	40 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
3274ai	40 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3275	40 y M				A	Ingst	Int-M	2		
		methamphetamine	1	1						
3276ai	40 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		gabapentin	2	2						
3277ai	40 y M				U	Unk	Int-S	1		
		amphetamine	1	1						
		hydrocodone	2	2						
		diphenhydramine	3	3						
3278ai	40 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
3279ai	40 y M				U	Unk	Int-U	3		
		methamphetamine	1	1						
3280ai	40 y M				U	Unk	Int-U	3		
		methamphetamine	1	1						
3281ai	40 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		phenylethylamine	2	2						
		ethanol	3	3						
3282ai	40 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hyperthermia	2	2						
3283ai	40 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		morphine	2	2						
		oxycodone	3	3						
3284pha	40 y F				A	Unk	Int-A	2		
		cocaine	1	1						
3285ai	40 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3286ai	40 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3287ai	40 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		sertraline	2	2						
3288ai	41 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3289ai	41 y M				C	Unk	Int-A	3		
		methamphetamine	1	1						
3290ai	41 y F				U	Ingst+ Unk	Int-A	1		
		methamphetamine	1	1						
		diazepam	2	2						
		ethanol	3	3						
3291ai	41 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3292ai	41 y F				U	Unk	Int-A	1		
		cocaine	1	1						
		methadone	2	2						
		etizolam	3	3						
3293h	41 y M				A	Inhal+ Par	Int-A	3		
		cocaine	1	1						
		oxycodone	2	2						
		benzodiazepine	3	3						
3294ai	41 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana, N.O.S.	2	2						
3295ai	41 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3296ai	41 y M				U	Unk	Int-U	3		
		Mitragyna speciosa korthals	1	1						
		methadone	2	2						
		sertraline	3	3						
3297h	41 y M				A	Ingst	Int-M	1		
		methamphetamine	1	1						
		fentanyl	2	2						
3298ph	41 y M				A	Ingst+ Oth	Int-U	2		
		cocaine	1	1						
3299ai	41 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
3300ai	42 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		codeine	2	2						
		levorphanol	3	3						
3301ai	42 y M				U	Unk	Int-A	3		
		cocaine	1	1						
		benzodiazepine	2	2						
3302ai	42 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		fentanyl	2	2						
		oxycodone	3	3						
		morphine	4	4						
3303i	42 y F				U	Unk	Int-A	1		
		cocaine	1	1						
		amphetamine	2	2						
		fluoxetine	3	3						
3304ai	42 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana, N.O.S.	2	2						
3305	42 y F				U	Unk	Unk	2		
		methamphetamine	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
3306ai	42 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		fentanyl, N.O.S.	2	2						
		ethanol	3	3						
3307ai	42 y M				U	Unk	Int-U	3		
		methamphetamine	1	1						
3308ai	42 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		hyperthermia	2	2						
3309ai	42 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3310ai	42 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		phenylpropanolamine	2	2						
		buprenorphine	3	3						
3311ai	42 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3312ai	43 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
3313ai	43 y F				U	Unk	Int-A	1		
		amphetamine	1	1						
		methadone	2	2						
		phencyclidine	3	3						
		benzodiazepine	4	4						
3314ai	43 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		narcotic, N.O.S.	2	2						
3315ai	43 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
3316ai	43 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
3317ai	43 y M				U	Unk	Unt-U	3		
		methamphetamine	1	1						
3318ai	43 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
3319h	43 y M				U	Ingst+ Inhal+ Aspir+ Unk	Int-A	2		
		amphetamine (hallucinogenic), cathinone	1	1						
		hydrocarbon, fluorinated	2	2						
		stimulant/street drug, N.O.S	3	3						
3320ai	43 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3321ai	43 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		Non Drug Substance (N.O.S.)	2	2						
3322ai	44 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3323ai	44 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		quetiapine	2	2						
3324h	44 y F				A	Ingst+ Unk	Int-U	3		
		methamphetamine	1	1						
3325ai	44 y F				U	Unk	Int-A	3		
		cocaine	1	1						
		phencyclidine	2	2						
3326ai	44 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
3327ai	44 y M				U	Unk	Unt-M	1		
		cocaine	1	1						
		fentanyl, N.O.S.	2	2						
		clonazepam	3	3						
3328ai	44 y M				U	Unk	Unt-M	1		
		methamphetamine	1	1						
		heroin	2	2						
3329ai	44 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3330ai	44 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
		marijuana	3	3						
3331ai	44 y M				U	Unk	Int-A	3		
		cocaine	1	1						
		ethanol	2	2						
3332ai	44 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3333ai	44 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
		paliperidone	3	3						
3334ai	44 y F				U	Unk	Int-U	2		
		methamphetamine	1	1						
		ethanol	2	2						
3335ai	44 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
3336ph	44 y F				U	Ingst+ Inhal+ Par	Int-A	2		
		methamphetamine	1	1						
		marijuana	2	2						
3337ai	44 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hyperthermia	2	2						
3338ai	44 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		gabapentin	2	2						
3339ai	45 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3340ai	45 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		nortriptyline	2	2						
		diphenhydramine	3	3						
3341h	45 y F				A/C	Ingst	Int-S	2		
		lisdexamfetamine (ER)	1	1						
		ethanol	2	2						
3342ai	45 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		ethanol	2	2						
3343ai	45 y F				A	Unk	Int-A	3		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		methamphetamine	1	1						
3344ai	45 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		ethanol	2	2						
3345ai	45 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3346ai	45 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		carbamazepine	2	2						
		olanzapine	3	3						
3347ph	45 y M				U	Ingst	Int-A	2		
		methylenedioxymethamphetamine (MDMA)	1	1						
		marijuana	2	2						
3348ai	45 y M				U	Unk	Int-U	2		
		methamphetamine	1	1						
		amphetamine	2	2						
3349ai	45 y M				U	Unk	Int-U	3		
		methamphetamine	1	1						
		ethanol	2	2						
3350ai	45 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		hyperthermia	2	2						
3351ai	45 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		hyperthermia	2	2						
3352a	45 y M				U	Ingst	Int-S	1		
		chlorophenhylpiperazine	1	1					mcpp (meta-chlorophenylpiperazine)	3436 ng/mL In Vitreous @ Autopsy
		propranolol	2	2					propranolol	210.25 mcg/mL In Vitreous @ Autopsy
		duloxetine (ER)	3	3					duloxetine	4954 ng/mL In Vitreous @ Autopsy
		clonazepam	4	4					7-aminoclonazepam	114 ng/mL In Vitreous @ Autopsy
		clonazepam	4	4					7-aminoclonazepam	43.9 ng/mL In Blood (unspecified) @ Unknown
		gabapentin	5	5					gabapentin	23.5 mcg/mL In Blood (unspecified) @ Unknown
		gabapentin	5	5					gabapentin	24.1 mcg/mL In Vitreous @ Autopsy
		trazodone	6	6					trazodone	17.2 ng/mL In Vitreous @ Autopsy
		diphenhydramine	7	7					diphenhydramine	946 ng/mL In Vitreous @ Autopsy
		hydroxyzine	8	8					hydroxyzine	42.6 ng/mL In Vitreous @ Autopsy
		ziprasidone	9	9						
3353ha	45 y M				U	Ingst+ Unk	Int-U	2		
		methamphetamine	1	1					methamphetamine	180 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	1	1					amphetamine	27 ng/mL In Blood (unspecified) @ Unknown
		amphetamine	2	2						
3354ai	46 y M				U	Unk	Unk	1		
		methamphetamine	1	1						
		tramadol	2	2						
		oxycodone	3	3						
		hydrocodone	4	4						
		citalopram	5	5						
		alprazolam	6	6						
3355ai	46 y M				U	Unk	Int-A	1		
		phencyclidine	1	1						
		ethanol	2	2						
3356ai	46 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3357ai	46 y F				U	Unk	Int-A	3		
		methamphetamine	1	1						
3358ai	46 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3359pha	46 y M				A	Ingst+ Inhal	Int-A	1		
		nitrites (amyl-butyl)	1	1					methemoglobin	77 % In Blood (unspecified) @ Unknown
3360ai	46 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		morphine	2	2						
		hydromorphone	3	3						
3361ai	46 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		fentanyl, N.O.S.	2	2						
		diphenhydramine	3	3						
3362ai	46 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		trazodone	2	2						
		ethanol	3	3						
3363ai	46 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		hyperthermia	2	2						
3364ai	46 y M				U	Unk	Int-U	3		
		methamphetamine	1	1						
3365ai	46 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3366ai	47 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3367ai	47 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hydromorphone	2	2						
3368ai	47 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
		marijuana	2	2						
3369ai	47 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana	2	2						
3370ai	47 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		cyclobenzaprine	2	2						
		amitriptyline	3	3						
3371ai	47 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		methamphetamine	2	2						
		fentanyl, N.O.S.	3	3						
		morphine	4	4						
		trazodone	5	5						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
3372ai	47 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3373ai	47 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		hyperthermia	2	2						
		lamotrigine	3	3						
3374ai	47 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3375pha	47 y M				U	Ingst+ Unk	Int-A	1		
		cocaine	1	1					cocaine	0.06 mg/L In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.02 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.03 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.06 % (wt/Vol) In Vitreous @ Autopsy
		ethanol	2	2					ethanol	0.14 % (wt/Vol) In Blood (unspecified) @ Autopsy
		fentanyl	3	3					fentanyl	0.003 mg/L In Blood (unspecified) @ Autopsy
		fentanyl	3	3					fentanyl	0.007 mg/L In Blood (unspecified) @ Autopsy
		hydroxyzine	4	4					hydroxyzine	0.09 mg/L In Blood (unspecified) @ Autopsy
3376ai	47 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3377ai	47 y M				U	Ingst+ Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
3378ha	47 y M				A	Ingst+ Par	Int-M	3		
		methamphetamine	1	1						
		fentanyl (non-prescription N.O.S.)	2	2						
		heroin	3	3						
		propofol	4	4						
3379ai	47 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3380ai	48 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hydrocodone	2	2						
		ethanol	3	3						
3381ai	48 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3382ai	48 y M				U	Unk	Unt-M	1		
		methamphetamine	1	1						
3383ai	48 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
3384i	48 y M				U	Unk	Int-A	1		
		cocaine	1	1						
3385ha	48 y M				U	Unk	Int-A	1		
		amphetamine	1	1						
		hyperthermia	2	2						
		narcotic, N.O.S.	3	3						
		marijuana	4	4						
3386ai	48 y F				U	Unk	Int-U	3		
		methamphetamine	1	1						
		marijuana	2	2						
3387ai	48 y M				U	Unk	Int-A	2		
		amphetamine	1	1						
		narcotic, N.O.S.	2	2						
		benzodiazepine	3	3						
3388ai	48 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hyperthermia	2	2						
3389h	48 y M				A/C	Ingst+ Par	Int-A	2		
		methamphetamine	1	1						
3390h	48 y M				U	Ingst	Int-U	2		
		methamphetamine	1	1						
3391ai	48 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3392ai	48 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3393ai	48 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		Non Drug Substance (N.O.S.)	2	2						
3394ai	48 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		hyperthermia	2	2						
3395ai	49 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3396ai	49 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		morphine	2	2						
		marijuana	3	3						
3397ai	49 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		bupropion	2	2						
3398ai	49 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
3399ai	49 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3400ai	49 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3401ai	49 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
3402ai	49 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3403pha	49 y M				A	Inhal+ Unk	Int-A	1		
		methamphetamine	1	1					amphetamine	40 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	1	1					methamphetamine	430 ng/mL In Blood (unspecified) @ Autopsy
		toluene diisocyanate	2	2						
3404ai	49 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
		marijuana, N.O.S.	3	3						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
3405ai	49 y M				U	Unk	Int-U	3		
		methamphetamine	1	1						
		ethanol	2	2						
3406ai	49 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		hyperthermia	2	2						
3407ai	49 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		ethanol	2	2						
3408ai	49 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3409ai	50 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		cocaine	2	2						
		marijuana	3	3						
3410ai	50 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		fentanyl, N.O.S.	2	2						
3411a	50 y F				U	Ingst	Int-A	2		
		methamphetamine	1	1						
		bupropion	2	2						
		budesonide	3	3						
3412ai	50 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		bupropion	2	2						
		gabapentin	3	3						
3413ai	50 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
3414ai	50 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		diphenhydramine	2	2						
3415ha	50 y M				A/C	Unk	Int-A	2		
		methamphetamine	1	1					methamphetamine	75 ng/mL In Blood (unspecified) @ Unknown
		gabapentin	2	2					gabapentin	1 mg/L In Blood (unspecified) @ Unknown
3416ai	50 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3417ai	50 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3418ai	50 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		hyperthermia	2	2						
		bupropion	3	3						
3419ai	50 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		hyperthermia	2	2						
3420ai	50 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		hyperthermia	2	2						
3421ai	50 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
3422ai	50 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3423ai	50 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3424ai	50 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hyperthermia	2	2						
3425ph	50 y F				A	Inhal	Int-A	1		
		nitrites (amyl-butyl)	1	1					methemoglobin	90.3 % In Whole Blood @ Unknown
3426pha	50 y M				A	Unk	Int-U	1		
		cocaine	1	1					cocaine	0.78 mg/L In Blood (unspecified) @ 15 m (pe)
		cocaine	1	1					benzoylecognine	4 mg/L In Blood (unspecified) @ 15 m (pe)
3427ai	51 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3428ai	51 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3429ai	51 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana	2	2						
		gabapentin	3	3						
3430ai	51 y M				U	Unk	Unt-M	1		
		methamphetamine	1	1						
		marijuana	2	2						
3431ai	51 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3432ai	51 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
3433ai	51 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3434ai	51 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		theophylline	2	2						
		benztropine	3	3						
3435ai	51 y M				U	Unk	Int-A	3		
		cocaine	1	1						
		marijuana, N.O.S.	2	2						
3436ai	51 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		diazepam	2	2						
3437ai	51 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		hyperthermia	2	2						
3438ai	51 y M				U	Unk	Int-U	3		
		amphetamine	1	1						
		butyrophenone	2	2						
3439ai	51 y M				U	Unk	Int-U	3		
		methamphetamine	1	1						
		amphetamine	2	2						
3440ai	51 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		ethanol	2	2						
3441ai	51 y M				U	Unk	Int-A	2		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		methamphetamine	1	1						
		ethanol	2	2						
3442hai	51 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		marijuana, N.O.S.	2	2						
		hyperthermia	3	3						
3443ai	51 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		risperidone	2	2						
3444ai	51 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3445ai	51 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3446h	51 y M				U	Ingst+ Unk	Int-A	2		
		amphetamine	1	1						
		morphine	2	2						
3447ai	52 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3448ai	52 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3449hai	52 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		morphine	2	2						
		hydroxyzine	3	3						
3450pai	52 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3451i	52 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		ethanol	2	2						
3452ai	52 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana	2	2						
3453ai	52 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		marijuana, N.O.S.	2	2						
3454ai	52 y M				U	Unk	Int-A	1		
		cocaine	1	1						
3455ai	52 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		narcotic, N.O.S.	2	2						
		cocaine	3	3						
3456ai	52 y M				U	Ingst+ Unk	Int-A	2		
		amyl nitrate	1	1						
		ethanol	2	2						
3457ai	52 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3458ai	52 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		Non Drug Substance (N.O.S.)	2	2						
3459ai	52 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3460i	52 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		ethanol	2	2						
3461ai	52 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
		hyperthermia	3	3						
3462ai	52 y M				U	Unk	Int-U	1		
		methamphetamine	1	1						
3463ai	52 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana	2	2						
3464ai	52 y M				U	Unk	Int-U	1		
		methamphetamine	1	1						
3465h	52 y M				A	Ingst	Int-A	2		
		stimulant/street drug, N.O.S	1	1						
		isopropanol	2	2						
3466ai	52 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3467ha	53 y M				A	Ingst	Int-S	2		
		amphetamine/dextroamphetamine	1	1						
		clonidine	2	2						
		benzodiazepine	3	3					lorazepam	29 ng/mL In Blood (unspecified) @ Unknown
		ethanol	4	4						
3468h	53 y M				A	Unk	Int-A	2		
		amphetamine	1	1						
3469ai	53 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3470ai	53 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		marijuana	2	2						
3471ai	53 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3472ai	53 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3473ai	53 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		methadone	2	2						
3474ai	53 y F				U	Unk	Int-U	3		
		methamphetamine	1	1						
3475ai	53 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		fentanyl, N.O.S.	2	2						
		hyperthermia	3	3						
3476ai	53 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		marijuana, N.O.S.	2	2						
3477ai	53 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		cocaine	2	2						
3478ai	53 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hyperthermia	2	2						
3479ai	54 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
3480ai	54 y M				U	Unk	Int-A	2		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		methamphetamine	1	1						
3481ai	54 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		diphenhydramine	2	2						
		tramadol	3	3						
3482ai	54 y F				U	Unk	Int-S	1		
		methamphetamine	1	1						
3483ai	54 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
		marijuana	3	3						
3484ai	54 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3485ai	54 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3486ai	54 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3487ai	54 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3488h	54 y M				U	Ingst	Int-U	2		
		methamphetamine	1	1						
3489hai	54 y M				U	Unk	Unk	1		
		methamphetamine	1	1						
3490pai	54 y M				U	Ingst+ Unk	Int-A	1		
		cocaine	1	1					cocaine	100 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	1	1					benzoylecognine	410 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	1	1					cocaethylene	97 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl analog (despropionyl fentanyl)	2	2					fentanyl	22 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	167 mcg/dL In Blood (unspecified) @ Autopsy
		methadone	4	4						
		alprazolam	5	5						
3491ai	54 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
3492ai	54 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		risperidone	2	2						
		hyperthermia	3	3						
3493ai	54 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana	2	2						
3494ai	54 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		fentanyl, N.O.S.	2	2						
3495p	54 y M				A	Inhal	Int-A	2		
		cocaine	1	1						
3496ai	55 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ephedrine	2	2						
		cyclobenzaprine	3	3						
3497ai	55 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		diphenhydramine	2	2						
3498ai	55 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
3499ai	55 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
3500ai	55 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		ethanol	2	2						
		isopropanol	3	3						
3501h	55 y M				U	Unk	Unk	2		
		cocaine	1	1						
3502ai	55 y F				U	Unk	Int-U	2		
		methamphetamine	1	1						
		marijuana	2	2						
3503ai	55 y M				U	Ingst+ Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
3504ai	55 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		oxycodone	2	2						
3505ai	55 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3506ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3507ai	56 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		lorazepam	2	2						
		marijuana	3	3						
3508ai	56 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
3509ai	56 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
3510ai	56 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
3511ai	56 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
3512ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
		marijuana	3	3						
3513ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		beta blocker	2	2						
		bupropion	3	3						
3514ai	56 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3515ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3516ai	56 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		morphine	2	2						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
3517ai	56 y M				C	Unk	Int-A	3		
		methamphetamine	1	1						
3518ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		buprenorphine	2	2						
		gabapentin	3	3						
		diphenhydramine	4	4						
3519ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
3520ai	56 y M				U	Unk	Int-A	2		
		cocaine	1	1						
3521h	56 y F				A	Ingst	Int-A	2		
		Mitragyna speciosa korthals	1	1						
3522ph	56 y M				A	Inhal	Int-A	2		
		THC homologs	1	1						
3523ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hyperthermia	2	2						
3524ai	56 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3525ai	56 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		methadone	2	2						
		hyperthermia	3	3						
3526ai	56 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		methadone	2	2						
3527ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hyperthermia	2	2						
		ethanol	3	3						
3528i	56 y M				U	Ingst+ Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
		hyperthermia	3	3						
3529ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3530ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3531ai	56 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		methadone	2	2						
		alprazolam	3	3						
3532ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3533ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3534ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3535ai	56 y F				U	Unk	Int-A	3		
		methamphetamine	1	1						
		phenylpropanolamine	2	2						
3536ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hyperthermia	2	2						
3537ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hyperthermia	2	2						
3538ai	57 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana	2	2						
3539ai	57 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
3540ai	57 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3541ai	57 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
3542ai	57 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3543ai	57 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		clonazepam	2	2						
		quetiapine	3	3						
3544ai	57 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		citalopram	2	2						
		ethanol	3	3						
3545ai	57 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3546ai	57 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3547ai	57 y F				U	Unk	Int-A	2		
		cocaine	1	1						
3548ai	57 y F				C	Unk	Int-A	3		
		methamphetamine	1	1						
3549ai	57 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3550ai	57 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		ethanol	2	2						
3551ai	57 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		hyperthermia	2	2						
3552ai	57 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3553ai	57 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		phenylpropanolamine	2	2						
3554ai	57 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		Non Drug Substance (N.O.S.)	2	2						
3555ai	57 y M				U	Unk	Int-M	3		
		methamphetamine	1	1						
3556ph	57 y M				A	Ingst+ Inhal	Int-A	2		
		cocaine	1	1						
		ethanol	2	2					ethanol	114 mg/dL In Blood (unspecified)

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										@ Unknown
3557ai	58 y F				U	Par	Int-A	1		
		methamphetamine	1	1						
3558hai	58 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		methadone	2	2						
3559ai	58 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana	2	2						
3560ai	58 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3561ai	58 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		amphetamine	2	2						
		ethanol	3	3						
3562ai	58 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		oxycodone	2	2						
		cyclobenzaprine	3	3						
3563ai	58 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3564ai	58 y F				U	Unk	Int-A	1		
		cocaine	1	1						
		diphenhydramine	2	2						
		pseudoephedrine	3	3						
3565ai	58 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3566ai	58 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3567ai	58 y M				U	Unk	Int-A	1		
		cocaine	1	1						
3568ai	58 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		ethanol	2	2						
3569ai	58 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3570ai	58 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana	2	2						
3571ai	58 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3572ai	58 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3573ai	58 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		fluoxetine	2	2						
3574ai	58 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
		marijuana, N.O.S.	3	3						
3575ai	58 y F				U	Unk	Int-A	2		
		cocaine	1	1						
3576ai	58 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		hyperthermia	2	2						
		ethanol	3	3						
3577ai	58 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		hyperthermia	2	2						
3578ai	58 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hyperthermia	2	2						
3579ai	58 y M				A/C	Par	Int-A	2		
		marijuana	1	1						
3580ai	58 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana, N.O.S.	2	2						
3581ai	58 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3582ai	58 y M				U	Par	Int-A	1		
		methamphetamine	1	1						
3583ai	58 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3584ai	58 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3585ai	58 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3586ai	58 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3587ai	59 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
3588ai	59 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
3589ai	59 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		marijuana	2	2						
3590ai	59 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
		marijuana	2	2						
3591ai	59 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
3592ai	59 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		quetiapine	2	2						
		hydroxyzine	3	3						
3593ai	59 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
3594ai	59 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
		marijuana	2	2						
3595ai	59 y F				U	Unk	Int-A	3		
		methamphetamine	1	1						
3596ai	59 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		morphine	2	2						
		buprenorphine	3	3						
3597ai	59 y M				U	Unk	Int-A	1		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		methamphetamine	1	1						
3598ai	59 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3599ai	59 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
		marijuana, N.O.S.	2	2						
3600ai	59 y M				C	Unk	Int-A	2		
		methamphetamine	1	1						
3601ai	59 y M				U	Unk	Int-U	3		
		methamphetamine	1	1						
		morphine	2	2						
		heroin	3	3						
		methadone	4	4						
3602ai	59 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3603ai	59 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3604ai	59 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3605ai	59 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3606ai	59 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3607ai	59 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
3608ai	59 y M				U	Ingst+ Unk	Int-A	1		
		cocaine	1	1						
		ethanol	2	2						
		marijuana	3	3						
3609ai	59 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		Non Drug Substance (N.O.S.)	2	2						
3610ai	60 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		morphine	2	2						
		trazodone	3	3						
3611ai	60 y F				U	Unk	Int-A	3		
		methamphetamine	1	1						
3612ai	60 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana	2	2						
3613h	60 y M				A	Inhal	Int-A	3		
		cocaine	1	1						
3614pha	60 y M				U	Inhal	Int-U	1		
		cocaine	1	1						
		fentanyl	2	2						
3615ai	60 y F				U	Unk	Int-A	3		
		methamphetamine	1	1						
		oxycodone	2	2						
		Non Drug Substance (N.O.S.)	3	3						
3616ai	60 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
3617ai	60 y F				U	Unk	Int-A	1		
		phencyclidine	1	1						
		diphenhydramine	2	2						
		trazodone	3	3						
3618ai	60 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		lorazepam	2	2						
		alprazolam	3	3						
3619ai	60 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		phenylethylamine	2	2						
		hyperthermia	3	3						
3620ai	60 y M				U	Unk	Int-U	2		
		methamphetamine	1	1						
		heroin	2	2						
3621ai	60 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
		hyperthermia	2	2						
3622ha	60 y M				A	Ingst	Int-S	2		
		cocaine	1	1						
		methanol	2	2						
3623ai	61 y M				U	Unk	Int-A	1		
		cocaine	1	1						
3624ai	61 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3625ai	61 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3626ai	61 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		ethanol	2	2						
3627ai	61 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
3628ai	61 y M				U	Unk	Unt-M	1		
		amphetamine	1	1						
		ethanol	2	2						
		methamphetamine	3	3						
3629ai	61 y M				U	Unk	Unt-M	2		
		methamphetamine	1	1						
3630ai	61 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		oxycodone	2	2						
		quetiapine	3	3						
3631ai	61 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		oxycodone	2	2						
3632ai	61 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hydroxyzine	2	2						
		ethanol	3	3						
3633ai	61 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana	2	2						
3634ai	61 y M				C	Unk	Int-A	3		
		methamphetamine	1	1						
3635ai	61 y M				U	Unk	Int-A	3		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		methamphetamine	1	1						
3636ai	61 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		levorphanol	2	2						
3637ai	61 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3638ai	61 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		hyperthermia	2	2						
3639ai	61 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		citalopram	2	2						
3640ai	61 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		fentanyl, N.O.S.	2	2						
3641ai	62 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
3642ai	62 y M				U	Unk	Int-M	3		
		methamphetamine	1	1						
3643ai	62 y M				U	Ingst+ Unk	Int-A	3		
		methamphetamine	1	1						
		ethanol	2	2						
3644ai	62 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
3645ai	62 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana	2	2						
3646ai	62 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		Non Drug Substance (N.O.S.)	2	2						
3647ai	62 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		promethazine	2	2						
3648ai	62 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
3649ai	62 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3650ai	63 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3651ai	63 y M				U	Unk	Unt-M	2		
		methamphetamine	1	1						
3652ai	63 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3653ai	63 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		methadone	2	2						
		hydromorphone	3	3						
3654ai	63 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana	2	2						
3655ai	63 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		amphetamine	2	2						
3656ai	63 y M				A	Unk	Int-A	1		
		methamphetamine	1	1						
3657ai	63 y M				U	Unk	Int-S	1		
		methamphetamine	1	1						
		marijuana	2	2						
3658ai	63 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3659ai	63 y F				U	Unk	Unk	1		
		methamphetamine	1	1						
		nortriptyline	2	2						
		oxycodone	3	3						
		citalopram	4	4						
3660ai	64 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3661ai	64 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		acetaminophen	2	2						
3662ai	64 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
		marijuana	3	3						
3663ai	64 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
3664ai	64 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3665ai	64 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
3666ai	64 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3667ai	64 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ephedrine	2	2						
		nifedipine	3	3						
3668ai	64 y F				U	Unk	Int-U	3		
		methamphetamine	1	1						
3669ai	64 y F				U	Unk	Int-A	3		
		methamphetamine	1	1						
3670ai	64 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
		hyperthermia	3	3						
3671ai	64 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hyperthermia	2	2						
3672ai	64 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		amitriptyline	2	2						
		hyperthermia	3	3						
3673ai	64 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3674h	64 y F				A	Inhal+ Unk	Int-S	2		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		cocaine	1	1						
		drug, N.O.S.	2	2						
3675ai	65 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
		doxylamine	3	3						
3676ai	65 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		Non Drug Substance (N.O.S.)	2	2						
3677i	65 y M				U	Unk	Int-A	1		
		cocaine	1	1						
3678ai	65 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana	2	2						
3679ai	65 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
3680ai	65 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		methadone	2	2						
3681ha	65 y F				A	Ingst	Int-U	1		
		methamphetamine	1	1					methamphetamine	540 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	1	1					amphetamine	64 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	2	2					alprazolam	11 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	3	3					morphine (free)	5.6 ng/mL In Blood (unspecified) @ Unknown
		trazodone	4	4						
3682ai	65 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3683ai	66 y M				U	Unk	Int-A	1		
		phencyclidine	1	1						
3684ai	66 y M				U	Unk	Unt-M	3		
		methamphetamine	1	1						
		amphetamine	2	2						
3685ai	66 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		morphine	2	2						
		diazepam	3	3						
		lorazepam	4	4						
3686ai	66 y M				U	Unk	Int-A	3		
		marijuana	1	1						
3687ai	66 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
3688h	66 y M				A/C	Inhal+ Par	Int-A	3		
		methamphetamine	1	1						
		phenytoin	2	2					phenytoin	30 mcg/mL In Blood (unspecified) @ 15 d (pe)
		phenytoin	2	2					phenytoin	38 mcg/mL In Blood (unspecified) @ 14 d (pe)
		phenytoin	2	2					phenytoin	40 mcg/mL In Blood (unspecified) @ 12 d (pe)
		phenytoin	2	2					phenytoin	40 mcg/mL In Blood (unspecified) @ 13 d (pe)
		phenytoin	2	2					phenytoin	40 mcg/mL In Blood (unspecified) @ Unknown
3689ai	66 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
3690ai	66 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
3691ai	66 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3692ai	66 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3693ai	66 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		Non Drug Substance (N.O.S.)	2	2						
3694ai	67 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3695ai	67 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3696ai	67 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
3697ai	67 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3698ai	68 y M				U	Unk	Int-A	3		
		cocaine	1	1						
3699ai	68 y M				U	Unk	Unk	1		
		methamphetamine	1	1						
		heroin	2	2						
		ethanol	3	3						
3700ai	68 y M				U	Unk	Int-A	3		
		cocaine	1	1						
		ethanol	2	2						
		marijuana, N.O.S.	3	3						
3701ai	69 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3702ai	69 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3703ai	69 y F				U	Unk	Unt-M	2		
		cocaine	1	1						
		marijuana	2	2						
		caffeine	3	3						
3704ai	69 y F				U	Unk	Unt-M	2		
		amphetamine	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
3705ai	69 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		diphenhydramine	2	2						
		marijuana	3	3						
3706ai	69 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		marijuana	2	2						
3707ai	69 y M				U	Unk	Int-A	1		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		methamphetamine	1	1						
		ethanol	2	2						
		hyperthermia	3	3						
3708ha	71 y M				U	Unk	Int-A	3		
		cocaine	1	1						
		narcotic, N.O.S.	2	2						
		ethanol	3	3						
3709ai	72 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
3710ai	72 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		methadone	2	2						
		ethanol	3	3						
3711ai	72 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		Non Drug Substance (N.O.S.)	2	2						
3712ai	73 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		cocaine	2	2						
		ethanol	3	3						
3713ai	73 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		cyclobenzaprine	2	2						
		ethanol	3	3						
3714ai	73 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
3715ai	77 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		fentanyl, N.O.S.	2	2						
		ethanol	3	3						
3716ai	83 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		hyperthermia	2	2						
3717ai	88 y F				U	Unk	Unk	3		
		methamphetamine	1	1						
3718ai	1 d M				U	Unk	Unt-M	2		
		amphetamine	1	1						
		methamphetamine	2	2						
3719ai	15 m F				U	Unk	Unt-G	1		
		methamphetamine	1	1						
3720ai	Unknown adult (>=20 yrs) F				U	Unk	Unk	2		
		cocaine	1	1						
		ethanol	2	2						
3721p	Unknown age M				A	Inhal	Int-A	2		
		cocaine	1	1						
See Also case 2, 7, 16, 25, 35, 40, 42, 52, 63, 72, 75, 87, 140, 155, 232, 255, 289, 317, 386, 391, 418, 468, 490, 494, 496, 502, 503, 510, 514, 550, 552, 556, 560, 562, 569, 575, 576, 580, 582, 587, 589, 591, 592, 593, 594, 595, 597, 605, 606, 608, 610, 612, 613, 616, 618, 621, 624, 625, 626, 627, 628, 629, 630, 631, 632, 635, 636, 639, 641, 642, 643, 644, 645, 650, 656, 658, 661, 667, 669, 670, 671, 674, 676, 677, 679, 681, 690, 691, 693, 694, 695, 696, 701, 702, 704, 705, 710, 714, 716, 719, 724, 726, 727, 728, 729, 730, 733, 736, 738, 739, 740, 742, 743, 744, 746, 748, 753, 754, 756, 761, 763, 767, 768, 771, 773, 776, 778, 779, 783, 784, 788, 789, 790, 792, 793, 794, 797, 799, 800, 802, 808, 810, 813, 814, 815, 816, 821, 822, 824, 827, 828, 829, 832, 833, 834, 835, 837, 848, 850, 852, 854, 856, 858, 859, 867, 868, 871, 875, 876, 878, 879, 880, 882, 890, 891, 900, 902, 905, 906, 908, 909, 913, 916, 917, 919, 920, 923, 925, 929, 930, 938, 939, 944, 945, 946, 947, 950, 951, 955, 957, 959, 960, 961, 963, 966, 968, 972, 973, 979, 981, 985, 987, 990, 995, 996, 998, 1000, 1001, 1005, 1007, 1009, 1013, 1021, 1022, 1026, 1027, 1030, 1032, 1035, 1039, 1042, 1048, 1050, 1051, 1053, 1060, 1061, 1068, 1072, 1076, 1081, 1082, 1087, 1090, 1091, 1093, 1094, 1095, 1102, 1104, 1106, 1108, 1109, 1111, 1112, 1118, 1119, 1122, 1124, 1133, 1139, 1140, 1142, 1143, 1144, 1145, 1147, 1149, 1152, 1155, 1157, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1171, 1172, 1173, 1174, 1175, 1179, 1181, 1186, 1187, 1188, 1191, 1193, 1194, 1195, 1200, 1211, 1219, 1220, 1221, 1223, 1225, 1226, 1232, 1234, 1237, 1238, 1240, 1242, 1243, 1244, 1245, 1247, 1250, 1251, 1255, 1258, 1262, 1263, 1264, 1265, 1267, 1272, 1273, 1274, 1277, 1282, 1284, 1285, 1294, 1296, 1306, 1307, 1309, 1312, 1314, 1316, 1317, 1321, 1323, 1324, 1330, 1331, 1334, 1335, 1339, 1343, 1344, 1347, 1354, 1357, 1358, 1360, 1361, 1362, 1365, 1368, 1369, 1370, 1374, 1376, 1381, 1382, 1383, 1384, 1387, 1390, 1391, 1392, 1395, 1397, 1400, 1404, 1405, 1409, 1412, 1415, 1417, 1424, 1425, 1430, 1431, 1433, 1434, 1436, 1437, 1438, 1439, 1442, 1443, 1444, 1446, 1453, 1456, 1460, 1461, 1462, 1463, 1464, 1469, 1471, 1472, 1477, 1483, 1484, 1489, 1493, 1494, 1496, 1497, 1502, 1505, 1506, 1507, 1509, 1513, 1517, 1518, 1521, 1523, 1530, 1532, 1533, 1544, 1546, 1547, 1548, 1553, 1555, 1558, 1564, 1569, 1572, 1573, 1574, 1583, 1586, 1587, 1591, 1592, 1594, 1598, 1601, 1605, 1611, 1615, 1616, 1617, 1618, 1619, 1621, 1624, 1626, 1630, 1631, 1633, 1636, 1638, 1650, 1652, 1659, 1662, 1665, 1666, 1668, 1670, 1673, 1674, 1676, 1684, 1688, 1693, 1695, 1696, 1699, 1702, 1703, 1722, 1724, 1733, 1735, 1736, 1740, 1745, 1749, 1757, 1764, 1766, 1770, 1772, 1773, 1774, 1778, 1782, 1783, 1786, 1787, 1789, 1790, 1791, 1792, 1793, 1796, 1797, 1798, 1800, 1809, 1810, 1812, 1813, 1816, 1818, 1825, 1827, 1829, 1830, 1831, 1836, 1840, 1841, 1842, 1843, 1845, 1850, 1861, 1862, 1863, 1864, 1865, 1866, 1868, 1870, 1876, 1883, 1884, 1885, 1891, 1892, 1902, 1911, 1912, 1918, 1919, 1921, 1922, 1924, 1930, 1932, 1939, 1943, 1945, 1946, 1948, 1952, 1953, 1958, 1959, 1960, 1966, 1968, 1969, 1971, 1972, 1975, 1979, 1981, 1983, 1986, 1989, 1992, 1999, 2001, 2005, 2007, 2010, 2018, 2022, 2023, 2030, 2032, 2034, 2036, 2040, 2041, 2046, 2052, 2054, 2056, 2057, 2058, 2061, 2078, 2079, 2083, 2084, 2086, 2088, 2090, 2091, 2093, 2097, 2104, 2112, 2117, 2120, 2121, 2128, 2132, 2134, 2144, 2148, 2155, 2156, 2160, 2172, 2176, 2180, 2182, 2188, 2197, 2199, 2201, 2204, 2210, 2217, 2230, 2231, 2232, 2242, 2257, 2266, 2273, 2276, 2282, 2284, 2299, 2326, 2328, 2330, 2402, 2416, 2419, 2420, 2423, 2427, 2437, 2438, 2439, 2441, 2443, 2470, 2475, 2481, 2503, 2509, 2519, 2544, 2547, 2552, 2555, 2568, 2594, 2602, 2632, 2644, 2655, 2684, 2686, 2757, 2906, 2922, 2980, 2995, 2998, 3000, 3021, 3028, 3048, 3751, 3764, 3773, 3817, 3833								
Topical Preparations										
3722ph	68 y F				A	Ingst	Unt-G	1		
		diaper (disposable)	1	1						
Unknown Drug										
3723h	15 y M				U	Unk	Int-S	2		
		drug, N.O.S.	1	1						
3724ph	15 y M				A	Ingst	Int-A	2		
		drug, N.O.S.	1	1						
3725ai	15 y M				U	Par+ Unk	Int-A	2		
		drug, N.O.S.	1	1						
3726ai	16 y M				A	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3727ph	16 y M				U	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3728ai	17 y M				U	Unk	Unk	2		
		drug, N.O.S.	1	1						
3729pha	17 y M				U	Ingst+ Unk	Int-S	2		
		drug, N.O.S.	1	1					etizolam	25.9 ng/mL In Blood (unspecified) @ Unknown
3730h	18 y F				A	Ingst	Int-S	2		
		drug, N.O.S.	1	1						
3731ai	18 y M				U	Par	Int-A	2		
		drug, N.O.S.	1	1						
3732ai	19 y M				U	Unk	Unk	2		
		drug, N.O.S.	1	1						
3733h	19 y M				A	Ingst	Int-S	2		
		drug, N.O.S.	1	1						
3734ph	20 y M				U	Unk	Unk	3		
		drug, N.O.S.	1	1						
3735ai	20 y F				U	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3736ai	21 y F				U	Unk	Int-A	1		
		drug, N.O.S.	1	1						
3737ph	22 y M				A	Ingst	Int-S	2		
		drug, N.O.S.	1	1						
3738ai	23 y F				C	Unk	Int-A	3		
		drug, N.O.S.	1	1						
3739	23 y F				U	Unk	Unk	3		
		drug, N.O.S.	1	1						
3740ai	23 y M				U	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3741p	23 y F				A	Inhal	Int-A	2		
		drug, N.O.S.	1	1						
		fentanyl	2	2						
3742ai	24 y M				A	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3743ai	24 y M				U	Unk	Int-A	2		
		drug, N.O.S.	1	1						

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
3744ph	24 y M				U	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3745ai	25 y M				A	Unk	Int-S	2		
		drug, N.O.S.	1	1						
3746h	25 y M				A	Ingst	Int-A	2		
		drug, N.O.S.	1	1						
3747p	25 y F				A	Ingst	Unk	2		
		drug, N.O.S.	1	1						
3748ai	25 y M				A	Unk	Int-U	2		
		drug, N.O.S.	1	1						
3749ai	26 y M				U	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3750ai	26 y M				U	Unk	Unk	2		
		drug, N.O.S.	1	1						
3751ha	26 y M				U	Oth+ Unk	Int-A	2		
		drug, N.O.S.	1	1						
		heroin	2	2						
		marijuana	3	3						
		cocaine	4	4						
		amphetamine	5	5						
		narcotic, N.O.S.	6	6						
		benzodiazepine	7	7						
		buprenorphine	8	8						
3752ai	27 y F				C	Unk	Int-A	3		
		drug, N.O.S.	1	1						
3753pha	27 y M				U	Unk	Int-U	2		
		drug, N.O.S.	1	1						
		lidocaine	2	2						
3754ai	27 y M				U	Par	Int-A	2		
		drug, N.O.S.	1	1						
3755ai	28 y M				C	Unk	Int-A	2		
		drug, N.O.S.	1	1						
		narcotic, N.O.S.	2	2						
3756ai	28 y F				U	Unk	Unk	3		
		drug, N.O.S.	1	1						
3757ai	28 y M				A	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3758ph	28 y F				U	Ingst	Unk	3		
		drug, N.O.S.	2	1						
		ethanol	1	1					ethanol	32 mg/dL In Blood (unspecified) @ Unknown
3759ai	30 y M				U	Unk	Unk	2		
		drug, N.O.S.	1	1						
3760h	30 y M				U	Unk	Unk	2		
		drug, N.O.S.	1	1						
3761h	31 y M				U	Unk	Int-U	2		
		drug, N.O.S.	1	1						
3762ai	31 y M				U	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3763ai	31 y M				A	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3764h	32 y M				U	Unk	Int-A	2		
		drug, N.O.S.	1	1						
		marijuana	2	2						
		benzodiazepine	3	3						
		narcotic, N.O.S.	4	4						
3765ai	32 y M				U	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3766ai	32 y M				U	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3767ai	32 y M				A/C	Ingst+ Unk	Int-A	2		
		drug, N.O.S.	1	1						
		ethanol	2	2						
3768ph	32 y M				A	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3769ph	33 y M				U	Ingst+ Unk	Unk	2		
		drug, N.O.S.	1	1						
		ethanol	2	2						
3770ai	33 y M				U	Par	Int-A	2		
		drug, N.O.S.	1	1						
3771ai	33 y M				U	Ingst+ Unk	Int-U	2		
		drug, N.O.S.	1	1						
		buprenorphine/naloxone (sublingual tablet)	2	2						
3772ph	33 y M				A	Ingst	Int-S	2		
		drug, N.O.S.	1	1						
3773ph	33 y M				A	Unk	Unk	2		
		drug, N.O.S.	1	1						
		cocaine	2	2						
3774ai	33 y F				U	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3775ai	34 y M				U	Unk	Unk	2		
		drug, N.O.S.	1	1						
3776ai	34 y M				U	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3777p	34 y F				A	Ingst	Int-S	2		
		drug, N.O.S.	1	1						
		baclofen	2	2						
		prednisolone	3	3						
		lurasidone	4	4						
		levothyroxine	5	5						
3778ai	34 y M				A	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3779ai	35 y M				U	Unk	Int-U	2		
		drug, N.O.S.	1	1						
3780ai	35 y M				U	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3781ai	35 y M				U	Unk	Unk	2		
		drug, N.O.S.	1	1						
3782	35 y M				U	Ingst	Int-S	2		
		drug, N.O.S.	1	1						
3783ai	36 y M				U	Par	Int-A	2		
		drug, N.O.S.	1	1						
3784ai	37 y M				C	Unk	Int-A	3		
		drug, N.O.S.	1	1						
3785ai	37 y M				U	Inhal+ Par	Unk	2		
		drug, N.O.S.	1	1						
3786ph	37 y F				U	Ingst	Int-S	2		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		drug, N.O.S.	1	1						
3787ai	37 y M				A	Unk	Int-U	2		
		drug, N.O.S.	1	1						
3788ai	38 y M				U	Unk	Int-A	1		
		drug, N.O.S.	1	1						
3789ai	38 y M				U	Unk	Unk	2		
		drug, N.O.S.	1	1						
3790ai	39 y M				A	Unk	Unk	2		
		drug, N.O.S.	1	1						
3791ai	39 y M				U	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3792ai	39 y M				U	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3793ai	39 y M				U	Unk	Unk	3		
		drug, N.O.S.	1	1						
		viral disease (COVID-19-Confirmed)	2	2						
3794ai	39 y M				U	Unk	Int-A	3		
		drug, N.O.S.	1	1						
		hyperthermia	2	2						
3795ai	40 y F				A	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3796ai	40 y M				A	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3797	41 y M				U	Unk	Int-S	2		
		drug, N.O.S.	1	1						
3798ai	41 y M				U	Unk	Unk	2		
		drug, N.O.S.	1	1						
3799ai	41 y M				A	Unk	Int-U	2		
		drug, N.O.S.	1	1						
3800h	41 y F				A/C	Ingst	Int-S	2		
		drug, N.O.S.	1	1						
		benzodiazepine	2	2						
3801ai	41 y M				A	Par	Int-U	2		
		drug, N.O.S.	1	1						
3802ai	42 y M				U	Par	Int-A	2		
		drug, N.O.S.	1	1						
3803	42 y F				A	Ingst	Int-S	2		
		drug, N.O.S.	1	1						
		amlodipine	2	2						
		hydralazine	3	3						
3804ai	44 y M				U	Par	Int-A	2		
		drug, N.O.S.	1	1						
3805h	45 y M				U	Ingst	Int-S	2		
		drug, N.O.S.	1	1					ethanol	29 mg/dL In Blood (unspecified) @ Unknown
		drug, N.O.S.	1	1					acetaminophen (apap)	51 mcg/mL In Blood (unspecified) @ Unknown
		drug, N.O.S.	1	1					acetaminophen (apap)	65 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	2	2						
		sodium bicarbonate	3	3						
3806ai	46 y M				U	Unk	Int-A	3		
		drug, N.O.S.	1	1						
3807ai	46 y M				C	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3808ai	46 y M				U	Par	Int-A	2		
		drug, N.O.S.	1	1						
3809ha	46 y F				U	Unk	Int-A	3		
		drug, N.O.S.	1	1						
3810ai	47 y F				A	Unk	Unk	2		
		drug, N.O.S.	1	1						
3811ai	47 y M				U	Unk	Unk	2		
		drug, N.O.S.	1	1						
3812	47 y M				A	Ingst	Unk	2		
		drug, N.O.S.	1	1						
		acetaminophen	2	2						
3813ai	48 y M				A	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3814ai	48 y F				U	Par	Int-A	2		
		drug, N.O.S.	1	1						
3815ai	49 y M				C	Unk	Int-A	3		
		drug, N.O.S.	1	1						
3816ai	49 y M				C	Unk	Int-A	3		
		drug, N.O.S.	1	1						
3817ph	49 y M				A	Unk	Unk	2		
		drug, N.O.S.	1	1						
		cocaine	2	2						
3818ai	49 y F				C	Par	Int-A	1		
		drug, N.O.S.	1	1						
3819ai	49 y M				A	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3820ai	50 y M				U	Unk	Unk	2		
		drug, N.O.S.	1	1						
3821ai	50 y F				U	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3822ai	50 y M				U	Par	Int-A	2		
		drug, N.O.S.	1	1						
3823ai	52 y M				U	Unk	Int-S	1		
		drug, N.O.S.	1	1						
3824ai	52 y M				U	Unk	Int-A	3		
		drug, N.O.S.	1	1						
3825ai	52 y F				C	Unk	Int-A	3		
		drug, N.O.S.	1	1						
3826ai	54 y M				U	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3827ph	54 y M				U	Unk	Unk	2		
		drug, N.O.S.	1	1						
3828ai	54 y M				A	Unk	Unt-U	2		
		drug, N.O.S.	1	1						
3829ai	54 y M				A	Inhal	Unt-U	2		
		drug, N.O.S.	1	1						
3830ai	54 y M				A	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3831ph	55 y M				A	Ingst	Int-S	2		
		drug, N.O.S.	1	1						
3832ai	56 y M				U	Unk	Int-U	2		
		drug, N.O.S.	1	1						
3833ph	56 y M				U	Unk	Int-U	2		

(*continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		drug, N.O.S.	1	1						
		amphetamine	2	2						
3834ai	57 y M				U	Unk	Int-A	1		
		drug, N.O.S.	1	1						
3835ai	57 y F				U	Unk	Unk	2		
		drug, N.O.S.	1	1						
3836ai	57 y M				A	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3837ai	57 y F				U	Unk	Unk	2		
		drug, N.O.S.	1	1						
3838h	57 y M				A	Ingst	Int-A	3		
		drug, N.O.S.	1	1						
3839i	57 y M				A	Ingst	Int-S	3		
		drug, N.O.S.	1	1						
		ethanol	2	2						
3840ai	57 y M				C	Unk	Int-A	3		
		drug, N.O.S.	1	1						
3841h	58 y F				U	Ingst	Int-S	2		
		drug, N.O.S.	1	1						
3842ai	58 y M				A/C	Par+ Unk	Int-A	2		
		drug, N.O.S.	1	1						
3843ai	58 y F				A	Unk	Unk	2		
		drug, N.O.S.	1	1						
3844ai	58 y M				A	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3845pha	59 y F				A	Inhal	Int-A	3		
		drug, N.O.S.	1	1						
		ethanol	2	2						
3846ai	59 y M				A	Unk	Unk	2		
		drug, N.O.S.	1	1						
3847ai	60 y M				U	Unk	Unk	2		
		drug, N.O.S.	1	1						
3848ai	60 y M				A	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3849ai	61 y F				C	Unk	Int-A	3		
		drug, N.O.S.	1	1						
3850h	62 y F				A	Ingst+ Derm+ Par	Unk	3		
		drug, N.O.S.	1	1						
		insulin	2	2						
3851p	62 y F				A	Ingst	Int-S	3		
		drug, N.O.S.	1	1						
3852h	64 y F				A	Unk	Unk	3		
		drug, N.O.S.	1	1					ethanol	30 mg/dL In Blood (unspecified) @ Unknown
3853h	65 y F				U	Unk	Unk	3		
		drug, N.O.S.	1	1						
3854	65 y F				A	Ingst	Int-S	1		
		drug, N.O.S.	1	1						
3855ai	68 y M				U	Unk	Unk	2		
		drug, N.O.S.	1	1						
3856h	69 y F				A	Ingst	Int-S	1		
		drug, N.O.S.	1	1						
		bupropion	2	2						
		ethanol	3	3					ethanol	250 mg/dL In Blood (unspecified) @ Unknown
3857ai	72 y M				U	Unk	Int-S	2		
		drug, N.O.S.	1	1						
		clonazepam	2	2						
3858ph	79 y M				A	Ingst	Int-S	2		
		drug, N.O.S.	1	1						
		acetaminophen	2	2					acetaminophen (apap)	63 mcg/mL In Blood (unspecified) @ Unknown
3859h	80 y F				A	Ingst	Unt-U	3		
		drug, N.O.S.	1	1						
		metoprolol	2	2						
3860	82 y F				U	Unk	Unk	3		
		drug, N.O.S.	1	1						
3861ha	90 y F				A/C	Ingst+ Par	Unk	2		
		neuroleptic malignant syndrome	1	1						
		risperidone	2	2						
		paliperidone	3	3						
3862ha	96 y M				U	Ingst+ Unk	Int-S	1		
		drug, N.O.S.	1	1						
		acetaminophen	2	2					acetaminophen (apap)	56.8 mcg/mL In Serum @ Unknown
3863ai	30+ y M				A	Par	Int-A	2		
		drug, N.O.S.	1	1						
3864ai	50+ y F				A/C	Unk	Int-A	2		
		drug, N.O.S.	1	1						
3865p	Unknown adult (>=20 yrs) M				A	Inhal	Int-A	2		
		drug, N.O.S.	1	1						
3866ai	Unknown adult (>=20 yrs) F				U	Par	Int-A	2		
		drug, N.O.S.	1	1						
See Also case 27, 31, 43, 89, 125, 144, 180, 188, 190, 242, 260, 272, 393, 522, 971, 1347, 1479, 1647, 1651, 1718, 1768, 1990, 2011, 2116, 2166, 2305, 2320, 2352, 2355, 2375, 2464, 2490, 2497, 2518, 2592, 2660, 2735, 2752, 2768, 2783, 2912, 2936, 2947, 2948, 2954, 2960, 3029, 3041, 3099, 3102, 3136, 3674										
Veterinary Drugs										
3867ai	45 y F				U	Unk	Int-A	1		
		xylazine	1	1						
		fentanyl, N.O.S.	2	2						
3868pa	45 y F				A	Unk	Int-S	1		
		pentobarbital/phenytoin	1	1						
		diazepam	2	2						
See Also case 1026, 1174, 1766										
Vitamins										
3869h	68 y M				A/C	Par	AR-D	3		
		vitamin K	1	1						
See Also case 2525, 2868										

Listing of 3,869 (1,434 Direct + 2,435 Indirect) fatalities classified as Relative Contribution to Fatality category 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).

Annual Report ID: Bracketed [case number]=Narrative provided for this case in Appendix C

i=Indirect case; identified through other sources (news feeds, medical examiner data, or other) about which no inquiry to the PC was made, **p=**prehospital cardiac and/or respiratory arrest, **h**=hospital records reviewed, **a**=autopsy report reviewed.

Age Gender: y years, **m** months, **d** days, **F** female, **M** male, **F-Pregnant** pregnant, **U** unknown

Substance: EC enteric coated, **ER** extended release, **TD** transdermal

Cause Rank: Designates and orders the substance(s) deemed to have made the greatest contribution to the death. Cause rank permits 2 or more substances to be judged indistinguishable in terms of contribution to the death. Additional agents implicated in the death are listed below the primary agent(s) in the order of their contribution to the fatality.

Chronicity: C=chronic exposure, **A**=acute exposure, **A/C=**acute on chronic, **U**=unknown

Route: Aspir=Aspiration (with ingestion), **B-S**=Bite/sting, **Derm**=Dermal, **Ingst**=Ingestion, **Inhal**=Inhalation/nasal, **Oc**=Ocular, **Ot**=Otic, **Oth**=Other, **Par**=Parenteral, **Rec**=Rectal, **Unk**=Unknown, **Vag**=Vaginal

Reason: AR-D=Adverse reaction – Drug, **AR-F**=AR – Food, **AR-O**=AR – Other, **Int-A**=Intentional – Abuse, **Int-M**=Int – Misuse, **Int-S**=Int – Suspected Suicide, **Int-U**=Int – Unknown, **Oth-C**=Other – Contamination/tampering, **Oth-M**=Oth – Malicious, **Oth-W**=Oth – Withdrawal, **Unk**=Unknown reason, **Unt-B**=Unintentional – Bite/sting, **Unt-E**=Unt – Environmental, **Unt-F**=Unt - Food poisoning, **Unt-G**=Unt – General, **Unt-M**=Unt – Misuse, **Unt-O**=Unt – Occupational, **Unt-T**=Unt - Therapeutic error, **Unt-U** =Unt – Unknown

RCF (Relative Contribution to Fatality): 1 = Undoubtedly responsible, 2 = Probably responsible, 3 = Contributory. Provided by the RPC for Indirect cases and the AAPCC Fatality Review Team for the direct (non-Indirect) cases.

Appendix B

Table 22(A) & Table 22(B), Demographic profile of single substance exposure cases by generic category

Nonpharmaceuticals (Table 22(A))

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Adhesives/Glues																			
Miscellaneous Adhesives/Glues																			
Cyanoacrylates (Superglues, etc)	4,942	4,885	1,963	334	305	1,762	21	455	45	4,710	106	17	32	1,316	617	957	214	4	0
Epoxy	1,214	1,160	370	43	51	548	2	136	10	1,106	11	7	31	252	177	230	76	2	0
Non-Toxic Adhesives/Glues (White Glue, Paper Glue, etc)	505	463	305	77	23	44	0	12	2	431	24	3	4	22	48	22	4	0	0
Toluene/Xylene (Adhesives Only)	249	240	79	12	13	105	0	31	0	227	2	4	6	40	34	49	9	2	0
Unknown Types of Adhesive, Glue, Cement or Paste	3,493	3,317	1,373	247	133	1,128	9	376	51	3,128	94	25	60	373	501	426	66	2	0
Category Total:	**10,403**	**10,065**	**4,090**	**713**	**525**	**3,587**	**32**	**1,010**	**108**	**9,602**	**237**	**56**	**133**	**2,003**	**1,377**	**1,684**	**369**	**10**	**0**
Alcohols																			
Miscellaneous Alcohols																			
Ethanol (Beverages)	53,489	8,340	2,637	213	1,024	3,844	7	489	126	3,383	4,125	357	244	3,295	1,050	1,135	1,306	370	128
Ethanol (Non-Beverage, Non-Rubbing)	3,144	2,569	1,506	130	89	695	5	131	13	2,350	166	18	14	233	447	211	48	14	1
Higher Alcohols (Butanol, Amyl Alcohol, Propanols, etc)	154	125	38	5	4	63	0	15	0	113	8	2	1	27	22	24	6	1	0
Isopropanol (Excluding Rubbing Alcohols and Cleaning Agents)	5,968	5,081	1,805	169	220	2,331	5	494	57	4,016	909	36	64	1,171	800	896	319	67	1
Methanol (Excluding Automotive Products and Cleaning Agents)	766	580	63	17	26	386	2	79	7	451	57	32	12	208	121	69	33	20	11
Other Types of Alcohol	272	160	61	11	10	62	3	12	1	122	30	0	2	47	27	22	15	6	1
Unknown Types of Alcohol	3,076	800	150	22	74	447	1	88	18	331	365	26	28	378	77	134	121	56	5
Rubbing Alcohols																			
Rubbing Alcohols: Ethanol with Methyl Salicylate	6	5	3	0	0	2	0	0	0	4	1	0	0	1	0	0	0	0	0
Rubbing Alcohols: Ethanol without Methyl Salicylate	206	189	85	11	6	64	0	21	2	160	22	0	2	24	42	19	7	2	0
Rubbing Alcohols: Isopropanol with Methyl Salicylate	152	143	74	4	2	56	0	7	0	123	15	1	1	27	35	26	5	2	0
Rubbing Alcohols: Isopropanol without Methyl Salicylate	8,093	7,122	3,012	249	336	2,947	5	521	52	5,978	980	69	43	1,297	1,099	1,110	319	50	0
Rubbing Alcohols: Unknown	293	248	82	8	11	112	1	33	1	184	55	3	4	73	30	39	17	2	0
Category Total:	**75,619**	**25,362**	**9,516**	**839**	**1,802**	**11,009**	**29**	**1,890**	**277**	**17,215**	**6,733**	**544**	**415**	**6,781**	**3,750**	**3,685**	**2,196**	**590**	**147**
Arts/Crafts/Office Supplies																			
Miscellaneous Arts/Crafts /Office Supplies																			
Artist Paints (Non-Water Color)	3,269	3,123	2,398	193	87	365	8	58	14	3,053	39	8	10	102	444	145	11	0	0
Artist Paints (Water Color)	1,211	1,168	1,017	62	27	45	2	10	5	1,149	15	3	0	10	143	23	1	0	0
Chalks	1,031	1,002	933	30	16	15	1	4	3	984	13	1	0	21	125	41	1	0	0
Clays	1,804	1,765	1,481	137	40	67	15	24	1	1,727	25	0	2	40	201	69	7	0	0
Crayons	1,480	1,432	1,232	112	26	41	8	11	2	1,394	27	0	0	27	135	36	2	0	0
Glazes	89	88	38	7	5	28	1	8	1	84	1	1	2	5	9	12	1	0	0
Office Supplies: Miscellaneous	90	83	65	4	2	8	1	2	1	81	1	0	1	3	9	4	1	0	0
Other Types of Arts/Crafts/ Writing Products	5,911	5,637	4,164	475	165	596	21	193	23	5,448	118	21	35	223	789	295	30	2	0

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Pencils	832	795	397	264	49	60	7	12	6	687	87	11	1	39	94	31	5	0	0
Pens or Inks	6,977	6,772	4,980	916	395	302	35	116	28	6,425	268	13	44	150	822	174	17	0	0
Typewriter Correction Fluids	281	272	177	30	13	40	0	10	2	249	21	1	0	14	46	25	2	0	0
Unknown Types of Arts/Crafts/ Writing Products	119	116	86	17	2	10	0	0	1	115	0	0	1	5	16	11	0	0	0
Category Total:	**23,094**	**22,253**	**16,968**	**2,247**	**827**	**1,577**	**99**	**448**	**87**	**21,396**	**615**	**59**	**96**	**639**	**2,833**	**866**	**78**	**2**	**0**
Automotive/Aircraft/Boat Products																			
Automotive Products																			
Automotive Products: Brake Fluids	834	770	192	20	51	436	1	64	6	719	34	12	0	268	149	202	38	1	1
Automotive Products: Ethylene Glycol (Including Antifreeze)	5,277	4,888	371	78	396	3,494	5	493	51	4,050	617	129	15	1,728	923	747	327	96	13
Automotive Products: Glycol and Methanol Mixtures	89	85	19	6	4	43	0	12	1	78	6	0	0	28	18	18	2	2	0
Automotive Products: Hydrocarbons (Transmission Fluids, Power Steering Fluids, etc)	1,711	1,601	427	52	77	862	2	163	18	1,515	62	8	7	423	284	504	83	6	0
Automotive Products: Methanol (Dry Gas, Windshield Washing Solutions, etc)	1,298	1,215	158	36	109	732	1	159	20	1,099	89	9	10	370	281	257	46	7	3
Automotive Products: Other Glycols	232	222	65	11	5	115	0	23	3	207	5	9	0	42	44	37	4	1	0
Miscellaneous Automotive/Aircraft/ Boat Products																			
Automotive/Aircraft/Boat Products: Non-Toxic	21	19	12	0	1	5	0	1	0	18	0	0	1	3	4	0	0	0	0
Automotive/Aircraft/Boat Products: Other	1,167	1,110	403	36	55	507	1	97	11	1,037	33	16	21	278	191	291	56	2	0
Automotive/Aircraft/Boat Products: Unknown	170	161	34	3	11	100	0	10	3	136	10	7	2	70	25	49	14	1	0
Category Total:	**10,799**	**10,071**	**1,681**	**242**	**709**	**6,294**	**10**	**1,022**	**113**	**8,859**	**856**	**190**	**56**	**3,210**	**1,919**	**2,105**	**570**	**116**	**17**
Batteries																			
Disc Batteries																			
Disc Batteries: Alkaline (MNO2)	393	384	249	48	7	59	0	20	1	372	6	0	2	280	221	33	6	0	0
Disc Batteries: Lithium	317	234	80	31	10	102	0	11	0	167	24	6	29	172	76	40	35	13	4
Disc Batteries: Mercuric Oxide	13	13	10	1	0	1	0	1	0	12	1	0	0	11	7	0	0	0	0
Disc Batteries: Nickel Cadmium	5	5	0	0	2	2	0	1	0	3	2	0	0	4	1	2	1	0	0
Disc Batteries: Other	35	35	27	1	1	4	0	2	0	32	2	1	0	21	13	0	1	0	0
Disc Batteries: Silver Oxide	76	76	35	5	0	32	1	3	0	74	2	0	0	63	50	4	1	0	0
Disc Batteries: Unknown	2,052	1,989	1,234	262	75	373	9	30	6	1,878	81	11	2	1,567	997	165	56	10	1
Disc Batteries: Zinc-Air	418	411	197	39	9	150	1	14	1	401	6	1	0	307	205	17	5	2	0
Miscellaneous Batteries																			
Automotive/Aircraft/Boat Batteries	1,372	1,335	164	50	77	855	0	164	25	1,271	23	15	10	339	187	333	83	7	0
Other Types of Battery	456	443	100	31	27	229	0	44	12	409	23	3	5	91	87	61	18	0	0
Penlight/Flashlight/Dry Cell Batteries	5,594	5,410	3,357	625	289	852	29	229	29	4,849	473	30	24	1,179	1,600	551	73	2	1
Unknown Types of Battery	217	200	93	22	11	59	2	13	0	178	20	1	0	45	54	33	6	0	0
Category Total:	**10,948**	**10,535**	**5,546**	**1,115**	**508**	**2,718**	**42**	**532**	**74**	**9,646**	**663**	**68**	**72**	**4,079**	**3,498**	**1,239**	**285**	**34**	**6**
Bites and Envenomations																			
Aquatic																			
Fish Stings	622	620	15	41	67	444	0	40	13	615	0	1	3	240	8	214	76	2	0
Jellyfish and Other Coelenterate Stings	268	265	37	75	44	91	1	13	4	262	1	0	1	50	1	73	22	0	0
Other or Unknown Marine Animal Bites and/or Envenomations	564	554	299	42	32	143	0	30	8	515	20	11	5	63	82	75	20	0	0

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Exotic Snakes																			
Exotic Snake: Unknown If Poisonous	3	3	0	1	0	2	0	0	0	3	0	0	0	3	2	1	0	0	0
Exotic Snakes: Non-Poisonous	12	12	0	2	2	8	0	0	0	12	0	0	0	9	0	5	1	0	0
Exotic Snakes: Poisonous	42	42	1	1	3	33	0	1	3	42	0	0	0	31	1	4	16	5	0
Insects																			
Ant or Fire Ant Bites	624	579	154	37	29	289	3	59	8	551	3	18	1	61	16	134	32	0	0
Bee, Wasp, or Hornet Stings	2,947	2,853	464	273	114	1,609	7	349	37	2,839	2	0	8	442	22	994	238	11	1
Caterpillars	1,295	1,287	313	164	90	612	2	97	9	1,270	7	2	8	164	33	417	75	2	0
Centipede or Millipede Bites	390	387	117	23	18	187	1	35	6	383	0	2	2	49	24	118	16	0	0
Mosquito Bites	81	74	25	7	0	31	0	8	3	73	0	1	0	6	1	17	0	0	0
Other Insect Bites and/or Stings	3,695	3,586	903	266	169	1,780	10	399	59	3,460	20	60	32	534	145	777	202	1	0
Scorpion Stings	11,393	11,373	1,418	1,184	835	7,326	7	508	95	11,367	2	1	0	1,201	97	6,956	699	24	0
Tick Bites	596	578	140	38	15	276	2	95	12	575	3	0	0	116	23	63	16	0	0
Mammals																			
Bat Bites	855	846	101	79	59	471	15	103	18	842	2	1	0	445	148	89	7	0	0
Cat Bites	755	743	49	50	43	479	3	99	20	742	0	0	1	470	11	265	24	0	0
Dog Bites	2,157	2,147	294	325	186	1,160	12	132	38	2,146	0	0	1	1,601	13	881	141	6	1
Fox Bites	30	30	1	3	3	21	0	2	0	30	0	0	0	23	4	11	2	0	0
Human Bites	20	16	2	2	0	8	0	4	0	13	0	2	0	3	0	5	0	0	0
Other Mammal Bites	653	644	64	75	46	343	9	81	26	636	2	1	1	357	56	153	13	0	0
Raccoon Bites	131	130	8	13	16	76	0	15	2	126	3	0	0	84	14	38	7	0	0
Rodent or Lagomorph Bites (Squirrels, Rats, Mice, Gerbils, Hamsters, Rabbits, etc)	762	741	152	113	69	275	8	107	17	709	5	23	3	245	45	145	14	0	0
Skunk Bites	13	13	0	1	0	8	0	4	0	13	0	0	0	7	3	1	1	0	0
Miscellaneous Bites and Envenomations																			
Other or Unknown Animal Bites	340	334	46	41	22	175	2	39	9	326	6	0	1	125	12	88	33	1	0
Other or Unknown Reptile Bites	279	268	99	51	14	85	3	11	5	252	5	2	7	49	28	59	11	0	0
Unknown Types of Insect or Spider Bite and/or Envenomation	2,383	2,340	592	159	116	1,187	3	242	41	2,296	11	26	4	363	59	477	130	4	0
Miscellaneous Snake Bites and Envenomations																			
Unknown or Known Non-Poisonous Snake Bites	502	499	44	70	60	302	0	20	3	498	0	0	1	289	19	275	28	1	0
Unknown Types of Snake Envenomation	2,457	2,428	179	320	276	1,590	1	52	10	2,424	3	0	0	2,177	57	1,050	869	47	1
Snakes																			
Copperhead Envenomations	2,590	2,558	118	203	223	1,982	2	26	4	2,553	5	0	0	2,492	12	714	1,623	60	0
Coral Envenomations	76	75	2	3	6	62	0	2	0	73	0	0	0	66	8	35	20	1	0
Cottonmouth Envenomations	269	265	11	14	24	212	0	1	3	264	1	0	0	250	7	101	118	9	0
Rattlesnake Envenomations	1,255	1,216	56	88	81	970	0	15	6	1,209	5	0	0	1,172	11	291	660	91	3
Unknown Crotalid Envenomations	556	534	30	70	76	349	1	7	1	531	1	0	1	508	10	169	277	16	0
Spiders																			
Black Widow Spider Bites and/or Envenomations	1,002	989	100	49	68	712	1	53	6	984	0	1	0	465	27	332	203	7	0
Brown Recluse Spider Bites and/or Envenomations	721	702	66	46	39	458	0	82	11	692	2	5	0	308	17	146	153	23	0
Other Necrotizing Spider Bites and/or Envenomations	88	85	18	4	3	53	0	5	2	85	0	0	0	15	3	22	5	1	0
Other Spider Bites and/or Envenomations	2,294	2,266	338	119	118	1,403	4	243	41	2,253	3	5	2	461	46	564	159	2	0
Tarantula Bites and/or Envenomations	35	33	4	1	1	21	0	6	0	33	0	0	0	16	1	12	2	2	0
Category Total:	**42,755**	**42,115**	**6,260**	**4,053**	**2,967**	**25,233**	**97**	**2,985**	**520**	**41,697**	**112**	**162**	**82**	**14,960**	**1,066**	**15,771**	**5,913**	**316**	**6**

(continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Building and Construction Products																			
Insulation																			
Asbestos	278	243	34	19	10	123	3	49	5	230	2	4	5	28	35	12	1	1	0
Fiberglass	654	616	279	46	33	195	4	54	5	572	11	7	22	96	80	117	18	0	0
Other Types of Insulation	74	71	21	1	0	43	1	5	0	69	1	0	1	25	5	20	5	1	0
Unknown Types of Insulation	327	306	180	21	9	79	1	15	1	291	3	1	11	45	52	36	3	0	0
Urea or Formaldehyde Insulations	7	5	2	0	0	3	0	0	0	5	0	0	0	1	0	0	0	0	0
Miscellaneous Building and Construction Products																			
Caulking Compounds and Construction Putties	2,241	2,168	1,322	95	52	541	7	129	22	2,088	21	17	25	125	413	142	26	0	0
Cement or Concrete (Excluding Glues)	1,423	1,368	329	37	41	815	2	133	11	1,315	23	5	18	507	125	300	218	11	0
Other Types of Building or Construction Products	2,155	1,972	1,014	69	75	637	6	158	13	1,900	41	7	20	264	313	275	66	4	0
Soldering Flux	156	147	52	3	8	75	1	7	1	142	1	2	2	29	27	33	7	0	0
Unknown Types of Building or Construction Products	83	77	21	3	0	42	0	9	2	73	1	1	2	22	7	23	11	0	0
Category Total:	**7,398**	**6,973**	**3,254**	**294**	**228**	**2,553**	**25**	**559**	**60**	**6,685**	**104**	**44**	**106**	**1,142**	**1,057**	**958**	**355**	**17**	**0**
Chemicals																			
Acids																			
Hydrochloric Acid	1,592	1,308	68	27	98	951	0	147	17	1,220	36	20	19	495	107	478	147	11	2
Hydrofluoric Acid	503	449	15	3	18	371	0	39	3	435	7	2	2	356	61	175	96	4	0
Other Types of Acid	4,776	3,622	705	192	177	2,071	9	390	78	3,371	110	44	69	1,076	422	972	365	15	1
Unknown Types of Acid	194	165	15	2	11	109	0	24	4	144	6	9	2	71	10	47	26	0	1
Miscellaneous Chemicals																			
Acetone (Excluding Nail Polish Removers)	1,614	1,426	486	45	93	647	4	131	20	1,296	62	23	24	321	234	331	52	4	0
Alkalis (Excluding Cleaning Agents, Bleaches, Batteries, and Detergents)	3,092	2,790	577	105	144	1,651	6	270	37	2,652	59	32	27	1,177	293	799	427	41	0
Ammonia (Excluding Cleaning Agents)	2,402	1,545	240	67	69	922	5	210	32	1,420	64	27	20	473	162	450	141	11	1
Borates or Boric Acid (Excluding Topicals and Pesticides)	7,403	7,137	1,582	333	437	3,831	10	865	79	6,809	143	68	90	526	1,241	436	50	1	0
Chlorates (Excluding Matches and Fireworks)	31	26	6	3	2	14	0	1	0	23	2	0	1	8	5	10	1	1	1
Cyanides (Excluding Rodenticides)	247	166	12	2	2	117	0	22	11	104	18	25	5	89	24	30	13	3	4
Dioxins	4	3	1	0	0	0	0	1	1	3	0	0	0	1	1	0	0	0	0
Ethylene Glycol (Excluding Automotive, Aircraft, or Boat Products)	759	622	108	25	32	407	1	40	9	392	162	16	1	323	108	79	65	68	17
Formaldehyde or Formalin	457	404	16	8	17	282	1	74	6	377	5	7	10	185	58	136	29	4	0
Ketones	307	276	98	2	5	143	1	26	1	265	7	0	3	92	47	79	15	1	0
Methylene Chloride (Excluding Paint Strippers)	160	137	26	2	12	77	0	17	3	131	1	1	4	46	17	41	11	1	0
Nitrates and Nitrites (Excluding Medications and Substances of Abuse)	892	775	223	92	97	297	0	56	10	533	201	12	16	259	153	114	47	19	23
Other Chemicals	14,842	11,837	3,975	701	542	5,176	49	1,212	182	10,639	546	174	373	2,356	1,754	2,236	582	58	7
Other Chemicals-Unknown If Toxic	2	2	0	0	0	2	0	0	0	2	0	0	0	0	1	1	0	0	0
Other Glycols (Excluding Automotive, Aircraft, or Boat Products)	665	556	208	27	25	252	1	37	6	484	30	11	22	124	101	90	13	7	0
Phenol or Creosotes (Excluding Disinfectants)	211	180	16	5	12	127	0	18	2	162	7	0	10	80	15	64	26	1	0

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Strychnine (Excluding Rodenticides)	26	19	8	1	0	10	0	0	0	12	4	2	0	6	3	1	1	0	0
Toluene Diisocyanate	871	838	132	12	26	492	3	147	26	815	3	2	14	132	373	152	26	3	0
Unknown Chemicals	5,729	5,323	923	239	230	2,753	29	945	204	4,036	191	692	199	1,465	603	1,198	350	42	3
Category Total:	**46,779**	**39,606**	**9,440**	**1,893**	**2,049**	**20,702**	**119**	**4,672**	**731**	**35,325**	**1,664**	**1,167**	**911**	**9,661**	**5,793**	**7,919**	**2,483**	**295**	**60**
Cleaning Substances (Household)																			
Automatic Dishwasher Detergents																			
Automatic Dishwasher Detergents: Granules (Unit Dose)	1,725	1,705	1,587	15	10	65	1	24	3	1,689	0	3	0	56	313	221	7	0	0
Automatic Dishwasher Detergents: Granules (Various Containers)	1,385	1,365	1,083	23	28	172	6	49	4	1,337	7	14	5	53	208	181	15	0	0
Automatic Dishwasher Detergents: Granules with Liquids (Unit Dose)	8,742	8,690	8,095	69	47	382	12	79	6	8,641	14	22	2	402	1,794	1,420	59	1	0
Automatic Dishwasher Detergents: Liquids (Unit Dose)	432	426	350	11	8	44	2	10	1	419	1	3	1	43	62	76	6	0	0
Automatic Dishwasher Detergents: Liquids (Various Containers)	1,332	1,284	954	22	30	231	0	43	4	1,235	13	21	9	100	263	176	31	2	0
Automatic Dishwasher Detergents: Tablets	2,290	2,274	1,976	31	15	205	9	32	6	2,241	13	17	1	132	463	323	23	0	0
Automatic Dishwasher Rinse Agents	779	739	561	12	11	118	3	29	5	722	8	5	1	67	131	123	10	0	0
Other or Unknown Types of Automatic Dishwasher Detergent	3,156	3,109	2,651	45	38	285	11	74	5	3,058	16	28	2	187	516	405	32	1	0
Bleaches																			
Bleaches: Borates	579	459	126	15	19	226	2	68	3	433	21	3	1	63	46	73	20	1	0
Bleaches: Hypochlorite (Liquid and Dry)	50,807	39,968	12,432	1,425	2,616	18,746	112	4,091	546	35,755	2,864	585	524	8,559	5,256	10,552	1,439	50	2
Bleaches: Non-Hypochlorite	328	256	81	8	11	124	1	25	6	216	22	3	13	53	48	59	15	0	1
Bleaches: Other or Unknown (Household)	1,737	1,294	344	47	99	662	2	130	10	1,093	131	41	18	352	122	265	49	3	0
Cleansers																			
Anionic or Nonionic Cleansers	2,402	2,112	1,315	46	54	544	4	140	9	2,031	47	14	14	194	356	192	33	1	0
Other or Unknown Types of Household Cleanser	2,752	2,424	1,144	89	94	852	7	214	24	2,239	97	45	30	431	367	455	62	5	1
Disinfectants																			
Disinfectants: Hypochlorite (Non-Bleach Products)	2,048	1,706	681	53	82	751	1	123	15	1,561	70	33	20	324	228	386	70	1	0
Disinfectants: Other or Unknown	12,920	11,306	3,972	536	447	4,446	83	1,588	234	9,698	556	730	253	1,404	1,719	2,318	401	55	0
Disinfectants: Phenol	574	492	142	20	22	243	2	61	2	451	26	4	10	67	51	111	10	0	0
Disinfectants: Pine Oil	4,468	3,677	1,522	139	148	1,463	5	344	56	3,375	193	44	37	498	717	721	74	6	1
Drain Cleaners																			
Drain Cleaners: Acids	189	159	22	7	1	104	0	19	6	153	5	0	1	56	16	47	20	1	0
Drain Cleaners: Alkalis	2,421	2,035	240	41	55	1,326	6	334	33	1,903	79	12	21	612	222	556	224	22	2
Drain Cleaners: Hydrochloric Acid	22	17	3	0	1	11	0	2	0	17	0	0	0	7	3	4	4	0	0
Drain Cleaners: Other or Unknown	1,006	805	372	20	12	319	2	72	8	765	20	8	8	174	148	167	37	3	0
Drain Cleaners: Sulfuric Acid	561	446	30	12	17	310	2	69	6	414	10	1	17	142	42	134	69	4	1
Fabric Softeners/Antistatic Agents																			
Fabric Softener/Antistatic Agent: Other or Unknown	39	36	28	0	2	3	0	1	2	32	1	0	2	5	7	6	0	0	0
Fabric Softeners/Antistatic Agents: Aerosol or Spray	86	80	71	3	0	2	0	4	0	78	1	0	1	2	17	12	0	1	0
Fabric Softeners/Antistatic Agents: Dry or Powder (Unit Dose)	9	8	8	0	0	0	0	0	0	8	0	0	0	0	2	0	0	0	0

(continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Fabric Softeners/Antistatic Agents: Dry or Powder (Various Containers)	7	7	6	1	0	0	0	0	0	6	1	0	0	1	1	0	0	0	0
Fabric Softeners/Antistatic Agents: Liquid (Unit Dose)	11	11	6	0	0	5	0	0	0	11	0	0	0	2	2	4	0	0	0
Fabric Softeners/Antistatic Agents: Liquid (Various Containers)	815	730	497	21	30	146	4	26	6	675	34	8	10	61	134	78	10	0	0
Fabric Softeners/Antistatic Agents: Powder with Liquid (Unit Dose)	2	2	2	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0
Fabric Softeners/Antistatic Agents: Solid or Sheet	566	556	458	18	7	46	2	16	9	532	5	5	6	7	89	13	2	0	0
Glass Cleaners																			
Glass Cleaners: Ammonia Containing	795	670	473	26	26	119	0	24	2	619	38	6	2	51	121	94	4	0	0
Glass Cleaners: Anionics or Nonionics	93	84	50	3	4	23	0	4	0	73	7	1	0	7	10	6	0	0	0
Glass Cleaners: Isopropanol	933	816	492	29	43	207	1	38	6	759	40	8	3	63	167	92	10	0	0
Glass Cleaners: Other or Unknown Types of Household	2,937	2,514	1,569	109	168	530	6	107	25	2,283	180	24	9	285	536	351	16	6	0
Hand Dishwashing																			
Anionic or Nonionic Hand Dishwashing Detergents	8,170	6,866	3,470	468	219	2,116	16	527	50	6,439	156	180	58	460	752	1,225	74	1	2
Other or Unknown Types of Household Hand Dishwashing Detergent	2,752	2,409	1,157	158	88	779	2	205	20	2,273	43	75	9	129	235	373	17	0	0
Laundry Additives																			
Enzyme and/or Microbiological Laundry Additives	102	100	47	0	6	41	0	6	0	96	2	1	1	13	12	26	4	0	0
Laundry Bluing and/or Brightening Agents (without Detergent)	22	19	13	1	0	4	0	1	0	19	0	0	0	1	3	4	0	0	0
Laundry Detergent Boosters	360	341	221	19	11	74	0	14	2	330	8	1	0	31	60	46	5	1	0
Other or Unknown Laundry Additives or Miscellaneous Products	1,523	1,457	1,163	62	31	171	1	26	3	1,397	29	10	9	100	301	135	18	2	0
Water Softeners	39	39	13	11	0	11	0	2	2	31	8	0	0	1	2	3	3	0	0
Laundry Detergents																			
Laundry Detergents: Granules (Unit Dose)	389	368	256	12	12	70	1	16	1	354	12	0	1	54	80	59	8	1	0
Laundry Detergents: Granules (Various Containers)	2,352	2,186	1,415	74	78	457	3	147	12	2,064	70	26	16	246	272	375	35	0	0
Laundry Detergents: Granules with Liquids (Unit Dose)	232	232	200	9	3	14	1	4	1	228	2	1	1	72	39	91	10	1	0
Laundry Detergents: Liquids (Unit Dose)	12,427	12,323	10,543	599	210	738	18	184	31	12,028	202	14	29	3,758	2,150	4,764	590	19	2
Laundry Detergents: Liquids (Various Containers)	5,872	5,553	3,464	199	223	1,383	14	258	12	5,210	251	35	25	746	777	1,045	102	9	1
Laundry Detergents: Other or Unknown Types of Household Laundry Detergent and/or Fabric Cleaner	295	260	132	11	12	70	2	31	2	221	14	12	9	42	45	52	6	2	0
Laundry Detergents: Soaps	271	244	145	14	7	55	7	15	1	229	8	2	3	14	29	39	3	0	0
Laundry Prewash/Stain Removers																			
Laundry Prewash/Stain Removers: Aerosol or Spray Solvent Based	67	65	56	3	1	5	0	0	0	62	1	0	1	8	14	13	1	1	0
Laundry Prewash/Stain Removers: Aerosol or Spray Surfactant Based	198	187	158	1	8	14	1	5	0	176	4	0	1	20	28	47	5	0	0

(continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Laundry Prewash/Stain Removers: Dry Solvent Based	4	4	2	0	0	1	0	0	1	4	0	0	0	1	0	0	0	0	0
Laundry Prewash/Stain Removers: Dry Surfactant Based	59	58	44	2	1	10	0	1	0	55	1	1	1	2	14	6	2	0	0
Laundry Prewash/Stain Removers: Liquid Solvent Based	217	204	146	5	4	39	1	7	2	200	0	2	2	24	49	31	6	0	0
Laundry Prewash/Stain Removers: Liquid Surfactant Based	1,245	1,173	989	24	27	100	5	24	4	1,140	26	4	0	133	204	209	27	0	1
Laundry Prewash/Stain Removers: Other or Unknown	1,666	1,552	1,158	45	42	241	1	60	5	1,497	20	19	13	134	240	255	30	0	0
Laundry Prewash/Stain Removers: Other or Unknown Solvent Based	34	30	20	0	0	9	0	1	0	29	0	0	1	4	4	7	1	0	0
Laundry Prewash/Stain Removers: Other or Unknown Surfactant Based	61	59	52	1	1	5	0	0	0	58	0	0	1	5	7	7	1	0	0
Miscellaneous Cleaners																			
Miscellaneous Cleaning Agents: Acids	1,959	1,716	714	53	72	694	0	168	15	1,596	58	36	19	255	281	361	49	1	1
Miscellaneous Cleaning Agents: Alkalis	7,468	6,322	2,974	172	254	2,285	8	558	71	5,892	259	79	62	1,238	1,054	1,362	299	24	1
Miscellaneous Cleaning Agents: Anionics or Nonionics	5,124	4,528	2,670	178	150	1,213	11	274	32	4,303	123	47	31	493	686	709	98	5	0
Miscellaneous Cleaning Agents: Cationics	3,083	2,739	1,100	107	131	1,137	9	232	23	2,506	138	33	56	486	411	535	90	4	0
Miscellaneous Cleaning Agents: Ethanol (Excluding Automotive Products)	519	463	258	22	20	126	2	33	2	437	15	3	5	42	87	72	5	2	0
Miscellaneous Cleaning Agents: Glycols (Excluding Automotive Products)	410	350	206	15	10	95	2	18	4	330	15	2	3	47	65	60	8	1	0
Miscellaneous Cleaning Agents: Isopropanol (Excluding Automotive Products and Glass)	1,077	994	396	53	38	379	2	117	9	918	48	12	15	83	190	135	9	0	0
Miscellaneous Cleaning Agents: Methanol (Excluding Automotive Products)	48	38	6	1	3	25	0	3	0	36	0	0	2	6	2	14	0	0	0
Miscellaneous Cleaning Agents: Other or Unknown Household Cleaning Agents	4,978	4,342	2,232	150	176	1,360	19	346	59	3,972	203	81	61	703	819	912	121	3	0
Miscellaneous Cleaning Agents: Phenol (Excluding Disinfectants)	16	15	5	0	0	7	0	2	1	12	0	1	2	2	2	1	1	0	0
Miscellaneous Cleaning Substances (Household)																			
Ammonia Cleaners (All Purpose)	920	609	137	12	34	339	2	69	16	558	25	10	11	110	92	153	27	2	0
Carpet, Upholstery, Leather, or Vinyl Cleaners	3,121	2,888	1,882	100	77	683	0	132	14	2,777	54	26	23	280	497	465	29	1	0
Hydrofluoric Acid or Bifluoride Wheel Cleaners	44	39	3	0	2	27	0	7	0	37	2	0	0	27	2	19	8	1	0
Starches, Fabric Finishes, or Sizing	105	102	68	5	3	18	0	6	2	99	1	0	2	3	17	9	0	0	0
Oven Cleaners																			
Oven Cleaners: Acids	30	28	1	0	0	24	0	3	0	28	0	0	0	3	3	6	0	0	0
Oven Cleaners: Alkalis	1,973	1,903	295	94	128	1,094	3	264	25	1,776	30	60	32	477	220	481	190	7	0
Oven Cleaners: Detergent Types	15	15	4	0	1	8	0	2	0	14	0	1	0	2	1	5	1	0	0
Oven Cleaners: Other or Unknown	637	602	63	17	36	352	4	115	15	543	13	29	14	112	81	143	34	6	0

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Rust Removers																			
Rust Removers: Acids Other Than Hydrofluoric Acid Types	344	287	77	7	7	149	0	41	6	277	5	3	1	54	63	60	16	0	0
Rust Removers: Alkalis	17	15	2	1	1	11	0	0	0	13	1	0	0	7	1	7	1	0	0
Rust Removers: Hydrofluoric Acid	201	190	23	3	5	139	0	18	2	177	7	2	1	82	32	56	21	2	0
Rust Removers: Other or Unknown	123	113	15	4	4	71	0	16	3	108	3	0	1	23	13	28	5	0	0
Spot Removers/Dry Cleaning Agents																			
Spot Removers/Dry Cleaning Agents: Anionics or Nonionics	101	93	67	3	3	17	0	2	1	88	4	1	0	10	19	11	1	0	0
Spot Removers/Dry Cleaning Agents: Glycols	33	31	17	2	0	9	1	2	0	30	1	0	0	6	4	6	1	0	0
Spot Removers/Dry Cleaning Agents: Isopropanol	25	24	13	0	4	7	0	0	0	23	1	0	0	3	4	6	0	0	0
Spot Removers/Dry Cleaning Agents: Other Halogenated Hydrocarbon Containing Products	10	9	5	0	1	3	0	0	0	9	0	0	0	2	0	1	1	0	0
Spot Removers/Dry Cleaning Agents: Other Hydrocarbon and/or Non-Halogenated Containing	721	683	418	17	15	183	1	46	3	649	15	7	9	74	149	90	15	2	0
Spot Removers/Dry Cleaning Agents: Other or Unknown	93	90	62	2	4	19	1	2	0	83	3	0	3	13	19	11	1	0	0
Toilet Bowl Cleaners																			
Toilet Bowl Cleaners: Acids	2,948	2,160	1,171	60	64	691	1	151	22	2,050	81	8	13	362	510	508	70	8	1
Toilet Bowl Cleaners: Alkalis	2,860	2,532	1,974	48	51	354	2	94	9	2,438	67	3	15	279	686	410	36	0	0
Toilet Bowl Cleaners: Other or Unknown	5,419	4,776	3,824	103	66	597	7	164	15	4,650	72	11	24	377	1,082	448	36	5	0
Wall/Floor/Tile Cleaners																			
Wall/Floor/Tile/All-Purpose Cleaning Agents: Acids	1,034	824	416	18	31	289	2	59	9	773	26	3	14	123	156	184	24	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Alkalis	6,949	6,049	3,379	188	190	1,819	16	404	53	5,677	226	50	68	911	1,132	1,424	183	9	1
Wall/Floor/Tile/All-Purpose Cleaning Agents: Anionics or Nonionics	9,080	7,737	4,309	289	306	2,327	20	430	56	7,255	316	73	31	1,116	1,393	1,196	133	3	1
Wall/Floor/Tile/All-Purpose Cleaning Agents: Cationics	3,222	2,736	1,423	101	91	862	9	237	13	2,561	97	40	21	276	404	505	39	4	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Ethanol	114	99	74	0	6	15	0	4	0	95	3	0	0	8	20	13	0	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Glycols	736	626	402	17	16	150	2	37	2	598	17	4	5	69	112	84	13	2	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Isopropanol	373	328	203	13	15	69	0	26	2	307	15	3	1	27	60	48	0	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Methanol	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Other or Unknown	1,724	1,531	896	51	31	338	4	74	137	1,459	35	17	7	166	265	197	28	2	0
Category Total:	**2,14,960**	**1,86,618**	**99,991**	**6,520**	**7,175**	**57,102**	**487**	**13,531**	**1,812**	**1,73,819**	**7,356**	**2,716**	**1,754**	**28,815**	**30,128**	**39,169**	**5,293**	**294**	**19**
Cosmetics/Personal Care Products																			
Dental Care Products																			
False Teeth Cleaning Agents	2,578	2,554	230	40	42	1,957	2	265	18	2,477	31	9	27	128	415	193	14	0	0
Other Dental Care Products (Excluding Fluoride Supplements)	1,299	1,263	479	57	61	533	2	123	8	1,154	21	0	83	93	178	114	18	0	0

(continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Toothpastes (with Fluoride)	13,311	12,935	10,767	438	222	1,104	10	331	63	12,323	174	39	331	178	2,063	752	30	1	0
Toothpastes (without Fluoride)	1,603	1,536	1,319	27	23	126	5	28	8	1,485	9	3	35	22	219	52	3	3	0
Hair Care Products																			
Curl Activators	51	48	42	1	1	4	0	0	0	47	1	0	0	5	13	3	1	0	0
Hair Coloring Agents (Excluding Peroxides)	2,665	2,564	934	90	166	1,082	5	262	25	2,232	40	11	266	448	367	550	125	4	0
Hair Oils	608	588	504	12	10	53	0	9	0	574	4	2	4	80	110	84	14	2	0
Hair Relaxers (with Other Alkalines)	121	115	71	1	4	32	1	6	0	105	5	0	5	40	24	31	11	0	0
Hair Relaxers (with Other Non-Alkalines)	31	28	14	2	1	11	0	0	0	25	0	0	3	4	6	4	1	0	0
Hair Relaxers (with Sodium Hydroxide)	154	150	93	5	7	37	0	8	0	140	0	0	10	67	28	53	16	0	0
Hair Rinses, Conditioners, Relaxers	1,972	1,824	1,441	85	46	203	0	42	7	1,740	40	4	26	108	314	164	18	0	0
Hair Sprays	844	761	454	36	40	193	0	37	1	674	66	9	7	100	129	116	17	7	0
Other Hair Care Products (Excluding Peroxides)	2,139	2,026	1,533	66	55	281	5	79	7	1,920	24	7	64	231	324	311	46	3	0
Permanent Wave Solutions	100	97	45	1	6	35	0	9	1	88	0	0	8	26	15	31	5	0	0
Shampoos	5,289	5,002	3,546	246	201	796	7	182	24	4,680	217	8	62	346	614	793	48	4	0
Hand Sanitizers																			
Hand Sanitizers: Ethanol Based	31,263	28,819	18,946	2,117	1,070	5,422	62	1,082	120	25,742	2,343	395	172	2,830	6,403	2,521	438	69	2
Hand Sanitizers: Isopropanol Based	569	519	313	30	5	139	0	25	7	457	53	4	2	66	106	48	23	5	0
Hand Sanitizers: Non-Alcohol Based	857	810	601	43	18	124	2	21	1	763	36	6	3	34	126	51	5	0	0
Hand Sanitizers: Unknown	4,771	4,022	1,090	271	208	1,846	32	518	57	2,393	316	1,047	211	754	1,028	361	87	26	10
Miscellaneous Cosmetics/Personal Care Products																			
Baby Oils	1,556	1,505	1,284	32	25	133	3	26	2	1,467	16	6	9	129	299	126	13	0	0
Bath Oils and/or Bubble Baths	3,471	3,372	2,927	241	37	125	8	29	5	3,270	38	8	30	118	579	325	16	0	0
Creams, Lotions, and Make-Up	16,707	15,968	12,638	457	331	1,939	37	498	68	15,233	181	36	455	559	2,165	846	103	2	0
Deodorants	10,212	10,022	8,679	284	324	560	24	123	28	9,607	249	20	105	270	1,366	711	34	0	0
Depilatories	603	591	222	15	72	220	0	52	10	440	21	6	116	151	70	136	52	1	0
Douches	61	58	27	3	3	19	0	6	0	52	1	0	5	5	5	5	1	0	0
Eye Products	1,096	1,050	817	17	30	149	0	31	6	1,015	5	1	27	85	134	82	14	2	0
Lipsticks and Lip Balms (with Camphor)	540	524	449	31	15	19	2	7	1	502	15	1	5	5	81	18	0	0	0
Lipsticks and Lip Balms (without Camphor)	4,084	3,939	3,472	169	54	164	7	62	11	3,756	48	6	116	82	531	192	18	0	0
Perfumes, Colognes, and Aftershaves	5,442	5,161	3,940	284	247	563	6	109	12	4,802	269	40	21	407	972	842	42	4	0
Peroxides	6,462	5,838	1,415	248	396	2,983	15	679	102	5,354	256	33	130	934	636	1,325	191	14	2
Powders Made of Material Other Than Talc	1,066	1,017	838	41	24	79	2	31	2	968	30	4	8	70	159	149	11	0	0
Powders Made of Talc	984	957	702	33	40	145	3	31	3	912	30	6	7	105	149	148	14	0	0
Soaps (Bar, Hand or Complexion)	14,024	13,190	8,213	808	482	2,930	27	655	75	12,362	454	101	202	853	1,424	1,890	157	4	1
Suntan and/or Sunscreen Products	5,457	5,351	4,631	200	74	336	16	84	10	5,233	34	16	57	113	662	402	23	0	0
Mouthwashes																			
Mouthwashes: Ethanol Containing	5,677	5,137	922	318	384	2,961	4	492	56	4,166	865	15	44	751	650	460	196	23	2
Mouthwashes: Fluoride Containing	4,671	4,616	2,876	886	87	661	3	98	5	4,519	53	0	23	58	739	115	4	1	0
Mouthwashes: Non Ethanol Containing	2,031	1,954	517	164	104	960	3	187	19	1,824	81	4	36	71	286	87	6	0	0
Mouthwashes: Unknown	202	161	27	8	10	87	1	27	1	127	28	0	3	30	24	15	7	3	0
Nail Products																			
Acrylic Nail Adhesives	1,326	1,313	430	195	177	428	6	61	16	1,276	17	9	8	530	122	409	107	1	0
Acrylic Nail Primers	172	163	110	4	10	33	0	6	0	159	3	0	1	51	29	41	12	2	0
Acrylic Nail Removers	22	20	12	2	2	4	0	0	0	20	0	0	0	8	2	4	1	0	0

(continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Miscellaneous Nail Products	951	919	584	37	56	203	0	35	4	887	13	4	13	155	148	181	13	0	0
Nail Polish Removers (Acetone Containing)	1,513	1,455	985	70	66	281	3	49	1	1,382	45	10	12	150	305	212	17	1	0
Nail Polishes	4,672	4,521	3,901	179	95	266	10	61	9	4,390	78	18	19	247	721	515	18	0	0
Other Nail Polish Removers	586	567	422	24	26	81	0	13	1	535	19	2	3	58	134	89	6	0	0
Unknown Nail Polish Removers	3,893	3,726	2,415	194	228	719	5	151	14	3,523	150	25	12	411	692	569	35	2	0
Category Total:	**1,67,706**	**1,58,756**	**1,05,877**	**8,512**	**5,585**	**31,026**	**318**	**6,630**	**808**	**1,46,800**	**6,379**	**1,915**	**2,786**	**11,966**	**25,566**	**16,126**	**2,031**	**184**	**17**
Deodorizers																			
Air Freshener																			
Air Fresheners: Aerosols	2,264	2,132	1,263	146	85	488	6	117	27	1,990	63	30	31	151	375	349	25	1	0
Air Fresheners: Liquids	7,629	7,532	6,615	184	98	483	13	121	18	7,353	64	57	20	382	1,360	1,004	29	1	0
Air Fresheners: Solids	2,048	2,033	1,792	55	15	128	4	33	6	1,998	13	10	5	100	336	141	6	1	0
Air Fresheners: Unknown Form	1,976	1,943	1,511	105	45	223	2	46	11	1,857	40	18	16	130	296	258	12	1	0
Miscellaneous Deodorizers																			
Diaper Pail Deodorizers (Excluding Moth Repellants)	27	27	23	2	2	0	0	0	0	25	0	2	0	1	7	0	0	0	0
Other Types of Deodorizer (Not For Personal Use)	5,110	4,885	2,937	183	144	1,308	17	257	39	4,682	103	49	31	491	837	786	69	1	0
Toilet Bowl Deodorizers	261	256	202	6	6	32	1	7	2	251	5	0	0	26	59	23	2	0	0
Unknown Types of Deodorizer (Not for Personal Use)	82	79	50	3	0	22	0	4	0	77	0	0	2	7	19	6	3	0	0
Category Total:	**19,397**	**18,887**	**14,393**	**684**	**395**	**2,684**	**43**	**585**	**103**	**18,233**	**288**	**166**	**105**	**1,288**	**3,289**	**2,567**	**146**	**5**	**0**
Dyes																			
Miscellaneous Dyes																			
Dyes: Chlorate Containing	3	3	3	0	0	0	0	0	0	3	0	0	0	1	1	0	0	0	0
Dyes: Fabrics	351	337	245	18	15	42	1	16	0	322	7	1	6	21	57	14	1	0	0
Dyes: Foods (Including Easter Egg)	494	460	359	58	7	25	6	3	2	438	11	0	10	8	67	23	3	0	0
Dyes: Leathers	58	57	46	2	1	4	0	3	1	55	2	0	0	2	12	0	1	0	0
Dyes: Other	449	410	226	37	36	82	2	25	2	385	14	3	8	33	89	31	4	0	0
Dyes: Unknown	99	91	59	12	1	13	0	3	3	87	4	0	0	9	19	7	0	0	0
Category Total:	**1,454**	**1,358**	**938**	**127**	**60**	**166**	**9**	**50**	**8**	**1,290**	**38**	**4**	**24**	**74**	**245**	**75**	**9**	**0**	**0**
Essential Oils																			
Miscellaneous Essential Oil																			
Cinnamon Oil	727	659	447	58	25	105	1	21	2	579	46	2	32	41	54	219	3	1	0
Clove Oil	546	488	302	11	4	138	0	30	3	442	13	0	28	77	98	89	10	1	0
Eucalyptus Oil	1,582	1,407	754	44	42	451	6	101	9	1,303	42	5	39	201	314	209	20	4	0
Miscellaneous Essential Oils	17,456	16,559	11,935	528	329	2,997	44	660	66	15,805	290	76	317	941	3,050	2,359	142	4	2
Pennyroyal Oil	30	30	7	3	1	18	0	1	0	23	6	0	1	3	3	4	1	0	0
Tea Tree Oil	3,665	3,390	1,598	74	144	1,282	7	267	18	3,129	129	30	61	335	752	318	44	5	0
Category Total:	**24,006**	**22,533**	**15,043**	**718**	**545**	**4,991**	**58**	**1,080**	**98**	**21,281**	**526**	**113**	**478**	**1,598**	**4,271**	**3,198**	**220**	**15**	**2**
Fertilizers																			
Miscellaneous Fertilizers																			
Household Plant Foods (Generally for Indoor Plants)	1,509	1,459	756	93	42	466	1	90	11	1,416	13	18	7	46	232	53	6	0	0
Other Types of Fertilizer	1,628	1,481	874	93	31	375	6	84	18	1,424	15	18	18	75	307	79	13	0	0
Outdoor Fertilizers	2,201	2,063	1,251	124	53	509	7	105	14	2,005	19	17	16	100	430	117	17	1	0
Plant Hormones	93	90	38	4	2	32	0	13	1	84	0	2	4	4	22	10	0	0	0
Unknown Types of Fertilizer	176	164	87	9	3	52	2	8	3	157	2	2	3	17	17	10	2	0	0
Category Total:	**5,607**	**5,257**	**3,006**	**323**	**131**	**1,434**	**16**	**300**	**47**	**5,086**	**49**	**57**	**48**	**242**	**1,008**	**269**	**38**	**1**	**0**
Fire Extinguishers																			
Miscellaneous Fire Extinguisher																			
Miscellaneous Fire Extinguishers	1,694	1,620	184	88	160	891	7	255	35	1,483	39	69	22	422	204	412	110	0	0
Category Total:	**1,694**	**1,620**	**184**	**88**	**160**	**891**	**7**	**255**	**35**	**1,483**	**39**	**69**	**22**	**422**	**204**	**412**	**110**	**0**	**0**
Foreign Bodies/Toys/Miscellaneous																			

(continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Miscellaneous Foreign Bodies/Toys/ Miscellaneous																			
Ashes	369	339	247	11	6	50	0	23	2	333	2	2	0	16	49	13	5	0	0
Bubble Blowing Solutions	2,706	2,673	2,378	156	34	84	6	14	1	2,639	20	3	1	86	261	496	12	0	0
Charcoals	660	521	335	28	18	101	3	27	9	469	15	8	23	21	83	26	1	1	0
Christmas ornaments	270	263	222	12	3	19	0	7	0	259	2	0	1	17	55	8	1	0	0
Coins	3,282	3,220	2,621	514	25	35	11	3	11	3,144	55	1	0	1,045	766	338	38	5	0
Desiccants	17,349	17,195	13,790	1,078	363	1,375	78	450	61	16,731	254	164	18	528	2,206	165	5	0	0
Feces/Urine	5,426	4,754	3,530	153	57	656	21	300	37	4,563	26	126	19	141	614	105	14	1	0
Glass	2,906	2,850	680	170	150	1,193	19	580	58	2,671	41	112	12	184	432	114	7	0	0
Glow Products	8,440	8,427	6,431	1,593	120	169	43	56	15	8,314	80	2	7	212	962	1,464	25	1	0
Incense (Punk)	206	201	152	7	5	30	0	6	1	193	4	1	1	9	31	16	0	0	0
Other Types of Foreign Body, Toy, or Miscellaneous Substance	29,245	27,847	19,035	2,999	933	3,361	131	1,191	197	26,541	675	325	187	2,556	4,893	1,223	117	9	0
Oxygen Absorbers	730	724	299	152	42	184	1	46	0	671	25	25	1	34	156	21	1	0	0
Soil	2,421	2,199	1,671	69	25	330	8	82	14	2,124	26	3	34	101	266	108	19	0	0
Toys	9,214	9,084	7,366	1,223	168	222	34	65	6	8,871	138	19	31	454	1,382	484	33	1	0
Unknown Types of Foreign Body, Toy, or Miscellaneous Substance	1,812	1,770	1,322	206	57	124	4	46	11	1,700	37	19	10	93	265	82	5	1	0
Thermometers																			
Thermometers: Mercury	1,691	1,674	175	89	50	815	15	490	40	1,634	12	13	7	73	305	21	4	0	0
Thermometers: Other	595	587	172	61	27	195	7	109	16	573	3	8	2	19	113	18	2	0	0
Thermometers: Unknown	158	158	22	2	2	87	2	42	1	157	0	0	1	3	7	0	0	0	0
Category Total:	**87,480**	**84,486**	**60,448**	**8,523**	**2,085**	**9,030**	**383**	**3,537**	**480**	**81,587**	**1,415**	**831**	**355**	**5,592**	**12,846**	**4,702**	**289**	**19**	**0**
Fumes/Gases/Vapors																			
Miscellaneous Fumes/Gases/Vapors																			
Carbon Dioxide	629	566	43	47	49	298	1	114	14	517	29	7	8	98	64	114	32	1	0
Carbon Monoxide	13,406	12,199	1,348	881	813	7,064	93	1,730	270	11,699	300	35	50	5,228	2,174	3,060	1,311	287	75
Chloramine Gas	3,785	3,566	97	78	185	2,405	25	697	79	3,421	95	14	22	514	335	829	236	10	0
Chlorine Gas	3,509	3,329	101	125	193	2,212	21	616	61	3,180	98	3	37	619	366	902	325	12	0
Chlorine Gas (When Household Acid is Mixed with Hypochlorite)	5,003	4,673	137	78	272	3,368	23	730	65	4,511	113	0	34	693	741	1,437	356	7	2
Hydrogen Sulfide (Sewer Gas)	742	622	36	27	21	405	5	116	12	600	4	6	6	207	101	135	55	16	6
Methane and Natural Gas	3,794	3,578	580	280	195	1,780	48	628	67	3,525	19	7	16	509	836	627	93	7	0
Other Types of Fume, Gas or Vapor	2,447	2,220	179	268	273	1,066	17	378	39	2,004	142	15	54	437	667	341	124	12	0
Polymer Fume Fever	9	9	1	0	0	3	1	4	0	9	0	0	0	0	4	1	0	0	0
Simple Asphyxiants	2,881	2,619	281	286	180	1,425	27	358	62	2,344	200	23	25	690	417	633	213	23	1
Unknown Types of Fume, Gas or Vapor	1,894	1,801	98	52	81	1,014	21	494	41	1,664	20	82	16	320	161	304	78	6	1
Category Total:	**38,099**	**35,182**	**2,901**	**2,122**	**2,262**	**21,040**	**282**	**5,865**	**710**	**33,474**	**1,020**	**192**	**268**	**9,315**	**5,866**	**8,383**	**2,823**	**381**	**85**
Heavy Metals																			
Miscellaneous Heavy Metals																			
Aluminum	894	844	437	64	27	231	7	70	8	797	11	14	13	48	117	40	10	2	0
Arsenic (Excluding Pesticides)	623	528	19	9	16	394	1	74	15	273	9	120	13	273	60	56	35	2	0
Barium, Soluble Salts	13	8	3	0	0	5	0	0	0	5	3	0	0	4	3	0	0	0	0
Cadmium	65	39	3	0	1	31	0	4	0	25	0	1	1	27	9	4	0	0	0
Copper	699	577	100	42	59	291	0	69	16	501	14	21	23	149	69	151	24	1	0
Fireplace Flame Colors	24	23	8	4	1	8	0	2	0	19	0	1	0	1	10	1	2	0	0
Gold	3	2	1	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0
Lead	2,187	2,040	931	136	88	642	24	196	23	1,858	31	69	17	904	513	112	60	10	0
Manganese	60	46	8	0	2	31	0	4	1	40	3	0	2	20	5	8	4	0	0
Mercury (Other)	427	378	28	16	12	239	1	68	14	287	11	27	31	109	57	19	10	1	0
	586	552	34	27	25	331	9	115	11	466	18	23	29	107	102	25	19	1	0

(continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Mercury, Elemental (Excluding Thermometer)																			
Metal Fume Fever	223	205	12	1	15	156	0	20	1	195	5	0	4	77	14	60	28	2	0
Other Types of Heavy Metal	3,982	2,904	968	186	119	1,309	5	291	26	2,212	170	40	465	354	357	368	70	1	2
Selenium	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0
Thallium	60	40	1	0	2	22	0	14	1	13	1	19	1	16	4	1	5	0	1
Unknown Types of Heavy Metal	82	76	14	7	2	38	1	14	0	56	0	15	3	36	1	8	4	0	0
Category Total:	**9,929**	**8,263**	**2,567**	**492**	**369**	**3,729**	**48**	**942**	**116**	**6,750**	**276**	**350**	**602**	**2,125**	**1,321**	**854**	**271**	**20**	**3**
Hydrocarbons																			
Miscellaneous Hydrocarbons																			
Benzene	56	39	2	1	1	27	0	7	1	36	0	0	0	20	4	11	4	0	0
Carbon Tetrachloride	46	43	6	4	2	23	1	7	0	41	0	0	1	12	15	12	1	0	1
Diesel Fuels	1,084	1,020	182	29	50	628	1	115	15	954	53	5	5	251	127	329	48	3	0
Freon and Other Propellants	3,916	3,734	284	161	313	2,374	6	527	69	3,045	592	47	26	1,223	470	854	405	67	15
Gasolines	9,152	8,806	1,336	383	733	5,134	21	1,090	109	8,088	521	90	38	1,535	1,152	2,638	308	19	1
Kerosenes	494	461	201	13	13	191	2	38	3	420	26	8	1	148	77	107	32	1	0
Lamp Oils	1,094	1,080	721	30	26	236	5	60	2	1,043	14	16	0	337	247	241	102	14	0
Lighter Fluids and/or Naphtha	1,922	1,837	1,020	40	102	527	7	123	18	1,675	76	63	9	565	362	480	101	13	0
Lubricating Oils and/or Motor Oils	3,334	3,112	1,670	106	114	955	10	231	26	2,955	83	40	17	444	719	457	79	2	0
Mineral Seal Oil	40	39	16	0	0	20	1	0	2	38	0	0	0	6	4	8	0	0	0
Mineral Spirits	2,040	1,851	487	48	84	1,012	2	199	19	1,730	58	31	20	518	264	484	127	10	0
Other Types of Halogenated Hydrocarbon	190	175	10	8	20	109	2	22	4	151	15	3	5	72	23	62	14	0	1
Other Types of Hydrocarbon	3,247	3,002	1,418	122	107	1,103	6	203	43	2,851	94	24	17	607	503	561	124	9	0
Toluene and/or Xylene (Excluding Adhesives)	442	383	43	3	15	267	1	46	8	350	19	8	4	148	39	130	35	5	0
Turpentine	234	207	28	11	4	136	1	24	3	157	41	4	3	69	29	56	13	1	1
Unknown Types of Hydrocarbon	631	562	191	16	25	245	4	71	10	508	40	10	4	140	111	122	37	5	1
Category Total:	**27,922**	**26,351**	**7,615**	**975**	**1,609**	**12,987**	**70**	**2,763**	**332**	**24,042**	**1,632**	**349**	**150**	**6,095**	**4,146**	**6,552**	**1,430**	**149**	**20**
Industrial Cleaners																			
Miscellaneous Industrial Cleaners																			
Industrial Cleaner: Disinfectants	2,339	2,104	251	87	152	1,279	5	294	36	1,898	133	25	40	529	240	632	132	6	0
Industrial Cleaner: Other or Unknown	1,323	1,204	222	35	88	684	2	163	10	1,110	34	38	16	443	147	409	97	7	0
Industrial Cleaners: Acids	1,835	1,534	318	32	77	922	5	163	17	1,439	39	32	19	425	202	392	115	9	1
Industrial Cleaners: Alkalis	2,390	2,182	268	48	163	1,450	19	208	26	2,047	67	36	23	1,068	211	779	345	25	0
Industrial Cleaners: Anionics or Nonionics	377	343	109	13	25	141	3	48	4	322	13	3	3	78	52	69	14	1	0
Industrial Cleaners: Cationics	1,434	1,268	188	61	92	751	2	160	14	1,143	90	14	20	364	163	384	64	4	0
Category Total:	**9,698**	**8,635**	**1,356**	**276**	**597**	**5,227**	**36**	**1,036**	**107**	**7,959**	**376**	**148**	**121**	**2,907**	**1,015**	**2,665**	**767**	**52**	**1**
Infectious and Toxin-Mediated Diseases																			
Algae Associated Exposures																			
Cyanobacteria Exposure (Blue Green Algae)	572	558	74	82	51	205	37	54	55	543	2	4	8	53	196	86	5	1	0
Karenia brevis Exposure (Red Algae Tide)	16	16	2	0	0	11	1	1	1	15	0	0	1	1	1	1	0	0	0
Unknown Type of Algae Associated Exposure	14	13	7	0	0	4	0	2	0	13	0	0	0	0	0	0	0	0	0
Botulinum Toxins																			
Botulism	376	333	115	10	7	154	2	38	7	252	9	11	49	59	44	14	12	12	0
Ichthyosarcotoxins																			
Ciguatera Poisoning	112	108	3	4	4	84	0	10	3	91	0	0	17	46	0	32	34	0	0
Clupeotoxic Fish Poisoning	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0
Other Types of Seafood Poisoning	142	138	8	10	8	78	0	30	4	105	0	0	29	29	12	19	17	3	0

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Palytoxin Poisoning	83	80	4	2	3	62	0	8	1	75	2	0	3	44	4	27	15	0	0
Paralytic Shellfish Poisoning	52	47	3	5	5	31	0	2	1	41	0	1	5	9	7	8	2	0	1
Scombroid Fish Poisoning	116	111	5	2	4	79	0	20	1	66	0	1	43	28	1	35	24	0	0
Tetrodon Poisoning	253	251	53	51	18	99	0	28	2	227	13	0	9	17	41	30	4	0	0
Infectious Diseases																			
Bacterial Diseases	338	317	64	29	19	155	3	39	8	271	3	12	28	59	27	34	12	4	0
Fungal Diseases	3,236	3,134	785	279	166	1,447	13	415	29	2,768	7	158	194	65	360	134	7	0	0
Other Types of Bacterial Food Poisoning (Salmonella, Shigella, Vibrio, Staphylococcus, Streptococcus, etc)	122	120	20	9	6	65	0	20	0	114	0	2	4	5	10	17	6	1	0
Parasitic Diseases	38	30	4	4	0	16	0	6	0	26	0	0	3	5	5	2	1	0	0
Unknown Types of Bacterial Food Poisoning	457	428	63	27	17	228	1	86	6	403	0	5	19	29	12	47	27	0	0
Unknown Types of Suspected Food Poisoning	12,545	11,924	2,096	816	725	6,494	33	1,615	145	10,973	31	146	732	821	800	1,604	373	5	0
Viral Diseases	25,027	16,554	263	321	932	11,092	69	2,907	970	13,470	8	22	27	1,670	339	219	376	10	2
Category Total:	**43,500**	**34,163**	**3,569**	**1,651**	**1,965**	**20,305**	**159**	**5,281**	**1,233**	**29,454**	**75**	**362**	**1,171**	**2,940**	**1,859**	**2,309**	**916**	**36**	**3**
Information Calls																			
Food Information Calls																			
Information Calls About Food Products, Additives or Supplements	3,358	2,893	1,079	185	140	1,053	19	395	22	2,456	112	76	227	176	354	248	67	3	0
Obsolete: Information Calls About Possibly Spoiled Foods	910	898	181	58	56	398	8	186	11	878	0	7	13	10	32	18	2	0	0
Category Total:	**4,268**	**3,791**	**1,260**	**243**	**196**	**1,451**	**27**	**581**	**33**	**3,334**	**112**	**83**	**240**	**186**	**386**	**266**	**69**	**3**	**0**
Lacrimators																			
Miscellaneous Lacrimators																			
Lacrimators: Capsicum Defense Sprays	2,357	2,316	526	513	235	760	13	212	57	1,923	73	229	31	435	90	1,099	97	4	0
Lacrimators: CN (Chloroacetophenone)	30	29	4	1	2	19	0	3	0	21	0	5	2	12	2	11	3	0	0
Lacrimators: CS (O-Chlorobenzylidene Malonitrile)	21	17	2	1	1	10	0	3	0	14	1	2	0	5	0	11	1	1	0
Lacrimators: Other	47	24	0	0	4	17	0	3	0	22	0	0	1	5	0	4	2	0	0
Lacrimators: Unknown	166	153	27	15	11	82	0	13	5	110	5	30	6	45	4	62	12	0	0
Category Total:	**2,621**	**2,539**	**559**	**530**	**253**	**888**	**13**	**234**	**62**	**2,090**	**79**	**266**	**40**	**502**	**96**	**1,187**	**115**	**5**	**0**
Matches/Fireworks/Explosives																			
Miscellaneous Matches/ Fireworks/Explosives																			
Explosives	172	169	93	20	7	31	1	16	1	155	10	3	0	47	40	17	3	1	0
Fireworks	779	764	643	55	7	44	0	13	2	751	8	4	0	69	227	71	11	0	0
Matches	241	235	206	6	2	12	0	5	4	228	2	0	2	7	35	5	0	0	0
Other Types of Match, Firework, or Explosive	85	84	62	14	2	4	0	2	0	81	1	0	1	14	17	22	1	1	0
Unknown Types of Match, Firework, or Explosive	5	4	2	0	0	1	0	1	0	3	0	0	1	0	0	1	0	0	0
Category Total:	**1,282**	**1,256**	**1,006**	**95**	**18**	**92**	**1**	**37**	**7**	**1,218**	**21**	**7**	**4**	**137**	**319**	**116**	**15**	**2**	**0**
Miscellaneous Foods																			
Foods																			
Capsicum Peppers	2,591	2,515	718	364	244	865	47	242	35	1,960	118	82	305	338	69	1,090	103	1	0
Food Additives	1,296	1,055	440	71	50	373	7	103	11	834	91	12	101	94	132	131	25	0	0
Food Products	13,996	12,931	5,431	895	557	4,284	71	1,468	225	10,296	243	440	1,849	709	1,432	1,090	241	8	0
Other Adverse Reactions to Food	2,004	1,918	304	90	100	954	15	425	30	1,058	11	62	783	274	97	336	131	5	0
Category Total:	**19,887**	**18,419**	**6,893**	**1,420**	**951**	**6,476**	**140**	**2,238**	**301**	**14,148**	**463**	**596**	**3,038**	**1,415**	**1,730**	**2,647**	**500**	**14**	**0**

(continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Mushrooms																			
Miscellaneous Mushrooms																			
Group 1 Mushrooms: Cyclopeptides	104	88	13	3	7	55	0	9	1	62	18	0	8	60	17	13	14	4	0
Group 1A Mushrooms: Orellanine	6	6	2	0	0	4	0	0	0	5	1	0	0	2	3	0	0	0	0
Group 2 Mushrooms: Muscimol (Ibotenic Acid)	43	34	8	7	1	15	1	2	0	24	7	1	2	19	9	6	9	3	0
Group 3 Mushrooms: Monomethylhydrazine (MMH)	47	43	2	6	2	27	0	6	0	32	2	0	9	15	8	9	3	0	0
Group 4 Mushrooms: Muscarine and Histamine	15	14	2	0	1	7	1	3	0	13	1	0	0	1	2	6	1	0	0
Group 5 Mushrooms: Coprine	11	10	5	0	0	5	0	0	0	9	0	0	1	2	5	1	0	0	0
Group 6 Mushrooms: Hallucinogenics (Psilocybin and Psilocin)	913	620	43	17	191	325	1	28	15	97	497	6	10	443	24	125	233	23	3
Group 7 Mushrooms: Gastrointestinal Irritants	355	330	115	21	18	151	0	18	7	233	52	0	43	129	79	104	42	0	0
Mushrooms: Miscellaneous, Non-Toxic	315	272	131	15	6	93	0	26	1	208	15	1	45	51	49	44	9	3	0
Mushrooms: Other Potentially Toxic	180	156	42	8	12	76	0	17	1	111	11	0	33	38	32	35	7	1	1
Mushrooms: Unknown	5,043	4,846	3,134	336	217	1,015	12	109	23	4,072	589	4	142	1,228	1,913	651	219	16	0
Category Total:	**7,032**	**6,419**	**3,497**	**413**	**455**	**1,773**	**15**	**218**	**48**	**4,866**	**1,193**	**12**	**293**	**1,988**	**2,141**	**994**	**537**	**50**	**4**
Other/Unknown Nondrug Substances																			
Miscellaneous Other/Unknown Nondrug Substances																			
Other Non-Drug Substances	22,253	19,448	8,571	1,496	750	6,232	115	1,966	318	16,644	800	972	707	2,763	2,872	2,205	626	83	7
Unknown Substances Unlikely to be Drug Products	7,100	6,735	1,208	251	232	3,794	21	974	255	4,731	203	1,010	253	1,481	466	715	347	73	11
Category Total:	**29,353**	**26,183**	**9,779**	**1,747**	**982**	**10,026**	**136**	**2,940**	**573**	**21,375**	**1,003**	**1,982**	**960**	**4,244**	**3,338**	**2,920**	**973**	**156**	**18**
Paints and Stripping Agents																			
Miscellaneous Paints and Stripping Agents																			
Other Types of Paint, Varnish or Lacquer	747	703	313	24	34	246	6	75	5	677	10	9	5	120	90	127	32	0	0
Unknown Types of Paint, Varnish or Lacquer	3,225	3,044	1,874	103	100	714	23	199	31	2,935	34	19	46	327	449	246	58	1	0
Varnishes and Lacquers	721	667	139	32	29	348	3	107	9	630	9	7	19	110	68	164	34	2	0
Paints																			
Anti-Algae Paints	14	13	2	0	1	5	0	4	1	11	1	0	1	2	1	0	2	1	0
Anti-Corrosion Paints	54	49	6	3	3	29	0	8	0	48	0	1	0	13	3	15	3	1	0
Oil-Base Paints	2,360	2,204	672	140	109	986	6	269	22	2,080	54	11	37	321	253	437	99	2	1
Water Base Paints (Acrylic, Latex, etc)	5,306	5,111	3,689	177	110	855	23	232	25	4,977	35	13	65	291	717	364	44	4	0
Wood stains	780	726	284	21	23	321	2	69	6	689	7	8	19	92	113	127	25	1	0
Stripping Agents																			
Methylene Chloride Stripping Agents	331	316	25	2	15	227	0	43	4	295	12	1	8	135	22	103	61	4	0
Other Types of Stripping Agent	534	513	82	8	26	334	0	58	5	480	16	1	13	195	43	162	74	5	0
Unknown Types of Stripping Agent	218	203	23	1	4	145	1	24	5	194	3	3	3	69	11	68	21	0	1
Category Total:	**14,290**	**13,549**	**7,109**	**511**	**454**	**4,210**	**64**	**1,088**	**113**	**13,016**	**181**	**73**	**216**	**1,675**	**1,770**	**1,813**	**453**	**21**	**2**
Pesticides																			
Fumigants																			
Aluminum Phosphide	60	44	0	0	1	38	0	4	1	39	4	1	0	35	3	10	11	1	2
Methyl Bromide	15	11	1	1	1	8	0	0	0	11	0	0	0	4	0	3	1	0	0

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Other Fumigants	44	43	6	1	0	21	0	11	4	40	0	1	2	6	3	11	4	0	0
Sulfuryl Fluoride	210	182	19	9	7	108	1	33	5	167	0	7	8	13	31	32	5	0	0
Unknown Fumigants	112	97	8	6	4	60	3	13	3	89	3	3	1	23	6	33	5	0	0
Fungicides (Non-medicinal)																			
Carbamate Fungicides	100	59	25	3	2	25	0	3	1	59	0	0	0	10	14	6	1	0	0
Copper Compound Fungicides	125	121	15	4	2	81	0	17	2	117	0	2	2	9	18	18	5	0	0
Mercurial Fungicides	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Types of Non-Medicinal Fungicide	677	531	101	22	14	317	0	70	7	506	11	3	10	62	103	79	13	2	0
Other/Unknown Type of Non-Medicinal Fungicide	5	5	0	0	0	3	0	2	0	5	0	0	0	0	1	1	0	0	0
Phthalimide Fungicides	25	16	10	1	1	4	0	0	0	16	0	0	0	1	7	0	0	0	0
Unknown Types of Non-Medicinal Fungicide	54	38	5	1	0	21	4	7	0	37	0	0	0	3	7	4	1	0	0
Wood Preservatives	151	145	23	6	5	93	0	15	3	140	1	0	4	23	15	22	5	1	0
Herbicides (Including Algaecides, Defoliants, Desiccants, Plant Growth Regulators)																			
Carbamate Herbicides (Excluding Metam Sodium)	10	7	1	0	0	6	0	0	0	7	0	0	0	1	1	1	0	0	0
Chlorophenoxy Herbicides	1,501	1,279	324	68	32	667	4	164	20	1,226	17	10	20	148	257	247	29	1	0
Diquat	477	436	120	20	6	227	2	47	14	417	4	2	12	62	110	86	14	2	2
Glyphosate	3,027	2,746	505	105	63	1,653	8	379	33	2,561	60	42	71	409	473	647	82	3	11
Other Types of Herbicide	1,694	1,359	343	61	33	734	8	170	10	1,288	19	6	38	180	212	263	30	2	2
Paraquat	91	79	3	2	2	65	0	7	0	70	5	3	0	49	7	22	20	2	3
Paraquat and Diquat Combinations	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Triazine Herbicides	191	151	32	4	8	77	0	13	17	144	0	1	5	26	23	29	4	0	0
Unknown Types of Herbicide	598	521	137	38	17	225	0	94	10	475	11	19	10	89	101	77	13	2	1
Urea Herbicides	35	24	4	1	0	15	0	3	1	22	0	0	1	4	5	4	1	0	0
Insecticides (Including Insect Growth Regulators, Molluscicides, Nematicides)																			
Carbamate Insecticides Alone	1,150	1,068	311	63	21	531	7	115	20	1,007	20	18	17	146	226	165	24	1	0
Carbamate Insecticides in Combination with Other Insecticides	270	255	42	7	8	163	2	32	1	242	8	1	4	41	33	56	13	0	0
Chlorinated Hydrocarbon Insecticides Alone	96	88	26	4	5	44	0	8	1	82	5	0	1	17	19	14	3	2	0
Chlorinated Hydrocarbon Insecticides in Combination with Other Insecticides	144	138	14	3	6	84	1	29	1	130	4	1	2	41	9	31	17	0	0
Insect Growth Regulators	139	75	36	2	0	31	0	5	1	74	1	0	0	12	16	9	1	0	0
Metaldehyde	40	38	16	1	0	18	0	3	0	38	0	0	0	5	6	6	0	0	0
Nicotine (Excluding Tobacco Products)	154	142	89	3	6	35	0	9	0	125	7	1	7	20	28	30	3	0	0
Organophosphate Insecticides Alone	1,634	1,496	406	65	59	745	7	182	32	1,375	58	19	30	333	348	278	80	14	0
Organophosphate Insecticides in Combination with Carbamate Insecticides	47	46	12	3	0	27	0	3	1	44	1	0	1	5	15	7	0	0	0
Organophosphate Insecticides in Combination with Non-Carbamate Insecticides	398	379	47	17	7	230	1	68	9	359	5	8	3	40	50	81	11	1	0
Other Types of Insecticide	8,394	7,835	3,761	306	145	2,716	25	762	120	7,510	98	54	141	617	1,363	851	125	5	1
Piperonyl Butoxide & Pyrethrins (without Carbamate or O.P.)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Pyrethrins	4,999	4,727	1,287	257	189	2,345	12	561	76	4,404	140	36	125	850	516	1,248	265	13	1
Pyrethrins Only (Alone)	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
Pyrethroids	19,191	18,136	3,765	796	651	10,124	42	2,381	377	16,688	533	221	561	2,540	2,253	4,445	650	30	3
Rotenone	39	39	1	1	3	27	0	7	0	35	0	0	4	0	9	3	0	0	0
Unknown Types of Insecticide	3,484	3,185	673	126	103	1,593	11	607	72	2,790	108	135	112	746	334	590	154	14	1
Veterinary Insecticide/Pesticide Product (For Pets-Flea Collars, Etc.)	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Miscellaneous Pesticides																			
Arsenic Pesticides	15	14	3	0	0	9	0	2	0	13	0	0	0	1	1	1	0	0	0
Borates and/or Boric Acid Pesticides (Excluding Other Uses)	8,866	8,775	7,863	155	64	505	20	147	21	8,661	44	31	25	346	1,420	163	23	1	0
Metam Sodium	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
Repellents																			
Animal Repellents	412	387	92	17	10	183	5	69	11	361	6	7	10	31	60	94	5	0	0
Insect Repellents with DEET	3,368	3,282	1,727	299	137	843	10	228	38	3,014	55	42	159	245	429	806	53	5	0
Insect Repellents without DEET	1,857	1,823	1,307	127	23	266	8	76	16	1,758	10	13	32	86	313	272	7	0	0
Naphthalene Moth Repellants (Excluding Deodorizing Products)	527	510	270	22	11	146	0	57	4	481	12	2	13	60	140	33	9	1	0
Other Types of Moth Repellant	18	18	14	0	0	2	0	2	0	18	0	0	0	0	1	0	0	0	0
Paradichlorobenzene Moth Repellants (Excluding Deodorizing Products)	85	85	41	1	0	29	0	11	3	75	3	1	2	4	18	5	1	0	0
Unknown Types of Insect Repellent	298	281	139	19	14	77	1	27	4	267	3	3	5	24	34	45	9	0	0
Unknown Types of Moth Repellant	2,219	2,173	1,038	101	49	676	12	264	33	2,048	50	28	38	242	472	191	37	6	0
Rodenticides																			
ANTU (1-naphthalenylthiourea)	3	3	0	0	2	1	0	0	0	1	0	0	2	1	0	1	1	0	0
Bromethalin Rodenticides	1,213	1,163	846	35	12	191	4	46	29	1,100	37	10	7	301	406	35	5	1	0
Cholecalciferol Rodenticides	448	426	324	12	9	49	1	23	8	399	14	9	0	81	121	7	5	0	0
Cyanide Rodenticides	22	2	0	0	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0
Long-Acting Anticoagulant Rodenticides	3,342	3,235	2,516	93	41	411	6	112	56	3,108	61	29	14	659	860	52	5	0	0
Other Types of Rodenticide	855	811	575	33	11	143	6	35	8	766	35	7	1	129	177	29	5	0	0
Sodium Monofluoroacetate	4	4	1	1	0	1	0	1	0	4	0	0	0	3	0	0	0	0	0
Strychnine Rodenticides	63	56	3	2	1	33	0	14	3	22	6	24	2	28	12	6	3	0	1
Unknown Types of Rodenticide	2,186	2,028	1,229	78	27	472	10	164	48	1,726	131	124	13	569	435	80	20	6	1
Warfarin Type Anticoagulant Rodenticides	110	105	76	4	2	15	0	4	4	98	2	2	1	25	33	0	2	0	0
Zinc Phosphide Rodenticides	116	106	24	2	2	58	0	18	2	100	6	0	0	34	40	9	6	2	0
Category Total:	**75,414**	**70,831**	**30,256**	**3,008**	**1,816**	**27,274**	**221**	**7,126**	**1,130**	**66,362**	**1,598**	**927**	**1,517**	**9,439**	**11,594**	**11,238**	**1,786**	**118**	**29**
Photographic Products																			
Miscellaneous Photographic Products																			
Developers, Fixing Baths, Stop Baths	82	75	30	3	6	25	0	10	1	70	3	1	0	12	11	16	0	0	0
Other Types of Photographic Product	341	335	279	17	7	25	1	4	2	328	5	0	2	16	89	16	1	0	0
Photographic Coating Fluids	13	11	10	1	0	0	0	0	0	11	0	0	0	0	4	0	0	0	0
Unknown Types of Photographic Product	2	2	2	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0
Category Total:	**438**	**423**	**321**	**21**	**13**	**50**	**1**	**14**	**3**	**411**	**8**	**1**	**2**	**28**	**105**	**32**	**1**	**0**	**0**

(continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Plants																			
Miscellaneous Plants																			
Plants: Amygdalin and/or Cyanogenic Glycosides	7,495	7,375	3,597	842	326	2,015	13	533	49	6,741	238	62	294	296	1,333	245	37	3	0
Plants: Anticholinergics	894	856	507	64	36	195	3	43	8	743	76	7	20	145	225	78	36	6	0
Plants: Cardiac Glycosides (Excluding Drugs)	2,050	2,008	1,126	221	51	472	12	113	13	1,879	80	6	35	205	513	116	30	2	0
Plants: Colchicine	16	15	5	1	0	6	0	3	0	11	1	0	3	5	4	2	2	0	0
Plants: Depressants	261	181	78	9	9	74	0	10	1	123	16	1	39	49	29	20	8	0	0
Plants: Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	6,590	6,343	4,647	601	136	753	17	167	22	5,914	216	5	151	304	1,171	436	49	4	1
Plants: Hallucinogenics (Code as Street Drug Unless Plant Part Involved)	590	515	85	34	153	205	1	32	5	223	206	7	72	164	47	108	67	2	0
Plants: Nicotine (Excluding Tobacco Products)	286	274	136	21	8	94	0	12	3	247	11	1	11	66	61	49	17	2	0
Plants: Non-Toxic	3,828	3,519	2,369	347	74	542	19	140	28	3,221	103	10	176	144	408	234	22	2	0
Plants: Other Toxic Types	5,930	5,645	3,616	652	149	984	16	203	25	5,153	287	10	175	500	1,092	386	150	15	1
Plants: Oxalates	5,975	5,880	4,182	774	166	595	21	134	8	5,486	290	11	72	354	774	1,319	79	0	0
Plants: Skin Irritants (Excluding Oxalate Containing Plants)	6,110	5,631	2,163	419	255	2,151	11	572	60	5,074	177	15	353	809	479	988	259	4	0
Plants: Solanine	2,091	2,058	1,107	126	58	581	11	163	12	1,851	59	7	137	113	466	173	13	0	0
Plants: Stimulants	570	531	112	69	24	270	4	45	7	444	51	7	28	120	150	74	20	1	0
Plants: Toxalbumins	260	247	110	17	13	83	1	20	3	192	33	10	10	80	69	35	11	1	0
Plants: Unknown Toxic Types or Unknown if Toxic	9,169	8,663	6,052	800	189	1,234	38	305	45	8,001	326	31	278	531	1,419	751	114	5	0
Category Total:	**52,115**	**49,741**	**29,892**	**4,997**	**1,647**	**10,254**	**167**	**2,495**	**289**	**45,303**	**2,170**	**190**	**1,854**	**3,885**	**8,240**	**5,014**	**914**	**47**	**2**
Polishes and Waxes																			
Miscellaneous Polishes and Waxes																			
Floor Waxes, Polishes, or Sealers	296	270	153	2	3	87	0	25	0	250	4	2	14	47	58	42	10	0	0
Furniture Polishes	1,022	961	760	26	17	133	2	20	3	919	21	12	4	77	244	131	8	1	0
Miscellaneous Polishes and Waxes (Excluding Mineral Seal Oils)	1,012	956	617	32	21	224	2	57	3	914	18	10	9	88	186	108	9	2	0
Category Total:	**2,330**	**2,187**	**1,530**	**60**	**41**	**444**	**4**	**102**	**6**	**2,083**	**43**	**24**	**27**	**212**	**488**	**281**	**27**	**3**	**0**
Radiation																			
Ionizing Radiation																			
Alpha Radiation	2	2	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0
Beta Radiation	3	3	1	0	0	2	0	0	0	1	0	2	0	1	1	0	0	0	0
Gamma Radiation	9	7	0	0	0	3	0	4	0	3	0	1	1	3	1	1	0	0	0
Ionizing Radiation: Type Unknown	43	43	5	1	0	18	0	16	3	29	1	7	4	8	1	3	3	0	0
Neutron Radiation	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0
Radon	76	65	8	9	0	30	2	13	3	64	0	0	0	20	13	2	1	0	0
Specific Nonpharmaceutical Radionuclides	78	59	4	3	0	34	0	16	2	43	4	3	4	19	10	8	3	0	0
X-ray Radiation	22	19	0	0	0	12	0	6	1	7	0	1	9	3	0	2	1	0	0
Miscellaneous Radiation																			
Nonpharmaceutical Radiation: Type Unknown	14	13	0	0	1	6	0	6	0	10	0	2	0	4	1	1	0	0	0
Non-ionizing Radiation																			
Extremely Low-frequency Radiation	2	2	0	0	1	0	0	1	0	2	0	0	0	1	0	0	0	0	0
Infrared Radiation	7	7	3	0	0	3	0	1	0	7	0	0	0	0	0	1	0	0	0
Microwave Radiation	23	22	0	0	3	12	0	7	0	21	0	0	1	4	0	1	1	0	0
Non-ionizing Radiation: Type Unknown	26	23	1	0	0	14	0	8	0	17	0	2	3	7	0	1	2	0	0
Radio Frequency Radiation	6	5	0	0	0	2	0	3	0	3	0	2	0	2	1	1	0	0	0

(continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Ultraviolet Radiation	29	27	1	2	3	13	0	6	2	24	1	0	2	13	0	5	3	0	0
Visible Light Radiation (Lasers)	8	7	2	1	0	1	0	3	0	6	0	0	0	3	0	1	0	0	0
Category Total:	**349**	**305**	**25**	**16**	**8**	**151**	**2**	**91**	**12**	**239**	**6**	**20**	**24**	**90**	**28**	**27**	**14**	**0**	**0**
Sporting Equipment																			
Miscellaneous Sporting Equipment																			
Fishing Baits	59	58	43	2	4	4	0	3	2	55	3	0	0	2	13	2	0	0	0
Fishing Products, Miscellaneous	12	12	9	2	0	1	0	0	0	12	0	0	0	0	4	0	0	0	0
Golf Balls (Including Liquid Center of Golf Balls)	1	1	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
Gun Bluing Compounds	37	36	4	2	1	19	0	6	4	34	0	0	0	7	16	4	2	0	0
Hunting Products, Miscellaneous	445	437	257	28	16	105	0	27	4	399	18	8	10	128	137	41	12	2	0
Other Types of Sporting Equipment	10	9	7	0	0	2	0	0	0	9	0	0	0	1	1	3	1	0	0
Unknown Types of Sporting Equipment	3	3	2	0	0	1	0	0	0	3	0	0	0	0	1	0	0	0	0
Category Total:	**567**	**556**	**322**	**35**	**21**	**132**	**0**	**36**	**10**	**513**	**21**	**8**	**10**	**139**	**172**	**50**	**15**	**2**	**0**
Swimming Pool/Aquarium																			
Miscellaneous Swimming Pool/Aquarium																			
Algicides	475	432	100	44	13	207	1	56	11	422	4	1	4	59	64	112	16	1	0
Aquarium Products, Miscellaneous	1,149	1,088	776	69	40	162	4	32	5	1,051	11	20	4	54	246	69	3	0	0
Bromine Shock Treatments	70	66	22	8	2	26	0	7	1	65	1	0	0	10	5	28	4	0	0
Chlorine Shock Treatments	3,304	3,158	646	404	198	1,549	14	320	27	3,025	45	15	65	646	249	1,060	280	11	0
Other Types of Swimming Pool or Aquarium Product	2,677	2,569	634	316	123	1,216	13	235	32	2,454	38	10	56	459	285	906	168	3	0
Swimming Pool and Aquarium Test Kits	111	100	47	9	7	25	0	9	3	98	2	0	0	10	14	8	5	0	0
Category Total:	**7,786**	**7,413**	**2,225**	**850**	**383**	**3,185**	**32**	**659**	**79**	**7,115**	**101**	**46**	**129**	**1,238**	**863**	**2,183**	**476**	**15**	**0**
Tobacco/Nicotine/eCigarette Products																			
eCigarettes: Nicotine Containing																			
eCigarettes: Nicotine Device Flavor Unknown	1,459	1,319	964	26	112	177	2	31	7	1,097	122	2	90	336	344	293	65	9	1
eCigarettes: Nicotine Device With Added Flavors	450	440	347	13	19	48	0	11	2	386	31	0	19	87	144	109	7	2	0
eCigarettes: Nicotine Device Without Added Flavors	286	267	192	4	29	32	0	7	3	226	22	2	15	49	68	54	11	1	0
eCigarettes: Nicotine Liquid Flavor Unknown	1,013	952	731	13	67	120	0	17	4	838	66	12	28	269	297	188	32	4	0
eCigarettes: Nicotine Liquid With Added Flavors	508	491	366	9	29	72	0	12	3	426	39	3	15	112	155	96	15	0	0
eCigarettes: Nicotine Liquid Without Added Flavors	118	113	81	2	9	19	0	2	0	95	13	1	4	34	44	23	3	0	0
Miscellaneous Tobacco Products																			
Chewing Tobacco	1,736	1,710	1,524	36	23	103	2	20	2	1,661	27	3	16	301	490	418	29	1	0
Cigarettes	4,440	4,275	3,898	43	31	244	6	48	5	4,091	71	23	47	458	1,237	624	31	2	0
Cigars	251	236	144	2	15	59	1	12	3	175	25	1	34	34	43	44	7	0	0
Dissolvable Tobacco	18	18	14	0	0	3	0	1	0	17	1	0	0	3	7	2	1	0	0
Filter Tips Only (i.e. Butts)	124	121	112	1	1	4	0	2	1	118	0	0	1	15	42	19	0	0	0
Heat Not Burn Tobacco	3	3	1	1	0	0	0	1	0	3	0	0	0	0	1	0	0	0	0
Other Types of Tobacco Product	398	366	273	8	10	61	0	12	2	329	15	2	18	55	110	68	6	0	0
Snuff	186	181	155	5	2	16	0	3	0	173	4	2	1	20	49	44	1	0	0
Unknown Types of Tobacco Product	1,288	1,186	723	38	76	270	4	67	8	960	126	17	72	273	277	206	60	4	0
Category Total:	**12,278**	**11,678**	**9,525**	**201**	**423**	**1,228**	**15**	**246**	**40**	**10,595**	**562**	**68**	**360**	**2,046**	**3,308**	**2,188**	**268**	**23**	**1**

(continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Waterproofers/Sealants																			
Miscellaneous Waterproofers/Sealants																			
Waterproofers/sealants: aerosols	167	163	71	10	8	67	1	6	0	150	8	0	5	41	32	29	16	1	0
Waterproofers/sealants: liquids	129	120	66	3	3	34	0	13	1	120	0	0	0	12	27	14	4	0	0
Waterproofers/sealants: solids	4	4	2	0	1	1	0	0	0	4	0	0	0	1	1	0	0	0	0
Waterproofers/sealants: unknown form	35	29	10	0	2	11	2	4	0	28	1	0	0	8	8	5	2	0	0
Category Total:	**335**	**316**	**149**	**13**	**14**	**113**	**3**	**23**	**1**	**302**	**9**	**0**	**5**	**62**	**68**	**48**	**22**	**1**	**0**
Weapons of Mass Destruction																			
Miscellaneous Weapons of Mass Destruction																			
Anthrax	9	9	0	0	0	8	0	0	1	1	0	8	0	5	0	0	1	0	0
Nerve Gases	7	7	0	0	0	5	0	0	2	5	0	2	0	5	2	0	2	0	0
Other Biological Weapons	5	5	0	0	0	3	0	2	0	0	0	4	0	0	1	0	0	0	0
Other Chemical Weapons	10	9	0	1	0	7	0	1	0	8	0	0	0	6	2	2	0	0	0
Other Suspicious Powders	141	128	31	12	6	60	1	17	1	92	9	16	1	50	28	22	9	2	1
Other Suspicious Substances (Non-Powder)	2,016	1,761	333	75	98	938	9	249	59	872	202	328	63	782	162	242	206	114	7
Suspicious Powders in Envelope or Package	28	26	0	0	2	18	0	4	2	10	3	9	3	11	7	4	2	1	0
Category Total:	**2,216**	**1,945**	**364**	**88**	**106**	**1,039**	**10**	**273**	**65**	**988**	**214**	**367**	**67**	**859**	**202**	**270**	**220**	**117**	**8**
Nonpharmaceuticals Total:	**1,111,808**	**976,640**	**479,355**	**56,655**	**40,334**	**313,071**	**3,220**	**73,374**	**10,631**	**895,641**	**38,237**	**14,232**	**18,541**	**143,999**	**147,905**	**152,782**	**32,997**	**3,113**	**450**

Pharmaceuticals (Table 22(B))

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals exposure cases by generic category

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Analgesics																			
Acetaminophen Alone																			
Acetaminophen Alone, Adult	50,580	33,443	7,034	1,469	8,945	14,751	19	1,013	212	15,443	16,980	11	525	20,894	8,730	5,951	3,208	995	109
Acetaminophen Alone, Pediatric	15,849	14,467	13,072	1,049	145	167	15	11	8	14,069	253	8	70	1,712	2,989	253	50	14	0
Acetaminophen Alone, Unknown if Adult or Pediatric	9,092	5,207	1,229	254	1,323	2,207	6	135	53	2,286	2,656	4	75	3,442	1,358	942	568	242	44
Acetaminophen Combinations																			
Acetaminophen in Combination with Other Drugs, Adult Formulations	5,533	3,241	636	167	1,460	897	2	59	20	1,075	2,060	5	60	2,245	705	909	539	51	2
Acetaminophen in Combination with Other Drugs, Pediatric Formulations	240	205	173	23	5	3	0	1	0	201	4	0	0	12	46	10	0	0	0
Acetaminophen with Codeine	2,316	1,042	113	18	125	711	0	60	15	466	449	0	97	557	231	210	102	22	0
Acetaminophen with Diphenhydramine	6,016	3,546	554	92	707	2,072	1	88	32	1,196	2,241	0	65	2,425	676	794	758	134	5
Acetaminophen with Hydrocodone	9,798	4,258	499	94	413	3,010	5	202	35	2,065	1,853	14	233	2,390	985	867	526	168	17
Acetaminophen with Other Narcotics or Narcotic Analogs	185	101	13	1	9	73	0	5	0	40	48	1	7	51	22	17	12	10	0
Acetaminophen with Oxycodone	6,232	2,942	289	23	365	2,087	0	147	31	1,069	1,651	24	138	1,959	525	516	462	464	14
Acetaminophen with Propoxyphene	20	12	1	0	4	6	0	1	0	4	7	0	1	6	4	1	1	0	0
Acetylsalicylic Acid Alone																			
Acetylsalicylic Acid Alone, Adult Formulations	4,914	2,625	1,023	112	469	947	0	56	18	1,394	1,119	2	68	1,392	621	360	407	47	7
Acetylsalicylic Acid Alone, Pediatric Formulations	1,192	545	339	35	60	100	2	5	4	403	125	0	7	195	147	41	24	4	0
Acetylsalicylic Acid Alone, Unknown if Adult or Pediatric Formulations	9,329	4,188	1,273	163	812	1,804	3	87	46	1,884	2,026	3	96	2,619	935	670	795	117	13
Acetylsalicylic Acid Combinations																			
Acetylsalicylic Acid in Combination with Other Drugs, Adult Formulations	767	498	118	17	37	315	0	8	3	250	210	1	25	271	78	95	83	23	1
Acetylsalicylic Acid in Combination with Other Drugs, Pediatric Formulations	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acetylsalicylic Acid with Carisoprodol	2	1	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0
Acetylsalicylic Acid with Codeine	17	5	2	0	0	3	0	0	0	2	3	0	0	3	2	1	2	0	0
Acetylsalicylic Acid with Other Narcotics or Narcotic Analogs	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acetylsalicylic Acid with Oxycodone	4	3	0	0	0	3	0	0	0	2	1	0	0	3	0	0	1	1	0
Miscellaneous Analgesics																			
Non-Aspirin Salicylates (Excluding Topicals and/or Gastrointestinal Drugs)	322	266	133	13	17	86	0	17	0	236	18	0	10	40	46	28	9	2	0
Other Analgesics	624	444	173	12	55	188	0	13	3	288	130	0	23	154	84	88	49	6	0
Phenacetin	2	2	0	0	0	0	0	1	1	1	1	0	0	1	0	1	0	0	0
Phenazopyridine	1,367	1,177	863	28	29	212	2	38	5	1,050	54	0	65	249	351	102	33	8	0
Salicylamide	4	3	1	1	0	1	0	0	0	3	0	0	0	0	0	1	0	0	0
Unknown Analgesics	154	60	7	1	21	28	0	2	1	18	38	0	3	44	8	16	3	1	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Nonsteroidal Antiinflammatory Drugs																			
Colchicine	396	246	36	6	3	193	0	8	0	176	31	0	35	104	45	47	23	4	4
Cyclooxygenase-2 Inhibitors	848	429	117	17	21	235	0	36	3	381	33	0	11	60	87	23	4	0	0
Ibuprofen	68,096	49,684	28,419	2,494	8,574	8,957	62	926	252	36,412	12,469	16	502	13,462	11,747	4,259	1,072	90	1
Ibuprofen with Diphenhydramine	1,996	1,263	265	25	218	707	1	40	7	614	614	0	22	642	251	237	187	25	0
Ibuprofen with Hydrocodone	26	13	3	1	1	6	0	2	0	11	2	0	0	3	3	4	1	0	0
Indomethacin	294	150	45	1	12	83	0	8	1	97	31	1	19	46	38	19	6	0	0
Ketoprofen	29	18	4	0	1	10	0	3	0	12	4	0	2	5	3	3	1	0	0
Naproxen	10,784	6,134	1,904	212	1,532	2,204	2	233	47	3,461	2,437	3	179	2,559	1,596	947	220	21	0
Other Types of Nonsteroidal Antiinflammatory Drug	7,374	4,117	1,319	148	211	2,094	2	298	45	3,500	450	8	142	667	868	278	58	5	0
Unknown Types of Nonsteroidal Antiinflammatory Drug	16	6	2	0	2	2	0	0	0	3	2	0	1	4	0	2	0	0	0
Other Acetaminophen and Acetylsalicylic Acid Combinations																			
Acetaminophen and Acetylsalicylic Acid with Other Ingredients	5,796	3,658	1,075	160	1,112	1,202	1	87	21	1,682	1,796	7	144	2,025	787	831	469	31	2
Acetaminophen and Acetylsalicylic Acid without Other Ingredients	269	173	63	9	39	59	0	3	0	101	60	0	8	79	45	33	23	4	0
Pharmaceutical and Illegal Opioid Preparations																			
Buprenorphine	4,958	2,948	1,143	45	71	1,450	5	196	38	1,667	883	109	211	2,107	414	758	623	125	2
Butorphanol	41	19	3	0	1	13	0	2	0	17	2	0	0	6	3	3	1	0	0
Codeine	798	472	124	56	35	229	0	26	2	352	88	3	20	134	112	58	21	8	0
Difenoxin	5	3	0	0	1	2	0	0	0	2	1	0	0	1	1	1	0	0	0
Dihydrocodeine	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fentanyl (Prescription)	2,976	1,439	69	3	72	1,209	0	69	17	219	1,111	36	30	1,198	129	155	300	558	31
Heroin	8,007	4,545	41	2	72	4,286	1	103	40	132	4,205	84	28	4,070	382	423	742	2,210	124
Hydrocodone Alone or in Combination (Excluding Combination Products with Acetaminophen, Acetylsalicylic Acid or Ibuprofen)	1,291	475	79	8	38	299	0	46	5	276	151	4	32	202	106	77	51	10	2
Hydromorphone	804	359	31	4	16	270	0	33	5	194	113	7	33	212	71	67	42	29	2
Levorphanol	10	4	0	0	0	3	0	1	0	2	1	0	1	3	0	1	1	0	0
Meperidine	33	13	4	0	1	7	0	1	0	6	5	0	2	10	2	3	3	0	0
Methadone	2,345	1,102	138	13	42	853	2	46	8	457	481	44	59	875	152	137	290	193	16
Morphine	1,940	915	94	7	38	710	0	58	8	505	311	10	56	517	182	136	132	83	9
Nalbuphine	2	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	0
Non-Prescription Fentanyl	1,713	564	21	3	92	421	0	16	11	46	468	33	4	358	33	58	83	140	146
Other or Unknown Narcotics	3,573	2,089	91	6	93	1,755	1	105	38	219	1,547	174	38	1,691	126	88	269	1,168	129
Oxycodone Alone or in Combination (Excluding Combination Products with Acetaminophen or Acetylsalicylic Acid)	7,188	3,433	383	93	320	2,404	3	193	37	1,456	1,710	36	153	2,180	544	573	560	574	16
Oxymorphone	89	38	8	0	1	26	0	3	0	18	19	0	1	22	2	7	7	5	1
Pentazocine	22	14	0	0	1	11	0	0	2	5	6	0	2	9	2	3	2	1	0
Propoxyphene	6	3	0	0	2	1	0	0	0	0	3	0	0	3	1	0	0	1	0
Sufentanil	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Synthetic Opioids, Analogs and Precursors (Excluding Pharmaceutical Preparations)	77	43	4	0	5	28	0	5	1	8	31	4	0	37	4	5	9	13	0
Tapentadol	159	83	7	0	2	66	0	6	2	47	24	2	6	50	19	16	13	4	0
Tramadol	6,974	3,075	450	81	263	2,116	2	136	27	1,396	1,442	14	165	1,971	697	665	491	141	3
Serotonin 5-HT 1B,1D Receptor Agonists																			
Serotonin 5-HT 1B,1D Receptor Agonists: Other or Unknown	334	165	50	22	21	62	0	9	1	123	20	0	20	48	37	24	10	1	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Serotonin 5-HT 1B,1D Receptor Agonists: Sumatriptan	908	508	132	36	61	249	1	23	6	352	81	0	71	186	121	92	43	0	0
Category Total:	**2,64,740**	**1,66,482**	**63,669**	**7,024**	**27,975**	**61,895**	**138**	**4,670**	**1,111**	**97,394**	**62,560**	**668**	**3,566**	**76,212**	**37,153**	**21,906**	**13,390**	**7,753**	**700**
Anesthetics																			
Inhalation Anesthetics																			
Nitrous Oxide	173	134	13	15	13	86	0	3	4	36	87	2	9	92	11	18	37	17	0
Other Types of Inhalation Anesthetic	62	55	1	1	0	47	0	5	1	47	3	0	4	27	11	18	11	0	0
Unknown Types of Inhalation Anesthetic	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local and/or Topical Anesthetics																			
Dibucaine	14	13	10	0	0	2	0	1	0	12	0	0	1	1	6	1	0	0	0
Lidocaine	2,122	1,885	576	88	98	948	2	160	13	1,484	107	6	272	376	374	265	97	26	3
Other or Unknown Local and/or Topical Anesthetic	2,836	2,652	1,279	120	108	917	4	203	21	2,236	119	6	270	404	625	303	82	29	1
Miscellaneous Anesthetics																			
Ketamine and Analogs	343	141	14	3	13	98	0	12	1	39	71	8	15	108	5	21	50	8	3
Other Types of Anesthetic	10	10	5	0	0	5	0	0	0	10	0	0	0	2	2	1	0	1	0
Unknown Types of Anesthetic	3	3	0	0	0	3	0	0	0	2	0	0	1	0	1	1	0	0	0
Category Total:	**5,564**	**4,893**	**1,898**	**227**	**232**	**2,106**	**6**	**384**	**40**	**3,866**	**387**	**22**	**572**	**1,010**	**1,035**	**628**	**277**	**81**	**7**
Anticholinergic Drugs																			
Miscellaneous Anticholinergic Drugs																			
Anticholinergic Drugs (Excluding Cough and Cold Preparations, and Plants)	4,682	2,465	171	49	100	1,868	0	255	22	2,020	262	9	151	465	323	217	166	25	2
Category Total:	**4,682**	**2,465**	**171**	**49**	**100**	**1,868**	**0**	**255**	**22**	**2,020**	**262**	**9**	**151**	**465**	**323**	**217**	**166**	**25**	**2**
Anticoagulants																			
Miscellaneous Anticoagulants																			
Glycoprotein IIIa/IIb Inhibitors	16	6	1	0	0	4	0	1	0	5	0	0	1	3	1	0	0	0	0
Heparins	205	173	20	6	7	118	0	19	3	146	13	1	13	62	35	17	9	3	0
Other Antiplatelets	3,015	1,015	186	7	7	726	0	80	9	959	32	1	19	134	216	29	5	1	0
Other Types of Anticoagulant	6,013	2,935	496	23	20	2,184	3	196	13	2,696	172	1	57	478	625	70	54	11	0
Unknown Types of Anticoagulant	14	6	3	0	0	1	0	2	0	4	1	1	0	3	3	0	0	0	0
Warfarin (Excluding Rodenticides)	1,681	799	87	14	18	622	0	54	4	666	98	6	22	231	108	46	59	15	1
Category Total:	**10,944**	**4,934**	**793**	**50**	**52**	**3,655**	**3**	**352**	**29**	**4,476**	**316**	**10**	**112**	**911**	**988**	**162**	**127**	**30**	**1**
Anticonvulsants																			
Anticonvulsants: Carbamazepine and Analogs																			
Carbamazepine	2,562	1,257	105	23	90	990	0	36	13	478	578	1	152	908	172	340	318	52	1
Oxcarbazepine	4,359	1,909	332	234	507	775	2	50	9	967	882	4	37	1,061	404	453	286	32	0
Anticonvulsants: Gamma Aminobutyric Acid and Analogs																			
Gabapentin	21,423	7,214	1,114	127	496	5,124	2	298	53	3,295	3,568	24	209	4,062	1,758	1,441	832	178	7
Other Types of Gamma Aminobutyric Acid Anticonvulsant	2,688	1,001	170	21	43	711	2	44	10	523	386	7	65	530	201	222	142	24	1
Anticonvulsants: Hydantoins																			
Fosphenytoin	9	8	0	1	0	5	0	2	0	2	0	0	6	7	0	3	2	2	0
Phenytoin	1,592	1,066	36	5	13	985	1	22	4	361	211	1	383	892	118	294	354	35	2
Miscellaneous Anticonvulsants																			
Felbamate	60	25	11	2	2	8	0	1	1	25	0	0	0	3	5	0	0	0	0
Lamotrigine	10,460	4,083	545	170	793	2,373	1	178	23	2,559	1,326	5	155	1,864	684	899	534	96	0
Levetiracetam	5,440	2,830	916	284	241	1,272	3	108	6	2,260	507	2	50	774	663	338	119	14	0
Other Types of Anticonvulsant (Excluding Barbiturates)	1,416	561	113	49	53	329	0	16	1	440	104	1	12	214	112	84	62	13	1
Primidone	359	127	15	1	3	105	0	3	0	92	19	1	10	47	29	34	8	1	0
Succinimides	163	115	54	34	14	13	0	0	0	103	9	0	2	17	39	6	3	0	0
Topiramate	4,489	1,691	399	143	351	730	1	59	8	974	638	3	66	839	474	336	203	11	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Unknown Types of Anticonvulsant (Excluding Barbiturates)	10	6	1	0	0	3	0	0	2	5	1	0	0	1	0	1	0	0	0
Valproic Acid	7,229	2,788	240	115	365	1,969	1	82	16	1,101	1,162	4	410	1,844	534	578	538	86	3
Zonisamide	735	360	89	32	41	174	1	22	1	298	51	1	9	78	85	44	12	2	0
Category Total:	**62,994**	**25,041**	**4,140**	**1,241**	**3,012**	**15,566**	**14**	**921**	**147**	**13,483**	**9,442**	**54**	**1,566**	**13,141**	**5,278**	**5,073**	**3,413**	**546**	**15**
Antidepressants																			
Lithium Salts																			
Lithium	6,276	3,420	80	38	359	2,824	2	92	25	777	1,051	5	1,359	2,850	389	741	1,308	170	4
Miscellaneous Antidepressants																			
Antidepressants: Type Unknown to Consumer	38	14	0	0	6	5	0	1	2	2	10	1	0	11	2	2	0	0	0
Bupropion	16,926	8,668	735	202	1,478	5,801	1	407	44	5,007	3,422	7	163	5,147	1,610	1,298	1,910	524	8
Other Types of Antidepressant	253	93	7	4	21	54	1	4	2	38	47	0	4	57	18	24	13	2	1
Trazodone	22,225	8,445	609	236	1,656	5,685	2	197	60	2,137	6,051	19	149	6,417	1,636	2,494	1,973	158	3
Monoamine Oxidase Inhibitors (MAOI)																			
Isocarboxazid	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0
Other Types of Monoamine Oxidase Inhibitor (MAOI)	64	30	1	0	0	28	0	0	1	28	2	0	0	7	10	0	5	0	0
Phenelzine	30	14	0	0	1	13	0	0	0	5	4	0	2	7	1	2	3	2	0
Selegiline	38	12	0	0	0	11	0	1	0	8	2	0	2	3	1	1	1	0	0
Tranylcypromine	27	13	1	0	1	10	0	1	0	7	2	0	4	8	1	3	2	2	0
Selective Serotonin Reuptake Inhibitors (SSRI)																			
Citalopram	6,497	2,680	577	163	654	1,185	1	79	21	1,310	1,275	7	63	1,478	671	501	387	45	2
Escitalopram	12,900	5,829	903	396	2,225	2,099	3	168	35	2,427	3,218	7	147	3,503	1,515	1,193	845	37	0
Fluoxetine	15,093	6,988	865	529	3,344	2,002	4	186	58	2,559	4,251	4	127	4,374	2,095	1,483	740	68	1
Fluvoxamine	499	158	20	8	32	86	0	12	0	95	48	1	12	60	37	25	10	1	0
Other Types of Selective Serotonin Reuptake Inhibitor (SSRI)	3,199	1,495	363	60	441	582	2	33	14	722	723	7	34	883	404	334	180	25	0
Paroxetine	2,630	1,024	223	34	191	519	1	47	9	542	432	4	44	508	249	212	117	7	0
Sertraline	22,521	11,986	2,677	659	4,229	3,998	9	328	86	5,614	5,895	11	381	6,726	2,802	2,783	1,463	81	1
Serotonin Norepinephrine Reuptake Inhibitors (SNRI)																			
Duloxetine	6,281	2,335	546	60	432	1,197	0	83	17	1,228	943	16	125	1,196	533	515	294	24	1
Nefazodone	28	21	0	0	1	20	0	0	0	16	3	0	1	4	2	4	2	0	0
Other Types of Serotonin Norepinephrine Reuptake Inhibitor (SNRI)	633	253	51	7	52	133	0	10	0	155	80	3	13	121	55	51	32	2	0
Venlafaxine	6,729	2,711	491	84	490	1,519	2	102	23	1,447	1,115	13	109	1,431	638	510	415	64	0
Tetracyclic Antidepressants																			
Maprotiline	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Mirtazapine	4,943	1,565	224	51	251	978	2	50	9	577	919	2	55	1,044	355	435	253	11	1
Tricyclic Antidepressants (TCA)																			
Amitriptyline	4,800	2,167	258	80	363	1,408	0	50	8	751	1,272	2	77	1,601	303	405	615	292	5
Amoxapine	7	3	0	0	1	1	0	0	1	1	2	0	0	1	0	0	0	1	0
Clomipramine	207	101	13	2	9	70	0	6	1	74	19	1	7	37	13	16	14	2	0
Desipramine	45	16	2	1	1	9	0	3	0	10	4	0	1	6	3	0	3	2	0
Doxepin	1,510	576	42	16	53	446	0	15	4	175	366	4	24	407	74	122	138	79	4
Imipramine	193	78	17	8	11	40	0	2	0	44	31	0	3	43	14	10	14	6	0
Loxapine	97	32	2	2	0	25	0	2	1	15	16	1	0	23	6	6	10	0	0
Nortriptyline	849	365	51	8	39	257	0	9	1	188	129	1	38	196	63	64	56	27	4
Other Types of Tricyclic Antidepressant (TCA)	344	188	8	0	11	163	0	4	2	28	107	25	13	167	10	26	81	24	0
Protriptyline	4	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals exposure cases by generic category – Continued

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Tricyclic Antidepressants (TCA) Formulated with a Benzodiazepine	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tricyclic Antidepressants (TCA) Formulated with a Phenothiazine	7	5	1	1	0	3	0	0	0	2	3	0	0	3	0	2	1	1	0
Tricyclic Antidepressants (TCA): Type Unknown to Consumer	16	6	0	2	1	3	0	0	0	0	3	0	0	6	1	1	2	0	0
Trimipramine	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Category Total:	**1,35,916**	**61,294**	**8,767**	**2,651**	**16,353**	**31,177**	**30**	**1,892**	**424**	**25,992**	**31,445**	**141**	**2,957**	**38,326**	**13,511**	**13,264**	**10,888**	**1,657**	**35**
Antihistamines																			
Histamine H2 Antagonists																			
Cimetidine and Other Histamine-2 Blockers	7,633	5,750	4,334	230	164	843	6	160	13	5,417	202	7	108	402	1,246	166	18	0	1
Less Sedating Antihistamines																			
Cetirizine	17,051	13,424	8,611	1,851	818	1,854	9	259	22	12,645	649	2	81	883	2,897	420	55	2	0
Fexofenadine	2,609	1,871	615	212	190	762	1	84	7	1,747	90	0	30	146	371	69	11	0	0
Levocetirizine	1,437	1,061	559	169	67	225	1	36	4	1,012	39	0	6	60	233	26	2	0	0
Loratadine	13,147	10,204	6,723	1,465	555	1,258	4	180	19	9,578	522	3	67	816	2,310	324	59	1	0
Other Less Sedating Antihistamines	263	172	80	11	17	50	0	10	4	153	13	0	4	25	40	14	4	2	0
Miscellaneous Antihistamines																			
Other Antihistamines Alone (Excluding Cough and Cold Preparations)	3,079	1,752	750	217	293	460	3	25	4	1,211	487	4	31	583	311	199	160	12	0
Sedating Antihistamines																			
Diphenhydramine Alone (Over the Counter)	26,437	18,642	8,793	1,172	2,987	5,171	20	385	114	11,648	6,464	17	354	7,762	3,704	2,605	2,770	370	2
Diphenhydramine Alone (Prescription)	608	410	130	19	82	167	1	9	2	200	191	1	14	230	74	71	92	15	0
Diphenhydramine Alone (Unknown if Over the Counter or Prescription)	14,087	9,366	3,722	555	1,853	3,026	7	161	42	5,187	3,889	12	163	4,547	1,885	1,566	1,657	269	7
Hydroxyzine	15,361	5,899	706	256	1,710	2,998	4	160	65	1,635	4,077	5	122	4,109	1,501	1,576	899	61	0
Other Sedating Antihistamines	5,110	2,905	1,177	135	332	1,113	1	118	29	1,960	813	3	103	1,111	742	391	287	40	1
Category Total:	**1,06,822**	**71,456**	**36,200**	**6,292**	**9,068**	**17,927**	**57**	**1,587**	**325**	**52,393**	**17,436**	**54**	**1,083**	**20,674**	**15,314**	**7,427**	**6,014**	**772**	**11**
Antimicrobials																			
Anthelmintics																			
Diethylcarbamazine	22	21	13	0	0	7	0	0	1	20	1	0	0	2	2	0	0	0	0
Levamisole	30	21	3	3	1	11	0	3	0	19	0	0	1	1	4	2	0	0	0
Other Types of Anthelmintic	1,771	1,618	824	140	38	509	5	89	13	1,412	117	4	67	195	358	147	27	2	1
Piperazine	104	96	60	8	5	21	0	2	0	86	7	0	1	14	16	4	4	0	0
Unknown Types of Anthelmintic	9	8	5	0	0	2	0	1	0	6	1	1	0	1	0	1	0	0	0
Antibiotics																			
Systemic Antibiotic Preparations (Oral, Intravenous, Intramuscular)	22,288	16,722	5,984	1,130	1,143	7,114	24	1,204	123	13,641	1,144	14	1,851	2,253	2,626	1,360	278	28	4
Topical Antibiotic Preparations (Dermal, Otic, Ophthalmic, Nasal)	4,045	3,830	2,476	122	103	862	6	237	24	3,652	47	9	110	103	545	160	13	0	0
Unknown Types of Antibiotic Preparation	265	180	100	8	5	49	1	13	4	155	10	0	13	14	15	14	2	0	0
Antifungals																			
Systemic Antifungal Preparations (Oral, Intravenous, Intramuscular)	1,198	936	385	61	34	371	3	74	8	833	24	2	73	99	181	60	13	1	0
Topical Antifungal Preparations (Dermal, Otic, Ophthalmic, Nasal)	5,900	5,588	3,425	172	96	1,521	12	330	32	5,335	59	8	171	292	835	378	29	3	0
Unknown Types of Antifungal Preparation	19	17	6	1	1	7	0	2	0	17	0	0	0	3	2	3	1	0	0
Antiparasitics																			
Antimalarials	1,015	552	116	21	31	353	0	26	5	437	68	0	43	200	148	54	53	11	2
Metronidazole	1,641	954	236	23	61	512	0	114	8	732	80	1	130	139	121	101	10	0	0
Other Types of Antiparasitic	44	37	16	2	0	13	0	4	2	30	0	0	7	2	11	2	2	0	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Antituberculars																			
Isoniazid	54	38	4	3	4	26	0	1	0	24	6	0	7	19	8	2	1	10	0
Other Types of Antitubercular	22	12	1	0	1	9	0	1	0	12	0	0	0	2	1	1	1	0	0
Rifampin	69	51	13	4	6	26	0	2	0	41	4	0	6	11	6	13	2	0	0
Antivirals																			
Amantadine	338	106	14	18	16	54	0	4	0	75	19	1	10	39	21	16	13	2	0
Antiretrovirals	868	520	61	8	20	363	0	66	2	412	89	0	18	140	103	47	14	1	0
Other Anti-Influenza Agents	999	904	373	221	58	219	2	27	4	818	12	0	71	94	171	55	12	0	0
Systemic Antiviral Preparations (Oral, Intravenous, Intramuscular)	1,726	1,194	321	24	68	662	0	107	12	976	97	1	115	210	242	83	60	9	1
Topical Antiviral Preparations (Dermal, Otic, Ophthalmic, Nasal)	163	159	79	8	11	45	1	14	1	148	2	0	9	5	14	9	0	0	0
Unknown Types of Antiviral Preparations	77	50	11	1	1	32	0	2	3	37	5	0	6	13	10	2	5	1	0
Miscellaneous Antimicrobials																			
Other Types of Antimicrobial	337	312	215	8	8	68	0	11	2	297	5	1	8	29	78	25	2	0	0
Unknown Types of Antimicrobial	8	6	2	0	1	2	0	0	1	4	0	0	2	2	2	1	0	0	0
Category Total:	**43,012**	**33,932**	**14,743**	**1,986**	**1,712**	**12,858**	**54**	**2,334**	**245**	**29,219**	**1,797**	**42**	**2,719**	**3,882**	**5,520**	**2,540**	**542**	**68**	**8**
Antineoplastics																			
Miscellaneous Antineoplastics																			
Antineoplastic Drugs	2,264	1,770	242	52	47	1,275	2	145	7	1,625	39	2	96	480	374	168	86	29	8
Category Total:	**2,264**	**1,770**	**242**	**52**	**47**	**1,275**	**2**	**145**	**7**	**1,625**	**39**	**2**	**96**	**480**	**374**	**168**	**86**	**29**	**8**
Asthma Therapies																			
Miscellaneous Asthma Therapies																			
Albuterol	3,538	3,167	1,160	504	290	998	6	185	24	2,401	485	10	250	420	453	455	225	5	0
Aminophylline or Theophylline	140	85	13	1	2	66	0	2	1	52	5	0	23	51	12	10	21	9	2
Leukotriene Antagonist or Inhibitor	6,080	4,122	2,520	609	174	707	3	102	7	3,903	186	1	24	368	947	84	12	0	0
Non-Selective Beta Agonists	2,752	2,711	1,106	607	138	723	4	126	7	2,632	44	2	24	659	170	1,107	202	2	0
Other Asthma Therapeutic Agents	221	175	45	13	4	103	0	8	2	142	15	1	12	26	42	15	5	3	2
Terbutaline and Other Beta-2 Agonists	1,072	893	97	82	30	577	0	99	8	785	61	4	41	101	130	73	45	2	0
Unknown Asthma Therapeutic Agents	8	7	0	5	2	0	0	0	0	2	4	1	0	1	0	1	0	0	0
Category Total:	**13,811**	**11,160**	**4,941**	**1,821**	**640**	**3,174**	**13**	**522**	**49**	**9,917**	**800**	**19**	**374**	**1,626**	**1,754**	**1,745**	**510**	**21**	**4**
Cardiovascular Drugs																			
Angiotensin Converting Enzyme Inhibitor																			
Angiotensin Converting Enzyme Inhibitor in Combination with Diuretic	1,986	1,093	365	55	36	594	1	42	0	971	106	0	9	284	335	50	35	4	0
Angiotensin Converting Enzyme Inhibitor in Combination with Other Drugs (Excluding Calcium Antagonists)	14	10	4	1	2	1	0	2	0	8	2	0	0	5	4	1	1	0	0
Angiotensin Converting Enzyme Inhibitor, Alone	14,378	5,790	2,060	293	199	2,989	2	223	24	4,948	731	1	64	1,744	1,947	273	169	8	1
Angiotensin Receptor Blocker																			
Angiotensin Receptor Blocker in Combination with Diuretic	1,482	853	140	16	15	640	0	41	1	801	40	0	4	135	254	36	12	0	0
Angiotensin Receptor Blocker in Combination with Other Drugs (Excluding Calcium Antagonists)	431	145	34	1	1	100	0	9	0	136	7	0	2	30	43	6	4	0	0
Angiotensin Receptor Blocker, Alone	9,335	3,986	730	121	114	2,741	1	254	25	3,653	267	1	32	698	1,117	211	86	2	0
Antihyperlipidemic																			
Antihyperlipidemic Combinations (Excluding Calcium Antagonists)	27	12	7	0	0	5	0	0	0	12	0	0	0	1	2	0	0	0	0
Antihyperlipidemic, Alone	13,090	4,320	1,494	146	123	2,248	4	284	21	3,998	210	1	101	434	797	114	31	2	0

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals exposure cases by generic category – Continued

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Antihypertensives																			
Antihypertensive (Excluding Diuretics), Alone	5,228	2,880	818	1,219	570	244	1	22	6	2,312	482	2	67	1,421	849	452	457	28	0
Antihypertensive in Combination with Diuretic	8	5	2	0	0	3	0	0	0	5	0	0	0	1	1	0	0	0	0
Antihypertensive in Combination with Other Drugs (Excluding Diuretics)	4	2	1	0	0	1	0	0	0	2	0	0	0	1	0	0	0	0	0
Beta Blockers																			
Beta Blocker in Combination with Diuretic	228	109	22	5	6	72	0	4	0	101	7	0	0	33	45	8	7	0	0
Beta Blocker in Combination with Other Drugs (Excluding Calcium Antagonists)	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beta Blocker, Alone	27,603	10,994	2,524	314	534	7,100	3	473	46	8,761	1,888	3	253	4,073	3,692	738	954	167	18
Calcium Antagonist																			
Calcium Antagonist in Combination with Angiotensin Converting Enzyme Inhibitor	374	197	31	6	5	139	0	15	1	171	22	0	2	54	66	9	6	3	0
Calcium Antagonist in Combination with Angiotensin Receptor Blocker	147	85	15	1	2	61	0	4	2	82	3	0	0	27	39	3	0	0	1
Calcium Antagonist in Combination with Antihyperlipidemic	25	15	5	0	0	10	0	0	0	15	0	0	0	5	7	2	0	0	0
Calcium Antagonist in Combination with Diuretic	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Calcium Antagonist in Combination with Other Drugs	76	53	18	1	2	31	0	1	0	53	0	0	0	15	18	3	4	0	0
Calcium Antagonist, Alone	15,363	6,132	1,159	166	200	4,313	1	273	20	5,176	770	2	134	2,793	2,199	426	548	101	45
Miscellaneous Cardiovascular Drugs																			
Alpha Blockers	6,072	1,807	244	40	221	1,179	2	113	8	1,151	581	4	66	753	450	274	195	9	0
Antiarrhythmics	2,295	1,185	118	9	20	970	1	61	6	1,078	54	1	50	509	413	77	99	31	5
Cardiac Glycosides	1,498	1,043	69	10	3	940	0	18	3	393	35	2	555	838	121	100	405	121	28
Clonidine	10,636	5,410	1,736	1,279	1,003	1,308	3	66	15	3,541	1,694	16	94	3,607	948	963	1,757	235	0
Hydralazine	1,606	605	130	12	23	416	0	20	4	480	96	1	21	234	182	73	51	3	1
Long-Acting Nitrates	1,047	262	42	3	3	198	0	16	0	239	17	0	6	67	85	22	21	1	2
Nitroglycerin	649	439	206	10	9	197	0	15	2	351	63	2	18	169	167	38	29	0	0
Nitroprusside	15	13	3	0	0	10	0	0	0	5	0	0	8	13	3	2	3	0	1
Other Types of Cardiovascular Drug	474	203	36	3	4	150	0	10	0	185	13	0	4	52	48	17	15	2	0
Other Types of Vasodilator	1,499	997	314	26	43	534	1	71	8	757	99	8	114	313	232	103	65	8	1
Unknown Types of Cardiovascular Drug	46	19	4	0	1	11	0	3	0	8	9	0	2	11	2	3	2	0	2
Unknown Types of Vasodilator	27	13	7	0	0	5	0	1	0	9	1	0	2	7	2	0	2	0	0
Vasopressors	279	240	61	29	9	113	1	22	5	222	5	3	8	73	27	71	21	2	0
Category Total:	**1,15,949**	**48,917**	**12,399**	**3,766**	**3,148**	**27,323**	**21**	**2,063**	**197**	**39,624**	**7,202**	**47**	**1,616**	**18,400**	**14,095**	**4,075**	**4,979**	**727**	**105**
Cold and Cough Preparations																			
Acetaminophen and Acetylsalicylic Acid with Decongestant and/or Antihistamine																			
Acetaminophen and Acetylsalicylic Acid with Antihistamine without Opioids	13	8	4	1	2	1	0	0	0	6	2	0	0	3	3	1	0	0	0
Acetaminophen and Acetylsalicylic Acid with Decongestant and Antihistamine without Opioids	15	8	4	0	2	2	0	0	0	4	3	0	0	4	1	1	2	0	0
Acetaminophen and Acetylsalicylic Acid with Decongestant without Opioids	5	2	1	0	1	0	0	0	0	1	1	0	0	0	0	1	0	0	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan with Antihistamine	19	11	9	0	0	2	0	0	0	9	2	0	0	2	2	3	0	0	0
Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan with Decongestant	10	7	6	0	0	1	0	0	0	7	0	0	0	0	2	0	0	0	0
Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan with Decongestant and Antihistamine	7	6	2	0	2	2	0	0	0	2	3	0	1	2	3	0	0	0	0
Acetaminophen, Acetylsalicylic Acid, and Opioid with Decongestant and Antihistamine	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Obsolete: Acetaminophen and Acetylsalicylic Acid with Decongestant and/or Antihistamine Combinations without Phenylpropanolamine or Opioids	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Obsolete: Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Acetaminophen with Decongestant and/or Antihistamine																			
Acetaminophen and Codeine with Antihistamine	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acetaminophen and Codeine with Decongestant	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
Acetaminophen and Codeine with Decongestant and Antihistamine	9	4	3	0	1	0	0	0	0	3	1	0	0	1	1	1	0	0	0
Acetaminophen and Dextromethorphan with Antihistamine	2,171	1,108	421	68	188	401	0	22	8	608	440	0	38	511	234	188	114	8	0
Acetaminophen and Dextromethorphan with Decongestant	3,377	1,764	897	127	217	463	1	46	13	1,303	336	4	105	450	381	195	70	8	0
Acetaminophen and Dextromethorphan with Decongestant and Antihistamine	3,907	1,877	735	140	271	659	0	56	16	1,088	695	2	63	784	356	293	182	22	1
Acetaminophen and Other Opioid with Antihistamine	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acetaminophen and Other Opioid with Decongestant	4	4	1	1	1	1	0	0	0	2	1	0	0	1	0	0	1	0	0
Acetaminophen and Other Opioid with Decongestant and Antihistamine	4	2	1	0	0	0	0	1	0	2	0	0	0	0	2	0	0	0	0
Acetaminophen with Antihistamine without Opioids	446	281	51	5	67	148	0	8	2	77	191	1	8	199	51	47	103	2	0
Acetaminophen with Decongestant and Antihistamine without Opioids	879	511	296	50	42	102	1	16	4	398	82	0	25	114	105	47	24	3	0
Acetaminophen with Decongestant without Opioids	860	474	245	29	68	117	1	13	1	362	94	0	14	127	118	43	21	0	0
Obsolete: Acetaminophen and Dextromethorphan Combinations with Decongestant and/or	5	2	0	0	0	2	0	0	0	0	1	0	0	2	0	1	0	0	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Antihistamine without Phenylpropanolamine																			
Acetylsalicylic Acid with Decongestant and/or Antihistamine																			
Acetylsalicylic Acid and Codeine with Decongestant	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
Acetylsalicylic Acid and Dextromethorphan with Antihistamine	2	1	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0
Acetylsalicylic Acid and Dextromethorphan with Decongestant	2	2	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Acetylsalicylic Acid and Dextromethorphan with Decongestant and Antihistamine	19	11	7	3	0	1	0	0	0	10	0	0	1	1	4	0	0	0	0
Acetylsalicylic Acid with Antihistamine without Opioids	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acetylsalicylic Acid with Decongestant and Antihistamine without Opioids	82	53	37	3	3	8	0	2	0	45	3	0	5	5	12	4	0	0	0
Acetylsalicylic Acid with Decongestant without Opioids	2	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
Antihistamine and/or Decongestant																			
Antihistamine and Decongestant with Codeine	34	24	8	2	0	12	0	2	0	16	6	0	2	7	3	4	2	0	0
Antihistamine and Decongestant with Dextromethorphan	1,591	1,307	861	196	73	164	0	12	1	1,175	101	0	23	225	311	118	53	1	0
Antihistamine and Decongestant with Other Opioid	5	5	4	0	0	1	0	0	0	5	0	0	0	1	0	1	1	0	0
Antihistamine and Decongestant without Opioid	3,219	2,587	1,647	272	129	470	3	59	7	2,335	173	1	56	408	669	204	78	5	0
Antihistamine with Codeine	250	170	36	13	12	102	0	4	3	116	45	0	7	69	32	30	15	3	0
Antihistamine with Dextromethorphan	2,845	2,132	352	100	586	1,058	2	24	10	638	1,428	2	25	1,479	279	451	750	53	1
Antihistamine with Other Opioid	65	54	9	1	1	36	0	7	0	43	8	0	3	13	10	10	3	1	0
Antihistamine without Opioid	1,430	831	430	30	84	268	1	13	5	571	236	0	21	349	233	124	74	11	0
Decongestant with Codeine	18	14	6	0	1	7	0	0	0	10	2	0	2	3	5	1	0	0	0
Decongestant with Dextromethorphan	1,025	772	483	107	60	117	0	4	1	659	90	1	16	124	168	59	40	2	0
Decongestant with Other Opioid	7	3	1	0	1	1	0	0	0	2	0	0	0	0	1	0	0	0	0
Decongestant without Opioid	2,873	1,930	917	114	167	645	1	77	9	1,644	192	2	78	315	453	153	73	6	0
Obsolete: Antihistamine and/or Decongestant with Dextromethorphan without Phenylpropanolamine	47	37	1	0	5	31	0	0	0	2	34	0	0	35	3	7	23	0	0
Obsolete: Antihistamine and/or Decongestant without Phenylpropanolamine and Opioid	2	1	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
Miscellaneous Cold and Cough Preparations																			
Acetaminophen in Combination with Dextromethorphan (Without Decongestants or Antihistamines)	108	67	33	5	11	13	0	3	2	44	20	0	1	23	11	3	6	0	1
Cough and Cold Preparations (Not Otherwise Classified)	2,576	1,750	1,195	82	117	319	4	27	6	1,378	303	2	52	364	323	163	97	10	0
Dextromethorphan Preparations (Not Otherwise Classified)	7,460	5,275	1,466	495	968	2,206	3	118	19	2,803	2,256	7	152	2,527	887	928	1,074	72	2
Dextromethorphan With Expectorants	663	482	190	54	56	169	0	13	0	304	152	0	14	175	88	67	58	6	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals exposure cases by generic category – Continued

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Expectorants Without Dextromethorphan	1,688	1,047	364	36	76	482	3	82	4	879	114	0	42	146	193	53	20	1	0
Non-Narcotic Antitussives Excluding Dextromethorphan	1,858	1,267	443	59	151	547	0	60	7	984	216	2	59	524	393	219	57	8	4
Obsolete: Unknown Types of Cough and Cold Preparation	16	5	0	1	1	3	0	0	0	0	3	0	2	3	0	0	1	0	0
Non-Acetylsalicylic Acid Salicylates with Decongestant and/or Antihistamine																			
Non-Acetylsalicylic Acid Salicylates and Dextromethorphan with Antihistamine	3	3	1	0	0	2	0	0	0	3	0	0	0	0	1	0	0	0	0
Non-Acetylsalicylic Acid Salicylates and Dextromethorphan with Decongestant	3	3	1	0	1	0	0	0	1	2	1	0	0	0	0	0	0	0	0
Non-Acetylsalicylic Acid Salicylates with Antihistamine without Opioid	2	2	2	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0
Non-Acetylsalicylic Acid Salicylates with Decongestant and Antihistamine without Opioid	3	3	2	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0
Non-Acetylsalicylic Acid Salicylates with Decongestant without Opioid	4	4	1	1	0	2	0	0	0	3	0	0	1	1	1	0	0	0	0
Phenylpropanolamine Containing Preparations																			
Acetaminophen and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	16	12	9	0	0	3	0	0	0	10	2	0	0	3	1	0	1	0	0
Acetaminophen, Acetylsalicylic Acid, and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	3	3	1	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0
Acetaminophen, Acetylsalicylic Acid, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	12	7	6	0	0	1	0	0	0	7	0	0	0	0	0	0	0	0	0
Acetaminophen, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	15	7	4	1	0	2	0	0	0	7	0	0	0	2	1	1	0	0	0
Acetylsalicylic Acid and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	8	4	1	2	0	1	0	0	0	3	0	0	1	0	1	0	0	0	0
Acetylsalicylic Acid, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	3	2	1	0	1	0	0	0	0	1	0	0	1	1	0	1	0	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine and Codeine	2	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine and Dextromethorphan	29	22	17	3	0	1	0	1	0	18	2	0	2	4	3	2	1	1	0

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals exposure cases by generic category – Continued

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Antihistamine and/or Decongestant with Phenylpropanolamine and Other Opioid	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine without Opioid	28	20	12	4	0	4	0	0	0	18	2	0	0	2	5	2	1	0	0
Non-Acetylsalicylic Acid Salicylates, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Other Phenylpropanolamine Preparations (Excluding Street Drugs and Diet Aids)	250	210	78	3	4	108	0	16	1	206	4	0	0	13	51	5	3	0	0
Category Total:	**40,011**	**26,204**	**11,305**	**2,011**	**3,370**	**8,691**	**20**	**687**	**120**	**17,828**	**7,245**	**24**	**823**	**9,023**	**5,405**	**3,431**	**2,948**	**223**	**9**
Diagnostic Agents																			
Miscellaneous Diagnostic Agents																			
Diagnostic Tablets for Glucose or Ketones	2	2	0	0	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0
Other Types of Diagnostic Agent	467	394	108	31	24	186	0	33	12	302	15	1	73	113	54	49	16	3	1
Unknown Types of Diagnostic Agent	10	9	1	1	0	6	0	1	0	6	0	0	2	1	0	1	2	0	0
Category Total:	**479**	**405**	**109**	**32**	**24**	**193**	**0**	**35**	**12**	**309**	**15**	**2**	**75**	**114**	**54**	**50**	**18**	**3**	**1**
Dietary Supplements/Herbals/ Homeopathic																			
Amino Acids																			
Creatine	118	88	54	4	7	20	0	1	2	71	5	0	11	15	17	4	3	0	0
Other Amino Acid Dietary Supplements	871	601	276	31	34	213	0	35	12	391	54	4	147	95	104	104	21	6	0
Botanical Products																			
Blue Cohosh	2	2	0	0	0	2	0	0	0	0	2	0	0	1	0	1	0	0	0
Citrus Aurantium (Single Ingredient)	9	8	1	2	1	4	0	0	0	6	0	0	1	1	2	3	1	0	0
Echinacea	183	119	74	15	1	20	1	8	0	104	5	0	10	9	12	11	0	0	0
Ginkgo Biloba	78	48	18	1	2	25	0	2	0	34	5	0	8	10	7	4	1	0	0
Ginseng	107	67	31	1	0	28	0	7	0	37	4	0	26	16	8	9	8	0	0
Kava Kava	114	63	6	1	7	45	0	3	1	15	20	0	24	27	5	10	11	1	0
Ma Huang/Ephedra (Single Ingredient)	23	13	4	0	1	7	0	1	0	7	5	0	1	6	3	1	5	0	0
Multi-Botanicals with Citrus Aurantium	34	23	9	0	2	11	0	1	0	12	3	0	8	11	5	4	4	0	0
Multi-Botanicals with Ma Huang	24	16	5	1	3	7	0	0	0	10	2	0	4	6	4	1	3	0	0
Multi-Botanicals without Ma Huang or Citrus Aurantium	2,100	1,677	872	108	73	544	3	67	10	1,136	125	10	396	323	240	272	115	8	1
Other Single Ingredient Botanicals	4,346	3,436	1,813	187	120	1,040	13	232	31	2,815	199	9	384	362	501	319	64	9	0
St. John's Wort	160	101	69	1	12	14	1	4	0	79	13	0	8	17	20	5	4	0	0
Valerian	195	101	27	4	7	54	0	8	1	50	21	0	27	30	17	17	3	1	0
Yohimbe	135	99	15	0	4	73	0	7	0	29	21	0	48	56	7	17	40	0	0
Cultural Medicines																			
Asian Medicines	68	51	23	1	3	20	0	4	0	40	3	0	8	21	5	8	4	0	0
Ayurvedic Medicines	9	7	4	0	0	3	0	0	0	6	0	0	1	2	1	0	1	0	0
Hispanic Medicines	8	5	3	0	1	1	0	0	0	5	0	0	0	1	0	0	0	0	0
Other Cultural Medicines	107	82	41	3	6	25	0	6	1	60	10	0	10	20	7	5	4	2	0
Energy Products																			
Energy Drinks: Caffeine Containing (From Any Source Including Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc)	1,051	869	533	73	102	134	1	18	8	662	96	2	101	121	170	127	62	3	0
Energy Drinks: Caffeine Only (Without Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc)	836	627	411	54	58	91	0	11	2	497	68	3	54	58	121	67	24	3	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Energy Drinks: Ethanol and Caffeine Containing (From Any Source Including Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc)	118	27	11	3	6	6	0	1	0	18	7	0	1	6	6	1	3	0	0
Energy Drinks: Ethanol and Caffeine Only (Without Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc)	6	4	3	0	0	1	0	0	0	3	0	1	0	2	0	0	2	0	0
Energy Drinks: Ethanol Containing Without Caffeine (From Any Source)	3	2	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0
Energy Drinks: No Caffeine (From Any Source)	31	27	15	2	1	7	1	1	0	22	0	1	3	7	4	0	3	1	0
Energy Drinks: Unknown	896	717	346	102	123	128	1	14	3	468	117	8	117	126	104	129	51	4	0
Energy Products: Other	216	181	99	11	15	52	0	3	1	127	29	0	22	60	40	35	19	2	0
Hormonal Products																			
Androgen or Androgen Precursor Dietary Supplements	129	92	48	2	7	29	0	6	0	63	9	0	19	25	15	10	8	1	0
Glandular Dietary Supplements	21	13	7	0	1	3	0	2	0	10	2	0	1	2	3	1	0	0	0
Melatonin	59,442	53,531	43,841	5,632	1,972	1,670	91	244	81	50,260	2,717	45	268	4,370	9,446	3,704	153	6	1
Phytoestrogen Dietary Supplements	72	41	16	1	2	20	0	2	0	29	4	0	8	7	6	3	2	0	0
Miscellaneous Dietary Supplements/ Herbals/Homeopathic																			
Homeopathic Agents	7,332	6,781	5,814	273	83	500	13	88	10	6,481	108	4	172	420	1,165	220	31	5	0
Unknown Dietary Supplements or Homeopathic Agents	2,262	1,803	1,085	112	72	449	2	67	16	1,371	100	16	302	344	293	178	95	6	0
Other Dietary Supplements																			
Fatty Acid Supplements	396	282	217	21	12	25	0	6	1	258	10	1	12	21	54	15	4	0	0
Glucosamine (with or without Chondroitin)	605	442	314	9	11	89	1	18	0	414	10	1	17	20	82	17	1	0	0
Other Single Ingredient Non-Botanical Dietary Supplements	1,764	960	622	44	24	226	2	36	6	817	37	0	99	78	163	83	12	2	0
Category Total:	**83,871**	**73,006**	**56,727**	**6,699**	**2,773**	**5,587**	**130**	**904**	**186**	**66,409**	**3,811**	**105**	**2,318**	**6,696**	**12,637**	**5,385**	**762**	**60**	**2**
Diuretics																			
Miscellaneous Diuretics																			
Furosemide	3,249	921	282	23	24	552	1	37	2	820	73	1	22	245	179	99	48	1	0
Other Types of Diuretic	3,161	1,101	340	59	85	547	1	57	12	924	117	6	43	256	271	95	42	2	0
Thiazide	4,183	1,368	474	77	62	685	0	65	5	1,204	132	0	23	292	322	71	30	3	0
Unknown Types of Diuretic	504	197	65	9	12	97	0	13	1	167	22	1	6	41	54	9	3	0	0
Category Total:	**11,097**	**3,587**	**1,161**	**168**	**183**	**1,881**	**2**	**172**	**20**	**3,115**	**344**	**8**	**94**	**834**	**826**	**274**	**123**	**6**	**0**
Electrolytes and Minerals																			
Miscellaneous Electrolytes and Minerals																			
Calcium and Calcium Salts	11,163	9,731	8,574	484	102	449	23	86	13	9,455	173	9	58	285	1,658	156	28	4	0
Chromium, Trivalent	179	158	37	15	6	72	1	24	3	152	2	0	4	25	31	21	3	0	0
Colloidal Silver	189	154	40	21	4	70	0	19	0	106	18	0	28	42	29	11	3	0	0
Fluoride (Excluding Vitamins, Hydrofluoric Acid & Mouthwashes)	1,101	1,067	818	102	27	98	0	21	1	981	16	2	60	40	191	64	5	0	0
Iron and Iron Salts (Excluding Vitamins with Iron)	6,358	4,688	2,044	191	557	1,635	6	227	28	3,625	666	9	349	1,136	937	621	139	11	1
Magnesium and Magnesium Salts	2,694	2,153	1,022	122	66	779	5	141	18	1,777	157	12	190	245	346	250	51	5	2
Multi-Mineral and Multi-Herbal Dietary Supplement	564	450	245	21	39	133	1	9	2	303	84	0	62	129	90	70	48	1	0
Multi-Mineral Dietary Supplements	244	197	76	7	4	92	0	15	3	126	2	1	68	20	20	59	5	1	0
Other Types of Electrolyte or Mineral	73	62	27	4	0	28	0	3	0	52	3	3	3	8	12	12	4	0	0
Potassium and Potassium Salts	1,760	662	160	14	23	402	1	57	5	527	82	4	42	143	152	54	23	3	0
Selenium and Selenium Salts	99	67	18	2	6	36	0	5	0	47	7	0	13	18	13	8	1	0	0
Sodium and Sodium Salts	5,089	4,205	2,124	347	173	1,255	10	264	32	3,573	408	42	143	605	743	653	80	7	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals exposure cases by generic category – Continued

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Unknown Types of Electrolyte or Mineral	9	7	3	0	0	4	0	0	0	6	1	0	0	3	0	2	0	0	0
Vanadium and Vanadium Salts	1	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
Zinc and Zinc Salts	2,532	2,100	564	101	98	1,103	6	211	17	1,327	122	5	631	138	190	390	39	0	0
Category Total:	**32,055**	**25,702**	**15,753**	**1,431**	**1,105**	**6,156**	**53**	**1,082**	**122**	**22,058**	**1,741**	**87**	**1,651**	**2,837**	**4,413**	**2,371**	**429**	**32**	**3**
Eye/Ear/Nose/Throat Preparations																			
Miscellaneous Eye/Ear/Nose/Throat Preparations																			
Topical Steroids For Eye/Nose/Throat	1,858	1,602	647	265	46	511	4	117	12	1,474	52	2	73	61	208	109	6	0	0
Nasal Preparations																			
Other Nasal Decongestants or Sympathomimetics (Excluding Tetrahydrazoline)	1,558	1,441	392	54	111	740	2	127	15	1,218	87	7	124	192	274	187	39	2	0
Other Types of Nasal Preparation	645	621	321	20	13	197	1	61	8	578	6	4	30	18	85	51	3	0	0
Tetrahydrozoline, Nasal Preparations	34	33	21	0	3	8	1	0	0	29	1	2	1	6	14	4	0	1	0
Unknown Types of Nasal Preparation	9	7	1	0	0	4	0	2	0	7	0	0	0	2	0	1	0	0	0
Ophthalmic Preparations																			
Contact Lens Products	1,633	1,581	846	40	66	511	3	104	11	1,524	21	5	18	213	176	239	48	1	0
Glaucoma Medications	431	379	77	6	10	247	0	35	4	337	11	1	28	59	66	30	12	2	0
Other Ophthalmic Sympathomimetics	562	540	347	17	21	124	0	26	5	491	15	11	20	129	206	24	10	0	0
Other Types of Ophthalmic Preparation	2,223	2,134	1,008	77	50	769	1	213	16	1,998	32	25	71	126	307	99	25	2	0
Tetrahydrozoline, Ophthalmic Preparations	888	836	408	17	40	279	1	75	16	642	70	86	15	233	263	34	31	2	1
Unknown Types of Ophthalmic Preparation	32	29	8	0	1	13	0	6	1	18	3	3	5	7	3	4	1	0	0
Otic Preparations																			
Combination Products	571	561	203	39	23	234	2	58	2	546	2	2	11	37	97	143	5	0	0
Other Types of Otic Preparation	2,292	2,271	637	68	67	1,238	2	241	18	2,213	7	3	41	272	214	696	63	0	0
Unknown Types of Otic Preparation	44	44	5	0	3	24	0	11	1	42	0	0	1	7	1	16	2	0	0
Throat Preparations																			
Other Types of Throat Preparation	663	636	94	53	78	328	0	79	4	585	30	0	17	42	104	48	7	0	0
Throat Lozenges with Local Anesthetics	156	132	74	3	8	38	0	6	3	117	5	0	9	12	37	10	1	0	0
Throat Lozenges without Local Anesthetics	536	487	377	34	11	54	0	9	2	444	20	0	20	13	92	21	0	0	0
Unknown Types of Throat Preparation	2	2	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0
Category Total:	**14,137**	**13,336**	**5,467**	**693**	**552**	**5,319**	**17**	**1,170**	**118**	**12,264**	**363**	**151**	**484**	**1,429**	**2,147**	**1,716**	**253**	**10**	**1**
Gastrointestinal Preparations																			
Antacids																			
Antacids: Other Types	2,940	2,656	2,274	128	19	184	6	41	4	2,564	47	3	38	68	329	51	5	1	0
Antacids: Proton Pump Inhibitors	10,271	4,549	2,017	140	233	1,795	7	325	32	4,024	326	7	178	453	846	169	24	1	0
Antacids: Salicylate-Containing	2,273	1,946	1,429	159	43	278	0	33	4	1,750	110	2	73	197	414	75	20	2	0
Antidiarrheals																			
Antidiarrheals: Diphenoxylate and Atropine Containing	168	86	17	2	2	58	0	6	1	60	16	2	4	47	17	14	8	0	0
Antidiarrheals: Loperamide	1,014	666	225	20	29	340	1	41	10	409	192	5	49	260	158	59	63	35	3
Antidiarrheals: Non-Narcotic Containing (Excluding Salicyl Containing)	20	16	12	2	1	1	0	0	0	16	0	0	0	0	5	0	0	0	0
Antidiarrheals: Paregoric Containing	4	4	0	0	0	4	0	0	0	2	1	1	0	3	1	0	2	0	0
Antispasmodics																			
Antispasmodics: Anticholinergic Containing	2,469	970	286	68	104	473	0	32	7	713	185	2	55	366	260	138	86	12	0
Antispasmodics: Other Types	329	122	15	0	1	93	0	13	0	112	3	0	6	20	32	9	3	0	0
Miscellaneous Gastrointestinal Preparations																			

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Laxatives	15,062	12,976	8,557	764	464	2,513	18	594	66	11,769	560	58	542	993	1,709	1,273	159	4	0
Other Types of Gastrointestinal Preparation	9,445	7,634	5,712	342	140	1,177	14	215	34	6,943	196	15	463	384	1,249	459	56	11	0
Unknown Types of Gastrointestinal Preparation	41	29	11	2	3	10	0	3	0	17	8	0	2	10	7	3	3	0	0
Serotonin 5-HT3 Receptor Antagonists																			
Serotonin 5-HT3 Receptor Antagonists: Ondansetron	2,700	1,437	782	106	124	373	1	44	7	1,216	153	2	55	363	464	104	46	3	0
Serotonin 5-HT3 Receptor Antagonists: Other or Unknown	8	4	1	2	1	0	0	0	0	3	1	0	0	1	2	0	0	0	0
Category Total:	**46,744**	**33,095**	**21,338**	**1,735**	**1,164**	**7,299**	**47**	**1,347**	**165**	**29,598**	**1,798**	**97**	**1,465**	**3,165**	**5,493**	**2,354**	**475**	**69**	**3**
Hormones and Hormone Antagonists																			
Hypoglycemic, Combination																			
Hypoglycemic: Biguanide Combinations (Excluding Sulfonylurea)	457	222	21	1	13	159	0	26	2	194	19	0	6	34	58	10	6	1	1
Hypoglycemic: Other or Unknown Oral Hypoglycemic Combination	24	14	6	2	1	5	0	0	0	14	0	0	0	1	3	1	0	0	0
Hypoglycemic: Sulfonylurea Combinations	60	33	9	0	3	19	0	2	0	28	3	0	1	20	9	2	5	1	0
Hypoglycemic, Single Agent																			
Hypoglycemics: Glucagon-Like Peptide-1 (GLP-1) Receptor Agonists	1,075	975	24	6	4	840	0	95	6	911	23	0	40	204	228	119	42	0	0
Hypoglycemics: Other or Unknown	15	6	3	0	0	3	0	0	0	4	1	0	0	4	1	0	2	1	0
Insulin	6,610	5,467	150	81	164	4,733	3	312	24	4,659	695	14	81	2,290	2,170	360	802	68	5
Oral Hypoglycemics: Alpha-Glucosidase Inhibitors	38	20	5	1	1	11	0	2	0	19	1	0	0	5	4	4	0	0	0
Oral Hypoglycemics: Biguanides	9,256	3,762	758	89	315	2,366	1	211	22	2,921	684	6	114	1,088	733	393	249	77	19
Oral Hypoglycemics: Dipeptidyl Peptidase-4 (DPP-4) Inhibitors	952	306	81	6	4	192	0	23	0	276	20	0	9	61	96	23	5	0	0
Oral Hypoglycemics: Meglitinides	69	34	7	2	1	20	0	4	0	29	2	0	3	19	11	4	5	0	0
Oral Hypoglycemics: Sodium Glucose Co-Transporter 2 Inhibitor (SGLT2) Inhibitors	872	340	107	10	6	195	0	20	2	310	9	0	19	76	110	11	7	3	0
Oral Hypoglycemics: Sulfonylureas	3,365	1,189	482	33	33	601	0	36	4	957	132	1	76	887	376	59	338	52	1
Oral Hypoglycemics: Thiazolidinediones	412	125	45	5	4	66	0	5	0	110	11	0	3	31	36	4	5	0	0
Miscellaneous Hormones and Hormone Antagonists																			
Androgens	413	345	71	5	12	210	0	38	9	264	42	2	37	75	48	54	15	2	0
Corticosteroids	10,368	8,309	3,123	510	276	3,699	9	637	55	7,624	169	10	483	470	1,067	367	62	2	0
Estrogens	1,274	879	359	20	49	377	1	62	11	786	51	5	31	58	139	63	6	1	0
Oral Contraceptives	3,029	2,410	1,481	87	371	380	3	72	16	1,975	376	2	39	216	330	170	6	0	0
Other Hormone Antagonists	681	530	154	23	21	295	3	30	4	497	20	2	10	45	99	14	4	0	0
Other Hormones	868	642	238	65	38	254	1	44	2	584	34	2	19	131	159	47	17	1	0
Progestins	1,271	989	528	39	46	316	1	50	9	874	39	4	68	91	166	55	13	1	0
Selective Estrogen Receptor Modulators	257	152	40	9	4	82	1	14	2	145	5	0	2	14	33	4	1	0	0
Thyroid Preparations (Including Synthetics and Extracts)	13,118	8,663	4,081	339	260	3,500	6	432	45	8,259	303	4	74	954	1,530	172	61	2	1
Unknown Hormones or Hormone Antagonists	9	4	0	0	0	3	0	1	0	2	0	0	2	2	0	2	0	0	0
Category Total:	**54,493**	**35,416**	**11,773**	**1,333**	**1,626**	**18,326**	**29**	**2,116**	**213**	**31,442**	**2,639**	**52**	**1,117**	**6,776**	**7,406**	**1,938**	**1,651**	**212**	**27**
Miscellaneous Drugs																			
Alzheimer Drugs																			
Miscellaneous Alzheimer Drugs	2,511	790	84	10	9	633	1	48	5	701	36	2	39	283	140	147	85	6	0

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals exposure cases by generic category – Continued

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Antidotes																			
Miscellaneous Antidote Drugs	394	234	64	4	13	143	0	8	2	195	18	2	18	83	44	30	19	1	0
Other Miscellaneous Drugs																			
Allopurinol	1,039	301	129	9	9	140	0	14	0	275	16	0	8	35	87	11	4	1	0
Bisphosphonates (Including Combinations)	517	471	6	3	1	413	0	44	4	449	2	0	20	83	61	44	8	0	0
Disulfiram	181	63	16	1	2	34	0	7	3	32	14	0	15	18	11	13	5	1	0
Ergot Alkaloids	52	41	18	1	1	17	0	4	0	35	1	1	3	18	10	6	10	1	0
Hematopoietics	37	36	9	1	2	21	0	2	1	30	2	0	4	9	7	3	0	1	0
Monoclonal Antibodies (Including Fragments)	294	271	17	8	13	206	0	25	2	220	5	2	43	52	45	40	12	2	1
Neuromuscular Blocking Agents (Succinylcholine, Curare, etc)	39	25	0	0	1	22	0	2	0	15	0	1	8	19	6	2	1	3	1
Nicotine Pharmaceuticals	1,608	1,513	906	114	35	373	1	79	5	1,295	106	2	98	229	387	253	30	0	0
Other Types of Miscellaneous Prescription or Over the Counter Drug	11,227	7,931	3,325	420	468	3,106	12	538	62	6,962	464	22	430	1,281	1,566	804	229	30	6
Parkinson Drugs																			
Decarboxylase Inhibitor, Alone	28	8	2	0	0	6	0	0	0	6	2	0	0	5	3	3	1	0	0
Levodopa (Alone or with Decarboxylase Inhibitor)	1,374	795	125	2	5	610	1	51	1	701	56	2	30	167	161	102	56	4	0
Levodopa and Carbidopa with Other Drugs	77	44	6	0	0	35	0	3	0	40	2	0	1	10	9	5	2	0	0
Other Parkinson Drugs (Including Combinations)	1,697	757	256	24	19	416	0	37	5	588	117	4	38	328	123	201	82	6	0
Category Total:	**21,075**	**13,280**	**4,963**	**597**	**578**	**6,175**	**15**	**862**	**90**	**11,544**	**841**	**38**	**755**	**2,620**	**2,660**	**1,664**	**544**	**56**	**8**
Muscle Relaxants																			
Miscellaneous Muscle Relaxants																			
Baclofen	4,786	2,112	247	61	138	1,615	0	36	15	694	1,140	37	110	1,639	287	366	592	388	4
Carisoprodol (Formulated Alone)	1,005	462	29	2	22	391	0	11	7	90	348	3	6	387	43	118	141	47	0
Cyclobenzaprine	8,572	3,494	769	177	286	2,108	4	123	27	1,733	1,639	2	77	2,046	682	736	633	124	1
Metaxalone	267	125	12	0	18	88	0	7	0	69	50	1	5	62	16	25	19	6	0
Methocarbamol	2,275	845	106	14	98	582	2	32	11	344	463	1	29	518	192	213	125	20	0
Other Types of Muscle Relaxant	448	167	32	3	6	119	0	5	2	89	68	0	4	90	48	31	22	5	0
Tizanidine	4,679	2,042	284	47	118	1,497	1	82	13	908	989	7	88	1,383	307	448	599	105	1
Unknown Types of Muscle Relaxant	152	24	2	0	2	19	0	1	0	4	16	0	0	22	5	7	6	1	1
Category Total:	**22,184**	**9,271**	**1,481**	**304**	**688**	**6,419**	**7**	**297**	**75**	**3,931**	**4,713**	**51**	**319**	**6,147**	**1,580**	**1,944**	**2,137**	**696**	**7**
Narcotic Antagonists																			
Miscellaneous Narcotic Antagonists																			
Miscellaneous Narcotic Antagonist	1,434	625	47	13	24	448	0	76	17	289	147	30	140	288	73	102	91	44	0
Category Total:	**1,434**	**625**	**47**	**13**	**24**	**448**	**0**	**76**	**17**	**289**	**147**	**30**	**140**	**288**	**73**	**102**	**91**	**44**	**0**
Radiopharmaceuticals																			
Miscellaneous Radiopharmaceutical																			
Specific Pharmaceutical Radionuclides	28	25	3	1	2	16	0	3	0	17	0	1	7	4	7	3	0	0	0
Category Total:	**28**	**25**	**3**	**1**	**2**	**16**	**0**	**3**	**0**	**17**	**0**	**1**	**7**	**4**	**7**	**3**	**0**	**0**	**0**
Sedative/Hypnotics/Antipsychotics																			
Barbiturates																			
Long Acting Barbiturates	1,271	748	149	22	22	528	3	24	0	611	100	2	24	205	137	85	69	27	2
Short or Intermediate Acting Barbiturates	126	62	6	0	3	46	0	7	0	40	14	1	3	30	9	18	4	7	2
Unknown Types of Barbiturate	21	3	0	0	0	2	0	1	0	0	2	0	0	3	0	0	1	0	0
Miscellaneous Sedative/Hypnotics/ Antipsychotics																			
Atypical Antipsychotics	44,383	17,271	1,653	805	3,065	11,085	7	507	149	5,535	10,753	41	660	12,837	2,941	4,447	4,370	776	14
Benzodiazepines	53,190	19,431	2,702	474	2,716	12,565	13	768	193	5,633	12,664	323	414	14,150	3,501	5,839	3,654	618	16

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Buspirone	7,579	2,332	339	66	420	1,375	1	108	23	941	1,269	2	96	1,402	616	647	227	11	0
Chloral Hydrate	6	6	3	1	0	1	0	1	0	5	1	0	0	2	2	0	2	0	0
Ethchlorvynol	4	4	1	0	2	1	0	0	0	2	2	0	0	3	0	2	0	0	0
Meprobamate	11	7	0	0	0	7	0	0	0	1	5	1	0	6	1	1	2	2	0
Methaqualone	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nonbenzodiazepine Hypnotics	263	100	9	2	6	80	0	2	1	35	61	1	3	66	14	34	18	1	0
Other Types of Sedative/Hypnotic/ Anti-Anxiety or Anti-Psychotic Drug	9,863	4,169	365	136	278	3,194	3	172	21	1,444	2,442	53	128	2,835	605	1,192	898	160	2
Phenothiazines	3,577	1,369	106	38	150	1,014	0	52	9	537	629	7	174	918	265	269	358	45	1
Sleep Aids, Over the Counter Only (Excluding Diphenhydramine)	2,133	1,470	791	21	122	495	0	29	12	906	534	1	20	702	427	216	192	34	1
Unknown Types of Sedative/Hypnotic/ Anti-Anxiety or Anti-Psychotic Drug	199	70	5	4	12	41	0	6	2	10	51	3	4	63	8	20	19	1	0
Category Total:	**1,22,628**	**47,042**	**6,129**	**1,569**	**6,796**	**30,434**	**27**	**1,677**	**410**	**15,700**	**28,527**	**435**	**1,526**	**33,222**	**8,526**	**12,770**	**9,814**	**1,682**	**38**
Serums, Toxoids, Vaccines																			
Miscellaneous Serums, Toxoids, Vaccines																			
Miscellaneous Serums, Toxoids and Vaccines	1,648	1,430	277	69	68	809	6	173	28	1,116	3	1	305	454	125	274	98	5	2
Category Total:	**1,648**	**1,430**	**277**	**69**	**68**	**809**	**6**	**173**	**28**	**1,116**	**3**	**1**	**305**	**454**	**125**	**274**	**98**	**5**	**2**
Stimulants and Street Drugs																			
Cannabinoids and Analogs																			
Cannabidiol (CBD)	2,224	1,791	794	195	144	578	5	62	13	1,247	276	11	220	726	367	371	180	12	0
eCigarettes: Marijuana Device Flavor Unknown	345	251	99	9	81	48	0	9	5	124	91	2	29	146	26	74	43	9	0
eCigarettes: Marijuana Device With Added Flavors	19	16	5	0	6	3	0	1	1	9	5	0	2	5	1	5	1	0	0
eCigarettes: Marijuana Device Without Added Flavors	15	13	5	1	1	5	0	1	0	7	5	0	1	9	0	7	3	0	0
eCigarettes: Marijuana Liquid Flavor Unknown	68	45	15	0	16	8	0	6	0	20	19	1	4	26	2	18	11	1	0
eCigarettes: Marijuana Liquid With Added Flavors	10	9	1	0	4	3	0	1	0	3	6	0	0	4	1	4	0	0	0
eCigarettes: Marijuana Liquid Without Added Flavors	5	4	2	0	0	0	0	2	0	2	2	0	0	1	1	1	0	0	0
Marijuana: Concentrated Extract (Including Oils and Tinctures)	1,084	816	209	54	205	311	2	26	9	335	349	9	101	536	56	245	216	26	0
Marijuana: Dried Plant	6,875	2,706	956	239	560	793	3	117	38	1,356	1,013	51	185	1,812	234	711	646	89	5
Marijuana: Edible Preparation	5,891	5,311	2,119	943	848	1,237	21	108	35	3,462	1,433	70	269	3,573	405	1,660	1,311	93	0
Marijuana: Oral Capsule or Pill Preparation	95	75	28	6	8	29	0	3	1	42	20	0	13	40	14	14	10	3	0
Marijuana: Other or Unknown Preparation	1,387	424	176	31	72	114	1	25	5	219	129	13	29	318	20	106	146	25	0
Marijuana: Pharmaceutical Preparation	72	44	11	0	4	27	0	2	0	25	6	0	11	20	4	10	4	0	0
Marijuana: Topical Preparation	35	28	11	0	0	16	0	1	0	24	2	0	1	7	5	6	0	0	0
Marijuana: Undried Plant	103	36	11	0	8	12	0	5	0	19	16	0	1	21	5	5	9	3	0
Synthetic Cannabinoids, Analogs and Precursors	1,202	730	19	15	122	506	1	30	37	76	465	8	13	640	23	173	305	87	1
Diet Aids																			
Diet Aids: Phenylpropanolamine and Caffeine Combinations	7	6	2	0	0	4	0	0	0	5	0	0	1	5	3	0	1	0	0
Diet Aids: Phenylpropanolamine Only	2	2	0	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0
Other Types of Diet Aid, Over the Counter Only	126	102	44	5	16	34	1	1	1	60	27	1	14	42	19	24	13	0	0
Other Types of Diet Aid, Prescription Only	7	5	2	0	0	3	0	0	0	3	1	0	1	2	1	1	0	0	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals exposure cases by generic category – Continued

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Unknown Types of Diet Aid	37	21	9	1	1	10	0	0	0	10	6	0	5	8	3	2	3	0	0
Miscellaneous Stimulants and Street Drugs																			
Amphetamines and Related Compounds	16,001	9,794	3,394	1,457	1,700	2,948	4	228	63	6,753	2,610	42	219	4,844	2,242	1,666	1,778	158	4
Amyl or Butyl Nitrites (Street Drugs)	215	184	8	0	5	138	0	30	3	70	102	2	4	98	13	29	36	9	2
Caffeine	3,821	2,966	1,249	152	410	1,007	3	118	27	1,905	571	27	426	667	410	480	333	15	1
Cocaine	5,026	954	66	9	54	709	1	89	26	111	733	19	8	770	118	136	245	118	28
Ephedrine	77	50	24	0	3	19	0	2	2	34	13	1	2	18	6	10	6	1	0
gamma-Hydroxybutyric Acid including Analogs or Precursors	766	528	12	2	20	452	0	25	17	96	346	52	9	452	27	76	148	156	1
Hallucinogenic Amphetamines	235	115	6	1	24	71	0	9	4	10	99	2	2	97	4	31	38	6	0
Kratom	1,262	794	63	5	35	637	0	45	9	120	513	48	90	614	59	175	259	66	5
Lysergic acid diethylamide (LSD)	1,450	885	17	11	574	250	1	18	14	47	802	12	5	784	42	202	439	55	0
Mescaline/Peyote	18	9	1	0	1	6	0	1	0	3	5	0	1	7	0	3	4	0	0
Methamphetamines	8,978	3,715	190	34	131	2,963	4	290	103	444	2,981	98	44	2,906	256	573	1,229	348	230
Methylphenidate	8,684	5,837	1,422	2,238	1,338	750	10	63	16	4,608	1,084	11	90	1,825	1,399	853	645	22	0
Other Hallucinogens	12	3	1	0	0	1	0	1	0	2	1	0	0	2	1	0	0	0	0
Other Stimulants (Excluding Amphetamines)	594	418	179	19	25	175	1	15	4	308	68	0	33	127	91	63	41	2	1
Other Street Drugs	32	20	3	0	2	13	0	2	0	7	11	1	1	13	2	2	7	2	0
Other Synthetic Street Drugs	27	11	2	0	3	5	0	1	0	3	6	1	0	7	1	4	1	1	0
Phenylcyclohexylpiperidine (PCP)	546	212	7	0	9	172	0	14	10	18	122	5	2	187	4	34	100	20	2
Phenylpropanolamine Containing Look Alike Drugs	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
Synthetic Cathinones, Analogs and Precursors	236	139	10	1	12	100	0	7	9	21	108	7	0	110	3	30	45	13	0
Synthetic Phenethylamines, Analogs, and Precursors	1,998	943	52	7	182	599	2	67	34	96	788	19	15	761	73	163	333	73	3
Synthetic Tryptamines, Analogs and Precursors	81	48	3	2	10	29	0	2	2	7	34	4	0	37	5	10	20	2	0
Unknown Hallucinogens	11	9	0	0	3	6	0	0	0	1	7	1	0	7	0	2	4	0	0
Unknown Stimulants or Street Drugs	297	190	13	1	36	115	0	20	5	29	132	9	4	158	6	23	74	34	0
Category Total:	**69,977**	**40,260**	**11,240**	**5,438**	**6,673**	**14,907**	**60**	**1,449**	**493**	**21,743**	**15,007**	**527**	**1,856**	**22,432**	**5,952**	**8,002**	**8,687**	**1,449**	**283**
Topical Preparations																			
Miscellaneous Topical Preparations																			
Acne Preparations	1,642	1,561	737	95	219	406	2	91	11	1,411	43	5	94	102	228	176	19	0	0
Boric Acid or Borates (As Antiseptics, Excluding Insecticides)	778	767	50	4	55	571	1	82	4	751	6	0	9	50	130	37	5	0	0
Calamine (Including All Caladryl Type Products)	1,542	1,496	890	55	10	470	1	66	4	1,459	16	2	13	116	204	174	4	1	0
Camphor	7,469	7,276	5,557	160	135	1,147	14	242	21	7,000	136	14	81	846	1,914	878	71	9	0
Camphor and Methyl Salicylate Combinations	1,079	1,055	708	40	30	223	0	51	3	993	13	2	44	110	225	145	4	0	0
Diaper Care and Rash Products	20,577	20,237	19,100	220	86	634	59	125	13	20,127	32	8	26	366	2,497	796	28	0	1
Hexachlorophene Containing Antiseptics	24	24	9	1	1	11	0	2	0	22	1	0	1	6	7	5	0	0	0
Hydrogen Peroxide 3%	8,766	8,176	1,973	400	465	4,484	14	786	54	7,726	268	58	85	682	736	1,337	79	3	0
Iodine or Iodide Containing Antiseptics	993	920	176	39	34	575	1	86	9	775	65	8	61	140	158	130	19	0	0
Mercury Containing Antiseptics	37	33	17	0	3	13	0	0	0	30	1	0	2	7	9	5	0	0	0
Methyl Salicylate	4,273	4,166	2,703	177	71	986	6	209	14	3,943	38	8	166	361	849	589	35	1	0
Minoxidil, Topical	206	192	67	3	3	103	1	15	0	154	7	1	29	35	35	21	10	1	0
Other Types of Rubefacient or Liniment (Excluding Camphor and Methyl Salicylate)	2,368	2,306	1,431	59	46	617	2	142	9	2,054	27	4	213	114	311	360	38	0	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Other Types of Topical Antiseptic	2,029	1,941	746	57	68	897	1	154	18	1,795	63	1	68	244	329	238	31	1	0
Podophyllin	56	55	22	4	2	16	3	8	0	49	3	0	2	12	9	7	4	0	0
Silver Nitrate	56	47	14	2	7	19	0	5	0	36	1	0	10	13	7	9	3	0	0
Topical Steroids (Including Otic, Ophthalmic, and Dermal Preparations)	7,026	6,835	3,656	510	136	2,034	12	456	31	6,699	40	3	73	89	877	234	19	1	0
Topical Steroids in Combination with Antibiotics (Including Otic, Ophthalmic, and Dermal Preparations)	1,230	1,190	556	65	30	425	6	102	6	1,160	6	0	21	37	145	162	9	1	0
Wart Preparations and Other Keratolytics	1,064	1,045	583	83	30	278	1	67	3	983	15	3	43	129	198	159	27	2	0
Category Total:	**61,215**	**59,322**	**38,995**	**1,974**	**1,431**	**13,909**	**124**	**2,689**	**200**	**57,167**	**781**	**117**	**1,041**	**3,459**	**8,868**	**5,462**	**405**	**20**	**1**
Unknown Drug																			
Miscellaneous Unknown Drug																			
Miscellaneous Unknown Drugs	23,043	14,795	2,838	482	2,042	8,224	45	785	379	4,332	6,453	791	570	11,287	2,029	2,012	3,529	2,140	225
Category Total:	**23,043**	**14,795**	**2,838**	**482**	**2,042**	**8,224**	**45**	**785**	**379**	**4,332**	**6,453**	**791**	**570**	**11,287**	**2,029**	**2,012**	**3,529**	**2,140**	**225**
Veterinary Drugs																			
Miscellaneous Veterinary Drugs																			
Miscellaneous Veterinary Drugs without Human Equivalent	6,991	6,299	1,451	109	146	3,936	4	608	45	6,185	57	14	22	369	1,211	444	69	6	0
Category Total:	**6,991**	**6,299**	**1,451**	**109**	**146**	**3,936**	**4**	**608**	**45**	**6,185**	**57**	**14**	**22**	**369**	**1,211**	**444**	**69**	**6**	**0**
Vitamins																			
Miscellaneous Vitamins																			
Other Types of Vitamin	848	639	442	51	23	92	5	22	4	574	25	0	37	53	106	30	6	0	1
Unknown Types of Vitamin	831	643	460	79	27	55	5	13	4	577	48	1	14	57	135	22	4	0	0
Multiple Vitamin Liquids: Adult Formulations																			
Multiple Vitamin Liquids: Adult Formulations with Fluoride (No Iron)	13	10	10	0	0	0	0	0	0	10	0	0	0	1	3	0	0	0	0
Multiple Vitamin Liquids: Adult Formulations with Iron (No Fluoride)	262	217	134	13	13	46	1	7	3	193	9	1	11	16	44	6	1	0	0
Multiple Vitamin Liquids: Adult Formulations with Iron and Fluoride	12	10	7	0	0	1	0	2	0	9	0	0	1	0	1	1	0	0	0
Multiple Vitamin Liquids: Adult Formulations without Iron or Fluoride	613	492	320	54	16	88	1	12	1	454	19	0	18	32	73	12	7	0	0
Multiple Vitamin Liquids: Pediatric Formulations																			
Multiple Vitamin Liquids: Pediatric Formulations with Fluoride (No Iron)	116	109	101	3	1	4	0	0	0	109	0	0	0	2	15	0	1	0	0
Multiple Vitamin Liquids: Pediatric Formulations with Iron (No Fluoride)	618	585	542	31	7	3	0	1	1	568	5	0	10	31	102	28	2	0	0
Multiple Vitamin Liquids: Pediatric Formulations with Iron and Fluoride	19	19	16	3	0	0	0	0	0	19	0	0	0	1	2	1	0	0	0
Multiple Vitamin Liquids: Pediatric Formulations without Iron or Fluoride	1,305	1,238	985	208	17	16	3	6	3	1,191	39	0	7	49	214	39	4	0	0
Multiple Vitamin Tablets: Adult Formulations																			
Multiple Vitamin Tablets: Adult Formulations with Fluoride (No Iron)	135	121	103	7	1	9	1	0	0	118	1	0	0	3	19	3	0	0	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals exposure cases by generic category – Continued

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Multiple Vitamin Tablets: Adult Formulations with Iron (No Fluoride)	4,357	3,339	2,438	81	104	584	3	119	10	3,124	124	4	77	244	647	128	16	1	0
Multiple Vitamin Tablets: Adult Formulations with Iron and Fluoride	38	27	17	0	1	9	0	0	0	24	1	0	2	3	1	4	0	0	0
Multiple Vitamin Tablets: Adult Formulations with Iron Carbonyl (No Fluoride)	94	81	62	4	2	10	1	2	0	78	2	0	0	5	18	5	2	0	0
Multiple Vitamin Tablets: Adult Formulations without Iron or Fluoride	9,750	8,024	5,763	1,046	305	751	8	139	12	7,483	346	2	169	337	1,336	235	23	2	0
Multiple Vitamin Tablets: Pediatric Formulations																			
Multiple Vitamin Tablets: Pediatric Formulations with Fluoride (No Iron)	184	174	142	24	1	5	1	0	1	171	2	0	1	8	24	4	0	0	0
Multiple Vitamin Tablets: Pediatric Formulations with Iron (No Fluoride)	4,028	3,772	3,281	375	62	45	3	4	2	3,679	71	1	13	256	711	238	19	2	0
Multiple Vitamin Tablets: Pediatric Formulations with Iron and Fluoride	18	15	15	0	0	0	0	0	0	15	0	0	0	0	3	0	0	0	0
Multiple Vitamin Tablets: Pediatric Formulations with Iron Carbonyl (No Fluoride)	37	36	36	0	0	0	0	0	0	36	0	0	0	0	8	2	0	0	0
Multiple Vitamin Tablets: Pediatric Formulations without Iron or Fluoride	17,674	16,736	13,317	2,916	325	129	26	17	6	16,116	569	0	12	504	2,693	408	5	0	0
Multiple Vitamins, Unspecified Adult Formulations																			
Multiple Vitamins, Unspecified Adult Formulations with Fluoride (No Iron)	13	11	10	0	0	1	0	0	0	10	1	0	0	2	5	0	0	0	0
Multiple Vitamins, Unspecified Adult Formulations with Iron (No Fluoride)	914	628	404	30	39	126	2	27	0	579	34	0	11	66	99	25	1	1	0
Multiple Vitamins, Unspecified Adult Formulations with Iron and Fluoride	9	8	7	0	0	1	0	0	0	8	0	0	0	0	1	0	0	0	0
Multiple Vitamins, Unspecified Adult Formulations without Iron or Fluoride	972	864	674	102	31	51	0	5	1	823	26	1	12	25	134	22	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations																			
Multiple Vitamins, Unspecified Pediatric Formulations with Fluoride (No Iron)	22	21	16	4	0	0	1	0	0	18	2	0	0	1	6	2	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations with Iron (No Fluoride)	84	77	72	5	0	0	0	0	0	76	1	0	0	6	15	8	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations with Iron and Fluoride	2	2	2	0	0	0	0	0	0	2	0	0	0	2	1	1	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations without Iron or Fluoride	2,152	2,044	1,637	353	32	16	4	2	0	1,969	69	0	5	61	389	51	2	0	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals exposure cases by generic category – Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	< =5	6-12	13-19	> =20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Other Vitamins																			
Other B Complex Vitamins	5,523	3,555	2,760	179	83	439	4	78	12	3,323	99	2	115	220	596	94	8	0	0
Vitamin A	550	471	251	32	16	139	2	25	6	432	15	0	23	26	74	26	3	1	0
Vitamin B3 (Niacin)	759	589	143	12	27	355	1	43	8	282	67	0	236	115	35	187	34	1	0
Vitamin B6 (Pyridoxine)	385	242	185	8	5	36	1	7	0	219	8	0	13	18	35	10	1	1	0
Vitamin C	3,104	2,070	1,435	250	48	279	4	46	8	1,901	93	1	68	81	336	78	14	0	0
Vitamin D	10,178	7,244	4,604	518	272	1,592	8	224	26	6,893	216	2	101	569	1,189	220	41	3	0
Vitamin E	584	395	276	18	12	74	0	11	4	366	10	1	16	30	66	13	1	0	0
Category Total:	**66,203**	**54,508**	**40,667**	**6,406**	**1,470**	**4,956**	**85**	**812**	**112**	**51,449**	**1,902**	**16**	**972**	**2,824**	**9,136**	**1,903**	**195**	**12**	**1**
Pharmaceuticals Total:	**1,446,011**	**889,952**	**379,687**	**56,223**	**93,054**	**322,509**	**1,009**	**32,069**	**5,401**	**636,505**	**208,073**	**3,615**	**30,352**	**289,107**	**173,893**	**109,304**	**72,620**	**18,434**	**1,507**
GRAND TOTAL (Nonpharmaceuticals + Pharmaceuticals):	**2,557,819**	**1,866,592**	**859,042**	**112,878**	**133,388**	**635,580**	**4,229**	**105,443**	**16,032**	**1,532,146**	**246,310**	**17,847**	**48,893**	**433,106**	**321,798**	**262,086**	**105,617**	**21,547**	**1,957**

Appendix C

Abstracts of selected cases

Selection of Abstracts for Publication

The abstracts included in Appendix C were selected for publication in a 3-stage process consisting of qualifying, ranking, and reading. Changes in place since the 2014 report for the selection of the top 200 cases: include all pregnant subjects, include all children (0-2 y/o) subjects, increase (double) the weight on the autopsy report, add a weighting for Age of subject (1/age in years), add a weighting for infrequency of substance category (Generic Code).

Qualifying cases were thus: Age 0-2 y/o, Pregnant, or RCF 1-Undoubtedly Responsible, 2-Probably Responsible or 3-Contributory. Fatalities by Indirect report were excluded beginning with the 2008 annual report. The ranking was based on Final Case Weighting (FCW).

$$\textbf{FCW} = \textbf{f}\ [1/(\textbf{num substances in this case}),\ \textbf{WCS},\ 1/\textbf{Age}\ (\textbf{years}),\ 1/(\textbf{num cases in that generic code this year})]$$

Where:

$$\begin{aligned}\text{Weighted Case Score (WCS)} = {} & \text{Hospital records}*8.8 + \text{Postmortem}*15.2 \\ & + \text{Blood levels}*6.9 \\ & + \text{Quality/Completeness}*6.4 \\ & + \text{Novelty/Educational value}*13.2\end{aligned}$$

WCS Scores were normalized (z-score) within each AAPCC reviewer before the final weighting: 25% for each (1/NumSubstances, WCS, 1/Age, 1/NumCodes).

The WCS weighting factors were the averages of review team recommendations gathered in 2006.

The top ranked abstracts (200 ties) were each read by individual reviewers who volunteered (See Appendix E) and the 2 managers (DAS and JBM). Each reader judged each abstract as "publish" or "omit" and all abstracts receiving 8 or more of 12 publish votes were selected, further edited, cross-reviewed by the 2 managers and DDG, and published in this report.

Abstracts

Abstracts of the cases were selected (see Selection of Abstracts for Publication, above) from the human fatalities judged related to an exposure as reported to US PCs in 2019. A structured format for abstracts was required in the PC preparation of the abstracts and was used in the abstracts presented. Abbreviations, units and normal ranges omitted from the abstracts are given at the end of this appendix.

Case 8. Acute-on-chronic ethanol ingestion: undoubtedly responsible

Scenario/Substances: A 29 y/o male experienced rectal bleeding for 3 days. He called EMS and walked outside to meet them. He admitted drinking "a gallon of vodka" daily x 3 days. EMS found BP 126/80, HR 160, RR 24, O_2 sat 98% on RA, Glu (fingerstick) 80, and transported him to the ED.

Past Medical History: Alcohol use disorder.

Physical Exam: Clinically intoxicated, tachycardic, tachypneic, ecchymosis over left upper arm. BP 161/91, HR 155, RR 20, O_2 sat 100%, T 37.1 °C.

Laboratory/Diagnostic Findings: Na 136/K 3.8/Cl 89/CO_2 13/BUN 10/Cr 1.34/Glu 111/AG 34, AST 1,044, ALT 268, bilirubin 2.5, INR 1.5, CK 374, lactate >20.0 mmol/L, ammonia 37 mcmol/L, WBC 9.2/Hgb 13.1/Hct 37.8/PLT 95, ABG-pH 7.10/pCO_2 24/pO_2 64/HCO_3 7/BE -22.0. Serum APAP and salicylate were not detected. Ethanol 292 mg/dL. Serum osmolality 382 mOsm/kg with an OG of 27. UDS was negative. CxR: low lung volumes, mild left basal atelectasis. ECG: HR 145, QRS 90, QTc 454.

Clinical Course: On arrival to the ED, he became agitated and aggressive towards staff. He was subsequently placed in restraints and given diazepam, midazolam, and haloperidol. He continued to demonstrate tremors, agitation, and delirium. Phenobarbital was given (5 mg/kg IV), but the patient remained agitated. He was then intubated, sedated, and admitted to the ICU. Head CT was negative. He was started on IV sodium bicarbonate infusion; IV NAC was administered. Laboratory values 8 h later were Na 139/K 4.8/Cl 93/CO_2 7/BUN 11/Cr 2.02/Glu 82/AG 39, ABG-pH 7.18/pCO_2 22/pO_2 62/HCO_3 8/BE -20.0, AST 780, ALT 211, lactate 24.8 mmol/L, and ethylene glycol 12 mg/dL (enzymatic method sensitive to interference by elevated lactate). Fomepizole, thiamine, pyridoxine and folic acid were started. On Day 2, the patient was requiring 5 vasopressors to maintain a MAP of 65 mmHg. He was also receiving CRRT, antibiotics and was paralyzed to improve respiratory function. Triglycerides were 2,786 mg/dL and propofol was discontinued. Based on the prognosis, the family opted for institution of comfort measures and he died on Day 3.

Autopsy Findings: Final diagnoses: Acute alcohol intoxication and clinical history of chronic alcohol use, acute liver failure superimposed on moderate to severe alcohol induced steatosis, and acute renal failure superimposed on chronic renal injury of uncertain etiology. Forensic Toxicology (hospital blood on admission): methanol, acetone, isopropanol and ethylene glycol were all negative, ethanol 0.274%. Cause of death: multiple organ failure precipitated by binge drinking alcohol. Manner of death: accident.

Case 201. Acute hydrocarbon, brake fluid, mirtazapine ingestion: undoubtedly responsible

Scenario/Substances: A 66 y/o female was found at home unconscious and foaming at the mouth. Her daughter stated the patient took 20 mirtazapine 15 mg tablets. Empty bottles of brake fluid and motor oil were also found at the scene. She was last seen the previous day, late afternoon.

Past Medical History: Depression, suicide attempts by medication.

Laboratory/Diagnostic Findings: Na 148/BUN 30/Cr 1.08, lactate 4.5 mmol/L, ABG-pH 7.28. Serum APAP, ethanol and salicylate were not detected.

Clinical Course: The patient was unconscious and tachypneic, with agonal respirations. BP 97/71/HR 114/RR 50s/T 38.5 °C. She was intubated, ventilated, and sedated. Her initial OG was 34. ~2 h later her serum osmolality was 321, OG 28. ~4.5 h later: pH 7.369/pO_2 182/pCO_2 34/HCO_3 18.7/BE -4.7, O_2 sat 100%, lactate 4.4 mmol/L. Treatment included sodium bicarbonate infusion, antibiotics for aspiration, etomidate, midazolam, propofol, and O_2. ~9 h after presentation, she was not very responsive, pupils were equal and reactive, and vital signs were stable. Na 147/K 3.3/Cl 101/CO_2 20/BUN 45/Cr 2.66/Glu 150/AG 26/GFR 17.93, lactate 4.1 mmol/L, CK 2655, Ca 6.6. She remained on a ventilator and received HD. Her sodium bicarbonate infusion was discontinued. On Day 2, the patient remained intubated and sedated but was weaned off propofol and fentanyl. She received another round of HD, and her vital signs were "okay". Ca 8.5/K 4.1/Cr 2.35/CO_2 22/lactate 2.4 mmol/L. Her ethylene glycol and methanol levels were both negative. On Day 4, she would open her eyes in response to verbal commands and tracked with her eyes. Her vital signs continued to be stable. She was now oliguric with Cr 4.74. She remained intubated and on mechanical ventilation and daily HD. She received pyridoxine, thiamine, and folic acid. On Day 6, she expressed a desire to be taken off the ventilator. Based on the prognosis, the family opted for institution of comfort measures and she died on Day 6.

Autopsy Findings: Urine obtained from hospital drug screen: mirtazapine and pentaoxanonadecane (fuel additive/lubricant) present. Cause of death: Combined mirtazapine and brake fluid toxicity. Manner of death: Suicide.

Case 207. Acute disc battery (lithium) ingestion: undoubtedly responsible

Scenario/Substances: A 16 m/o female developed a cough and congestion. She was seen by her PCP, diagnosed with croup, and given an injection of dexamethasone. After returning home, parents noticed that a button battery was missing from a device at home and could not be found. The child's symptoms worsened, and they brought her to the ED after suspecting a battery ingestion.

Past Medical History: Otherwise healthy, no medications.

Clinical Course: In the ED she was tachycardic and febrile. CxR revealed a disc battery lodged in the cervical esophagus. She underwent removal by endoscopy and was noted to have 60% circumferential burns to her esophagus with concern for microperforation. She was admitted to the PICU and started on antibiotics and improved. She remained in the PICU for "a few days" following EGD and was medically cleared with liquid diet recommendations and plans to repeat EGD in 4-6 weeks. At outpatient follow up, her pediatrician noted she had stridor and she was re-admitted to the hospital. CT scan revealed tracheoesophageal fistula that was 1 cm above the carina. A gastric tube was placed for feeding and she was ventilated and sedated to restrict movement and allow for healing. She suffered respiratory arrest and was transferred to a tertiary care center. The tracheoesophageal fistula was surgically repaired (~1 month after ingestion), and she was extubated a week after the surgery. She suffered cardiac arrest soon after extubation. ROSC was achieved, she was re-intubated and remained on the ventilator for 2 more weeks to allow healing before extubation was attempted. Extubation was unsuccessful 2 more times and a tracheostomy was performed. Complications developed and the team decided to take her back to the OR to replace the trach with a different sized tube. The following day she suffered a cardiac arrest and despite aggressive resuscitative measures, they were unable to revive her, and she died on Day 47.

Autopsy Findings: Not available

Case 210. Acute envenomation (crotalinae) bite: undoubtedly responsible

Scenario/Substances: 3 y/o 15 kg female was bitten on the left knee by a rattlesnake (Hour 0) and was brought to the ED for evaluation.

Laboratory/Diagnostic Findings: Na 149/K6.8/CO_2 5/Cr 0.7/Glu 323/AG 34, Hgb 6.6, Hct 22.6/PLT 58, AST 90, ALT 47, INR 4.8, PT 47.2, aPTT 170, Fibrinogen $<$ 60, D-dimer 9.69, CK 253, lactate 16.2 mmol/L.

Clinical Course: Minor swelling and redness of bite site. The patient was transferred to a tertiary care center, but there was a delay in transport, and the patient arrived at the receiving hospital at Hour 6. Upon arrival she suffered cardiac arrest. She received 25 min of CPR, intubation and defibrillation x 2 with ROSC. 10 vials of antivenom were administered (Hour 7). BP 39/26, HR 105, RR 28, T 32.9 °C. A second 10 vials were administered at Hour 12. She also received packed RBCs, cryoprecipitate, epinephrine, and sodium bicarbonate. MAP improved to 45-50, but coagulopathy worsened (INR 6.73, PT 61.6, fibrinogen$<$ 60, PLT 292, Hgb 11.6), HCO_3 11, Cr 0.92, ABG-pH 6.8. She became volume overloaded with escalating vasopressor requirements and required CRRT for anuria. AST 827, ALT 496, Hgb 4.8, so more packed RBCs were infused along with 10 more vials of antivenom, FFP and vitamin K. Prior to administration, PT 46.3, INR 4.72, fibrinogen 147, lactate 10.8, ABG pH 6.976. Post antivenom administration, PT 34.8, INR 3.3, PTT 6.3, fibrinogen 209, Hgb 8.6, PLT 138. The patient remained intubated, unresponsive, without purposeful movements, despite being off sedation. She had fixed pupils. Based on the prognosis, the family opted for initiation of organ procurement for transplantation. Time of death was called at time of organ procurement.

Autopsy Findings: Not available

Case 211. Acute envenomation (crotalinae): probably responsible

Scenario/Substances: A 58 y/o male suffered a bite to the hand by a presumed Northern Pacific Rattlesnake (*Crotalus viridis oreganus*). He then walked 2 miles to a fire station and had a cardiac arrest. EMS administered CPR and epinephrine with ROSC.

Clinical Course: In the ED, BP 71/52, MAP 58, HR 122, RR 18 (ventilated), INR 1.4, PT 17.2, PTT 38, PLT 302, fibrinogen 385. Vasopressors were started, 6 vials of Crotalidae polyvalent Fab antivenom were given, and he was transferred to a tertiary care center where HR 140's, BP 135/89 O_2 sat 96% on 60% FiO_2. 14 additional vials were given with 15 more planned. He remained tachycardic with ECG, troponin, CK findings consistent with STEMI. D-dimer was too high to quantify. He developed coffee ground emesis, anuria, and seizures, treated with cisatracurium. Day 2: HR 91, RR 22, BP 106/71, MAP 82 O_2 sat 100% FiO_2 40%, T 36.3 °C, . WBC 8.97, Hgb 12.6, Hct 36, PLT 173, PT 19.6, INR 1.7, PTT 36, fibrinogen 238, total CK 2478, troponin 0.22. Paralytics and vasopressors were discontinued and propofol started for severe muscle tremors. Up to this point 24 vials of antivenom had been given. INR peaked at 1.9, fibrinogen nadir at 270. Hypotension remained, requiring vasopressors. He was anuric and dialysis was begun. Over the next 5 days his PLT dropped to 134 then to 104, but other signs of coagulopathy resolved. His arm remained swollen with several bullae. He remained neurologically impaired on the ventilator. Day 6 brain MRI showed questionable areas in the medial occipital and temporal lobes suspicious for mild hypoxic ischemic encephalopathy. He remained on the ventilator but would track intermittently. Over time his thrombocytopenia resolved but he remained ventilated until Day 15 and required intermittent dialysis until Day 26. He continued to exhibit agitation, delirium, and confusion. On Day 30 he was re-intubated for de-saturation and eventually received a tracheostomy. On Day 57, he had a cardiac arrest and died on Day 60.

Autopsy Findings: Cause of death: rattlesnake bite, anoxic encephalopathy; respiratory failure. Manner of death: accident.

Case 214. Acute envenomation (crotalinae): probably responsible

Scenario/Substances: A 67 y/o male received a rattlesnake bite to the webspace between thumb and index finger of his left hand (Hour 0).

Laboratory/Diagnostic Findings: Initial labs: Na 142/K 4.1/Cl 104/CO_2 25/BUN 26/Cr 1.23, AST 32, ALT 57, PT 9, INR 0.9, PTT 23. WBC 5.4, PLT 194.

Clinical Course: He was asymptomatic on arrival at the ED but then had an anaphylactic reaction with hypotension and facial swelling. He was transferred to a tertiary care center. Treatment there included cricothyrotomy, epinephrine, norepinephrine, diphenhydramine, steroids and 2 loading doses of antivenom. Hour 6 he was "looking better" with clear lungs. BP had been "stabilized on low dose norepinephrine". The bite wound looked 'surprisingly good, but facial swelling was hard to assess due to his large beard". There was no evidence of coagulopathy. Hour 7 labs: PT 15.3, INR 1.2, fibrinogen 186, PLT 231, WBC 9.8, Hgb 17.6, Hct 54.1. He received a 3rd loading dose of antivenom at Hour 10. BP 93/70, HR 69, RR 36. Hour 10.5 lab: Na 142, K 5.4, Cl 115, CO_2 22, AG 5, Glu 178, BUN 30, Cr 1.78 AST 53, ALT 43, PT 15.1, INR 1.2, PTT 30.5, fibrinogen 179, PLT 198, WBC 8.1, Hgb 16, Hct 49.6. He was anuric with a more swollen hand. Hour 13 he was given a 4th loading dose of antivenom for worsening BP and renal function and began maintenance antivenom dosing. Additional vasopressors were added, and patient was started on CRRT. Cr 2.87; fibrinogen 582, PLT 30. Day 2 he was off vasopressors, remained intubated on benzodiazepines, opioids, propofol and CRRT, and received maintenance antivenom doses. The affected arm was swollen, ecchymotic and somewhat "worse" but this was attributed to lack of elevation. Hour 27 labs: PT 15.7, INR 1.3, fibrinogen 660. Hour 48 labs: PLT 30, PT 14.4, INR 1.1, fibrinogen 847, Cr 1.98. The patient developed anoxic injury due to cerebral infarcts (verified on imaging). Based on the prognosis, the family opted for institution of comfort measures, and he died on Day 5.

Autopsy Findings: Autopsy was not performed.

Case 216. Acute chloroform inhalation: undoubtedly responsible

Scenario/substances: A 3 y/o female was found wrapped in plastic bags and weighted down with concrete at the bottom of a river.

Autopsy Findings: Autopsy demonstrated moderate to severe cerebral swelling with hypoxic-ischemic changes, early acute pneumonia and mild edema as well as some minor head injuries that were not considered lethal. Postmortem iliac vein blood demonstrated chloroform 34 mg/L, and chloroform was also found ($>$ 5 mg/kg) in lung tissue. Cause of death: chloroform toxicity. Manner of death: homicide.

Case 225. Acute sodium azide ingestion: undoubtedly responsible

Scenario/Substances: In a suicide attempt in his home, a 21 y/o male drank 2.5 g of sodium azide powder, obtained online, in water. When EMS arrived, he was awake and talking. He then had a seizure and arrived at the ED post-ictal and vomiting.

Physical Exam: Obtunded, post-ictal, normotensive. He did not require sedation.

Laboratory/Diagnostic Findings: Lactate 13 mmol/L. Serum APAP and salicylate not detected. ECG: bradycardia with unremarkable QRS and QT.

Clinical Course: His seizures continued on arrival to the ED and he was intubated. Gastric lavage was performed with sterile water, and 100 g of activated charcoal was administered. He developed refractory hypotension requiring maximal norepinephrine, epinephrine, and phenylephrine continuous infusions. Sodium thiosulfate 12.5 g IV was administered. A sodium bicarbonate bolus followed by continuous infusion was started. Severe hyperkalemia required calcium gluconate, regular insulin, and dextrose. The patient had multiple cardiac arrests during the first 2 h following ingestion with ROSC following ACLS. Epinephrine was required on numerous occasions between the episodes of cardiac arrest. A HD catheter was placed. A repeat lactate was 24 mmol/L. The patient was transferred to the medical ICU and died prior to the initiation of HD.

Autopsy Findings: Not available.

Case 231. Acute nitrite ingestion: undoubtedly responsible

Scenario/Substances: A 22 y/o male drank 22 g of sodium nitrite in a suicide attempt and started vomiting. His father reported him to be unresponsive and possibly breathing with pale clammy skin and a palpable pulse. EMS found him hypoxic and hypopneic with a pulse. He was bagged enroute but lost pulses and CPR was started.

Past Medical History: Depression on venlafaxine, bupropion, and clonazepam.

Laboratory/Diagnostic Findings: Na 147/K 7.1/Cl 102/Glu 330, Ca 1.6, PTT 51.7, INR 1.4, AntiXa (unfractionated heparin) 0.36, WBC 11.8, Hb 14.9, Hct 42.7, PLT 136, troponin T 15, MetHb $>$ 30%, VBG-7.14, pCO_2 95, pO_2 $<$6, O_2 sat 54.6%, ABG-pH $<$7.0, pCO_2 120, pO_2 $<$6. Repeat labs showed K 6.6, Cl 102, calcium 1.26, and HCO_3 32.

Clinical Course: In the ED BP 135/51, HR 0, RR19, O_2 sat 75% on 100% FiO_2. Ventilated with LMA. Pupils nonreactive. No palpable pulse. Coarse breath sounds bilaterally. Unresponsive and cold to touch. EMS called ahead so methylene blue was immediately available. $EtCO_2$ via LMA was minimal and he was endotracheally intubated. CPR was continued and a humeral IO catheter was placed followed by a femoral triple lumen catheter. He received multiple doses of epinephrine and an epinephrine infusion and vasopressin. He also received activated charcoal, magnesium, bicarbonate, calcium, D50W and methylene blue. He was crossmatched for an exchange transfusion. He was placed on VA-ECMO but had no change in color with unrestricted flow. There was no difference in arterial or venous blood color. Based on the prognosis, the family opted for institution of comfort measures and he died on Day 1.

Autopsy Findings: Blue green discoloration of heart and brain consistent with methemoglobin poisoning. Toxicology testing on hospital blood was consistent with patient's prescriptions: Clonazepam 19 ng/mL, 7-amino clonazepam 27 ng/mL, hydroxybupropion 330 ng/mL, amphetamine 23 ng/mL, 10-hydroxycarbazepine 9.2 ng/mL, venlafaxine 520 ng/mL, and o-desmethylvenlafaxine 180 ng/mL. Cause of death: sodium nitrite toxicity. Manner of death: suicide.

Case 246. Acute ammonia exposure (inhalation, ocular, dermal): undoubtedly responsible

Scenario/substances: A 29 y/o male was demolishing freezer panels and chipping ice off refrigerant pipes when a pipe ruptured and sprayed him with anhydrous ammonia.

Laboratory/Diagnostic Findings: Serum ethanol not detected.

Clinical Course: Died on scene. No protective equipment was noted.

Autopsy Findings: Autopsy demonstrated chemical burns of head, neck, torso and extremities as well as erythema of the tongue, hypopharynx, larynx, esophagus, trachea and bronchi. There was evidence of pulmonary edema. The trachea demonstrated denuded epithelium and evidence of thermal injury. Cause of death: inhalational chemical injury. Manner of death: accidental.

Case 288. Acute laundry detergent (pod) ingestion and aspiration: probably responsible

Scenario/Substances: A 27 y/o male was found with a Tide Pod in his mouth. He was asymptomatic in the ER and was discharged home. At home, he developed vomiting and shortness of breath. About 8 h post-exposure, his caregiver noticed seizure-like activity and he vomited. Caregiver noted gurgling with his breathing, and he collapsed. His lips turned blue, and he was not breathing. The caregiver started CPR and EMS was called.

Past Medical History: Cerebral Palsy (non-verbal)

Physical Exam: BP 154/68, HR 74, RR 25, O_2 sat 93% on FiO_2 45% per vent, T 36.1 °C.

Laboratory/Diagnostic Findings: Na 145/K 4.0/Cl 105/CO_2 22/BUN 29/Cr 1.12/Glu 357/AG 18, AST 33, ALT 27, bilirubin 0.3. INR 1.7, lactate 10.8. ABG-pH 7.23/pCO_2 45/pO_2 431.3/HCO_3 19. Serum APAP and salicylate not detected. Ethanol 12 mg/dL. UDS was negative. CxR: mild central peribronchial cuffing and patchy atelectasis/infiltrate in the medial lower lobes bilaterally. ECG: HR123, QRS 82, QTc 469. Head CT: No significant intracranial mass effect or acute hemorrhage. EEG: burst suppression, concerning for anoxic brain injury.

Clinical Course: Patient was brought to ER with CPR in progress. He received 1 dose of epinephrine and 12 min of CPR (5 min bystander, 7 min EMS) with ROSC. He was intubated, placed on the ventilator with hypothermia protocol, and sedated with lorazepam and propofol. He was unresponsive with myoclonic jerks. Norepinephrine was started for a BP of 85/50. Antibiotics were given for aspiration pneumonia. Insulin was given for hyperglycemia (patient not known to be diabetic). Day 2: An EEG suggested hypoxic ischemic cerebral injury. AST 121, Cr 1.03, CO_2 21, K 6.1, Glu 271. A rewarming protocol was started, and sedation turned off. He remained unresponsive and his breathing did not override the ventilator rate of 24. Day 3: Off sedation and vasopressor stopped. He did not respond to pain and had no spontaneous movements. K 5.0, INR 2.2, Glu 150. Days 4-6: No improvement was noted. He was not responsive to voice, grimaced to ocular pressure and postured to nail bed pressure. Repeat head CT showed evidence of anoxic brain injury. Based on the prognosis, the family opted for institution of comfort measures and he died on Day 6.

Autopsy Findings: Autopsy pathology was unremarkable. Urine toxicology had no positive findings. Cause of death: probable ingestion of caustic substance. Manner of death: accident.

Case 291. Acute cleaner (ammonium bifluoride/sulfuric acid) ingestion: undoubtedly responsible

Scenario/Substances: A 44 y/o female accidentally ingested a cup of aluminum cleaner which contained sulfuric acid, phosphoric acid, and ammonium bifluoride. She immediately developed a burning sensation in her throat.

Past Medical History: No regular home medications.

Laboratory/Diagnostic Findings: Na 142/K 3.6/Cl 106/CO_2 13/BUN 15/Cr 0.91, AST 44, ALT 15, Ca 6.9, ABG: pH 7.32, pCO_2 33.8, HCO_3 17.6.

Clinical Course: In the ED she initially appeared lethargic and uncomfortable. HR 60, BP 126/66, RR 18, T 37 °C, O_2 sat 99% on RA. Upon arrival to initial health care facility, she was noted to be lethargic and having abdominal pain. Immediate transport to a tertiary care facility was initiated. Enroute to the tertiary center, she went into torsades de pointes and suffered a cardiac arrest. Upon arrival to the tertiary care center, she was intubated, placed on a ventilator, given a calcium bolus, sedated on propofol, and placed on an amiodarone infusion. Initial laboratory data was obtained after calcium had been repleted. 11 h after ingestion, she suffered a second cardiac arrest that resolved with repeated boluses of calcium. Over the next 3 h, she had 3 more cardiac arrests and was given calcium, sodium bicarbonate, lidocaine, and epinephrine. She developed VF that was refractory to treatment, and she died 16 h after ingestion.

Autopsy Findings: Not performed.

Case 319. Unknown hand sanitizer (methanol) ingestion: undoubtedly responsible

Scenario/Substances: A 47 y/o female was found unconscious and unresponsive by her mother-in-law. A nearly empty 6 oz. bottle of 7.0% N,N-diethyl-m-toluamide insect repellant was found near the patient and a bottle of hand sanitizer was missing. She was last seen awake the night before. When EMS arrived at the home, the patient's HR was 60 and her O_2 sat was 92% on RA. The family reported she was known to take water bottles to the grocery store and replace the water with hand sanitizer from the store.

Past Medical History: Depression, hypertension, alcohol use disorder, prior history of drinking hand sanitizer and rubbing alcohol when she cannot obtain ethanol. Home medications: escitalopram, clonidine, montelukast.

Physical Exam: Obtunded and foaming at the mouth, agonal respirations, withdraws to painful stimuli. BP 147/82, HR 92, RR 6, O_2 sat 90%, T 36 °C.

Laboratory/Diagnostic Findings: Na 142/K 4.7/Cl 97/CO_2 <5.1/BUN 17/Cr 1.8/Glu 177/AG could not be calculated, AST 106, ALT 42, bilirubin 0.4, INR 1.0, WBC 7.2/Hgb 12.0/Hct 42.7/PLT 157. ABG-pH 6.7/pCO_2 31.5/pO_2 495/HCO_3 3.9/BE <-30. Serum APAP <10, salicylate <4.1, ethanol nondetectable. Measured osmolality 432 mOsm/Kg with an OG of 132. UDS was "presumptive positive" for amphetamine. CxR: unremarkable.

Clinical Course: On arrival to the ED (Hour 0), she could weakly withdraw to painful stimuli but was not following commands. There was concern for toxic alcohol ingestion. A laryngeal mask airway was placed, emergent dialysis was ordered, fomepizole was started empirically, and IV sodium bicarbonate was given. Folic acid, thiamine and pyridoxine were also started. When the temporary HD catheter was placed, the patient had a generalized tonic-clonic seizure. Lorazepam was given, the patient was intubated and admitted to the ICU. HD for 4 h was initiated. Hour 3 head CT showed mildly diminished density in the bilateral basal ganglia and thalami. Over the next 5 h her pupils became fixed and dilated. Hour 8 head CT showed diffuse anoxic injury and diffuse cerebral swelling. There was bilateral uncal herniation, with a small focus of acute parenchymal hemorrhage in the left caudate body and small amounts of intraventricular hemorrhage in the frontal horns of both lateral ventricles. On Day 2, the patient remained intubated, unresponsive and requiring vasopressor support. Na 152/K 2.9/Cl 115/CO_2 21/BUN 6/Cr 0.8/Glu 167/AG 16. Measured osmolality 323 with an OG of 8. Nuclear brain imaging revealed absence of cerebral blood flow. Based on the prognosis, the family opted for institution of comfort measures and she died on Day 2.

Autopsy Findings: Toxicology: methanol 0.278% w/v, ethanol, acetone and isopropanol negative. Cause of death: acute methanol intoxication. Manner of death: accident.

Case 321. Acute hand sanitizer (methanol) ingestion, inhalation/nasal: undoubtedly responsible

Scenario/Substances: A 48 y/o male reported that he drank hand sanitizer roughly 13 h prior to his arrival to the ED. He sought help after he developed blindness and trouble breathing. He was brought to the ED by private vehicle. He denied suicidal intent.

Past Medical History: Alcohol use disorder, diagnosed with COVID-19 infection 1 day prior.

Physical Exam: Alert, agitated, tachypneic, tachycardic. BP 146/101, HR 103, RR 20, O_2 sat 100%, T 37 °C.

Laboratory/Diagnostic Findings: Na 147/K 4.6/Cl 102/CO_2 5/BUN 20/Cr 1.8/Glu 223/AG 40, AST 48, ALT 43, bilirubin 0.5, INR 1.0, WBC 17.56/Hgb 19.1/Hct 59.4/PLT 275, lactate 4.9 mmol/L. ABG-pH 6.735/pCO_2 67/pO_2 207/HCO_3 8.8/BE "out of range". Serum APAP, salicylate and ethanol were not detected. UDS was positive for THC. Serum osmolality 411 mOsm/kg with an OG of 98. Serum ketones negative. CxR: bilateral infiltrates. ECG: HR 100, QRS 100, QTc 427.

Clinical Course: On arrival to the ED, he was intubated due to hypoxemia and administered midazolam, fentanyl, sodium bicarbonate, fomepizole, folic acid, thiamine, and pyridoxine. About 6 h later, the patient was transferred to a tertiary care center. Ten minutes after the flight crew left the ED, they returned with the patient due to suspected ventilator failure. He became hypoxemic, bradycardic, and developed cardiac arrest. ACLS was instituted, he developed VF, was defibrillated and ROSC was achieved. He was then flown to the tertiary care center. Enroute, he received ketamine and midazolam. On arrival to the ICU, ~10 h after presentation, he was intubated, unresponsive and his pupils were nonreactive to light. BP 106/80, HR 99, RR 32, O_2 sat 98% on 50% FiO_2. He was given propofol and fentanyl, and fomepizole and folic acid were continued. CRRT was instituted. On Day 2, he remained unresponsive with fixed, dilated pupils. Na 166/K 2.6/Cl 132/CO_2 22/BUN 22/Cr 1.27/Glu 179/AG 12, AST 133, ALT 105, bilirubin 0.7. VBG-pH 7.35/pCO_2 37/pO_2 29/HCO_3 20/BE -5.0, serum osmolality 397 mOsm/kg with an OG of 47. He was hypotensive and developed central DI. Head CT revealed transtentorial and cerebellar tonsillar herniation with diffuse cerebral edema. Sedative medications were discontinued. He was given IV fluids, vasopressors, and desmopressin. Magnesium, potassium, and phosphate were replaced. Fomepizole, folic acid and CRRT were continued. On Day 3 the results of his volatile panel and ethylene glycol level became available: methanol 194 mg/dL; ethylene glycol, acetone, ethanol, and isopropanol not detected. Based on the prognosis, the family opted for institution of comfort measures and he died on Day 3.

Autopsy Findings: Cause of death: complications of methanol toxicity. Manner of death: accident.

Case 325. Acute hand sanitizer (methanol) ingestion: undoubtedly responsible

Scenario/Substances: A 53 y/o male woke up in the night with a headache. The next morning, he continued to have a headache, along with nausea and vomiting. He told his wife he was not feeling well and 40 minutes later that he was "going blind." Family reported that he had been drinking a mixture of hand sanitizer and juice from an empty vodka container the day before he became ill.

Past Medical History: Alcohol use disorder.

Physical Exam: Unresponsive and moaning, fixed right eye deviation, pupils 4 mm, fixed and dilated. BP 94/58, HR 101, RR 18, O_2 sat 94%.

Laboratory/Diagnostic Findings: Na 142/K 3.8/Cl 101/CO_2 5/BUN 9/Cr 1.9/Glu 302/AG 36, AST 222, ALT 175, bilirubin 0.5, INR 1.1, WBC 12.92/Hgb 20.0/Hct 66.9/PLT 250. ABG-pH 6.620/pCO_2 67.4/pO_2 97.2/HCO_3 6.7. Serum APAP and salicylate were not detected. Serum ethanol 34 mg/dL. Measured serum osmolality 411 mOsm/kg with an OG of 98. UDS was negative. CxR: infiltrates in the lower half of the right lung and in the mid left lung region. ECG: HR 71, QRS 114, QTc 447. COVID-19 negative.

Clinical Course: On arrival to the ED, IV access was established, and he was taken to CT where his breathing became shallow. On return to the ED, he developed cardiopulmonary arrest. CPR was started, epinephrine was administered, and he was intubated. IV sodium bicarbonate, calcium chloride and IV NS were given. He developed VF and was defibrillated.

He became hypotensive and norepinephrine was started. Atropine was given for bradycardia. He then developed AF with rapid ventricular rate, and a dose of amiodarone was administered. After ~an hour of resuscitation, the patient had a HR of 60 to 70 and a sinus rhythm. He continued to require vasopressors for BP support. There was a high suspicion for methanol poisoning. He was administered IV fomepizole 15 mg/kg, IV sodium bicarbonate infusion, IV folic acid 50 mg, IV thiamine 100 mg and IV pyridoxine 50 mg. Head CT was negative for any acute process; Chest CT revealed extensive ground-glass density infiltrates. He was transferred to a tertiary care center. Enroute to the tertiary care center, he required multiple doses of epinephrine to support his blood pressure. On arrival, he was unresponsive, pupils were 4 mm and non-reactive, and he remained hypotensive and tachycardic (BP 88/50 and HR 119). His CxR showed diffuse pulmonary opacities. Laboratory: Na 139/K 3.5/Cl 102/CO_2 15/BUN 14/Cr 1.5/Glu 443/AG 22, AST 593, ALT 274, ABG-pH 7.09/pCO_2 50/pO_2 55/HCO_3 15.2. Measured serum osmolality 400 mOsm/kg with an OG of 90. Volatile panel: ethanol 11 mg/dL; acetone and isopropanol not detected; methanol could not be quantified due to insufficient sample. He was intubated and was receiving propofol for sedation. He continued to receive multiple vasopressors for blood pressure support and IV sodium bicarbonate for profound acidosis. Fomepizole, pyridoxine and thiamine were continued; folinic acid was given in place of folic acid. Emergent CRRT was instituted. On Day 2, he was unresponsive with no brain stem reflexes off sedation. He developed severe hypoxemic respiratory failure unresponsive to 100% O_2, various ventilatory settings and inhaled nitric oxide. On Day 3, the patient continued to receive CRRT and require multiple vasopressors. AG 13, OG 9. With improvement in his laboratory values, fomepizole was discontinued. He remained intubated without sedation, unresponsive with fixed and dilated pupils. On Day 4, CRRT was discontinued. On Day 6, head MRI showed hypoxic ischemic injury with diffuse cerebral edema, multifocal regions of hemorrhage, cerebellar peduncles herniated through the foramen magnum and bilateral uncal herniation. The patient was pronounced dead on Day 6.

Autopsy Findings: Manner of death: accident. Cause of death: complications of presumed methanol toxicity. It was determined that the liquid in the vodka bottle contained methanol. The brand of hand sanitizer the patient ingested was subject to recall by the FDA due to contamination with methanol.

Case 336. Acute carbon monoxide and cyanide inhalation: undoubtedly responsible

Scenario/Substances: A 2 y/o female, was found along with her 7 y/o sibling in cardiac arrest at the scene of a house fire by firefighters. CPR initiated on scene; ROSC was obtained on ED arrival.

Laboratory/Diagnostic Findings: Initial labs (0 hour): COHb 32, cyanide 160 mcg/dL; 5.8 hours: COHb 0, lactate 10.1 mmol/L, pH 7.24; 15.3 hours: lactate 5.1 mmol/L, pH 7.35; 21.1 hours: cyanide 30 mcg/dL, lactate 2.8 mmol/L, pH 7.3; 26.3 hours: cyanide 1 mcg/dL, lactate 1.2 mmol/L, COHb 3.2.

Clinical Course: In the ED, no pupillary reflex, agonal respirations, intubated. She received pressors and hydroxocobalamin. Cyanide, COHb, and lactate levels declined over 20 hours, but she was deemed too unstable for to transfer for HBO. Brain imaging showed concern for herniation and anoxic brain injury. She was declared brain dead on Day 3. CPS was consulted.

Autopsy Findings: Not available.

Case 337. Acute carbon monoxide inhalation: undoubtedly responsible

Scenario/Substances: A 2 y/o girl was found unresponsive in her home after neighbors were alerted to carbon monoxide detector alarms. There was no fire or smoke. EMS began CPR and 100% O_2 was initiated at the scene.

Past Medical History: Previously healthy.

Laboratory/Diagnostic Findings: Na 145/K 4.8/Cl 111/CO_2 <5/BUN 15/Cr 1.7/Glu 218, AST 3,378, bilirubin 0.8, VBG-pH 6.69/pCO_2 23/BE -30. WBC 20.3, Hgb 14, PLT 310. COHb 48%.

Clinical Course: In the ED, endotracheal intubation with PALS led to ROSC. She was unresponsive to painful stimuli and pupils were fixed and dilated after ROSC. Blood testing confirmed carbon monoxide poisoning. She was transferred to a tertiary care hospital where she was supported with IV inotropes and vasopressors, IV sodium bicarbonate for persistent metabolic acidosis, and briefly received insulin for hyperglycemia. DI ensued treated with vasopressin. Head CT: diffuse, severe hypoxic ischemic injury. Multi-organ failure, cerebral edema with brainstem herniation followed and she died on Day 4.

Autopsy Findings: Not available.

Case 372. Acute chlorine gas inhalation: undoubtedly responsible

Scenario/Substances: A 34 y/o female was found dead slumped over a cleaning bucket between her crossed legs after a cleaning binge the night before. The bucket contained a white powdery substance surrounded by a blue liquid. The cleaners found included a hypochlorite powder cleanser, 2 hydrochloric acid toilet bowl cleaners, a sodium hydroxide cleaner with sodium hypochlorite, and a sodium bicarbonate carpet deodorizer.

Autopsy Findings: Lungs were diffusely edematous and hemorrhagic and white frothy fluid emanating from the airways. Lungs weights were within the normal range. Cause of death: Inhalation of chlorine gas (from mixing hypochlorite and hydrochloric acid).

Case 385. Acute hydrogen sulfide inhalation: undoubtedly responsible

Scenario/Substances: A 47 y/o male and co-worker were alerted by their personal alarms to hydrogen sulfide exposure while working in an oilfield. His co-worker was able to leave the area, but he collapsed. EMS was called, but 1 h passed before they were able to safely extricate him. He was arousable and combative. EMS intubated him for ground transfer. He then had cardiac arrest and was resuscitated for 30 min prior to ROSC during which time air transport was called.

Physical Exam: BP 136/79, HR 95, RR 12 (intubated), O_2 sat 98%, T 38.6 °C. GCS 3T (intubated).

Laboratory/Diagnostic Findings: Initial labs: Na 144/K 5.2/Cl 100/CO_2 14/BUN 13/Cr 1.2/Glu 358/AG 30, AST 116, ALT 90, bilirubin 0.5, lactate 9.89 mmol/L. WBC 21.7/Hgb 16.0/Hct 47.8/PLT 289, INR 0.93. ECG: HR 100, QRS 75, QTc 381.

Clinical Course: Upon arrival, he was admitted to the ICU. Initial ABG (on ventilator)-pH 7.285/PCO_2 34.0/PO_2 263/HCO_3 15.8/BE -9.7. Apnea testing was conducted and indicated brain death. Brain flow scan demonstrated no flow to the bilateral cerebral hemispheres. That afternoon, patient was noted to have flexion posturing of left upper extremity and was "overbreathing" the ventilator, at which time the family requested continued critical care management. The next day the posturing had ceased. Based on the prognosis, the family opted for institution of comfort measures and he died on Day 2.

Autopsy Findings: Not performed.

Case 487. Acute-on-chronic, fluorinated hydrocarbon inhalation: undoubtedly responsible

Scenario/Substances: A 41y/o male had been huffing 8 cans per day for a week of refrigerant-based propellant cleaner. On the day of presentation, he huffed 12 cans. EMS reported that he vomited enroute to the ED.

Past Medical History: Diabetic, abuse of methamphetamine, marijuana, and ethanol. Current medications: lisinopril and atenolol.

Physical Exam: BP 107/92, HR 83, RR 16 O_2 sat 96% on RA, T 36.1 °C.

Laboratory/Diagnostic Findings: Na 127/Cl 86/K 7.1/CO_2 17/Cr 5.52/BUN 98/Glu 205/AG 24, Ca 5.9, Ca (ionized) 0.57, AST 59, ALT 20/bilirubin 0.9, CK 840, troponin 0.45, WBC 19.9, Hgb 13.6, Hct 41, PLT 297, INR 1.3,

VBG-pH 7.33/pCO_2 39/pO_2 <34/HCO_3 20.6/BE -4.9. Serum APAP and salicylate not detected. UDS was negative. ECG: rate 75, PR, QRS, ST segments unremarkable, QTc < 500, peaked T-waves.

Clinical Course: He arrived alert and awake complaining only of generalized weakness and chills. Nephrology was consulted and dialysis planned. Vital signs included BP 92/44. He received IVF, sodium bicarbonate bolus and infusion, calcium gluconate, insulin, D50W, albuterol, sodium polystyrene sulfonate, furosemide, magnesium sulfate, ondansetron and aspirin. Hour 3 Na 132/K 6.4/Cl 92/CO_2 18/BUN 99/Cr 5.19, Ca 4.3, Mg 1.5, Phos 6.8. ECG: HR 151, QRS 94, QT 236, QTc 374, PVCs, fusion complexes in a pattern of bigeminy. Electrolytes had mostly normalized except Ca 4.68 and Mg 1.2. ECHO unremarkable, LVEF > 60%. The patient experienced an asystolic arrest ~10 hours after admission. He remained asystolic despite ~30 min of resuscitative efforts (CPR and epinephrine).

Autopsy Findings: Cause of death: 1,1-difluoroethane toxicity. Manner of death: accident. Postmortem blood: 1,1 difluoroethane 34 mcg/mL.

Case 495. Acute cleaner (acid) ingestion: undoubtedly responsible

Scenario/substances: A 70 y/o male poured wheel and grill cleaner containing hydrofluoric acid, 2-butoxyethanol and sulfuric acid into a bottle, marked it with an "X", and stored it in the refrigerator. He later accidentally drank ~40 mL. He initially refused HCF referral, but developed vomiting and then explosive diarrhea, so EMS transported him to the ED.

Past Medical History: Recent left BKA, peripheral artery disease, peripheral neuropathy, sleep apnea, alcohol dependence.

Laboratory/Diagnostic Findings: CO_2 17, Ca 6.1, Mg 1.1, lactate 4.33 mmol/L CxR: no acute changes, EKG: NSR with frequent PVCs.

Clinical Course: In the ED, he complained of abdominal pain, developed hypoxemic respiratory failure, and was intubated. He received multiple boluses of calcium and was admitted to the ICU. In the ICU he was sedated with propofol and received fluid boluses. BP 86/50, HR 92, RR 15, T 37 °C. He continued to receive calcium and magnesium, was on norepinephrine and piperacillin/tazobactam. He developed VF, then cardiac arrest. Resuscitation measures were continued for 20 min. He died ~11.5 hours post-ingestion.

Autopsy Findings: The gastric mucosa was diffusely hemorrhagic and edematous; the lumen had bloody contents. The stomach had diffuse erosion of the mucosa with necrosis, acute inflammation, and hemorrhage. He had pulmonary congestion and edema; the pulmonary parenchyma exuded moderate amounts of blood and frothy fluid. Cause of death: corrosive chemical ingestion. Manner of death: accidental.

Case 498. Acute paralytic shellfish ingestion: undoubtedly responsible

Scenario/Substances: A 63 y/o woman ate snails that she had harvested.

Clinical Course: She presented to the ED with nausea and vomiting and felt like she was "having a stroke". She reported diffuse tingling and weakness of her mouth and upper extremities. BP 160/90, HR 108. As the ED was very remote, air transport was initiated. She was resuscitated 6 times during transport but continued resuscitation was unsuccessful at the tertiary care center.

Autopsy Findings: Saxitoxin was detected in her urine as well as the snails that were left over as well as in shellfish taken from the beach where she obtained the snails. Cause of death: paralytic shellfish poisoning.

Case 506. Acute dichloromethane, formic acid, hydrofluoric acid and phenol ingestion/inhalation/aspiration/dermal: undoubtedly responsible

Scenario/Substances: A 46 y/o male fell into a barrel of industrial paint remover at work. The product was known to contain dichloromethane, formic acid, hydrofluoric acid, and phenol.

Past Medical History: Hypertension, atherosclerotic cardiovascular disease.

Laboratory/Diagnostic Findings: K 5.3, Mg 1.4, Ca "hypocalcemia", Ca (ionized) 0.17, CoHb 1.5%, ABG "acidosis". ECG: VF.

Clinical Course: In the ED, chemical burns to 35% of his body, evidence of pulmonary exposure. The patient had cardiac arrest and respiratory failure. He was admitted to the ICU in profound shock. He was aggressively decontaminated, started on multiple vasopressors, and given calcium. He was intubated and ventilated. He arrested a second time and died despite resuscitation efforts.

Autopsy Findings: Cause of death: chemical and thermal injuries. Manner of death: accident.

Case 507. Acute diquat ingestion: undoubtedly responsible

Scenario/Substances: A 2 y/o male was found next to a spilled unmarked container thought to be glyphosate. EMS transported the patient to the ED.

Clinical Course: In the ED, there was no excessive drooling or evidence of oropharyneal burns. Multiple episodes of emesis were treated with ondansetron. On Day 1 he was transferred to a tertiary care center, where he had no episodes of emesis, but was found to be less active than usual. BP 125/72, HR 99, RR 24, O_2 Sat 98% on RA, T 37 °C. He was started on IVF. Na 137/K 4.6/Cl 124/BUN 19/Cr 0.32/Glu 126, AST 25, ALT 56, WBC 14.5, Hgb 12.3, Hct 36.5, PLT 321. On the second day post ingestion, the patient had 2 large episodes of watery diarrhea. Based on worsening status and symptom progression, diquat ingestion was considered. NAC, dexamethasone, and ILE were given, and he was started on HD. Perioral burns were noted, and the product was identified as an herbicide containing 37.3% diquat bromide. On Day 3 he developed anuria, rhabdomyolysis, worsening liver function and fluid overload. He was intubated for seizure activity. Day 4, he was re-intubated for continued tonic-clonic seizures. His renal failure progressed and he developed pulmonary inflammation. Day 5 he developed brain herniation and ARDS, on 3 vasopressors with MAP in the 30s. He continued to be hypoxemic with saturations in the 60s. Based on the prognosis, comfort measures were instituted and he died on Day 5.

Autopsy Findings: Not available.

Case 509. Acute diquat ingestion: probably responsible

Scenario/Substances: An 8 y/o male drank a "mouthful" from a soda bottle, thinking it was soda. He experienced nausea, 5 vomiting episodes, and throat irritation between the time of ingestion and the time of presentation to the ED (within 3 hours). The ingested substance was initially unidentified.

Physical Exam: BP 158/86, HR 130, O_2 Sat, 100% on RA, T 37 °C.

Laboratory/Diagnostic Findings: 1st ED visit: BUN 18, Cr 0.49, WBC 18.2. 2nd ED visit: Na 135/K 3.6/Cl 108/CO_2 13/BUN 33/Cr 3.22, AST 1,109, ALT 944, C-reactive protein 44.6 mg/L, WBC 28.9/Hgb 16.2/, Hct 48.8/PLT 542. CSF protein 88 mg/dL.

Clinical Course: The mother of the child had obtained the herbicide from a friend and decanted it into an unmarked soda bottle. At this time it was believed clopyralid was the active ingredient. The patient was observed, managed symptomatically, and discharged home that morning. He returned mid-afternoon the same day after 8 episodes of "black" emesis. Mother reported his T 40° C. In the ED, the patient had abnormal behavior, an unsteady gait, abnormal head movements and was unable to make eye contact, although he was able to answer questions. The patient continued to decompensate and about 4 hours later, family informed providers that the substance ingested was actually an herbicide containing 37% diquat dibromide. BP 118/57, HR 173, RR 34, O_2 sat 96% on 2L of O_2. He was pale and ataxic, with episodes of diarrhea. He received APAP, ceftriaxone, morphine, prochlorperazine, lorazepam, NS bolus, and an H2-blocker. Head CT was unremarkable. He was admitted to the PICU. He was intubated on arrival and sedated with dexmedetomidine. He was started on NAC. T 39 °C despite application of a cooling blanket. Cr 3.9 and he was started on CRRT. Intermittent HD

was attempted, but he became hemodynamically unstable and required initiation of vasopressors. The patient's ventilation status worsened with O_2 sat 87 on 100% FiO_2. Pressors were increased with minimal improvement of BP. Respiratory viral screen returned positive for rhinovirus, enterovirus and RSV. Chest CT showed bilateral lung infiltrates and thickening of the distal esophageal wall. Stress dose steroids were administered. Lung function continued to worsen and he was started on nitric oxide for ARDS. Hemodynamics and oxygenation continued to worsen, and cyclophosphamide was administered. ECMO, lung transplantation was offered but the patient died despite aggressive resuscitative efforts later on Day 2.

Autopsy Findings: Not available.

Case 511. Acute pyrethroid parenteral: probably responsible

Scenario/Substances: A 29 y/o female injected an insecticide IV as a substitute for methamphetamine. Ingredients included 0.26% piperonyl butoxide, 0.20% permethrin, and 0.13% pyrethrins.

Past Medical History: Methamphetamine use.

Laboratory/Diagnostic Findings: K 6.6/BUN 37/Cr 3.4, Phos 6.7, Mg 2.2, AST 9,900, ALT 8,489, INR 3.6, PLT 51, ABG-pH 7.27/pCO_2 35/HCO_3 16.5. Serum APAP not detected. CxR: bilateral pleural effusions. ECG: junctional rhythm.

Clinical Course: Prior to intubation patient was talking, but confused. HR 122, BP 105/85, RR 23 on vent, O_2 sat 97% (50% prior to intubation). She was admitted to the ICU with congestive heart failure, renal failure, and liver failure. She received vasopressors, sodium bicarbonate drip, NAC IV x 1 then enterally due to lack of sufficient IV access, vitamin K, and cryoprecipitate. Day 2 she was started on CRRT. She received HD several days into her course, but she never regained consciousness. Based on the prognosis, the family opted for institution of comfort measures and she died on Day 9.

Autopsy Findings: Not available.

Case 512. Acute dinitrophenol ingestion: undoubtedly responsible

Scenario/Substances: A 30 y/o male presented 2 hours after ingesting 2.4 grams of dinitrophenol, 4x the dose he had been taking for weight loss. He suspected he might have taken too much and presented to the ED with palpitations and feeling sweaty.

Past Medical History: ADHD, anxiety. Medications: amphetamine/dextroamphetamine, lorazepam. He denied suicidal ideation.

Physical Exam: In the ED, BP 125/75, HR 180, RR 28, T 37 °C, irritable, but alert and oriented, tachycardic, diaphoretic.

Laboratory/Diagnostic Findings: Na 143/K 4.8/Cl 112/CO_2 23/BUN 19/Cr 1.56/Glu 162, Mg 2.90, Ca 9.3, CK 223, Covid negative, AST 62, ALT 114, WBC 13.7, Hgb 17.9, PLT 422. Serum APAP, ethanol and salicylate not detected. UDS was negative. ECG: QRS 72, QTc 453.

Clinical Course: He became more agitated requiring benzodiazepines, IVFs, and ice packs were placed in his groin/axillae, T 38.2 °C. HR remained in the 180s. Hour 3, T 42.7 °C, he developed hyperkalemia, and asystole. He received calcium, sodium bicarbonate, insulin, and epinephrine. Hour 4 he had an asystolic/PEA arrest and died.

Autopsy Findings: Not available.

Case 516. Acute glyphosate ingestion: undoubtedly responsible

Scenario/Substances: A 47 y/o male drank ~1 L of glyphosate "because he was feeling sad". He vomited immediately after drinking it and experienced several additional episodes of vomiting and diarrhea overnight. He was unable to tolerate food or water and reported decreased urine output.

Past Medical History: Depression

Physical Exam: In the ED he was alert and oriented without evidence of trauma. BP 123/84, HR 99, RR 18, O_2 Sat 100% on RA, T 37 °C.

Laboratory/Diagnostic Findings: Na 136/K 4.2/Cl 94/CO_2 12/BUN 77/Cr 9.19/Glu 139/AG 30, lactate 2.7 mmol/L, serum osmolality 319 mOsm/Kg, CK 16,878, AST 354, ALT 424, bilirubin 1.1, INR 0.82, WBC 24.5/Hgb 17.8/Hct 50.4/PLT 330, ABG-pH 7.0/pCO_2 49/pO_2 536/HCO_3 10.1/BE -19. Serum APAP, ethanol, and salicylate not detected. CxR: unremarkable, CT abd/pelvis unremarkable.

Clinical Course: In the ED the day after the ingestion he complained of abdominal pain. He developed seizures for which he was given lorazepam and was intubated. He was started on a bicarbonate drip, NAC, and admitted to the ICU. His conditioned worsened with progressive agitation and then obtundation despite being off of any type of sedation. Head CT was consistent with cerebral edema and hypoxic ischemic encephalopathy. He lost his brainstem reflexes and died on Day 3.

Autopsy Findings: Antemortem blood: glyphosate 95,000 ng/mL (reporting limit 10 ng/mL). Cause of death: glyphosate toxicity.

Case 522. Acute aldicarb and antihypertensive ingestion: probably responsible

Scenario/Substances: A 58 y/o female presented after an intentional ingestion of aldicarb granules and an unknown antihypertensive medication following an argument with her significant other. She was found unresponsive with agonal respirations. EMS reported HR 50, hypersalivation. vomiting, and stool incontinence. Emesis contained "flaky" material consistent with a granular pesticide. She was intubated in the field and transported.

Past Medical History: Hypertension, Type II DM, hypothyroidism, depression, vitamin D deficiency. Home medications: amlodipine, oxycodone, levothyroxine, glimepiride, furosemide, ergocalciferol, duloxetine, acarbose, alprazolam, zolpidem.

Physical Exam: In the ED, BP 154/77, HR 98, RR 13, O_2 sat 99% on vent, T 36 °C. Obtunded/not responsive to painful stimuli.

Laboratory/Diagnostic Findings: Na 135/K 3.6/Cl 97/CO_2 11/AG 27/BUN 14, Cr 1.2, AST 42, ALT 39, bilirubin 0.6, ALP 112, total protein 9.5, albumin 5.2, lactate 12, Ca 11.1, Mg 1.8. WBC 34.5, Hgb 15.4, Hct 49.5, PLT 559, ABG-pH 7.024/pCO_2 54.8/pO_2 145/HCO_3 14.3/BE -17. Serum ethanol, salicylates, and APAP not detected. CxR: ET and NG tubes in place, heart size unremarkable, lungs poorly expanded with perihilar opacity suggestive of atelectasis. ECG: Sinus rhythm, HR 94, QRS 120, QTc 523

Clinical Course: She received atropine by the air EMS crew prior to arrival. She had a seizure in the ED treated with lorazepam. She did not have cholinergic symptoms, but she became more hypotensive with worsening lactic acidosis requiring 4 vasopressors. Based on the prognosis, the family opted for institution of comfort measures and she died on Day 3.

Autopsy Findings: Not available.

Case 524. Acute paraquat ingestion: undoubtedly responsible

Scenario/Substances: A 60 y/o male ingested 16 oz. of undiluted paraquat in an attempt to harm himself after an argument. He experienced immediate nausea and vomiting without hematemesis, followed by shortness of breath and diffuse body pains. He was transported by air ambulance to the ED. Enroute, he was placed on 2L O_2 by nasal cannula and given activated charcoal.

Past Medical History: High blood pressure, dyslipidemia. Tobacco and alcohol use. Home medications unknown other than acetaminophen with codeine.

Physical Exam: Sickly in appearance with tachycardia, tachypnea, and diaphoresis. Breathing was labored, but lungs sounds were clear bilaterally. Dry mucous membranes with abdominal tenderness in bilateral upper quadrants. Alert and oriented with a GCS of 15. BP 144/80, HR 96, RR 32, O_2 sat 81% on RA, T 35.4 °C.

Laboratory/Diagnostic Findings: Na 143/K 5.4/Cl 105/CO_2 14/BUN 9/Cr 1.14/Glu 119/AG 24, AST 37, ALT 77, bilirubin 0.41, INR 1.14, pro-BNP 1,342, WBC 16.8/Hgb 15.9/Hct 49.3/PLT 242, ABG-pH 7.25/pCO_2 36/pO_2 57/HCO_3 15.8/BE -10.5. Serum APAP, ethanol and salicylate not detected.

ECG: Sinus rhythm with nonspecific ST-T abnormalities, nonspecific IVCD with LAD; HR 93, QRS 138, QTc 528.

Clinical Course: In the ED, his supplemental O_2 was removed, and he was started on prednisone and antioxidant therapies with IV NAC and vitamin C. He was admitted to the ICU. Based on the prognosis, the family opted for institution of comfort measures. About 7 h after ingestion, the patient became unresponsive, asystolic and died.

Autopsy Findings: Not performed.

Case 529. Acute paraquat ingestion: undoubtedly responsible

Scenario/substances: A 75 y/o male unintentionally ingested a mouthful of paraquat concentrate from a soda bottle. He developed vomiting 1 h later and presented to the ED 4.5 h from ingestion.

Past Medical History: Glimepiride, simvastatin, amlodipine, lisinopril, spironolactone, hydrochlorothiazide, aspirin, and clopidogrel.

Physical Exam: Alert and oriented; no distress. No mouth lesions or irritation. BP 156/56, HR 94, RR 16, T 36 °C, O_2 sat 98% on RA.

Laboratory/Diagnostic Findings: Na 139/K 3.5/Cl 106/CO_2 19/BUN 23/Cr 1.4/Glu 207, AST 27, ALT 22, CK 77, troponin 0.012.

Clinical Course: He was admitted and started on IV cyclophosphamide, IV methylprednisolone and antiemetics. Precautions were taken to ensure no supplemental oxygen was given. Day 2 he was making urine, alert and oriented with unremarkable vitals, O_2 sat 93%. Day 3 Cr 6.2 and O_2 sat 91%. Day 4 he required intubation for hypoxemia and was placed on 100% oxygen. BUN 122, Cr 9.9, AST 299, ALT 443, troponin 5.99. He became acidotic (peak lactate 5.9 mmol/L) and died early on Day 5.

Autopsy Findings: Cause of death: paraquat ingestion. Manner of death: accidental.

Case 535. Acute Aleurites moluccana (cardiac glycoside) ingestion: probably responsible

Scenario/Substances: 43 y/o female reportedly ingested 1 cup of a weight loss product containing *Aleurites moluccana* (rather than the recommended 1 seed) the night prior to her ED arrival.

Past Medical History: Home meds: venlafaxine, ropinirole, propranolol, clonazepam.

Physical Exam: Diaphoretic, anxious, complaining of chest pressure. SBP 90, HR 30.

Laboratory/Diagnostic Findings: Na 132/K 7.7 Mg 1.9, Ca 8.6, PLT 437, troponin negative, Digoxin < 0.3 ng/mL.

Clinical Course: Upon arrival to the ED, she had a seizure and became asystolic. She received calcium, insulin, dextrose, bicarbonate, epinephrine, and atropine without ROSC. She died 4 h after arrival to the ED.

Autopsy Findings: Toxicology (antemortem blood): venlafaxine 85 ng/mL, O-desmethylvenlafaxine 410 ng/mL (both within therapeutic range). Cause of death: probable candlenut seed toxicity. Manner of death: accident.

Case 542. Acute fentanyl (non-prescription) ingestion: probably responsible

Scenario/Substances: A 2 y/o male presented in cardiac arrest after being found by EMS unresponsive next to a bottle of hydralazine.

Clinical Course: Patient presented to the ED in cardiac arrest. ROSC was not achieved.

Autopsy Findings: Pulmonary and cerebral edema and sequelae of prolonged hypoxia. Postmortem toxicology results revealed a blood fentanyl level of 0.0032 mg/L and liver fentanyl level of 0.019 mg/kg. Fentanyl and despropionylfentanyl were present in the urine. Cause of death: acute fentanyl toxicity. Manner of death: not reported.

Case 1541. Acute salicylate ingestion: undoubtedly responsible

Scenario/Substances: A 40 y/o male ingested an entire bottle of aspirin (amount unknown). He arrived at the ED 1.5 hours after ingestion.

Physical Exam: HR 80, BP 126/78, RR 16, O_2 sat 98% on RA, T 37 °C.

Clinical Course: In ED, he was paranoid, having visual hallucinations, and vomiting. He was agitated and hyperactive "like someone who is on methamphetamine". Hour 2.5: Na 142/K 4.5/Cl 102/CO_2 30/AG 10/BUN 17/Cr 1.9/Glu 118, Ca 9.5, AST 26, ALT 28. Serum APAP and ethanol not detected. Salicylate 92.2 mg/dL. EKG NSR, QRS 88, QT/QTc 352/430. HR 87, BP 126/78, RR 21. Repeat laboratory: Salicylate 116.5 mg/dL, K 5.7/CO_2 27/Cr 1.0. HR 94, BP 113/70, RR 13, RA O_2 sat 97%, T 37 °C. IVF: D5W with bicarbonate and potassium. In the ICU the patient became extremely agitated and combative during placement of the dialysis catheter. He developed a pneumothorax and respiratory distress requiring intubation and sedation. Lorazepam IV was given, but he developed cardiac arrest. CPR was begun and he was given epinephrine, sodium bicarbonate, calcium, and insulin/D10, but he could not be resuscitated. HD was never begun. Salicylate was 125 mg/dL at the time of his arrest.

Autopsy Findings: Not available.

Case 1711. Acute salicylate ingestion: undoubtedly responsible

Scenario/Substances: A 46 y/o male ingested 120 g of aspirin in a suicide attempt (Hour 0) and presented to the ED at Hour 1.

Laboratory/Diagnostic Findings: CO_2 19/Cr 0.9/AG 21, salicylate 67.8 mg/dL (Hour 1). Serum APAP was not detected.

Clinical Course: The patient was admitted to an intermediate care unit and sodium bicarbonate infusion was started. The salicylate level increased to 79.2 mg/dL and then 88.1 mg/dL ~6 h after arrival. CO_2 16, AG 25, Cr 1.1. He was alert and oriented but complained of feeling "foggy" with tinnitus and tachypnea. The salicylate level increased to 93 mg/dL (Hour 9), HD was scheduled, and the patient sent for catheter placement. He was given D50 and a single dose of activated charcoal. The sodium bicarbonate infusion was stopped when pH reached 7.54 but was then restarted. His salicylate level was over 100 mg/dL (Hour 16). He had escalating agitation preventing initiation of HD and he was intubated and transferred to the ICU. His ABG prior to intubation was pH 7.15/pCO_2 50s/CO_2 30s.The patient became hypotensive with BPs of 40s/20s and then went into asystole. ACLS was initiated and he received CPR with several rounds of sodium bicarbonate, epinephrine, and calcium. ACLS was continued, but the patient died at Hour 19.

Autopsy Findings: Not available.

Case 2365. Acute-on-chronic colchicine ingestion: undoubtedly responsible

Scenario/substances: A 76 y/o female mistakenly took up to 34.8 mg of her colchicine due to a mix up with her medications in the dark.

Past Medical History: DM, hypertension, gout, arthritis, fibromyalgia. Thymus cancer when younger.

Laboratory/Diagnostic Findings: Na 136/K 3.6/Cl 101/CO_2 34.9/BUN 28/Cr 1.37/Glu 365, WBC 3.5, AST 17, ALT 84, PT 10.3, INR 1.0, TSH 7.21, troponin negative. Serum APAP not detected. ECG: QRS 78, QTc 447

Clinical Course: On ED arrival HR 103, BP 201/86, RR 20, O_2 sat 96% on RA. She complained of nausea and vomiting and received ondansetron, an NS infusion and activated charcoal (~1 h post ingestion). She developed watery diarrhea and continued to have nausea and vomiting. She was given promethazine, a second dose of activated charcoal and placed on oxygen 2 L for decreased O_2 sat. Hour 24 she had become febrile, drowsy, and agitated. CO_2 14, Cr 2.11, AST 156, ALT 146, WBC 2.5, PLT 98. Dose 3 of activated charcoal was given about Hour 24. Hour 36 she became unresponsive, increasingly acidotic, and hypotensive requiring intubation and norepinephrine and sodium bicarbonate infusions. WBC 10.6. She deteriorated despite additional vasopressors, antibiotics and CRRT for worsening renal function and died at hour 54.

Findings: Antemortem peripheral blood colchicine was 13 ng/mL (~28.5 h post ingestion). Cause of death: colchicine toxicity. Manner of death: accidental.

Case 2408. Acute narcotic ingestion: undoubtedly responsible

Scenario/Substances: A 15-month-old female ingested an unknown amount of an unidentified opioid. Parents noticed patient was sleepier than usual and completely unresponsive at 3 hours later. EMS treated with intranasal naloxone x 2 with minimal response and she was transported to the ED. Parents stated she could have ingested APAP/oxycodone in her father's or grandmother's home.

Past Medical History/Medications: None.

Clinical Course: She was minimally responsive, pupils pinpoint, and was immediately intubated in the ED. HR 146, BP 104/74, RR 23, O_2 sat 100%. UDS positive for opiates; serum APAP not detected. She received sodium bicarbonate and a naloxone drip without response. Head CT was negative. She was transferred to the PICU where the naloxone drip was increased. She developed seizures, treated with lorazepam, but twitching continued, so levetiracetam and midazolam were added. MRI showed "significant areas of restrictive diffusion in basal ganglia." The parents speculated that the patient may have picked up drugs "on the sidewalk outside" as "many people in their neighborhood do drugs". HR 110, BP 92/78, RR 26, O_2 sat 100%. The patient continued having seizures for most of the day. She remained intubated on midazolam and was given multiple doses of lorazepam, levetiracetam and phenobarbital. UDS was positive for benzodiazepines and fentanyl (not given at any of the hospitals). On Day 4, she remained on ventilatory support, but seizures stopped, and midazolam was stopped. The patient remained unresponsive to pain. HR 108, BP 90-100/40-50, RR 15. Head CT showed brain swelling with herniation. She was put on high frequency oscillation ventilation and on levetiracetam, epinephrine, dopamine and propafenone. Brain death study was consistent with brain death and she died on Day 7.

Autopsy Findings: Not performed.

Case 2410. Acute methadone ingestion: undoubtedly responsible

Scenario/Substances: An 18-month-old 8.6 kg female ingested methadone liquid from an unmarked bottle. Her mother reported that they had not taken it during the past few days, so she threw the bottle into the trash where the child found it.

Past Medical History: Neonatal exposure to ethanol and illicit drugs.

Laboratory/Diagnostic Findings: Na 138/K 4.8/Cl 10, Mg 3, INR 2.24, PTT 33.1, Serum APAP and salicylate not detected, CT head: hypodensities in the cerebellum consistent with anoxic injury. UDS: positive for methadone. ECG: Sinus tachycardia HR 154, QRS 58, QTC 442.

Clinical Course: The child presented apneic, cyanotic, and limp. BP 134/60, HR 161, RR 4, T 38 °C, O_2 sat 80% on RA. Swelling and redness on 1 side of the body, possibly due to prolonged positioning. Naloxone was given with improvement in RR but not GCS; she then had seizure-like activity with decorticate posturing which resolved with midazolam. At that time, pupils were 3 mm. She had another seizure and received midazolam and additional naloxone with no response. The child was intubated and received crystalloid bolus for hypotension. She was transferred to a tertiary care center. The patient received a dextrose bolus for hypoglycemia and was started on epinephrine for hypotension. She was given another naloxone bolus and infusion with "significant improvement", moving all extremities and responding to pain. Her pupils were reactive to light. Late Day 2, brain MRI demonstrated concern for herniation and hypertonic saline was started. EEG showed decreased activity compared with earlier in the day. When returning from MRI, she became hypertensive with dilated, nonreactive pupils. 2 sequential brain studies demonstrated brain death along with the MRI evidence of cerebral edema and tonsillar herniation. She was pronounced dead on Day 4 with organ donation referral.

Autopsy Findings: Not available.

Case 2432. Acute bupivacaine parenteral: contributory

Scenario/Substances: A 73 y/o female came to the hospital for elective lower extremity angiogram and limb salvage procedure due to chronic right heel ulcer.

Past Medical History: End stage renal disease on HD, Type II DM, hypertension, peripheral vascular disease, heart failure, chronic right heel ulcer. Home medications: insulin glargine, sevelamer.

Laboratory/Diagnostic Findings: Na 131/K 6.8/Cl 92/CO_2 19/BUN 80/Cr 6.89/Glu 185/AG 20, Mg 2.6, Phos 6.1, WBC: 9.8/Hgb 10.2/Hct 31.8/PLT 164.

Clinical Course: The patient was taken to the OR for irrigation and debridement. Initially 2 mL of 0.5% bupivacaine was injected in the wound area. Due to her level of discomfort, an additional 8 mL of 0.5% bupivacaine was administered. After the second dose of bupivacaine, she became hypotensive, bradycardic and pulseless. ACLS was instituted, and ILE was started. ROSC was achieved after 20 minutes. She was intubated and transferred to the ICU. Soon after arrival to the ICU, she became more hypotensive, and vasopressors were started. She developed cardiac arrest; additional ILE was administered, and ROSC was obtained again. She subsequently became hypertensive with systolic BP in the 300's. Her BP continued to fluctuate between hypertension and hypotension. She was treated with ILE, vasopressors and propofol. A total of 11 mL/kg of ILE was administered over an hour. She arrested again. Based on the prognosis, the family opted for institution of comfort measures and she died on Day 1. The patient had an underlying history of diabetes, peripheral vascular disease, hypertension, end-stage renal disease and heart failure, which were considered contributory to her death.

Autopsy Findings: Not performed.

Case 2592. Acute bupropion ingestion: probably responsible

Scenario/Substances: A 16 m/o male was found with an open bottle of bupropion had a witnessed seizure ~1-2 hours later, prompting health care evaluation.

Laboratory/Diagnostic Findings: Na 149/K 3.3/Cl 99/CO_2 26/BUN 15/Cr 0.36/Glu 130/AG 29, AST 60, ALT 29, bilirubin$<$ 0.1. WBC 17.3, Hgb 12.5, Hct 35.4, PLT 35, Serum APAP, ethanol and salicylate not detected. Head CT negative.

Clinical Course: He arrived at the ED after several seizures. The patient was endotracheally intubated and in and out of VT. He was given lidocaine and started on ILE infusion. He regained a pulse but reverted to VT. He then developed bradycardia and epinephrine was given, as he was still in VT. He was given activated charcoal. Lidocaine and sodium bicarbonate were given again. Blood was noted to be coming out of his nose and mouth. His rhythm converted to PEA and he received intermittent CPR and 2 doses of epinephrine. Had a pulse briefly then was back in wide complex VT. He died ~4 hours after exposure.

Autopsy Findings: Not performed.

Case 2619. Acute chloroquine ingestion: undoubtedly responsible

Scenario/Substances: A 68 y/o male ingested 1 heaping teaspoon of an aquarium product containing 100% chloroquine phosphate powder to prevent COVID-19. He developed decreased responsiveness and dyspnea within 90 minutes of ingestion. EMS was called. BP 110/67, HR 93, RR 20, O_2 sat 90%, glucose (fingerstick) 99. Enroute to the ED, he desaturated with an O_2 sat in the 70's. He developed a prolonged QRS and received 100 mEq sodium bicarbonate.

Past Medical History: Hypertension, hypercholesterolemia.

Laboratory/Diagnostic Findings: Na 143/K 3.8/Cl 110/BUN 15/Cr 1.2. ECG: ST, HR 111, PR 216, QRSD 108, QT 308, QTC 419.

Clinical Course: In the ED, Lung sounds were diminished throughout. He became unresponsive, had a seizure, and went into PEA with intermittent biventricular VT and wide complex bradycardia. He received CPR and 3 mg of epinephrine, 2 mg atropine, 50 mEq sodium bicarbonate and 1 g magnesium sulfate IVP with ROSC after 8 minutes. ECG: ST at

111, QRS 108, QT 419 with subtle lateral strain but no STEMI. Eleven minutes later he went into PEA and received 4 mg epinephrine, 25 mcg norepinephrine, 50 mEq sodium bicarbonate, 1 g calcium chloride and 25 g dextrose IVP with ROSC after 10 minutes. PEA ensued 9 minutes later, and he received 9 mg epinephrine, 2 mg atropine, 10 mg diazepam, 50 mEq sodium bicarbonate, 3 g magnesium sulfate IVP, dobutamine drip and sodium bicarbonate drip. He was pronounced dead 4 hours after ingestion.

Autopsy Findings: Chloroquine (hospital blood) 17,000 ng/mL. Cause of Death: acute chloroquine toxicity; Manner of Death: accident.

Case 2643. Unknown flecainide ingestion: undoubtedly responsible

Scenario/Substances: A 19 y/o female was found by family unresponsive with a suicide note after an argument earlier in the evening. She was estimated to have ingested up to 3 grams of flecainide. EMS found her unresponsive. She became pulseless while the monitor showed a ventricular escape rhythm at 20-30. CPR was started. She was intubated and treated with sodium bicarbonate boluses during transport.

Past Medical History: Atrial tachyarrhythmia treated with flecainide.

Physical Exam: Arrived in ED in asystole. CPR was performed for 45 min before the patient was cannulated for ECMO.

Laboratory/Diagnostic Findings: Na 143/K 2.6/Cl 119/CO_2 21/BUN 8/Cr 0.4/AG 5.6, WBC 8.6/Hgb 13.6/Hct 40/PLT 148. Flecainide Day 2: 2.4 mcg/mL.

Clinical Course: ILE and sodium bicarbonate boluses were given. There was difficulty with ECMO flows and bedside ultrasound suggested a large pericardial effusion which was drained of 400 ml of bloody fluid. She was then transferred to a tertiary care facility and started on veno-arterial ECMO. She developed very high urine output with hypernatremia, leading to suspicion of DI, and this was treated with fluid replacement and vasopressin. She remained unresponsive with fixed and dilated pupils. Her hemodynamics were volatile, alternating between severe hypertension to pulseless when vasopressors were weaned. Rhythm was variable with wide QRS complex, irregular and junctional rhythms. ECHO showed LVEF of 22%. EEG found no measurable activity; head CT was concerning for herniation. The patient remained on veno-arterial ECMO for 15 days until flecainide levels declined. She died on day 15.

Autopsy Findings: Anoxic brain injury following flecainide overdose. Flecainide concentration: 4.6 mcg/mL. Manner of Death: suicide.

Case 2734. Acute-on-chronic calcium antagonist in combination and ethanol ingestion: undoubtedly responsible

Scenario/substances: 53 y/o female ingested a bottle of wine and ~20 tabs of her antihypertensive (amlodipine/hydrochlorothiazide/olmesartan). She vomited at home with pill fragments seen in the emesis. Her husband summoned EMS and she was transported to the ED.

Past Medical History: Hypertension, previous suicide attempts and alcohol abuse.

Physical Exam: BP 86/58, HR 107, RR 16, O_2 sat 92% on RA.

Laboratory/Diagnostic Findings: Na 141/K 3.4/Cl 104/CO_2 17/BUN 9/Cr 0.89/Glu 101/AG 20, AST 77, ALT 44, bilirubin 0.26, ABG-pH 7.31/pCO_2 29.1/pO_2 66/HCO_3 15/BE -10. Serum APAP and salicylate not detected. UDS was negative, serum ethanol 435 mg/dL. CxR: unremarkable, EKG: Sinus tachycardia, HR 101, QRS 86, QTc 469. Methanol, acetone and isopropanol were not detected.

Clinical Course: She was initially altered, confused and agitated in the ED (Hour 0) with slurred speech. She was started on IVF, IV calcium boluses, norepinephrine, and epinephrine. At Hour 5 she became abruptly less responsive and hypoxemic prompting intubation. About 10 min after intubation she developed PEA, and ACLS was initiated. She received multiple epinephrine boluses, calcium chloride, and sodium bicarbonate with ROSC. Her vasopressors were increased, and sodium bicarbonate and HIE infusions were started. Propofol was given for agitation. She was transferred to a tertiary care facility at the end of Day 1. Day 2: Na 149/K 5/Cl 99/CO_2 6/BUN 11/Cr 2.04/Glu 268/AG 44, Ca (ionized) 1.62, then $>$ 1.94. ABG (intubated)-pH 6.77/pCO_2 34.3/pO_2 116/HCO_3 6/BE -30. EKG: HR 78, QRS 74, QTc 378; accelerated junctional rhythm. In the ICU she remained profoundly hypothermic, acidotic, and hypotensive requiring constant titration of multiple vasopressors at high doses. She received warming measures, bicarbonate infusion, calcium infusion, and HIE. She also received activated charcoal per her OG tube and boluses of IV glucagon. ILE and CRRT were initiated. Despite these measures she remained hypotensive, hypothermic, unresponsive and acidotic with an unmeasurably elevated lactate level. Based on the prognosis, the family opted for institution of comfort measures and she died on Day 3.

Autopsy Findings: Antemortem peripheral blood collected Day 2 demonstrated amlodipine. Cause of death: amlodipine and ethanol toxicity. Manner of death: suicide.

Case 2791. Acute-on-chronic metoprolol ingestion: undoubtedly responsible

Scenario/Substances: A 62 y/o female intentionally ingested 60 tablets of her metoprolol ER 100 mg, an unknown amount of fluoxetine and omeprazole, after which she presented to the ED.

Past Medical History: Hypertension, depression.

Physical Exam: In the ED, alert and oriented, BP 69/52, HR 63.

Laboratory/Diagnostic Findings: Na 139.0/K 4.7/Cl 101/CO_2 22/BUN 22/Cr 1.1/Glu 121/Ca 7.1, AST 40, ALT 33. Serum APAP, ethanol and salicylate not detected.

Clinical Course: In the ED she received IVF and activated charcoal. WBI was begun but not completed. ~Hour 2 she became bradycardic and hypotensive (HR 45, BP 73/51, MAP 59). She was started on atropine, norepinephrine, glucagon, and ondansetron. Later that day she become obtunded and required intubation and sedation. She was transferred to a tertiary care center. Hour 12 EKG: HR 64, QRS 80, QTC 519, first degree heart block. Hour 15 she was transferred to the ECMO unit, but became hypoxemic and went into PEA. The patient was given rounds of vasopressors. HIE therapy was initiated post-PEA. ECHO showed improvement in the ventricular ejection fraction. Hydroxocobalamin was started for vasoplegia. At 24 hours she suffered another cardiac arrest, was unable to be resuscitated and died.

Autopsy Findings: Not available.

Case 2827. Chronic digoxin ingestion: contributory

Scenario/Substances: A 70 y/o female was admitted to the hospital with abdominal pain and vomiting due to diverticulitis with perforation and abscess. During her hospitalization she went into atrial fibrillation, and they restarted her digoxin. She developed AKI and then had an elevated digoxin level on Day 16.

Past Medical History: Atrial fibrillation, diastolic congestive heart failure, hypertension, CAD status post percutaneous coronary intervention, CVA, peripheral vascular disease, Type II DM, intestinal angina, depression.

Laboratory/Diagnostic Findings: K 5.3/Cr 1.08 to 1.93, digoxin 6.9 ng/mL.

Clinical Course: HR was 20-40. She was transferred to the ICU for bradycardia and given 7 vials of digoxin immune fab on Day 18 when the digoxin level increased to 10.7 ng/mL and Cr to 2.02, K 5.4. She also received atropine and was started on dopamine, which improved her heart rate up to the 60s. She was drowsy and required BiPAP. On Day 19 she became more confused with garbled speech. Her renal function continued to worsen with minimal urine output despite furosemide. She was intubated and sedated due to respiratory distress. Her ICU course was complicated by ventilator associated pneumonia, renal failure, and hypotension despite norepinephrine. By Day 24 her renal function returned to baseline although she remained intubated. On Day 33 the family opted for comfort measures, and she was extubated on Day 34. She died on Day 40. Complications of acute perforated diverticulitis with pericolonic abscess and sigmoid colon fistula were considered to be contributing illnesses.

Autopsy Findings: Not performed.

Case 2836. Acute amlodipine ingestion: undoubtedly responsible

Scenario/Substances: A 72 y/o female who did not speak English misunderstood the directions for taking her newly prescribed amlodipine. Instead of 1 tablet by mouth daily for 30 days, she took 30 tablets on day 1.

Past Medical History: Hypertension.

Physical Exam: Metal status was appropriate, nausea but no vomiting. BP 110/66.

Laboratory/Diagnostic Findings: Serum APAP and salicylate were not detected.

Clinical Course: In the ED she received activated charcoal and was admitted to the ICU. Early on Day 2 she was drowsy, BP 82/53, HR 83, O_2 sat 94% on RA. She received norepinephrine, calcium chloride, and vasopressin. Glu 181, Ca 9.3, Mg 2.2, K 4. About 2 hours later, HR was 110 and BP 127/46. D20, HIE and ILE were started. By mid-morning, she was on 3 vasopressors, HIE and calcium. She received an infusion of methylene blue. MAP 65, pH 6.98, lactate 11. She died the evening of Day 2.

Autopsy Findings: Toxicology Report: hospital serum amlodipine 100 ng/mL, peripheral blood: ketamine: 0.525 mg/L, norketamine 0.240 mg/L. Cause of death: amlodipine intoxication. Manner of death: accident.

Case 2863. Acute-on-chronic verapamil ingestion: undoubtedly responsible

Scenario/Substances: A 78 y/o female presented to the ED weak and dizzy after an taking 50 verapamil ER 100 mg tablets 12 h prior in a suicide attempt.

Past Medical History: Hypertension, DM, depression, verapamil ER, losartan, citalopram, linagliptin, clopidogrel, conjugated estrogens, "statin".

Physical Exam: Drowsy. BP 88/55, HR 60, O_2 sat 99% on RA.

Laboratory/Diagnostic Findings: Na 139/K 4.9/Cl 102/CO_2 22/BUN 26/Cr 2.01/Glu 297, lactate 1.6 mmol/L, AST 44, ALT 28 Serum APAP, ethanol and salicylate not detected.

Clinical Course: She was hypotensive and bradycardic in the ED and complained that her legs were hurting. In the ICU, she developed a HR 30 and complete heart block. She received calcium and atropine. She went into cardiac arrest and was intubated and placed on a ventilator. She received insulin 70 units IV bolus but no insulin infusion. Transcutaneous pacer was applied. Vasopressors, dextrose, and sodium bicarbonate were administered. She became hypothermic and her O_2 saturation dropped to 60%. She had a second cardiac arrest. ILE was administered. Patient died 5 h after her arrival to the ICU.

Autopsy Findings: Toxicology on pre mortem blood: verapamil 1900 ng/mL. Cause of death: acute verapamil intoxication. Manner of death: suicide.

Case 2898. Acute-on-chronic amlodipine ingestion: undoubtedly responsible

Scenario/Substances: A 96 y/o female was found altered and poorly responsive at home surrounded by empty pill bottles of amlodipine, levothyroxine, atorvastatin, and meclizine. She was hypotensive pre-hospital and brought in by EMS.

Past Medical History: Home medications: amlodipine, levothyroxine, atorvastatin, and meclizine.

Physical Exam: Drowsy elderly female. BP 70s systolic, HR 31.

Clinical Course: She was given calcium, HIE, and norepinephrine. Initial potassium unknown. She was subsequently admitted to the ICU. Norepinephrine dose was increased and she was given 2 additional doses of calcium chloride and 1 dose of atropine. Atropine briefly resulted in an increase in the heart rate. VS: BP: 100/54, HR 48 in ICU; K 3.8, lactate 2.1. She was started on HIE up to a dose of 1.5 units/kg/h with low dose dextrose, with blood glucoses in the 700 mg/dL range. On HIE and norepinephrine: HR 50; BP 98/50; 98% sat on 4L O_2. Over the next 3 h, the doses of insulin and norepinephrine were increased. Epinephrine and dopamine were added. She remained bradycardic and hypotensive and died on Day 1.

Autopsy Findings: Postmortem toxicology: amlodipine (heart blood) 2 mg/L. Cause of death: amlodipine intoxication.

Case 2908. Acute-on-chronic, dextromethorphan/guaifenesin and ethanol ingestion: undoubtedly responsible

Scenario/Substances: A 55 y/o female was found outside having a seizure and a witness called EMS.

Past Medical History: Chronic alcohol abuse, hypercholesteremia, Type II DM. Current Medications: vitamins, "statin", metformin, paliperidone. "Recreational" dextromethorphan/guaifenesin use.

Laboratory/Diagnostic Findings: Na 137/K 3.8/CO_2 26.7, Ca 9.9, bilirubin 1.1, Serum APAP and salicylate not detected. Serum ethanol not tested. UDS was positive for THC. ECG: HR 91, QRS 94, QTc 356.

Clinical Course: She was unresponsive on arrival to the ED, BP 173/77, HR 110. She was intubated and admitted to the ICU. Day 3: She did not follow commands, sedated on propofol; on insulin for hyperglycemia, enoxaparin and piperacillin/tazobactam. EEG was consistent with anoxic brain injury. BP 109/65, HR 110, RR 16, T 99.2, and O_2 sat 100% on 30% FiO_2. Glu 310, WBC 14.2, arterial pH 7.3, arterial HCO_3 13.8. Day 4-6: Intubated with increase in work of breathing when propofol decreased, acidosis improving. She had a positive cough and gag, postured to pain, had reactive pupils and was over-breathing the vent. Day 7 propofol discontinued, but still ventilated. No gag, occasional cough, pupils brisk and reactive, no purposeful movements. Plan made for organ procurement. Based on the prognosis, comfort measures were instituted and she died on Day 9.

Autopsy Findings: Toxicology Results: Screening positive for caffeine, carboxy-THC-glucuronide, guaifenesin, hydroxyrisperidone, midazolam. Ethanol 0.036 g/dL (hospital admission). Dextro/Levo methorphan 1700 mcg/L. Cause of death: acute dextromethorphan and alcohol intoxication:

Case 2910. Acute benzonatate ingestion: undoubtedly responsible

Scenario/Substances: A 10 m/o male ingested an unknown number of 100 mg benzonatate liquid capsules. Mother reported a seizure before cardiac arrest. EMS initiated CPR and APLS and transported him to the ED.

Past Medical History: Prematurity and GERD.

Clinical Course: Patient was in asystole with ongoing CPR on arrival to ED. GCS 3, pupils fixed and dilated. CPR was continued in the ED for about 40 minutes. He was pronounced dead ~1.25 hours after the seizure.

Autopsy Findings: Drug screen on autopsy detected benzonatate, but blood toxicology did not detect. Cause of death: benzonatate toxicity. Manner of death: accident.

Case 2914. Acute iron ingestion: undoubtedly responsible

Scenario/Substances: A 14 m/o male ate an unknown amount of ferrous sulfate tablets (Hour 0) and was brought to the ED (Hour 1).

Physical Exam: Asymptomatic.

Laboratory/Diagnostic Findings: Iron 119 mcg/mL (1 h post ingestion)

Clinical Course: In the ED, the child was initially asymptomatic, but developed vomiting. An abdominal x-ray showed 20 disc-shaped radiopaque objects in the stomach and small intestines. He was intubated and started on WBI, but it was paused due to the WBI liquid coming back out of the nose. A repeat iron level came back >2000 mcg/dL. Deferoxamine was started, and the child was transferred to a tertiary care center. On arrival to the tertiary care center, he was tachycardic but normotensive and afebrile. He was producing red-brown colored urine while on deferoxamine. Thirteen iron tablets and fragments were removed by endoscopy. His labs showed acidosis with INR 2.5, and unremarkable renal and liver function testing. A repeat iron level was still >1000 mcg/dl. Deferoxamine and WBI were continued. Exchange

transfusion was started about 13 h after ingestion and continued for 5 h. On Day 2 his iron level was 69 mcg/dL and deferoxamine and WBI were continued until the afternoon when they were stopped. He remained tachycardic: HR 190s, BP 80s/40s, T 38.3 °C. He developed an ileus with distended abdomen, became hypoglycemic and received D50. He also received platelets for thrombocytopenia and developed a metabolic acidosis (pH 7.09). The patient became bradycardic and went into cardiac arrest and was resuscitated. He was transferred to another facility for pediatric dialysis. He required vasopressors and sodium bicarbonate. HD was started by early Day 3 but was switched to CRRT due to hypotension. ECMO was started by midday on Day 3. IV NAC and methylprednisolone were started (AST 184/ALT 124/INR 1.8). He developed ascites with distention and a drain was placed. A repeat iron level on Day 4 was 174 mcg/dL and a second round of exchange transfusion was attempted. The iron level after the exchange was 220 mcg/dL. On Day 5, his abdomen remained distended, but no perforation was noted on imaging. He had elevated ammonia (45 mcmol/L) and was given lactulose. Antibiotics and antifungals were started. He also received phytonadione for INRs of 2-3. He remained on ECMO and advanced vasopressor support for vasoplegia. His course was further complicated by pleural effusions with chest tube placement and esophageal perforation with stent placement. By Day 12 he was off vasopressors but began to have bloody stools. Operative inspection on Day 16 demonstrated intestinal ischemia. Based on the prognosis, the family opted for institution of comfort measures and he died on Day 17.

Autopsy Findings: Not performed.

Case 2966. Acute tranexamic acid intrathecal: contributory

Scenario/Substances: A79 y/o male was undergoing a nerve block prior to a knee replacement surgery. He was administered tranexamic acid (TXA) intrathecally instead of an anesthetic.

Past Medical History: Atrial fibrillation, aortic stenosis.

Physical Exam: BP 108/61, HR 86, RR 19, O_2 sat 95% on ventilator 90% FiO_2, T 37 °C.

Laboratory/Diagnostic Findings: MRI brain: moderate supratentorial and infratentorial chronic ischemic changes. ECHO: LV function normal, EF >70%, mildly increased ventricular wall thickness, left and right ventricles normal size, atria mildly dilated. Chest CT: Lower lobe pneumonia, no PE.

Clinical Course: He had a seizure sometime after TXA administration and was intubated. He was transferred to a tertiary care center on propofol and midazolam and was given levetiracetam for seizure prophylaxis. An EEG showed burst suppression. He was on amiodarone for arrhythmia prevention, but this was stopped on the day after admission after no arrythmias were seen. He was placed on phenylephrine for BP maintenance while intubated. He was noted to be hypoxemic on the ventilator with intermittent fevers. Chest CT revealed pneumonia. He was treated with broad spectrum antibiotics and methylprednisolone. He had no response when sedation was stopped. His respiratory status worsened to the point that he required paralytics and proning and died on Day 9.

Autopsy Findings: Cardiomegaly with moderate calcific atherosclerosis of the coronary arteries and calcification of the aortic leaflets. Brain was edematous with minimal uncal and cerebellar tonsillar herniation and no intracerebral hemorrhage. CNS histology showed moderate congestion with anoxic appearing neurons and many rounded basophilic bodies along the periphery of the brainstem. Cause of death: Complication of inadvertent intrathecal infusion of tranexamic acid.

Case 2967. Acute lipid emulsion other: undoubtedly responsible

Scenario/Substances: A 9 m/o female on home TPN for esophageal varices received a 250 mL lipid emulsion over 6 h (instead of 24 h) when it was connected to the TPN pump instead of the lipid pump the prior evening. The mother brought the child to the ED.

Past Medical History: Biliary atresia, cirrhosis, on transplant list for end-stage liver failure.

Laboratory/Diagnostic Findings: Na 131/K 4.7/Cl 100/CO_2 11/BUN 13/Cr.2, Glu 38, Ca 11.2, AST 399, ALT 96, albumin 2.5, bilirubin 24.7, bili (direct) 16.3, pH 6.9.

Clinical Course: In the ED, she was fussy with increasing RR and somnolent. Day 1: She was admitted to the ICU where she arrested twice, was intubated and ventilated. She was unable to tolerate an oscillating ventilator and received maximal dosing of epinephrine. Day 2: She remained hypoxemic in the 60's while intubated. DIC, hemolysis and pH 6.9 were observed. She died on Day 2.

Autopsy Findings: Triglycerides >1,100 mg/dL and she was coagulopathic. Cause of death: fat embolism syndrome due to accidental accelerated infusion of lipid emulsion in the setting of Alagille syndrome with biliary cirrhosis. Manner of death: accident.

Case 2988. Acute-on-chronic clozapine and clonidine ingestion: undoubtedly responsible

Scenario/Substances: A 13 y/o boy was found in asystole in the bathroom of his home. EMS performed CPR and the patient was transported to an ED. There was no stated history of ingestion.

Past Medical History: ADD, Oppositional Defiant Disorder, Disruptive Deregulatory Disorder, chronic constipation. Daily meds: Clozapine, clonidine.

Physical Exam: Intubated and on ventilator. Pupils nonresponsive.

Laboratory/Diagnostic Findings: ECG: QTc450.

Clinical Course: In the ED, he was placed on a ventilator and received fluids. He was admitted to the Pediatric ICU and received benzodiazepines for sedation. Decerebrate posturing was noted. A fecal impaction was removed. Head MRI showed massive hypoxic encephalopathy and cerebral edema. An EEG showed little cortical activity. His ECHO was unremarkable. On Day 2, he developed acute kidney injury (Cr 3.01), AST peaked at 3,500, ALT at 500, and his Hgb was 7.2. He was transfused packed RBCs and received calcium. Based on the prognosis, comfort measures were instituted on Day 6 and he died on Day 10.

Autopsy Findings: Pathology: recto-sigmoid wall with areas of ulceration and acute inflammation with exudate; ganglion cells present. Pathology otherwise unremarkable. Toxicology on pre mortem blood: clozapine 3,638 ng/mL (therapeutic up to 1300 ng/mL in patients receiving 400 mg/day); nor-clozapine 621 ng/mL. There was no history of overmedication by the patient or by caregivers. Cause of death: Acute clozapine intoxication; fecal impaction/disimpaction; sigmoid-rectum ulcerations; scattered blunt injuries, superficial. Manner of death: Undetermined.

Case 3009. Acute-on-chronic quetiapine ingestion: undoubtedly responsible

Scenario/Substances: A 33 y/o female ingested 90 tabs of quetiapine 200 mg. She was found very sleepy an hour later by a friend who tried to induce vomiting. EMS was summoned and transported her to the ED.

Past Medical History: Bipolar disorder, depression. Medications: quetiapine, topiramate.

Physical Exam: In the ED, she was drowsy but arousable to voice. She faded off during conversation. Speech was slowed but fluent. Disconjugate gaze and tachycardia were present. HR 137, BP 119/59, RR 22, SpO_2 98%, T 36.1 °C.

Laboratory/Diagnostic Findings: Na 137/K 3.0/Cl 105/CO_2 21/Glu 169/Bun 3/Cr 0.68, AST 23, ALT 12. Serum APAP, ethanol and salicylate not detected. UDS was negative. EKG: HR 110, QRS 76, QTc 473.

Clinical Course: Her GCS remained about 11 and she was admitted to the medical floor. She was observed to have a tonic-clonic seizure that was treated with lorazepam. She continued to have seizures and was treated with lorazepam and levetiracetam. About 30 minutes later she became bradycardic and had a PEA arrest. CPR was and begun and she was given ILE x 2, sodium bicarbonate, calcium, magnesium, and potassium. ACLS followed for 1 h without ROSC and the patient died.

Autopsy Findings: Quetiapine 1,200 ng/ml shortly after arrival to the hospital (~2 h after exposure). Postmortem quetiapine from IVC blood 38,000 ng/ml. An expanded postmortem screen did not detect any other drugs. Cause of death: quetiapine toxicity. Manner of death: suicide.

Authors' Note: This 32 fold (38,000/1,200) increase in quetiapine concentration occurring while she was in the hospital reminds us all of the importance of the "Decrease Absorption" interventions in our poison management.

Case 3078. Chronic immune globulin (human) parenteral: probably responsible

Scenario/Substances: A 67 y/o female was admitted to the hospital in myasthenia gravis crisis to receive IV immunoglobulin therapy. Dose was to be 2 g/kg (120 g) divided over 5 days, but on Day 5 it was noted that she had been receiving 2 g/kg daily for the past 4 days. On Day 4, she developed AKI, AMS, and hemolytic anemia. The patient was a Jehovah's Witness and refused blood transfusions.

Past Medical History: Myasthenia gravis.

Physical Exam: BP 102/64, HR 94, RR 20, O_2 sat 100% on RA, T 38.2 °C.

Laboratory/Diagnostic Findings: Initial RBC 5.3 and Cr 0.9. RBC 3.13 > 2.78 > 2.2 > 1.74. Cr 0.9 > 2.2 > 2.8 > 3.3 > 4.4. Serum viscosity 3 centipoises.

Clinical Course: The patient received 1 round of HD on Day 5 and came back with SOB, requiring BiPAP. Shortly after plasmapheresis was initiated, there was a noted improvement in her mental status. After receiving 2 rounds of plasmapheresis, she was lethargic, but able to converse with her niece. The next day she was able to come off BiPAP to low flow O_2. Her renal function did not recover, and she continued to require intermittent HD. She was started on a daily steroid infusion but developed worsening mental status that prompted a head CT. Findings were consistent with a recent CVA, but no specific interventions were deemed to be indicated. Based on the prognosis, the family opted for institution of comfort measures and she died on Day 18.

Autopsy Findings: Not performed.

Case 3079. Acute botulinum toxin parenteral: undoubtedly responsible

Scenario/Substances: A 79 y/o male received 45 units of botulinum toxin injections for cricopharyngeal bar with improvement of his dysphagia. He returned to the ED 5 days after the procedure with severe dysphagia, shortness of breath and stridor.

Past Medical History: Intermittent/progressive dysphagia, progressive generalized weakness, CHF, polymyalgia rheumatica on steroids, COPD, hypertension, persistent atrial fibrillation.

Laboratory/Diagnostic Findings: Not provided.

Clinical Course: He presented with stridor, dyspnea, and dysphagia. Endoscopy showed paralyzed vocal cords. He received botulinum antitoxin from the CDC with some improvement of his dysphagia, although he still had some dyspnea, weakness, and edema. He was discharged home Day 8 post botulinum toxin injection but was readmitted 1 day later with worsening dysphagia and stridor. The patient opted for institution of comfort measures and died on Day 11 after the botulinum toxin injection.

Autopsy Findings: Not performed.

Case 3081. Acute cocaine exposure: undoubtedly responsible

Scenario/Substances: A 15 y/o female had a fight with her mother and was found having a seizure, which lasted 20-30 minutes. EMS arrived and transported her to the hospital.

Past Medical History: Polysubstance abuse, depression. Medications: trazodone, hydroxyzine, and aripiprazole.

Physical Exam: Active seizures. BP 128/77, P 122, R 20, T 37 °C.

Laboratory/Diagnostic Findings: Na 145/K 2.9/Cl 114/CO_2 17/BUN 11/Cr 2.4/Glu 87/AG 14, AST 173/ALT 138, troponin 1.03, lactate 7.2, VBG: pH 7.2/pCO_2 40/pO_2 56. EKG QRS 74, QTc 497. UDS positive for cocaine and benzodiazepines. Serum APAP, ethanol and salicylate not detected. Head CT negative.

Clinical Course: Upon arrival to the ED, she was hyperthermic to T 41.7 °C. She was given calcium and developed asystole. She received CPR and epinephrine, O_2, and was intubated and ventilated. She developed PEA and was given atropine with ROSC. She was given IV fluids and vasopressors, amiodarone and synchronized cardioversion for a wide-complex tachycardia that converted to sinus tachycardia. After stabilization she was transferred to the PICU. She was started on NAC and broad-spectrum antibiotics. On Day 2, she required escalating doses of vasopressors and stress dose steroids for hypotension as well as sodium bicarbonate infusion for acidosis. Worsening lactic acidosis, kidney injury, hepatic injury, and DIC required transfusion of RBCs and FFP. Later on Day 2, she became acutely hypotensive which preceded a ventricular dysrhythmia and cardiac arrest. Despite CPR, ACLS, and other measures, the patient was unable to be resuscitated and died on Day 2.

Autopsy Findings: Post-mortem toxicology showed a blood benzoylecgonine concentration of 2.13 mg/L. Cause of death: cocaine toxicity complicated by malignant hyperthermia, DIC, cardiac arrest with multisystem organ failure and QTc prolongation with dysrhythmia.

Case 3082. Acute methylenedioxymethamphetamine (MDMA) and methylphenidate exposure: undoubtedly responsible

Scenario/Substances: A 16 y/o male was found unresponsive at a house party. When EMS arrived, the patient was in cardiac arrest. CPR was performed including naloxone and 3 rounds of epinephrine, atropine, and defibrillation for VT. This resulted in ROSC. Multiple pill bottles were found near the patient, including cyclobenzaprine, alprazolam, methylphenidate, and "ecstasy".

Laboratory/Diagnostic Findings: Na 132/K 3.6/Cl 95/CO_2 17/BUN 17/Cr 2.0/Glu 193/AG 20, AST 411, ALT 536, bilirubin 1.9, INR 1.2, WBC 10.5/Hgb 14.3/Hct 41.4/PLT 117, troponin 0.246, CK 1595, ABG: pH 6.92/pCO_2 93/pO_2 442/HCO_3 19/BE -4. Serum APAP, ethanol and salicylate not detected. UDS was positive for amphetamines. CxR: No acute abnormality. ECG: HR 120, QRS 127, QTc 528. Head CT showed global brain edema consistent with anoxic brain injury.

Clinical Course: He arrived in the ED, unresponsive with fixed and dilated pupils. BP 168/146, HR 110, RR 17, O_2 sat 100% intubated, T 37 °C. The patient was sedated, paralyzed, intubated, and placed on a ventilator. He received sodium bicarbonate and was started on fentanyl and midazolam infusions. Potassium was supplemented. Initial BP was high, but he developed hypotension and was started on IV fluids and norepinephrine. He developed urinary retention and gross hematuria was noted after a difficult urinary catheter insertion. A neurosurgery exam in the ED was consistent with brain death secondary to anoxic brain injury. He was admitted to the PICU for further management. He remained sedated and required nicardipine for hypertension and desmopressin for DI. He continued to worsen and was declared brain dead on Day 3 and evaluated for organ transplantation. He was taken to the OR for organ transplantation, developed asystole, and died.

Autopsy Findings: Antemortem blood methylenedioxymethamphetamine 1.0 mg/L. Cyclobenzaprine, amphetamine and alprazolam were not detected. Cause of death: anoxic encephalopathy due to accidental intoxication by methylenedioxymethamphetamine.

Case 3197. Acute armodafinil ingestion: contributory

Scenario/Substances: A 33 y/o female had become increasingly tired with abdominal pain and intractable nausea and vomiting for 3 days. EMS was told she was suicidal and transported her to the ED.

Past Medical History: Six months postpartum, ADHD, anxiety, depression. Medications: oxycodone, amphetamine/dextroamphetamine salts. She sometimes took extra of her amphetamine/dextroamphetamine salts tablets, and would be awake for days and then crash. The patient's mother would then give her 1-2 tablets of mother's armodafinil to keep patient awake.

Laboratory/Diagnostic Findings: AG 20. Serum APAP and salicylate not detected.

Clinical Course: She was ambulatory, calm and alert oriented upon arrival. Starvation ketoacidosis was diagnosed and she was admitted and treated with IVF and ondansetron. Overnight she became agitated and required sedation. Day 2, her mother reported 15 of her armodafinil 250 mg tablets were missing. The patient was sleepy but alert and oriented, HR 120-130; BP 122/85; RR and O_2 sat unremarkable on RA. EKG: sinus tach 110, QTc 432; renal and liver function tests were unremarkable, AG 17, ketonuria was present. She became diaphoretic, T 38 °C, RR 20, AG 20 with a CO_2 of 15. That evening she was found obtunded and transferred to the neurology ICU at a tertiary care center. Day 3 she became very agitated and received lorazepam and haloperidol, was intubated, and placed on a ventilator. A cooling protocol was started with placement of an ICP monitor. She was tachycardic, agitated, chewed through her ET tube, and was requiring high doses of paralytics, hypertonic saline, and mannitol. Day 4 the patient remained intubated on atracurium, pentobarbital, vancomycin and meropenem. HR 109, BP 126/75, O_2 sat 94% with 80% FiO_2, T 34.1° C, on HD. ICP was high and unresponsive to medical treatment. Later in the day, off paralytics, she was areflexic. Her pupils were 8 mm and non-reactive. Na 158/K 3.8/Cl 118/CO_2 26/Cr 0.37/BUN 2, lactate 2.0, ammonia 48 mmol/L. Head CT showed increased edema. Day 5 her pupils were 6 mm and non-reactive, ammonia 58 mmol/L, ICP high, lactate 3.3 mmol/L. Day 6, she was completely rewarmed, ICP was still high. Day 9, she remained unresponsive on the ventilator with weak cough and gag reflex, pupils 7 mm and sluggish, MRI showed global anoxic injury. Based on the prognosis, comfort measures were instituted and she was taken to hospice and died on Day 12. Starvation ketoacidosis was believed to be contributory to her death.

Autopsy Findings: ME reported cause of death as acute-on-chronic respiratory failure due to toxic metabolic encephalopathy with cerebral edema.

Disclaimer – all laboratories are different and provide their own normal ranges. Units and normal ranges are provided here for general guidance only. These values were taken from Harrison's[a], Goldfrank's[b] or Dart[c]

[a]Table SR12-1 Selected Examples of Laboratory Critical Values, *Harrison's Principles of Internal Medicine 20e.* McGraw-Hill Professional, 2018. Available from: http://www.accessmedicine.com/ Oct 6, 2020.

[b]*Goldfrank's Toxicologic Emergencies, 11th Edition*, McGraw-Hill Education, 2019.

[c]*Dart RC, ed. Medical Toxicology, 3rd Edition,* Lippincott, Williams & Wilkins, 2004.

Typical laboratory panels

ABG-pH/pCO_2/pO_2/HCO_3/BE

Basic metabolic panel: Na/K/Cl/CO_2/BUN/Cr/Glu/AG

Complete blood count: WBC/Hgb/Hct/platelets

Abbreviations & Normal Ranges

~	approximately;
abd	abdomen;
ABG	arterial blood gases;
pH	hydrogen ion concentration [7.38-7.42 mmHg];
pCO_2	partial pressure of carbon dioxide [38-42 mmHg];
pO_2	partial pressure of oxygen [90-100 mmHg];
HCO_3	bicarbonate [22 - 28 mEq/L];
BE	base excess [±2mEq/L or mmol/L];
ACLS	advanced cardiac life support, protocol for the provision of cardiac resuscitation;
ADHD	attention deficit hyperactivity disorder;
AF	atrial fibrillation;
AG	anion gap Na – (Cl HCO_3) [12 ± 4 mEq/L or mmol/L];
AICD	automatic implanted cardiodefibrillator;
AKI	acute kidney injury;
ALP	alkaline phosphatase [13-100] U/L;
ALT	Alanine aminotransferase [7-41] U/L (SGPT);
AMA	against medical advice;
ammonia	[25-80] mcg/dL [15-47] mcmol/L;
amp	ampoule;
amphetamines (hallucinogenic)	one or more of the products (6-APB, bath salts, plant food, Bliss, Ivory Wave, Purple Wave, Vanilla Sky, et al) or chemicals (3,4 methylenedioxypyrovalerone [MDPV], 6-(2-aminopropyl)benzofuran [6-APB], butylone, desoxypipradrol [2-DPMP], ethylone, flephedrone, naphyrone, mephedrone, methylenedioxypyrovalerone, methylone, methcathinone, et al);
AMS	altered mental status;
APAP	acetaminophen (acetyl-para-aminophenol), therapeutic [10-20] mcg/mL;
APLS	advanced pediatric life support, protocol for the provision of cardiac resuscitation;
aPTT	activated partial thromboplastin time [30-40] sec;
ARDS	acute respiratory distress syndrome;
AST	Aspartate aminotransferase [12-38] U/L = (SGOT);
AV block	atrio-ventricular block;
BAL	British anti-Lewisite;
BE	base excess [±2mEq/L or mmol/L];
bicarbonate	[22-26] mmol/L;
bili (direct)	direct bilirubin [0.1, 0.4] mg/dL;
bili (indirect)	indirect bilirubin [0.2, 0.9] mg/dL;
bilirubin	total [0.3-1.3] mg/dL;
BiPAP	bilevel positive airway pressure, pressure support with 2 levels of continuous positive airway pressure;
BLQ	below the limit of quantitation;
BMI	body mass index;
BNPT	prohormone with a 76 amino acid N-terminal inactive protein that is cleaved from the molecule to release brain natriuretic peptide. CHF is likely if BNPT > 125 pg/mL (<75 y/o), > 450 pg/mL (>75 y/o);
body packing	insertion of drugs into body orifices to evade law enforcement;
body stuffing	the ingestion of drugs in order to evade law enforcement;
BP	Blood Pressure, systolic/diastolic, (Torr);
BPH	benign prostatic hypertrophy;
BUN	see Urea nitrogen;
C	degrees Centigrade;
Ca (ionized)	ionized calcium, [4.5-5.6] mg/dL;
Ca	calcium [8.7–10.2] mg/dL;
CABG	coronary artery bypass graft;
CAD	coronary artery disease;
CHF	congestive heart failure;
CIWA	Clinical Institute Withdrawal Assessment for Alcohol;
CK	creatinine kinase (CPK), total: [39-238] U/L females, [51-294] U/L males;
CKMB	MB fraction of CK [0.0–5.5 mcg/L ¼ 0.0–5.5 ng/mL] Fraction of total CK activity [0–0.04 0–4.0%];
Cl	chloride [102-109] mEq/L;
CMV	cytomegalovirus;
CNS	central nervous system;
COHb	carboxyhemoglobin (RR < 3%);
COPD	chronic obstructive pulmonary disease;
CPAP	continuous positive airway pressure;
CPR	cardio pulmonary resuscitation;
Cr	creatinine [0.5-0.9] mg/dL females, [0.6-1.2] males,;
CRRT	continuous renal replacement therapy;
CSF	cerebrospinal fluid;
CT	computed tomography (CAT scan);
CVA	cerebrovascular accident;
CVP	central venous pressure;
CVVH	continuous venovenous hemodiafiltration;
CxR	chest radiograph, chest xray;
c/w	consistent with;
D10W	10% dextrose in water;
D50W	50% dextrose in water;
D5NS	5% dextrose in normal saline;

D5W	5% dextrose in water;
Day	when capitalized, Day hospital day, i.e., days since admission to the initial hospital admission for this exposure;
DIC	disseminated intravascualar coagulation;
DM	diabetes mellitus;
DNI	do not intubate;
DNR	do not resuscitate;
drip	intravenous infusion;
Dx	diagnosis;
ECG	electrocardiogram (EKG), leads I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6;
ECHO	echocardiogram;
ECMO	extracorporeal membrane oxygenation;
ED	emergency department, in these abstracts refers to the initial health care facility;
EDDP	principal methadone metabolite, 2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine;
EEG	electroencephalogram;
EGD	esophagogastroduodenoscopy;
ELISA	enzyme-linked immunosorbent assay;
EMS	emergency medical services, paramedics, the first responders;
EOMI	extraocular movements intact.;
ER	extended release medication;
ETT	endotracheal tube;
FFP	fresh frozen plasma;
FiO_2	fraction of inspired oxygen (%);
g	grams;
g/dL	grams per deciliter;
GCS	Glasgow Coma Score, ranges from 3 to 15;
GERD	gastroesophageal reflux disease;
GI	gastrointestinal;
Glu	glucose, fasting [75-110] mg/dL;
h	hours;
HBO	hyperbaric oxygen treatment/therapy;
HCF	health care facility;
HCG	human chorionic gonadotropin test for pregnancy;
HCO_3	bicarbonate [22 - 28 mEq/L];
HCP	health care provider;
Hct	hematocrit [35.4-44.4] females, [38.8-46.4]% males;
HD	hemodialysis;
Hgb	hemoglobin [12.0-15.8] g/dL females, [13.3-16.2] g/dL males;
HIE	hyperinsulinemia-euglycemia therapy;
HIV	human immunodeficiency virus;
Hour	when capitalized, Hour or hours since admission or since exposure as specified in the narrative;
HR	HR, beats per min;
IABP	intraortic balloon pump;
ICP	intracranial pressure;
ICU	intensive care unit;
IDDM	insulin dependent diabetes mellitus;
IgE	immunoglobulin E;
ILE	intravenous lipid emulsion (20%);
IM	intramuscular;
INR	international normalized ratio (PT to control) [0.8-1-2];
IO	intraosseous;
IU/L	international units per Liter;
IV	intravenous;
IVF	intravenous fluid(s);
K	potassium [3.5-5] mEq/L;
kg	kilogram;
L	Liter;
lactate	lactic acid [4.5-14.4] mg/dL arterial, [4.5-19.8] mg/dL venous [0.5-1.6] mmol/L arterial, [0.5-2.2] mmol/L venous;
LBBB	left bundle branch block on ECG;
LFT	liver function tests;
LV	left ventricle;
LVEF	left ventricular ejection fraction;
m/o	months old;
MAP	mean arterial pressure;
mcg/dL	micrograms per deciliter;
mcg/L	micrograms per Liter;
mcg/min	micrograms per minute;
mcg/mL	micrograms per milliliter;
mcmol/L	micromoles per liter;
MDA	3,4-methylenedioxyamphetamine;
MDMA	methylenedioxymethamphetamine (ecstasy, molly);
ME	medical examiner;
MetHgb	methemoglobin (RR $<$ 1%);
Mg	magnesium [1.5-2.3] mg/dL;
mg	milligrams;
mg/dL	milligrams per deciliter;
mg/kg	milligrams per kilogram;
mg/L	milligrams per Liter;
min	minutes;
ml	milliliter;
mmol	millimoles;
mmol/L	millimoles per Liter (previously mEg/L);
mmol/L	millmoles per Liter;
mosm/kg	milliosmoles per kilogram;
mosm/L	milliosmoles per Liter;
MRI	Magnetic Resonance Imaging;
MRSA	Methicillin-resistant Staphylococcus aureus;
ms	milliseconds;
MSDS	material safety data sheet;
Na	sodium [136-146] mEq/L;
NAC	n-acetyl cysteine;
NG	nasogastric;
ng/mL	nanograms per milliliter;
NOS	not otherwise specified;
not detected	analyte below the level of quantitation, negative;
NPO	*nil per os*, nothing by mouth;
NRB	non rebreathing mask for O_2 delivery;
NS	normal saline;
NSR	normal sinus rhythm;
NSTEMI	non-ST segment elevation myocardial infarction;
O_2 sat	oxygen percent saturation [94-100]% at sea level;
OG	serum osmol gap measured serum osmolality – calculated serum osmolality [0 ± 10 mOsmol/kg];
OR	operating room;
Osm	osmole;
OTC	over the counter;
PALS	pediatric advanced life support;
PC	poison center (PCC, or Poison Control Center);
PCC	prothrombin complex concentrate;
PCP	primary care provider;
PEA	pulseless electrical activity;
PEEP	positive end expiratory pressure;
PERRLA	pupils, equal, round and reactive to light and accomodation;
Phos	phosphate (phosphorous) [2.5-4.5] mg/dL;
PICU	pediatric intensive care unit;
PLT	platelet count [150-400] x109/L;
PO	per os ("by mouth" in Latin);
POC	point of care;
Ppm	parts per million;
PR	P-R interval [120-200] msec on the ECG;
PRN	as needed;
PT	prothrombin time, INR is preferred, but PT may be used if INR is not available;
PTA	Prior to admission;
PTSD	post-traumatic stress disorder;
PTT	partial thromboplastin time [26.3-39.4] sec;
PVC	premature ventricular contraction;
QRS	ECG QRS complex duration [60-100] msec;
QT	Q to T interval on the ECG waveform, varies with HR;

QTc	QT interval corrected for HR, usually QTcB $QT/RR^{1/2}$ (Bazett correction) 1-15 y-o [<440] msec, adult male [<430] msec, adult female [<450] msec;
RA	on room air;
RBBB	right bundle branch block on ECG;
RBC	red blood cell(s);
ROSC	return of spontaneous circulation;
RPC	regional poison center;
RR	respiratory rate, breaths per minute;
s/p	status post;
salicylate	aspirin, acetylsalicylic acid, therapeutic [15-30] mg/dL;
SBP	systolic blood pressure;
sec	seconds;
SL	sublingual;
SVT	supraventricular tachycardia;
T (oral)	Temperature (oral) [36.4, 37.2]°C or;
T (rectal)	Temperature (rectal) [36.4, 37.2]°C or;
T (tympanic)	Temperature (tympanic) [36.4, 37.2]°C;
TBSA	total body surface area;
THC	tetrahydrocannabinol;
THC Homolog	one or more of the products (Blaze, Dawn, herbal incense, K2, Red X, spice, et al) or chemicals (cannabicyclohexanol, CP-47,497, JWH-018, JWH-073, JWH-200, et al);
TPN	total parenteral nutrition;
Tprot	total protein;
troponin	troponin I, normal range [0-0.08] ng/mL, Cut-off for MI > 0.04 ng/mL;
TTE	transthoracic echocardiogram;
U	units;
U/dL	units per deciliter;
U/L	units per liter;
U/mL	units per milliliter;
UA	urinalysis;
UDS	urine drug screen;
Urea nitrogen	(BUN) [6-17] mg/dL;
VBG	venous blood gases;
VF	ventricular fibrillation;
VSD	ventricular septal defect;
VT	ventricular tachycardia;
WBC	white blood cell (leukocyte) count [3.54-9.06] $10^3/mm^3$;
WBI	whole bowel irrigation;
WNL	within normal limits;
y/o	year old;

APPENDIX D

POISONHELP.ORG

Methods: Raw data from PoisonHelp.org Virtual Poison Center was extracted into Microsoft Excel 365 (Redmond, WA, USA) in sequential contact format. On review of each year it was evident that some sequential contacts appeared to be repeat entries due to similarities of nearly every data field over short time periods (i.e., minutes) between contacts. To account for these apparent repeats, identified by adjacent sequential contact numbers or separated by only a single contact, line items with identical age category, state, verbatim substance input (first three characters), and originating operating system used for contact entry were considered repeat entries and were excluded from the final analyses. Repeat entries excluded by this process were:

Year	2017	2018	2019	2020	4 years
Original Counts	17,870	38,010	43,981	28,662	128,523
Final Counts	14,070	32,228	37,415	24,485	108,198
Number Excluded	3,800	5,782	6,566	4,177	20,325
% Excluded	21.3%	15.2%	14.9%	14.6%	15.8%

Table D-1. Age Distribution of PoisonHelp.org Contacts (repeats redacted).

	2017	2018	2019	2020
Age <5	7,194	10,641	11,004	6,352
6-12	1,072	1,996	2,084	1,218
Teen 13-19	1,075	3,870	4,739	3,113
Adult 20-69	4,454	14,440	17,922	12,591
Adult 70+	275	1,281	1,666	1,200
Unknown Age	0	0	0	11
Total Counts	14,070	32,228	37,415	24,485

The table shows ages of individuals who were involved in human exposures (HEs) reported to PoisonHelp.org Virtual Poison Center during the initial 4 years of operation.

Table D-2A. Substance Frequency – 2017.

Substance Generic Code	Contact Counts	Percentage of Contacts
Bleaches: Hypochlorite (Liquid and Dry)	269	2.66%
Ibuprofen	261	2.58%
Acetaminophen Alone, Adult	248	2.46%
Other Antihistamines Alone (Excluding Cough and Cold Preparations)	184	1.82%
Pyrethroids	162	1.60%
Diphenhydramine Alone (Over the Counter)	151	1.50%
Diaper Care and Rash Products	147	1.46%
Creams, Lotions, and Make-Up	146	1.45%
Desiccants	120	1.19%
Soaps (Bar, Hand or Complexion)	113	1.12%
Other Non-Drug Substances	103	1.02%
Deodorants	101	1.00%
Hand Sanitizers: Ethanol Based	100	0.99%
Miscellaneous Essential Oils	96	0.95%
Other Chemicals	94	0.93%

The table lists the 15 most frequent substances involved in cases of human exposures when the substance was known (n = 10,100) reported to PoisonHelp.org in year 2017.

Table D-2B. Substance Frequency – 2018.

Substance Generic Code	Contact Counts	Percentage of Contacts
Systemic Antibiotic Preparations (Oral, Intravenous, Intramuscular)	983	4.30%
Other Antihistamines Alone (Excluding Cough and Cold Preparations)	910	3.98%
Benzodiazepines	888	3.89%
Atypical Antipsychotics	463	2.03%
Ibuprofen	451	1.97%
Sertraline	431	1.89%
Other Types of Miscellaneous Prescription or Over the Counter Drug	421	1.84%
Acetaminophen Alone, Adult	386	1.69%
Bleaches: Hypochlorite (Liquid and Dry)	341	1.49%
Beta Blocker, Alone	272	1.19%
Diphenhydramine Alone (Over the Counter)	233	1.02%
Leukotriene Antagonist or Inhibitor	229	1.00%
Other Types of Nonsteroidal Antiinflammatory Drug	221	0.97%
Antacids: Proton Pump Inhibitors	206	0.90%
Angiotensin Receptor Blocker, Alone	203	0.89%

The table lists the 15 most frequent substances involved in cases of human exposures when the substance was known (n = 22,846) reported to PoisonHelp.org in year 2018.

Table D-2C. Substance Frequency – 2019.

Substance Generic Code	Contact Counts	Percentage of contacts
Benzodiazepines	1,447	5.42%
Systemic Antibiotic Preparations (Oral, Intravenous, Intramuscular)	1,394	5.22%
Other Antihistamines Alone (Excluding Cough and Cold Preparations)	1,235	4.63%
Other Types of Miscellaneous Prescription or Over the Counter Drug	596	2.23%
Atypical Antipsychotics	591	2.21%
Sertraline	559	2.09%
Ibuprofen	473	1.77%
Diphenhydramine Alone (Over the Counter)	457	1.71%
Angiotensin Receptor Blocker, Alone	416	1.56%
Acetaminophen Alone, Adult	363	1.36%
Beta Blocker, Alone	346	1.30%
Antacids: Proton Pump Inhibitors	333	1.25%
Bleaches: Hypochlorite (Liquid and Dry)	318	1.19%
Cimetidine and Other Histamine-2 Blockers	282	1.06%
Other Types of Nonsteroidal Antiinflammatory Drug	276	1.03%

The table lists the 15 most frequent substances involved in cases of human exposures when the substance was known (n = 26,697) reported to PoisonHelp.org in year 2019.

Table D-2D. Substance Frequency – 2020.

Substance Generic Code	Contact Counts	Percentage of Contacts
Benzodiazepines	940	5.17%
Other Antihistamines Alone (Excluding Cough and Cold Preparations)	871	4.79%
Systemic Antibiotic Preparations (Oral, Intravenous, Intramuscular)	660	3.63%
Sertraline	605	3.33%
Diphenhydramine Alone (Over the Counter)	507	2.79%
Ibuprofen	491	2.70%
Other Types of Miscellaneous Prescription or Over the Counter Drug	418	2.30%
Atypical Antipsychotics	351	1.93%
Angiotensin Receptor Blocker, Alone	313	1.72%
Bleaches: Hypochlorite (Liquid and Dry)	279	1.53%
Antacids: Proton Pump Inhibitors	259	1.42%
Acetaminophen Alone, Adult	254	1.40%
Beta Blocker, Alone	206	1.13%
Other Types of Nonsteroidal Antiinflammatory Drug	192	1.06%
Corticosteroids	190	1.04%

The table lists the 15 most frequent substances involved in cases of human exposures when the substance was known (n = 18,183) reported to PoisonHelp.org in year 2020.

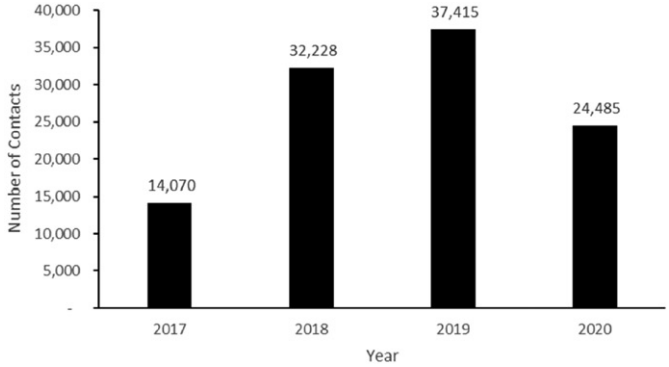

Figure D-1A. Cases per Year. The figure demonstrates total contacts to the PoisonHelp.org Virtual Poison Center during the initial 4 years of operation.

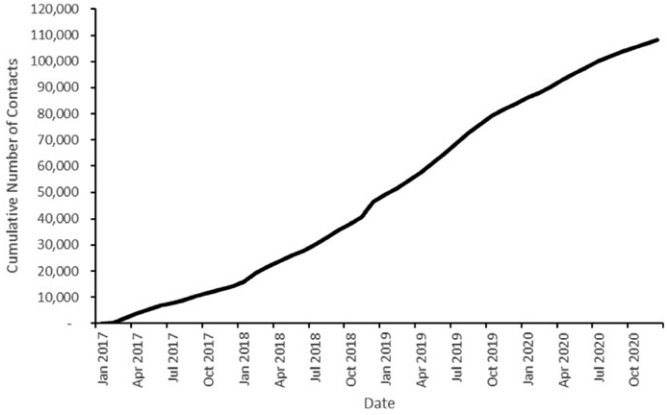

Figure D-1B. Cumulative counts. The figure demonstrates cumulative contacts to the PoisonHelp.org Virtual Poison Center during the first 4 years of operation.

APPENDIX E

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The Lead and Peer review of the 2020 fatalities was carried out by the 48 individuals listed here including 6 who reviewed the pediatric cases [Peds]. The authors and the AAPCC wish to express our appreciation for their volunteerism, dedication, hard work and good will in completing this task in a limited time frame.

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** These reviewers further volunteered to read the top ranked 200 abstracts and judged to publish or not publish each.*

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AAPCC Surveillance Team

NPDS surveillance anomalies are analyzed daily by a team of 10 medical and clinical toxicologists working across the country in a distributed system. These dedicated professionals interface with the Health Studies Branch, National Center for Environmental Health, Centers for Disease Control and Prevention (HSB/NCEH/CDC) and the PCs on a regular basis to identify anomalies of public health significance and improve NPDS surveillance systems:

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Regional Poison Center Fatality Awards

Each year the AAPCC and the Fatality Review team recognizes several regional PCs for their extra effort in their preparation of fatality reports and prompt responses to reviewer queries. The awards are presented each year at the North American Congress of Clinical Toxicology Annual meeting.

First Center to Complete all Cases (11/13/20, 15 cases)
  Mississippi Regional Poison Center (Jackson)
Largest Number with Autopsy Reports (39 of 63 cases; 62%)
  North Carolina Poison Control (Charlotte)
Highest Percentage with Autopsy Reports (Tie: 88% of 17 and 42 cases)
  Northern New England Poison Center (Portland)
  Connecticut Poison Control Center (Farmington, CT)
Largest Number of Indirect cases (n= 1,986; 80% of all Indirect cases)
  Banner Poison & Drug Information Center (Phoenix)
Highest Overall Quality of Reports (6.09 out of possible 12 for 33 cases)
  Arizona Poison & Drug Information Center (Tucson)
Greatest improvement in Overall Quality of Reports (1.93 increase from last year)
  Arizona Poison & Drug Information Center (Tucson)
Most Abstracts Published in the 2020 Annual report (7 of the 60 published narratives)
  North Carolina Poison Control (Charlotte) [6 years running]
Most Helpful Regional Poison Center Staff (based on survey of AAPCC review team)
  Minnesota Regional Poison Center (Minneapolis)
  Upstate New York Poison Center (Syracuse)
2020 Endurance Award
  Henry A. Spiller, MS, DABAT

APPENDIX F

DATA DEFINITIONS

Reason for Exposure

NPDS classifies all encounters as either an Exposure case (concern about an exposure to a substance) or an Information request (no exposed human or animal). A contact may provide information about one or more exposed person or animal.

SPIs coded the reasons for exposure reported by callers to PCs according to the following definitions:

Unintentional general: All unintentional exposures not otherwise defined below.

Environmental: Any passive, non-occupational exposure that results from contamination of air, water, or soil. Environmental exposures are usually caused by manmade contaminants.

Occupational: An exposure that occurs as a direct result of the person being on the job or in the workplace.

Therapeutic error: An unintentional deviation from a proper therapeutic regimen that results in the wrong dose, incorrect route of administration, administration to the wrong person, or administration of the wrong substance. Only exposures to medications or products used as medications are included. Drug interactions resulting from unintentional administration of drugs or foods which are known to interact are also included.

Unintentional misuse: Unintentional, improper or incorrect use of a nonpharmaceutical substance. Unintentional misuse differs from intentional misuse in that the exposure was unplanned or not foreseen by the patient.

Bite/sting: All animal bites and stings, with or without envenomation, are included.

Food poisoning: Suspected or confirmed food poisoning; ingestion of food contaminated with microorganisms is included.

Unintentional unknown: An exposure determined to be unintentional, but the exact reason is unknown.

Suspected suicidal: An exposure resulting from the inappropriate use of a substance for reasons that are suspected to be self-destructive or manipulative.

Intentional misuse: An exposure resulting from the intentional improper or incorrect use for reasons other than the pursuit of a psychotropic effect.

Intentional abuse: An exposure resulting from the intentional improper or incorrect use where the patient was likely attempting to gain a high, euphoric effect or some other psychotropic effect, including recreational use of a substance for any effect.

Contaminant/tampering: The patient is an unintentional victim of a substance that has been adulterated (either maliciously or unintentionally) by the introduction of an undesirable substance.

Malicious: Patients who are victims of another person's intent to harm them.

Withdrawal: Inquiry about or experiencing of symptoms from a decline in blood concentration of a pharmaceutical or other substance after discontinuing therapeutic use or abuse of that substance.

Adverse Reaction Drug: Unwanted effects due to an allergic, hypersensitivity, or idiosyncratic response to the active ingredient(s), inactive ingredient(s) or excipient of a drug, chemical, or other drug substance when the exposure involves the normal, prescribed, labeled or recommended use of the substance.

Adverse Reaction Food: Unwanted effects due to an allergic, hypersensitivity, or idiosyncratic response to a food substance.

Adverse Reaction Other: Unwanted effects due to an allergic, hypersensitivity, or idiosyncratic response to a substance other than drug or food.

Unknown Reason: Reason for the exposure cannot be determined or no other category is appropriate.

Medical Outcome

No effect: The patient did not develop any signs or symptoms as a result of the exposure.

Minor effect: The patient developed some signs or symptoms as a result of the exposure, but they were minimally bothersome and generally resolved rapidly with no residual disability or disfigurement. A minor effect is often limited to the skin or mucus membranes (e.g., self-limited gastrointestinal symptoms, drowsiness, skin irritation, first degree dermal burn, sinus tachycardia without hypotension, and transient cough).

Moderate effect: The patient exhibited signs or symptoms as a result of the exposure that were more pronounced, more prolonged, or more systemic in nature than minor symptoms. Usually, some form of treatment is indicated. Symptoms were not life-threatening, and the patient had no residual disability or disfigurement (e.g., corneal abrasion, acid-base disturbance, high fever, disorientation, hypotension that is rapidly responsive to treatment, and isolated brief seizures that respond readily to treatment).

Major effect: The patient exhibited signs or symptoms as a result of the exposure that were life-threatening or resulted in significant residual disability or disfigurement (e.g., repeated seizures or status epilepticus, respiratory compromise requiring intubation, ventricular tachycardia with hypotension, cardiac or respiratory arrest, esophageal stricture, and disseminated intravascular coagulation).

Death: The patient died as a result of the exposure or as a direct complication of the exposure.

Not followed, judged as nontoxic exposure: No follow-up calls were made to determine the outcome of the exposure because the substance implicated was nontoxic, the amount implicated was insignificant, or the route of exposure was unlikely to result in a clinical effect.

Not followed, minimal clinical effects possible: No follow-up calls were made to determine the patient's outcome because the exposure was likely to result in only minimal toxicity of a trivial nature. (The patient was expected to experience no more than a minor effect.).

Unable to follow, judged as a potentially toxic exposure: The patient was lost to follow-up, refused follow-up, or was not followed, but the exposure was significant and may have resulted in a moderate, major, or fatal outcome.

Unrelated effect: The exposure was probably not responsible for the effect.

Confirmed nonexposure: This outcome option was coded to designate cases where there was reliable and objective evidence that an exposure initially believed to have occurred actually never occurred (e.g., all missing pills are later located). All cases coded as confirmed nonexposure are excluded from this report.

Death, indirect report: Death, indirect report are deaths that the poison center acquired from medical examiner or media, but did not manage nor answer any questions about the death.

Relative Contribution to Fatality (RCF)

The Case Review Team (CRT) includes the Author and Reviewer from the RPC, The AAPCC Lead Reviewer, Peer Reviewer and Manager.

The definitions used for the Relative Contribution to Fatality (RCF) classification were as follows:

1. **Undoubtedly responsible -** In the opinion of the CRT, the Clinical Case Evidence establishes beyond a reasonable doubt that the SUBSTANCES actually caused the death.
2. **Probably responsible** - In the opinion of the CRT, the Clinical Case Evidence suggests that the SUBSTANCES caused the death, but some reasonable doubt remained.
3. **Contributory** - In the opinion of the CRT, the Clinical Case Evidence establishes that the SUBSTANCES contributed to the death, but did not solely cause the death. That is, the SUBSTANCES

alone would not have caused the death, but combined with other factors, were partially responsible for the death.

4. **Probably not responsible** - In the opinion of the CRT, the Clinical Case Evidence establishes to a reasonable probability, but not conclusively, that the SUBSTANCES associated with the death did not cause the death
5. **Clearly not responsible** - In the opinion of the CRT, the Clinical Case Evidence establishes beyond a reasonable doubt that the SUBSTANCES did not cause this death.
6. **Unknown** - In the opinion of the CRT, the Clinical Case Evidence is insufficient to impute or refute a causative relationship for the SUBSTANCES in this death.