



1985 Annual Report of the American Association of Poison Control Centers National Data Collection System

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In 1983, the American Association of Poison Control Centers (AAPCC) piloted a project to collect epidemiological data on poison exposures reported to poison centers nationwide.¹ Sixteen participating poison centers reported 251,012 human poison exposures during that year. Forty-seven centers participated in the National Data Collection System in 1984, reporting 730,224 human poison exposures.² The data presented herein reflect 900,513 human poison exposures reported in 1985 to 56 participating poison centers.

CHARACTERIZATION OF PARTICIPATING CENTERS

Of the 56 poison centers that participated in the 1985 AAPCC National Data Collection System, five submitted data for only a portion of the year. Twenty of the 56 centers were certified as regional poison control centers by AAPCC during the data collection interval. Annual center call volumes (human poison exposure cases only) ranged from 1,066 to 55,547 (mean 16,616). Center penetrance (defined as the number of human poison exposure cases reported to a

From the Data Collection Committee, American Association of Poison Control Centers.

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Centers participating in this year's report include: Alabama Poison Center, Tuscaloosa, AL; Arizona Poison Control System, Tucson, AZ; St. Luke's Poison Center, Phoenix, AZ; Fresno Community Hospital Regional Poison Control Center, Fresno, CA; Orange County Poison Center, Orange, CA; San Diego Regional Poison Center, San Diego, CA; San Francisco Bay Area Regional Poison Center, San Francisco, CA; Rocky Mountain Poison Center, Denver, CO; National Capital Poison Center, Washington, DC; Idaho Poison Control Center, Boise, ID; Mid-America Poison Center, Kansas City, KS; Kentucky Regional Poison Center of Kosair-Children's Hospital, Louisville, KY; Louisiana Regional Poison Control Center, Sreveport, LA; Maryland Poison Center, Baltimore, MD; University of Michigan Poison Center, Ann Arbor, MI; Children's Hospital of Michigan Poison Control Center, Detroit, MI; Blodgett Regional Poison Center, Grand Rapids, MI; Great Lakes Poison Control Center, Kalamazoo, MI; Midwest Poison Center, Kalamazoo, MI; Saginaw Regional Poison Center, Saginaw, MI; Hennepin Poison Center, Minneapolis, MN; Minnesota Poison Control System, St. Paul, MN; St. Louis Regional Poison Center, St. Louis, MO; Mid-Plains Poison Control Center, Omaha, NE; New Jersey Poison Information and Education System, Newark, NJ; Hudson Valley Poison Center, Nyack, NY; Triad Poison Center, Greens-

boro, NC; North Dakota Poison Center, Fargo, ND; Akron Regional Poison Center, Akron, OH; Stark County Poison Control Center, Canton, OH; Greater Cleveland Poison Control Center, Cleveland, OH; Central Ohio Poison Control Center, Columbus, OH; Oregon Poison Center, Portland, OR; Keystone Region Poison Center, Altoona, PA; Northwest Poison Center, Erie, PA; Capital Area Poison Center, Hershey, PA; St. Joseph Poison Center, Lancaster, PA; Pittsburgh Poison Center, Pittsburgh, PA; Rhode Island Poison Center, Providence RI; Southern Poison Center, Inc., Memphis, TN; North Central Texas Poison Center, Dallas, TX; Intermountain Regional Poison Control Center, Salt Lake City, UT; Blue Ridge Poison Center, Charlottesville, VA; Tidewater Poison Center, Norfolk, VA; Central Virginia Poison Center, Richmond, VA; Seattle Poison Center, Seattle, WA; Spokane Poison Center, Spokane, WA; Mary Bridge Poison Center, Tacoma, WA; Central Washington Poison Center, Yakima, WA; West Virginia Poison Center, Charleston, WV; Eau Claire Poison Center, Eau Claire, WI; Green Bay Poison Center, Green Bay, WI; LaCrosse Area Poison Center, LaCrosse, WI; University of Wisconsin Hospital Regional Poison Control Center, Madison, WI; Milwaukee Children's Hospital Poison Center, Milwaukee, WI; Wyoming Poison Center, Cheyenne, WY.

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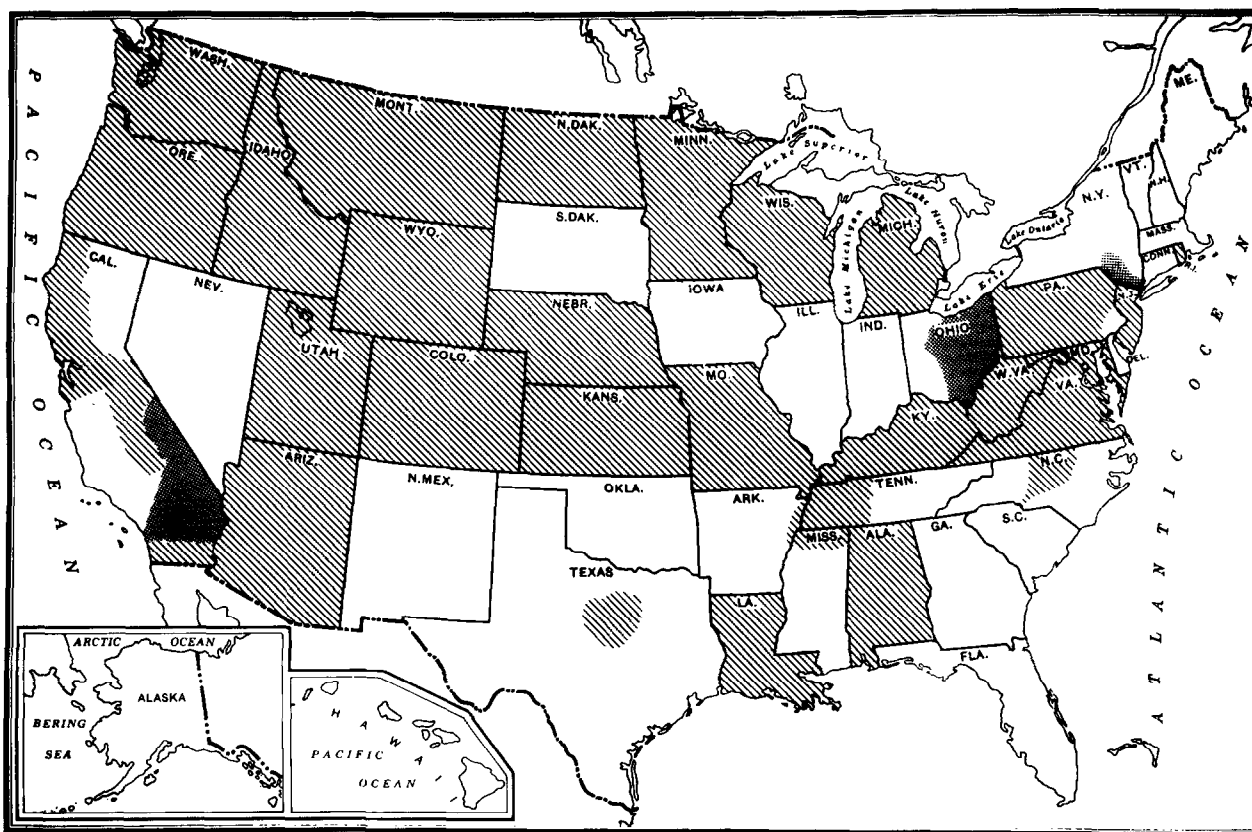


FIGURE 1. Fifty-six poison centers participated in the Data Collection System in 1985. The lightly stippled areas represent regions served by poison centers reporting data during the entire year. Cross-hatched areas denote reporting during the entire year. (Map adapted from Hammond's Outline Map of the United States.)

center divided by the population served by that center) ranged from 2.1 to 20.2/1,000, with a mean of 7.9 reported exposures per thousand.

A total population of 113.6 million was served by the participating centers including portions of 35 states and the District of Columbia (Fig. 1). Noting the 238.7 million estimated United States population during 1985, the data presented represent an estimated 47.6% of the human poison exposures reported to poison control centers in the United States each year. Thus, the 900,513 human poison exposures reported in this database can be extrapolated to predict a nationwide incidence of human poison exposures in ex-

cess of 1.9 million. Extrapolations from the frequency of reported poisonings to the frequency of actual poisonings occurring annually in the United States cannot be made from these data alone, as considerable variations in poison center penetrance were noted. Indeed, assuming all centers reached the penetrance level of 20.2 poisonings/1,000 population reported by one center, then 4.8 million poisoning would have been reported to poison control centers in 1985. Because of the growth and development of this relatively new data collection project, with variable (increasing) center participation from year to year, the data do not directly identify a trend in the overall incidence of poisonings in the United States. However, an analysis of data from 40 centers that participated for the entirety of 1984 and 1985 indicates a 10.9% increase in reported poison exposures from 1984 to 1985 within the regions served by these 40 centers.

TABLE 1. Site of Caller and Site of Exposure, Human Exposure Cases Only

	Site of Caller (%)	Site of Exposure (%)
Residence	81.7	90.6
Health care facility	13.7	0.5
Workplace	1.5	2.4
School	0.6	0.8
Other	1.3	2.1
Unknown	1.3	3.5
Total	100.0	100.0

REVIEW OF THE DATA

The 900,513 human poison exposures reported to the American Association of Poison Control Centers (AAPCC) National Data Collection System in 1985 represent the largest poison exposure database ever compiled in the United States. An analysis of the data

TABLE 2. Age and Sex Distribution of Human Poison Exposure Cases

Age	Male	Female	Unknown	Total
	Number (%)	Number (%)	Number (%)	Number (%)
<1 year	38,632 (52.0)	34,341 (46.2)	1,341 (1.8)	74,314 (8.3)
1 year	90,208 (52.7)	78,548 (45.9)	2,336 (1.4)	171,092 (19.0)
2 years	96,599 (53.3)	81,862 (45.2)	2,765 (1.5)	181,226 (20.1)
3 years	46,988 (53.8)	38,892 (44.6)	1,407 (1.6)	87,287 (9.7)
4 years	20,660 (55.3)	16,086 (43.1)	602 (1.6)	37,348 (4.1)
5 years	10,805 (55.9)	8,222 (42.5)	326 (1.6)	19,353 (2.1)
6-12 years	26,405 (56.9)	19,223 (41.4)	805 (1.7)	46,433 (5.2)
13-17 years	14,746 (40.2)	21,454 (58.5)	487 (1.3)	36,687 (4.1)
>17 years	93,209 (43.3)	118,452 (55.1)	3,378 (1.6)	215,039 (23.9)
Unknown*	11,840 (37.3)	13,076 (41.2)	6,818 (21.5)	31,734 (3.6)
Total	450,092 (50.1)	430,156 (47.7)	20,265 (2.2)	900,513 (100.0)

* In the unknown category, although the exact age was not reported, 881 were infants and 4,334 were children aged 2 to 15 years.

TABLE 3. Number of Substances Involved in Human Poison Exposure Cases

	Number of Cases	Percentage of Cases
1 substance	839,893	93.3
2 substances	45,721	5.1
3 substances	8,043	0.9
4 substances	2,176	0.2
5 substances	739	0.1
6 substances	306	0.0
7 substances	122	0.0
8 substances	73	0.0
9 substances	37	0.0
≥10 substances	91	0.0
unknown	3,312	0.4
Total	900,513	100.0

indicates that 90.6% of exposures occurred in the home (Table 1). Two unlikely sites of poisonings, health care facilities and schools, accounted for 4,842 and 7,264 poison exposures respectively. Poison center peak call volumes were noted from 5:00 PM to 8:00 PM, although call frequency remained consistently high between 9:00 AM and 10:00 PM, with 83.1% of calls logged during this 13-hour period.

The age and sex distribution of human poison exposure victims is outlined in Table 2. One- and two-year-old children together constituted 39.1% of reported cases, and 63.4% of cases involved children under six years of age. A male predominance is found among children less than 13 years old, but the gender distribution is reversed in teenagers and adults.

A single substance was implicated in 93.3% of reports, and only 1.3% of patients were exposed to more than two possibly poisonous drugs or products (Table 3). Most cases of human exposure were acute (98.5%), as were most poison-related fatalities (94.8%). (Chronic exposures were arbitrarily defined as repeated exposures to the same toxic substance or a single exposure lasting longer than eight hours.)

The vast majority (89.9%) of poison exposures were accidental; suicidal intent was present in 5.1% of cases (Table 4). Whereas accidental poisonings outnumbered both intentional poisonings and adverse reactions in all age groups (Table 5), the ratio was lower in teenage and adult cases. In contrast, of the 328 human poisoning fatalities reported, this ratio was re-

(Text continues on page 439.)

TABLE 4. Reason for Human Poison Exposure Cases

	Number	Percentage
Accidental		
General	773,958	85.9
Misuse*	15,843	1.8
Occupational	14,373	1.6
Environmental	4,282	0.5
Unknown	1,361	0.2
Total	809,817	89.9
Intentional		
Suicidal	45,967	5.1
Abuse†	10,243	1.1
Misuse‡	8,446	0.9
Unknown	9,125	1.0
Total	73,781	8.2
Adverse Reaction		
Drug	5,449	0.6
Food	5,086	0.6
Other	1,377	0.2
Total	11,912	1.3
Unknown	5,003	0.5
Total	900,513	100.0

* Improper use of a substance where therapeutic or beneficial results were intended, e.g., an overdose occurring because both parents gave the same medication to a child and neither was aware (at the time) of the other's action, or a case where misreading the label of a product results in an unintended exposure.

† Improper use of a substance where the patient was seeking a psychotropic effect.

‡ Intentional incorrect use of a substance where a psychotropic effect was not sought, e.g., intentional excessive dosing to obtain a more rapid or superior pharmacologic effect for presumed "therapeutic purposes."

TABLE 5. Distribution of Reason for Exposure by Age, Human Exposure Cases Only

Reason	<6 Years	6-12 Years	13-17 Years	>17 Years	Unknown	Total
	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)
Accidental	572,536 (63.6)	43,077 (4.8)	19,146 (2.1)	154,734 (17.2)	20,324 (1.8)	809,817 (89.9)
Intentional	982 (0.1)	2,239 (0.2)	16,528 (1.8)	49,324 (5.5)	4,708 (0.5)	73,781 (8.2)
Adverse reaction	1,600 (0.2)	824 (0.1)	528 (0.1)	8,280 (0.9)	680 (0.1)	11,912 (1.3)
Unknown	717 (0.1)	293 (0.0)	485 (0.0)	2,701 (0.3)	807 (0.1)	5,003 (0.6)
Total	575,835 (63.9)	46,433 (5.2)	36,687 (4.1)	215,039 (23.9)	26,519 (2.9)	900,513 (100.0)

TABLE 6. Distribution of Reason for Exposure and Age for 328 Human Fatalities

	<6 Years	6-12 Years	13-17 Years	>17 Years	Total
Accidental					
General	18	0	2	27	47
Misuse	2	0	0	5	7
Occupational	0	0	0	10	10
Unknown	0	0	0	0	0
Total	20	0	2	42	64
Intentional					
Suicide	0	0	13	165	178
Misuse	0	0	0	4	4
Abuse	0	0	5	38	43
Unknown	0	0	1	21	22
Total	0	0	19	228	247
Adverse reaction	0	1	0	5	6
Unknown	0	0	0	11	11
Total	20	1	21	286	328

TABLE 7. Distribution of Route of Exposure by Patient Management Site for Human Poison Exposure Cases

	Non-health-care facility	Health-care facility	Unknown Site	Total
	Number (%)	Number (%)	Number (%)	Number (%)*
Ingestion	573,705 (61.3)	149,090 (15.9)	18,885 (2.0)	741,680 (79.2)
Dermal	43,773 (4.7)	13,240 (1.4)	2,112 (0.2)	59,125 (6.3)
Ophthalmic	34,089 (3.6)	14,125 (1.5)	1,409 (0.2)	49,623 (5.3)
Inhalation	26,222 (2.8)	18,176 (1.9)	3,093 (0.3)	47,491 (5.1)
Bites and stings	20,462 (2.2)	7,590 (0.8)	1,088 (0.1)	29,140 (3.1)
Other/unknown	3,519 (0.4)	2,136 (0.2)	1,319 (0.1)	6,974 (0.7)
Parenteral	492 (0.1)	1,837 (0.2)	198 (0.0)	2,527 (0.3)

* Multiple routes of exposure were observed in many poison exposure victims. Percentage is based upon the total number of exposure routes (936,560) rather than the total number of human exposures (900,513).

TABLE 8. Symptom Assessment at Time of Initial Call to Poison Center

	Number (%)
Asymptomatic	596,137 (66.2)
Symptomatic, related to exposure	224,403 (24.9)
Symptomatic, unrelated to exposure	12,976 (1.4)
Symptomatic, unknown if related	39,722 (4.4)
Unknown	27,275 (3.0)
Total	900,513 (100.0)

TABLE 9. Management Site of Human Poison Exposure Cases

	Number (%)
Non-health-care facility	674,621 (74.9)
Health-care facility	
Already there at time of call to poison center	99,772 (11.1)
Referred by poison center	98,874 (11.0)
Other/unknown	27,246 (3.0)
Total	900,513 (100.0)

TABLE 10. Medical Outcome of Human Poison Exposure Cases by Patient Age

	<6 Years	6-12 Years	13-17 Years	>17 Years	Unknown	Total
	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)
No effect	331,150 (36.8)	17,440 (1.9)	9,293 (1.0)	39,104 (4.3)	7,034 (0.8)	404,021 (44.9)
Minor effect	67,189 (7.5)	13,190 (1.5)	13,113 (1.5)	85,206 (9.5)	8,436 (0.9)	187,134 (20.8)
Moderate effect	3,347 (0.4)	1,020 (0.1)	2,382 (0.3)	15,073 (1.7)	881 (0.1)	22,703 (2.5)
Major effect	476 (0.1)	78 (0.0)	342 (0.0)	2,342 (0.3)	121 (0.0)	3,359 (0.4)
Death	20 (0.0)	1 (0.0)	21 (0.0)	286 (0.0)	0 (0.0)	328 (0.0)
Unknown, non-toxic*	130,965 (14.5)	9,411 (1.0)	4,315 (0.5)	26,623 (3.0)	2,672 (0.3)	173,986 (19.3)
Unknown, potentially toxic†	28,004 (3.1)	3,864 (0.4)	6,125 (0.7)	36,510 (4.1)	5,560 (0.6)	80,063 (8.9)
Unrelated effect	5,988 (0.7)	859 (0.1)	531 (0.1)	6,735 (0.7)	566 (0.1)	14,679 (1.6)
Unknown	8,696 (1.0)	570 (0.1)	565 (0.1)	3,160 (0.3)	1,249 (0.1)	14,240 (1.6)
Total	575,835 (63.9)	46,433 (5.2)	36,687 (4.1)	215,039 (23.9)	26,519 (2.9)	900,513 (100.0)

* No follow-up provided as exposure was assessed as nontoxic.

† Patient lost to follow-up. Exposure was assessed as potentially toxic.

TABLE 11. Distribution of Medical Outcome by Reason for Exposure for Human Poison Exposure Victims

	Accidental	Intentional	Adverse Reaction	Unknown	Total
	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)
No effect	388,710 (43.2)	13,067 (1.5)	1,330 (0.1)	914 (0.1)	404,021 (44.9)
Minor effect	156,275 (17.4)	23,800 (2.6)	5,873 (0.7)	1,186 (0.1)	187,134 (20.8)
Moderate effect	14,081 (1.6)	7,397 (0.8)	808 (0.1)	417 (0.0)	22,703 (2.5)
Major effect	1,268 (0.1)	1,938 (0.2)	56 (0.0)	97 (0.0)	3,359 (0.4)
Death	64 (0.0)	247 (0.0)	6 (0.0)	11 (0.0)	328 (0.0)
Unknown, non-toxic	167,399 (18.6)	4,702 (0.5)	1,422 (0.2)	463 (0.1)	173,986 (19.3)
Unknown, potentially toxic	56,007 (6.2)	21,070 (2.3)	1,545 (0.2)	1,441 (0.2)	80,063 (8.9)
Unrelated effect	13,003 (1.4)	732 (0.1)	722 (0.1)	222 (0.0)	14,679 (1.6)
Unknown	13,010 (1.4)	828 (0.1)	150 (0.1)	252 (0.0)	14,240 (1.6)
Total	809,817 (89.9)	73,781 (8.2)	11,912 (1.3)	5,003 (0.6)	900,513 (100.0)

TABLE 12. Therapy Provided in Human Poison Exposure Cases

	Number		Number
Initial decontamination		Pralidoxime (2-PAM)	91
Dilution	355,069	Cyanide antidote kit	47
Irrigation/washing	150,461	Dimercaprol (BAL)	147
Ipecac syrup	134,905	Penicillamine	107
Activated charcoal	41,641	EDTA	48
Cathartic	33,694	Pyridoxine	78
Gastric lavage	12,372	Methylene blue	52
Other emetic	2,324	FAB fragments	117
		Hydroxocobalamin	164
Specific antidote administration			
N-acetylcysteine (PO)	2,743	Measures to enhance elimination	
Naloxone	2,189	Urinary alkalization (with or without diuresis)	1,554
Antivenin/antitoxin	281	Forced diuresis	267
Atropine	388	Hemodialysis	217
Physostigmine	243	Urinary acidification (with or without diuresis)	58
Deferoxamine	404	Hemoperfusion (charcoal or resin)	56
Ethanol	322	Exchange transfusion	15
N-acetylcysteine (IV)	139	Peritoneal dialysis	19

TABLE 13. Ipecac Administration by Site and Age

Age	Site			
	Non-health-care Facility	Health-Care Facility	Unknown	Total
	Number (%)	Number (%)	Number (%)	Number (%)
<1 year	4,243 (3.1)	1,499 (1.1)	46 (0.1)	5,788 (4.3)
1 year	18,933 (14.0)	6,390 (4.7)	215 (0.2)	25,538 (18.9)
2 years	25,270 (18.7)	10,041 (7.4)	429 (0.3)	35,740 (26.5)
3 years	13,711 (10.2)	4,932 (3.7)	193 (0.2)	18,836 (14.0)
4 years	5,010 (3.7)	1,780 (1.3)	73 (0.0)	6,863 (5.1)
5 years	2,108 (1.6)	701 (0.5)	24 (0.0)	2,833 (2.1)
6-12 years	2,943 (2.2)	1,341 (1.0)	33 (0.0)	4,317 (3.2)
13-17 years	626 (0.5)	5,973 (4.4)	109 (0.1)	6,708 (5.0)
>17 years	3,997 (3.0)	16,902 (12.5)	306 (0.1)	21,205 (15.7)
Unknown	3,820 (0.8)	3,159 (2.3)	98 (0.0)	7,077 (5.3)
Total	80,661 (59.8)	52,718 (39.1)	1,526 (0.9)	134,905 (100.0)

TABLE 14. Summary of Fatal Exposures

Case No.	Substance 1	Additional Substances	Age*	Route of Exposure†	Reason‡
Alcohols					
1§	Ethanol		2	ingestion	acc gen
2§	Isopropanol	acetone (nail polish remover)	2	ingestion	acc gen
3	Isopropanol (rubbing alcohol)		39	ingestion	unknown
4	Isopropanol		54	ingestion	int abuse
5	Isopropanol (rubbing alcohol)		79	ingestion	unknown
6	Methanol		30	ingestion	int abuse
7§	Methanol		35	ingestion	int suicide
8	Methanol	ethylene glycol	65	unknown	unknown
See also cases 9, 13, 22, 48, 71, 84, 110, 145, 150, 151, 171, 199, 200, 222, 229, 239, 252, 289, 300-304, 315, 318 (ethanol); 112 (isopropanol).					
Automotive/aircraft/boat products					
9	Ethylene glycol	ethanol	25	ingestion	int suicide
10	Ethylene glycol		29	ingestion	int unk
11§	Ethylene glycol		59	ingestion	int suicide
12§	Ethylene glycol		77	ingestion	acc gen
13	Methanol	ethanol	>17	ingestion	int unknown
Chemicals					
14	Acetone	aspirin (adult)	55	ingestion	int suicide
15§	Alkaline cyanide reagent		24	ingestion	int suicide
16	Cyanide	acid (battery)	22	ingestion	int suicide
17§	Cyanide		29	unknown	int suicide
18	Cyanide		35	ingestion	int suicide
19	Cyanide		>17	ingestion	int suicide
20§	Ethylene glycol		33	ingestion	int suicide
21	Ethylene glycol		39	ingestion	int unk
22	Hydrochloric acid	ethanol	60	ingestion	int suicide
23	Hydrochloric acid		85	ingestion	int suicide
24	Phenol	formaldehyde	31	dermal	acc occ
25§	Sodium azide		33	ingestion	int suicide
26§	Sodium azide		35	ingestion	int suicide
27§	Sodium azide		38	ingestion	int suicide
28§	Sodium hydroxide		45	dermal	acc occ
29§	Sodium silicofluoride		86	ingestion	acc gen
30	Sulfuric acid (12N)		23	ingestion	int suicide
31§	Sodium nitrite		15	unknown	int abuse
See also case 8 (ethylene glycol).					
Cleaning Substances					
32§	Alkaline drain opener (crystals)		29	ingestion	int suicide
33	Isopropanol disinfectant		55	ingestion	int unknown

TABLE 14. Continued

Case No.	Substance 1	Additional Substances	Age*	Route of Exposure†	Reason‡
34§	Lye		24	ingestion	int suicide
35§	Perchloroethylene		45	inh and derm	acc occ
36§	Rust remover (HF)		29	ingestion	acc gen
37	Rust remover (HF)		>17	ingestion	int suicide
38	Trichloroethane		27	inhalation	int abuse
39	Window cleaner (methanol)		>17	ingestion	int unknown
See also case 133 (Lye).					
Cosmetics/Personal Care Products					
See also case 2 (acetone in nail polish remover).					
Dyes					
40§	Tartrazine		65	ingestion	adv rxn
Fumes/gases/vapors					
41	Carbon monoxide	other gases	14	inhalation	acc gen
42	Carbon monoxide		15	inhalation	int suicide
43	Carbon monoxide		17	inhalation	acc gen
44§	Carbon monoxide		20	inhalation	acc gen
45§	Carbon monoxide		20	inhalation	acc gen
46	Carbon monoxide		24	inhalation	unknown
47	Carbon monoxide		34	inhalation	unknown
48	Carbon monoxide	ethanol	35	inhalation	int suicide
49§	Carbon monoxide		36	inhalation	acc gen
50	Carbon monoxide		38	inhalation	int suicide
51	Carbon monoxide		39	inhalation	acc occ
52	Carbon monoxide		40	inhalation	acc gen
53	Carbon monoxide		40	inhalation	acc occ
54	Carbon monoxide		47	inhalation	acc gen
55	Carbon monoxide		55	inhalation	int suicide
56	Carbon monoxide	amitriptyline normifensine	58	inhalation	int suicide
57	Carbon monoxide		59	inhalation	acc gen
58	Carbon monoxide		59	inhalation	int suicide
59	Carbon monoxide		64	inhalation	acc gen
60	Carbon monoxide		65	inhalation	int suicide
61	Carbon monoxide		67	inhalation	int suicide
62	Carbon monoxide		72	inhalation	acc gen
63	Smoke inhalation		18 mo	inhalation	acc gen
64	Smoke inhalation	carbon monoxide	3	inhalation	acc gen
65	Smoke inhalation	carbon monoxide	4	inhalation	acc gen
66	Methane		3	inhalation	acc gen
Heavy Metals					
67	Arsenic		62	ingestion	int suicide
68§	Arsenic trioxide		32	ingestion	int suicide
69§	Arsenic trioxide		40	ingestion	int unknown
Herbicides					
70§	Paraquat		40	ingestion	acc gen
71§	Paraquat	ethanol	39	ingestion	int suicide
Hydrocarbons					
72§	Freon		16	inhalation	int abuse
73	Freon		33	inhalation	int suicide
74	Freon		>17	inhalation	acc occ
75§	Kerosene (Lamp oil)		12 mo	ingestion	acc gen
76§	Mineral spirits (paint thinner)		89	ingestion	acc gen
77	Toluene		53	derm and inh	acc occ
78	Toluene		53	derm and inh	acc occ
79	Toluene		>17	derm and inh	acc occ
80§	Trichloroethane		12	unknown	int abuse
81§	Trichloroethane		13	unknown	int abuse
Insecticides/pesticides (excluding rodenticides)					
82§	Chlorpyrifos	phenylpropanolamine	27	inhalation	acc occ
83§	Diazinon		29	ingestion	int suicide

TABLE 14. Continued

Case No.	Substance 1	Additional Substances	Age*	Route of Exposure†	Reason‡
84	Diazinon	ethanol	>17	ingestion	int suicide
85§	Fonofos		15 mo	ing and derm	acc gen
86	Malathion		84	ingestion	int suicide
87§	Mosquito repellent (DEET)		33	ingestion	int suicide
88§	Organophosphate (unknown type)		26 mo	ing and derm	acc gen
89	Pesticide (unknown)		2	ingestion	acc gen
90§	Sodium fluoride (roach killer)		30	ingestion	int suicide
Mushrooms					
91§	Cyclopeptide mushrooms		27	ingestion	acc gen
92§	Cyclopeptide mushrooms		31	ingestion	acc gen
93§	Cyclopeptide mushrooms		38	ingestion	acc gen
94§	Cyclopeptide mushrooms		42	ingestion	acc gen
Paints and stripping agents					
95	Paint remover (methylene chloride/methanol)		14	ingestion	unknown
96	Paint remover (above + toluene)		22	inhalation	acc gen
97§	Furniture refinisher (methanol)		38	ingestion	int suicide
Plants					
98§	Conium maculatum (poison hemlock)		5	ingestion	acc gen
99§	Cicuta maculata (water hemlock)		>17	ingestion	acc gen
Sporting Equipment					
100	Gun bluing		2	ingestion	acc gen
101§	Gun bluing		15 mo	ingestion	acc gen
Analgesics					
102	Acetaminophen (adult)		24	ingestion	int suicide
103	Acetaminophen (adult)		26	ingestion	int suicide
104	Acetaminophen (adult)		27	ingestion	int suicide
105	Acetaminophen (adult)		38	ingestion	int suicide
106	Acetaminophen (adult)		52	ingestion	int unknown
107	Acetaminophen (adult)		52	ingestion	int suicide
108§	Acetaminophen (adult)	acetaminophen/ diphenhydramine	38	ingestion	int suicide
109	Acetaminophen (adult)	aspirin/ acetaminophen	19	ingestion	int suicide
110	Acetaminophen (adult)	ethanol	49	ingestion	int suicide
111	Acetaminophen (adult)	ibuprofen naproxen	33	ingestion	int suicide
112	Acetaminophen (adult)	isopropanol	58	ingestion	int suicide
113	Acetaminophen/codeine		42	ingestion	int abuse
114	Acetaminophen/codeine	chlordiazepoxide	43	ingestion	int suicide
115	Acetaminophen/oxycodone	amitriptyline/perphenazine	42	ingestion	int suicide
116	Acetaminophen/propoxyphene	ibuprofen imipramine diazepam	31	ingestion	int suicide
117	Aspirin (adult)		19	ingestion	int suicide
118	Aspirin (adult)		50	ingestion	int suicide
119	Aspirin (adult)		60	ingestion	int unknown
120	Aspirin (adult)		62	ingestion	int unknown
121	Aspirin (adult)		65	ingestion	acc gen
122	Aspirin (adult)		70	ingestion	int suicide
123	Aspirin (adult)		70	ingestion	int suicide
124	Aspirin (adult)		73	ingestion	unknown
125	Aspirin (adult)		80	ingestion	int suicide
126	Aspirin (adult)		81	ingestion	int unknown
127	Aspirin (adult)	acetaminophen	50	ingestion	unknown
128	Aspirin (adult)	acetaminophen (adult)	54	ingestion	int suicide
129	Aspirin	alprazolam	46	ingestion	int suicide
130§	Aspirin (adult)	amoxapine	26	ingestion	int suicide
131	Aspirin	diphenhydramine	43	ingestion	int suicide
132	Aspirin	ibuprofen acetaminophen	76	ingestion	int suicide
133	Aspirin (adult)	lye	59	ingestion	int suicide
134	Aspirin (adult)	thiothixene benztropine	20	ingestion	int suicide

TABLE 14. Continued

Case No.	Substance 1	Additional Substances	Age*	Route of Exposure†	Reason‡
135	Aspirin/propoxyphene		18	ingestion	int suicide
136	Aspirin/propoxyphene		35	ingestion	int suicide
137	Aspirin/propoxyphene	phentermine	60	ingestion	int suicide
138	Codeine	unknown drug	20	ingestion	int suicide
139§	Colchicine		13	ingestion	int suicide
140§	Colchicine		42	ingestion	int abuse
141§	Ibuprofen		64	ingestion	int suicide
142§	Meperidine/promethazine/ chlorpromazine	lidocaine/epinephrine	6	parenteral	adv rxn
143	Meperidine		22	ingestion	int suicide
144	Methadone	ibuprofen aspirin	37	ingestion	int suicide
145	Morphine	ethanol	36	ing and paren	int abuse
146	Morphine		86	parenteral	acc misuse ^l
147	Pentazocine	benzodiazepines trazodone	61	ingestion	unknown
148	Propoxyphene		15	ingestion	int suicide
149	Propoxyphene	aspirin/codeine acetaminophen	28	ingestion	int suicide
150	Propoxyphene	ethanol	19	ingestion	int unknown
151	Propoxyphene	ethanol	24	ingestion	int suicide
152	Propoxyphene	trazodone	67	ingestion	int suicide
153	Salsalate	acetaminophen/propoxyphene	>17	ingestion	acc gen ^l
See also cases 159 (acetaminophen); 201, 253, 267–271 (acetaminophen/codeine); 280 (acetaminophen/propoxyphene); 14, 170, 179, 180, 186, 212, 253 (aspirin); 250 (aspirin/propoxyphene); 272, 273, 174 (codeine); 250 (hydrocodone); 264 (hydromorphone); 240 (ibuprofen); 172 (methadone); 229 (naproxen); 202 (propoxyphene); 159 (sulindac).					
Anesthetics					
154	Halothane		14 mo	inhalation	acc gen
155§	Lidocaine (viscous)		2	ingestion	acc misuse ^l
156	Nitrous oxide		28	inhalation	int abuse
See also case 142 (lidocaine/epinephrine).					
Anticholinergics					
157	Benztropine	lithium	25	ingestion	int suicide
158	Trihexyphenidyl	perphenazine lithium	28	ingestion	int suicide
See also cases 134, 277 (benztropine); 185 (biperiden); 221 (trihexyphenidyl).					
Anticonvulsants					
159	Carbamazepine	sulindac acetaminophen	15	ingestion	int suicide
160	Carbamazepine	metoprolol loxapine	41	ingestion	int suicide
161	Methsuximide		41	ingestion	int suicide
See also case 284 (carbamazepine, phenytoin).					
Antidepressants					
162	Amitriptyline		18	ingestion	int suicide
163	Amitriptyline		19	ingestion	int suicide
164	Amitriptyline		35	ingestion	int suicide
165	Amitriptyline		80	ingestion	int suicide
166	Amitriptyline		>17	ingestion	int suicide
167	Amitriptyline	barbiturates haloperidol	87	ingestion	int suicide
168	Amitriptyline	chlordiazepoxide	50	ingestion	int suicide
169	Amitriptyline	diphenhydramine	48	ingestion	int suicide
170§	Amitriptyline	doxepin aspirin	24	ingestion	int suicide
171	Amitriptyline	ethanol	27	ingestion	int suicide
172	Amitriptyline	methadone imipramine	20	ingestion	int suicide

TABLE 14. Continued

Case No.	Substance 1	Additional Substances	Age*	Route of Exposure†	Reason‡
173	Amitriptyline	perphenazine	>17	ingestion	int suicide
174	Amitriptyline	propranolol codeine	>17	ingestion	int suicide
175	Amitriptyline	thiothixene	37	ingestion	int suicide
176	Amitriptyline/chlordiazepoxide		36	ingestion	int suicide
177	Amitriptyline/perphenazine		55	ingestion	int suicide
178	Amitriptyline/perphenazine		>17	ingestion	int suicide
179	Amitriptyline/perphenazine	aspirin	20	ingestion	int suicide
180	Amitriptyline/perphenazine	methyprylon aspirin	81	ingestion	int suicide
181	Amoxapine		14	ingestion	int suicide
182§	Amoxapine		18	ingestion	int suicide
183	Amoxapine		48	ingestion	int suicide
184	Amoxapine	loxapine	25	ingestion	int suicide
185	Amoxapine	loxapine	36	ingestion	int suicide
186§	Amoxapine	biperiden thiothixene aspirin	60	ingestion	int suicide
187	Amoxapine	triazolam	39	ingestion	int suicide
188	Desipramine		15	ingestion	int suicide
189	Desipramine		20	ingestion	int suicide
190	Desipramine		22	ingestion	int suicide
191	Desipramine		27	ingestion	int suicide
192	Desipramine	fluphenazine	54	ingestion	int suicide
193	Desipramine	maprotiline	17	ingestion	int suicide
194	Desipramine	methyprylon alprazolam	29	ingestion	int suicide
195	Desipramine	propranolol	50	ingestion	int suicide
196	Doxepin		22	ingestion	int suicide
197	Doxepin		27	ingestion	int suicide
198§	Doxepin	desipramine	27	ingestion	int suicide
199	Doxepin	ethanol	20	ingestion	int suicide
200	Doxepin	ethanol	38	ingestion	int suicide
201	Doxepin	pentobarbital acetaminophen/codeine	40	ingestion	int suicide
202	Doxepin	propoxyphene diazepam	48	ingestion	int suicide
203§	Imipramine		18 mo	ingestion	acc gen
204	Imipramine		14	ingestion	int suicide
205	Imipramine		20	ingestion	int suicide
206	Imipramine		23	ingestion	int suicide
207	Imipramine		30	ingestion	int suicide
208	Imipramine		32	ingestion	int suicide
209	Imipramine	alprazolam loxapine	34	ingestion	int suicide
210	Imipramine	alprazolam trifluoperazine	41	ingestion	int unknown
211	Imipramine	amitriptyline	19	ingestion	int suicide
212	Imipramine	aspirin chlorpheniramine/ phenylephrine	13	ingestion	int suicide
213	Imipramine	lithium trifluoperazine	19	ingestion	int suicide
214	Imipramine	phenelzine alprazolam	41	ingestion	int suicide
215	Imipramine	thioridazine chlorpropamide	64	ingestion	int suicide
216	Lithium		35	ingestion	acc misuse [§]
217§	Lithium		55	ingestion	int suicide
218	Lithium		57	ingestion	acc gen
219§	Lithium	haloperidol	20	ingestion	acc misuse [§]
220§	Loxapine		27	ingestion	int suicide

TABLE 14. Continued

Case No.	Substance 1	Additional Substances	Age*	Route of Exposure†	Reason‡
221	Loxapine	trihexyphenidyl	62	ingestion	int suicide
222	Maprotiline	amitriptyline ethanol	34	ingestion	int suicide
223	Nortriptyline		26	ingestion	int suicide
224	Nortriptyline		52	ingestion	int suicide
225§	Phenelzine		27	ingestion	int suicide
226	Phenelzine	alprazolam	38	ingestion	int suicide
227	Trazodone		64	ingestion	int suicide
See also cases 56, 276, 286 (amitriptyline); 115 (amitriptyline/perphenazine); 130 (amoxapine); 116 (imipramine); 157, 158 (lithium); 160 (loxapine); 56 (nomifensine); 147, 152, 255 (trazodone).					
Antihistamines					
228	Diphenhydramine		20	ingestion	int suicide
229	Diphenhydramine	ethanol naproxen	20	ingestion	int suicide
See also cases 131, 169, 239 (diphenhydramine).					
Asthma Therapies					
230	Oxytriphyllyne		60	ingestion	acc gen
231	Theophylline (long-acting)		13	ingestion	int suicide
232	Theophylline		19	ingestion	int suicide
233	Theophylline		45	ingestion	int suicide
234	Theophylline		71	ingestion	acc gen
235	Theophylline		71	ingestion	acc gen
236	Theophylline		86	ingestion	int suicide
237	Theophylline (long-acting)		>17	ingestion	int suicide
238	Theophylline (long-acting)		>17	ingestion	int suicide
239	Theophylline	diphenhydramine ethanol	30	ingestion	int suicide
240	Theophylline	ibuprofen	54	ingestion	int misuse
Cardiovascular Drugs					
241	Digoxin		24	ingestion	adv rxn
242	Digoxin		75	parenteral	acc misuse
243	Digoxin		84	ingestion	int suicide
244§	Digoxin		88	ingestion	int unknown
245§	Nifedipine		1	ingestion	acc gen
246	Prazosin	trifluoperazine	19	ingestion	int suicide
247§	Propranolol		18	ingestion	int suicide
248	Propranolol		18	ingestion	int suicide
249	Propranolol		38	ingestion	int suicide
250	Propranolol	aspirin/propoxyphene hydrocodone	21	ingestion	int suicide
251	Propranolol	cimetidine	47	ingestion	int suicide
252	Propranolol	ethanol	34	ingestion	int suicide
253	Quinidine	acetaminophen/codeine clonidine aspirin	15	ingestion	int suicide
254	Quinidine	nitroglycerin	68	ingestion	int suicide
255	Quinidine (long acting)	trazodone	>17	ingestion	int suicide
256	Verapamil		79	ingestion	adv rxn
See also case 160 (metoprolol), 174, 195 (propranolol)					
Cough and Cold Preparations					
See also case 258 (phenylpropanolamine/chlorpheniramine syrup); case 212 (chlorpheniramine/phenylephrine).					
Electrolytes/minerals					
257§	Ferrous sulfate		3	ingestion	acc gen
258§	Sodium bicarbonate	phenylpropanolamine/ chlorpheniramine syrup	20 mo	ingestion	acc misuse
Gastrointestinal Preparations					
259§	Loperamide	phenobarbital	13	ingestion	int suicide
See also case 251 (cimetidine).					

TABLE 14. Continued

Case No.	Substance 1	Additional Substances	Age*	Route of Exposure†	Reason‡
Hormones and Hormone Antagonists					
See case 215 (chlorpropamide).					
Muscle Relaxants					
260§	Cyclobenzaprine		15	ingestion	int suicide
Sedative/hypnotics					
261	Alprazolam		58	ingestion	int suicide
262	Barbital		24	ingestion	int suicide
263	Chloral hydrate		74	ingestion	int unknown
264	Chloral hydrate	hydromorphone	78	ingestion	int suicide
265§	Chlorpromazine		9 mo	ingestion	acc gen
266	Diazepam		38	parenteral	adv rxn
267	Glutethimide	acetaminophen/codeine	24	ingestion	int abuse
268	Glutethimide	acetaminophen/codeine	24	ingestion	int abuse
269	Glutethimide	acetaminophen/codeine	25	ingestion	int abuse
270	Glutethimide	acetaminophen/codeine	30	ingestion	int abuse
271	Glutethimide	acetaminophen/codeine	37	ingestion	int abuse
272	Glutethimide	codeine	25	ingestion	int abuse
273	Glutethimide	codeine	29	ingestion	int suicide
274§	Haloperidol		25	ingestion	int suicide
275	Haloperidol		96	ingestion	adv rxn
276	Haloperidol	amitriptyline amphetamines	41	ingestion	int unknown
277	Haloperidol	benztropine	43	ingestion	int suicide
278	Haloperidol	oxazepam thiothixene	52	ingestion	int suicide
279	Meprobamate		>17	ingestion	acc gen
280	Meprobamate	propoxyphene/acetaminophen diazepam	41	ingestion	acc misuse
281	Pentobarbital		21	ingestion	int suicide
282	Phenobarbital		22	ingestion	int suicide
283	Phenobarbital		60	ingestion	int suicide
284	Phenobarbital	carbamazepine phenytoin	26	ingestion	int suicide
285§	Thioridazine		48	ingestion	int suicide
286	Thiothixene	alprazolam amitriptyline	34	ingestion	int suicide
287	Trifluoperazine		50	ingestion	int suicide
See also cases 129, 194, 209, 210, 214, 226 (alprazolam); 167 (barbiturates); 147 (benzodiazepines); 114, 168 (chlordiazepoxide); 116, 202, 305 (diazepam); 192 (fluphenazine); 167, 219 (haloperidol); 180, 194 (methyprylon); 201 (pentobarbital); 158, 173 (perphenazine); 259 (phenobarbital); 308 (thiopental); 215 (thioridazine); 175, 186 (thiothixene); 187 (triazolam); 134, 210, 213, 246 (trifluoperazine).					
Stimulants and Street Drugs					
288	Amphetamines		37	unknown	unknown
289	Amphetamines	ethanol	31	ingestion	int unknown
290	"Clickers" (marijuana/PCP/ formaldehyde)		23	inhalation	int abuse
291§	Cocaine		21	ingestion	int misuse
292	Cocaine		22	ingestion	int abuse
293	Cocaine		23	ingestion	unknown
294§	Cocaine		25	ingestion	int unknown
295	Cocaine		28	parenteral	int unknown
296	Cocaine		28	parenteral	int abuse
297§	Cocaine		29	ingestion	int suicide
298	Cocaine		37	parenteral	int abuse
299	Cocaine	amphetamine	27	parenteral	int abuse
300	Cocaine	ethanol	19	ing and inh	int abuse
301	Cocaine	ethanol	23	inhalation	int abuse
302	Cocaine	ethanol	24	inhalation	int misuse
303	Cocaine	ethanol marijuana	26	parenteral	int abuse
304	Cocaine	ethanol	27	ing and par	int unknown

TABLE 14. Continued

Case No.	Substance 1	Additional Substances	Age*	Route of Exposure†	Reason‡
305	Cocaine	heroin diazepam	21	ing and par	int abuse
306	Cocaine	marijuana	31	ing and inh	int abuse
307	Cocaine	phenylpropanolamine	22	ingestion	int unknown
308	Cocaine	thiopental	21	parenteral	int abuse
309	Heroin		23	parenteral	int abuse
310	Heroin		25	parenteral	int abuse
311	Heroin		30	parenteral	int abuse
312	Heroin		30	parenteral	int abuse
313	Heroin		31	parenteral	int abuse
314	Heroin		36	parenteral	int abuse
315	Heroin	ethanol	28	parenteral	int abuse
316§	MDMA		18	unknown	int unknown
317	Opiate derivative		25	parenteral	int abuse
318	"Speed"	ethanol	49	ingestion	int abuse
319	Street drugs (caffeine)		17	ingestion	int abuse
320	Street drug (fentanyl?)		35	parenteral	int abuse
321	Unidentified street drugs		24	ingestion	int abuse
322	Unidentified street drug		30	parenteral	int abuse
323	Unidentified street drugs		31	ingestion	int abuse
See also cases 276 (amphetamines); 137 (phentermine); 82 (phenylpropanolamine).					
Topicals					
324§	Hexachlorophene		>17	ingestion	acc gen
325§	Oil of wintergreen		30	ingestion	int suicide
326§	Oil of wintergreen		37	ingestion	int misuse
Unknown Drug					
See case 138 (unknown drug).					
Veterinary Drugs					
327	Nicotine alkaloids		21	ingestion	unknown
328	Pentobarbital/phenytoin		22	parenteral	int unknown

* Age in years unless otherwise indicated; specific age provided where known.

† For route of exposure, ing = ingestion, inh = inhalation, derm = dermal, paren = parenteral.

‡ For reason for exposure, acc = accidental, adv rxn = adverse reaction, gen = general, int = intentional, occ = occupational, unk = unknown.

§ Abstract of case provided at end of article.

|| Chronic exposures (all others are acute).

versed among the adult deaths, with 3.9 times as many deaths resulting from intentional as compared with accidental exposures (Table 6).

Ingestions accounted for 79.2% of poison exposures (Table 7), followed in frequency by dermal exposure, ophthalmic exposure, inhalation, bites and stings, and parenteral exposure. The 328 fatalities included 250 ingestions (76.2%), 37 inhalational exposures (11.3%), 21 parenteral exposures (6.4%), two dermal exposures (0.0%), and seven unknown exposure routes (2.1%). In addition, 11 victims (3.4%) had multiple exposure routes.

Table 8 displays the symptom assessment at the time of the initial call to the participating poison center. In addition to the 24.9% of patients with symptoms clearly related to the exposure, symptoms

developed during the subsequent course in 19,173 initially asymptomatic patients. Thus, symptoms definitely related to the exposure eventually developed in 27.0% of patients.

The majority of cases reported to poison centers were managed in a non-health care facility (74.9%), usually at the site of exposure, the patient's own home (Table 9). Treatment in a health care facility was rendered or recommended in 22.1% of all cases, and of these 51.7% involved treatment and release, 17.2% involved admission for medical treatment, and 2.2% involved admission for psychiatric care; 9.0% refused referral, and 19.8% were lost to follow-up.

Table 10 displays the medical outcome of the human poison exposure victims distributed by age and emphasizes the more severe outcome observed in the

(Text continues on page 451.)

TABLE 15. Demographic Profile of Exposure Cases by Generic Category of Substances and Products: Non-pharmaceuticals

	Number of Exposures			Age (years)*			Reason*			Treated in Health Facility			Medical Outcome (Effect)†			
		<6	6-17	>17	Acc#	In#	Adv Rn#	None	Minor	Moderate	Major	Death				
													None	Minor	Major	
Adhesives/glues/cements/pastes	9,101	4,968	1,071	2,642	8,987	95	10	1,802	3,452	2,716	192	6	0	0		
Alcohols																
Ethanol (excluding rubbing alcohol)	24,750	11,140	2,325	10,418	15,256	8,931	162	10,166	8,265	6,513	1,476	277	26	26		
Isopropanol (excluding rubbing alcohol)	3,935	2,843	229	774	3,730	160	7	765	2,114	777	69	9	3	3		
Methanol	1,125	464	108	504	1,030	73	3	523	494	302	42	17	3	3		
Flubbing alcohol																
Ethanol	1,062	827	68	141	1,018	40	1	165	657	120	8	1	0	0		
Isopropanol	3,928	3,130	189	538	3,668	235	2	808	2,122	652	53	4	2	2		
Unknown type	439	329	28	72	400	35	0	97	245	75	8	4	0	0		
Other/unknown	1,792	1,010	500	232	1,733	56	1	274	761	469	22	2	0	0		
Total	37,031	19,743	3,447	12,679	26,835	9,530	176	12,798	14,658	8,908	1,678	314	34	34		
Arts and crafts and office supplies	8,980	7,477	887	441	8,912	56	5	347	4,825	470	25	0	0	0		
Automotive/aircraft/boat products																
Glycols	1,535	538	109	807	1,466	56	2	557	618	430	46	17	4	4		
Hydrocarbons	472	285	27	129	465	6	0	98	210	155	7	0	0	0		
Methanol	536	273	25	205	507	29	0	289	125	18	18	8	1	1		
Other/unknown	677	357	62	215	667	7	0	188	255	234	30	1	0	0		
Total	3,220	1,453	223	1,356	3,105	98	2	1,132	1,368	944	101	26	5	5		
Batteries																
Penlight/flashlight/dry cells	449	313	84	39	446	3	0	42	195	168	5	0	0	0		
Automotive	373	52	39	248	372	1	0	140	56	203	29	3	0	0		
Button batteries	835	569	154	94	825	9	0	535	512	83	7	2	0	0		
Other/unknown	192	114	38	35	190	1	0	58	89	45	5	0	0	0		
Total	1,849	1,048	315	416	1,833	14	0	775	852	499	46	5	0	0		
Bites and envenomations																
Fish and coelenterate	562	31	110	384	558	0	4	213	31	328	79	0	0	0		
Insects																
Bee/wasp/hornet	11,433	2,952	2,455	5,585	11,254	2	170	2,148	794	7,350	555	14	0	0		
Scorpion	2,375	221	379	1,711	2,373	0	1	403	154	1,708	163	25	0	0		
Other	1,986	723	395	758	1,954	1	28	447	352	973	65	1	0	0		
Total	2,332	603	792	856	2,301	3	21	1,100	356	1,121	76	0	0	0		
Reptile—other/unknown	226	64	81	74	223	1	2	45	30	109	10	5	0	0		
Snakes—exotic	53	2	15	30	53	0	0	27	10	21	1	0	0	0		
Snakes indigenous to U.S.																
Rattlesnake	259	24	28	197	253	4	1	245	16	74	91	35	0	0		
Copperhead	119	13	24	69	118	0	1	105	14	44	41	6	0	0		
Coral	5	0	1	3	5	0	0	5	3	0	1	0	0	0		
Cottonmouth	14	1	2	9	14	0	0	12	3	5	4	1	0	0		
Non-poisonous snake	415	49	194	149	412	1	0	104	110	184	1	0	0	0		
Unknown crotalid	10	0	1	7	10	0	0	9	0	2	7	1	0	0		
Unknown type of snake	575	62	214	267	575	0	0	327	158	234	36	3	0	0		
Spiders																
Black widow	1,278	201	154	899	1,273	1	3	372	255	548	178	21	0	0		
Brown recluse	430	43	52	296	424	3	3	257	26	145	92	7	0	0		
Other/unknown	8,866	2,015	1,441	5,057	8,767	1	81	2,153	585	4,898	570	16	0	0		
Total	30,938	7,004	6,338	16,351	30,567	17	313	7,972	2,897	17,744	1,970	135	0	0		

Building/construction supplies	2,916	1,586	215	978	2,889	14	10	730	1,133	762	145	8	0
Chemicals													
Acetone (excluding nail polish removers)	3,310	2,578	210	465	3,244	57	1	494	1,390	699	37	3	1
Acids													
Hydrofluoric acid	662	58	18	523	655	5	1	463	65	287	133	10	0
Other/unknown acid	5,004	966	455	3,259	4,906	75	7	2,248	987	2,435	407	27	4
Alkali	4,628	3,242	269	970	4,560	50	6	796	2,168	1,192	114	7	1
Borates/boric acid (excluding topicals and insecticides)	1,914	1,158	159	547	1,836	69	2	424	997	245	34	5	0
Chlorates (excluding matches and fireworks)	196	139	30	18	195	1	0	28	99	35	2	1	0
Cyanide (excluding rodenticides)	293	21	10	240	254	37	0	185	61	93	21	4	5
Dioxin	10	3	0	6	10	0	0	5	4	2	0	0	0
Formaldehyde/formalin	1,031	300	139	518	981	39	6	372	289	388	40	6	1
Glycols (excluding automotive products)	5,121	3,662	338	999	5,039	59	8	672	2,595	915	51	12	3
Ketones	1,033	528	52	415	1,024	4	2	280	353	368	40	1	0
Methylene chloride (excluding paint strippers)	1,451	413	155	798	1,427	16	2	529	316	695	69	3	0
Nitrates and nitrites (excluding medications and abused substances)	2,164	1,504	308	291	2,113	43	3	251	983	245	35	3	1
Phenol/cresote	2,129	847	252	913	2,054	26	45	626	598	836	128	7	1
(excluding disinfectants)													
Strychnine (excluding rodenticides)	21	3	3	14	11	8	0	17	3	3	3	2	0
Toluene diisocyanate	396	41	16	317	385	8	2	190	61	187	36	0	0
Other	16,255	10,646	1,409	3,694	15,915	228	67	3,005	7,267	3,074	314	27	4
Total	45,618	26,109	3,823	13,987	44,609	725	152	10,585	18,236	11,699	1,464	118	21
Cleaning substances													
Ammonia cleaners	5,103	2,157	488	2,263	4,952	127	4	1,464	1,396	2,055	257	16	0
Bleaches (household)	14,202	7,747	1,001	4,947	13,903	252	13	3,220	5,077	5,253	348	8	0
Hypochlorite-containing	1,214	712	87	386	1,186	24	3	257	491	368	30	0	0
Other/unknown													
Cleaners													
Anionic/nonionic	1,497	1,301	51	119	1,483	13	1	87	886	200	5	0	0
Other/unknown	446	301	30	102	437	8	0	73	194	110	6	0	0
Disinfectants (household)													
Hypochlorite-containing	4,368	3,067	361	1,757	5,254	95	4	982	1,899	1,684	185	11	0
Phenol	999	660	58	247	953	38	0	207	418	267	19	1	0
Pine oil	466	370	23	56	453	11	1	136	269	101	2	0	0
Other/unknown	213	108	19	75	203	8	2	66	88	65	6	0	1
Electric dishwasher detergent													
Alkali	3,086	2,706	82	258	3,071	9	2	214	1,837	510	24	2	0
Other/unknown	339	285	13	33	338	1	0	24	177	57	0	0	0
Fabric softeners													
Cationic	1,031	959	21	40	1,018	5	4	66	651	106	5	0	0
Other/unknown	52	44	0	6	51	0	1	5	29	8	0	0	0
Glass cleaners (household)													
Hand dishwashing detergents	3,708	3,091	211	350	3,658	43	0	232	1,966	653	12	3	1
Industrial cleaners													
Acids	5,186	4,087	295	696	5,156	20	5	223	2,277	1,372	29	4	0
Alkali	469	121	17	314	454	13	0	193	99	121	35	3	0
Other/unknown	356	72	33	222	353	3	0	223	51	179	52	3	0
Other/unknown	676	202	44	385	659	12	0	320	153	282	58	4	0

TABLE 15. Continued

	Number of Exposures	Age (years)*			Reason*			Treated in Health Facility	Medical Outcome (Effect)†					
		Age (years)*			Reason*				None	Minor	Moderate	Major	Death	
		<6	6-17	>17	Accs	Ints	Adv Rxns							
Laundry detergents														
Anionic/nonionic	3,528	2,844	139	483	3,496	16	9	308	1,681	963	39	0	0	0
Alkali	1,004	870	28	88	994	4	3	185	477	293	24	3	0	0
Other/unknown	1,330	1,099	44	160	1,312	14	2	139	630	278	21	1	0	0
Miscellaneous cleaners														
Acid	978	524	46	364	958	16	0	238	394	326	29	3	0	0
Alkali	8,710	4,557	701	3,140	8,517	172	11	2,695	3,002	3,030	449	44	3	3
Anionic/nonionic	10,011	7,964	407	1,455	9,803	83	107	941	4,447	2,066	74	2	0	0
Cationic	2,528	1,704	169	593	2,456	64	5	472	1,175	614	45	3	0	0
Methanol/glycols	185	137	12	30	181	4	0	39	93	42	1	0	0	0
Isopropanol	1,634	1,252	87	279	1,533	98	0	336	795	304	26	6	0	0
Ethanol	981	787	55	128	934	44	1	92	202	202	10	3	0	0
Other/unknown	1,585	1,025	87	397	1,553	21	2	326	710	335	45	3	0	0
Oven cleaners														
Alkali	1,966	710	133	1,008	1,942	18	4	692	390	1,018	152	7	0	0
Other/unknown	141	41	15	81	137	3	1	57	20	58	11	1	0	0
Rust removers														
Hydrofluoric acid	307	56	13	229	296	11	0	220	36	142	60	3	2	0
Other acid	176	55	12	100	169	7	0	72	46	82	13	0	0	0
Other/unknown	60	22	4	28	59	1	0	21	15	30	1	0	0	0
Spot remover/dry cleaning agents	415	259	25	109	412	2	0	89	161	162	4	1	2	0
Toilet bowl cleaners														
Acid	1,654	837	119	637	1,594	56	0	448	597	603	68	7	0	0
Other/unknown	376	272	16	77	369	7	0	66	217	63	6	0	0	0
Wall/floor/tile cleaners														
Alkali	1,429	738	66	581	1,405	21	2	404	405	590	48	3	0	0
Anionic/nonionic	902	684	37	161	888	11	0	115	457	205	8	0	0	0
Glycols	442	362	17	50	439	2	0	51	240	88	7	1	0	0
Other/unknown	573	319	35	189	558	15	0	163	223	188	14	3	0	0
Total	85,326	55,108	5,101	22,623	83,587	1,372	187	16,161	34,660	25,173	2,228	149	9	0
Cosmetics/personal care products														
Bath oil/bubble bath	1,213	1,138	40	25	1,203	3	1	45	663	160	3	0	0	0
Creams, lotions, make-up	3,325	2,895	127	245	3,270	29	22	182	1,797	273	9	2	0	0
Dental care products	953	747	84	96	929	10	8	77	431	182	6	0	0	0
Deodorants	3,578	3,204	124	200	3,554	20	1	140	1,910	479	16	0	0	0
Deplatories	39	14	4	17	38	1	0	8	41	41	1	0	0	0
Douches	110	75	6	24	103	4	3	18	63	7	0	0	0	0
Eye products	1,066	910	35	100	1,062	1	3	53	557	99	2	0	0	0
Hair care products	7,908	6,533	394	825	7,770	90	35	618	3,869	1,572	86	5	0	0
Lipsticks and lip balms	900	863	15	15	899	0	1	17	470	30	0	0	0	0
Mouthwash	2,225	1,609	377	197	2,150	70	2	248	1,264	333	22	3	0	0
Nail polish	1,777	1,598	93	55	1,755	18	1	108	951	427	11	0	0	0
Nail polish removers	4,181	3,586	217	310	4,075	95	2	590	2,544	652	12	0	1	0
Nail products, miscellaneous	533	444	20	54	527	2	2	68	280	117	8	1	0	0
Perfume/cologne/after shave	16,589	15,593	392	459	16,463	99	4	954	10,036	1,787	28	2	0	0
Peroxide	889	550	72	233	864	19	5	84	395	201	10	2	0	0
Powders	1,994	1,820	63	91	1,976	12	3	185	1,026	448	6	0	0	0

Soaps (bar, hand, complexions)	4,512	3,967	137	338	4,451	46	9	194	2,370	786	17	2	0
Suntan/sunscreen products	228	180	14	26	225	2	1	18	106	52	0	0	0
Total	52,020	45,726	2,214	3,310	51,314	521	103	3,607	28,750	7,619	237	17	1
Deodorizers (not for personal use)	1,275	1,253	6	7	1,272	2	0	68	862	61	2	0	0
Diaper pail deodorizers	2,764	2,412	115	178	2,743	17	2	527	1,630	286	9	1	0
Other	4,039	3,665	121	185	4,015	19	2	325	2,492	347	11	1	0
Total	2,251	2,067	61	92	2,232	6	9	111	1,289	82	10	3	1
Dyes	1,551	1,089	265	167	1,484	51	13	243	561	591	22	2	0
Essential oils	5,147	3,893	433	720	5,119	13	6	316	2,874	383	37	1	0
Fertilizers	588	70	112	349	574	10	1	167	149	264	20	0	0
Fire extinguishers	29,104	7,410	3,574	16,466	24,345	82	4,593	2,962	7,667	8,805	833	14	0
Food products/food poisoning	445	415	17	6	445	0	0	10	212	97	1	0	0
Foreign bodies/toys/miscellaneous	794	748	24	16	793	1	0	27	469	34	1	0	0
Bubble blowing solutions	1,617	1,392	179	31	1,606	9	0	259	796	126	6	1	0
Christmas ornaments	714	625	43	22	712	1	1	24	260	7	0	0	0
Coins	860	860	28	60	954	3	2	32	464	44	1	0	0
Feces/urine	485	256	52	154	479	4	1	49	247	42	2	0	0
Glass	953	810	24	108	940	1	11	111	448	130	6	0	0
Soil	4,810	2,962	1,062	627	4,789	15	0	235	2,832	114	2	4	0
Thermometer	1,751	1,555	142	25	1,744	3	2	78	916	106	3	0	0
Toys	13,585	9,518	1,906	1,900	13,416	60	88	1,840	6,274	1,627	81	8	0
Other/unknown foreign body	26,115	19,141	3,477	2,949	25,878	97	105	2,665	12,920	2,327	103	13	0
Total	3,537	3,721	497	2,498	3,423	90	2	1,946	326	1,791	449	36	24
Fumes/gases/vapors	825	18	32	700	794	30	0	248	66	495	53	2	0
Carbon monoxide	721	21	59	558	703	17	0	248	62	476	67	5	0
Chloramine	2,841	365	517	1,790	2,810	22	5	1,146	272	1,707	252	15	0
Chlorine gas (mixing household products)	369	32	31	273	369	0	0	147	76	169	30	7	0
Chlorine gas (other)	261	37	32	170	249	10	1	126	41	109	22	3	1
Hydrogen sulfide	19	5	0	12	19	0	0	6	7	9	0	0	0
Methane	196	23	10	146	190	4	1	75	56	83	13	0	0
Polymer fume fever	3,212	440	305	2,121	3,136	53	9	1,199	621	1,355	192	10	4
Propane/simple asphyxiants	11,981	1,313	1,483	8,268	11,693	226	18	5,143	1,527	6,194	1,078	78	29
Other/unknown	730	429	63	204	720	7	1	129	362	115	14	1	0
Fungicides (non-medicinal)	1,199	788	49	320	1,105	76	1	458	659	135	39	13	3
Heavy metals	420	145	85	161	408	8	1	137	135	148	15	0	0
Arsenic	857	398	124	301	832	14	3	308	332	90	24	4	0
Copper	867	358	136	330	825	33	4	205	426	110	14	4	0
Lead	709	90	20	568	702	2	3	247	63	325	110	3	0
Mercury	51	17	4	28	45	5	0	22	12	14	3	0	0
Metal fume fever	17	7	1	8	12	4	0	12	5	0	0	0	0
Selenium	1,075	520	122	368	1,051	13	4	305	417	278	28	1	0
Thallium	5,195	2,323	541	2,084	4,980	155	16	1,694	2,049	1,100	236	26	3
Other/unknown													
Total													

444 TABLE 15. Continued

	Number of Exposures			Age (years)*			Reason*			Treated in Health Facility			Medical Outcome (Effect)†			
		<6	6-17	>17	Acc\$	Int\$	Adv Rx\$	None	Minor	Moderate	Major	Death				
													None	Minor	Moderate	
Herbicides	1,189	482	108	563	1,167	15	2	429	274	32	3	0				
2,4-D or 2,4,5-T	179	29	13	129	171	7	1	56	41	9	3	2				
Diquat/paraquat	1,781	537	191	953	1,756	15	4	520	484	54	5	0				
Other/unknown	3,149	1,048	312	1,645	3,094	37	7	926	799	95	11	2				
Hydrocarbons	112	41	4	62	109	3	0	33	48	4	1	0				
Benzene	1,863	658	269	840	1,830	48	1	508	795	42	2	0				
Diesel fuel	10,456	3,482	2,060	4,544	10,131	293	1	1,922	4,490	212	11	0				
Halogenated hydrocarbons	2,004	289	145	1,408	1,951	40	3	525	667	59	6	5				
Kerosene	2,302	1,710	126	410	2,287	10	0	735	682	55	8	1				
Lighter fluid/naphtha	1,013	801	57	136	993	18	0	268	249	26	4	0				
Lubricating/motor oils	1,343	1,064	75	166	1,336	6	0	156	198	11	0	0				
Mineral seal oil	769	704	21	35	749	18	1	144	79	13	3	0				
Mineral spirits/varsol	2,441	1,567	183	606	2,401	32	2	483	681	52	2	1				
Toluene/xylene	3,247	1,852	323	956	3,133	98	4	782	1,034	83	10	3				
Turpentine	1,242	779	120	320	1,169	59	4	393	379	26	5	0				
Other/unknown	18,550	12,828	1,122	4,137	18,154	336	22	4,244	4,589	377	29	0				
Total	45,362	25,775	4,505	13,620	44,243	961	38	10,216	13,891	960	81	10				
Insecticides/pesticides (Excluding rodenticides)	1,538	1,176	65	262	1,488	46	1	337	156	14	0	0				
Borates/boric acid	4,504	2,557	307	1,492	4,299	55	134	863	841	130	14	0				
Chlorinated hydrocarbon	3,369	1,893	290	1,056	3,254	70	18	888	633	72	19	0				
Metaldehyde	204	166	4	27	199	5	0	35	13	2	0	0				
Organophosphate alone	7,266	2,801	616	3,526	7,026	148	66	2,038	1,958	286	48	6				
Organophosphate and carbamate	1,773	824	148	736	1,716	48	3	370	457	50	2	0				
Organophosphate and chlorinated hydrocarbon	208	76	12	108	201	7	0	65	51	6	3	0				
Organophosphate and other pesticide	376	180	32	142	358	13	4	126	122	17	2	0				
Piperonyl butoxide alone	310	168	29	103	300	7	3	70	97	5	1	0				
Piperonyl butoxide and pyrethrins	1,532	670	145	621	1,493	24	11	391	423	44	3	0				
Pyrethrins alone	173	67	18	66	171	1	1	57	56	8	1	0				
Insect repellents	1,214	974	132	86	1,203	6	3	88	369	9	0	1				
Other/unknown	3,704	1,630	303	1,570	3,599	68	21	826	1,588	86	6	2				
Total	26,171	13,182	2,101	9,795	25,307	498	265	6,154	6,047	729	99	9				
Lacrimators	2,146	758	594	657	2,069	55	7	472	1,467	63	1	0				
Matches/fireworks/explosives	622	579	16	18	619	2	0	39	38	2	0	0				
Moth repellents	1,347	1,169	52	103	1,328	5	10	244	103	13	4	0				
Naphthalene	1,142	1,011	53	60	1,139	0	1	141	72	6	0	0				
Paradichlorobenzene	744	647	42	35	738	5	1	113	40	3	0	0				
Other/unknown	3,233	2,827	147	198	3,205	10	12	498	215	22	4	0				
Total	7,245	6,068	404	663	6,929	262	41	1,318	732	159	18	4				
Paints and stripping agents	10,633	6,911	808	2,577	10,454	144	14	1,560	2,160	184	20	3				

Photographic products	755	531	77	121	748	4	3	92	325	97	7	1	0
Plants													
Anticholinergic	342	219	51	59	274	66	1	114	159	79	30	3	0
Cardiac glycosides	1,944	1,523	210	179	1,904	35	0	397	1,202	158	20	1	0
Colchicine	44	37	3	3	43	1	0	6	23	8	0	0	0
Cyanogenic glycosides	3,298	2,679	398	168	3,273	13	10	189	1,942	111	13	0	0
Depressants	1,052	927	60	52	1,041	5	4	100	760	72	11	0	0
Dermatitis	7,390	4,802	739	1,601	7,232	30	122	722	2,911	1,893	243	2	0
Gastrointestinal irritants	12,111	10,504	703	734	11,976	90	18	731	7,167	1,076	90	7	0
Hallucinogenic	579	406	134	30	562	14	0	69	395	35	6	0	0
Nicotine (no tobacco products)	169	125	30	32	179	8	2	49	93	35	3	0	0
Non-toxic plant	22,975	20,977	839	770	22,836	58	50	525	11,528	813	38	6	0
Oxalate	13,934	12,927	425	428	13,861	47	9	522	8,281	1,668	58	3	0
Solanine	1,984	1,745	118	98	1,974	5	4	247	1,392	137	12	0	0
Stimulants	285	251	16	13	282	2	1	63	179	24	10	0	1
Toxalbumins	219	152	42	22	216	3	0	69	127	43	7	0	0
Other/unknown	8,659	7,342	805	355	8,553	58	27	660	5,315	696	53	3	1
Total	75,005	64,616	4,573	4,544	74,206	435	248	4,463	41,474	6,848	594	25	2
Polishes and waxes	463	381	16	42	454	7	0	67	263	70	0	1	0
Radio-isotopes	39	1	1	27	37	0	1	15	11	4	1	0	0
Rodenticides													
Anticoagulants	5,098	4,624	109	256	4,977	108	1	1,191	3,359	143	14	2	0
Strychnine	126	41	10	63	87	35	1	76	48	19	12	2	0
Other/unknown	725	551	42	101	669	44	2	290	441	51	3	1	0
Total	5,948	5,216	161	420	5,733	187	4	1,557	3,848	213	29	5	0
Sporting equipment	271	127	106	28	258	8	3	51	106	65	5	0	0
Swimming pool/aquarium products	637	493	51	73	627	0	8	59	333	84	16	0	0
Tobacco products	4,937	4,514	153	223	4,862	54	15	817	2,553	1,005	77	3	0
Unknown non-drug substances	6,184	3,193	604	2,089	5,818	118	94	1,696	2,305	1,355	209	20	0

* Patients with totally unknown age, reason, or medical outcome were omitted from the respective tabulations.

† Medical outcome data were also collected in categories labelled "unknown, nontoxic," "unknown, potentially toxic," and "unrelated effect." Thus, the numbers listed here do not represent the total poison exposure experience.

§ Acc = accidental, Int = intentional, Adv Rxn = adverse reaction.

TABLE 16. Demographic Profile of Exposure Cases by Generic Category of Substance: Pharmaceuticals

	Number of Exposures	Age (years)*			Reason†			Treated In Health Facility	Medical Outcome (Effect)*\$				Death
		Age (years)*			Reason†				None	Minor	Moderate	Major	
		<6	6-17	>17	Acc	Int	Adv Rxn						
Analgesics													
Acetaminophen only	12,100	3,773	3,349	4,442	5,725	6,090	72	7,340	5,211	1,842	458	143	6
Adult formulation	24,980	24,054	661	111	24,725	190	43	3,271	16,482	788	27	2	0
Pediatric formulation	3,604	2,368	492	676	2,727	806	34	1,185	1,698	378	103	26	0
Unknown type													
Acetaminophen in combination with:													
Aspirin	128	61	27	33	80	48	0	52	55	26	3	0	4
Codeine	3,961	682	589	2,500	1,483	2,196	200	2,595	946	1,219	229	58	9
Oxycodone	855	125	83	603	350	430	53	531	192	243	60	15	1
Propoxyphene	1,534	261	189	1,021	544	929	30	1,146	395	449	115	46	4
Other narcotic/analogs	804	282	107	381	462	277	39	394	241	218	43	9	0
Other drug	2,703	1,147	466	1,003	1,542	1,055	54	1,368	1,070	632	110	20	5
Aspirin only													
Adult formulation	6,425	1,813	1,926	2,343	2,892	3,378	61	3,772	2,232	1,393	369	59	10
Pediatric formulation	3,098	2,854	168	51	2,987	93	10	558	1,952	246	13	2	0
Unknown type	3,522	1,570	773	1,071	2,183	1,229	33	1,543	1,390	721	148	37	0
Aspirin in combination with:													
Codeine	746	134	104	475	277	423	31	498	165	217	70	10	1
Oxycodone	660	128	65	435	269	348	26	420	162	195	51	6	0
Other narcotic/analogs	532	103	90	315	223	258	35	324	124	152	29	1	4
Other drug	4,257	1,520	1,049	1,526	2,183	1,909	75	2,285	1,622	1,121	164	33	13
Narcotics													
Codeine	1,178	687	145	323	846	276	43	465	469	292	51	8	4
Pentazocine	254	35	27	118	99	118	30	168	44	74	29	8	1
Propoxyphene	603	75	60	476	194	367	22	441	114	159	53	21	5
Other/unknown	197	28	13	126	71	106	12	132	27	47	21	7	8
Non-aspirin salicylates	309	236	16	49	276	28	4	72	167	49	6	0	1
Non-steroidal antiinflammatory drugs													
Ibuprofen	6,510	3,782	764	1,793	4,446	1,872	114	2,380	3,357	950	132	26	6
Other/unknown	1,403	675	162	491	939	380	69	560	649	280	52	10	5
Other/unknown	598	417	51	108	479	98	13	220	297	99	13	4	0
Total	80,961	46,810	11,376	20,477	56,002	22,904	1,103	31,720	39,061	11,790	2,349	551	87
Anesthetics	2,517	1,838	217	407	2,350	113	44	393	1,328	387	39	9	4
Anticholinergic	4,617	2,050	645	1,761	2,896	1,540	104	2,356	1,831	1,133	265	52	6
Anticoagulants	933	736	32	137	858	65	5	269	524	57	7	1	0
Anticonvulsants													
Phenytoin	1,980	564	232	1,074	1,122	747	58	1,267	598	539	201	44	1
Other/unknown	1,413	581	255	525	963	400	27	772	550	328	124	42	4
Total	3,393	1,145	487	1,599	2,085	1,147	85	2,039	1,148	867	325	86	5
Antidepressants													
Cyclic antidepressants													
Amiripryline	2,704	398	259	1,880	881	1,692	52	2,215	455	705	498	245	19
Amoxapine	312	34	39	220	102	200	4	262	54	90	42	34	8
Desipramine	490	96	55	318	192	278	12	374	122	144	65	32	9
Doxepin	1,367	121	112	1,067	335	970	19	1,149	195	384	250	119	8
Imipramine	1,323	316	193	753	565	697	35	990	339	385	176	71	15
Maprotiline	319	45	32	222	100	202	7	256	59	103	37	19	2

267	22	26	195	63	191	5	220	45	66	41	20	2
64	6	7	44	19	43	1	53	13	17	5	3	0
Formulated with a:												
362	52	35	253	111	225	7	287	62	93	59	38	1
771	142	75	517	273	467	10	648	131	219	131	62	5
669	61	53	529	207	427	17	535	98	201	84	43	6
1,038	140	75	762	411	539	56	762	262	277	114	44	7
406	48	18	304	156	158	76	276	109	104	54	29	3
820	79	75	620	232	543	28	640	158	275	71	18	4
53	11	5	31	21	29	2	32	10	6	5	3	1
10,965	1,571	1,059	7,715	3,368	6,661	331	8,699	2,106	3,069	1,632	780	90
8,455	3,535	1,236	3,401	4,924	3,281	135	4,127	3,196	2,173	429	81	5
Antihistamines												
Antimicrobials												
17,385	11,879	2,032	3,067	13,960	2,386	912	3,075	8,342	2,032	178	15	0
1,846	1,619	63	137	1,793	32	17	115	1,010	198	1	1	0
2,343	1,562	107	587	2,309	25	3	142	1,491	105	3	5	0
2,343	1,329	224	716	1,715	320	290	639	1,014	432	59	7	0
Antituberculars												
138	25	38	57	50	78	4	109	47	26	20	23	0
33	17	5	8	22	7	4	17	16	7	1	2	0
1,682	690	160	775	1,067	483	104	699	542	384	87	27	0
55	32	6	16	51	2	2	5	25	10	2	0	0
25,825	17,153	2,635	5,363	20,967	3,333	1,336	4,801	12,487	3,194	351	80	0
197	76	18	92	166	23	7	78	92	35	5	0	0
Antineoplastics												
Asthma therapies												
Aminophylline/												
3,590	1,367	953	1,120	2,393	1,018	129	2,091	1,246	983	366	66	11
807	426	147	206	594	184	20	342	326	198	47	2	0
4,397	1,793	1,100	1,326	2,987	1,202	149	2,433	1,572	1,181	413	68	11
Cardiovascular drugs												
663	215	53	367	495	129	26	302	305	129	36	4	3
1,213	690	119	358	909	281	7	802	476	293	140	31	3
2,742	1,293	279	1,067	1,919	730	61	1,397	1,411	435	108	39	8
804	394	33	356	655	127	14	340	445	110	31	8	2
1,015	584	56	351	842	155	9	548	528	126	74	17	4
2,036	1,378	118	488	1,708	282	27	731	1,185	269	46	8	1
71	35	8	20	51	19	1	31	32	8	6	1	0
8,544	4,589	666	3,007	6,579	1,723	145	4,151	4,382	1,370	441	108	21
Cold and cough preparations												
1,240	674	210	297	889	285	43	439	630	251	27	4	0
Acetaminophen and decongestant/antihistamine												
709	232	142	315	406	256	31	320	221	204	31	4	0
Acetaminophen and decongestant/antihistamine												
708	332	139	212	471	200	23	275	303	175	26	5	0
4,366	3,645	287	397	4,090	214	48	846	2,285	901	60	7	0
Expectorants/antitussives												
32,546	25,532	2,950	3,617	29,033	2,906	455	8,105	16,614	7,426	459	55	2
39,569	30,415	3,728	4,838	34,889	3,861	600	9,985	20,053	8,957	603	75	2
143	79	12	42	132	4	7	37	70	23	1	1	0
3,023	1,815	342	802	2,385	566	35	1,188	1,502	518	94	19	0
Diagnostic agents												
Diuretics												
6,122	5,643	163	264	6,028	60	22	177	3,354	217	11	3	0
Electrolytes/minerals												
Calcium salts												

TABLE 16. Continued

	Number of Exposures			Age (years)*			Reason**			Treated in Health Facility					Medical Outcome (Effect)*								
		6-17		Acc	Int	Adv Rxn	None	Minor	Moderate	Major	Death	>17		None		Minor		Moderate		Major		Death	
		<6	6-17									>17	Acc	Int	Adv Rxn	None	Minor	Moderate	Major	Death			
Fluoride (excluding vitamins)	3,139	2,846	181	72	3,093	26	10	266	1,597	526	21	2	0										
Iron (excluding vitamins)	2,013	1,483	192	286	1,739	252	6	905	971	421	75	15	1										
Magnesium salts	284	231	11	37	271	9	4	39	144	48	4	1	0										
Potassium salts	549	357	60	116	478	61	7	168	294	86	12	1	0										
Sodium salts	1,760	1,362	157	212	1,718	26	5	227	959	249	14	1	1										
Zinc	989	628	52	270	952	27	9	217	473	196	30	0	0										
Other/unknown	77	44	6	26	70	5	2	15	38	10	2	0	0										
Total	14,933	12,594	822	1,283	14,349	466	67	2,014	7,830	1,753	169	23	2										
Eye/ear/nose/throat preparations	6,994	5,247	592	993	6,492	417	60	1,561	4,019	1,117	92	13	0										
Gastrointestinal preparations	4,087	3,374	281	359	3,813	235	18	461	2,311	342	25	7	1										
Antacids	1,678	1,011	196	411	1,219	398	42	935	740	378	106	17	1										
Antidiarrheals/antispasmodics	12,999	11,105	688	1,047	12,593	314	53	1,147	6,372	2,082	133	10	0										
Laxatives	854	595	64	174	722	91	33	186	394	104	18	0	0										
Other/unknown	19,618	16,085	1,229	1,991	18,347	1,038	146	2,729	9,817	2,906	282	34	2										
Hormones and hormone antagonists	283	208	24	32	259	12	8	18	192	11	2	1	0										
Corticosteroids	232	31	20	169	137	75	19	127	74	43	16	6	0										
Insulin	6,068	5,572	275	159	5,865	168	16	432	3,278	230	8	0	0										
Oral contraceptives	507	288	47	161	406	90	6	291	272	87	24	6	1										
Oral hypoglycemics	1,829	1,442	112	243	1,662	146	14	464	1,100	139	34	3	0										
Thyroid preparations	1,908	1,225	153	476	1,699	156	36	435	906	338	32	2	0										
Other/unknown	10,827	8,766	631	1,240	10,028	647	99	1,767	5,822	848	116	18	1										
Miscellaneous drugs	143	92	21	27	118	21	3	40	93	11	2	0	0										
Allopurinol	113	62	5	45	93	18	2	42	47	21	4	4	0										
L-dopa and related drugs	498	37	20	413	189	248	47	355	80	166	59	3	0										
Disulfiram	360	179	46	126	256	72	29	164	160	86	10	0	0										
Ergot alkaloids	371	221	28	110	304	38	24	102	149	61	6	1	0										
Homeopathic/herbal preparations	1,397	913	140	287	1,189	161	40	244	536	358	27	1	0										
Other	2,874	1,504	260	1,004	2,146	556	143	941	1,065	699	110	9	0										
Total	1,976	399	243	1,225	801	1,069	49	1,369	468	601	203	42	1										
Muscle relaxants	2,760	781	379	1,464	1,434	1,226	37	1,766	742	770	306	125	5										
Sedative/hypnotics/antipsychotics	1,303	180	159	856	411	821	17	988	232	448	153	48	3										
Barbiturates	27	3	4	15	9	22	0	4	2	4	6	0	1										
Long-acting Short/intermediate-acting	15,092	2,404	1,222	10,506	4,793	9,691	183	10,584	2,655	5,186	1,377	297	18										
Unknown type	225	65	10	136	98	113	10	166	73	28	23	12	2										
Benzodiazepines	258	17	11	216	50	196	2	223	15	83	48	29	0										
Chloral hydrates	194	9	9	170	28	160	2	171	14	62	46	26	7										
Ethchlorvynol	433	59	51	302	145	262	6	317	79	136	61	18	2										

Methaqualone	181	16	25	129	47	128	0	147	15	45	24	8	0
OTC sleep aids	1,868	111	290	1,341	410	1,408	8	1,494	334	668	130	22	0
Phenothiazines	5,305	1,240	582	3,231	2,275	2,651	239	3,750	1,422	1,724	563	128	22
Other/unknown	318	25	33	219	72	222	6	247	35	65	29	7	2
Total	27,964	4,910	2,745	18,585	9,722	16,893	510	19,875	5,575	9,264	2,766	720	62
Serums, toxoids, and vaccines	119	35	14	63	90	0	28	49	32	29	8	1	0
Stimulants and street drugs													
Amphetamines	2,807	973	518	1,172	1,481	1,211	62	1,772	725	808	239	44	6
Amyl/butyl nitrites	142	20	23	92	67	73	0	81	23	52	10	2	0
Caffeine	2,641	931	812	806	1,455	1,082	53	1,187	762	904	177	14	0
Cocaine	1,116	41	62	916	179	905	14	880	60	372	146	39	18
Diet aids													
Phenylpropane- nolamine (PPA)	1,192	585	271	289	766	388	15	611	531	293	60	5	0
PPA and caffeine	752	330	201	202	443	287	14	405	289	207	46	2	0
Other/unknown	389	189	77	107	259	107	13	200	167	97	24	0	0
Heroin	299	7	6	241	51	245	0	254	17	77	55	22	8
LSD	470	20	138	267	97	358	3	342	29	182	77	11	0
Marijuana	754	150	168	380	279	452	13	420	97	278	73	7	3
Mescaline/peyote	193	57	41	84	103	88	1	112	39	76	16	2	0
Phencyclidine	410	31	74	247	103	291	4	351	24	155	82	31	1
PPA-containing "look-alikes"	137	55	28	47	64	71	0	94	33	42	10	1	1
Other/unknown	594	103	135	313	184	386	7	418	98	170	53	8	7
Total	11,896	3,492	2,554	5,163	5,531	5,944	199	7,127	2,894	3,711	1,068	188	44
Topicals													
Acne preparations	294	185	31	60	283	3	7	49	131	79	3	0	0
Boric acid													
antiseptics	1,106	638	73	372	1,082	17	6	148	587	162	9	0	0
Camphor	2,562	2,079	127	306	2,513	42	4	1,173	1,656	325	29	9	0
Camphor and methyl salicylate	3,488	2,901	157	392	3,450	23	11	466	1,804	679	15	1	0
Diaper care products	5,289	5,147	42	66	5,278	4	4	63	3,046	233	5	1	0
Hexachlorophene antiseptics	271	183	14	66	263	6	2	72	142	42	3	0	1
Hydrogen peroxide	7,182	4,551	580	1,814	7,021	135	7	399	3,620	1,387	31	1	0
Iodine antiseptics	1,100	513	130	410	957	126	13	309	536	224	15	2	0
Mercurial antiseptics	113	89	5	12	107	5	0	10	86	4	0	0	0
Methyl salicylate	1,802	1,539	78	148	1,783	13	5	232	1,107	280	8	0	2
Podophyllin	41	22	4	13	36	2	2	20	16	11	1	0	0
Steroids	1,395	1,147	48	181	1,381	4	6	34	821	111	1	0	0
Wart preparations	69	53	6	8	68	1	0	12	33	24	1	0	0
Other/unknown	3,519	2,956	147	320	3,457	52	8	341	1,954	506	13	3	0
Total	28,231	22,003	1,442	4,168	27,679	433	75	3,328	15,539	4,067	134	17	3
Veterinary drug (no human equivalent)	1,057	613	93	244	1,041	14	2	180	569	132	10	2	2
Vitamins													
Multiple vitamins— adult preparations													
No iron, no fluoride	3,408	2,631	279	444	3,095	153	142	342	1,740	432	26	1	0
With iron, no fluoride	2,268	1,897	189	150	2,084	157	12	532	1,399	252	21	5	0
With iron, with fluoride	49	37	3	8	46	1	2	7	30	11	2	0	0
No iron, with fluoride	29	25	2	0	27	1	0	2	19	1	0	0	0

TABLE 16. Continued

	Number of Exposures	Age (years)*			Reason†			Treated in Health Facility	Medical Outcome (Effect)‡				
		<6	6-17	>17	Acc	Int	Adv Rxn		None	Minor	Moderate	Major	Death
Multiple vitamins—													
pediatric preparations													
No iron,													
no fluoride	5,870	5,280	535	15	5,807	49	8	221	3,518	313	11	2	0
With iron,	7,909	7,187	655	21	7,834	58	6	1,374	4,904	960	56	5	0
no fluoride													
With iron,	443	417	24	2	440	2	0	56	268	43	2	0	0
with fluoride													
No iron,	1,284	1,238	37	3	1,275	6	2	65	837	57	3	0	0
with fluoride	1,466	1,300	54	99	1,419	27	15	95	900	80	8	0	0
Vitamin A	141	35	7	86	88	6	47	11	24	102	0	0	0
Niacin	42	32	1	7	38	1	3	4	22	6	1	0	0
Pyridoxine													
Other B complex	430	348	19	54	400	18	9	33	206	74	3	0	0
vitamins	1,529	1,301	149	64	1,455	54	9	66	775	135	3	0	0
Vitamin C	151	124	5	21	145	4	2	21	87	17	2	0	0
Vitamin D	366	297	18	42	343	18	3	42	206	20	4	0	0
Vitamin E	4,698	4,018	408	216	4,451	200	29	842	2,901	455	27	5	0
Other/unknown	30,083	26,167	2,385	1,232	28,497	755	289	3,713	17,386	2,958	169	18	0
Total	7,267	3,566	1,051	2,342	5,697	1,221	172	2,755	2,840	1,376	264	46	1
Unknown drug													

Note: *Patients with totally unknown age, reason or medical outcome were omitted from the respective tabulations.

† Acc = accidental, Int = intentional, Adv Rxn = adverse reaction.

‡ Medical outcome data were also collected in categories labelled "unknown, nontoxic," "unknown, potentially toxic," and "unrelated effect." Thus, the numbers listed here do not represent the total poison exposure experience.

older age groups. Table 11 compares medical outcome and reason for exposure, demonstrating the greater involvement of intentional exposures in cases with a major effect or fatality.

Table 12 outlines the use of initial decontamination procedures, specific antidotes, and measures to enhance elimination in the treatment of patients reported in this database. These must be interpreted as minimum frequencies of use because of the limitations of telephone data gathering. Ipecac syrup was administered in 15.0% of cases. In children, ipecac syrup was most often administered outside a health care facility (Table 13).

A summary of the 328 fatal exposures is presented in Table 14. Each of these cases was abstracted and/or verified by the reporting center. Only fatalities deemed to be "probably" or "undoubtedly" related to the exposure are included. Confirmation of the cause of death by a post-mortem report was obtained in 36% of cases. A review of the fatality data demonstrates frequent deaths from antidepressant drugs, analgesics, street drugs, sedative hypnotics, and carbon monoxide. Where many substances were implicated in a single case, an effort was made to list substances in roughly the order they were felt to have contributed to the death. That determination, however, could not always be made. Abstracts are provided for selected cases at the end of this report (see Appendix).

Tables 15 and 16 provide comprehensive demographic data on patient age, reason for exposure, medical outcome, and use of a health care facility for all 900,513 human exposures presented by category. Table 15 focuses on non-pharmaceuticals; Table 16 focuses on drugs. The categories most frequently implicated in poison exposures were cleaning substances (85,326), analgesics (80,961), plants (75,005) and cosmetics (52,020). Exposure frequencies often represent only market shares of products or home availability and should not be interpreted as toxicity data. Instead, the medical outcome data, especially the fatality rate, should be used for this purpose. For example, plants were the third most common category of implicated substances, but only two fatalities were documented in this group. Also of note, a nearly two-fold increase in deaths from street drugs and stimulants occurred as compared with 1984, including 18 cocaine fatalities.

Interestingly, although there were more fatalities from aspirin ingested alone than from acetaminophen alone, the mean age of the acetaminophen fatalities was 36.5 years compared with 63 years among the aspirin deaths. No children were involved in either group. One wonders whether this reflects relatively greater aspirin utilization among the elderly, or only the influence of prior cardiovascular disease on aspirin overdose survival.

References

1. Veltri JC, Litovitz TL. 1983 Annual Report of the American Association of Poison Control Centers National Data Collection System. *Am J Emerg Med* 1984;2:420-443.
2. Litovitz T, Veltri JC. 1984 Annual Report of the American Association of Poison Control Centers National Data Collection System. *Am J Emerg Med* 1985;3:423-450.

Appendix: Abstracts of Fatal Poisoning Cases

Case 1. A 2-year-old girl ingested up to 4 ounces of ethanol (tequila) at an unknown time. Child had a cardiopulmonary arrest in the emergency department (ED) and was resuscitated. Initial blood ethanol concentration was 263 mg/dl, then was 208 mg/dl four hours later. Results of other toxicological analysis were negative. Admission glucose level was 1,269 mg/dl. Pupils were fixed and dilated, and the patient remained on a ventilator. The patient died approximately 20 hours after presentation.

Case 2. A 2-year-old boy was found in respiratory arrest with open bottles of isopropyl alcohol and finger nail polish remover. Cardiac arrest was also noted when the ambulance arrived. Cardiorespiratory resuscitation was successful, but pupils remained fixed and dilated. Toxicological analysis results were: urinary acetone, 25 mg/dl; urinary isopropanol, 10 mg/dl; blood acetone, 27 mg/dl; blood isopropanol, less than 5 mg/dl. Chest radiographs showed left atelectasis. The child was pronounced brain-dead.

Case 7. A 35-year-old man reportedly ingested 10 diphenhydramine (50 mg) capsules. He was hospitalized in a psychiatric ward. Approximately 11 hours later, the patient was found convulsing, and he then sustained a respiratory arrest. He was transferred to the intensive care unit (ICU) where he was comatose, intubated, placed on a ventilator and given sodium bicarbonate and dopamine. Toxicological analysis revealed a methanol level of 94.8 mg/dl (14 hours after admission). Ethanol therapy was then started via nasogastric tube. Hemodialysis and peritoneal dialysis were started 21 hours after admission to hospital. The patient remained comatose with fixed, dilated pupils and died on the fourth hospital day. Post-mortem examination confirmed diagnosis of methanol poisoning.

Case 11. A 59-year-old man was found comatose on the street and brought to the ED following a possible ingestion of one glassful of antifreeze (ethylene glycol) at an unknown time. Prior suicide attempts were also reported. Upon initial presentation, the patient was unresponsive to all stimuli, blood pressure was 90/0 mm Hg, pulse was 60/min, and respirations were 28/min. Initial arterial blood gases revealed: pH, 7.08; P_O₂, 163 mm Hg; P_{CO}₂, 10 mm Hg; bicarbonate, 3 mmol/l; O₂ saturation, 98%. Ethylene glycol levels were not available. Treatment included ethanol therapy for several days and hemodialysis. Acidosis persisted despite massive doses of sodium bicarbonate. Seizures developed and were treated with diazepam and phenytoin. On the seventh hospital day, a computerized tomography (CT) scan revealed "marked destruction of subcortical and basal ganglionic structures symmetrically with cortical edema." The patient remained in ICU on daily dialysis as his blood urea nitrogen (BUN) and serum creatinine continued to climb, reaching

levels of 120 mg/dl and 11 mg/dl, respectively, on the 14th hospital day. The patient was initially intubated and remained on a ventilator until day 6, at which time he was weaned from the ventilator. The patient had repeated bouts of sepsis, emanating either from the upper respiratory tract or urinary tract, with no change in renal status. The patient died on the 26th hospital day.

Case 12. A 77-year-old woman became confused and drank ethylene glycol antifreeze instead of lemonade. She was found comatose at home and taken to a local ED 12 hours after the ingestion. Toxicological analysis results were negative except for ethylene glycol, and the urine was negative for crystals (but positive for erythrocytes). The patient was started on intravenous (IV) ethanol and dialysis. Initial ethylene glycol level was 355 mg/l. Pre-dialysis level was 210 mg/l and dropped to <25 mg/l over four hours. Patient developed acidosis and decreasing urinary output. Hemodialysis was resumed the next day. She remained acidotic with pH values of 7.22 to 7.26 despite treatment with sodium bicarbonate. The patient remained unresponsive, hypotensive, anuric, and on a ventilator until she died on the third hospital day. An autopsy confirmed ethylene glycol poisoning.

Case 15. A 24-year-old man ingested an unknown quantity of an alkaline cyanide reagent obtained from his place of employment. He presented to an ED approximately 30 minutes after the exposure with a burn on one lip and mydriasis, but no respiratory distress. Within 10 minutes of arrival he experienced a respiratory arrest and became acidotic. Since a cyanide antidote kit was not available in that emergency department, amyl nitrite was administered and the patient was transported to another facility. He died en route.

Case 17. A 29-year-old man was found unresponsive and asystolic. A suicide note and small unlabeled vial of white powder were found with the patient. The time and route of the exposure were unknown. He was treated with epinephrine, sodium bicarbonate, cardiopulmonary resuscitation (CPR), and intubation, then transported to an ED, where he required defibrillation. The patient sustained multiple cardiac arrests. The toxicology laboratory eventually identified the white powder as 91% potassium cyanide and 5% potassium hydroxide. Blood cyanide level was 698 µg/dl, gastric aspirate level was 250 µg/dl, thiocyanate level was 12 µg/ml (time after exposure unknown). Ten grams sodium thiosulfate were then given without effect, and the patient died on the second hospital day.

Case 20. A 33-year-old man ingested ethylene glycol (undetermined amount and time). The patient presented to the ED hyperglycemic (600 mg/dl) and in metabolic acidosis (pH 7.00). Toxicological analysis revealed an ethylene glycol level of 38 mg/dl. Therapy included oral ethanol and hemodialysis. His blood glucose was difficult to control, frequently exceeding 400–500 mg/dl. No oxalate crystals were present in numerous urinalyses. The patient remained comatose during the entire admission, developed severe renal failure, and died eight days after admission.

Case 25. A 33-year-old man ingested an unknown quantity of sodium azide less than an hour before admission and was hypotensive (90/50 mm Hg) with a heart rate of 120/min and respirations of 40/min. He was hypertonic, diaphoretic, and salivating. An hour after arrival at the hospital, the pa-

tient was comatose with a metabolic acidosis (pH 7.1) and dilated pupils. He was intubated but breathing spontaneously. Six hours after ingestion, premature ventricular contractions (PVCs), junctional rhythm disturbances, and Cheyne-Stokes respirations developed. Blood pressure was 66 mm Hg (systolic). Treatment included gastric lavage, 300 mg sodium nitrite IV, lidocaine, and dopamine. The patient died ten hours after ingestion.

Case 26. A 35-year-old man ingested sodium azide (undetermined amount and time). Patient was lethargic and disoriented with severe acidosis unresponsive to approximately 45 amps of sodium bicarbonate, and hypotensive despite aggressive pressor therapy. The patient died in cardiogenic shock.

Case 27. A 38-year-old man ingested 2 tablespoons of sodium azide one hour before admission. The patient began experiencing seizures in the ambulance. Upon arrival in the ED, he was comatose and in severe respiratory distress with ventricular fibrillation and heart block. Gastric lavage was performed. Severe hypotension was unresponsive to dopamine. Naloxone was given with no response. The patient died 90 minutes after ingestion from cardiac arrest.

Case 28. A 46-year-old man presented with 95% total body surface area burns after falling into a heated vat (195° F) of 5% sodium hydroxide at work. Despite standard burn therapy, the patient died 13 days after admission because of renal and cardiac failure and septicemia.

Case 29. An 86-year-old woman presented with vomiting and diarrhea an hour after ingesting five grams of sodium silicofluoride, mistaking it for sugar. Serum calcium shortly after arrival was 5.0 mEq/l. Initial treatment included intravenous fluids and calcium. Upper and lower gastrointestinal (GI) bleeding developed but resolved spontaneously (hematocrit 46%). Initial ECG showed sinus rhythm with non-specific ST and T wave changes, but QT prolongation developed with episodes of polymorphous ventricular tachycardia. Four hours after ingestion, cardiac arrest occurred (a few seconds after rigid laryngoscopy was performed). Serum calcium fell to 4.2 mEq/l, then rose to 12.6 mEq/l after treatment. Lengthy resuscitative attempts were unsuccessful, and the patient was pronounced dead six hours after the ingestion. Post-mortem examination revealed hemorrhage of the gastric mucosa and perirenal soft tissue. Fluoride levels were: blood, 0.3 mg/dl; kidney, 1.0 mg/dl; liver, 0.4 mg/dl; brain, 0.7 mg/dl; gastric, 38.0 mg/dl.

Case 31. A 15-year-old woman was found by paramedics with two bottles of white crystals, one labeled sodium nitrite, the other sodium benzoate. Patient was in cardiopulmonary arrest with fixed and dilated pupils. Resuscitation included cardiopulmonary resuscitation (CPR), naloxone, sodium bicarbonate, and methylene blue, but resuscitation was unsuccessful. Initial carboxyhemoglobin level was 22% and methemoglobin level 72.6%.

Case 32. A 29-year-old woman presented after ingestion of sodium hydroxide drain cleaner crystals with severe necrosis of mouth and pharynx and bleeding ulceration of mouth. Endoscopy showed black eschar from pharynx to duodenum with tracheal involvement. Total gastrectomy and feeding jejunostomy were performed. The course was complicated by bleeding and possible ARDS, which improved by the 7th hospital day. Two days later she devel-

oped pneumonia. The patient died on the 13th hospital day from presumed aortic rupture.

Case 34. A 24-year-old man who ingested approximately $\frac{3}{4}$ cup of lye and slashed his wrists and neck presented in hypovolemic shock with bloody emesis, lip burns, and abdominal pain. He developed respiratory complications and was placed on a ventilator for approximately ten days. Burns were evident throughout the GI tract, necessitating gastrectomy, duodenectomy, proximal jejunectomy, and esophagectomy. He was febrile and was treated with steroids, antibiotics, and hyperalimentation. He developed a ruptured aorta and renal failure and died 30 days after the exposure.

Case 35. A 45-year-old man, owner/operator of a dry cleaning business, was found unconscious on the floor in a 40 gallon perchloroethylene spill. Initial care was complicated by hypothermia, hypotension, and bradycardia. Resuscitation including rewarming successfully restored his cardiovascular status, but the patient never regained consciousness and was pronounced brain-dead.

Case 36. A 29-year-old man accidentally ingested a hydrofluoric acid containing rust remover that he mistook for water. Approximately 40 minutes later the patient was totally unresponsive, cyanotic, and asystolic. Resuscitation was unsuccessful and the patient was pronounced dead 90 minutes after the ingestion. Laboratory results available later included: calcium, 3.1 mg/dl; bicarbonate, 12 mEq/l; and plasma fluoride, 35.2 mg/l (normal less than 0.1 mg/l).

Case 40. A 65-year-old woman patient with a known history of yellow dye allergy was in anaphylactic shock and seizing uncontrollably after having eaten orange crackers two hours before. The patient received diphenhydramine, epinephrine, and aminophylline. The patient died approximately 72 hours after ingestion. Two years before this incident, the patient had experienced cardiopulmonary arrest from a similar exposure.

Cases 44-45. Two 20-year-old adults fell asleep in the back of a camper pickup truck where a propane space heater was used to keep them warm. A third adult was driving the truck and drove all night before stopping in the morning at a restaurant. The victims were found in cardiopulmonary arrest, one in asystole, the other in an idioventricular rhythm. Both were hypothermic (35-35.5° C) and failed to respond to resuscitation.

Case 49. A 37-year-old man was found dead in his residence, and later a carbon monoxide leak was found in the furnace. The victim's carboxyhemoglobin level was 66.7%. Three other family members with depressed mental status were also found in the home, but they survived.

Case 68. A 32-year-old woman ingested 8 ounces of a rodenticide (arsenic trioxide) one hour before admission. The patient had severe diarrhea, abdominal cramps, and a blood pressure of 80/60 mmHg. Initial treatment included gastric lavage and activated charcoal followed by dimercaprol. Her condition continued to deteriorate requiring mechanical ventilation and dopamine and levarterenol to maintain blood pressure. The patient died on the fifth hospital day.

Case 69. A 40-year-old man was discovered near a rodenticide (arsenic trioxide 1.5%) in an unresponsive state (undetermined amount and time of ingestion). He was transported to a medical facility and upon arrival was found to have no

vital signs. Resuscitation and gastric decontamination efforts were unsuccessful. Autopsy verified the presence of arsenic and pathological changes consistent with arsenic poisoning.

Case 70. A 40-year-old male gardener inadvertently drank an unknown, foul tasting liquid from a beverage container while on the job. He was admitted with nausea, vomiting, and diarrhea. Ten days after the incident, accidental ingestion of paraquat was suspected. Supportive treatment was insufficient to sustain the patient as respiratory status worsened. The patient died 45 days after exposure. The medical examiner's report attributed death to pulmonary fibrosis secondary to paraquat poisoning.

Case 71. A 39-year-old man presented to an ED with dyspnea and abdominal pain 3.5 hours after drinking one pint of paraquat. His abdomen was distended, and he had dark urine and polyuria. Laboratory results included: pH, 7.23; P_{O_2} , 120 mm Hg; P_{CO_2} , 20 mm Hg; bicarbonate, 8 mEq/l; leukocyte count 1900/mm³ (left shift); BUN, 11 mg/dl; creatinine, 2.3 mg/dl; potassium, 2.7 mEq/l; osmolar gap, 38. The patient was hyperventilating and gagging on arrival. Pulse was 120/min with 80 PVCs/min and hypertension. Ipecac was given, and supplemental oxygen was withheld. Vomiting and diarrhea developed 11.5 hours after admission. Ethanol infusion was given. Several hours later, the patient became hypoxic; ventricular fibrillation developed, and resuscitative efforts were unsuccessful.

Case 72. A 16-year-old man presented in coma and in cardiac arrest after sniffing freon with friends. Resuscitation was unsuccessful. Post-mortem report demonstrated pulmonary congestion.

Case 75. A 12-month-old girl presented to the ED comatose, dusky, and with bilateral rales 90 minutes after ingesting an unknown quantity of lamp oil (100% kerosene). Initial blood gases and chest radiograph showed respiratory acidosis secondary to hypoventilation and respiratory distress syndrome. Gastric lavage yielded a large amount of oily material smelling of kerosene. The patient was maintained on a ventilator with aminophylline and antibiotics for 27 days. High volumes of positive end-expiratory pressure (PEEP) were delivered causing a right pneumothorax, corrected by the placement of a chest tube. Laboratory tests revealed high liver enzyme values throughout her hospitalization. The patient died on the 27th day.

Case 76. An 89-year-old man ingested approximately 12 ounces of paint thinner (mineral spirits) that he thought was juice. Patient was found unconscious on the kitchen floor and on presentation to the ED responded only to deep pain. He was cyanotic, hypoventilating, in atrial fibrillation (pulse, 94/min; blood pressure, 60 mm Hg; pH, 7.19; P_{CO_2} , 48 mm Hg; P_{O_2} , 47 mm Hg; bicarbonate, 18.7 mEq/l) and a radiograph showed diffuse bilateral infiltrates. Activated charcoal and cathartics were given, blood pressure improved to 122/60 mm Hg (pulse improved to 88/min) after sodium bicarbonate, dopamine and IV fluids were administered. He was placed on PEEP, but his condition continued to deteriorate and he died on the second hospital day. An autopsy demonstrated chemical pneumonitis.

Cases 80 and 81. A 12-year-old and a 13-year-old girl were found in school by a janitor after alleged exposure to trichloroethane. No spontaneous pulse or respirations were

present. Cardiovascular function was restored in an ED. Lidocaine was given for periodic ventricular tachyarrhythmias, and dopamine was given to maintain blood pressure. Body temperature initially was 32.2° C. Respiration was mechanically assisted, and spontaneous respiration occurred only occasionally. Over the next few days, no neurological activity was observed, and life support was discontinued.

Case 82. A 27-year-old male exterminator was applying chlorpyrifos under a house. The patient became unconscious and was taken to the ED in cardiopulmonary arrest. Cardiopulmonary resuscitation was performed for approximately 20 minutes; the patient remained asystolic. There were no signs or symptoms of an organophosphate poisoning. Post-mortem examination revealed significant levels of phenylpropranolamine that the patient had been taking therapeutically. It was postulated that the patient had inhaled the fumes from the pesticide solvent and developed cardiac arrhythmias secondary to myocardial sensitization (from the solvent and PPA).

Case 83. A 29-year-old man ingested ¾ pint of diazinon and presented in cardiopulmonary arrest an hour later. Treatment included gastric lavage, activated charcoal, atropine (10 g over 52 hours), 2-PAM, and intubation with assisted ventilation. Aspiration pneumonia and ventricular arrhythmias developed, and the patient died 56 hours after admission.

Case 85. A 15-month-old boy, while playing in the front yard, ran to his mother and complained that he didn't feel well. He then had a convulsion and stopped breathing. Cardiopulmonary resuscitation was initiated by the mother, an ambulance was summoned, and he was taken to the ED where he was found to have bradycardia, pinpoint pupils, and hypersalivation. Chest radiograph was normal. The patient received atropine and gastric lavage. Over the next three hours, he experienced cardiopulmonary arrest many times, but was finally stabilized, intubated, and placed on a ventilator. Atropine therapy was continued, and 2-PAM was administered. Naloxone was given without results. Plasma and erythrocyte cholinesterase activities were undetectable. Over the next two days, a drop in urinary output was treated with furosemide and mannitol, and hypotension was treated with dopamine. Three days after the incident, an electroencephalogram (EEG) showed no electrical activity, and life-support systems were discontinued. Subsequent laboratory analyses showed fonofos in the patient's gastric aspirate and urine, and also on his shirt.

Case 87. A 33-year-old man ingested 8 ounces of a mosquito repellent containing diethyl-meta-toluamide. One to two hours later, he experienced a cardiorespiratory arrest and developed DIC. The patient was intubated and placed on a ventilator. On day 2 he became hyperglycemic (blood glucose 250 mg/dl) and developed status epilepticus, which was treated with phenytoin. He developed cerebral edema and died nine days after ingestion.

Case 88. A 26-month-old boy presented in cardiopulmonary arrest 7.5 hours after allegedly ingesting dishwashing liquid. Approximately 15 hours after exposure, the child began demonstrating tongue and upper arm fasciculations. Organophosphate toxicity was suspected, and cholinesterase levels were drawn. Plasma cholinesterase was 0.2 (normal

1.3–4.5), erythrocyte cholinesterase was 3.9 (normal 8.6–12.8). Salivation was reported 15.5 hours after ingestion. Administration of 2-PAM was advised at this point, although there is no record of such administration. The child died on the second hospital day. Autopsy confirmed organophosphate poisoning.

Case 90. A 30-year-old woman ingested an unknown quantity of a sodium fluoride roach killer. About two hours later, she had the abrupt onset of rigidity and a possible seizure and developed ventricular fibrillation. She was given 2–3 g of calcium chloride but could not be resuscitated. Autopsy report revealed a tissue fluoride level of 7.4 mg/l and a gastric fluoride level of 18 mg/l.

Cases 91–94. Four Mexican farm workers, ages 27, 31, 38, and 42 years, were admitted to the hospital after eating wild mushrooms in North San Diego County four days before admission. The mushrooms were described as large with a white cap. Patients were staying for the past several days at a downtown shelter where they were described as having been very sick with severe vomiting. Upon arrival at the hospital, they were all disoriented with evidence of severe hepatotoxicity, coagulopathy, and renal failure. (Their serum glutamic oxaloacetic transaminases [SGOT] ranged from 5,000 to 20,000 U/l; prothrombin times ranged from 70 to 100 seconds; serum creatinine ranged from 1.4 to 3 mg/dl.) They were treated with activated charcoal and supportive care. Peritoneal dialysis was begun because of anuria. Three patients died two days after admission from profound hypotension and bradycardia followed by asystole, which was unresponsive to resuscitative efforts. The fourth patient died seven days after admission. No mushroom samples were available for identification; however, mycologists reported that samples of *Amanita ocreata* had been found in the area.

Case 97. A 38-year-old woman who was depressed and had domestic problems, was found in a coma with labored respirations in her basement. Near her was an empty container of furniture refinisher (methanol 30%, methylene chloride 30%, toluene 15%, acetone 30%, and isopropanol 5%). She had last been seen well approximately 16 hours before. Initial presentation included a blood pressure of 50/0 mm Hg, respiratory rate of 30/min, pulse of 90/min, and a rectal temperature of 33.9° C. She was acidotic (pH 7.0 after initial sodium bicarbonate). Treatment included IV fluids, dopamine, levarterenol, gastric lavage, ethanol, leucovorin, and peritoneal dialysis. Her pupils remained fixed and dilated, and hypotension persisted. Initial laboratory results revealed: acetone, 2,249 mg/l; methanol, 1,084 mg/l; isopropanol, 518 mg/l; ethanol undetected. Disseminated intravascular coagulopathy (DIC) and acute hemolysis developed, and the patient died approximately 40 hours after presentation.

Case 98. A 5-year-old girl was found dead in the morning by her parents. The child had been playing in an area around their residence on the evening prior to death. Before going to bed, the child had complained of not feeling well and double vision, which the parents attributed to a "cold." Upon autopsy, a large quantity of plant material was found in the stomach that was identified as *Conium maculatum* (poison hemlock).

Case 99. A man in his twenties ingested *Cicuta maculata*

(**water hemlock**) for nourishment in the backwoods Yellowstone National Park. The patient was 90 minutes from a health care facility. One hour after exposure, when the health care facility was initially contacted, he was experiencing seizures every 15–20 minutes and was comatose; pulse was 170/min, and breathing was labored. Cardiopulmonary resuscitation was performed for an hour while the patient had seizures every 10 minutes. No medications were available for administration, and resuscitative efforts were unsuccessful.

Case 101. A 15-month-old boy was found with a 2-ounce bottle of **gun bluing** (unknown amount ingested). The child vomited 10–15 minutes after the ingestion. He was subsequently lavaged and then became stuporous. Activated charcoal was administered, after which the child vomited and aspirated. Thereafter, the child developed a cardiopulmonary arrest and could not be resuscitated. At autopsy, findings consistent with aspiration pneumonitis were found along with the following serum levels: methanol, undetectable; copper, within normal limits; selenium, 440 $\mu\text{g}/\text{dl}$ (normal 10–20 $\mu\text{g}/\text{dl}$). The cause of death was listed as selenium poisoning.

Case 108. A 38-year-old man ingested approximately 30 **acetaminophen/diphenhydramine** capsules two days before admission, as well as several more the following day. He also ingested 6 to 7 **acetaminophen** 500 mg tablets over this period. On admission, the patient was lethargic with a respiration rate of 32/min, a pulse of 105 beats/min, a blood pressure of 148/88 mm Hg, a temperature of 35.9°C, a pH of 6.97, P_{CO_2} of 25 mm Hg, HCO_3^- of 5.7 mmol/l, creatinine of 1.9 mg/dl, prothrombin time of 46.2 seconds (control, 13 seconds), partial prothrombin time of 76.1 seconds (control, 33.6 seconds) a platelet count of 16,000/ mm^3 , a hemoglobin value of 16.3 g/dl, a hematocrit of 51%, and a leukocyte count of 17,700/ mm^3 . The acetaminophen serum concentration approximately 36 hours after ingestion was 68 $\mu\text{g}/\text{ml}$. N-acetylcysteine, sodium bicarbonate, and vitamin K_1 were administered. The patient's condition began to deteriorate. Hematemesis and melena developed. At 24 hours following admission, his liver edge became palpable, and his serum creatinine continued to rise. He became confused and increasingly combative. He was then sedated, and lactulose enemas, neomycin per nasogastric (NG) tube, packed cells, fresh-frozen plasma, and platelets were administered. The patient continued to bleed extensively. On the morning of the third hospital day, the patient became hypotensive requiring dopamine, then experienced a cardiac arrest that was unresponsive to resuscitation. Post-mortem examination revealed multifocal hepatic necrosis, massive retroperitoneal and gastrointestinal hemorrhage, cardiomegaly, and bilateral pulmonary congestion.

Case 130. A 26-year-old man with recent depression presented after several hours of vomiting. Patient rapidly deteriorated from sinus tachycardia to ventricular fibrillation and experienced a seizure. Laboratory results from samples drawn on initial presentation but only available after death were: **salicylate** level, 96 mg/dl; repeat salicylate, 147 mg/dl; normal electrolytes; normal cerebrospinal fluid (CSF); pH, 7.46; P_{CO_2} , 31 mm Hg; and P_{O_2} , 105 mm Hg. The patient died 7.5 hours after presentation, still with no diagnosis. An autopsy showed pulmonary edema and multiorgan hyperemia.

Urine toxicology screen revealed amoxapine. Post-mortem serum salicylate level was 212 mg/dl.

Case 139. A 13-year-old girl ingested 50 mg of **colchicine** 22 hours before presenting with nausea, vomiting, and diarrhea. She was initially alert and oriented. Two days later she became progressively more hypotensive and died, despite therapy with fluids and pressor agents. At autopsy, she had pulmonary edema with pleural effusions and intra-alveolar hemorrhages. Also present were gastrointestinal hemorrhages, ascites, and cerebral edema.

Case 140. A 42-year-old man, known to be a substance abuser, ingested an unknown amount of **colchicine** in a street-prepared gel used for "colchicine-dipping" (the practice of marijuana growers of treating the seeds prior to planting, purportedly to increase THC content of the plant). This occurred approximately 21 hours prior to his death. He presented to ED the same day complaining of nausea, vomiting, and diarrhea. He was sent home after a brief evaluation, but re-admitted later that day with breathing difficulties, pulmonary edema, severe acidosis (pH 6.8) and hypotension, and died eight hours later. Serum colchicine test results were negative, but colchicine was detected in the myocardium on post-mortem examination. The medical examiner listed the cause of death as diffuse myocardial necrosis secondary to acute colchicine intoxication. Involvement of other drugs was not excluded.

Case 141. A 64-year-old man ingested 40 **ibuprofen** (600 mg) tablets over a day and presented with guaiac positive emesis, confusion, and tachycardia (120/min). Blood pressure and respirations were normal. Laboratory studies demonstrated an anion gap and a respiratory alkalosis (sodium, 130, mEq/l; potassium, 4.6 mEq/l; chloride, 98 mEq/l; CO_2 , 13 mEq/l; P_{CO_2} , 18 mm Hg; pH, 7.47). Toxicologic analysis revealed an ibuprofen level of 15.8 $\mu\text{g}/\text{ml}$ (blood) and no salicylates were present. Treatment included gastric lavage, activated charcoal, and magnesium citrate. The next day, the patient had a distended colon and was experiencing renal failure (BUN 112 mg/dl, creatinine 3.2 mg/dl, potassium 3.6 mEq/l). Septic shock developed. The patient died three days after the ingestion.

Case 142. A 6-year-old child presented to ED with a laceration of the lip and was given a combination of **meperidine 30 mg, promethazine 15 mg, and chlorpromazine 15 mg**. Ten minutes after injection, the vital signs were reported as being within normal limits. Later, the child's lip was injected with 40 mg **lidocaine with epinephrine**. Ninety minutes after the initial injection and during the suturing procedure, the child was found to be in cardiac arrest with asystole. Resuscitative efforts were unsuccessful.

Case 155. A 2-year-old girl was found comatose and cyanotic, and was transported to an ED where CPR was performed. Initially, there was no history of an ingestion, but it was later discovered that the child was found near empty bottles of **erythromycin** and **lidocaine 2% viscous**. Patient was placed on a ventilator and required dopamine and dobutamine. Lidocaine blood concentration four hours after ingestion was 4.1 $\mu\text{g}/\text{ml}$. Methemoglobin concentration was 1.1%. Twenty four hours after admission the patient was determined to have a necrotic abdomen and brain death. It was discovered that the child had been receiving lidocaine viscous for mouth ulcers over a period of 4 days (swallowing

each dose.) The child died approximately 27 hours after initial presentation.

Case 170. A 24-year-old woman ingested 5 g of **amitriptyline** and 5 g of **doxepin** and was found unconscious and seizing five hours later. Evaluation in the ED revealed a blood pressure of 60 mm Hg systolic (Doppler), QRS interval greater than 0.3 seconds, continuous tonic/clonic seizures, and a pH of 6.98. Treatment included intubation with mechanical ventilation, cardiac monitoring, sodium bicarbonate, dopamine, gastric lavage, activated charcoal, and magnesium citrate. Despite attempts to control seizures with 70–80 mg diazepam, 8 mg physostigmine, 1 g phenytoin, and 400 mg phenobarbital, they never completely subsided. Patient's acidosis was sufficiently corrected; however, maximum blood pressure attained was only 90 mm Hg. Temperature rose to 42.2° C rectally, with no response to external cooling, aspirin, or acetaminophen. Initial catheterization yielded 45 ml of bloody urine but no further urinary output. The patient died 19.5 hours after admission. Urinary drug screen revealed cannabinoids, while amitriptyline and aspirin were found in the gastric contents.

Case 182. An 18-year-old woman ingested 2.5 g of **amoxapine**. She presented 3.5 hours later with lethargy and a pulse of 140–150/min. The patient was lavaged, and activated charcoal was administered. The patient then began experiencing seizures and was unresponsive to diazepam, phenobarbital, and phenytoin. Status epilepticus persisted for approximately seven hours. Temperature rose to 42.1° C. A brief episode of ventricular tachycardia occurred during placement of a CVP line. The patient was declared brain-dead on fourth hospital day.

Case 186. A 60-year-old woman was reported to have ingested unknown amounts of **amoxapine**, **thiothixene**, and **aspirin**. She presented with seizures and developed status epilepticus. Treatment included diazepam, physostigmine, activated charcoal, magnesium citrate, intubation, phenobarbital, and phenytoin. There were no ECG abnormalities until, following prolonged seizure activity, the patient developed bradycardia and experienced a cardiac arrest. Following resuscitation the patient was decerebrate, febrile (42.2° C), and hypotensive requiring a dopamine drip. An EEG showed no activity. The patient died the following day.

Case 198. A 27-year-old man ingested 10 **doxepin** capsules and developed coma, seizures, widened QRS complex and tachycardia. Blood pressure was 85 mm Hg systolic, and pH was normal. The patient was intubated, lavaged, and given activated charcoal, diazepam, physostigmine, dopamine, levarterenol, and sodium bicarbonate. Phenytoin, phenobarbital, and diazepam were administered in attempt to treat seizures. Core temperature increased to 41.7° C and was brought down to 37.3° C with a cooling blanket. The patient was paralyzed with pavulon. Urine was brick red. The patient continued to deteriorate over next two days with supportive care until death. Autopsy confirmed doxepin overdose.

Case 203. An 18-month-old boy ingested a "whole bottle" of **imipramine** (50 mg tablets) approximately 30 minutes before arrival in the ED. While gastric lavage was being attempted, the patient had a seizure and cardiac ar-

rest. Lorazepam, dopamine, sodium bicarbonate, and antiarrhythmics were administered, and the child was stabilized. He was comatose with a normal sinus rhythm, but remained hypotensive. Approximately 5.5 hours later, he developed a widened QRS complex, had a blood pressure of 60/40 mm Hg on dopamine, and had no urinary output. Sodium bicarbonate and physostigmine were administered. The patient continued to deteriorate, developing seizures and arrhythmias that did not respond to treatment, and died 27.5 hours after ingestion.

Case 217. A 55-year-old woman presented with a **lithium** concentration of 4.88 mEq/l following treatment for a bipolar affective disorder. She presented in the ED awake but uncommunicative with clonus and positive Babinski reflexes. Her blood pressure was 140/106 mm Hg, pulse was 106/min, respirations were 16/min, repeat lithium level was 4.6 mEq/l, leukocyte count was 24,600/mm³, and BUN was 41 mg/dl. She had a urinary tract infection, and her urinary screen was positive for amoxapine and ethanamate. Concomitant acute and chronic overdose were assumed. Serum lithium was reduced to 0.6 mEq/l in two hours by dialysis. Further treatment included urinary alkalization with sodium bicarbonate, mannitol, acetazolamide, gentamicin, and blood transfusions. While some increase in kidney function was seen, the mental status never improved. The patient died on the sixth hospital day.

Case 219. A 20-year-old woman taking **lithium** 600 mg tid and **haloperidol** 10 mg qid collapsed in the psychiatric clinic, and was comatose and dehydrated. Her blood pressure was 90–100 mm Hg systolic, pulse was 116/min, Na was 172 mEq/l, K was 5.4 mEq/l, BUN was 12 mg/dl, creatinine was 7.2 mg/dl, and lithium was 3.7 mEq/l. No decontamination was done initially. The patient received fluids, but no improvement was observed. Hemodialysis was performed on the third hospital day. The patient remained in critical and unstable condition. She suffered cardiac arrest on the third day and was resuscitated. Dopamine was required to maintain blood pressure. The patient died on the fourth hospital day.

Case 220. A 27-year-old man ingested approximately 90 **loxapine** capsules and presented a few hours later alert, oriented, anxious, with slurred speech and extrapyramidal symptoms. He was given diphenhydramine, then had a grand mal seizure 10 minutes after arrival in the ED and was comatose afterwards. Gastric lavage was performed. His condition continued to deteriorate; he became acidotic and was given sodium bicarbonate, then suffered a cardiac arrest 1.5 hours after presentation and could not be resuscitated. Blood was positive for phenobarbital, and urine was positive for phenobarbital and diphenhydramine. An autopsy confirmed loxapine overdose. Postmortem loxapine blood level was 0.42 mg/dl and the stomach and the bile also contained loxapine.

Case 225. A 27-year-old man was comatose and hypotensive when he presented approximately eight hours after ingestion of an unknown amount of **phenelzine**. Pupils were fixed and dilated, and anuria was evident. Patient was initially hyperthermic (42.2° C), but then became hypothermic (32.2° C). Patient was lavaged, but no charcoal was given.

Blood pressure was maintained with vasopressors, and hemodialysis was performed. The patient's condition continued to deteriorate. Three cardiac arrests occurred, and the patient died on the third hospital day. An autopsy confirmed phenelzine overdose.

Case 244. An 88-year-old woman ingested digoxin (unknown amount, unknown time). Patient was lethargic and in atrial fibrillation with occasional PVCs. No gastrointestinal decontamination was done. Heart rate was 150–160 beats/min. Ventricular fibrillation developed, and the patient died approximately two hours after admission to hospital. Digoxin level was 29 ng/ml.

Case 245. A 12-month-old girl ingested nifedipine (unknown amount, unknown time). Patient was hypotensive on presentation with a heart rate of 150/min and depressed respirations. Patient became lethargic within 7 minutes of arrival and had a cardiorespiratory arrest. Resuscitation included intubation, CPR, and sodium bicarbonate, epinephrine, calcium gluconate, and transthoracic pacing, but was unsuccessful.

Case 247. An 18-year-old woman arrived at the ED in seizures with a pulse of 50/min and a stable blood pressure after ingesting 50–60 propranolol 80 mg tablets. Initial treatment included gastric lavage, activated charcoal, and cathartics. The patient then went into cardiorespiratory arrest and was revived with sodium bicarbonate, epinephrine, and cardioversion. The patient was admitted to the ICU on a glucagon drip with a pulse of 80–90/min. Respirations were poor with bronchospasm, pupils were fixed and dilated, and the patient remained unresponsive. Aminophylline was administered. Twelve hours after initial ED presentation blood pressure dropped to 60 mm Hg, pulse rose to 120/min, and dopamine was administered. Eighteen hours later, on the second hospital day, the patient had a cardiorespiratory arrest and died.

Case 257. A 3-year-old girl ingested an undetermined number of ferrous sulfate 300 mg tablets. Three hours after ingestion, the initial serum iron level was 3,805 µg/dl and the child responded only to deep pain. Blood pressure was normal and urinary output was good. The child was lavaged with sodium bicarbonate and received activated charcoal. An exchange transfusion was performed. Within eight hours the iron level decreased to 856 µg/dl, and the child was treated with intravenous deferoxamine. At approximately 21 hours after the ingestion, the patient became hypovolemic secondary to gastrointestinal bleeding. At 26 hours after ingestion, the child suffered two cardiac arrests. The child died two days after the ingestion.

Case 258. A 20-month-old girl ingested 4 ounces of phenylpropanolamine/chlorpheniramine syrup. The babysitter had no ipecac syrup so gave sodium bicarbonate. Serum sodium concentration on admission was 184 mEq/l. The patient's temperature was 42.2° C. Two hours later, the temperature was 41.1° C on a cooling blanket, and the patient was in status epilepticus. Cardiopulmonary arrest occurred 14 hours after the ingestion. Resuscitation was attempted for two hours.

Case 259. A 13-year-old girl arrived in the ED in cardiopulmonary arrest. She had been found unresponsive at

home after ingesting loperamide. Resuscitative efforts were unsuccessful. Post-mortem examination revealed acute pulmonary edema and a serum phenobarbital concentration of 65 µg/ml.

Case 260. A 15-year-old boy ingested approximately 80 cyclobenzaprine tablets and presented in coma unresponsive to any stimuli, with hypothermia, tachycardia, and dilated pupils 8 to 12 hours later. Initial therapy included lavage, activated charcoal, and cathartics. The patient stabilized but continued to be unresponsive. He became agitated after a test dose of physostigmine (2 mg). At approximately 20 hours after ingestion, the patient developed severe respiratory distress syndrome and pulmonary edema. Cardiac arrest ensued and resuscitation was successfully performed. He died on the eighth hospital day. Final diagnosis was death caused by massive cerebral edema and anoxic brainstem damage secondary to cyclobenzaprine overdose.

Case 265. A 9-month-old girl ingested three to five chlorpromazine 100 mg tablets and presented with lethargy, becoming progressively unresponsive an hour later. Treatment included gastric lavage and activated charcoal. No radio-opaque tablets were observed on a radiograph. The child's condition worsened. Seizure activity was treated with phenytoin, and the child had to be intubated. The patient suffered a cardiorespiratory arrest but was resuscitated and stabilized. Her condition continued to deteriorate, and she remained unresponsive. Dopamine was infused to maintain blood pressure. The patient died 20 hours after ingestion. An autopsy confirmed cause of death.

Case 274. A 25-year-old woman presented 19 hours after ingesting 30 haloperidol (20 mg) tablets alert and oriented with blood pressure 118/90 mm Hg and a pulse of 88/min. She had vomited several times prior to presentation. Treatment included activated charcoal in sorbitol. The patient was admitted to a psychiatric unit following "medical clearance." Twenty-five hours after ingestion, patient had no anticholinergic symptoms and QRS complex was not wide. The patient died during the night. The medical examiner reported death as "accidental-idiosyncratic reaction to medication."

Case 285. A 48-year-old woman with a history of a myocardial infarction nine months before, was alert but lethargic when admitted to the intensive care unit after an ingestion of unknown drugs. Initial therapy included lavage and activated charcoal. Several runs of ventricular tachycardia were observed, which responded to lidocaine, procainamide, or cardioversion, with subsequent maintenance of normal sinus rhythm on phenytoin and lidocaine. The initial serum thioridazine level was 5,000 ng/ml (therapeutic, 250–1250 ng/ml). The patient died two days after admission because of refractory ventricular tachycardia.

Case 291. A 21-year-old man ingested an unknown quantity of cocaine 30 minutes before admission in an attempt to hide the substance from police. Upon arrival in the ED, the patient was in full cardiorespiratory arrest, resuscitated, and placed on a ventilator. The patient remained comatose with fixed and dilated pupils. Gastrointestinal decontamination with gastric lavage, activated charcoal and cathartic was performed. Over the next 12 hours, the patient's body tem-

perature increased to 42.8° C, and he began suffering unremitting tonic-clonic seizures unresponsive to diazepam and phenytoin. The patient then developed DIC, began bleeding uncontrollably, and required fresh frozen plasma and whole blood. Toxicology screen revealed cocaine 0.2 mg/l, lidocaine 37 mg/l, phenytoin 4.4 mg/l, and morphine 130 µg/l. The patient died on the second hospital day. Post-mortem examination confirmed multiple drug overdose.

Case 294. A 25-year-old man ingested 3 to 5 g of cocaine approximately 3 to 4 hours before presentation. The patient was comatose and on a ventilator with a blood pressure of 60 mm Hg systolic and ventricular fibrillation. A Swan-Ganz catheter was placed and dopamine and norepinephrine therapy was begun. By the second hospital day the patient was experiencing renal failure and undergoing peritoneal dialysis. He remained unresponsive and died on the fourth hospital day.

Case 297. A 29-year-old man presented to an ED in cardiac arrest an hour after ingesting a 5-g bag of cocaine in a suicide attempt. Six hours after resuscitation, the patient was on a ventilator, was unresponsive to pain, his pupils were fixed and dilated, and he was hyperthermic (40.1 ° C) and had seizures poorly controlled by diazepam. Blood pressure at this time was 120/80 mm Hg on dopamine. Activated charcoal was given. Serum cocaine level was 27.5 mg/ml. Sodium pentothal by continuous infusion was utilized successfully to control seizure activity. The patient's condition continued to deteriorate, and an EEG two days after ingestion showed brain death. The patient died six days after admission. Post-mortem report confirms cause of death as mixed drug ingestion and bronchopneumonia. Urine was positive for cocaine, phencyclidine, and marijuana.

Case 316. An 18-year-old woman ingested a street drug MDMA (Ecstasy) at a night club. She was brought to the ED in cardiopulmonary arrest. Cardiopulmonary resuscitation

was performed, but the patient could not be resuscitated. On examination, there was evidence of massive pulmonary edema. A small amount of ethanol and MDMA were present on post-mortem examination.

Case 324. An elderly, debilitated man was inadvertently administered 30 ml hexachlorophene in 90 ml water via nasogastric tube. He vomited spontaneously. Respiratory distress was not observed. The patient was suctioned immediately but received no other therapy. He died within 10 minutes of the exposure. Post-mortem examination revealed signs of aspiration; hexachlorophene was not detected in serum.

Case 325. A 30-year-old man ingested approximately 2 ounces of oil of wintergreen 12 hours before admission. He presented with a respiratory rate of 40/min, a P_{O₂} of 80 mm Hg, a P_{CO₂} of 10 mm Hg, and a pH of 7.4. Initial salicylate level was 77 mg/dl approximately 12 hours after ingestion. The patient was breathing on his own on admission. Diagnosis was ARDS. Respiratory status deteriorated within 12 hours after admission. The patient was given sodium bicarbonate and intubated as his pH fell to 7.19. Dialysis was thought to be too risky at that time because of the critical condition of patient. Approximately 12 hours after admission, the patient developed bradycardia and hypotension and died.

Case 326. A 37-year-old woman ingested one teaspoon of oil of wintergreen four hours before admission to "treat a cold." Upon presentation, the patient was alert and oriented, with a history of vomiting, a respiratory rate of 20/min, and a blood pressure of 138/80 mm Hg. Salicylate levels were 80 mg/dl (six hours after ingestion) and 128 mg/dl (14 hours after ingestion). Treatment included diuresis and sodium bicarbonate. Coma and hyperventilation developed. The patient died approximately 16 hours after the ingestion.