Toxicology

A special contribution from the American Association of Poison Control Centers.

1995 Annual Report of the American Association of Poison Control Centers Toxic Exposure Surveillance System

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Toxic Exposure Surveillance System (TESS) data are compiled by the American Association of Poison Control Centers (AAPCC) in cooperation with the majority of US poison centers. These data are used to identify hazards early, focus prevention education, guide clinical research, and direct training. TESS data have prompted product reformulations, repackaging, recalls, and bans; they are used to support regulatory actions; and they form the basis of postmarketing surveillance of newly released drugs and products.

From its inception in 1983, TESS has grown dramatically, with increases in the number of participating poison centers, population served by those centers, and reported human exposures (Table 1).[1-12]

The cumulative AAPCC database now contains 18 million human poison exposure cases. This report includes 2,023,089 human exposure cases reported by 67 participating poison centers during 1995, an increase of 5% compared to 1994 poisoning reports.

CHARACTERIZATION OF PARTICIPATING CENTERS

Of the 67 reporting centers, 62 submitted data for the entire year. Forty-three of the 67 participating centers were certified as regional poison centers by the AAPCC in 1995. Annual center call volumes (human exposure cases only) ranged from 3,131 to 92,931 (mean, 31,376) for centers participating for the entire year. Penetrance, calculated by

Centers participating in this report include Children's Hospital of Alabama Regional Poison Control Center, Birmingham, AL; Alabama Poison Center, Tuscaloosa, AL; Arizona Poison and Drug Information Center, Tucson, AZ; Samaritan Regional Poison Center, Phoenix, AZ; University of California Davis Medical Center Regional Poison Control Center, Sacramento, CA; San Diego Regional Poison Center, San Diego, CA; Santa Clara Valley Medical Center Regional Poison Center, San Jose, CA; San Francisco Bay Area Regional Poison Control Center, San Francisco, CA; Central California Regional Poison Control Center, Fresno, CA; Rocky Mountain Poison and Drug Center, Denver, CO; Connecticut Poison Control Center, Farmington, CT; National Capital Poison Center, Washington, DC; Florida Poison Information Center and Toxicology Resource Center, Tampa, FL; Florida Poison Information Center, Jacksonville, FL; Florida Poison Information Center, Miami, FL; Georgia Poison Control Center, Atlanta, GA; Idaho Poison Center, Boise, ID; Indiana Poison Center, Indianapolis, IN; St. Luke's Poison Center, Sioux City, IA; Mid-America Poison Control Center, Kansas City, KS; Kentucky Regional Poison Center of Kosair Children's Hospital, Louisville, KY; Louisiana Drug and Poison Information Center, Monroe, LA; Maryland Poison Center, Baltimore, MD; Massachusetts Poison Control System, Boston, MA; Children's Hospital of Michigan Poison Control Center, Detroit, MI; Blodgett Regional Poison Center, Grand Rapids, MI; Hennepin Regional Poison Center, Minneapolis, MN; Minnesota Regional Poison Center, St. Paul, MN; Cardinal Glennon Children's Hospital Regional Poison Center, St. Louis, MO; The Poison Center, Omaha, NE; New Hampshire Poison Information Center, Lebanon, NH; New Jersey Poison Information and Education System, Newark, NJ; New Mexico Poison and Drug Information Center, Albuquerque, NM; New York City Poison Control Center, New York, NY; Hudson Valley Regional Poison Center, North Tarrytown, NY; Long Island Regional Poison Control Center, Mineola, NY; Finger Lakes Regional Poison Center, Rochester, NY; Central New York Poison Control Center, Syracuse, NY; Western New York Regional Poison Control Center, Buffalo; Carolinas Poison Center, Charlotte, NC; North Dakota Poison Information Center, Fargo, ND; Akron Regional Poison Center, Akron, OH; Cincinnati Drug and Poison Information Center, Cincinnati, OH; Central Ohio Poison Center, Columbus, OH; Greater Cleveland Poison Control Center, Cleveland, OH; Mahoning Valley Poison Center, Youngstown, OH; Oregon Poison Center, Portland, OR; Pittsburgh Poison Center, Pittsburgh, PA; The Poison Control Center, Philadelphia, PA; Central Pennsylvania Poison Center, Hershey, PA; Rhode Island Poison Center, Providence, RI; McKennan Poison Control Center, Sioux Falls, SD; Middle Tennessee Regional Poison and Clinical Toxicology Center, Nashville, TN; Southern Poison Center, Memphis, TN; Central Texas Poison Center, Temple, TX; North Texas Poison Center, Dallas, TX; Southeast Texas Poison Center, Galveston, TX; Texas Poison Center Network at Amarillo, Amarillo, TX; West Texas Regional Poison Center, El Paso, TX; South Texas Poison Center, San Antonio, TX; Utah Poison Control Center, Salt Lake City, UT; Virginia Poison Center, Richmond, VA; Blue Ridge Poison Center, Charlottesville, VA; Washington Poison Center, Seattle, WA; West Virginia Poison Center, Charleston, WV; University of Wisconsin Hospital Regional Poison Center, Madison, WI; Poison Center of Eastern Wisconsin, Milwaukee, WI.

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TABLE 1. Growth of the AAPCC Toxic Exposure Surveillance System

Year	No. of Participating Centers	Population Served (Millions)	Human Exposures Reported	Exposures/ Thousand Population
1983	16	43.1	251,012	5.8
1984	47	99.8	730,224	7.3
1985	56	113.6	900,513	7.9
1986	57	132.1	1,098,894	8.3
1987	63	137.5	1,166,940	8.5
1988	64	155.7	1,368,748	8.8
1989	70	182.4	1,581,540	8.7
1990	72	191.7	1,713,462	8.9
1991	73	200.7	1,837,939	9.2
1992	68	196.7	1,864,188	9.5
1993	64	181.3	1,751,476	9.7
1994	65	215.9	1,926,438	8.9
1995	67	218.5	2,023,089	9.3
Total			18,214,463	

state or portion of the state served, ranged from 1.1 to 18.2 per 1,000 with a mean of 9.3 reported exposures per 1,000 population. Penetrance is defined as the number of human poison exposure cases reported per 1,000 individuals in the population served.

A total population of 218.5 million was served by the participating centers, including 38 entire states, portions of 6 states, and the District of Columbia (Figure 1). Noting the 262.8 million 1995 United States population, the data presented represent an estimated 83% of the human poison exposures that precipitated poison center contacts in the US during 1995. Extrapolating from the 2,023,089 human poison exposures reported in this database, 2.4 million human poison exposures are estimated to have been reported to all US poison centers in 1995. However, extrapolations from the number of reported poisonings to the number of actual poisonings occurring annually in the US 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 18.2 poisonings per 1,000 population reported for one state, 4.8 million poisonings would have been reported to poison centers in 1995.

TABLE 2. Site of Caller and Site of Exposure, Human Poison Exposure Cases

	Site of Caller (%)	Site of Exposure (%)
Residence		
Own	77.3	86.8
Other	2.4	3.6
Workplace	1.9	3.0
Health care facility	13.0	0.4
School	0.6	1.3
Restaurant/food service	0.1	0.7
Public area	0.6	1.4
Other	3.8	1.1
Unknown	0.4	1.8

The data do not directly identify a trend in the overall incidence of poisonings in the US because of changing center participation from year to year and changes in center use. An analysis of data from 55 centers that participated for the entirety of both 1994 and 1995 shows a 5.9% increase in reported poison exposures from 1994 to 1995 within the regions served by these 55 centers.

REVIEW OF THE DATA

Of the 2,023,089 human exposures reported in 1995, 90.4% occurred at a residence (Table 2). In 4.7% of cases (95,204 cases) multiple patients were implicated in the poison exposure episode (eg, siblings "shared" a household product, multiple patients inhaled vapors at a hazardous materials spill). Two unlikely sites of poisonings, health care facilities and schools, accounted for 7,919 (0.4%) and 26,186 (1.3%) poison exposures, respectively. Poison center peak call volumes were noted from 4 to 10 PM, although call

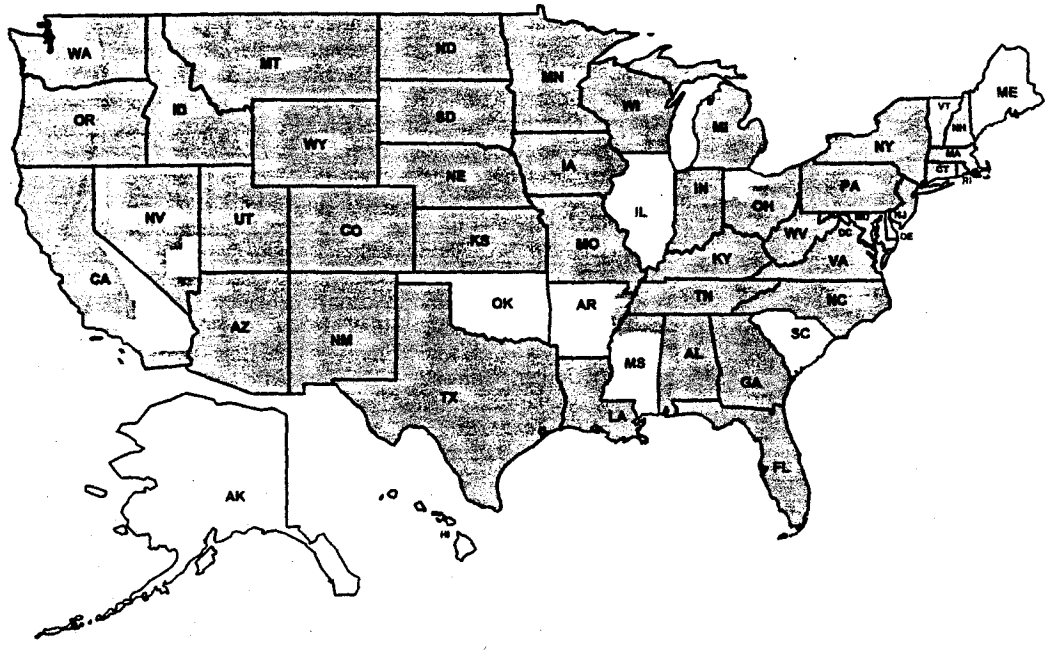

FIGURE 1. Sixty-seven poison centers participated in the Toxic Exposure Surveillance System in 1995. The shaded areas denote regions served by reporting centers.

TABLE 3. Age and Gender Distribution of Human Poison Exposure Cases

	Male		Female		Unknown		Total		Cumulative Total	
Age (yr)	No.	%	No.	%	No.	%	No.	%	No.	%
<1	65,338	51.9	59,960	47.6	589	0.5	125,887	6.2	125,887	6.2
1	168,585	52.5	151,848	47.3	848	0.3	321,281	15.9	447,168	22.1
2	184,284	53.6	158,512	46.1	818	0.2	343,614	17.0	790,782	39.1
3	86,760	54.8	71,190	44.9	458	0.3	158,408	7.8	949,190	46.9
4	41,636	55.6	33,001	44.1	267	0.4	74,904	3.7	1,024,094	50.6
5	24,141	55.6	19,138	44.0	176	0.4	43,455	2.1	1,067,549	52.8
Unknown child < 5	1,332	45.2	1,045	35.4	571	19.4	2,948	0.1	1,070,497	52.9
6-12	76,399	55.9	59,397	43.4	915	0.7	136,711	6.8	1,207,208	59.7
13-19	63,731	42.1	87,129	57.5	588	0.4	151,448	7.5	1,358,656	67.2
Unknown child	1,628	41.7	1,430	36.7	843	21.6	3,901	0.2	1,362,557	67.4
Total children (<20)	713,834	52.4	642,650	47.2	6,073	0.4	1,362,557	67.4	1,362,557	67.4
20-29	74,906	44.0	95,014	55.9	194	0.1	170,114	8.4	1,532,671	75.8
30-39	68,747	42.3	93,655	57.6	139	0.1	162,541	8.0	1,695,212	83.8
40-49	40,017	40.7	58,237	59.2	68	0.1	98,322	4.9	1,793,534	88.7
50-59	17,724	38.5	28,291	61.4	39	0.1	46,054	2.3	1,839,588	90.9
60-69	10,552	36.4	18,436	63.6	21	0.1	29,009	1.4	1,868,597	92.4
70-79	7,415	34.1	14,316	65.8	29	0.1	21,760	1.1	1,890,357	93.4
80-89	3,408	29.8	8,009	70.1	13	0.1	11,430	0.6	1,901,787	94.0
90-99	545	26.5	1,510	73.5	0	0.0	2,055	0.1	1,903,842	94.1
Unknown adult	41,851	39.4	62,032	58.5	2,237	2.1	106,120	5.2	2,009,962	99.4
Total adults	265,165	41.0	379,500	58.6	2,740	0.4	647,405	32.0	2,009,962	99.4
Unknown age	4,339	33.1	5,892	44.9	2,896	22.1	13,127	0.6	2,023,089	100.0
Total	983,338	48.6	1,028,042	50.8	11,709	0.6	2,023,089	100.0	2,023,089	100.0

frequency remained consistently high between 8 AM and midnight, with 91% of calls logged during this 16-hour period.

The age and gender distribution of human poison exposure victims is outlined in Table 3. Children younger than 3 years of age were involved in 39% of cases, and 53% occurred in children younger than 6 years. A male predominance is found among poison exposure victims younger than 13 years of age, but the gender distribution is reversed in teenagers and adults. Although the gender distribution was nearly equal for unintentional exposures, 60.9% of intentional exposures occurred in females, as did 65.1% of adverse reactions. Of all poison exposures captured, 6,484 occurred in pregnant women. Of those with known pregnancy duration, 30% occurred in the first trimester, 39% in the second trimester, and 31% in the third trimester.

Table 4 presents the age and gender distribution for the 724 reported fatalities. Although responsible for the majority of poisoning reports, children younger than 6 years of age comprised just 2.8% (20) of the fatalities. Sixty-one percent of poisoning fatalities occurred in 20- to 49-year-old individuals.

A single substance was implicated in 92.8% of reports, and 1.8% of patients were exposed to more than two possibly poisonous drugs or products (Table 5). The overwhelming majority of human exposures were acute (94.0%) compared to only 54.8% of poison-related fatal exposures.

TABLE 4. Distribution of Age and Gender for 724 Fatalities

Age (yr)	Male	Female	Unknown	Total	%	Cumulative Total	Cumulative %
<1	3	5	0	8	1.1	8	1.1
1	5	2	0	7	1.0	15	2.1
2	2	1	0	3	0.4	18	2.5
3	2	0	0	2	0.3	20	2.8
4	0	0	0	0	0.0	20	2.8
5	0	0	0	0	0.0	20	2.8
6-12	6	0	0	6	0.8	26	3.6
13-19	21	19	0	40	5.5	66	9.1
20-29	69	40	0	109	15.1	175	24.2
30-39	106	84	1	191	26.4	366	50.6
40-49	79	63	0	142	19.6	508	70.2
50-59	34	34	0	68	9.4	576	79.6
60-69	24	28	0	52	7.2	628	86.7
70-79	21	20	0	41	5.7	669	92.4
80-89	12	23	0	35	4.8	704	97.2
90-99	3	4	0	7	1.0	711	98.2
Unknown adult	5	8	0	13	1.8	724	100.0
Total	392	331	1	724	100.0	724	100.0

TABLE 5. Number of Substances Involved in Human Poison Exposure Cases

No. of Substances	No. of Cases	% of Cases
1	1,878,238	92.8
2	109,145	5.4
3	20,215	1.0
4	7,713	0.4
5	3,081	0.2
6	1,315	0.1
7	638	0.0
8	311	0.0
≥9	2,433	0.1
Total	2,023,089	100.0

TABLE 6. Reason for Human Poison Exposure Cases

Reason	No.	%
Unintentional		
General	1,339,318	66.2
Therapeutic error	110,038	5.4
Bite/sting	77,368	3.8
Misuse	58,559	2.9
Environmental	54,378	2.7
Occupational	45,989	2.3
Food poisoning	45,505	2.3
Unknown	3,260	0.2
Total	1,734,415	85.7
Intentional		
Suicidal	160,478	7.9
Misuse	30,060	1.5
Abuse	26,416	1.3
Unknown	12,545	0.6
Total	229,499	11.3
Other		
Malicious	5,913	0.3
Contaminant/tampering	5,218	0.3
Total	11,131	0.6
Adverse Reaction		
Drug	28,296	1.4
Other	9,908	0.5
Food	4,491	0.2
Total	42,695	2.1
Unknown	5,349	0.3
Total	2,023,089	100.0

Chronic exposures comprised 2.3% of all poison exposure reports, and acute-on-chronic exposures comprised 3.1%. (Chronic exposures were defined as continuous or repeated exposures occurring in a period exceeding 8 hours.)

Reason for exposure was coded according to the following definitions: *Unintentional general*: All unintentional exposures not specifically defined below. Most unintentional exposures in children are captured here. *Environmental*: Any passive, nonoccupational exposure that results from contamination of air, water, or soil. Environmental exposures are usually caused by man-made contaminants. *Occupational*: An exposure that occurs as a direct result of the person being on the job or in the workplace. *Therapeutic error*: An unintentional deviation from a proper therapeutic regimen that results in the wrong dose, incorrect route of administration, administration to the wrong person, or administration of the wrong substance. Only exposures to medications or products substituted for medications are included. Drug interactions resulting from unintentional administration of drugs or foods that are known to interact are also included. *Unintentional misuse*: Unintentional improper or incorrect use of a nonpharmaceutical substance. Unintentional misuse differs from intentional misuse in that the exposure was unplanned or not foreseen by the patient. *Bite/sting*: All animal bites and stings, with or without envenomation, are included. *Food poisoning*: Suspected or confirmed food poisoning; ingestion of food contaminated with microorganisms is included. *Unintentional unknown*: An exposure determined to be unintentional but the exact reason is unknown. *Suspected suicidal*: An exposure resulting from the inappropriate use of a substance for reasons that are suspected to be self destructive or manipulative. *Intentional misuse*: An exposure resulting from the intentional improper or incorrect use of a substance for reasons *other* than the pursuit of a psychotropic effect. *Intentional abuse*: An exposure resulting from the intentional improper or incorrect use of a substance by a victim who was likely attempting to achieve a euphoric or psychotropic effect. All recreational uses of substances for any effect are included. *Intentional unknown*: An exposure that is determined to be intentional but the specific motive is unknown. *Contaminant/tampering*: The patient is an unintentional victim of a substance that has been adulterated (either maliciously or unintentionally) by the introduction of an undesirable substance. *Malicious*: This category is used to capture patients who are victims of another person's intent to harm them. *Adverse reaction*: An adverse event occurring with normal, prescribed, labeled, or recommended use of a product, as opposed to overdose, misuse, or abuse. Included are cases with an unwanted effect caused by an allergic, hypersensitive, or idiosyncratic response to active ingredients, inactive ingredients, or excipients. Concomitant use of a contraindicated medication or food is excluded and coded instead as a therapeutic error.

The vast majority (85.7%) of poison exposures were unintentional; suicidal intent was present in 7.9% of cases (Table 6). Therapeutic errors comprised 5.4% of exposures (110,038 cases), with unintentional nonpharmaceutical product misuse comprising another 2.9% of exposures (58,559 cases). Unintentional poisonings outnumbered intentional poisonings in all age groups (Table 7). In contrast, of the 724 human poisoning fatalities reported, 82% of adult deaths (older than 19 years of age) were intentional (Table 8).

Ingestions accounted for 73.6% of exposure routes (Table 9), followed in frequency by dermal, inhalation, and ocular exposures, bites and stings, and parenteral and aspiration exposures. For the 724 fatalities, ingestion and inhalation were the predominant exposure routes.

Clinical effects (signs, symptoms, or laboratory abnormali-

TABLE 7. Distribution of Reason for Exposure by Age

	<6 Years		6-12 Years		13-19 Years		>19 Years		Unknown		Total	
Reason	No.	Row %	No.	Row %	No.	Row %	No.	Row %	No.	Row %	No.	Col %
Unintentional	1,064,532	61.4	124,777	7.2	77,042	4.4	456,139	26.3	11,925	0.7	1,734,415	85.7
Intentional	685	0.3	7,419	3.2	68,211	29.7	149,178	65.0	4,006	1.7	229,499	11.3
Other	927	8.3	1,585	14.2	2,032	18.3	6,369	57.2	218	2.0	11,131	0.6
Adverse Reaction	3,847	9.0	2,427	5.7	3,396	8.0	32,500	76.1	525	1.2	42,695	2.1
Unknown	506	9.5	503	9.4	767	14.3	3,219	60.2	354	6.6	5,349	0.3
Total	1,070,497	52.9	136,711	6.8	151,448	7.5	647,405	32.0	17,028	0.8	2,023,089	100.0

TABLE 8. Distribution of Reason for Exposure and Age for 724 Fatalities

Reason	<6 Years	6-12 Years	13-19 Years	>19 Years	Unknown	Total
Unintentional						
General	10	0	0	2	0	12
Environmental	3	1	0	23	0	27
Occupational	0	0	0	3	0	3
Therapeutic error	1	0	0	33	0	34
Misuse	1	0	0	3	0	4
Bite/sting	0	0	0	3	0	3
Food poisoning	0	0	0	0	0	0
Unknown	0	0	0	1	0	1
Total	15	1	0	68	0	84
Intentional						
Suicide	0	2	19	384	0	405
Misuse	1	0	2	25	0	28
Abuse	1	2	13	95	0	111
Unknown	0	0	3	34	0	37
Total	2	4	37	538	0	581
Other	0	0	0	0	0	0
Adverse Reaction	1	1	1	11	0	14
Unknown	2	0	2	41	0	45
Total	20	6	40	658	0	724

ties) were coded in 31.9% of cases (18.3% had one effect, 8.0% had two effects, 3.5% had three effects, 1.4% had four effects, 0.4% had five effects, and 0.3% had more than five effects). Of 1,412,605 clinical effects coded, 77.9% were deemed related, 7.0% were considered not related, and 15.1% were coded as "unknown if related."

The majority of cases reported to poison centers were managed in a non–health care facility (72.5%), usually at the site of exposure, the patient's own home (Table 10). Treatment in a health care facility was rendered in 23.6% of cases and recommended in another 2.3% of patients who refused the referral. Of cases managed in a health care facility, 58.6% were treated and released without admission, 12.6% were admitted for critical care, and 7.2% were admitted for noncritical care. When treatment was provided

TABLE 9. Distribution of Route of Exposure for Human Poison Exposure Cases and 724 Fatalities

	All Exposure Cases		Fatal Exposure Cases	
Route	No.	%	No.	%
Ingestion	1,564,859	73.6	590	75.5
Dermal	173,725	8.2	5	0.6
Inhalation	151,407	7.1	95	12.2
Ocular	133,061	6.3	0	0.0
Bites and stings	80,810	3.8	3	0.4
Parenteral	6,861	0.3	43	5.5
Aspiration	2,432	0.1	7	9.0
Other	5,840	0.3	4	0.5
Unknown	7,956	0.4	34	4.4
Total	2,126,951	100.0	781	100.0

NOTE: Multiple routes of exposure were observed in many poison exposure victims. Percentage is based on the total number of exposure routes (2,126,951 for all patients, 781 for fatal cases) rather than the total number of human exposures (2,023,089) or fatalities (724).

TABLE 10. Management Site of Human Poison Exposure Cases

Site	No.	%
Managed on-site, non-health care facility	1,467,630	72.5
Managed in health care facility		
Treated and released	279,667	13.8
Admitted to critical care	60,375	3.0
Admitted to noncritical care	34,322	1.7
Admitted to psychiatry	26,212	1.3
Lost to follow-up; left AMA	75,546	3.7
Unspecified level of care	1,325	0.1
Subtotal	477,447	23.6
Other	16,751	0.8
Refused referral	47,070	2.3
Unknown	14,191	0.7
Total	2,023,089	100.0

ABBREVIATION: AMA, against medical advice.

in a health care facility, 43.8% of the patients were referred by a poison center and 56.2% were already in or en route to the health care facility when the poison center was contacted. Health care facilities included acute care hospitals (86.9%), freestanding emergency centers (2.0%), and physicians' offices or clinics (10.9%).

Table 11 displays the medical outcome of the human poison exposure cases distributed by age, showing more severe outcomes in the older age groups. Table 12 compares medical outcome and reason for exposure, and demonstrates the greater frequency of serious outcome in intentional exposures. Table 13 demonstrates the increasing duration of the clinical effects observed with more severe outcomes. Note the medical outcome categories, as follows: *No effect*: The patient developed no signs or symptoms as a result of the exposure. *Minor effect*: The patient developed some signs or symptoms as a result of the exposure but they were minimally bothersome and generally resolved rapidly with no residual disability or disfigurement. A minor effect is often limited to the skin or mucous membranes (eg, self-limited gastrointestinal symptoms, drowsiness, skin irritation, first degree dermal burn, sinus tachycardia without hypotension, and transient cough). *Moderate effect*: The patient exhibited signs or symptoms as a result of the exposure that were more pronounced, more prolonged, or more of a systemic nature than minor symptoms. Usually some form of treatment is indicated. Symptoms were not life-threatening, and the patient has no residual disability or disfigurement (eg, corneal abrasion, acid-base disturbance, high fever, disorientation, hypotension that is rapidly responsive to treatment, and isolated brief seizures that respond readily to treatment). *Major effect*: The patient exhibited signs or symptoms as a result of the exposure that were life-threatening or resulted in significant residual disability or disfigurement (eg, repeated seizures or status epilepticus, respiratory compromise requiring intubation, ventricular tachycardia with hypotension, cardiac or respiratory arrest, esophageal stricture, and disseminated intravascular coagulation). *Death*: The patient died as a result of the exposure or as a direct complication of the exposure. Only those deaths that were probably or undoubtedly related to the exposure are coded here. *Not followed, judged as nontoxic exposure*: No follow-up calls were made to determine the patient's

TABLE 11. Medical Outcome of Human Poison Exposure Cases by Patient Age

Outcome	<6 Years		6-12 Years		13-19 Years		>19 Years		Unknown		Total	
	No.	Col %	No.	Col %	No.	Col %	No.	Col %	No.	Col %	No.	%
No effect	367,361	34.3	27,105	19.8	29,361	19.4	76,014	11.7	1,778	10.5	501,619	24.8
Minor effect	133,216	12.4	33,636	24.6	45,355	29.9	193,199	29.8	2,771	16.3	408,177	20.2
Moderate effect	10,582	1.0	3,928	2.9	13,501	8.9	59,499	9.2	576	3.4	88,086	4.4
Major effect	584	0.1	199	0.2	1,103	0.7	6,769	1.0	56	0.3	8,711	0.4
Death	20	0.0	6	0.0	40	0.0	658	0.1	0	0.0	724	0.0
No follow-up, nontoxic	275,045	25.7	25,519	18.7	11,846	7.8	50,243	7.8	2,165	12.8	364,818	18.0
No follow-up, minimal toxicity	247,283	23.1	37,478	27.4	30,912	20.4	164,127	25.4	4,196	24.7	483,996	23.9
No follow-up, potentially toxic	17,562	1.6	4,278	3.1	14,529	9.6	58,560	9.0	4,764	28.1	99,693	4.9
Unrelated effect	18,890	1.8	4,562	3.3	4,801	3.2	38,336	5.9	676	4.0	67,265	3.3
Total	1,070,543	52.9	136,711	6.8	151,448	7.5	647,405	32.0	16,982	0.8	2,023,089	100.0

TABLE 12. Distribution of Medical Outcome by Reason for Exposure for Human Poison Exposure Cases

Outcome	Unintentional		Intentional		Other		Adverse Reaction		Unknown		Total	
	No.	Col %	No.	Col %	No.	Col %	No.	Col %	No.	Col %	No.	Col %
No effect	453,034	26.1	46,434	20.2	1,258	11.3	476	1.1	417	7.8	501,619	24.8
Minor effect	325,949	18.8	66,024	28.8	3,300	29.6	12,034	28.2	870	16.3	408,177	20.2
Moderate effect	50,315	2.9	32,516	14.2	515	4.6	4,076	9.5	664	12.4	88,086	4.4
Major effect	2,233	0.1	6,008	2.6	27	0.2	276	0.6	167	3.1	8,711	0.4
Death	84	0.0	581	0.3	0	0.0	14	0.0	45	0.8	724	0.0
No follow-up, nontoxic	358,008	20.6	4,550	2.0	1,150	10.3	863	2.0	247	4.6	364,818	18.0
No follow-up, minimal toxicity	440,131	25.4	25,000	10.9	3,150	28.3	14,680	34.4	1,035	19.3	483,996	23.9
No follow-up, potentially toxic	51,415	3.0	43,356	18.9	931	8.4	2,860	6.7	1,131	21.1	99,693	4.9
Unrelated effect	53,245	3.1	5,031	2.2	800	7.2	7,416	17.4	773	14.5	67,265	3.3
Total	1,734,414	85.7	229,500	11.3	11,131	0.6	42,695	2.1	5,349	0.3	2,023,089	100.0

outcome because the substance implicated was nontoxic, the amount implicated was insignificant, or the route of exposure was unlikely to result in a clinical effect. *Not followed, minimal clinical effects possible*: No follow-up calls were made to determine the patient's outcome because the exposure was likely to result in only minimal toxicity of a trivial nature. (The patient was expected to experience no more than a minor effect.) *Unable to follow, judged as a potentially toxic exposure*: The patient was lost to follow-up, refused follow-up, or was not followed up, but the exposure was significant and may have resulted in a moderate, major, or fatal outcome. *Unrelated effect*: The exposure was probably not responsible for the effect. *Confirmed nonexposure*: This outcome option was used during coding to designate cases in which reliable and objective evidence showed that an exposure initially believed to have occurred actually never occurred (eg, all missing pills are later located). All cases coded as confirmed nonexposure are excluded from this report. In 1995 there were 6,482 such cases reported nationally.

Tables 14 and 15 outline the use of 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 because of the limitations of telephone data gathering. Ipecac syrup was administered in 2.3% of cases. In children younger than 6 years of age, ipecac syrup was most often administered outside a health care facility. This pattern was reversed in teenagers and adults. Ipecac was administered more often in children (3.6% of poison exposures occurring in children younger than 6 years of age compared with 0.7% of poison exposures occurring in patients older than 19 years). Table 16 demonstrates a continued decline in the use of ipecac-induced emesis in the treatment of poisoning.

TABLE 13. Duration of Clinical Effects by Medical Outcome

Duration of Effect	Minor Effect (Col%)	Moderate Effect (Col%)	Major Effect (Col%)
≤2 hours	40.6	6.8	2.9
>2 hours, ≤8 hours	23.8	20.7	8.1
>8 hours, ≤24 hours	18.0	31.3	27.3
>24 hours, ≤3 days	6.1	17.3	29.4
>3 days, ≤1 week	2.2	7.0	13.7
>1 week, ≤1 month	0.6	2.5	5.7
>1 month	0.2	0.7	1.5
Anticipated permanent	0.0	0.2	3.1
Unknown	8.6	13.6	8.4

TABLE 14. Decontamination and Therapeutic Intervention

Therapy	No. of Patients	%
Decontamination only	1,144,201	56.6
No therapy provided	254,035	12.6
Observation only	227,015	11.2
Decontamination and other therapy	133,920	6.6
Other therapy only (no decontamination)	87,346	4.3
Unknown if therapy provided/patient refused	176,572	8.7

TABLE 15. Therapy Provided in Human Exposure Cases

Therapy	No.
Decontamination	
Dilution/irrigation	970,152
Activated charcoal, single dose	140,359
Cathartic	106,761
Gastric lavage	72,862
Ipecac syrup	47,359
Activated charcoal, multidose	15,521
Other emetic	5,976
Whole bowel irrigation	1,690
Measures to Enhance Elimination	
Alkalinization (with or without diuresis)	7,261
Hemodialysis	772
Hemoperfusion	59
Other extracorporeal procedure	53
Specific Antidote Administration	
N-acetylcysteine (oral)	9,601
Naloxone	7,373
Flumazenil	2,567
Antivenin	833
Atropine	770
Ethanol	623
Hyperbaric oxygen	562
N-acetylcysteine (IV)	432
Deferoxamine	422
Phytonadione	356
Pyridoxine	281
Pralidoxime (2-PAM)	228
Physostigmine	219
Fab fragments	194
Dimercaprol (BAL)	136
Folate	127
EDTA	122
Succimer	107
Methylene blue	81
Sodium thiosulfate	70
Sodium nitrite	57
Penicillamine	45
Hydroxocobalamin	15
Other intervention	
Transplantation	16
ECMO	12

TABLE 16. Decontamination Trends

Year	Human Exposures Reported	% of Exposures Involving Children <6 Years	Ipecac Administered (% of Exposures)	Activated Charcoal Administered (% of Exposures)
1983	251,012	64.0	13.4	4.0
1984	730,224	64.1	12.9	4.0
1985	900,513	63.4	15.0	4.6
1986	1,098,894	63.0	13.3	5.2
1987	1,166,940	62.3	10.1	5.2
1988	1,368,748	61.8	8.4	6.5
1989	1,581,540	61.1	7.0	6.4
1990	1,713,462	60.8	6.1	6.7
1991	1,837,939	59.9	5.2	7.0
1992	1,864,188	58.8	4.3	7.3
1993	1,751,476	56.0	3.7	7.3
1994	1,926,438	54.1	2.7	6.8
1995	2,023,089	52.9	2.3	7.7

TABLE 17A. Substances Most Frequently Involved in Human Exposures

Substance	No.	%*
Cleaning substances	208,843	10.3
Analgesics	196,805	9.7
Cosmetics and personal care products	171,426	8.5
Cough and cold preparations	105,947	5.2
Plants	104,187	5.1
Bites/envenomations	87,628	4.3
Pesticides (includes rodenticides)	84,346	4.2
Foreign bodies	75,021	3.7
Topicals	72,124	3.6
Food products, food poisoning	67,084	3.3
Antimicrobials	66,274	3.3
Hydrocarbons	65,143	3.2
Sedatives/hypnotics/antipsychotics	63,271	3.1
Antidepressants	56,285	2.8
Alcohols	52,119	2.6
Chemicals	51,508	2.5
Vitamins	45,952	2.3

NOTE: Despite a high frequency of involvement, these substances are not necessarily the most toxic, but rather may only be the most readily accessible.
*Percentages are based on the total number of human exposures rather than the total number of substances.

Table 17A presents the most common substance categories listed by frequency of exposure. Tables 17B and 17C present similar data for children and adults, respectively, and show the considerable differences between pediatric and adult poison exposures. Table 18 lists the substance categories with the largest number of reported deaths; analgesics and antidepressants led this list. A remarkable chronological constancy of selected demographic data elements is shown in Table 19. A breakdown of plant exposures is provided for those most commonly implicated (Table 20).

TABLE 17B. Substances Most Frequently Involved in Pediatric Exposures (Children Under 6 Years)

Substance	No.	%*
Cosmetics and personal care products	127,419	11.9
Cleaning substances	118,332	11.1
Analgesics	81,643	7.6
Plants	74,829	7.0
Cough and cold preparations	70,862	6.6
Foreign bodies	53,972	5.0
Topicals	53,875	5.0
Pesticides (includes rodenticides)	44,150	4.1
Antimicrobials	39,718	3.7
Vitamins	36,553	3.4
Gastrointestinal preparations	34,922	3.3
Hydrocarbons	26,723	2.5
Arts/crafts/office supplies	26,421	2.5
Antihistamines	18,330	1.7
Hormones and hormone antagonists	18,291	1.7

NOTE: Despite a high frequency of involvement, these substances are not necessarily the most toxic, but rather may only be the most readily accessible.
*Percentages are based on the total number of exposures in children under six years, rather than the total number of substances.

TABLE 17C. Substances Most Frequently Involved in Adult Exposures (>19 years)

Substance	No.	%*
Analgesics	61,834	9.6
Cleaning substances	57,582	8.9
Bites/envenomations	43,431	6.7
Sedatives/hypnotics/antipsychotics	43,333	6.7
Antidepressants	34,387	5.3
Food products, food poisoning	31,875	4.9
Alcohols	25,199	3.9
Fumes/gases/vapors	23,886	3.7
Cosmetics and personal care products	23,248	3.6
Chemicals	23,137	3.6
Hydrocarbons	22,695	3.5
Pesticides (includes rodenticides)	22,579	3.5
Cardiovascular	15,716	2.4
Cough and cold preparations	15,141	2.3
Antihistamines	14,877	2.3

NOTE: Despite a high frequency of involvement, these substances are not necessarily the most toxic, but rather may only be the most readily accessible.

*Percentages are based on the total number of exposures in adults (over 19 years), rather than the total number of substances.

A summary of the 724 fatal exposures is presented in Table 21. Each of these cases was abstracted and verified by the reporting center, with only those exposures deemed "probably" or "undoubtedly" responsible for the fatality included in this compendium. The highest blood level of implicated substances is provided where available to the reporting poison center. Prehospital cardiac and/or respiratory arrests occurred in 40% of all fatalities, and these are indicated in Table 21.

Tables 22A and 22B provide comprehensive demographic data on patient age, reason for exposure, medical outcome, and use of a health care facility for all 2,023,089 exposures, presented by category. Table 22A focuses on nonpharmaceuticals; Table 22B presents drugs. Of the 2,167,552 substances logged in Tables 22A and 22B, 57.9% were nonpharmaceuticals and 42.1% were pharmaceuticals. The reason for the exposure was intentional for 28.0% of pharmaceutical substances implicated compared with only 4.0% of nonpharmaceutical substances. Correspondingly, treatment in a health care facility was provided in a higher percentage of exposures to pharmaceutical substances (37.2%) compared with nonpharmaceutical substances (18.0%). Pharmaceutical exposures also had more severe outcomes. Of substances implicated in fatal cases, 77.0% were pharmaceuticals, compared with only 42.1% in nonfatal cases. Similarly, 75.9% of substances implicated in major outcomes were pharmaceuticals.

In closing, we gratefully acknowledge the extensive contributions of each participating poison center and the assistance of the many physicians and nurses who provided comprehensive data to the poison centers for inclusion in this database.

TABLE 18. Categories with Largest Numbers of Deaths

Category	No.	% of All Exposures in Category
Analgesics	235	0.119
Antidepressants	168	0.298
Cardiovascular drugs	115	0.347
Stimulants and street drugs	108	0.319
Sedative/hypnotics/antipsychotics	97	0.153
Alcohols	82	0.157
Gases and fumes	48	0.113
Chemicals	23	0.045
Asthma therapies	20	0.103
Insecticides/pesticides (includes rodenticides)	18	0.021
Automotive products	17	0.125
Cleaning substances	17	0.008
Hydrocarbons	14	0.021

TABLE 19. 13-Year Comparisons of Fatality Data

	Total Fatalities		Suicides		Pediatric Deaths (<6 years)	
Year	No.	%	No.	% of Deaths	No.	% of Deaths
1983	95	0.038	60	63.2	10	10.5
1984	293	0.040	165	56.3	21	7.2
1985	328	0.036	178	54.3	20	6.1
1986	406	0.037	223	54.9	15	3.7
1987	397	0.034	226	56.9	22	5.5
1988	545	0.040	297	54.5	28	5.1
1989	590	0.037	323	54.7	24	4.1
1990	612	0.036	350	57.2	25	4.1
1991	764	0.042	408	53.4	44	5.8
1992	705	0.038	395	56.0	29	4.1
1993	626	0.036	338	54.0	27	4.3
1994	766	0.040	410	53.5	26	3.4
1995	724	0.036	405	55.9	20	2.8

TABLE 20. Frequency of Plant Exposures by Plant Type

Botanical Name	Common Name	Frequency
Capsicum annuum	Pepper	4,984
Philodendron spp.	Philodendron	4,378
Euphorbia pulcherrima	Poinsettia	2,952
Ilex spp.	Holly	2,871
Dieffenbachia spp.	Dumbcane	2,648
Spathiphyllum spp.	Peace lily	2,632
Phytolacca americana	Pokeweed, inkberry	2,207
Crassula spp.	Jade plant	1,715
Toxicodendron radicans	Poison ivy	1,478
Epipremnum aureum	Pothos, devil's ivy	1,258
Caladium spp.	Caladium	1,058
Rhododendron spp.	Rhododendron, azalea	1,033
Saintpaulia ionantha	African violet	991
Eucalyptus Globulus	Eucalyptus	984
Brassaia actinophylla	Umbrella tree	982
Pyracantha spp.	Pyracantha	946
Hedera helix	English ivy	884
Chrysanthemum spp.	Chrysanthemum	811
Schlumbergera Bridgesii	Christmas cactus	803
Taraxacum officinale	Dandelion	795

NOTE: This table provides the frequency of involvement of plants in exposures reported to poison centers with no correlation with severity of toxicity. Several of the plants on the list pose little, if any, ingestion hazard.

TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels	
NONPHARMACEUTICALS							
Adhesives/glue							
1[ip]	30 yr	Cement (tetrahydrofuran/methyl ethyl ketone)	A/C	Inhalation	Int abuse		
Alcohols							
2	20 yr	Ethanol	A	Ingestion	Unknown	290 mg/dL	
3[ip]	23 yr	Ethanol	U	Unknown	Int abuse	182 mg/dL	
4[p]	25 yr	Ethanol	A	Ingestion	Int abuse	456 mg/dL	
5[ip]	36 yr	Ethanol	A	Ingestion	Int abuse	342 mg/dL	
6[ip]	37 yr	Ethanol	A/C	Ingestion	Int abuse	330 mg/dL§	
7[i]	41 yr	Ethanol	U	Ingestion	Int abuse		
8[ip]	49 yr	Ethanol	A/C	Ingestion	Int abuse	270 mg/dL	
9[p]	64 yr	Ethanol	C	Ingestion	Int abuse		
10	66 yr	Ethanol	A/C	Ingestion	Int abuse	195 mg/dL	
11	32 yr	Ethanol	C	Ingestion	Int abuse		
		acetaminophen					
12	75 yr	Ethanol	A/C	Ingestion	Int abuse		
		acetaminophen					
13	35 yr	Ethanol	C	Ingestion	Int abuse		
		acetaminophen/decongestant					
14	20 yr	Ethanol	A	Ingestion	Int suicide		
		antidepressant					
		trazodone				0.2 µg/mL	
15[ip]	49 yr	Ethanol	A/C	Ingestion	Int abuse		
		carbamazepine					
		amitriptyline					
16[p]	46 yr	Ethanol	A/C	Ingestion	Int suicide	310 mg/dL	
		fluoxetine				0.51 µg/mL§	
						norfluoxetine 0.32 µg/mL§	
		carbamazepine				6 µg/mL§	
17[p]	34 yr	Ethanol	A/C	Ingestion	Int abuse	300 mg/dL	
		heroin					
18[p]	2 mo	Ethanol	A	Ingestion	Unknown	140 mg/dL§	
		methamphetamine				0.02 µg/mL§	
19[ip]	43 yr	Ethanol	A/C	Ingestion	Int abuse	240 mg/dL	
		morphine					
20[p]	47 yr	Ethanol	A/C	Ingestion	Int abuse	16 mg/dL§	
		propoxyphene					
21[ip]	36 yr	Ethanol	U	Ingestion	Unknown		
		propoxyphene					
		benzodiazepines					
22[ip]	53 yr	Ethanol	U	Ingestion	Int suicide		
		propoxyphene					
		sertraline					
23	40 yr	Methanol	A	Ingestion	Int suicide	467 mg/dL	
24	47 yr	Methanol	A	Ingestion	Int abuse	333 mg/dL	
25[i]	48 yr	Methanol	A	Ingestion	Unknown	83 mg/dL	
26	63 yr	Methanol	A	Ingestion	Int abuse	23 mg/dL	
27	51 yr	Methanol	A	Ingestion	Int abuse	339 mg/dL	
		deodorant spray (ethanol)					
See also cases 37, 39, 46, 54, 65, 129, 130, 131, 132, 133, 155, 164, 170, 206, 207, 208, 218, 226, 228, 232, 240, 243, 244, 245, 274, 284, 285, 308, 309, 310, 317, 318, 328, 367, 368, 377, 378, 380, 381, 382, 417, 429, 430, 435, 445, 446, 447, 452, 465, 471, 475, 506, 527, 534, 545, 554, 584, 604, 608, 609, 617, 618, 619, 632, 650, 672, 673, 674, 686, 699, 701, 702, 703, 704, 705, 706, 715 (ethanol); 435 (isopropanol); 679 (methanol).							
Automotive products							
28	31 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide	41 mg/dL	
29	45 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int unknown	233 mg/dL	
30	45 yr	Antifreeze (ethylene glycol)	U	Ingestion	Int suicide		
31[a]	46 yr	Antifreeze (ethylene glycol)	U	Ingestion	Unknown		
32[a]	57 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide	177 mg/dL	
33	62 yr	Antifreeze (ethylene glycol)	A	Ingestion	Unknown	1,920 mg/dL	
34	74 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide	54 mg/dL	
35	86 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide		
36	36 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide		
		acetaminophen				107 µg/mL	12-14 h
		barbiturates					

(Continued on following page)

TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995 (Cont'd)

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels	
37	27 yr	Antifreeze (ethylene glycol) ethanol	A	Ingestion	Int suicide	194 mg/dL§	
38	27 yr	Antifreeze (ethylene glycol) sulfuric acid	A	Ingestion	Int suicide	57 mg/dL	
39	43 yr	Antifreeze (ethylene glycol) windshield washing fluid (methanol) mouthwash (ethanol)	A	Ingestion	Int suicide		
40	33 yr	Brake fluid	U	Ingestion	Unknown		
41[p]	30 yr	Windshield washing fluid (methanol)	A	Ingestion	Int suicide	697 mg/dL	
42	36 yr	Windshield washing fluid (methanol)	A	Ingestion	Int suicide	610 mg/dL	7 h
43[p]	48 yr	Windshield washing fluid (methanol) nail polish remover (acetone)	A	Ingestion	Int suicide		
See also case 39 (windshield washing fluid).							
Bites and envenomations							
44[a]	66 yr	Bee stings	A	Bite/sting	Bite/sting		
45[a]	88 yr	Bee stings	A	Bite/sting	Bite/sting		
46[ap]	35 yr	Crotalus horridus atricaudatus (canebrake rattlesnake)	A	Bite/Ing	Bite/sting		
		ethanol				250 mg/dL§	
Chemicals							
47	35 yr	Cyanide	A	Ingestion	Int suicide		
48[ap]	53 yr	Cyanide	A	Ingestion	Int suicide	17.4 µg/mL	2.3 h
49	30 yr	Ethylene glycol	U	Unknown	Unknown	8,000 mg/dL	
50	32 yr	Ethylene glycol	A	Ingestion	Int unknown	59 mg/dL	
51	43 yr	Ethylene glycol	A	Ingestion	Int suicide	177 mg/dL	
52[i]	46 yr	Ethylene glycol	U	Unknown	Unknown		
53	35 yr	Ethylene glycol	A	Ingestion	Int suicide	223 mg/dL	
		acetaminophen				765 µg/mL	
54	52 yr	Ethylene glycol	A/C	Ingestion	Int abuse		
		ethanol				202 mg/dL	
55[p]	64 yr	Ethylene glycol	A/C	Ingestion	Int suicide	417 mg/dL§	
		nortriptyline				1,850 ng/mL§	
		chlorpromazine				1,663 ng/mL§	
56	35 yr	Ethylene glycol rodenticide (unknown type)	A	Ingestion	Int suicide		
57	31 yr	Hydrochloric acid	A	Ingestion	Int suicide		
58	45 yr	Hydrochloric acid	A	Ingestion	Int suicide		
59	17 yr	Potassium hydroxide	A	Ingestion	Int suicide		
60[a]	24 yr	Sodium azide	A	Ingestion	Int suicide	5.58 mg/mL§	
61[ip]	43 yr	Sodium azide	A	Ingestion	Int suicide		
62[a]	43 yr	Sodium azide	A	Derm/Inh	Occ		
		carbon monoxide				14%	
63	35 yr	Sulfuric acid	A	Ingestion	Int suicide		
See also case 38 (sulfuric acid).							
Cleaning substances							
64	52 yr	Cleaning agent (acid)	A	Ingestion	Int suicide		
		aspirin				>35 mg/dL	
65	49 yr	Cleaning solution (methanol) ethanol	A/C	Ingestion	Int abuse	20 mg/dL	
66	71 yr	Deodorizing cleaner (cationic)	A	Ingestion	Unint gen		
67	84 yr	Detergent (cationic)	A	Asp/Ing	Unint gen		
68	42 yr	Drain opener rodenticide	A	Ingestion	Int suicide		
69	37 yr	Drain opener (hydrochloric acid)	A	Ingestion	Int suicide		
70	20 yr	Drain opener (sodium hydroxide)	A	Ingestion	Int suicide		
71	73 yr	Drain opener (sodium hydroxide crystals)	A	Ingestion	Int suicide		
72	31 yr	Drain opener (sulfuric acid)	A	Ingestion	Int suicide		
73[a]	40 yr	Hydrofluoric acid rust remover (6-8%)	A	Ingestion	Int suicide		
74	51 yr	Lye (sodium hydroxide)	A	Ingestion	Int suicide		
75[ip]	33 yr	Sodium hydroxide/hypochlorite spray cleaner	U	Inhalation	Env		
76	56 yr	Tire cleaner (acid)	A	Ingestion	Int suicide		
77	30 yr	Toilet bowl cleaner (acid)	A	Ingestion	Int suicide		
78	45 yr	Toilet bowl cleaner (HCl)	A	Ingestion	Int suicide		
79	50 yr	Toilet bowl cleaner (HCl)	A	Ingestion	Int misuse		

(Continued on following page)

TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995 (Cont'd)

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels	
80	72 yr	Toilet bowl cleaner (HCl, phosphoric acid)	A	Ingestion	Int suicide		
81	20 yr	Toilet bowl cleaner (5-10% HCl) toilet bowl cleaner (15-20% HCl)	A	Ingestion	Int suicide		
82	65 yr	Toilet bowl deodorizer (alkyl dimethyl benzyl ammonium chloride)	A	Ingestion	Int suicide		
Cosmetics and personal care products							
83[p]	42 yr	Hair spray (ethanol, >50%)	A/C	Ingestion	Int abuse	414 mg/dL	
See also cases 27 (deodorant spray,ethanol); 39 (mouthwash); 43 (nail polish remover, acetone).							
Deodorizers							
84	12 yr	Air freshener	A	Inhalation	Int abuse		
85[ip]	15 yr	Air freshener (propane, butane)	A	Inhalation	Int abuse	propane 6.4 ppm§ butane 9.0 ppm§	
86[p]	16 yr	Air freshener	A	Inhalation	Int abuse		
87[ip]	24 yr	Air freshener	A	Inhalation	Int abuse		
See also case 142 (air freshener).							
Essential oils							
88[a]	75 yr	Liniments (essential oils & herbals)	A	Ingestion	Int suicide		
Foreign body							
See cases 276, 369, 579 (activated charcoal); 685 (plastic bag).							
Fumes, gases and vapors							
89[p]	5 mo	Carbon monoxide/smoke	A	Inhalation	Env	82%	
90[p]	11 mo	Carbon monoxide	A	Inhalation	Env	55%	
91[p]	18 mo	Carbon monoxide	A	Inhalation	Env	45%	
92[ip]	6 yr	Carbon monoxide	A	Inhalation	Env		
93[p]	23 yr	Carbon monoxide	A	Inhalation	Int suicide		
94[p]	24 yr	Carbon monoxide/smoke	A	Inhalation	Env	54%	
95[ip]	25 yr	Carbon monoxide	A	Inhalation	Unint mis		
96[p]	26 yr	Carbon monoxide/smoke	A	Inhalation	Env	48%	
97[ip]	28 yr	Carbon monoxide	A	Inhalation	Env		
98[p]	33 yr	Carbon monoxide	A	Inhalation	Int suicide	45%	
99[ip]	33 yr	Carbon monoxide	A	Inhalation	Int suicide		
100[p]	34 yr	Carbon monoxide	A	Inhalation	Int suicide		
101	34 yr	Carbon monoxide	A	Inhalation	Int suicide	50%	
102[p]	35 yr	Carbon monoxide	A	Inhalation	Int suicide		
103[ip]	36 yr	Carbon monoxide	A	Inhalation	Int suicide		
104	38 yr	Carbon monoxide	C	Inhalation	Env		
105[ip]	39 yr	Carbon monoxide	A	Inhalation	Env		
106[p]	40 yr	Carbon monoxide	A	Inhalation	Int suicide	46%	
107[p]	43 yr	Carbon monoxide	A	Inhalation	Env		
108[i]	44 yr	Carbon monoxide/smoke	A	Inhalation	Env	20%	
109[ip]	45 yr	Carbon monoxide	A	Inhalation	Int suicide		
110[ip]	47 yr	Carbon monoxide	A	Inhalation	Int suicide		
111[aip]	47 yr	Carbon monoxide	A	Inhalation	Int suicide		
112[aip]	47 yr	Carbon monoxide	A	Inhalation	Int suicide	45%§	
113[ip]	48 yr	Carbon monoxide	A	Inhalation	Env		
114[ip]	49 yr	Carbon monoxide/smoke	A	Inhalation	Int suicide	30%	
115	57 yr	Carbon monoxide	A	Inhalation	Unknown	54%	
116	60 yr	Carbon monoxide	A	Inhalation	Env	48%	
117[p]	65 yr	Carbon monoxide	U	Inhalation	Env		
118[p]	70 yr	Carbon monoxide	C	Inhalation	Env	23%§	
119[ip]	70 yr	Carbon monoxide	A	Inhalation	Int suicide		
120[aip]	75 yr	Carbon monoxide	A	Inhalation	Env	45%	
121	77 yr	Carbon monoxide	A	Inhalation	Int suicide	28%	
122[ip]	83 yr	Carbon monoxide	A	Inhalation	Int suicide		
123	83 yr	Carbon monoxide/smoke	A	Inhalation	Env	26%	
124[ip]	85 yr	Carbon monoxide	U	Inhalation	Env		
125[p]	89 yr	Carbon monoxide/smoke	A	Inhalation	Env	>40%	
126[p]	91 yr	Carbon monoxide	A	Inhalation	Env	50%	
127	22 yr	Carbon monoxide acetaminophen	A	Ing/Inh	Int suicide	52% 70 µg/mL	2.5 h
128[p]	27 yr	Carbon monoxide cocaine	A	Inh/Unk	Int suicide	23%§ 0.10 µg/mL§ cocaine metabolite 1.17 µg/mL§	

(Continued on following page)

TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995 (Cont'd)

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels	
129[ip]	46 yr	Carbon monoxide ethanol	A	Ing/Inh	Env	77%§ 220 mg/dL§	
130[p]	50 yr	Carbon monoxide ethanol	A	Ing/Inh	Env	13%	
131[ip]	57 yr	Carbon monoxide ethanol	A	Ing/Inh	Env	31%§ 180 mg/dL§	
132[ip]	59 yr	Carbon monoxide ethanol	A	Ing/Inh	Int suicide		
133[p]	65 yr	Carbon monoxide ethanol	A	Ing/Inh	Env	33.5% 238 mg/dL	
See also cases 62, 225 (carbon monoxide).							
Heavy metals							
134	27 yr	Arsenic	A	Ingestion	Int suicide		
Herbicides							
135[a]	34 yr	Diquat carbidopa/levodopa	A	Ingestion	Int suicide	4.9 µg/mL	23.7 h
Hydrocarbons							
136[ip]	13 yr	Butane	A	Inhalation	Int abuse		
137[p]	15 yr	Butane	A	Inhalation	Int abuse		
138[p]	17 yr	Butane	A	Inhalation	Int abuse	8.5 µg/mL§	
139[p]	18 yr	Butane	A/C	Inhalation	Int abuse		
140[a]	18 mo	Charcoal lighter fluid	A	Asp/Ing	Unint gen		
141[ip]	14 yr	Chlorofluorocarbon	A	Inhalation	Int abuse		
142[p]	16 yr	Chlorofluorocarbon air freshener	A	Inhalation	Int abuse		
143[p]	27 yr	Difluorochloromethane	U	Inhalation	Int abuse		
144[ap]	12 yr	Difluoroethane	A/C	Inhalation	Int abuse		
145[ip]	>19 yr	Difluoroethane propellant	A	Inhalation	Unknown		
146[p]	20 yr	Gasoline	A/C	Inhalation	Int abuse		
147[a]	13 mo	Lighter fluid	A	Asp/Ing	Unint gen		
148[p]	66 yr	Natural gas	A	Inhalation	Env		
149	37 yr	Toluene	A/C	Inhalation	Int abuse		
150[ip]	36 yr	Toluene cocaine	A/C	Inhalation	Int abuse	19 µg/mL	
See also case 396 (natural gas).							
Industrial Cleaners							
151[a]	74 yr	Sodium hydroxide cleaner	C	Inhalation	Unint mis		
Insecticides/pesticides (excluding rodenticides)							
152	83 yr	Carbaryl	A	Ingestion	Int suicide		
153[p]	40s yr	Chlorpyrifos	A	Ingestion	Int suicide		
154	34 yr	DEET (repellants)	C	Dermal	Adv rxn		
155[ip]	64 yr	Diazinon ethanol	A	Ingestion	Int suicide		
156[a]	31 yr	Disodium methyl arsonate	C	Derm/Inh	Occ		
157	35 yr	Fenthion	A	Dermal	Unknown		
158[p]	64 yr	Insecticide, unknown type	A	Inhalation	Env		
159	75 yr	Malathion	A	Ingestion	Int unknown		
160[a]	73 yr	Malathion carbaryl	A	Ingestion	Int suicide		
161	85 yr	Organophosphate	A	Ingestion	Int unknown		
162[p]	71 yr	Pesticide, unknown type	A	Ingestion	Unint mis		
163	82 yr	Pesticides, unknown type	A	Ingestion	Int suicide		
164	43 yr	Propetamphos ethanol	A	Parenteral	Int suicide		
See also case 160 (carbaryl).							
Paints and stripping agents							
165[p]	32 yr	Paint fumes	A	Inhalation	Occ		
Plants							
166[a]	11 mo	Cayenne pepper garlic oil	C	Derm/Ing	Int misuse		
167[a]	39 yr	Herbal tea	A	Ingestion	Unknown		
168[a]	3 mo	Pennyroyal tea	A	Ingestion	Unint mis		
See also case 166 (garlic oil).							

(Continued on following page)

TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995 (Cont'd)

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels	
Rodenticides							
169[a]	74 yr	Brodifacoum	C	Ingestion	Int unknown	9.5 ng/mL§	
170	80 yr	Rodenticide (arsenic trioxide,1.5%) ethanol fluoxetine	A	Ingestion	Int suicide	 80 mg/dL	
171[a]	83 yr	Strychnine	A	Ingestion	Int suicide	0.35 µg/mL§	
See also cases 273 (brodifacoum); 56, 68 (rodenticide).							
Swimming pool/aquarium products							
172	26 yr	Swimming pool acid (HCl) aspirin/carisoprodol	A	Ingestion	Int suicide		
PHARMACEUTICALS							
Analgesics							
173[a]	9 mo	Acetaminophen	C	Ingestion	Ther error	60 µg/mL	
174	13 yr	Acetaminophen	C	Ingestion	Int misuse		
175	20 yr	Acetaminophen	A	Ingestion	Int suicide	63 µg/mL	
176	24 yr	Acetaminophen	A	Ingestion	Int suicide	218 µg/mL	27 h
177	24 yr	Acetaminophen	A	Ingestion	Int suicide	33 µg/mL	>48 h
178	24 yr	Acetaminophen	A	Ingestion	Int suicide	81 µg/mL	35 h
179	25 yr	Acetaminophen	A	Ingestion	Int unknown		
180	26 yr	Acetaminophen	A	Ingestion	Int suicide	57 µg/mL	22 h
181	26 yr	Acetaminophen	A	Ingestion	Int suicide	444 µg/mL	8 h
182[a]	26 yr	Acetaminophen	A	Ingestion	Int suicide	70 µg/mL	4 h
183	30 yr	Acetaminophen	U	Ingestion	Int suicide	650 µg/mL	
184	30 yr	Acetaminophen	U	Ingestion	Unknown	137 µg/mL	
185	30 yr	Acetaminophen	A	Ingestion	Int suicide		
186	31 yr	Acetaminophen	C	Ingestion	Int suicide	96 µg/mL	
187	34 yr	Acetaminophen	C	Ingestion	Int unknown	35 µg/mL	
188	36 yr	Acetaminophen	A	Ingestion	Int suicide	38 µg/mL	36 h
189	37 yr	Acetaminophen	A	Ingestion	Int misuse	35 µg/mL	
190	38 yr	Acetaminophen	U	Ingestion	Unknown	76 µg/mL	>24 h
191	38 yr	Acetaminophen	A/C	Ingestion	Ther error		
192	39 yr	Acetaminophen	A	Ingestion	Int suicide	267 µg/mL	14 h
193	41 yr	Acetaminophen	C	Ingestion	Ther error	462 µg/mL	
194	46 yr	Acetaminophen	A	Ingestion	Int suicide	45 µg/mL	
195	50 yr	Acetaminophen	A	Ingestion	Int unknown	512 µg/mL	
196	51 yr	Acetaminophen	A	Ingestion	Int suicide	43 µg/mL	
197	51 yr	Acetaminophen	U	Ingestion	Int suicide	72 µg/mL	
198	59 yr	Acetaminophen	C	Ingestion	Ther error	68 µg/mL	
199	60 yr	Acetaminophen	A	Ingestion	Int unknown	128 µg/mL	
200	71 yr	Acetaminophen	C	Ingestion	Ther error	63 µg/mL	
201	71 yr	Acetaminophen	C	Ingestion	Ther error	17 µg/mL	>24 h
202	15 yr	Acetaminophen acetaminophen/diphenhydramine	A	Ingestion	Int suicide		
203	35 yr	Acetaminophen aspirin	C	Ingestion	Int misuse	103 µg/mL 4 mg/dL	
204	43 yr	Acetaminophen carbamazepine	U	Ingestion	Int suicide	740 µg/mL 59 µg/mL	
205	28 yr	Acetaminophen cocaine	U	Ingestion	Int unknown		
206	26 yr	Acetaminophen ethanol	C	Ingestion	Ther error	36 µg/mL 103 mg/dL	
207	36 yr	Acetaminophen ethanol	A/C	Ingestion	Int misuse	153 µg/mL	12 h
208	37 yr	Acetaminophen ethanol	C	Ingestion	Int misuse	13 µg/mL	
209	55 yr	Acetaminophen fluoxetine	U	Ingestion	Int suicide		
210	54 yr	Acetaminophen heroin	U	Ing/Paren	Int unknown		
211	45 yr	Acetaminophen iron dextran	C	Ing/Paren	Int misuse	154 µg/mL 829 µg/dL	
212	35 yr	Acetaminophen lisinopril	A	Ingestion	Int suicide	150 µg/mL	48 h
213	37 yr	Acetaminophen oral hypoglycemic venlafaxine	A	Ingestion	Int suicide	280 µg/mL	

(Continued on following page)

TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995 (Cont'd)

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels	
214	24 yr	Acetaminophen theophylline aspirin	A	Ingestion	Int suicide	23 µg/mL 3 µg/mL 4 mg/dL	72 h 72 h 72 h
215[P]	23 yr	Acetaminophen/aspirin/caffeine	U	Ingestion	Int suicide		
216[P]	34 yr	Acetaminophen/butalbital/caffeine	A	Ingestion	Int suicide	103 µg/mL[‖]	>6 h
217	70 yr	Acetaminophen/codeine	U	Ingestion	Int suicide		
218	38 yr	Acetaminophen/codeine amitriptyline ethanol	U	Ingestion	Int unknown		
219[P]	46 yr	Acetaminophen/codeine carisoprodol	U	Ingestion	Int suicide	32 µg/mL[‖]	
220[P]	57 yr	Acetaminophen/codeine carisoprodol	A	Ingestion	Int suicide	4 µg/mL[‖]	
221	25 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide	333 µg/mL[‖]	
222	27 yr	Acetaminophen/diphenhydramine	U	Ingestion	Int suicide	362 µg/mL[‖]	
223	35 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide	94 µg/mL[‖]	15 h
224	35 yr	Acetaminophen/diphenhydramine alprazolam opiate	A	Ingestion	Int suicide	86 µg/mL[‖]	
225	44 yr	Acetaminophen/diphenhydramine carbon monoxide	A	Ing/Inh	Int suicide	7 µg/mL[‖] 3%	
226	81 yr	Acetaminophen/diphenhydramine ethanol	A/C	Ingestion	Int unknown	46 µg/mL[‖]	~24 h
227	37 yr	Acetaminophen/hydrocodone	C	Ingestion	Int misuse	48 µg/mL[‖]	2 d
228[P]	35 yr	Acetaminophen/hydrocodone acetaminophen/propoxyphene ethanol	A	Ingestion	Int suicide	248 µg/mL[‖] 130 mg/dL	
229	44 yr	Acetaminophen/hydrocodone diazepam	A	Ingestion	Int suicide	36 µg/mL[‖] hydrocodone 0.17 µg/mL§ 0.18 µg/mL nordiazepam 0.08 µg/mL	
230	46 yr	Acetaminophen/hydrocodone temazepam lorazepam	A	Ingestion	Int suicide	685 µg/mL[‖] hydrocodone 0.35 µg/mL 0.34 µg/mL	
231	40 yr	Acetaminophen/oxycodone	C	Ingestion	Unknown	37 µg/mL[‖]	
232[P]	38 yr	Acetaminophen/oxycodone propoxyphene ethanol	A	Ingestion	Int suicide		
233	43 yr	Acetaminophen/oxycodone salicylate	C	Ingestion	Int misuse	252 µg/mL[‖] 38 mg/dL	
234	39 yr	Acetaminophen/propoxyphene	U	Ingestion	Int suicide	150 µg/mL[‖]	
235	43 yr	Acetaminophen/propoxyphene	U	Ingestion	Unknown		
236	44 yr	Acetaminophen/propoxyphene	A	Ingestion	Int suicide	44 µg/mL[‖]	48 h
237	88 yr	Acetaminophen/propoxyphene	A/C	Ingestion	Adv rxn		
238	60 yr	Acetaminophen/propoxyphene acetaminophen/codeine	C	Ingestion	Int suicide	7 µg/mL[‖]	
239	39 yr	Acetaminophen/propoxyphene acetaminophen/codeine paroxetine	A/C	Ingestion	Int suicide		
240[P]	36 yr	Acetaminophen/propoxyphene acetaminophen/diphenhydramine ethanol	A	Ingestion	Int suicide	272 µg/mL[‖] 78 mg/dL	
241	57 yr	Acetaminophen/propoxyphene alprazolam	A	Ingestion	Int suicide		
242[P]	48 yr	Acetaminophen/propoxyphene aspirin/butalbital nefazodone	A/C	Ingestion	Int suicide		
243[P]	47 yr	Acetaminophen/propoxyphene ethanol	A/C	Ingestion	Int suicide	177 µg/mL[‖] 265 mg/dL	
244[P]	64 yr	Acetaminophen/propoxyphene ethanol	A	Ingestion	Int suicide	propoxyphene 0.24 µg/mL norpropoxyphene 0.37 µg/mL 290 mg/dL	
245[P]	34 yr	Acetaminophen/propoxyphene hydroxyzine ethanol	A	Ingestion	Int suicide	190 µg/mL[‖]	
246	42 yr	Acetaminophen/propoxyphene lorazepam	A	Ingestion	Int suicide	130 µg/mL[‖]	
247	48 yr	Acetaminophen/propoxyphene oxybutynin	A/C	Ingestion	Int misuse	567 µg/mL[‖]	

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TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995 (Cont'd)

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels	
248	35 yr	Acetaminophen/propoxyphene	U	Ingestion	Unknown	320 µg/mL §	
						propoxyphene 6.99 µg/mL§	
						norproxyphene 4.03 µg/mL§	
		temazepam				1.22 µg/mL§	
249[a]	2 yr	Aspirin	A	Ingestion	Unint gen	109 mg/dL	6 h
250	18 yr	Aspirin	A	Ingestion	Int suicide	105 mg/dL	
251	19 yr	Aspirin	A	Ingestion	Unknown	73 mg/dL	
252	22 yr	Aspirin	A	Ingestion	Int suicide	120 mg/dL	
253	25 yr	Aspirin	A	Ingestion	Int suicide	126 mg/dL	
254	33 yr	Aspirin	A	Ingestion	Int suicide	104 mg/dL	9 h
255	35 yr	Aspirin	A	Ingestion	Int suicide	104 mg/dL	5 h
256[a]	37 yr	Aspirin	A	Ingestion	Int suicide	120 mg/dL	28 h
257	37 yr	Aspirin	A	Ingestion	Int suicide	95 mg/dL	
258	43 yr	Aspirin	A	Ingestion	Int suicide	92 mg/dL	8 h
259	50 yr	Aspirin	A/C	Ingestion	Ther error	116 mg/dL	
260	50 yr	Aspirin	C	Ingestion	Int unknown	82 mg/dL	
261	55 yr	Aspirin	A	Ingestion	Int suicide	36 mg/dL	2-3 d
262	55 yr	Aspirin	C	Ingestion	Ther error	40 mg/dL	
263	56 yr	Aspirin	A	Ingestion	Int suicide	97 mg/dL	9 h
264	60 yr	Aspirin	A	Ingestion	Int suicide	76 mg/dL	
265	69 yr	Aspirin	C	Ingestion	Unknown	47 mg/dL	
266	87 yr	Aspirin	A	Ingestion	Int suicide	65 mg/dL	
267	88 yr	Aspirin	A	Ingestion	Int suicide	103 mg/dL	
268	93 yr	Aspirin	A	Ingestion	Int suicide	88 mg/dL	
269	95 yr	Aspirin	A	Ingestion	Int suicide	71 mg/dL	~22 h
270	46 yr	Aspirin	A	Ingestion	Int suicide	87 mg/dL§	
		acebutolol					
271	15 yr	Aspirin	A	Ingestion	Int suicide	130 mg/dL	7 h
		acetaminophen				103 µg/mL	7 h
272	42 yr	Aspirin	U	Ingestion	Ther error	99 mg/dL	
		acetaminophen				36 µg/mL	
273	22 yr	Aspirin	A	Ingestion	Int suicide	118 mg/dL	
		acetaminophen				108 µg/mL	
		brodifacoum					
274	32 yr	Aspirin	A	Ingestion	Int suicide	73 mg/dL	10 h
		acetaminophen/diphenhydramine					
		ethanol					
275	33 yr	Aspirin	A	Ingestion	Int suicide	94 mg/dL	
		acetaminophen/oxycodone				9 µg/mL	
276	70 yr	Aspirin	A	Asp/Ing	Int suicide	50 mg/dL	
		activated charcoal					
277	33 yr	Aspirin	A	Ingestion	Int suicide	101 mg/dL	
		amitriptyline					
278	53 yr	Aspirin	U	Ingestion	Int suicide	70 mg/dL	
		amitriptyline				121 ng/mL	
279	71 yr	Aspirin	A	Ingestion	Int suicide	113 mg/dL	
		amitriptyline/perphenazine					
		amitriptyline				210 ng/mL	
280	23 yr	Aspirin	U	Ingestion	Unknown	69 mg/dL	
		benztropine					
		lorazepam					
281	35 yr	Aspirin	A	Ingestion	Int suicide	86 mg/dL	
		bupropion					
		haloperidol					
282	40 yr	Aspirin	A	Ingestion	Int suicide	91 mg/dL	42 h
		carbamazepine					
283[b]	35 yr	Aspirin	U	Ingestion	Int suicide	116 mg/dL	
		clonidine					
		alprazolam					
284	68 yr	Aspirin	A	Ingestion	Int suicide		
		ethanol					
285	79 yr	Aspirin	A	Ingestion	Int suicide	121 mg/dL	10 h
		ethanol				160 mg/dL	
286	37 yr	Aspirin	A	Ing/Paren	Int suicide	87 mg/dL	
		interferon					
287	52 yr	Aspirin	A	Ingestion	Int suicide	130 mg/dL	16 h
		lorazepam					

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TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995 (Cont'd)

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels	
288	27 yr	Aspirin phentermine phendimetrazine	A	Ingestion	Int suicide	47 mg/dL§ 0.08 µg/mL	
289	43 yr	Aspirin temazepam	A	Ingestion	Int suicide	119 mg/dL	
290	74 yr	Aspirin verapamil (long-acting)	A	Ingestion	Int suicide	73 mg/dL	
291	15 yr	Aspirin-containing sinus medication	A	Ingestion	Int suicide	88 mg/dL	8 h
292[p]	>19 yr	Aspirin/propoxyphene/caffeine flunitrazepam	A	Ingestion	Int suicide	47 mg/dL¶	6 h
293[p]	22 yr	Codeine fluoxetine	A	Ingestion	Int suicide	1.6 µg/mL§ morphine 0.162 µg/mL§ 1,890 ng/mL§ norfluoxetine 2,270 ng/mL§	
294[ip]	80 yr	Codeine oxycodone amitriptyline	U	Ingestion	Int suicide		
295[a]	38 yr	Colchicine	A	Ingestion	Int suicide		
296	48 yr	Colchicine aspirin/carisoprodol	A/C	Ingestion	Int suicide	25 mg/dL¶	
297[a]	14 yr	Colchicine trazodone	A	Ingestion	Int suicide		
298[p]	32 yr	Hydrocodone alprazolam	A	Ingestion	Int suicide	186 ng/mL 33 ng/mL	
299[p]	49 yr	Meperidine	U	Ingestion	Int unknown		
300[p]	32 yr	Meperidine cocaine	U	Ingestion	Int suicide		
301[aip]	19 mo	Methadone	A	Ingestion	Unint gen	0.5 µg/mL§	
302[ap]	2 yr	Methadone	A	Ingestion	Unint gen		
303[ip]	3 yr	Methadone	A	Ingestion	Unint gen		
304[p]	20 yr	Methadone	A	Ingestion	Int suicide		
305[ip]	30 yr	Methadone	A/C	Ingestion	Unknown		
306[p]	39 yr	Methadone amitriptyline	A	Ingestion	Int suicide	430 ng/mL nortriptyline 3,250 ng/mL	
307[p]	30 yr	Methadone amitriptyline chlordiazepoxide	A/C	Ingestion	Int unknown	1.55 µg/mL§ 60 ng/mL§ nortriptyline 120 ng/mL§ 0.2 µg/mL§	
308[p]	21 yr	Methadone ethanol	A	Ingestion	Int abuse	5,010 µg/mL 59 mg/dL	
309[p]	23 yr	Methadone ethanol	A	Ingestion	Int unknown		
310[p]	28 yr	Methadone ethanol	U	Ingestion	Unknown	0.29 µg/mL§ 200 mg/dL§	
311[ap]	47 yr	Methadone heroin	A/C	Ingestion	Int abuse		
312[p]	30 yr	Morphine (long-acting)	U	Ingestion	Int abuse		
313	75 yr	Morphine (long-acting)	C	Ingestion	Ther error		
314[ip]	40 yr	Morphine acetaminophen/oxycodone diazepam	U	Ing/Unk	Int unknown		
315	69 yr	Morphine alprazolam	U	Ingestion	Int suicide		
316[ip]	33 yr	Morphine cocaine benzodiazepines	A/C	Ing/Inh/Par	Int abuse		
317[ip]	39 yr	Morphine ethanol benzodiazepines	A	Ing/Paren	Int abuse	0.065 µg/mL 27 mg/dL	
318[ip]	37 yr	Morphine ethanol codeine	A/C	Ing/Inh/Par	Int abuse		
319	61 yr	Morphine hydromorphone metoprolol	A	Ingestion	Int suicide		
320[ip]	26 yr	Morphine methamphetamine	A/C	Parenteral	Int abuse	0.056 µg/mL§ 0.30 µg/mL§	

(Continued on following page)

TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995 (Cont'd)

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels
321[ip]	44 yr	Morphine paroxetine thioridazine	A/C	Ingestion	Int suicide	
322[ip]	37 yr	Morphine sertraline	A/C	Ing/Unk	Int unknown	
323[p]	34 yr	Opiates	C	Unknown	Int abuse	
324[p]	41 yr	Opiates	A	Ingestion	Int misuse	
325	22 yr	Opiates amphetamines	A	Unknown	Int abuse	
326[p]	41 yr	Opiates chlordiazepoxide	U	Unknown	Int unknown	 1,037 ng/mL§
327[p]	46 yr	Opiates doxepin benzodiazepines	U	Ingestion	Unknown	884 ng/mL 215 ng/mL nordoxepin 84 ng/mL
328	55 yr	Opiates ethanol	U	Unknown	Unknown	 200 mg/dL
329[p]	46 yr	Pentazocine/naloxone	A	Ingestion	Int suicide	
330[a]	40 yr	Phenylbutazone	U	Ingestion	Int suicide	
331	18 yr	Propoxyphene	A/C	Ingestion	Int suicide	
332[ip]	43 yr	Propoxyphene	A/C	Ingestion	Int suicide	
333[i]	13-19 yr	Propoxyphene	A	Ingestion	Int suicide	7.69 µg/mL
334[p]	28 yr	Propoxyphene acetaminophen	A	Ingestion	Int suicide	>2,000 ng/mL 366 µg/mL
335[p]	26 yr	Propoxyphene acetaminophen fluoxetine	A/C	Ingestion	Int unknown	 244 µg/mL
336[ip]	31 yr	Propoxyphene amitriptyline	U	Ingestion	Int suicide	
337[ip]	38 yr	Propoxyphene butalbital chlorpromazine	U	Ingestion	Unknown	
338[ip]	39 yr	Propoxyphene cocaine benzodiazepines	A/C	Ingestion	Int suicide	
339	82 yr	Propoxyphene codeine benzodiazepine	A/C	Ingestion	Int suicide	
340	41 yr	Propoxyphene fentanyl carisoprodol	A	Ingestion	Int suicide	
341	58 yr	Salicylate	C	Ingestion	Int misuse	71 mg/dL
342	51 yr	Salicylate	A	Ingestion	Int suicide	166 mg/dL
343	>19 yr	Salicylate	U	Ingestion	Unknown	

See also cases 11, 12, 36, 53, 127, 271, 272, 273, 334, 335, 367, 390, 432, 476, 495, 542, 577, 611, 618, 643 (acetaminophen); 238, 239, 393, 578, 603 (acetaminophen/codeine); 13 (acetaminophen/decongestant); 202, 240, 274, 641 (acetaminophen/diphenhydramine); 528, 543, 611 (acetaminophen/hydrocodone); 275, 314 (acetaminophen/oxycodone); 228, 368, 448, 647 (acetaminophen/propoxyphene); 64, 203, 214, 370, 430, 684 (aspirin); 242 (aspirin/butalbital); 172, 296 (aspirin/carisoprodol); 318, 339, 375, 404, 532, 698, 708 (codeine); 542 (codeine/iodinated glycerol); 583 (diclofenac); 383 (etodoloc); 340 (fentanyl); 387, 449 (hydrocodone); 319 (hydromorphone); 431, 449, 458, 495, 496, 528, 585, 605 (ibuprofen); 452 (methadone); 19, 680 (morphine); 628 (naproxen); 224, 347, 474, 476, 648, 681, 682, 683 (opiate); 294, 389, 432, 468 (oxycodone); 589 (piroxicam); 20, 21, 22, 232, 590, 600, 707, 708 (propoxyphene); 233 (salicylate).

Anesthetics

344[ap]	29 yr	Bupivacaine	A	Parenteral	Adv rxn	
345[p]	16 yr	Halothane	A/C	Inhalation	Int abuse	
346[a]	28 yr	Isoflurane	U	Inhalation	Int abuse	145 µg/mL§
347	48 yr	Lidocaine opiates benzodiazepines	A	Ingestion	Int suicide	50 µg/mL

See also case 718 (ethyl ether).

Anticholinergic drugs

348	35 yr	Amantadine	A	Ingestion	Int suicide	

See also cases 426 (amantadine); 280, 588, 628 (benztropine); 247 (oxybutynin); 621 (trihexyphenidyl).

Anticoagulants

349	71 yr	Warfarin trimethoprim/sulfamethoxazole	C	Ingestion	Ther error	

See also case 499 (warfarin).

(Continued on following page)

TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995 (Cont'd)

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels
Anticonvulsants						
350	30s yr	Carbamazepine	A/C	Ingestion	Int suicide	40 µg/mL
351	32 yr	Valproic acid	U	Ingestion	Int suicide	170.8 µg/mL
See also cases 15, 16, 204, 282, 443, 477 (carbamazepine); 498 (phenytoin); 402 (valproate); 642 (valproic acid).						
Antidepressants						
352[ip]	19 yr	Amitriptyline	A	Ingestion	Int misuse	6,000 ng/mL
						nortriptyline 1,140 ng/mL
353[p]	21 yr	Amitriptyline	A	Ingestion	Int suicide	
354	22 yr	Amitriptyline	A/C	Ingestion	Int suicide	
355	22 yr	Amitriptyline	A/C	Ingestion	Int suicide	
356	24 yr	Amitriptyline	A/C	Ingestion	Int suicide	
357[p]	24 yr	Amitriptyline	A	Ingestion	Int suicide	653 ng/mL
358	27 yr	Amitriptyline	U	Ingestion	Int suicide	
359[p]	32 yr	Amitriptyline	A	Ingestion	Int suicide	
360[p]	32 yr	Amitriptyline	A	Ingestion	Int suicide	
361[p]	35 yr	Amitriptyline	U	Ingestion	Int suicide	
362[p]	36 yr	Amitriptyline	A	Ingestion	Int unknown	514 ng/mL
363	38 yr	Amitriptyline	A/C	Ingestion	Int suicide	
364[p]	41 yr	Amitriptyline	A	Ingestion	Int suicide	218 ng/mL
						nortriptyline 410 ng/mL
365[ip]	57 yr	Amitriptyline	A/C	Ingestion	Int suicide	
366[p]	>19 yr	Amitriptyline	A	Ingestion	Int suicide	
367[p]	58 yr	Amitriptyline	A/C	Ingestion	Int suicide	137 ng/mL
		acetaminophen				154 µg/mL
		ethanol				586 mg/dL
368[p]	35 yr	Amitriptyline	A/C	Ingestion	Int suicide	
		acetaminophen/propoxyphene				
		ethanol				
369	34 yr	Amitriptyline	A	Asp/Ing	Int suicide	3,283 ng/mL
						nortriptyline 351 ng/mL
		activated charcoal				
370	41 yr	Amitriptyline	A/C	Ingestion	Int suicide	1,250 ng/mL#§
		aspirin				88 mg/dL
371[p]	36 yr	Amitriptyline	A	Ingestion	Int suicide	4,680 ng/mL
						nortriptyline 1,320 ng/mL
		clomipramine				14,880 ng/mL
		diphenhydramine				6,000 ng/mL
372[p]	35 yr	Amitriptyline	U	Ingestion	Int suicide	
		clonazepam				
373	47 yr	Amitriptyline	A	Ingestion	Int suicide	
		clonazepam				
		baclofen				
374[p]	29 yr	Amitriptyline	A	Ingestion	Int suicide	
		cocaine				
375[p]	>19 yr	Amitriptyline	A/C	Ingestion	Int suicide	4,100 ng/mL#
		codeine				
		benzodiazepines				
376[p]	42 yr	Amitriptyline	A/C	Ingestion	Int suicide	
		cyclobenzaprine				
		diazepam				
377[ip]	42 yr	Amitriptyline	U	Ingestion	Int suicide	
		cyclobenzaprine				
		ethanol				
378	38 yr	Amitriptyline	A	Ingestion	Int suicide	7,068 ng/mL§
						nortriptyline 1,574 ng/mL§
		diazepam				710 ng/mL
		ethanol				
379[p]	45 yr	Amitriptyline	A/C	Ingestion	Int suicide	2,350 ng/mL
						nortriptyline 3,830 ng/mL
		diphenhydramine				0.20 µg/mL
380[p]	27 yr	Amitriptyline	A	Ingestion	Int suicide	1,460 ng/mL§
		ethanol				124 mg/dL§
381[p]	34 yr	Amitriptyline	U	Ingestion	Int suicide	
		ethanol				
382[p]	55 yr	Amitriptyline	A/C	Ingestion	Int suicide	5,200 ng/mL§
		ethanol				70 mg/dL§
383	48 yr	Amitriptyline	A	Ingestion	Int suicide	
		etodolac				

(Continued on following page)

TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995 (Cont'd)

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels
384	57 yr	Amitriptyline fluoxetine	A/C	Ingestion	Int suicide	
385	69 yr	Amitriptyline fosinopril alprazolam	A/C	Ingestion	Int suicide	
386[ip]	47 yr	Amitriptyline heroin	A/C	Ingestion	Int suicide	
387	38 yr	Amitriptyline hydrocodone alprazolam	A	Ingestion	Int suicide	1,100 ng/mL nortriptyline 1,200 ng/mL
388[ap]	9 yr	Amitriptyline imipramine methylphenidate	A/C	Ingestion	Int suicide	1,430 ng/mL nortriptyline 600 ng/mL 696 ng/mL desipramine 636 ng/mL
389[p]	25 yr	Amitriptyline oxycodone	U	Ingestion	Unknown	
390	64 yr	Amitriptyline phenelzine acetaminophen	A/C	Ingestion	Int suicide	64 µg/mL
391	57 yr	Amitriptyline prochlorperazine	A	Ingestion	Int suicide	>5,000 ng/mL
392	48 yr	Amitriptyline risperidone terfenadine	A/C	Ingestion	Int suicide	279 ng/mL
393	41 yr	Amitriptyline paroxetine acetaminophen/codeine	A/C	Ingestion	Int suicide	
394[p]	26 yr	Amitriptyline phenobarbital	U	Ingestion	Unknown	
395[p]	32 yr	Amitriptyline thioridazine	A/C	Ingestion	Int suicide	
396	34 yr	Amitriptyline thiothixene natural gas	A	Ing/Inh	Int suicide	
397[p]	49 yr	Amitriptyline verapamil	A	Ingestion	Int suicide	860 ng/mL§ nortriptyliine 150 ng/mL§ 0.48 µg/mL§ norverapamil 0.51 µg/mL§
398	75 yr	Amitriptyline/perphenazine	A	Ingestion	Int suicide	
399[ap]	27 yr	Bupropion	A	Ingestion	Int suicide	446 ng/mL hydroxybupropion 3,217 ng/mL
400[p]	61 yr	Bupropion	A	Ingestion	Int suicide	
401	35 yr	Bupropion sertraline	A	Ingestion	Int suicide	10.5 µg/mL desmethylsertraline 1.5 µg/mL
402[p]	25 yr	Bupropion valproate lorazepam	A/C	Ingestion	Int suicide	
403	51 yr	Clomipramine	A	Ingestion	Int suicide	2,600 ng/mL
404[p]	50 yr	Clomipramine loxapine codeine	A/C	Ingestion	Int suicide	
405[a]	1 yr	Desipramine	A	Ingestion	Unint gen	
406[a]	3 yr	Desipramine	U	Ingestion	Unknown	1,472 ng/mL
407[p]	14 yr	Desipramine	A	Ingestion	Int suicide	1,800 ng/mL
408	15 yr	Desipramine	A	Ingestion	Int suicide	
409	18 yr	Desipramine	A/C	Ingestion	Int suicide	8,200 ng/mL§
410[ip]	18 yr	Desipramine	A	Ingestion	Int suicide	
411	19 yr	Desipramine	A	Ingestion	Int suicide	3,500 ng/mL
412[p]	21 yr	Desipramine	U	Ingestion	Int suicide	
413[p]	21 yr	Desipramine	A	Ingestion	Int suicide	
414	34 yr	Desipramine	A	Ingestion	Int suicide	
415[p]	44 yr	Desipramine alprazolam	A	Ingestion	Int suicide	
416	44 yr	Desipramine barbiturate, unknown type trazodone	A/C	Ingestion	Int suicide	

(Continued on following page)

TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995 (Cont'd)

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels
417[ip]	47 yr	Desipramine benzodiazepines ethanol	A/C	Ingestion	Int suicide	
418[p]	29 yr	Desipramine fluoxetine	A	Ingestion	Int suicide	2,500 ng/mL
419	22 yr	Desipramine haloperidol	A	Ingestion	Int suicide	
420	25 yr	Desipramine lithium chlorpromazine	A/C	Ingestion	Int suicide	
421	42 yr	Desipramine lorazepam	A	Ingestion	Int suicide	
422[p]	40 yr	Doxepin	A	Ingestion	Int suicide	>3,000 ng/mL
423[p]	40 yr	Doxepin	A/C	Ingestion	Int suicide	
424[p]	43 yr	Doxepin	A	Ingestion	Int suicide	
425	84 yr	Doxepin alprazolam paroxetine	A/C	Ingestion	Int suicide	
426	33 yr	Doxepin amantadine	A	Ingestion	Int suicide	
427[p]	46 yr	Doxepin buspirone indapamide	A	Ingestion	Int suicide	
428	78 yr	Doxepin chlorzoxazone diphenhydramine	U	Ingestion	Int suicide	2,900 ng/mL nordoxepin 1,200 ng/mL 32 µg/mL
429[p]	34 yr	Doxepin ethanol	A	Ingestion	Int suicide	
430[p]	50 yr	Doxepin ethanol aspirin	A/C	Ingestion	Int suicide	1,300 ng/mL nordoxepin 90 ng/mL 220 mg/dL 6 mg/dL
431[i]	30 yr	Doxepin ibuprofen	A	Ingestion	Int suicide	
432[p]	42 yr	Doxepin oxycodone acetaminophen	A	Ingestion	Int suicide	3,600 ng/mL§ 0.3 µg/mL§
433[p]	30 yr	Doxepin perphenazine	A	Ingestion	Unknown	
434[ip]	46 yr	Doxepin trazodone cannabinoids	A/C	Ingestion	Int suicide	
435[ip]	50 yr	Fluoxetine isopropanol ethanol	A/C	Ingestion	Int suicide	
436[p]	12 yr	Imipramine	A/C	Ingestion	Int suicide	8,718 ng/mL desipramine 2,098 ng/mL
437	24 yr	Imipramine	A	Ingestion	Int suicide	6,700 ng/mL desipramine 1,500 ng/mL
438	29 yr	Imipramine	A	Ingestion	Int suicide	
439[p]	34 yr	Imipramine	A	Ingestion	Int suicide	16,800 ng/mL§ desipramine 2,100 ng/mL§
440	40 yr	Imipramine	A	Ingestion	Int abuse	1,500 ng/mL desipramine 8,500 ng/mL
441	35 yr	Imipramine alprazolam	A/C	Ingestion	Int suicide	1,012 ng/mL§ desipramine 228 ng/mL
442	43 yr	Imipramine alprazolam verapamil	A/C	Ingestion	Int suicide	
443[p]	39 yr	Imipramine carbamazepine	A	Ingestion	Int suicide	4,230 ng/mL§ desipramine 8,230 ng/mL§ 21.2 µg/mL
444[p]	32 yr	Imipramine cocaine	U	Ingestion	Int suicide	8,168 ng/mL
445[p]	29 yr	Imipramine ethanol	U	Ingestion	Int suicide	
446[p]	30 yr	Imipramine ethanol	A	Ingestion	Int suicide	1,934 ng/mL# 278 mg/dL

(Continued on following page)

TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995 (Cont'd)

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels
447	30 yr	Imipramine ethanol	A	Ingestion	Int suicide	
448[p]	>19 yr	Imipramine fluoxetine acetaminophen/propoxyphene	U	Ingestion	Int suicide	
449	30 yr	Imipramine hydrocodone ibuprofen	A	Ingestion	Int suicide	29,445 ng/mL
450	49 yr	Imipramine lithium	A/C	Ingestion	Int unknown	2,650 ng/mL desipramine 586 ng/mL 4.46 mEq/L
451	46 yr	Imipramine meclizine phenylpropanolamine/guaifenesin	A	Ingestion	Int suicide	
452[p]	31 yr	Imipramine methadone ethanol	A	Ingestion	Int suicide	
453	67 yr	Imipramine thioridazine clonazepam	A	Ingestion	Int suicide	
454	41 yr	Lithium	C	Ingestion	Ther error	3.1 mEq/L
455	46 yr	Lithium	C	Ingestion	Ther error	2.3 mEq/L
456	37 yr	Lithium fluphenazine lorazepam	A	Ingestion	Int suicide	
457	70 yr	Lithium theophylline thioridazine	C	Ingestion	Int misuse	3.0 mEq/L 56 µg/mL
458	19 yr	Lithium tricyclic antidepressants ibuprofen	A/C	Ingestion	Int suicide	
459	>19 yr	Loxapine	A	Ingestion	Int suicide	
460	17 yr	Nortriptyline	A/C	Ingestion	Int suicide	3,450 ng/mL§
461[p]	27 yr	Nortriptyline	A	Ingestion	Int suicide	
462[ip]	31 yr	Nortriptyline	A/C	Ingestion	Int suicide	
463	39 yr	Nortriptyline atenolol venlafaxine	A/C	Ingestion	Int suicide	2,423 ng/mL#
464[p]	60 yr	Nortriptyline flurazepam	A/C	Ingestion	Int suicide	
465	43 yr	Nortriptyline imipramine ethanol	A	Ingestion	Int suicide	
466	61 yr	Nortriptyline trazodone	A/C	Ingestion	Int suicide	
467	39 yr	Phenelzine	U	Ingestion	Unknown	
468[ip]	50 yr	Sertraline carisoprodol oxycodone	U	Ingestion	Int suicide	
469[ip]	37 yr	Sertraline lithium propranolol	A	Ingestion	Int suicide	
470	36 yr	Sertraline paroxetine	A/C	Ingestion	Int suicide	
471[ip]	50 yr	Trazodone benzodiazepines ethanol	A	Ingestion	Ther error	
472	54 yr	Tricyclic antidepressant	A/C	Ingestion	Int suicide	
473	68 yr	Tricyclic antidepressant	A/C	Ingestion	Int suicide	
474	31 yr	Tricyclic antidepressant amphetamines opiates	A/C	Ingestion	Int suicide	
475[p]	59 yr	Tricyclic antidepressant benzodiazepines ethanol	A	Ingestion	Unknown	
476[p]	28 yr	Tricyclic antidepressant opiate acetaminophen	A	Ingestion	Int suicide	 246 µg/mL

(Continued on following page)

TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995 (Cont'd)

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels
477[a]	30 yr	Venlafaxine	A/C	Ingestion	Unknown	89 µg/mL§
		carbamazepine				19.2 µg/mL§
See also cases 15, 218, 277, 278, 279, 294, 306, 307, 336, 669 (amitriptyline); 279 (amitriptyline/perphenazine); 14, 607 (antidepressant); 281 (bupropion); 371, 503, 642 (clomipramine); 621, 649 (desipramine); 327, 600 (doxepin); 16, 170, 209, 293, 335, 384, 418, 448, 595, 620 (fluoxetine); 388, 465, 534, 641 (imipramine); 420, 450, 469, 547, 629 (lithium); 404 (loxapine); 242 (nefazodone); 55, 504, 555 (nortriptyline); 239, 321, 393,425, 470, 547 (paroxetine); 390 (phenelzine); 22, 322, 401, 496, 612 (sertraline); 14, 297, 416, 434, 466 (trazodone); 458 (tricyclic antidepressant); 213, 463 (venlafaxine).						
Antihistamines						
478	48 yr	Diphenhydramine	A	Ingestion	Int suicide	
479[p]	22 yr	Diphenhydramine (OTC) sleep aid	A	Ingestion	Int suicide	
480[p]	30 yr	Diphenhydramine (OTC) sleep aid	A	Ingestion	Int suicide	
See also cases 371, 379, 428, 589 (diphenhydramine); 245, 609, 633 (hydroxyzine); 451 (meclizine), 392 (terfenadine).						
Antimicrobials						
481	39 yr	Rifampin	C	Ingestion	Adv rxn	
		ethambutol				
		clofazimine				
See also cases 481 (clofazimine); 481 (ethambutol); 583 (penicillin); 349 (trimethoprim/sulfamethoxazole).						
Antineoplastics						
482	81 yr	Doxorubicin	A	Parenteral	Ther error	
Asthma therapies						
483	68 yr	Aminophylline	C	Parenteral	Ther error	47 µg/mL
484	48 yr	Theophylline	C	Ingestion	Unknown	>100 µg/mL
485	52 yr	Theophylline (long-acting)	A/C	Ingestion	Int suicide	180 µg/mL
486[p]	55 yr	Theophylline	A/C	Ingestion	Int misuse	69 µg/mL
487	65 yr	Theophylline	C	Ingestion	Int suicide	36 µg/mL
488	68 yr	Theophylline	C	Ing/Other	Ther error	46 µg/mL
489	74 yr	Theophylline (long-acting)	U	Ingestion	Ther error	46 µg/mL
490	74 yr	Theophylline	C	Ingestion	Ther error	75 µg/mL
491	76 yr	Theophylline	C	Ingestion	Ther error	40 µg/mL
492	89 yr	Theophylline	C	Ingestion	Ther error	57 µg/mL
493	>19 yr	Theophylline	C	Ingestion	Ther error	49 µg/mL
494	64 yr	Theophylline (long-acting)	A/C	Ingestion	Int suicide	119 µg/mL
		alprazolam				
		prednisone				
495	18 yr	Theophylline (long-acting)	A	Ingestion	Int suicide	167 µg/mL
		ibuprofen				
		acetaminophen				19 µg/mL
496	20 yr	Theophylline	A	Ingestion	Int suicide	105 µg/mL
		ibuprofen				
		sertraline				
497	71 yr	Theophylline	A/C	Ingestion	Int suicide	72 µg/mL
		isradipine				
498	75 yr	Theophylline	A/C	Unknown	Unknown	37 µg/mL
		phenytoin				51.4 µg/mL
499	71 yr	Theophylline	C	Ingestion	Ther error	64 µg/mL
		warfarin				
See also cases 214, 457, 577 (theophylline).						
Cardiovascular drugs						
500	28 yr	Acebutolol	A	Ingestion	Int suicide	
		enalapril				
501	50 yr	Amlodipine	A	Ingestion	Int suicide	
		alprazolam				
		verapamil				
502	62 yr	Amlodipine	A/C	Ingestion	Int suicide	
		verapamil (long-acting)				
		guanfacine				
503	34 yr	Atenolol	A	Ingestion	Int suicide	
		clonidine				
		clomipramine				
504	63 yr	Atenolol	A	Ingestion	Int suicide	
		trifluoperazine				
		nortriptyline				4,750 ng/mL§
505[a]	23 yr	Cardiac glycoside extract from *Bufo* species (toad) sold as topical aphrodisiac	A	Ingestion	Int misuse	digoxin 0.9 ng/mL

(Continued on following page)

TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995 (Cont'd)

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels	
506	40 yr	Cardiac glycoside extract from *Bufo* species (toad) sold as topical aphrodisiac cocaine ethanol	A	Ingestion	Int misuse	digoxin 3.08 ng/mL	
507	>19 yr	Clonidine	A	Ingestion	Int suicide		
508	63 yr	Digoxin	A/C	Ingestion	Int misuse	5.0 ng/mL	
509	74 yr	Digoxin	C	Ingestion	Ther error		
510[p]	83 yr	Digoxin	A/C	Ingestion	Int suicide	>10 ng/mL	3-4 h
511[i]	89 yr	Digoxin	A/C	Ingestion	Ther error	>4.0 ng/mL	
512	89 yr	Digoxin	A/C	Ingestion	Int suicide	3.8 ng/mL§	
513	94 yr	Digoxin	A/C	Ingestion	Ther error	8 ng/mL	
514	81 yr	Digoxin loperamide	A	Ingestion	Int unknown	3.3 ng/mL	
515	92 yr	Digoxin oxybutynin	A/C	Ingestion	Int suicide	49.1 ng/mL	
516	30 yr	Digoxin verapamil lorazepam	A/C	Ingestion	Int suicide	7.8 ng/mL	
517	34 yr	Diltiazem (long-acting)	A	Ingestion	Int suicide		
518	38 yr	Diltiazem	A	Ingestion	Adv rxn		
519[p]	60 yr	Diltiazem (long-acting)	U	Ingestion	Int suicide		
520	68 yr	Diltiazem (long-acting)	A/C	Ingestion	Int suicide		
521[p]	80 yr	Diltiazem	C	Ingestion	Ther error		
522	86 yr	Diltiazem (long-acting)	A/C	Ingestion	Ther error		
523	90 yr	Diltiazem (long-acting)	A/C	Ingestion	Int suicide		
524	29 yr	Diltiazem captopril	A	Ingestion	Int suicide	>2,000 mg/dL§	
525	69 yr	Diltiazem (long-acting) digoxin	A/C	Ingestion	Int suicide	6.8 ng/mL	
526	42 yr	Diltiazem enalapril atenolol	A	Ingestion	Int suicide		
527	49 yr	Diltiazem ethanol	A/C	Ingestion	Int suicide		
528	65 yr	Diltiazem (long-acting) ibuprofen acetaminophen/hydrocodone	A	Ingestion	Int suicide	16.3 µg/mL§ 80 µg/mL[ll]	8 h
529	17 yr	Disopyramide	A/C	Ingestion	Int suicide		
530[a]	20 yr	Flecainide	A	Ingestion	Int suicide	1.62 µg/mL	
531	53 yr	Isradipine enalapril cisapride	U	Unknown	Unknown		
532[p]	40 yr	Metoprolol nifedepine codeine	A/C	Ingestion	Int suicide		
533[p]	25 yr	Mexiletine	A	Ingestion	Int suicide		
534	26 yr	Mexiletine imipramine ethanol	U	Ingestion	Int unknown	 204 mg/dL	
535[a]	72 yr	Milrinone	A	Parenteral	Ther error		
536[p]	31 yr	Nadolol verapamil benzodiazepines	A/C	Ingestion	Int misuse		
537[p]	23 yr	Nifedipine (long-acting)	U	Ingestion	Unknown		
538	47 yr	Nifedipine (long-acting)	U	Ingestion	Int suicide		
539	57 yr	Nifedipine (long-acting)	A/C	Ingestion	Int suicide		
540[a]	57 yr	Nifedipine (long-acting)	A	Ingestion	Int misuse	>200 ng/mL	
541[p]	>19 yr	Nifedipine	U	Ingestion	Unknown		
542	22 yr	Nifedipine (long-acting) acetaminophen codeine/iodinated glycerol	A	Ingestion	Int suicide	 123 µg/mL	10 h
543[p]	58 yr	Nifedipine acetaminophen/hydrocodone alprazolam	A/C	Ingestion	Int suicide	 43.8 µg/mL[ll]	
544	38 yr	Nifedipine diltiazem (long-acting) enalapril	A	Ingestion	Int suicide		

(Continued on following page)

TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995 (Cont'd)

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels
545	38 yr	Nifedipine (long-acting) ethanol	A/C	Ingestion	Int suicide	
546	36 yr	Nifedipine (long-acting) glyburide methocarbamol	A	Ingestion	Int suicide	
547	>19 yr	Nifedipine (long-acting) lithium paroxetine	A/C	Ingestion	Int suicide	5.6 mEq/L
548	40 yr	Nifedipine (long-acting) verapamil (long-acting)	A/C	Ingestion	Int suicide	
549[p]	46 yr	Nifedipine (long-acting) verapamil (long-acting)	A	Ingestion	Int suicide	
550	35 yr	Procainamide	A/C	Ingestion	Unknown	74 µg/mL N-acetylprocainamide 80 µg/mL
551	70 yr	Procainamide	A	Parenteral	Adv rxn	
552	37 yr	Propranolol (long-acting)	A	Ingestion	Int suicide	
553	79 yr	Propranolol (long-acting) calcium channel blocker, unknown type	C	Ingestion	Adv rxn	
554[ip]	39 yr	Propranolol ethanol	A/C	Ingestion	Int suicide	
555	26 yr	Propranolol nortriptyline	A	Ingestion	Int suicide	
556[a]	49 yr	Propranolol verapamil (long-acting)	C	Ingestion	Unknown	600 µg/mL 668 µg/mL norverapamil 301 µg/mL
557	67 yr	Quinidine	A	Ingestion	Int suicide	
558[a]	50 yr	Quinidine captopril	A/C	Ingestion	Int suicide	12 µg/mL
559[i]	79 yr	Unknown cardiovascular drug	A/C	Ingestion	Int suicide	
560	15 yr	Verapamil	A	Ingestion	Unknown	2.6 µg/mL§
561[p]	16 yr	Verapamil	A	Ingestion	Int unknown	
562	26 yr	Verapamil (long-acting)	A	Ingestion	Int suicide	
563[p]	28 yr	Verapamil (long-acting)	A/C	Ingestion	Ther error	
564[p]	37 yr	Verapamil (long-acting)	A	Ingestion	Int suicide	1,681 µg/mL
565	38 yr	Verapamil (long-acting)	A/C	Ingestion	Int suicide	
566	41 yr	Verapamil (long-acting)	A	Ingestion	Int suicide	
567	44 yr	Verapamil (long-acting)	A	Ingestion	Int suicide	
568	46 yr	Verapamil (long-acting)	A	Ingestion	Int suicide	
569	48 yr	Verapamil (long-acting)	U	Ingestion	Int suicide	
570	50 yr	Verapamil (long-acting)	A/C	Ingestion	Int suicide	
571	50 yr	Verapamil (long-acting)	A	Ingestion	Int suicide	18.4 µg/mL
572[p]	54 yr	Verapamil (long-acting)	A	Ingestion	Int suicide	
573	64 yr	Verapamil (long-acting)	A/C	Ingestion	Ther error	
574[p]	64 yr	Verapamil	A/C	Ingestion	Int suicide	
575[p]	70s yr	Verapamil (long-acting)	A	Ingestion	Int suicide	
576	87 yr	Verapamil	U	Ingestion	Int suicide	
577	69 yr	Verapamil (long-acting) acetaminophen theophylline	A	Ingestion	Int suicide	 404 µg/mL 26 µg/mL
578	60 yr	Verapamil (long-acting) acetaminophen/codeine benazepril	A/C	Ingestion	Int suicide	2.55 µg/mL§ norverapamil 0.30 µg/mL§ 19 µg/mL[ll] codeine 0.38 µg/mL§
579	54 yr	Verapamil activated charcoal	A/C	Asp/Ing	Int suicide	15,800 ng/mL§
580[p]	30 yr	Verapamil amphetamines/methamphetamine	A	Ingestion	Int unknown	509 µg/mL norverapamil 236 µg/mL
581[p]	19 yr	Verapamil atenolol	A	Ingestion	Int suicide	
582	55 yr	Verapamil cyclobenzaprine alprazolam	A	Ingestion	Int suicide	
583	15 yr	Verapamil (long-acting) diclofenac penicillin	A	Ingestion	Int suicide	

(Continued on following page)

TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995 (Cont'd)

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels	
584	61 yr	Verapamil (long-acting) ethanol	A/C	Ingestion	Int suicide		
585[p]	52 yr	Verapamil ibuprofen	A	Ingestion	Int suicide		
586	52 yr	Verapamil (long-acting) molindone clonazepam	A	Ingestion	Int suicide		
587	61 yr	Verapamil (long-acting) temazepam clorazepate	A	Ingestion	Int suicide		
588	53 yr	Verapamil thiothixene benztropine	A/C	Ingestion	Int suicide		
See also cases 270 (acebutolol); 463, 526, 581 (atenolol); 578 (benazepril); 553 (calcium channel blocker, unknown type); 524, 558 (captopril); 283, 503, 638 (clonidine); 525, 625 (digoxin); 544 (diltiazem); 500, 526, 531, 544 (enalapril); 385 (fosinopril); 502 (guanfacine); 497 (isradipine); 212 (lisinopril); 319 (metoprolol); 532 (nifedipine); 469 (propranolol); 290, 397, 442, 501, 502, 516, 536, 548, 549, 556 (verapamil).							
Cough and cold preparations							
589	28 yr	Clemastine/phenylpropanolamine diphenhydramine piroxicam	A	Ingestion	Int misuse		
590[ip]	33 yr	Dextromethorphan phenylpropanolamine propoxyphene	A	Ingestion	Int unknown	9 µg/mL 1.11 µg/mL 0.83 µg/mL norpropoxyphene 1.6 µg/mL	
591[aip]	17 yr	Ephedrine	A	Ingestion	Int unknown		
592[p]	22 yr	Ephedrine	A	Ingestion	Int misuse		
593[a]	43 yr	Phenylpropanolamine/ brompheniramine	A	Ingestion	Int suicide		
See also cases 542 (codeine/iodinated glycerol); 451 (phenylpropanolamine/guaifenesin).							
Diuretics							
See cases 629 (hydrochlorothiazide/triamterene); 427 (indapamide).							
Electrolytes and minerals							
594[a]	22 mo	Ferrous sulfate	A	Ingestion	Unint gen	2,583 µg/dL	6.5 h
595	52 yr	Potassium fluoxetine	A	Ingestion	Int suicide	9.4 mEq/L	
See also case 211 (iron dextran).							
Gastrointestinal preparations							
596	2 yr	Bismuth subsalicylate	C	Ingestion	Adv rxn		
597[a]	63 yr	Sodium biphosphate/phosphate enema	A	Other	Ther error		
See also cases 531 (cisapride); 514 (loperamide).							
Hormones and hormone antagonists							
598	44 yr	Insulin	A/C	Parenteral	Int suicide		
599	30 yr	Insulin chlordiazepoxide carisoprodol	A	Ing/Paren	Int suicide		
600	66 yr	Insulin doxepin propoxyphene	A	Ing/Paren	Int suicide		
601	67 yr	Phenformin	C	Ingestion	Adv rxn		
See also cases 546 (glyburide); 637 (levothyroxine); 213 (oral hypoglycemic); 494 (prednisone).							
Miscellaneous drugs							
602	85 yr	Allopurinol	C	Ingestion	Adv rxn		
See also cases 135 (carbidopa/levodopa); 675 (gamma hydroxy butyrate); 286 (interferon).							
Muscle relaxants							
603	41 yr	Carisoprodol acetaminophen/codeine	A/C	Ingestion	Int suicide		
604[ip]	33 yr	Carisoprodol ethanol	A	Ingestion	Int suicide		
605	35 yr	Cyclobenzaprine ibuprofen	U	Ingestion	Int suicide		
See also cases 373 (baclofen); 219, 220, 340, 468, 599 (carisoprodol); 428 (chlorzoxazone); 376, 377, 582 (cyclobenzaprine); 546 (methocarbamol).							
Sedatives/hypnotics/antipsychotics							
606	73 yr	Alprazolam	A	Ingestion	Int suicide		
607	35 yr	Alprazolam antidepressant, unknown type	A	Ingestion	Int suicide		

(Continued on following page)

TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995 (Cont'd)

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels	
608[ip]	30 yr	Alprazolam ethanol	A	Ingestion	Int abuse	0.031 µg/mL§ 60 mg/dL§	
609[p]	42 yr	Alprazolam hydroxyzine ethanol	A/C	Ingestion	Int suicide		
610[p]	17 yr	Benzodiazepines	A	Unknown	Int unknown		
611[p]	49 yr	Benzodiazepines acetaminophen/hydrocodone acetaminophen	A	Ingestion	Int suicide	 183 µg/mL	 6-10 h
612[p]	82 yr	Benzodiazepines sertraline	A/C	Ingestion	Int suicide		
613[p]	41 yr	Chloral hydrate	A	Ingestion	Int suicide		
614[p]	80 yr	Chloral hydrate	A	Ingestion	Int suicide		
615	85 yr	Chlorpromazine	A	Ingestion	Ther error		
616[a]	31 yr	Clozapine	A	Ingestion	Int suicide		
617	37 yr	Diazepam ethanol	A	Ingestion	Int suicide		
618[p]	45 yr	Diazepam ethanol acetaminophen	A/C	Ingestion	Int suicide	1.19 µg/mL§ 366 mg/dL	
619[a]	30 yr	Ethchlorvynol ethanol	U	Ing/Paren	Int unknown	8.6 µg/mL§ 150 mg/dL	
620	32 yr	Fluphenazine chlorpromazine fluoxetine	U	Ingestion	Int suicide		
621	36 yr	Fluphenazine trihexyphenidyl desipramine	A/C	Ingestion	Int suicide		
622	50s yr	Flurazepam	A	Ingestion	Int suicide		
623	84 yr	Flurazepam	U	Ingestion	Int suicide	desalkylflurazepam 380 ng/mL	
624	37 yr	Flurazepam alprazolam	A	Ingestion	Int suicide	N-desalkylflurazepam 189 ng/mL 5 ng/mL	
625	80 yr	Flurazepam lorazepam digoxin	A	Ingestion	Int suicide	 2.7 ng/mL	
626[a]	16 yr	Haloperidol	C	Parenteral	Adv rxn		
627[p]	51 yr	Haloperidol	A	Ingestion	Int suicide		
628[ip]	24 yr	Haloperidol benztropine naproxen	U	Ingestion	Int suicide		
629	70 yr	Haloperidol hydrochlorothiazide/triamterene lithium	A/C	Ingestion	Int suicide	 0.3 mEq/L	
630	42 yr	Haloperidol perphenazine	C	Parenteral	Adv rxn		
631	91 yr	Lorazepam	A	Ingestion	Adv rxn		
632[p]	>19 yr	Lorazepam ethanol	A	Ingestion	Int suicide		
633[p]	46 yr	Lorazepam hydroxyzine chlordiazepoxide	A	Ingestion	Int suicide		
634	32 yr	Phenobarbital	A	Ingestion	Int suicide	212 µg/mL	
635	41 yr	Phenobarbital amphetamines benzodiazepines	A/C	Ingestion	Int suicide		
636[ip]	36 yr	Phenobarbital benzodiazepines	U	Ingestion	Int unknown		
637[p]	21 yr	Phenobarbital levothyroxine	A/C	Ingestion	Int suicide	276.5 µg/mL	
638[a]	66 yr	Risperidone clonidine	A/C	Ingestion	Int suicide		
639	66 yr	Secobarbital	A/C	Ingestion	Int suicide	132 µg/mL	18 h
640	80 yr	Temazepam	A	Ingestion	Int suicide	7 µg/mL	
641	47 yr	Thioridazine acetaminophen/diphenhydramine imipramine	A/C	Ingestion	Int suicide	4,200 ng/mL 148 µg/mL‖ 230 ng/mL desipramine 1,300 ng/mL	4 h

(Continued on following page)

TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995 (Cont'd)

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels
642[ip]	31 yr	Thioridazine valproic acid clomipramine	C	Ingestion	Int misuse	
643	50 yr	Trifluoperazine lorazepam acetaminophen	A	Ingestion	Int suicide	 168 µg/mL
644[ap]	12 yr	Trimethobenzamide	C	Other	Adv rxn	26.8 µg/mL
See also cases 224, 241, 283, 298, 315, 385, 387, 415, 425, 441, 442, 494, 501, 543, 582, 624, 669, 682 (alprazolam); 21, 316, 317, 327, 338, 339, 347, 375, 417, 471, 475, 536, 635, 636, 670, 683, 686, 695, 715 (benzodiazepines); 36, 416, 648 (barbiturates); 427 (buspirone); 337 (butalbital); 307, 326, 599, 633 (chlordiazepoxide); 55, 337, 420, 620 (chlorpromazine); 372, 373, 453, 586 (clonazepam); 229, 314, 376, 378, 671, 700 (diazepam); 292 (flunitrazepam); 456 (fluphenazine); 464 (flurazepam); 281, 419 (haloperidol); 230, 246, 280, 287, 402, 421, 456, 516, 625, 643 (lorazepam); 433, 630 (perphenazine); 394 (phenobarbital); 391 (prochlorperazine); 392 (risperidone); 230, 248, 289, 587 (temazepam); 321, 395, 453, 457 (thioridazine); 396, 588 (thiothixene); 504 (trifluoperazine).						
Stimulants and street drugs						
645[p]	43 yr	Amphetamine	A/C	Ingestion	Int abuse	
646	48 yr	Amphetamine	U	Unknown	Int unknown	1,000 ng/mL
647	51 yr	Amphetamine acetaminophen/propoxyphene	A/C	Ingestion	Int misuse	 64 µg/mL‖
648[p]	41 yr	Amphetamine barbiturates opiates	A/C	Unknown	Int abuse	 110 µg/mL
649	60 yr	Amphetamine desipramine	U	Ingestion	Unint unk	 210 ng/mL§
650	30 yr	Amphetamines, hallucinogenic ethanol cannabinoids	U	Unknown	Int unknown	 18 mg/dL
651	35 yr	Amphetamines marijuana	A	Inhalation	Int abuse	
652[ap]	11 mo	Cocaine (crack)	A	Ingestion	Unint gen	25.66 µg/mL§
653	18 yr	Cocaine	A	Ingestion	Int abuse	0.31 µg/mL§ benzoylecgonine 6.9 µg/mL§ ecgonine methyl ester 2.87 µg/mL§
654[p]	25 yr	Cocaine	A	Ing/Inh	Int misuse	
655[p]	25 yr	Cocaine	A/C	Ingestion	Int misuse	
656	27 yr	Cocaine	A	Ingestion	Int misuse	
657[p]	29 yr	Cocaine	A	Ingestion	Unknown	0.52 µg/mL benzoylecgonine 3.43 µg/mL
658[ip]	29 yr	Cocaine	A	Unknown	Int abuse	
659	30 yr	Cocaine	A/C	Inhalation	Int abuse	0.3 µg/mL
660	31 yr	Cocaine	A	Unknown	Int abuse	benzoylecgonine 8.8 µg/mL§
661[p]	31 yr	Cocaine	A/C	Inhalation	Int abuse	
662[p]	35 yr	Cocaine	A	Unknown	Unknown	2.0 µg/mL
663	35 yr	Cocaine	A/C	Parenteral	Int abuse	
664	37 yr	Cocaine	U	Unknown	Int abuse	
665[p]	38 yr	Cocaine (crack)	A/C	Inhalation	Int abuse	
666	42 yr	Cocaine	A	Inhalation	Int abuse	
667[p]	42 yr	Cocaine	U	Unknown	Int abuse	
668[p]	55 yr	Cocaine	U	Inhalation	Int abuse	
669[p]	34 yr	Cocaine amitriptyline alprazolam	A	Ing/Inh	Int unknown	
670	47 yr	Cocaine benzodiazepines amphetamines	A	Ing/Inh	Int abuse	
671	29 yr	Cocaine diazepam	U	Ingestion	Int abuse	0.06 µg/mL§ benzoylecgonine 2.28 µg/mL§ ecgonine methyl ester 0.75 µg/mL§ 0.9 µg/mL§
672[ip]	30 yr	Cocaine ethanol	C	Ing/Inh	Int abuse	
673[p]	35 yr	Cocaine ethanol	A	Unknown	Int abuse	
674	24 yr	Cocaine ethanol methamphetamine	C	Ing/Inh	Int abuse	
675	23 yr	Cocaine gamma hydroxy butyrate	A	Ing/Unk	Int abuse	0.03 µg/mL§ benzoylecgonine 1.4 µg/mL§
676[p]	46 yr	Cocaine heroin methamphetamine	A/C	Ing/Paren	Int abuse	

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TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995 (Cont'd)

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels
677	41 yr	Cocaine marijuana	A	Inhalation	Int abuse	
678[p]	26 yr	Cocaine	A	Parenteral	Int abuse	0.02 µg/mL
						cocaine metabolite 0.19 µg/mL
		methamphetamine				0.02 µg/mL
		heroin				
679	23 yr	Cocaine (crack) methanol	U	Ing/Inh	Int abuse	
680[ip]	26 yr	Cocaine	A/C	Parenteral	Int abuse	0.06 µg/mL
						benzoylecgonine 1.4 µg/mL
		morphine				0.06 µg/mL
681[p]	36 yr	Cocaine opiates	A	Unknown	Int unknown	
682	33 yr	Cocaine opiates alprazolam	A/C	Ing/Unk	Int abuse	
683[p]	51 yr	Cocaine opiates benzodiazepines	A	Ingestion	Int unknown	
684	43 yr	Cocaine phenylpropanolamine	A/C	Ingestion	Int suicide	
		aspirin				79 mg/dL
685[ip]	52 yr	Cocaine (crack) plastic bag	U	Asp/Ing	Int abuse	
686[p]	30 yr	Fenfluramine ethanol benzodiazepines	U	Ingestion	Int suicide	109 mg/dL§
687[p]	21 yr	Heroin, brown	U	Inhalation	Int abuse	
688[p]	34 yr	Heroin	A/C	Parenteral	Int suicide	
689[p]	36 yr	Heroin	A/C	Parenteral	Int abuse	
690	42 yr	Heroin	A/C	Parenteral	Int abuse	morphine 0.028 µg/mL
691[p]	45 yr	Heroin	A	Parenteral	Int abuse	morphine 111 µg/mL
692[ip]	46 yr	Heroin	A/C	Parenteral	Int abuse	
693[p]	47 yr	Heroin	A	Parenteral	Int abuse	
694[p]	48 yr	Heroin	A/C	Parenteral	Int abuse	
695[ip]	43 yr	Heroin benzodiazepines	A/C	Ing/Paren	Int abuse	
696[ip]	32 yr	Heroin cocaine	A/C	Inh/Paren	Int abuse	
697[ip]	38 yr	Heroin cocaine	A/C	Inh/Paren	Int abuse	
698[p]	39 yr	Heroin cocaine codeine	A/C	Unknown	Int abuse	
699[p]	47 yr	Heroin cocaine	A/C	Parenteral	Int abuse	
		ethanol				130 mg/dL
700[p]	28 yr	Heroin diazepam	A/C	Ing/Paren	Int abuse	
701[p]	20 yr	Heroin ethanol	U	Ing/Paren	Int abuse	
702[p]	30 yr	Heroin	A/C	Ing/Paren	Int abuse	
		ethanol				167 mg/dL
703[ip]	34 yr	Heroin ethanol	A/C	Ing/Paren	Int abuse	
704[p]	37 yr	Heroin	U	Ing/Paren	Int abuse	
		ethanol				240 mg/dL
705[p]	46 yr	Heroin ethanol	C	Parenteral	Int abuse	
706[ip]	19 yr	Heroin ethanol cannabinoids	A/C	Ing/Inh/Par	Int abuse	
707[p]	26 yr	Heroin propoxyphene cocaine	A	Parenteral	Int abuse	
708[ip]	26 yr	Heroin propoxyphene codeine	A	Ing/Inh/Unk	Int abuse	

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TABLE 21. Summary of Fatal Exposures Reported to TESS in 1995 (Cont'd)

Case	Age	Substances	Chronicity	Route	Reason	Blood Levels	
709[a]	1 d	Methamphetamine	C	Other	Int abuse		
710	27 yr	Methamphetamine	A	Ingestion	Int abuse		
711[a]	30 yr	Methamphetamine	U	Ing/Inh	Int abuse		
712	36 yr	Methamphetamine	A/C	Unknown	Int abuse		
713	37 yr	Methamphetamine	A/C	Parenteral	Int abuse		
714[p]	>19 yr	Methamphetamine	U	Unknown	Unknown	1.1 µg/mL amphetamine 0.16 µg/mL	
715	40 yr	Methamphetamine benzodiazepines ethanol	U	Ing/Unk	Int abuse	 474 mg/dL	
716	37 yr	Methamphetamine cannabinoids	U	Unknown	Int abuse	>5,000 ng/mL amphetamine 3,590 ng/mL	
717[p]	31 yr	Methamphetamine cocaine	A	Unknown	Int abuse	0.80 µg/mL amphetamine 0.11 µg/mL benzoylecgonine 0.28 µg/mL§	
718[ap]	25 yr	Methamphetamine ethyl ether	A	Inh/Unk	Int abuse		
719[p]	19 yr	Methylenedioxymethamphetamine	A	Ingestion	Int abuse	0.54 µg/mL§	
720[p]	23 yr	Methylenedioxymethamphetamine	A	Ingestion	Int abuse		
721	18 yr	Phencyclidine	U	Unknown	Int abuse		
722[p]	38 yr	Phencyclidine	A	Ingestion	Int abuse	0.62 µg/mL§	
See also cases 325, 474, 635, 670 (amphetamine); 580 (amphetamines/methamphetamine); 434, 650, 706, 716 (cannabinoids); 128, 150, 205, 300, 316, 338, 374, 444, 506, 696, 697, 698. 699, 707, 717 (cocaine); 17, 210, 311, 386, 676, 678 (heroin); 651, 677 (marijuana); 18, 320, 674, 676, 678 (methamphetamine); 388 (methylphenidate); 288 (phendimetrazine); 288 (phentermine); 590, 684 (phenylpropanolamine).							
Topical preparations							
723	44 yr	Methyl salicylate (oil of wintergreen) iodine (2%)	A	Ingestion	Int suicide	124 mg/dL	1-2 h
See also case 723 (iodine).							
Vitamins							
724[a]	1 yr	Prenatal vitamins with iron	A	Ingestion	Unint gen	6,000 µg/dL	12-14 h

NOTE: The term "long-acting" is used throughout for all sustained release, delayed release, or long-acting formulation.

ABBREVIATIONS: C, chronic exposure; A, acute exposure; A/C, acute on chronic; U, unknown; Adv rxn, adverse reaction; Env, environmental; Int, intentional; Occ, occupational; Ther error, therapeutic error; Unint gen, unintentional general.

[p]Prehospital (cardiac and/or respiratory) arrest.

[i]Reported to poison center indirectly (by coroner, medical examiner, or from other source) after the fatality occurred.

[a]Abstract provided in Appendix.

§ Level obtained postmortem.

‖ Acetaminophen level.

¶ Salicylate level.

Level includes metabolite and parent compound.

TABLE 22A. Demographic Profile of Exposure Cases by Generic Category of Substances and Products: Nonpharmaceuticals

Substance Implicated In the Exposure	No. of Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6–19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Adhesives/glues														
Cyanoacrylates	12,403	3,831	2,472	4,568	12,235	113	37	14	2,795	1,579	3,067	680	11	0
Epoxy	822	322	66	331	804	6	2	7	302	190	229	70	0	0
Toluene/xylene	2,134	1,447	324	257	2,040	82	8	3	308	621	489	47	2	0
Nontoxic	1,577	1,120	330	109	1,522	40	12	1	73	275	102	11	0	0
Unknown	4,742	2,606	640	1,163	4,553	131	23	28	841	1,230	1,041	175	7	1
*Category totals	21,678	9,326	3,832	6,428	21,154	372	82	53	4,319	3,895	4,928	983	20	1
Alcohols														
Ethanol (beverage)	28,981	1,581	4,303	20,417	4,198	23,902	170	501	20,245	3,469	9,395	4,370	706	20
Ethanol (other)	2,367	1,469	226	562	2,165	160	8	28	381	788	402	53	2	0
Higher alcohols	147	54	24	46	143	3	0	0	54	42	37	12	0	0
Isopropanol	9,781	6,649	849	1,944	8,807	902	37	11	2,043	3,671	1,948	294	41	1
Methanol	842	206	114	442	753	78	6	0	435	238	246	52	17	6
Rubbing alcohol														
Ethanol, with methyl salicylate	31	22	2	6	29	2	0	0	7	10	8	1	0	0
Ethanol, without methyl salicylate	319	249	21	40	308	10	0	0	47	134	47	3	1	0
Isopropanol, with methyl salicylate	356	276	21	52	335	19	0	0	82	174	60	9	3	0
Isopropanol, without methyl salicylate	8,540	6,283	717	1,325	7,862	612	43	3	1,340	3,247	1,512	152	10	0
Unknown rubbing alcohol	191	127	24	35	170	17	3	0	27	53	17	5	0	0
Other alcohol	35	17	3	11	32	1	0	2	9	12	9	0	1	0
Unknown alcohol	529	76	88	319	228	290	2	6	325	75	105	74	12	0
*Category totals	52,119	17,009	6,392	25,199	25,030	25,996	269	551	24,995	11,913	13,786	5,025	793	82
Arts/crafts/office supplies														
Artist paints, non-water-color	1,091	761	156	129	1,059	26	2	4	90	307	135	16	3	0
Chalk	1,903	1,677	165	41	1,888	10	1	2	37	346	51	3	1	0
Clay	1,727	1,450	163	89	1,703	16	0	7	67	284	93	3	0	0
Crayon	2,767	2,410	223	101	2,743	19	0	4	80	450	70	5	0	0
Glazes	253	97	41	101	246	6	1	0	43	80	34	4	1	0
Office supplies: miscellaneous	314	105	39	126	304	8	0	1	56	54	77	8	1	0
Pencil	3,054	1,528	1,174	257	2,963	30	56	2	153	318	361	14	0	0
Pens/ink	12,982	9,543	2,744	474	12,663	271	24	15	375	2,796	468	34	1	0
Typewriter correction fluid	2,394	1,551	610	177	2,244	130	12	2	228	811	302	13	1	0
Water color	3,309	2,659	375	230	3,264	37	2	6	84	706	145	10	1	0
Other	5,662	4,374	677	486	5,562	82	12	5	280	1,065	340	27	0	0
Unknown	365	266	69	27	354	6	2	2	28	72	23	4	0	0
*Category totals	35,821	26,421	6,436	2,238	34,993	641	112	50	1,521	7,289	2,099	141	9	0
Auto/aircraft/boat products														
Ethylene glycol	4,362	722	630	2,450	4,038	285	18	8	1,523	1,031	1,067	298	80	11
Glycols: other	1,544	471	131	752	1,474	55	10	0	523	381	583	73	13	1
Glycol and methanol	90	36	12	32	86	4	0	0	32	26	32	2	0	0
Hydrocarbons	3,546	1,580	432	1,223	3,430	96	12	5	941	929	1,345	155	10	0
Methanol	1,290	395	191	563	1,187	91	9	1	575	448	375	58	14	5
Nontoxic	53	35	11	6	52	0	1	0	6	12	9	2	0	0
Other	2,587	1,084	393	861	2,515	44	12	14	876	513	1,036	202	3	0
Unknown	159	45	30	73	147	11	1	0	67	20	69	15	1	0
*Category totals	13,631	4,368	1,830	5,960	12,929	586	63	28	4,543	3,360	4,516	805	121	17
Batteries														
Automotive batteries	1,785	179	220	1,034	1,766	11	4	1	579	156	802	194	6	0
Disc batteries														
Alkaline (MnO_2)	94	71	11	4	89	2	3	0	63	61	11	3	0	0
Lithium	68	32	13	14	63	4	0	1	37	17	11	2	1	0
Mercuric oxide	13	4	2	6	13	0	0	0	7	6	0	0	0	0
Nickel cadmium	5	1	1	2	5	0	0	0	2	1	1	0	0	0
Silver oxide	35	23	5	5	32	2	1	0	22	21	3	1	0	0
Zinc-air	96	49	6	38	94	2	0	0	75	69	4	0	0	0
Other	8	5	2	1	8	0	0	0	4	2	0	0	0	0
Unknown	1,532	1,060	333	106	1,497	29	0	0	1,093	881	69	15	1	0
Dry cell batteries	4,007	2,119	1,017	631	3,831	134	36	3	615	1,051	1,093	172	1	0
Other batteries	92	34	30	22	91	1	0	0	20	22	23	5	0	0
Unknown batteries	30	9	13	5	29	1	0	0	11	5	14	1	0	0

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TABLE 22A. Demographic Profile of Exposure Cases by Generic Category of Substances and Products: Nonpharmaceuticals (Cont'd)

Substance Implicated In the Exposure	No. of Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6–19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
*Category totals	7,765	3,586	1,653	1,868	7,518	186	44	5	2,528	2,292	2,031	393	9	0
Bites and envenomations														
Coelenterate	52	13	11	22	52	0	0	0	11	1	14	3	0	0
Fish	1,233	25	204	853	1,228	1	2	2	408	26	550	173	5	0
Other/unknown marine animal	217	70	35	97	213	2	0	2	64	21	49	18	0	0
Insects														
Ant/fire ant	3,121	1,255	460	1,173	3,099	6	13	2	358	78	1,232	184	6	0
Bee/wasp/hornet	17,874	3,795	4,060	8,408	17,853	11	2	8	1,771	206	7,706	947	22	2
Caterpillar	2,554	714	686	1,020	2,535	8	4	6	217	81	979	86	1	0
Centipede/millipede	105	41	20	33	105	0	0	0	9	8	38	3	0	0
Mosquito	287	101	55	104	286	0	1	0	46	1	101	19	2	0
Scorpion	11,005	915	2,161	6,793	11,001	3	0	1	761	122	5,917	733	21	0
Tick	3,211	882	788	1,264	3,202	2	0	3	644	195	698	55	2	0
Other insect	10,876	2,362	2,030	5,495	10,676	22	136	29	1,976	394	3,384	669	3	0
Mammals														
Bat	180	18	39	93	176	1	0	1	110	21	38	3	0	0
Cat	744	131	176	357	740	1	0	2	359	12	160	23	1	0
Dog	1,407	261	530	514	1,407	0	0	0	851	17	233	39	2	0
Fox	27	7	5	14	27	0	0	0	19	1	2	0	0	0
Human	62	18	19	16	53	0	9	0	27	2	14	7	0	0
Raccoon	103	9	19	67	101	1	0	0	61	5	25	4	0	0
Rodents/lagomorphs	1,703	453	652	455	1,685	1	13	2	383	63	512	28	0	0
Skunk	233	27	63	102	231	0	1	1	26	19	78	11	0	0
Other mammal	964	168	335	356	957	1	1	2	365	55	218	21	3	0
Reptile other/unknown	1,342	509	445	296	1,313	9	9	8	188	153	431	37	0	1
Snakes														
Copperhead	467	29	103	302	467	0	0	0	406	9	185	167	10	0
Coral	45	4	9	31	44	0	0	1	38	6	19	5	1	0
Cottonmouth	81	2	18	52	81	0	0	0	68	3	30	24	2	0
Crotalid: unknown	5	1	1	3	5	0	0	0	3	1	0	2	0	0
Rattlesnake	817	55	158	533	811	4	1	1	708	26	201	355	74	1
Exotic snakes														
Poisonous	104	11	14	63	101	1	0	1	84	5	21	28	8	0
Nonpoisonous	237	26	80	110	237	0	0	0	69	4	77	12	0	0
Unknown if poisonous	1	0	0	1	1	0	0	0	1	0	0	0	0	0
Nonpoisonous snake	2,044	243	937	715	2,040	0	1	1	444	79	867	43	1	0
Unknown snake	1,957	213	651	971	1,956	1	0	0	1,130	118	946	225	22	0
Spiders														
Black widow	2,080	184	336	1,400	2,076	3	1	0	689	130	950	321	14	0
Brown recluse	2,003	180	301	1,239	1,997	2	1	1	1,051	43	570	493	25	0
Other spider	6,687	944	1,343	3,854	6,668	8	2	8	1,118	135	2,400	372	4	0
Tarantula	107	17	41	38	106	0	0	1	16	2	56	2	0	0
Unknown insect or spider	12,672	2,076	2,320	6,172	12,648	5	13	4	2,681	189	5,280	1,025	13	0
Other/unknown animal bite	1,021	101	463	415	1,019	1	0	1	142	14	328	66	0	0
*Category totals	87,628	15,860	19,568	43,431	87,197	94	210	88	17,302	2,245	34,309	6,203	242	4
Building and construction products														
Caulking compounds and putties	3,428	2,563	222	461	3,379	28	4	15	252	1,057	321	45	2	0
Cement, concrete	1,455	361	116	779	1,430	14	3	7	618	200	400	303	16	0
Insulation														
Asbestos	200	28	36	95	195	1	0	1	65	31	25	5	0	0
Fiberglass	1,503	586	252	515	1,448	15	19	12	214	200	380	48	0	0
Urea/formaldehyde	119	44	20	38	116	1	0	2	29	16	24	8	0	0
Other	246	103	34	80	240	2	0	4	38	59	41	6	0	0
Unknown	60	32	5	19	56	0	2	2	16	9	3	3	0	0
Soldering flux	463	190	70	159	454	3	3	2	154	100	148	40	3	0
Other construction product	1,875	1,014	184	534	1,851	13	4	6	347	361	375	80	0	0
Unknown construction product	64	12	7	35	62	0	0	2	22	5	23	7	0	0
*Category totals	9,413	4,933	946	2,715	9,231	77	35	53	1,755	2,038	1,740	545	21	0
Chemicals														
Acetone	1,197	439	139	508	1,124	47	8	7	369	248	384	67	3	0

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TABLE 22A. Demographic Profile of Exposure Cases by Generic Category of Substances and Products: Nonpharmaceuticals (Cont'd)

Substance Implicated In the Exposure	No. of Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6–19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Acids														
Hydrochloric	2,968	176	576	1,750	2,883	56	15	8	1,174	267	1,288	439	20	3
Hydrofluoric	1,435	105	84	954	1,410	14	5	2	1,095	135	573	367	25	0
Other	4,895	656	716	2,680	4,771	74	22	20	2,184	475	1,980	728	35	5
Unknown	484	57	84	267	456	14	13	0	209	34	189	93	3	0
Alkali	4,958	1,181	806	2,241	4,831	60	38	18	2,339	622	1,700	908	41	0
Ammonia	5,653	1,627	704	2,713	5,416	182	31	18	1,918	640	2,209	622	21	0
Borates/boric acid	3,622	2,074	358	999	3,417	152	30	13	559	950	361	45	1	0
Chlorates	76	29	10	30	73	3	0	0	44	12	13	5	1	0
Cyanide	287	15	15	200	251	20	11	1	181	49	91	18	9	2
Dioxin	16	1	0	13	14	1	0	0	14	2	5	2	0	0
Formaldehyde/formalin	1,572	246	309	772	1,493	48	15	7	674	215	517	114	7	0
Glycol: ethylene	660	122	70	361	546	99	3	1	319	128	137	63	44	9
Glycol: other	1,210	475	231	390	1,162	29	5	11	450	297	353	71	6	0
Ketones	986	261	85	512	974	5	2	5	496	147	385	113	4	0
Methylene chloride	697	101	65	415	684	6	3	2	360	77	292	84	3	0
Nitrates and nitrites	970	255	355	281	889	51	21	5	253	250	239	43	2	0
Phenol/creosote	1,349	204	172	756	1,313	18	2	16	546	126	480	178	7	0
Strychnine	29	7	8	9	13	9	3	2	16	7	2	1	0	0
Toluene diisocyanate	430	66	38	241	422	4	1	2	172	56	120	42	2	0
Other chemicals	15,565	4,881	2,117	6,388	14,272	441	476	264	4,960	2,971	3,928	986	63	4
Unknown chemicals	2,449	1,159	376	657	2,341	19	59	24	402	426	354	52	2	0
*Category totals	51,508	14,137	7,318	23,137	48,755	1,352	763	426	18,734	8,134	15,600	5,041	299	23
Cleaning substances (household)														
Ammonia cleaners (all purpose)	3,643	1,687	360	1,375	3,505	112	18	5	679	789	1,092	200	2	0
Automatic dishwasher detergents														
Granules	4,930	4,114	279	429	4,890	25	10	1	244	2,121	942	54	0	0
Liquids	2,182	1,744	108	266	2,159	15	0	8	137	873	372	34	1	0
Rinse agents	1,171	1,094	33	37	1,170	1	0	0	22	342	155	3	1	0
Other/unknown	803	621	53	91	791	4	6	2	55	322	143	11	0	0
Bleaches														
Borate	806	379	56	306	773	14	3	15	99	184	254	30	1	0
Hypochlorite	47,495	19,837	5,052	18,967	45,615	1,430	309	94	8,937	7,938	16,911	2,396	51	0
Nonhypochlorite	822	446	65	251	794	19	4	4	133	194	270	16	1	0
Other/unknown	314	156	25	112	290	15	6	2	55	63	106	17	0	0
Carpet/upholstery cleaners	4,207	3,191	276	558	4,135	24	7	39	388	1,223	806	71	2	0
Cleansers														
Anionic/nonionic	7,755	5,904	551	1,036	7,507	163	39	35	728	2,403	1,447	149	1	0
Other/unknown	1,085	675	96	273	1,031	43	5	3	186	326	268	41	0	0
Disinfectants														
Hypochlorite	5,657	2,730	667	1,894	5,525	75	25	31	1,139	1,319	1,959	425	8	0
Phenol	4,793	3,282	489	801	4,546	188	39	13	687	1,197	1,317	106	5	0
Pine oil	10,802	7,500	853	2,107	10,337	375	54	16	1,959	3,801	2,522	256	19	0
Other/unknown	1,847	862	256	560	1,716	87	27	14	499	442	635	87	1	0
Drain cleaners														
Acid	938	96	80	594	911	20	4	2	341	90	373	187	7	1
Alkali	3,447	653	368	1,969	3,199	220	22	0	1,240	483	1,252	497	26	2
Other/unknown	397	105	60	192	370	22	1	3	84	71	139	21	1	1
Fabric softeners/ antistatic agents														
Aerosol/spray	61	37	4	18	60	0	1	0	8	13	18	1	0	0
Dry/powder	6	5	1	0	6	0	0	0	0	2	2	0	0	0
Liquid	1,158	939	64	120	1,109	16	2	31	89	398	149	11	0	0
Solid/sheet	366	313	25	21	348	2	1	14	8	108	32	0	0	0
Other/unknown	26	20	0	5	25	1	0	0	4	6	3	2	0	0
Glass cleaners														
Ammonia	2,702	2,083	229	291	2,612	70	15	4	219	820	541	21	2	0
Anionic/nonionic	30	12	5	10	26	2	0	1	6	7	9	2	0	0
Isopropanol	4,400	3,446	403	452	4,262	107	24	3	351	1,375	1,015	43	1	0
Other/unknown	4,479	3,499	408	405	4,329	100	31	13	340	1,328	1,045	44	3	0
Hand dishwashing														
Anionic/nonionic	7,877	4,963	776	1,682	7,521	104	88	156	480	1,587	2,322	108	4	0
Other/unknown	1,373	764	150	361	1,272	29	29	42	107	181	335	20	0	0

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TABLE 22A. Demographic Profile of Exposure Cases by Generic Category of Substances and Products: Nonpharmaceuticals (Cont'd)

Substance Implicated In the Exposure	No. of Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6–19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Laundry additives														
Bluing/brightening agent	62	41	13	7	60	1	0	0	4	19	3	0	0	0
Detergent booster	34	21	3	5	31	2	1	0	6	6	11	0	0	0
Enzyme/microbiological additive	47	27	4	12	45	1	0	0	7	16	8	1	0	0
Water softener	141	31	10	91	131	0	3	7	23	40	28	5	0	0
Other/unknown	89	50	6	22	78	0	2	9	29	15	29	10	0	0
Laundry detergents														
Granules	8,271	6,939	470	700	8,046	95	10	115	983	2,378	2,312	195	4	0
Liquids	3,481	2,468	263	615	3,256	82	6	130	442	714	974	64	1	0
Soaps	172	117	12	34	169	2	0	0	13	35	36	3	0	0
Other/unknown	136	89	13	30	132	2	0	2	28	43	38	5	1	0
Laundry prewash/stain removers														
Dry solvent-based	88	79	4	5	88	0	0	0	6	20	10	1	0	0
Liquid solvent-based	376	292	20	49	373	2	0	1	44	115	82	14	1	0
Spray solvent-based	536	399	27	76	528	2	0	6	100	122	174	30	0	0
Other/unknown solvent-based	72	42	5	18	71	1	0	0	11	25	13	1	0	0
Dry surfactant-based	657	553	25	43	646	4	0	7	32	179	103	5	0	0
Liquid surfactant- based	2,315	1,912	113	199	2,277	23	4	11	287	610	590	99	2	0
Spray surfactant- based	383	304	25	42	376	3	3	1	47	76	161	9	0	0
Other/unknown surfactant-based	20	15	0	1	20	0	0	0	3	3	4	1	0	0
Other/unknown	40	23	2	10	39	0	0	1	13	8	14	2	0	0
Miscellaneous cleaner														
Acid	701	272	52	284	684	10	3	3	205	174	243	49	1	1
Alkali	6,585	3,258	645	2,074	6,366	142	52	23	2,115	1,602	2,177	585	19	2
Anionic/nonionic	8,675	5,822	702	1,661	8,414	155	37	62	1,173	2,192	2,203	201	5	0
Cationic	3,798	2,056	457	970	3,617	126	23	24	835	969	1,039	161	6	1
Ethanol	454	280	34	108	433	14	2	5	72	128	121	16	0	0
Glycols	1,915	1,234	184	395	1,865	27	11	8	278	599	465	47	1	0
Isopropanol	1,464	983	224	198	1,419	26	15	4	201	476	398	28	0	0
Methanol	50	30	4	15	49	0	1	0	17	13	19	1	0	0
Phenol	16	2	7	7	15	1	0	0	3	5	8	0	0	0
Other/unknown	2,918	1,613	325	737	2,766	76	38	33	580	758	804	112	3	0
Oven cleaner														
Acid	13	2	4	3	11	2	0	0	5	1	4	2	0	0
Alkali	3,419	815	430	1,660	3,313	55	32	12	1,477	312	1,277	595	19	0
Detergent type	26	12	3	11	25	0	1	0	3	9	3	1	0	0
Other/unknown	280	65	36	146	273	2	2	2	108	22	93	29	1	0
Rust remover														
Alkali	31	11	3	11	30	1	0	0	10	9	10	3	0	0
Anionic/nonionic	1	0	1	0	1	0	0	0	1	0	1	0	0	0
Hydrofluoric acid	1,563	113	109	1,217	1,531	29	3	0	969	155	807	389	17	1
Acid other	209	64	13	112	199	6	2	1	74	42	79	21	0	0
Other/unknown	312	55	30	197	302	2	1	6	61	55	115	37	1	0
Spot removers/dry cleaning agent														
Anionic/nonionic	495	389	35	54	492	2	0	1	61	146	123	12	0	0
Glycol	108	77	6	16	104	3	0	1	12	37	33	2	0	0
Carbon tetrachloride	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Perchloroethylene	73	36	5	26	69	4	0	0	25	16	14	6	0	0
Other halogenated hydrocarbon	136	41	11	62	132	2	0	2	24	18	43	5	0	0
Isopropanol	33	23	2	7	31	1	0	1	4	12	8	0	0	0
Other nonhalogenated hydrocarbon	153	96	10	35	149	4	0	0	30	57	42	5	0	0
Other/unknown	51	25	5	19	49	1	0	0	15	15	14	2	0	0
Starch/fabric finishes/sizing	1,180	956	118	83	1,126	47	2	3	55	284	172	9	1	0
Toilet bowl cleaner														
Acid	3,445	1,257	322	1,444	3,288	128	15	9	990	758	1,315	342	19	5
Alkali	545	335	28	153	537	7	1	0	76	191	122	29	0	0
Other/unknown	2,696	2,036	123	381	2,645	32	6	12	227	804	333	51	1	0
Wall/floor/tile cleaner														
Acid	3,054	1,242	257	1,228	2,986	43	8	15	755	674	1,263	249	3	0
Alkali	8,506	4,970	758	2,373	8,283	136	38	38	1,811	2,212	3,188	524	13	1

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TABLE 22A. Demographic Profile of Exposure Cases by Generic Category of Substances and Products: Nonpharmaceuticals (Cont'd)

Substance Implicated In the Exposure	No. of Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6–19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Anionic/nonionic	819	526	70	162	788	21	6	4	126	198	202	25	1	0
Cationic	2,094	1,442	172	390	2,051	25	6	11	222	645	582	56	0	0
Ethanol	8	2	2	0	7	0	0	1	1	0	2	0	0	0
Glycols	1,643	1,138	143	302	1,598	29	8	7	257	473	429	55	1	0
Isopropanol	63	43	5	13	62	1	0	0	9	23	14	1	0	0
Methanol	1	0	1	0	1	0	0	0	1	0	0	1	0	0
Other/unknown	424	193	34	148	405	13	4	1	125	96	124	31	1	0
*Category totals	200,449	116,073	18,177	53,844	193,316	4,676	1,116	1,130	34,315	48,610	58,913	8,980	259	15
Industrial cleaners														
Acids	1,823	427	227	910	1,777	37	8	1	778	274	765	234	5	0
Alkali	2,909	541	453	1,426	2,780	93	18	13	1,664	375	1,170	523	19	1
Anionic/nonionic	1,137	642	134	278	1,104	20	6	7	262	263	352	48	0	0
Cationic	761	150	149	325	714	36	5	4	321	104	326	81	5	1
Other/unknown	1,764	499	224	799	1,686	48	23	4	728	278	690	211	1	0
*Category totals	8,394	2,259	1,187	3,738	8,061	234	60	29	3,753	1,294	3,303	1,097	30	2
Cosmetics/personal care products														
Bath oil, bubble bath	8,955	8,172	444	239	8,799	32	5	114	247	2,535	1,169	37	0	0
Creams, lotions, make-up	16,195	12,089	1,031	2,504	14,825	183	49	1,118	746	3,424	1,385	110	2	0
Dental care products														
False teeth cleaning	1,242	235	73	842	1,207	19	7	4	95	380	144	8	0	0
Toothpaste with fluoride	4,499	3,417	326	547	4,026	39	24	393	246	1,272	825	24	0	0
Toothpaste without fluoride	252	177	25	44	231	7	1	13	12	55	45	3	0	0
Other	1,350	835	165	289	1,291	24	0	33	121	357	289	9	0	0
Deodorants	11,235	8,920	971	1,016	10,163	158	26	885	445	2,574	1,592	65	1	1
Depilatories	646	206	125	246	493	24	13	116	133	111	208	63	1	0
Douches	272	171	24	69	243	7	0	20	41	89	40	4	0	0
Eye products	1,425	1,076	73	213	1,368	10	1	45	103	323	165	20	2	0
Hair care products														
Coloring agents	1,632	700	143	622	1,473	12	2	143	405	349	542	110	1	0
Rinses, conditioners, relaxers	3,840	2,831	336	474	3,646	52	10	129	974	1,047	964	251	1	0
Shampoos	8,515	6,657	733	937	8,153	237	12	103	587	2,088	1,775	101	7	0
Sprays	3,843	2,500	599	579	3,366	387	27	59	512	989	1,020	85	5	1
Other	3,144	2,048	306	613	2,893	89	12	147	588	894	660	136	7	0
Lipsticks/balms, with camphor	630	561	34	27	621	3	1	5	23	149	65	2	0	0
Lipsticks/balms, without camphor	2,374	2,183	110	66	2,345	8	1	18	50	447	94	4	0	0
Mouthwash														
Ethanol	9,682	3,598	1,975	3,435	8,719	828	62	52	996	2,665	1,159	153	19	0
Nonethanol	431	244	91	80	386	36	0	6	71	194	57	2	0	0
Fluoride	1,263	938	265	53	1,248	4	2	9	38	457	77	1	0	0
Unknown	249	47	136	51	212	12	22	2	29	25	127	9	0	0
Nail products														
Polish	8,354	7,402	505	353	8,266	59	14	14	545	2,442	1,682	50	1	0
Polish removers: acetone	3,335	2,625	294	351	3,244	69	13	8	377	1,284	677	33	0	1
Polish removers: other	2,111	1,645	205	219	2,065	31	2	11	158	794	435	33	1	0
Polish removers: unknown	6,748	5,110	725	738	6,533	170	33	8	748	2,211	1,315	53	2	0
Other miscellaneous	4,295	2,560	655	848	4,216	41	3	34	1,163	978	1,286	288	7	0
Perfume, cologne, aftershave	29,038	26,091	1,586	1,157	28,556	349	79	45	1,704	10,614	4,797	142	1	0
Peroxide	14,362	7,632	1,502	4,274	13,911	317	40	79	1,014	3,286	2,659	176	6	0
Powders: talc	3,839	3,338	242	209	3,782	36	4	17	376	1,044	1,154	51	2	0
Powders: without talc	1,225	1,119	67	33	1,206	8	2	9	36	226	262	13	0	0
Soaps	12,033	8,843	1,016	1,743	11,130	176	65	648	665	2,927	2,129	105	0	0
Suntan/sunscreen products	4,412	3,449	498	377	4,211	23	5	168	282	756	1,543	57	3	0
*Category totals	171,426	127,419	15,280	23,248	162,828	3,450	537	4,455	13,530	46,986	30,341	2,198	69	3
Deodorizers														
Air fresheners	15,031	12,413	1,338	802	14,687	210	50	77	1,000	4,044	3,733	138	7	5
Diaper pail deodorizers	632	593	23	13	631	0	0	1	24	292	23	1	0	0
Toilet bowl deodorizers	998	884	53	52	986	9	0	3	87	400	95	7	0	1
Other	3,725	2,606	326	517	3,572	51	12	84	512	1,029	800	66	1	0
Unknown	142	96	17	24	137	2	1	1	26	46	40	1	0	0
*Category totals	20,528	16,592	1,757	1,408	20,013	272	63	166	1,649	5,811	4,691	213	8	6

(Continued on following page)

TABLE 22A. Demographic Profile of Exposure Cases by Generic Category of Substances and Products: Nonpharmaceuticals (Cont'd)

Substance Implicated In the Exposure	No. of Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6–19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Dyes														
Fabric	790	634	75	65	777	6	1	5	68	275	36	5	0	0
Food dye (eg, Easter egg)	1,076	897	122	40	1,038	23	3	10	26	258	58	2	0	0
Leather	141	113	11	13	137	3	0	1	16	40	11	1	0	0
Other	604	388	146	52	585	7	3	9	52	201	54	5	0	0
Unknown	72	50	5	14	68	0	3	1	9	25	7	2	1	0
*Category totals	2,683	2,082	359	184	2,605	39	10	26	171	799	166	15	1	0
Essential oils	3,451	2,354	452	509	3,236	129	26	58	476	808	1,287	73	2	2
Fertilizers														
Household plant food	4,964	3,248	659	877	4,911	33	11	7	145	1,296	206	6	2	0
Outdoor fertilizers	2,840	1,878	293	459	2,805	13	4	14	159	765	232	22	0	0
Plant hormones	118	48	13	41	117	1	0	0	23	32	19	6	0	0
Other	324	189	41	76	318	1	3	2	30	76	24	5	1	0
Unknown	1,756	1,097	242	319	1,715	19	7	13	175	447	244	31	0	0
*Category totals	10,002	6,460	1,248	1,772	9,866	67	25	36	532	2,616	725	70	3	0
Fire extinguishers	2,954	273	829	1,347	2,744	61	130	7	846	439	1,149	153	4	0
Food products/food poisoning	67,084	17,677	10,857	31,875	62,063	540	959	3,387	6,571	7,121	12,929	2,893	79	0
Foreign bodies/toys/ miscellaneous														
Ashes	626	554	32	30	618	4	1	3	35	124	75	10	0	0
Bubble blowing solutions	3,833	3,542	202	69	3,814	8	6	4	104	727	1,028	17	0	0
Charcoal	842	606	71	142	813	20	3	6	59	205	84	18	5	3
Christmas ornaments	1,317	1,115	111	68	1,304	9	0	3	83	322	81	11	0	0
Coins	3,731	3,004	620	82	3,690	34	3	1	1,311	1,188	417	37	1	0
Desiccants	20,537	18,230	1,487	567	20,376	120	34	1	497	3,375	148	7	2	0
Feces/urine	3,329	2,667	204	363	3,263	10	53	0	113	663	190	13	0	0
Glass	2,212	729	289	940	1,913	19	267	10	308	352	300	20	1	0
Incense, punk	259	224	19	11	255	3	0	1	9	70	18	2	0	0
Soil	2,098	1,778	129	159	2,080	11	3	3	68	422	118	6	0	0
Thermometer	12,919	6,908	3,522	1,772	12,827	63	18	6	708	2,501	248	13	0	0
Toys	5,553	3,888	1,489	125	5,479	58	8	7	313	1,177	819	19	1	0
Other	17,529	10,581	4,350	1,996	16,543	298	572	100	1,672	3,576	2,361	183	4	1
Unknown	236	146	44	29	209	3	21	2	36	52	32	4	1	0
*Category totals	75,021	53,972	12,569	6,353	73,184	660	989	147	5,316	14,754	5,919	360	15	4
Fumes/gases/vapors														
Carbon dioxide	409	39	109	196	389	17	1	1	90	40	125	29	0	0
Carbon monoxide	19,253	2,655	3,147	10,500	18,797	394	5	18	7,719	1,904	6,673	1,856	187	47
Chloramine	3,089	110	192	2,305	2,977	107	0	2	829	112	1,472	383	2	0
Chlorine: acid mixed with hypochlorite	1,163	29	171	797	1,148	12	2	1	333	47	547	196	4	0
Chlorine: other	5,400	424	1,057	3,133	5,270	81	13	32	1,925	261	2,645	936	20	0
Hydrogen sulfide	1,407	140	150	714	1,400	3	4	0	482	164	423	134	12	0
Methane and natural gas	4,081	640	700	2,081	4,017	47	9	3	1,202	509	1,393	223	6	1
Polymer fume fever	5	2	1	2	5	0	0	0	1	0	0	1	0	0
Propane/simple asphyxiants	2,852	241	694	1,464	2,602	236	4	1	992	285	961	283	20	0
Other	2,748	257	387	1,652	2,621	48	53	17	1,166	296	975	302	16	0
Unknown	1,898	162	264	1,042	1,867	10	11	4	489	150	809	114	0	0
*Category totals	42,305	4,699	6,872	23,886	41,093	955	102	79	15,228	3,768	16,023	4,457	267	48
Fungicides														
Carbamate fungicide	290	93	25	124	283	5	0	1	77	62	69	14	0	0
Mercurial fungicide	16	10	3	3	15	1	0	0	8	3	4	3	0	0
Nonmercurial fungicide	425	77	40	192	399	7	1	17	138	66	114	22	2	0
Phthalimide fungicide	271	142	40	62	257	8	1	5	38	57	35	4	0	0
Other/unknown	566	148	42	198	541	4	0	19	129	91	131	23	0	0
*Category totals	1,568	470	150	579	1,495	25	2	42	390	279	353	66	2	0
Heavy metals														
Aluminum	743	362	82	231	723	6	5	7	99	146	68	24	2	0
Arsenic (excluding pesticides)	569	52	33	392	405	28	77	3	347	87	76	31	7	2
Barium	19	4	3	10	15	2	0	2	9	4	3	2	0	0
Cadmium	61	9	6	34	53	3	1	0	35	9	12	1	2	0
Copper	925	171	311	339	846	31	24	18	273	152	268	69	2	0
Fireplace flame colors	15	11	3	0	15	0	0	0	3	2	1	0	0	0
Gold	3	1	0	1	3	0	0	0	0	0	0	0	0	0
Lead	3,039	1,459	500	827	2,902	44	31	9	1,250	619	206	81	7	0

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TABLE 22A. Demographic Profile of Exposure Cases by Generic Category of Substances and Products: Nonpharmaceuticals (Cont'd)

Substance Implicated In the Exposure	No. of Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6–19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Manganese	43	4	14	19	37	4	0	1	22	5	10	7	1	0
Mercury	2,157	762	459	702	1,970	119	23	27	443	599	121	39	3	0
Metal fume fever	1,078	24	62	851	1,071	2	0	5	330	17	351	195	2	0
Selenium	93	31	8	46	76	11	1	5	27	21	23	6	0	0
Thallium	106	33	8	22	94	3	1	7	14	7	8	2	0	0
Other	796	270	123	308	709	40	4	37	290	155	137	47	1	0
Unknown	29	6	5	18	22	0	6	1	7	9	4	1	1	0
*Category totals	9,676	3,199	1,617	3,800	8,941	293	173	122	3,149	1,832	1,288	505	28	2
Herbicides														
Carbamate herbicide	65	9	4	27	64	0	0	1	26	11	20	1	1	0
2,4-D or 2,4,5-T	2,712	762	300	949	2,603	17	6	79	576	433	564	99	6	0
Diquat	319	81	28	171	307	6	0	4	133	75	90	27	1	1
Paraquat	231	6	28	112	220	6	2	3	127	22	44	32	2	0
Paraquat/diquat	2	0	1	1	1	1	0	0	2	1	0	1	0	0
Triazine herbicide	517	99	51	224	490	5	1	19	172	59	118	27	0	0
Urea herbicide	62	7	5	39	60	1	0	1	25	6	15	3	1	0
Other	5,127	1,373	481	2,418	4,844	40	23	204	1,229	1,104	1,271	174	9	0
Unknown	306	89	38	143	290	3	8	5	85	54	74	13	0	0
*Category totals	9,341	2,426	936	4,084	8,879	79	40	316	2,375	1,765	2,196	377	20	1
Hydrocarbons														
Benzene	105	19	9	56	95	4	6	0	61	9	32	10	1	0
Carbon tetrachloride	46	3	6	26	46	0	0	0	16	9	13	4	0	0
Diesel fuel	1,034	214	139	525	1,000	23	6	3	229	161	423	45	0	0
Freon and other propellants	7,195	643	919	4,190	6,933	226	19	10	1,526	1,249	1,971	382	11	5
Gasoline	21,284	7,004	4,338	8,187	20,039	1,133	80	10	3,435	4,449	9,427	728	34	1
Halogenated hydrocarbon: other	1,097	195	151	577	1,034	40	9	12	469	123	472	113	8	0
Kerosene	3,072	1,901	335	646	2,987	54	19	3	963	806	1,074	202	11	0
Lighter fluid/naphtha	4,256	2,431	518	1,029	4,024	184	33	10	1,293	1,250	1,351	241	17	2
Lubricating oil/motor oil	4,159	2,841	378	712	4,072	48	33	2	593	1,583	766	85	0	0
Mineral seal oil	258	222	19	13	255	2	1	0	28	131	36	4	0	0
Mineral spirits/varsol	5,661	2,768	805	1,675	5,405	201	31	19	1,258	1,497	1,803	255	14	0
Toluene/xylene	1,894	318	207	1,114	1,704	169	9	6	943	251	741	240	18	2
Turpentine	1,182	483	195	420	1,021	143	10	3	334	274	360	41	3	0
Other	6,456	3,092	804	1,889	6,174	210	38	26	1,698	1,784	1,703	395	21	4
Unknown	7,444	4,589	709	1,636	7,210	150	46	28	1,916	2,219	2,133	401	27	0
*Category totals	65,143	26,723	9,532	22,695	61,999	2,587	340	132	14,762	15,795	22,305	3,146	165	14
Insecticides/pesticides (excluding rodenticides)														
Arsenic pesticides	442	307	71	50	424	16	2	0	80	183	25	8	0	0
Borates/boric acid	3,534	2,856	191	398	3,458	60	10	5	355	1,101	190	16	1	0
Carbamate only	5,750	2,602	535	1,853	5,510	151	20	61	1,101	1,287	952	222	14	2
Carbamate with other pesticide	1,319	408	138	567	1,242	43	11	21	265	222	372	50	2	0
Chlorinated hydrocarbon only	3,002	1,237	523	1,009	2,709	122	4	150	1,063	965	681	109	25	0
Chlorinated hydrocarbon with other pesticide	162	52	20	56	159	0	0	3	25	34	32	7	0	0
Metaldehyde	325	228	33	44	321	1	1	1	48	114	20	6	1	0
Nicotine	7	4	0	3	6	1	0	0	3	3	1	1	0	0
Organophosphate only	16,586	5,678	1,335	6,326	15,895	350	50	261	3,903	3,189	3,340	702	67	7
With carbamate	1,088	354	105	425	1,028	38	7	12	192	205	249	38	2	0
With chlorinated hydrocarbon	260	59	23	107	248	4	4	4	61	44	56	16	2	0
With other pesticide	1,940	551	193	794	1,840	55	7	36	390	366	488	92	5	0
With carbamate & chlorinated hydrocarbon	44	17	4	20	43	1	0	0	17	12	9	1	1	0
Piperonyl butoxide only	109	40	10	48	103	3	1	2	34	22	28	8	0	0
Piperonyl butoxide/pyrethrin	7,396	2,285	941	2,586	6,813	198	37	336	1,523	1,157	1,730	398	10	0
Pyrethrins only	6,576	2,108	787	2,806	6,123	156	29	250	1,628	1,107	1,705	338	11	0
Repellants (insect)	6,745	4,332	1,168	792	6,243	66	37	388	895	1,569	1,691	158	11	1
Rotenone	134	49	13	57	131	1	0	2	22	32	32	6	0	0
Veterinary insecticide	4,396	2,639	514	1,005	4,245	77	9	60	576	1,365	975	100	2	0

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TABLE 22A. Demographic Profile of Exposure Cases by Generic Category of Substances and Products: Nonpharmaceuticals (Cont'd)

Substance Implicated In the Exposure	No. of Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6–19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Other	3,984	2,461	263	913	3,876	40	10	50	521	1,042	464	86	6	0
Unknown	3,360	983	429	1,508	3,121	90	74	60	911	571	753	141	9	3
*Category totals	67,159	29,250	7,296	21,367	63,538	1,473	313	1,702	13,613	14,590	13,793	2,503	169	13
Lacrimators														
Capsicum/peppers	1,313	394	459	334	1,123	39	120	22	177	33	805	39	0	0
Lacrimators: CN	7,743	2,212	2,829	1,868	6,639	137	855	17	1,149	329	4,565	246	3	0
Lacrimators: CR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lacrimators: CS	528	204	192	78	471	5	50	1	100	29	363	10	1	0
Lacrimators: DM	1	0	1	0	0	0	1	0	0	0	0	0	0	0
Other	109	23	27	41	101	5	3	0	33	5	60	11	1	0
Unknown	3,346	877	1,142	1,014	2,877	66	361	9	518	118	1,952	171	3	0
*Category totals	13,040	3,710	4,650	3,335	11,211	252	1,390	49	1,977	514	7,745	477	8	0
Matches/fireworks/explosives														
Eplosives	275	125	91	38	240	16	18	0	66	67	68	11	0	0
Fireworks	581	474	78	17	562	8	6	2	40	195	88	12	1	0
Matches	1,561	1,398	99	50	1,540	17	2	0	57	496	37	7	0	0
Other	54	28	10	11	48	5	0	0	21	17	9	6	2	0
Unknown	4	3	0	1	4	0	0	0	0	2	0	1	0	0
*Category totals	2,475	2,028	278	117	2,394	46	26	2	184	777	202	37	3	0
Moth repellants														
Naphthalene	2,008	1,576	141	222	1,971	26	7	2	445	1,028	163	18	3	0
Paradichlorobenzene	119	85	7	21	117	2	0	0	11	48	15	0	0	0
Other	51	40	4	5	51	0	0	0	3	24	5	1	0	0
Unknown	2,868	2,218	198	331	2,813	25	20	6	557	1,223	198	34	1	0
*Category totals	5,046	3,919	350	579	4,952	53	27	8	1,016	2,323	381	53	4	0
Mushrooms														
Coprine	10	8	1	1	10	0	0	0	1	8	0	1	0	0
Cyclopeptide	41	11	5	22	28	7	0	5	31	10	9	9	4	0
Gastrointestinal irritants	304	130	60	90	269	26	1	7	103	71	61	38	1	0
Hallucinogenic	515	65	244	165	122	383	5	4	322	56	97	155	6	0
Ibotenic acid	37	2	18	17	16	21	0	0	29	4	4	15	1	0
Miscellaneous, nontoxic	190	78	30	72	169	3	0	18	36	61	37	5	0	0
Monomethylhydrazine	79	4	7	56	67	2	0	10	35	10	32	11	1	0
Muscarine	11	6	1	3	9	1	0	1	10	6	2	3	0	0
Orellanine	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other potentially toxic	32	19	3	9	31	1	0	0	17	20	3	4	0	0
Unknown	7,904	5,875	1,140	745	7,277	536	13	72	2,024	4,974	758	235	9	0
*Category totals	9,123	6,198	1,509	1,180	7,998	980	19	117	2,608	5,220	1,003	476	22	0
Paints and stripping agents														
Paint: antialgae	6	0	0	5	6	0	0	0	2	1	1	1	0	0
Paint: anticorrosion	76	24	13	34	75	1	0	0	21	9	26	7	0	0
Paint: oil-base	4,409	1,244	942	1,747	4,085	270	17	30	1,084	721	1,483	303	10	0
Paint: water-base	4,102	2,982	267	578	4,042	26	8	26	310	939	380	46	1	0
Stains	1,100	451	117	449	1,070	9	6	12	206	249	283	46	1	0
Stripping agents														
Methylene chloride	1,422	260	146	784	1,382	33	0	5	507	119	699	152	6	0
Other	665	139	48	363	650	9	1	4	257	76	264	76	1	0
Unknown	481	127	57	188	417	8	2	4	143	72	131	53	4	0
Varnishes, lacquers	986	312	133	430	961	15	6	3	235	155	295	60	4	0
Wood preservatives	641	169	66	305	624	9	0	7	159	81	192	34	1	0
Other paint/varnish/ lacquer	1,234	538	158	404	1,191	24	2	15	267	233	308	77	2	0
Unknown paint/varnish/ lacquer	10,354	6,049	1,155	2,342	10,081	184	28	41	1,547	2,042	1,560	270	10	1
*Category totals	25,426	12,295	3,102	7,629	24,584	588	70	147	4,738	4,697	5,622	1,125	40	1
Photographic products														
Developers/fixing/stop baths	460	58	153	183	450	5	1	4	145	54	193	41	0	0
Photographic coating fluids	2	1	0	1	2	0	0	0	1	0	1	0	0	0
Other	331	191	32	94	325	2	2	2	52	71	51	6	0	0
Unknown	15	1	4	8	14	1	0	0	9	1	7	1	0	0
*Category totals	808	251	189	286	791	8	3	6	207	126	252	48	0	0
Plants														
Amygdalin/cyanogenic glycosides	2,592	1,970	378	186	2,518	29	8	35	138	779	103	17	2	0
Anticholinergic	1,052	241	584	168	470	560	14	6	586	162	242	318	24	0

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TABLE 22A. Demographic Profile of Exposure Cases by Generic Category of Substances and Products: Nonpharmaceuticals (Cont'd)

Substance Implicated In the Exposure	No. of Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6–19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Cardiac glycosides	2,437	1,713	421	228	2,325	94	2	15	362	1,054	176	28	2	0
Colchicine	19	15	3	1	19	0	0	0	6	10	1	1	0	0
Depressants	54	30	4	13	43	9	0	2	17	18	6	1	0	0
Dermatitis	20,373	9,914	3,603	5,133	19,185	214	244	685	1,700	2,830	5,839	573	5	1
Gastrointestinal irritants	18,521	14,678	1,852	1,577	17,923	370	25	191	1,169	6,297	1,745	180	3	0
Hallucinogenic	278	137	83	46	181	80	1	13	84	69	28	26	1	0
Nicotine	270	72	84	89	254	6	1	8	107	57	100	30	0	0
Nontoxic plant	19,485	16,311	1,836	1,014	19,160	122	13	179	485	3,250	835	79	2	0
Oxalate	14,586	12,494	1,363	567	14,443	113	1	22	530	5,404	2,364	85	6	0
Solanine	1,691	1,357	150	155	1,654	19	1	16	233	856	137	16	1	0
Stimulants	604	311	106	160	464	69	2	65	192	234	98	37	6	0
Toxalbumins	203	105	33	50	187	14	0	1	115	73	51	13	0	0
Other	3,211	2,270	427	387	3,016	85	7	93	331	1,039	360	45	11	1
Unknown	18,811	13,211	2,644	2,210	18,145	278	77	285	1,616	5,764	1,887	237	10	0
*Category totals	104,187	74,829	13,571	11,984	99,987	2,062	396	1,616	7,671	27,896	13,972	1,686	73	2
Polishes and waxes	7,911	5,942	633	870	7,708	137	19	43	958	2,989	1,441	156	8	0
Radioisotopes	181	25	24	103	165	2	1	10	64	18	17	10	1	0
Rodenticides														
ANTU	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anticoagulant: standard	1,287	1,139	36	94	1,234	44	6	1	428	542	27	5	3	0
Anticoagulant: long-acting	13,423	12,028	536	673	12,962	392	46	6	5,051	5,869	226	80	8	1
Barium carbonate	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyanide	19	0	0	17	16	1	2	0	16	7	5	5	0	0
Monofluoroacetate	1	1	0	0	1	0	0	0	1	1	0	0	0	0
Strychnine	158	29	17	85	69	52	26	3	94	33	14	21	3	1
Vacor	5	2	0	3	5	0	0	0	3	2	0	1	0	0
Other	978	732	65	134	910	57	8	3	272	313	51	12	4	2
Unknown	1,316	969	69	206	1,152	115	39	2	595	468	57	19	2	1
*Category totals	17,187	14,900	723	1,212	16,349	661	127	15	6,460	7,235	380	143	20	5
Sporting equipment														
Fishing bait	111	78	26	4	108	1	1	1	5	20	8	0	0	0
Fishing products, other	39	25	8	2	37	2	0	0	11	11	8	2	0	0
Golf balls	68	9	39	15	62	6	0	0	19	7	26	1	0	0
Golf products, other	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gun bluing	54	21	4	26	52	1	0	0	33	13	19	12	0	0
Hunting products, other	419	262	81	60	387	19	8	2	117	185	41	8	0	0
Other	195	111	56	10	180	8	1	6	38	64	19	2	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*Category totals	886	506	214	117	826	37	10	9	223	300	121	25	0	0
Swimming pool/aquarium	7,100	3,490	1,188	1,806	6,949	49	8	91	1,172	1,617	2,201	421	9	0
Tobacco products	9,733	7,917	600	1,038	8,963	231	330	196	2,037	3,450	2,542	200	8	0
Other/unknown nondrug substances	15,846	5,638	2,487	5,957	13,219	585	1,118	390	4,607	2,876	3,281	755	77	0
Total number of nonpharmaceutical substances	1,255,696	649,216	166,611	347,878	1,176,764	50,535	10,007	15,787	226,295	268,471	293,550	51,854	2,908	245
% of nonpharmaceutical substances		51.7%	13.3%	27.7%	93.7%	4.0%	0.8%	1.3%	18.0%	21.4%	23.4%	4.1%	0.2%	0.0%
% of all substances	57.9%	30.0%	7.7%	16.0%	54.3%	2.3%	0.5%	0.7%	10.4%	12.4%	13.5%	2.4%	0.1%	0.0%

NOTE: Patients with unknown age, reason, or medical outcome were omitted from the respective tabulations.
ABBREVIATIONS: Adv rxn, adverse reaction: Int, intentional: Unint, unintentional.

TABLE 22B. Demographic Profile of Exposure Cases by Generic Category of Substances and Products: Pharmaceuticals

Substance Implicated In the Exposure	No. of Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6–19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Analgesics														
Acetaminophen only														
Adult formulations	27,586	6,760	10,429	9,329	11,998	15,200	18	292	16,611	9,096	4,268	1,464	308	35
Pediatric formulations	36,106	32,858	2,788	390	35,555	402	8	127	4,433	10,931	774	58	4	0
Unknown formulations	9,197	2,618	3,152	2,993	3,897	5,128	10	103	5,733	2,852	1,499	688	189	20
Acetaminophen in combination with:														
Aspirin (with other ingredients)	2,621	1,024	779	713	1,455	1,062	3	93	1,195	853	532	103	4	2
Aspirin (no other ingredients)	26	12	6	5	14	12	0	0	15	8	5	2	0	0
Codeine	7,108	1,346	1,425	3,817	2,686	3,870	2	518	4,201	1,732	1,898	519	85	7
Oxycodone	2,853	384	355	1,826	1,038	1,538	0	256	1,619	588	737	240	55	5
Propoxyphene	5,180	734	669	3,380	1,622	3,268	3	244	3,505	1,240	1,456	529	104	16
Other narcotics	7,878	956	1,222	5,021	2,721	4,449	2	654	4,458	1,605	2,220	625	97	6
Other drugs, adult formulations	12,401	2,259	2,956	6,378	4,300	7,661	1	383	7,833	3,209	3,249	1,072	144	11
Other drugs, pediatric formulations	219	36	33	127	81	122	0	15	135	61	66	19	5	1
Aspirin alone														
Adult formulations	4,965	1,653	1,622	1,481	2,336	2,469	5	132	2,723	1,531	878	471	34	11
Pediatric formulations	628	521	83	21	586	32	0	8	129	279	30	10	1	0
Unknown formulations	9,955	2,067	3,826	3,515	3,298	6,423	8	159	6,798	2,698	2,212	1,296	129	37
Aspirin in combination with:														
Codeine	714	119	104	448	226	449	1	36	469	156	228	79	15	0
Oxycodone	328	51	39	204	122	181	0	23	187	67	91	17	11	0
Propoxyphene	64	14	7	36	27	33	0	4	34	20	16	4	0	1
Other narcotics	46	10	5	25	18	24	0	4	18	11	11	3	0	0
Other drugs (adult formulations)	2,374	509	488	1,237	894	1,371	1	93	1,436	575	619	255	33	3
Other drugs (pediatric formulations)	9	7	2	0	7	2	0	0	6	4	2	0	0	0
Narcotics														
Codeine	1,458	631	317	410	961	391	1	97	497	413	264	64	10	4
Meperidine	603	72	92	372	238	292	0	70	359	112	166	73	12	2
Methadone	534	54	35	397	169	303	2	46	395	24	116	113	30	12
Morphine	795	94	84	514	340	370	3	68	468	139	147	93	38	13
Oxycodone	127	12	15	82	37	71	0	15	76	20	31	12	1	3
Pentazocine	292	26	35	197	90	154	1	45	159	43	98	31	4	1
Propoxyphene	686	73	78	466	186	458	1	33	481	148	193	70	34	17
Other/unknown	3,181	512	387	1,979	1,303	1,331	1	502	1,734	542	884	394	110	16
Nonaspirin salicylates	1,152	575	173	347	790	307	0	49	441	379	203	69	7	0
Other nonsteroidal antiinflammatory drugs														
Colchicine	171	45	24	83	101	44	1	25	107	47	37	14	1	3
Ibuprofen, OTC	17,553	9,051	4,509	3,442	11,233	5,957	9	317	6,098	6,306	1,995	375	21	2
Ibuprofen, R_x	11,688	7,138	1,711	2,527	8,626	2,824	2	215	3,263	4,077	1,123	242	22	2
Ibuprofen, unknown if OTC or R_x	10,120	3,525	3,119	2,925	4,956	4,858	2	271	4,806	3,555	1,567	372	37	2
Indomethacin	822	226	129	409	395	336	2	89	386	249	171	51	4	0
Other	15,891	4,933	3,673	6,273	8,251	6,677	2	919	7,157	5,327	2,642	676	47	3
Unknown	4	1	1	2	1	2	0	1	3	2	1	0	0	0
Phenacetin	4	2	0	2	2	1	0	1	3	1	1	1	0	0
Phenazopyridine	715	534	68	101	613	70	2	30	231	320	93	16	1	0
Salicylamide	112	87	11	12	93	16	0	3	34	66	8	2	0	0
Other analgesic	464	87	58	282	173	206	0	83	240	88	102	42	16	0
Unknown analgesic	175	27	71	66	46	114	1	13	109	33	37	13	0	0
*Category totals	196,805	81,643	44,580	61,834	111,485	78,478	92	6,036	88,585	59,407	30,670	10,177	1,613	235
Anesthetics														
Inhalation anesthetics														
Nitrous oxide	204	13	78	79	80	104	1	19	104	26	43	21	5	0
Other/unknown	180	32	26	89	149	18	4	9	72	22	74	13	6	3
Ketamine and analogs	66	1	15	41	14	50	1	0	51	5	19	10	7	0
Local and topical anesthetic	5,797	4,141	544	863	5,387	155	19	228	1,139	2,461	813	88	16	2
Other anesthetic	16	7	1	8	12	3	0	1	6	3	3	1	1	0
Unknown anesthetic	3	2	0	1	2	0	0	1	0	0	1	0	0	0

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TABLE 22B. Demographic Profile of Exposure Cases by Generic Category of Substances and Products: Pharmaceuticals (Cont'd)

Substance Implicated In the Exposure	No. of Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6–19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
*Category totals	6,266	4,196	664	1,081	5,644	330	25	258	1,372	2,517	953	133	35	5
Anticholinergic drugs	4,297	1,228	536	2,296	2,020	1,987	12	236	2,729	1,235	965	670	100	6
Anticoagulants														
Heparin	57	18	1	32	51	4	0	2	24	15	8	8	3	0
Warfarin (excluding rodenticides)	1,118	541	61	475	890	185	1	37	525	425	62	81	21	2
Other	126	58	1	60	109	8	0	7	49	50	13	3	1	0
Unknown	13	10	1	1	11	2	0	0	11	9	0	0	0	0
*Category totals	1,314	627	64	568	1,061	199	1	46	609	499	83	92	25	2
Anticonvulsants														
Carbamazepine	6,602	2,044	1,333	2,918	3,809	2,461	3	265	4,356	1,681	1,756	1,032	283	6
Phenytoin	4,258	978	416	2,584	2,266	1,613	7	289	2,849	1,126	999	619	92	1
Succinimides	132	52	41	35	108	20	0	4	39	46	23	3	1	0
Valproic acid	4,149	741	945	2,195	1,912	1,981	1	223	2,580	1,256	971	437	88	3
Other	563	121	73	326	405	113	1	42	247	164	129	41	7	0
Unknown	9	5	1	3	8	1	0	0	5	2	3	0	0	0
*Category totals	15,713	3,941	2,809	8,061	8,508	6,189	12	823	10,076	4,275	3,881	2,132	471	10
Antidepressants														
Cyclic antidepressants														
Amitrintyline	7,784	987	942	5,313	2,069	5,466	5	156	6,358	1,291	1,903	1,849	822	54
Amoxapine	113	15	13	76	40	69	0	3	89	22	25	23	8	0
Desipramine	1,061	174	227	590	390	611	0	49	774	235	222	190	69	17
Doxepin	2,874	175	272	2,188	564	2,216	4	61	2,402	405	801	677	290	15
Imipramine	3,491	764	1,161	1,396	1,512	1,816	1	144	2,480	999	782	555	216	21
Maprotiline	64	11	4	48	23	38	0	3	50	13	14	16	7	0
Nortriptyline	2,213	227	401	1,411	675	1,428	2	91	1,666	443	554	387	128	9
Protriptyline	36	3	3	24	10	26	0	0	26	11	9	1	3	0
Other cyclic antidepressant	993	65	153	678	256	687	1	40	754	212	290	174	41	5
Unknown cyclic antidepressant	155	8	24	105	18	127	3	3	141	16	28	41	29	5
Cyclic antidepressant formulated with a benzodiazepine	147	24	17	97	49	93	0	3	107	27	39	30	9	0
Cyclic antidepressant formulated with a phenothiazine	496	87	53	326	155	322	0	14	394	102	126	101	42	2
Lithium	5,313	376	1,093	3,457	1,570	3,205	8	429	4,122	1,187	1,455	925	168	9
MAO inhibitors	420	50	17	307	166	162	0	87	293	82	79	99	28	2
Trazodone	6,716	433	847	4,758	1,404	4,964	1	304	5,094	1,436	2,369	804	116	4
Other antidepressant	24,358	3,156	5,574	13,576	6,894	15,955	13	1,386	17,086	7,309	6,124	2,393	365	23
Unknown antidepressant	51	4	4	37	8	42	0	1	38	8	16	3	1	2
*Category totals	56,285	6,559	10,805	34,387	15,803	37,227	38	2,774	41,874	13,798	14,836	8,268	2,342	168
Antihistamines														
H_2 receptor antagonists	4,933	2,010	678	1,991	3,363	1,172	2	378	1,631	1,673	574	185	17	0
Diphenhydramine, unknown if OTC or R_x	6,523	2,187	1,381	2,636	3,260	2,997	14	209	3,424	1,576	1,587	783	83	3
Diphenhydramine, R_x	250	74	45	114	119	119	0	10	129	56	57	28	2	0
Diphenhydramine, OTC	16,292	8,281	2,541	4,908	10,513	5,433	4	307	6,654	4,829	3,819	1,209	108	1
Other	15,193	5,778	3,464	5,228	9,475	5,026	6	622	6,743	5,054	2,915	1,057	107	4
*Category totals	43,191	18,330	8,109	14,877	26,730	14,747	26	1,526	18,581	13,188	8,952	3,262	317	8
Antimicrobials														
Antibiotics: systemic	43,904	25,226	7,264	9,523	32,964	6,215	25	4,597	8,703	11,173	4,684	853	70	1
Antibiotics: topical	6,357	4,789	476	859	6,168	62	1	120	247	1,490	353	36	1	0
Antibiotics: unknown	1,711	501	493	583	878	542	1	286	616	345	337	67	8	0
Antifungals: systemic	940	514	125	250	737	116	0	87	189	260	92	20	2	0
Antifungals: topical	7,953	6,257	418	1,001	7,739	63	8	142	321	1,960	650	35	2	0
Antifungals: unknown	18	11	1	5	16	0	0	2	0	5	2	0	0	0
Anthelmintics: diethylcarbamazine	640	442	29	148	639	1	0	0	15	244	15	1	0	0
Anthelmintics: piperazine	635	480	66	77	612	21	0	1	61	239	27	8	1	0
Anthelmintics: other	711	364	73	198	653	9	0	46	175	206	131	30	0	0
Anthelmintics: unknown	37	22	2	10	32	4	0	1	4	14	1	1	0	0
Antiparasitics: antimalarial	271	92	37	118	191	50	0	29	139	108	41	23	3	0

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TABLE 22B. Demographic Profile of Exposure Cases by Generic Category of Substances and Products: Pharmaceuticals (Cont'd)

Substance Implicated In the Exposure	No. of Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6–19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Antiparasitics: metronidazole	1,116	294	171	558	620	256	0	230	348	270	180	46	3	0
Antiparasitics: other	221	118	30	62	175	16	0	29	38	69	31	3	1	0
Antituberculars: isoniazid	521	106	193	198	220	256	0	38	397	121	76	71	93	0
Antituberculars: rifampin	67	25	13	26	43	11	0	12	29	15	12	2	0	1
Antituberculars: other	32	10	2	17	17	7	1	7	15	10	2	1	1	1
Antituberculars: unknown	2	0	2	0	2	0	0	0	0	0	0	0	0	0
Antivirals: systemic	932	346	133	386	590	274	0	66	385	298	116	44	3	0
Antivirals: topical	57	31	4	18	52	3	0	2	3	9	8	1	1	0
Antivirals: unknown	66	33	12	18	53	9	0	4	22	23	4	1	0	0
Other antimicrobial	78	57	7	14	64	8	0	6	20	36	14	1	0	0
Unknown antimicrobial	5	0	1	2	2	3	0	0	2	0	2	0	0	0
*Category totals	66,274	39,718	9,552	14,071	52,467	7,926	36	5,705	11,729	16,895	6,778	1,244	189	3
Antineoplastics	840	295	61	393	710	72	0	55	284	283	111	23	5	2
Asthma therapies														
Aminophylline/theophylline	3,683	785	851	1,913	2,110	1,313	1	225	2,388	927	808	681	103	19
Terbutaline and other beta-2 agonists	12,168	9,401	1,619	967	11,081	699	14	351	4,380	4,564	2,374	956	15	0
Other beta agonists	1,982	553	760	585	858	1,039	5	69	1,121	487	532	296	9	1
Other	1,601	1,097	249	225	1,263	299	4	30	420	551	191	102	2	0
Unknown	12	4	5	2	7	4	1	0	8	2	1	2	0	0
*Category totals	19,446	11,840	3,484	3,692	15,319	3,354	25	675	8,317	6,531	3,906	2,037	129	20
Cardiovascular drugs														
Alpha blockers	392	146	28	194	285	80	0	27	213	174	48	38	3	0
Antiarrhythmics	1,069	220	50	721	916	104	0	44	418	441	112	58	21	8
Antihypertensives	9,648	4,068	1,765	3,417	7,406	1,923	5	273	4,941	3,860	1,607	1,023	130	12
Beta blockers	6,524	1,920	744	3,466	4,490	1,789	5	209	3,660	2,729	701	690	133	13
Calcium antagonists	8,396	2,258	630	5,028	6,178	1,973	6	207	4,747	3,468	948	846	227	69
Cardiac glycosides	2,557	1,003	121	1,347	2,099	313	0	129	1,343	1,045	196	297	83	11
Hydralazine	204	70	20	108	159	39	0	6	85	85	31	12	1	0
Long-acting nitrates	773	341	37	363	691	67	0	15	275	362	83	34	4	0
Nitroglycerin	2,174	1,443	141	518	1,885	246	1	33	671	1,146	216	51	6	0
Nitroprusside	17	0	1	14	4	0	0	13	17	2	4	3	1	0
Other vasodilator	364	187	23	139	321	36	0	6	122	170	39	16	3	0
Unknown types of vasodilators	13	5	1	5	7	5	0	1	11	6	3	1	0	0
Vasopressor	24	8	1	12	22	1	0	1	14	2	9	3	1	1
Other cardiovascular drug	884	258	210	363	772	77	2	32	296	230	186	66	5	0
Unknown cardiovascular drug	55	23	5	21	38	13	0	4	27	23	1	3	0	1
*Category totals	33,094	11,950	3,777	15,716	25,273	6,666	19	1,000	16,840	13,743	4,184	3,141	618	115
Cough and cold preparations	105,947	70,862	17,887	15,141	90,987	11,457	44	3,270	23,058	34,865	19,126	3,147	134	7
Diagnostic agents	383	92	26	179	322	13	1	46	152	74	91	26	0	0
Diuretics														
Furosemide	1,437	780	111	493	1,236	165	0	30	496	533	199	67	1	0
Thiazide	1,281	585	151	483	1,013	216	2	47	412	514	104	54	4	1
Other	1,330	656	130	480	1,074	204	0	50	422	550	137	63	7	0
Unknown	266	133	30	95	205	47	2	11	98	103	34	8	2	0
*Category totals	4,314	2,154	422	1,551	3,528	632	4	138	1,428	1,700	474	192	14	1
Electrolytes and minerals														
Calcium	2,134	1,730	156	198	2,037	56	0	39	161	464	123	21	0	0
Fluoride	3,611	3,186	292	112	3,539	38	3	29	234	1,321	468	14	0	0
Iron	4,528	3,026	674	710	3,562	875	5	73	2,215	1,920	775	195	25	2
Magnesium	323	109	52	122	281	26	1	14	114	85	53	29	3	0
Potassium	1,006	543	112	312	826	139	1	38	301	387	85	39	3	1
Sodium	2,485	1,713	417	263	2,326	103	29	18	357	736	453	42	1	0
Zinc	1,072	557	122	309	993	41	1	34	222	232	189	58	2	0
Other	121	79	5	32	112	1	1	7	24	27	10	4	0	0
Unknown	26	22	2	2	25	0	0	1	1	1	2	0	0	0
*Category totals	15,306	10,965	1,832	2,060	13,701	1,279	41	253	3,629	5,173	2,158	402	34	3
Eye/ear/nose/throat preparations														
Nasal preparations														
Tetrahydrazoline	64	50	6	6	61	1	0	2	29	38	9	1	0	0
Other decongestant	2,673	1,504	268	741	2,480	76	7	106	580	1,133	419	50	1	0
Other	432	307	29	68	419	7	0	6	18	103	64	3	0	0
Unknown	17	6	3	5	17	0	0	0	3	5	5	0	0	0

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TABLE 22B. Demographic Profile of Exposure Cases by Generic Category of Substances and Products: Pharmaceuticals (Cont'd)

Substance Implicated In the Exposure	No. of Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6–19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Ophthalmic preparations														
Contact lens products	3,782	2,176	314	995	3,721	26	10	14	519	708	725	156	5	0
Glaucoma therapies	152	52	10	72	130	4	0	17	30	39	40	8	0	0
Tetrahydrazoline	1,882	1,337	181	293	1,717	58	83	15	818	1,033	217	27	3	0
Other ophthalmic sympathomimetics	290	168	31	72	250	9	0	30	91	117	44	10	0	0
Other	598	318	63	177	536	19	2	41	58	91	98	13	2	0
Unknown	18	5	3	6	14	0	1	1	5	3	3	0	0	0
Otic preparations														
Combination products	987	719	103	132	978	3	0	6	108	366	220	14	0	0
Other	1,886	1,052	220	505	1,863	6	0	17	181	420	589	29	0	0
Unknown	44	20	7	14	44	0	0	0	7	9	15	1	0	0
Steroids-topical for eye/nose/throat	1,004	530	164	246	907	37	0	59	86	187	177	16	0	0
Throat preparations														
Lozenges without local anesthetics	705	536	75	74	665	18	2	20	40	172	63	5	1	0
Lozenges with local anesthetics	293	189	67	30	273	10	0	9	15	78	22	3	0	0
Other	427	252	113	46	381	39	0	7	94	156	73	7	2	0
Unknown	5	4	1	0	4	0	0	1	0	1	0	0	0	0
*Category totals	15,259	9,225	1,658	3,482	14,460	313	105	351	2,682	4,659	2,783	343	14	0
Gastrointestinal preparations														
Antacids: salicylate-containing	2,562	2,155	207	166	2,406	67	1	88	223	892	131	12	1	1
Antacids: other	18,931	17,228	720	813	18,559	199	26	140	507	4,363	496	38	2	0
Antidiarrheals: diphenoxylate	1,390	720	184	432	1,023	231	4	124	676	565	239	66	5	1
Antidiarrheals: nonnarcotic	644	508	48	73	598	19	2	24	52	137	32	8	2	0
Antidiarrheals: paregoric	122	94	6	17	102	11	0	7	46	50	23	4	0	0
Antidiarrheals: other narcotic	4	2	2	0	4	0	0	0	1	3	0	0	0	0
Antispasmodics: anticholinergic	1,539	591	307	570	878	568	0	82	819	514	342	146	19	1
Antispasmodics: other	9	4	2	3	7	1	0	1	1	2	1	1	0	0
Laxatives	13,614	9,843	1,426	1,991	12,292	857	168	276	1,933	2,917	2,774	275	7	1
Other	4,278	3,287	315	574	3,786	320	10	153	773	1,233	325	110	9	0
Unknown	912	490	58	296	688	137	0	83	221	316	61	8	4	0
*Category totals	44,005	34,922	3,275	4,935	40,343	2,410	211	978	5,252	10,992	4,424	668	49	4
Hormones and hormone antagonists														
Androgens	198	41	50	88	88	87	0	21	84	23	20	13	2	0
Corticosteroids	6,396	3,833	741	1,511	5,539	398	2	443	783	1,446	424	84	7	0
Estrogens	2,805	2,050	188	483	2,560	168	1	72	314	803	116	22	1	0
Insulin	1,118	75	78	856	780	309	5	17	485	388	105	180	21	3
Oral contraceptives	7,795	6,596	753	339	7,271	431	12	67	567	1,657	272	19	1	0
Oral hypoglycemics	2,815	1,381	230	1,084	2,214	518	2	65	2,067	1,264	291	527	51	3
Progestins	1,254	706	178	318	1,058	110	1	84	187	320	60	17	1	0
Thyroid preparations	5,338	3,385	525	1,224	4,853	410	2	67	1,069	1,658	236	85	5	1
Other hormones	322	120	50	124	226	57	0	35	125	96	71	25	2	0
Other hormone antagonists	232	95	26	95	188	35	1	8	67	85	14	8	0	0
Unknown hormones or antagonists	22	9	3	5	14	2	0	2	8	3	0	2	0	0
*Category totals	28,295	18,291	2,822	6,127	24,791	2,525	26	881	5,756	7,743	1,609	982	91	7
Miscellaneous drugs														
Allopurinol	349	214	30	95	294	44	0	11	90	144	20	5	3	1
L-dopa and related drugs	421	163	11	221	365	36	0	17	140	151	64	21	3	1
Disulfiram	526	24	19	388	149	297	4	70	302	52	133	96	4	0
Ergot alkaloids	631	267	92	240	387	174	1	66	365	218	159	52	1	0
Homeopathic preparations	2,968	1,980	256	602	2,372	262	4	316	633	1,006	340	73	7	1
Methylsergide	5	3	1	1	3	2	0	0	2	1	1	0	0	0
Neuromuscular blocking agent	7	1	0	4	6	0	0	1	3	2	2	0	0	0
Other	9,400	4,345	1,069	3,391	7,081	1,672	24	585	2,796	2,757	1,653	534	73	0
*Category totals	14,307	6,997	1,478	4,942	10,657	2,487	33	1,066	4,331	4,331	2,372	781	91	3

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TABLE 22B. Demographic Profile of Exposure Cases by Generic Category of Substances and Products: Pharmaceuticals (Cont'd)

Substance Implicated In the Exposure	No. of Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6–19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Muscle relaxants														
Cyclobenzaprine	3,641	657	588	2,142	1,255	2,289	0	81	2,617	847	1,078	527	99	4
Methocarbamol	1,112	134	209	664	358	709	1	33	740	254	331	89	18	0
Other	5,444	565	624	3,826	1,460	3,738	4	201	3,862	960	1,831	724	167	6
Unknown	38	1	12	23	5	31	0	1	25	4	11	2	0	0
*Category totals	10,235	1,357	1,433	6,655	3,078	6,767	5	316	7,244	2,065	3,251	1,342	284	10
Narcotic antagonist	103	6	5	77	20	51	1	30	71	10	27	15	0	0
Radiopharmaceuticals	14	0	1	11	10	0	0	3	5	3	4	1	0	0
Sedative/hypnotics/ antipsychotics														
Barbiturates: long-acting	3,475	798	379	2,057	1,766	1,562	5	87	2,116	823	847	466	160	5
Barbiturates: short-acting	1,481	146	183	1,020	418	987	2	58	1,051	271	452	179	54	4
Barbiturates: unknown type	20	1	4	13	1	19	0	0	20	2	8	4	2	1
Benzodiazepines	37,044	4,522	3,272	25,935	8,879	27,103	48	760	27,566	6,602	12,844	4,265	837	55
Chloral hydrate	480	121	37	292	159	277	4	36	364	68	175	82	30	2
Ethchlorvynol	161	13	9	127	29	124	1	4	135	12	53	40	16	1
Glutethimide	19	2	4	13	2	17	0	0	15	0	4	3	3	0
Meprobamate	274	26	21	211	72	193	0	6	215	50	57	50	18	0
Methaqualone	60	4	18	29	6	50	2	0	46	3	17	7	3	0
Phenothiazines	11,577	1,441	1,679	7,566	3,775	6,976	17	701	8,719	2,627	3,016	2,192	355	25
Sleep aids (OTC)	2,498	159	428	1,698	385	2,072	8	22	1,940	491	731	356	43	1
Other	5,874	461	685	4,180	1,515	3,997	7	301	4,216	1,119	1,979	687	117	3
Unknown	308	19	50	192	39	250	1	14	223	36	94	33	1	0
*Category totals	63,271	7,713	6,769	43,333	17,046	43,627	95	1,989	46,626	12,104	20,277	8,364	1,639	97
Serum, toxoids, vaccines	1,455	370	155	696	1,013	17	1	416	468	120	368	82	3	0
Stimulants and street drugs														
Amphetamines	12,981	3,634	5,177	3,514	7,345	5,122	81	349	6,925	3,568	2,676	1,781	189	27
Amyl/butyl nitrites	92	12	18	46	35	53	1	1	44	15	25	4	1	0
Caffeine	7,655	1,174	4,335	1,782	2,600	4,704	24	292	3,627	1,070	2,538	1,021	18	0
Cocaine	3,875	135	496	2,847	325	3,440	39	16	3,422	468	837	1,014	250	49
Diet aids: phenylpropanol-amine	1,703	515	701	429	758	878	0	57	1,001	536	350	258	6	0
Diet aids: phenylpropanol-amine and caffeine	332	81	139	99	147	171	0	12	213	70	74	43	2	0
Diet aids: other, OTC	261	125	70	61	159	66	1	33	91	82	38	14	0	0
Diet aids: other, R_x	280	127	29	114	179	71	0	27	163	104	51	31	4	1
Diet aids: unknown	187	51	65	58	73	91	0	23	108	39	50	22	0	0
Heroin	1,156	9	69	964	88	1,030	18	9	1,001	70	197	294	157	26
LSD	1,708	32	1,142	409	153	1,467	74	8	1,240	104	377	566	19	0
Marijuana	1,734	90	888	598	254	1,409	21	28	1,184	132	432	322	41	3
Mescaline/peyote	189	57	49	70	139	42	3	5	62	10	61	37	0	0
Phencyclidine	426	19	154	220	49	353	8	0	375	22	99	144	38	2
Phenylpropanolamine look-alike drugs	97	12	53	28	23	69	1	4	68	18	28	23	0	0
Other stimulants	1,032	207	408	353	288	716	3	16	676	228	278	195	9	0
Other hallucinogens	3	0	2	1	0	3	0	0	1	0	1	0	0	0
Unknown hallucinogens	13	0	5	8	1	8	4	0	9	0	1	7	0	0
Other street drugs	24	1	13	9	6	17	1	0	15	2	5	4	2	0
Unknown stimulant/street drugs	81	3	38	33	7	64	7	2	66	5	27	17	2	0
*Category totals	33,829	6,284	13,851	11,643	12,629	19,774	286	882	20,291	6,543	8,145	5,797	738	108
Topical preparations														
Acne preparations	1,732	847	453	327	1,545	23	3	158	206	367	416	76	0	0
Boric acid/borates	381	256	24	90	365	10	0	3	39	103	50	4	0	0
Calamine	4,838	3,853	242	638	4,781	34	1	22	268	1,161	332	14	1	0
Camphor	8,914	7,101	575	1,029	8,684	152	15	58	1,314	3,850	1,374	76	5	0
Camphor/methyl salicylate	1,273	995	68	187	1,216	17	2	38	167	518	235	11	1	0
Diaper products	19,164	17,747	701	576	19,109	35	4	16	256	4,179	673	17	1	0
Hexachlorophene antiseptic	124	65	13	36	109	9	0	4	31	37	23	1	0	0
Hydrogen peroxide	7,195	3,648	764	2,339	7,011	139	9	26	469	1,484	1,552	78	3	0
Iodine or iodide antiseptics	1,588	608	246	592	1,355	171	8	46	392	427	371	52	5	1
Mercury antiseptics	480	384	37	51	457	17	1	4	58	195	32	6	0	0
Methyl salicylate	9,820	7,101	873	1,510	9,667	54	16	82	953	3,005	2,232	80	4	1
Podophyllin	64	24	6	27	55	3	0	6	24	15	12	9	0	0
Silver nitrate	161	19	58	62	147	4	0	9	37	18	61	8	0	0
Topical steroids	6,625	4,850	425	1,064	6,499	39	2	80	189	1,193	447	28	1	0

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TABLE 22B. Demographic Profile of Exposure Cases by Generic Category of Substances and Products: Pharmaceuticals (Cont'd)

Substance Implicated In the Exposure	No. of Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6–19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Topical steroid with antibiotics	1,583	1,225	124	187	1,534	17	3	27	85	384	163	9	1	0
Wart preparations	1,654	1,084	228	277	1,583	35	6	27	191	462	343	49	0	0
Other liniment	1,975	1,070	161	599	1,814	16	1	142	178	420	629	29	0	0
Other topical antiseptic	4,553	2,998	503	864	4,387	94	13	58	516	1,536	702	55	4	0
*Category totals	72,124	53,875	5,501	10,455	70,318	869	84	806	5,373	19,354	9,647	602	26	2
Veterinary drugs	3,614	2,057	280	1,038	3,568	32	1	10	312	1,114	559	47	5	0
Vitamins														
Multiple vitamins tablets: adult formulations														
No iron, no fluoride	2,223	1,498	260	393	1,835	212	3	169	306	636	220	24	1	0
With iron, no fluoride	4,934	3,414	605	775	4,089	649	4	177	1,209	1,963	457	51	4	1
With iron, with fluoride	99	82	10	5	89	9	0	1	25	44	12	0	0	0
No iron, with flouride	122	119	2	0	121	1	0	0	6	46	7	0	0	0
Multiple vitamin tablets: pediatric formulations														
No iron, no fluoride	8,138	7,138	936	38	8,002	101	1	29	254	2,675	270	3	0	0
With iron, no fluoride	15,419	13,810	1,486	93	15,144	218	1	45	2,223	6,646	1,199	74	2	0
With iron, with fluoride	618	592	21	3	613	2	0	0	50	164	42	2	0	0
No iron, with fluoride	1,478	1,402	66	6	1,473	5	0	0	56	494	50	0	0	0
Multiple vitamin liquids: adult formulations														
No iron, no fluoride	57	33	8	14	47	2	0	8	9	12	13	0	0	0
With iron, no fluoride	91	46	11	33	71	13	1	6	20	29	5	1	0	0
With iron, with fluoride	3	2	0	0	3	0	0	0	1	0	0	0	0	0
No iron, with fluoride	2	2	0	0	2	0	0	0	0	1	1	0	0	0
Multiple vitamin liquids: pediatric formulations														
No iron, no fluoride	260	244	11	4	256	1	0	3	19	62	19	0	0	0
With iron, no fluoride	472	460	7	5	458	4	3	7	44	155	27	2	0	0
With iron, with fluoride	98	97	1	0	98	0	0	0	5	40	6	0	0	0
No iron, with fluoride	460	429	26	5	459	0	0	1	19	178	20	0	0	0
Multiple vitamins, unspecified adult formulations														
No iron, no fluoride	45	34	2	8	38	3	0	3	3	11	2	1	0	0
With iron, no fluoride	1,688	1,219	245	188	1,461	175	3	41	447	699	163	20	2	0
With iron, with fluoride	9	8	0	1	8	0	0	1	1	2	0	0	0	0
No iron, with fluoride	4	3	0	1	3	0	0	1	1	1	1	0	0	0
Multiple vitamins, unspecified pediatric formulations														
No iron, no fluoride	47	41	6	0	44	2	0	0	2	12	4	0	0	0
With iron, no fluoride	74	64	8	1	73	1	0	0	14	44	5	0	0	0
With iron, with fluoride	6	5	1	0	5	1	0	0	1	1	1	0	0	0
No iron, with fluoride	14	13	1	0	14	0	0	0	0	8	0	0	0	0
Other vitamins														
Vitamin A	947	690	76	150	856	44	0	40	117	261	58	13	1	0
Niacin (B_3)	2,260	446	275	1,325	1,030	136	2	1,089	247	103	1,081	80	2	0
Pyridoxine (B_6)	321	220	31	55	264	41	1	14	55	97	21	8	5	0
Other B complex vitamins	1,318	871	86	294	1,082	105	0	124	147	293	137	22	1	0
Vitamin C	2,193	1,710	257	183	2,017	123	3	45	103	609	119	6	0	0
Vitamin D	141	86	6	40	120	13	0	8	26	32	11	3	1	0
Vitamin E	1,207	976	84	112	1,115	60	1	28	80	347	39	3	0	0
Other	609	414	54	121	509	39	2	57	116	158	87	10	1	0
Unknown	595	385	87	99	493	58	3	38	125	162	62	12	0	0
*Category totals	45,952	36,553	4,669	3,952	41,892	2,018	28	1,935	5,731	15,985	4,139	335	20	1
Unknown drugs	9,918	3,624	1,910	3,482	5,394	3,590	221	474	5,600	2,625	1,597	809	171	1
Total number of pharmaceutical substances	911,856	445,674	148,415	276,735	618,777	255,036	1,473	32,978	339,005	261,831	156,370	55,114	9,157	818
% of pharmaceutical substances		48.9%	16.3%	30.3%	67.9%	28.0%	0.2%	3.6%	37.2%	28.7%	17.1%	6.0%	1.0%	0.1%
% of all substances	42.1%	20.6%	6.8%	12.8%	28.5%	11.8%	0.1%	1.5%	15.6%	12.1%	7.2%	2.5%	0.4%	0.0%

NOTE: Patients with unknown age, reason, or medical outcome were omitted from the respective tabulations.
ABBREVIATIONS: Adv Rxn, adverse reaction; Int, intentional; Unint, unintentional.

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APPENDIX

Drug and chemical levels provided in these abstracts were obtained on blood, serum, or plasma unless otherwise indicated.

Case 31. A 46-year-old man presented 3 days after an exposure to **antifreeze** with nausea, vomiting, and abdominal cramping of 2 days' duration. He stated that some of the chemical had been ingested when he was "splashed" with radiator fluid while working. There were no witnesses to corroborate the exposure history. Clinical findings included a diminished urine output and intractable vomiting. Initial laboratory results were as follows: arterial pH, 7.39; creatinine, 10.8 mg/dL; blood urea nitrogen (BUN), 78 mg/dL; and white blood cell count, 20,500/μL. The urinalysis showed amorphous crystals, sloughed renal cells, 3+ leukocyte esterase, 4+ proteinuria, moderate blood, and >50 white blood cells. The patient became dialysis-dependent and was discharged from the hospital. Three weeks later, he presented with seizure activity, decorticate posturing, and deficits of cranial nerves V, VII, and IX. Computed tomography (CT) of the head showed white matter changes, and the cerebrospinal fluid (CSF) was remarkable for elevated protein. The patient died 26 days after the exposure.

Case 32. A 57-year-old man with a history of Parkinson's disease, chronic obstructive pulmonary disease (COPD), sleep apnea, right heart failure, chronically elevated creatine phosphokinase, and previous myocardial infarction was found stumbling and disoriented by his wife. There was no initial history of overdose. Four hours later in the emergency department (ED), his mental status further deteriorated and he was intubated. CT of the head was negative. Laboratory study results showed the following: **ethylene glycol**, 177 mg/dL; lactate, 4.8 mmol/L; osmolal gap, 35 mosm/L; anion gap, 40 mEq/L; sodium, 147 mEq/L; potassium, 3.8 mEq/L; chloride, 100 mEq/L; bicarbonate, 7 mEq/L; BUN, 15 mg/dL; creatinine, 2.4 mg/dL; calcium, 7.6 mg/dL; white blood cell count, 35,900/μL; ionized calcium, 0.6 mmol/L; arterial pH, 7.01; P_{CO_2}, 29.3 mm Hg; and P_{O_2}, 224 mm Hg. The urinalysis showed more than 50 red blood cells/high-powered field (HPF), 26 white blood cells/HPF, and hippuric acid crystals. The electrocardiogram showed ST elevations in leads V_1 to V_3 with ST depressions in the anterolateral leads. Subsequent treatment included intravenous ethanol, 4-methylpyrazole, large doses of sodium bicarbonate, and hemodialysis. The patient suffered a myocardial infarction and developed refractory hypotension, unresponsive to dopamine, norepinephrine, and epinephrine. He died 36 hours postingestion.

Case 44. A 66-year-old man with a history of prostate cancer with liver and bone metastases was attacked by a swarm of **bees** while reading the newspaper in his backyard. On initial evaluation, 25 stingers were noted on his head with additional stings noted about the shoulders, chest, back, and upper and lower extremities. One bee was found inside his mouth. Initial vital signs included: blood pressure, 160/100 mm Hg; pulse, 100 beats/min; and respirations, 18 breaths/min. En route to the hospital, the patient became light-headed and vomited. He was hypertensive on arrival to the hospital, and except for multiple stings, the physical examination was unremarkable. In all, 120 stingers were removed from his body. Over the next 24 hours, he developed disseminated intravascular coagulation (DIC), rhabdomyolysis, renal dysfunction, elevated liver function tests, and pulmonary edema. He died from renal failure 5 days after admission.

Case 45. An 88-year-old woman with a history of chronic abdominal pain treated with oral meperidine opened the door to a shed in her backyard and was suddenly enveloped in a swarm of bees. She collapsed at the scene after sustaining several hundred **bee stings**. The patient's initial vital signs were as follows: pulse, 100 beats/min; blood pressure, unobtainable; respirations, 28 breaths/min. Initial therapy included intravenous fluids, diphenhydramine, methylprednisolone, and military antishock trousers (MAST). At the hospital, blood pressure increased to 194/90 mm Hg and the patient complained of increasing abdominal pain. Laboratory studies were remarkable for a platelet count that decreased from an initial 232,000/μL to 32,000/μL and a decreasing hematocrit over the next 48 hours. Transfusions of platelets and packed red blood cells were required. Myoglobinuria developed, and she was treated with intravenous fluids, sodium bicarbonate, and furosemide. After the patient developed rebound and guarding, a laparotomy was performed. Findings included diffuse necrosis of the entire small and large intestine and complete necrosis of the colon. Supportive care was withdrawn and the patient died on the 4th hospital day.

Case 46. A 35-year-old man sustained a bite to the region of the right radial artery while playing with a ***Crotalus horridus atricaudatus*** **(canebrake rattlesnake)**. The patient was asystolic when emergency medical services (EMS) arrived 30 minutes later. The bite area was swollen and discolored. Resuscitative efforts were not successful. At autopsy, no tissue necrosis was noted. The postmortem blood ethanol level was 250 mg/dL. No other drugs were detected.

Case 48. A 53-year-old woman ingested an unknown amount of **cyanide** in the hospital shortly after seeing her psychiatrist. She was found in respiratory arrest, with a junctional rhythm, hypotension (systolic blood pressure 80 to 90 mm Hg by palpation), and acidosis. The cyanide antidote kit was administered without significant improvement. Seizure activity developed. Dopamine and second doses of cyanide antidote medications were administered, with improvement in the blood pressure and restoration of the cardiac rhythm. The patient remained unresponsive and was declared brain dead 21 hours postingestion. The heart, liver, and

both kidneys were harvested for organ transplantation. Pertinent laboratory studies were: initial arterial pH, 7.12; P_{CO_2}, 20 mm Hg; P_{O_2} 300 mm Hg; repeat arterial pH, 7.48; P_{CO_2}, 25 mm Hg; P_{O_2}, 364 mm Hg; creatine phosphokinase, 1,500 IU/L; MB fraction, 5%; lithium, 0.55 mEq/L; toxicology screen, negative. Serial plasma cyanide levels were: 15 minutes postingestion, 6.75 μg/mL; 2.3 hours postingestion, 17.4 μg/mL; 14 hours postingestion, 0.99 μg/mL.

Case 60. A 24-year-old graduate student, found by paramedics in the hallway of his research building, admitted to the ingestion of rat poison (later identified as **sodium azide**). At the scene, he was lethargic and hypotensive. On arrival to the ED, vital signs were: blood pressure, 107/46 mm Hg; pulse, 133 beats/min; respirations, 32 breaths/min; temperature, 36.2°C. He was diaphoretic with clenched teeth and upward, rightward ocular deviation. He withdrew to pain with only the right hand. Initial treatment included gastric lavage, activated charcoal, and sodium thiosulfate 5 grams intravenously. Within 1 hour, hypotension (blood pressure 60/40 mm Hg) and a junctional escape rhythm developed. Minutes later, the patient was asystolic and did not respond to atropine, epinephrine, sodium bicarbonate, dopamine, or external pacing. Initial laboratory results were as follows: arterial pH, 7.49; P_{CO_2}, 17 mm Hg; sodium, 143 mEq/L; potassium, 3.1 mEq/L; chloride, 102 mEq/L; bicarbonate, 22 mEq/L; anion gap 19 mEq/L. Autopsy findings included acute parahippocampal focal neuronal necrosis, mild cerebral edema, diffuse congestion of the lungs, liver, spleen, and kidneys, acute tubular necrosis, and early myocardial necrosis. Postmortem blood sodium azide level was 5.58 mg/mL.

Case 62. A 43-year-old man was the victim of a **sodium azide** explosion at the work site. He suffered burns over 60% of his body and multiple fractures. At the scene, he was noted to have pulmonary edema and hypotension, and was treated with intubation, neuromuscular paralysis, and epinephrine. Multiple boluses of calcium and magnesium were administered. In the ED, twitching was noted, although the patient was still partially paralyzed. The initial **carboxyhemoglobin** level was 14%. Hemodynamic instability worsened with blood pressure and pulse rate fluctuations from 30 to 100 mm Hg systolic and 110 to 140 beats/min, respectively. Pulmonary edema, renal failure, and severe metabolic acidosis persisted, despite treatment with epinephrine and sodium bicarbonate infusions. The patient died approximately 24 hours after the explosion.

Case 73. A 40-year-old woman with a history of renal, thyroid, and psychiatric disease ingested three ounces of **rust stain remover** (6% to 8% **hydrofluoric acid**) in a suicide attempt. She presented to the ED 90 minutes after ingestion, after six episodes of spontaneous emesis. She denied throat irritation, abdominal pain, or shortness of breath. Physical findings were remarkable for the absence of oral burns, drooling, respiratory distress, or chest or abdominal abnormalities. Vital signs were as follows: pulse rate, 124 beats/min; blood pressure, 102/63 mm Hg; and respirations, 20 breaths/min. The electrocardiogram showed sinus tachycardia with a QT_c interval of 0.35 seconds, and nonspecific T wave flattening in the lateral leads. The patient later developed ventricular fibrillation only minutes after appropriately conversing with a nurse. Defibrillation, calcium gluconate, magnesium sulfate, and cardiac pacing were not effective. The serum calcium at the time of cardiac arrest was 7.2 mg/dL.

Case 88. A 75-year-old man with a history of diabetes and emphysema intentionally ingested **Pomswnon Oil** (a liniment containing cinnamon oil, peppermint oil, tea tree oil, licorice, dragon's blood, and skullcap) along with another reportedly identical herbal liniment preparation. Within 1 hour, he developed vomiting and was taken to the ED. On arrival, his systolic blood pressure was 86 mm Hg and his pulse rate was 140 beats/min. The patient then seized and suffered a cardiac arrest. Resuscitative efforts were unsuccessful and he died within 1 hour.

Cases 111 and 120. A 75-year-old woman was found dead in bed at home. The postmortem **carboxyhemoglobin** level was 45%. (Her 47-year-old daughter was also found dead inside a vehicle in the attached garage. A hose was found connected to the exhaust pipe and the driver's window of the car. The daughter had a history of depression and had left a suicide note).

Case 135. A 34-year-old man with a history of narcotic and ethanol abuse and Parkinson's disease was brought to the ED with altered mental status. Two hours earlier, he had reportedly ingested 8 ounces of a liquid from an unmarked bottle, thought initially to contain the herbicide glyphosate, along with his antiparkinsonian medications, **carbidopa/levodopa**. Initial vital signs were: pulse, 120 beats/min; blood pressure, 156/116 mm Hg; and respirations, 18 breaths/min. He was noted to have mydriasis and hyperreflexia. Initial treatment included gastric lavage and activated charcoal. Within 8 hours, hyperpyrexia, seizures, and hypotension developed. Respiratory failure, hemodynamic instability, and renal failure developed. The patient died 37 hours after ingestion. Of note, the family later brought a bottle which contained the black liquid that had been ingested. It was identified as **diquat**. Serum and gastric diquat levels were 4.9 μg/mL and 1.1 μg/mL respectively, 23.7 hours postingestion. The paraquat assay was negative.

Case 140. An 18-month-old boy was left unattended outside. His parents had borrowed **charcoal lighter fluid** from the neighbors to start a fire, and left the unused portion outdoors in a bowl. Following ingestion of the lighter fluid, the child developed vomiting and seizure activity. Initial treatment included lorazepam and intubation, with high pressure ventilation. The initial chest X-ray showed a possible infiltrate in the left lower lobe. Clinical and radiographic deterioration occurred. On hospital day 2, extracorporeal membrane oxygenation (ECMO) therapy was initiated. The chest X-ray showed bilateral "white out." Life support was removed on hospital day 4. Autopsy findings included diffuse alveolar damage, pneumonia, and diffuse ischemic neuronal injury.

Case 144. A 12-year-old boy was found face down in the bathtub, in cardiopulmonary arrest by his father. He had not been seen for a prolonged period of time. Along with the patient, a rubber hose and spray can containing an unknown substance were found in the water. The presenting cardiac rhythm was asystole which did not respond to prolonged resuscitative efforts. Autopsy findings included nasal injury consistent with inhalant abuse and blood and lung samples positive for **difluoroethane**. The patient's older brother later admitted to teaching him how to "huff" a few weeks earlier.

Case 147. A 13-month-old girl ingested an unknown quantity of **lighter fluid**. Initial symptoms included coughing and difficulty breathing. In the ED, the child developed seizures and cyanosis. Despite intubation, she died within 3 hours of arrival.

Case 151. A 74-year-old man inhaled a spray **cleaner (sodium hydroxide** >0.5%) for most of an entire day while cleaning his boat in an enclosed garage. That evening, he developed dyspnea, which became progressively worse over the next 5 days. On presentation to the hospital, intubation, intravenous steroids, and high concentrations of oxygen (F_{IO_2}, 0.70) were required to support respirations. Later, multiple attempts at weaning were unsuccessful and he died on hospital day 15. An open lung biopsy showed acute lung injury consistent with toxic pneumonitis.

Case 156. A 31-year-old farmer who had been spraying **disodium methyl arsonate** for 2 weeks presented with diarrhea, weakness, and inability to walk. The patient was admitted for dehydration and developed progressive renal failure, coagulopathy, fluid overload, and hypotension. Despite treatment with 3 to 4 doses of dimercaprol (5 mg/kg), the patient died approximately 5 days later.

Case 160. A 73-year-old man was found unconscious in his back yard. An empty container of **carbaryl** was found nearby. Further search of the area suggested that the patient may have also ingested

malathion. He was intubated at the scene. In the ED, vital signs were: pulse, 80 to 100 beats/min; respirations, 40 breaths/min, and temperature, 33.3°C. Copious diarrhea and respiratory secretions, miosis, and fasciculations of the eyelids and chest wall were noted. Atropine was administered to decrease secretions. Pralidoxime bolus and infusion therapy were initiated. Fluids and dopamine were given for hypotension and a Swan-Ganz catheter was placed. His mental status remained depressed, although he would occasionally respond to verbal or painful stimuli. The patient developed renal failure and hypotension that was refractory to fluids and increasing doses of vasopressors. By day 4 he was flaccid with fixed pupils and metabolic acidosis. He expired on the 6th hospital day. An initial plasma cholinesterase level was 0.3 KU/L (reference range 4.5 to 10.3 KU/L).

Case 166. An 11-month-old girl presented with cold symptoms and a productive cough of unknown duration culminating in a seizure episode just prior to arrival to the ED. Home therapy included steam and topical and oral administration of **cayenne pepper** and ground **garlic in oil**. The child was limp and unresponsive with the following vital signs: pulse, 220 beats/min; respirations 52 breaths/min; temperature, 40.8°C. The skin, face, and oropharynx were covered with cayenne pepper. Treatment included intubation, antibiotics, vasopressors, lorazepam, and phenobarbital. Thirty-six hours later, hypertension, bradycardia, and fixed, dilated pupils were noted. CT of the head showed cerebral edema. The child was declared brain dead on hospital day 3. Pertinent laboratory results included: sodium, 142 mEq/L; potassium, 7.7 mEq/L; chloride, 109 mEq/L; BUN, 32 mg/dL; bicarbonate, 15 mEq/L; creatinine, 1.5 mg/dL; glucose, 44 mg/dL; white blood cell count, 28,800/μL; platelets, 419,000/μL; hemoglobin, 12.7 gm/dL; with no CSF red or white blood cells. The chest X-ray showed right upper lobe atelectasis and bilateral perihilar infiltrates. Autopsy findings included localized edema of the trachea.

Case 167. A 39-year-old man drank an **herbal tea** made from an unknown root from the Dominican Republic and developed vomiting, increased salivation, and incontinence. Physical findings included pinpoint pupils, fasciculations, a blood pressure of 200/100 mm Hg and a pulse rate of 98 beats/min. Treatment included intubation, naloxone (8 mg without response), and atropine (10 mg). Despite the above therapy, the patient developed hypotension and suffered a cardiac arrest. Depressed plasma cholinesterase levels were subsequently reported.

Case 168. A 12-week-old Hispanic boy had a history of rhinorrhea and mild cough for 3 days. No bowel or bladder changes were noted and adequate oral intake was maintained. One evening before admission, he was treated with acetaminophen, an antihistamine/decongestant (brompheniramine/phenylpropanolamine), and 4 ounces of tea made from 3 to 4 leaves from a plant growing in the aunt's yard. The following morning the child was found to be floppy, in respiratory distress, with "eyes rolled back." On arrival to the ED, the child had a respiratory rate of 80 breaths/min. The arterial pH was 7.22 and the blood glucose was 29 mg/dL. Treatment included intubation, 15% dextrose, normal saline, and albumin. Subsequent laboratory studies included: pH, 7.02; P_{CO_2}, 65 mm Hg; PTT, >150 seconds; international normalized ratio (INR), 4.7; fibrin split products, >80 μg/mL; d-dimers, >200; fibrin monomer, positive; hematocrit, 21.5%; total bilirubin, 1.1 mg/dL; aspartate transaminase (AST), 3,225 IU/L; alkaline phosphatase, 351 IU/L; potassium, 7.7 mEq/L; BUN, 23 mg/dL; creatinine, 2.1 mg/dL. Drug screens were negative for acetaminophen and salicylates. Hypocalcemia was also noted. Additional testing revealed cerebral edema on CT scan, left ventricular hypokinesis on echocardiogram, pulmonary edema, and oliguria. Subsequent treatment included blood transfusions, sodium polystyrene sulfonate, glucose, insulin, furosemide, ampicillin, cefotaxime, clindamycin, ganciclovir, ranitidine, vitamin K, and *N*-acetylcysteine. Fulminant hepatic failure developed, and liver transplantation was considered. Metabolic acidosis and renal and hepatic dysfunction progressed with the following laboratory results: BUN, 25 mg/dL; creatinine, 1.8 mg/dL; ammonia, 173; INR, 5.2; total bilirubin, 4.4 mg/dL; AST, >4500 IU/L; and alkaline phosphatase, 309 IU/L. The child died before liver transplantation. Antemortem blood was qualitatively positive for **pulegone** (pennyroyal) at approximately 2.5 days postingestion (limit of detection, 20 pg/mL).

Case 169. A 74-year-old woman was found unresponsive and was suspected to have suffered a stroke. On physical examination, there were multiple ecchymotic skin lesions and a teal color staining of her teeth. In her pockets were several teal colored pellets later identified as **brodifacoum**. In addition to hypoglycemia and elevated liver function tests, initial laboratory results included a PT of 21 seconds and platelet count of 8,000/μL. Treatment included activated charcoal, vitamin K, platelet and fresh frozen plasma transfusions. She died 28 hours later. Postmortem blood revealed a brodifacoum level of 9.5 ng/mL.

Case 171. An 83-year-old man with a history of lymphoma admitted to the ingestion of rat poison 30 to 45 minutes earlier. After an apparent seizure, he was found by paramedics to be diaphoretic and not responding verbally, with a blood pressure of 160/70 mm Hg and a pulse rate of 116 beats/min. On arrival to the ED, he was lethargic, answered questions, and exhibited intermittent periods of screaming, neck extension, and "shaking." While being interviewed by a physician, the patient had a seizure followed by bradycardia and then pulselessness. Treatment included CPR, epinephrine, atropine, and sodium bicarbonate. The patient died after 10 minutes. Laboratory results included: arterial pH, 7.03; P_{CO_2}, 32 mm Hg; sodium, 134 mEq/L; potassium, 5.2 mEq/L; chloride, 104 mEq/L; bicarbonate, 9 mEq/L; BUN, 20 mg/dL; creatinine, 1.0 mg/dL; glucose, 248 mg/dL; and anion gap 30 mEq/L. The patient's wife revealed that he had threatened to take **strychnine** which was stored in an old container in their garage. Autopsy findings included acute pulmonary edema, visceral congestion, lymphoma with generalized lymphadenopathy and splenomegaly, generalized atherosclerosis, emphysema, and benign prostatic hypertrophy. A postmortem blood strychnine level was 0.35 μg/mL.

Case 173. A previously healthy, premature 9-month-old, 9-kg girl presented with hyperpyrexia and respiratory distress. The child had evidence of septic shock and hepatic and renal failure. Upper respiratory symptoms had been present for about 3 days before arrival. The child's mother was treating her with **acetaminophen** infant drops. After running out, she switched to chewable acetaminophen, and finally crushed adult strength acetaminophen tablets mixed into the child's formula. The total amount of acetaminophen administered was unknown. Treatment included vasopressors, intubation, plasmapheresis, and hemodialysis. The patient died the same day. Laboratory studies included: acetaminophen, 60 μg/mL; AST, 13,000 IU/L; alanine transaminase (ALT), 8,000 IU/L; PT, >90 seconds; ammonia, 384 μmol/L; CSF studies were normal. Autopsy findings were indicative of acetaminophen toxicity.

Case 182. A 26-year-old woman with a history of schizophrenia and ethanol abuse ingested an unknown amount of **acetaminophen** 1 hour before arrival to the ED. The patient had a prior history of acetaminophen overdose 1 month earlier with resultant hepatotoxicity. On this admission, serial acetaminophen levels were: at 1 hour postingestion, 133 μg/mL; 4 hours postingestion, 70 μg/mL; and 8 hours postingestion, 26 μg/mL. Liver function tests were not performed and the patient was transferred to a psychiatric unit. Three days later, fulminant hepatic failure developed. There was no acetaminophen detectable in the serum at that time. In addition to acidemia, the patient had multiple laboratory abnormalities: PT, >100 seconds; creatinine, 2.0 mg/dL; AST, 12,000 IU/L. The oral *N*-acetylcysteine formulation was administered intravenously ev-

ery 4 hours, along with intensive supportive care. Renal failure worsened over the next day with the creatinine level increasing to 4.5 mg/dL. The patient was not considered a candidate for liver transplantation and died 11 days postingestion.

Case 249. A 2-year-old girl presented with tachypnea, nausea, and vomiting following the ingestion of an unknown number of 325-mg **aspirin** tablets. The initial vital signs were: temperature, 38.0°C; and respirations, 48 breaths/min. When seizures developed, the patient was transported to another facility. Subsequent therapy included intubation, activated charcoal with cathartic, and urinary alkalinization. The 6-hour salicylate level was 109 mg/dL. Other laboratory results included: initial arterial pH, 7.36; P_{CO_2}, 17 mm Hg; P_{O_2}, 120 mm Hg; PT, 14 seconds; and PTT, 39 seconds. Refractory seizures were treated with phenobarbital, lorazepam, and hemodialysis. The child remained comatose, with reactive pupils, an adequate urine output (urine pH, 7.0), and a repeat salicylate level of <5.0 mg/dL on the second hospital day. A CT scan of the head at that time showed cerebral edema. The patient suffered an intracranial hemorrhage, and was pronounced brain dead on hospital day 5.

Case 256. A 37-year-old woman made a slurry using brandy plus 150 to 250 unknown strength **aspirin** tablets. She then drank one half of the mixture. Two hours later, she developed vomiting and called 911. Charcoal with cathartic were administered en route to the ED by prehospital personnel. Five and one half hours postingestion she was awake and alert with the following vital signs: pulse rate, 93 beats/min; blood pressure, 199/85 mm Hg; respirations, 24 breaths/min; temperature, 36.6°C. The initial salicylate level was 62 mg/dL. Other laboratory results were: sodium, 145 mEq/L; potassium, 3.4 mEq/L; chloride, 109 mEq/L; bicarbonate, 22 mEq/L; arterial pH, 7.43; P_{CO_2}, 27 mm Hg; and P_{O_2}, 121 mm Hg. A repeat salicylate level drawn 6 hours later was 41 mg/dL. Initial treatment included sodium bicarbonate boluses, potassium chloride, and two additional doses of activated charcoal with sorbitol. Fifteen hours after ingestion the patient had stable vital signs and was transferred to the psychiatric division. At 22 hours after ingestion, she complained of stomach upset and had multiple episodes of emesis which precluded the administration of oral medications. At 28 hours postingestion she was found lying on the floor, disoriented, diaphoretic, with the following vital signs: respirations, 24 breaths/min; pulse rate, 80 beats/min; blood pressure, 158/78 mm Hg; and temperature, 36°C. Shortly thereafter, she had a grand mal seizure and developed ventricular fibrillation. Resuscitative efforts were not successful. A salicylate level drawn during CPR was 120 mg/dL, with a postmortem level of 85.8 mg/dL.

Case 295. A 38-year-old man ingested 25, 0.5 mg **colchicine** tablets, five hours prior to presentation. A British Textbook of Suicide was found in the patient's home. He was noted to complain of severe abdominal pain, hematemesis, and hematochezia. The patient's vital signs were: blood pressure, 158/80 mm Hg; pulse rate, 118 beats/min; temperature, 38.3°C; respirations, 20 breaths/min. Orthostatic pulse and blood pressure changes were noted. The electrocardiogram showed a normal sinus rhythm without ectopy or abnormal intervals. The initial blood gas analysis on room air showed: arterial pH, 7.38; P_{CO_2}, 33 mm Hg; and P_{O_2}, 83 mm Hg. Volume resuscitation was successful using six units of whole blood and 3 liters of lactated ringers. Multiple dose activated charcoal therapy was initiated. Twenty-three hours after ingestion the patient was talking to the nurse when he developed ventricular tachycardia followed by ventricular fibrillation. Defibrillation, lidocaine, epinephrine, magnesium, atropine, and sodium bicarbonate therapy were unsuccessful.

Case 297. A 14-year-old girl ingested **colchicine** and **trazodone** within 3 days of arrival to the ED. Initial symptoms included multiple episodes of vomiting and diarrhea. She was treated with activated charcoal and sorbitol, prophylactic antibiotics and fresh frozen plasma. Laboratory results included: white blood cell count, 40,000/μL; AST, 320 IU/L; ALT, 280 IU/L; LDH, 7,300 IU/L; PT, 16 seconds; PTT, 30 seconds, BUN, 8 mg/dL; creatinine, 0.9 mg/dL; acetaminophen, <10 μg/mL. The urine toxicology screen was negative. One day later, respiratory distress, refractory hypotension, and bradycardia developed. An agonal ventricular rhythm developed, which was unresponsive to prolonged advanced cardiac life support (ACLS) measures.

Case 301. A 19-month-old boy was found comatose by his mother. Several bottles of **methadone** elixir were found in the home. Both the mother and her boyfriend were in methadone treatment programs. The amount of methadone ingested was never determined. On arrival to the ED, the child was in cardiac arrest. Treatment included ACLS measures and naloxone. Resuscitative efforts were not successful. Autopsy findings included a postmortem blood methadone concentration of 0.5 μg/mL, and death was attributed to methadone intoxication.

Case 302. A 2-year-old boy was given an uncertain amount of his uncle's **methadone** by his 4-year-old sibling. Seven hours later, his mother noted bizarre movements with "eyes rolling back into his head." She placed him in bed. One hour later, she checked on him, noting that he had persistently abnormal extremity and ocular movements. Four to five hours later he was apneic. On arrival to the ED, the child was pronounced dead.

Case 311. A 47-year-old man on **methadone** maintenance intentionally ingested additional methadone to get high. On arrival to the hospital, he was comatose with hypoventilation. Treatment included naloxone boluses and infusion and admission to a critical care setting. The patient left the unit against medical advice and was found dead in the hospital chapel 4 hours later. A white powder, presumed to be **heroin**, was found in his pockets.

Case 330. A 40-year-old woman ingested an unknown amount of **phenylbutazone**. On arrival to the ED, she was seizing, unresponsive, hypotensive and had severe acidosis (arterial pH, 6.3). After intubation, diazepam and phenobarbital were administered to control the seizures. Additional therapy included gastric lavage, multiple dose activated charcoal, cathartic, and bicarbonate. A repeat arterial pH was 7.3. The patient became more awake, but was agitated, tachycardic, and required neuromuscular paralysis. Subsequent laboratory studies included: glucose, 325 mg/dL; AST, 346 IU/L; ALT, 240 IU/L; lactic dehydrogenase (LDH), 381 IU/L; calcium, 7.6 mg/dL; and arterial pH, 7.47. The patient died 24 hours later. Autopsy findings included mild cerebral edema and unidentified white, grainy material in the small bowel.

Case 344. A 29-year-old woman received a 40-mL injection of **bupivacaine** 0.5% into the knee joint at her physician's office. Within 2 minutes, she seized and suffered a respiratory arrest. Prehospital CPR was initiated. On EMS arrival, the patient was noted to be bradycardic, but rapidly deteriorated to ventricular fibrillation. During transport, seizures continued. In the ED, seizures were controlled with lorazepam and phenytoin, and the acidosis was corrected with bicarbonate. After resuscitation, the patient's pupils were fixed and dilated, and she remained comatose. The bilirubin was noted to be elevated at 1.9 mg/dL on hospital day 4. Two days later, she died.

Case 346. A 28-year-old male hospital housekeeper was found unconscious with an empty bottle of **isoflurane** and cotton balls strapped to his face. Pulseless electrical activity was noted and treatment included sodium bicarbonate, atropine, and epinephrine. Despite pacemaker placement, progressive tachyarrhythmias and, finally, asystole developed. Autopsy findings were negative. A postmortem isoflurane blood level was 145 μg/mL.

Case 388. A 9-year-old boy was noted to have an unsteady gait prior to developing a seizure and cardiorespiratory arrest. Paramedics arrived approximately 10 minutes later and noted empty bottles of **imipramine**, **amitriptyline**, and **methylphenidate** nearby. On arrival to the ED, the patient was hypotensive with a wide complex

bradycardia. Treatment included intravenous fluids and sodium bicarbonate (arterial pH maintained at 7.45 to 7.48) and multiple dose activated charcoal. The cardiac conduction delay improved with a subsequent QRS duration of 0.10 seconds. Continuous squinting activity was observed. Electroencephalogram (EEG) tracings were consistent with seizure activity, CT of the head was negative, and the patient was treated with phenytoin. His clinical condition gradually deteriorated, and the patient died on hospital day 3. The antemortem blood analysis showed: amitriptyline, 1,430 ng/mL; nortriptyline, 600 ng/mL; imipramine, 696 ng/mL; and desipramine, 636 ng/mL.

Case 399. A 27-year-old man called a crisis hotline stating that he had taken some medications and had only 2 hours to live. A first responder found him to be lethargic and attempted to walk him around at the scene to increase his alertness. He subsequently seized. A second seizure occurred en route to the hospital and was followed by a cardiac arrest. He was treated with CPR, intravenous fluids, and sodium bicarbonate. In the ED, a pulseless idioventricular rhythm and apnea were noted. Subsequent therapy with epinephrine, atropine, and intubation resulted in the return of spontaneous circulation, and the following vital signs were noted: pulse rate, 118 beats/min; blood pressure, 82/25 mm Hg; respirations, 15 breaths/min. Dopamine and norepinephrine were required to support the blood pressure. Initial laboratory results included; arterial pH, 6.75; P_{CO_2}, 33 mm Hg; P_{O_2}, 244 mm Hg; and bicarbonate, 16.9 mEq/L. Life support was withdrawn 5 days later when an EEG showed no evidence of brain activity. Blood **bupropion** and hydroxybupropion levels taken 21 hours after admission were 446 ng/mL and 3,217 ng/mL respectively.

Case 405. A 1-year-old girl ingested an unknown quantity of **desipramine** and was taken by ambulance to the ED. The child had a widened QRS of more than 0.12 seconds, and was treated with gastric lavage, activated charcoal, and intravenous sodium bicarbonate. Deterioration occurred, with a respiratory arrest, bradycardia, and acidosis (arterial pH, 7.06). Despite additional therapy including epinephrine, atropine, cardioversion, dopamine, and CPR, the patient died within 3 hours of arrival.

Case 406. A 3-year-old boy with a history of attention deficit disorder was brought by ambulance to the ED following a 1-minute shaking spell at home. Earlier, he had received his usual bedtime dose of **desipramine**, 100 mg. Both the patient and his 6-year-old sibling were chronically treated with desipramine. It was determined that at most, two to three tablets from either prescription were missing. In the ED, a second tonic clonic seizure was followed by asystole. The patient was resuscitated with CPR, intubation, epinephrine, sodium bicarbonate, calcium, and atropine. A wide-complex tachycardia and persistent seizure activity led to the administration of additional sodium bicarbonate, benzodiazepines, and phenobarbital. After transfer to a tertiary care center, refractory seizures were treated with phenytoin and pentobarbital coma. The patient remained hemodynamically stable for 26 hours and then required fluid boluses and dopamine for hypotension. EEGs performed at 28 and 36 hours were flat line without evidence of brainstem activity. Life support was discontinued at approximately 47 hours. Laboratory results included: glucose, 308 mg/dL; serum desipramine on arrival, 1,472 ng/mL; and repeat antemortem desipramine, 215 ng/mL. The urine drug screen was positive for barbiturates, caffeine, imipramine, desipramine, and phenytoin. Autopsy findings included cerebral edema and bilateral diffuse bronchopneumonia.

Case 477. A 30-year-old woman ingested an unknown quantity of **venlafaxine** and **carbamazepine**. She presented with the following vital signs: pulse rate, 160 beats/min; respirations, 28 breaths/min; and blood pressure, 148/82 mm Hg. To control the tachycardia, overdrive pacing was attempted. The patient's pulse rate steadily decreased to asystole. Prolonged resuscitative efforts were not successful. The initial urine drug screen was positive for benzoylecgonine. Postmortem results were: serum venlafaxine, 89 µg/mL; liver venlafaxine, 132 µg/mL; total gastric venlafaxine, 800 mg; serum carbamazepine 19.2 µg/mL; *serum benzoylecgonine*, none detected. Autopsy findings were remarkable only for the presence of alveolar fluid.

Case 505. A 23-year-old man ingested a topical aphrodisiac called "Love Stone" purchased in a "smoke shop." Thirty minutes later he developed vomiting and diarrhea that persisted until his arrival to the ED the next day. On physical exam, the patient's vital signs were: pulse rate, 76 beats/min; respirations, 28 breaths/min; temperature, 33.8°C; and blood pressure, 98/60 mm Hg. He was noted to be alert, in respiratory distress, with diaphoresis and midrange, reactive pupils. A chest X-ray showed evidence of pulmonary edema. During intubation, the patient's heart rate decreased to 20 beats/min. He was treated with atropine, and the heart rate increased to 150 beats/min. Three hours after ED presentation, ventricular fibrillation developed. Despite Fab fragment therapy, the patient died. Antemortem laboratory results included: digoxin, 0.9 ng/mL; sodium, 139 mEq/L; potassium, 4.3 mEq/L; chloride, 100 mEq/L; bicarbonate, 21 mEq/L; BUN, 14 mg/dL; creatinine, 1.0 mg/dL; glucose, 104 mg/dL; arterial pH, 7.44; P_{CO_2}, 23 mm Hg; P_{O_2}, 41 mm Hg (on room air). A right bundle branch block pattern was noted on the electrocardiogram. The product was identified as an **extract from the *Bufo* species of toad**, known to contain a number of **cardiac glycosides.**

Case 530. A drowsy 20-year-old woman admitted to the ingestion of naproxen and ethanol in a suicide attempt. (Later, police also discovered an empty bottle of her father's **flecainide** in the home). Prehospital providers found the patient to be lethargic, cool and clammy, with sluggishly reactive pupils and some purposeful movements. The pulse rate was 20 to 40 beats/min and the systolic blood pressure was 70 mm Hg by palpation. Intubation was performed at the scene. Ventricular fibrillation converted to pulseless electrical activity with defibrillation and lidocaine therapy. Atropine and epinephrine were then administered. Widened QRS complexes did not respond to 150 mEq of intravenous sodium bicarbonate. Hypotension persisted despite glucagon, calcium chloride, transvenous pacing, dopamine, norepinephrine, and isoproterenol. Additional complications included adult respiratory distress syndrome (ARDS) and renal failure. The patient was placed on ECMO for 2 days and developed a refractory coagulopathy. Death occurred shortly after removal from ECMO. An antemortem flecainide level was 1.62 µg/mL.

Case 535. A 72-year-old man with an extensive cardiac history, an indwelling pacemaker, and renal failure was administered 50 mg of **milrinone** intravenously as a loading dose, instead of 3 mg. He became hypotensive (blood pressure, 60 mm Hg), and developed cardiogenic shock and anuria. High doses of vasopressor agents, including dopamine, norepinephrine, and phenylephrine, were administered for blood pressure support. The patient failed to respond to the above therapy and succumbed to a cardiac arrest 18 hours after exposure.

Case 540. A 57-year-old man with a history of hypertension, asthma, peripheral vascular disease, and alcohol abuse presented to the ED after ingesting 15 of his own **long-acting nifedipine** for chest pain. Initial findings included hypotension, third degree heart block, ST elevations on electrocardiogram, acidosis, and lethargy. He was treated with gastric lavage, charcoal, cathartic, norepinephrine, dopamine, and calcium chloride. Whole bowel irrigation was initiated but discontinued upon the development of an ileus. Subsequent therapy for persistent hypotension and bradycardia included glucagon, calcium chloride infusion, epinephrine, transvenous cardiac pacing, and theophylline. Nonetheless, the patient died. Laboratory studies included: arterial pH, 7.28; P_{O_2}, 76 mm Hg (F_{IO_2}, 0.8); P_{CO_2}, 30 mm Hg; sodium, 136 mEq/L; potassium 3.5 mEq/L; chloride, 97 mEq/L; bicarbonate, 8 mEq/L; BUN, 15 mg/dL; creatinine, 2.7 mg/dL; glucose, 216 mg/dL; calcium, 13.1

mg/dL (after bolus); ionized calcium, 2.41 mmol/L; and creatine phosphokinase, 2,200 IU/L (100% MM fraction). The serum drug screen was negative for ethylene glycol, methanol, salicylates, and acetone. The urine drug screen was positive for opiates. Serum nifedipine levels were greater than 200 ng/mL by dilution.

Case 556. A 49-year-old woman with a history of adult onset diabetes, hypertension, and hemorrhagic stroke presented with acute dyspnea. The family denied a history of suicide attempt or symptoms of depression. Her only medication was sustained release verapamil. Initial physical examination revealed confusion, agitation, bradycardia at 20 beats/min, poor skin perfusion, and a systolic blood pressure of 60 mm Hg by palpation. The electrocardiogram revealed a junctional bradycardia with QRS duration of .108 seconds and normal T wave appearance. Resuscitative efforts included rapid sequence intubation, atropine, isoproterenol, dobutamine, calcium chloride, norepinephrine, sodium bicarbonate, crystalloid infusion, insulin infusion and transvenous pacemaker placement. Despite 3 hours of aggressive resuscitation, the patient developed progressive bradycardia and hypotension, and died. Pertinent laboratory findings were: hemoglobin, 13.9 gm/dL; white blood cell count, 9,000/μL; glucose, 562 mg/dL; creatinine, 1.3 mg/dL; sodium, 137 mEq/L; potassium, 6.7 mEq/L; bicarbonate, 21 mEq/L; anion gap, 10 mEq/L. Autopsy findings revealed biventricular hypertrophy, diffuse coronary stenosis without acute coronary thrombus, and hepatic cirrhosis. Toxicologic blood analysis revealed the following: **propranolol**, 600 μg/mL; **verapamil**, 668 μg/mL; norverapamil, 301 μg/mL; and the presence of diphenhydramine.

Case 558. A 50-year-old man with a history of cardiac disease and hypertension ingested a mixture of 50 tablets of **captopril** and **quinidine**. Prehospital intubation was performed and vital signs included a pulse of 52 beats/min and a systolic blood pressure of 50 mm Hg. In the ED, treatment included gastric lavage, charcoal, cathartic, norepinephrine, isoproterenol, dopamine, atropine, and sodium bicarbonate. The electrocardiogram showed a QRS duration of 0.21 seconds (right bundle branch block pattern) and first degree AV block. The patient developed seizures, pulmonary edema, and dysrhythmias. His neurological status improved slightly prior to the onset of refractory hypotension and bradycardia on the third hospital day. Laboratory results included: quinidine, 12 μg/mL; initial digoxin, 1.8 ng/mL; sodium, 134 mEq/L; and potassium, 3.4 mEq/L.

Case 591. A 17-year-old man reportedly ingested approximately 40 **ephedrine** tablets and then fell asleep. Later that evening, and early the next morning, friends heard him snoring. He was found unresponsive at noon the following day. On arrival to the ED, ventricular fibrillation was noted and was treated with defibrillation, fluids, and pacemaker placement. His body temperature was greater than 37.8°C. Resuscitative efforts were not successful. The initial laboratory results included: arterial pH, 6.53; P_{CO_2}, 29 mm Hg; P_{O_2}, 151 mm Hg; bicarbonate, 3.3 mEq/L; potassium, 11.03 mEq/L. The urine drug screen was positive for ephedrine, and negative for other drugs of abuse. A quantitative urine ephedrine level was 140 μg/mL. Autopsy findings included an intracerebral hemorrhage, cerebral edema, severe hemorrhagic gastritis, and bilateral pulmonary edema.

Case 593. A 43-year-old woman with a history of hypertension intentionally ingested an unknown number of antihistamine/decongestant tablets (75 mg **phenylpropanolamine** with 12 mg **brompheniramine** per tablet). On presentation, she was alert and oriented and complained of dizziness. Physical findings included diaphoresis, small to midrange pupils, normal bowel sounds, and good urine output. Vital signs were: pulse rate, 60 beats/min; respirations, 20 breaths/min; blood pressure, 165/125 mm Hg; temperature, 36.2°C. Over the course of several hours, the patient's blood pressure and pulse rate decreased to 150/90 mm Hg and 50 beats/min, respectively. She became increasingly lethargic. A subsequent CT scan revealed a large intracerebral bleed. Progressive coma, hypotension, and multiple organ failure resulted in death 3 days after ingestion.

Case 594. A 22-month-old boy ingested 96 325-mg **ferrous sulfate** tablets (549 mg/kg elemental iron) 15 minutes before to arrival to the ED. Initial therapy included endoscopy, gastric lavage, and deferoxamine. Early laboratory results included: hemoglobin, 10.8 gm/dL; white blood cell count, 8,100/μL; serum iron, 50 μg/dL. After transfer to a second facility, the patient was somnolent and mildly combative with the following vital signs: pulse rate, 190 beats/min; respirations, 30 breaths/min; and blood pressure, 131/106 mm Hg. Repeat laboratory analysis included: serum iron (6½ hours postingestion), 2,583 μg/dL; glucose, 393 mg/dL; white blood cell count, 26,800/μL; bicarbonate 13 mEq/L; PT, 27.1 seconds; PTT, 92 seconds; arterial pH, 7.24; P_{CO_2}, 22 mm Hg; and P_{O_2}, 99 mm Hg. Subsequent treatment included intubation, albumin, crystalloids, activated charcoal with cathartic, exchange transfusions, vasopressors, and a continuous deferoxamine infusion. A *vin rose* urinary color change was noted. Repeat endoscopy showed corrosive changes in the cervical esophagus with retained charcoal and pill fragments in the gastric fundus. On hospital day 2, deterioration occurred with the development of ARDS, worsened coagulopathy, and acidosis. Multiple organ failure and hemodynamic instability ensued and the patient died that day. Blood cultures were positive for pneumococcus and pseudomonas.

Case 597. A 63-year-old man with a history of colon cancer was being prepared for repair of stenosis of his colostomy. Ten **enemas** (each containing **sodium biphosphate**, 19 grams, and **sodium phosphate**, 7 grams per 118 mL) were administered into the ostomy. Three to four hours later he suffered a cardiac arrest. The patient was initially resuscitated with intubation and cardiac pacing. Vital signs were: blood pressure, 90/30 mm Hg; pulse rate, 96 beats/min; and temperature, 34.9°C. Laboratory results 1 hour after cardiac arrest were as follows: ionized calcium, 0.3 mg/dL; phosphorus, 10.8 mg/dL. Repeat laboratory results 3 hours later showed: sodium, 157 mEq/L; potassium, 8.2 mEq/L; chloride, 93 mEq/L; bicarbonate, 8 mEq/L; arterial pH, 7.17. Despite peritoneal dialysis, the patient died 12 hours after enema administration.

Case 616. A 31-year-old man presented to the ED 3.5 hours after ingesting 14 tablets of 100 mg **clozapine**. He was awake, alert and in no distress with the following vital signs: blood pressure, 132/90 mm Hg; pulse rate, 100 beats/min. The initial electrocardiogram showed a QRS duration of 0.08 seconds. Five to six hours postingestion, the patient became uncooperative, pulled off the cardiac monitor lead wires and ran around the ED. Shortly thereafter, his level of consciousness became depressed and intubation was performed. The QRS duration had increased to 0.24 seconds at that time. No seizure activity was noted. Treatment, including sodium bicarbonate, physostigmine (2 mg), epinephrine, atropine, and dopamine, was unsuccessful, and the patient died.

Case 619. A 30-year-old man with a history of cocaine, marijuana, heroin, and **ethanol** abuse injected **ethchlorvynol** intravenously prior to arriving to the ED with complaints of shortness of breath. Initial physical findings included cyanosis, tachypnea, tachycardia, and hypotension. Treatment included intubation, 100% oxygen, positive end expiratory pressure of 15 cm H_2O, fluid restriction, vasopressor therapy, and invasive hemodynamic monitoring. The central venous pressure was 5 to 7 cm H_2O and the systemic vascular resistance was low. Hemodialysis was attempted, but was aborted after 30 minutes because of hemodynamic instability. The patient died within 12 hours of arrival. Laboratory studies included: arterial pH, 7.21; P_{CO_2}, 58 mm Hg; P_{O_2}, 42 mm Hg; ethanol, 150 mg/dL; methanol, salicylate, ethylene glycol, and acetaminophen levels were below detection limits. Autopsy findings included acute pulmonary edema, early pneumonia, passive congestion of the liver, kidneys, spleen, and viscera,

and bilateral hydrothoraces. A postmortem ethchlorvynol level was 8.6 μg/mL.

Case 626. A 16-year-old boy with a history of viral meningitis/encephalitis complicated by seizures and agitation was being treated in a pediatric intensive care unit. In addition to anticonvulsants, **haloperidol** was given in escalating doses for 2 weeks. After receiving haloperidol 8 mg three times daily for 24 hours, dystonia was noted. Benztropine 2 mg was given. Thereafter, hyperkinesis, hyperthermia (temperature, 41.7°C), and cardiac arrest occurred. The patient was resuscitated, but developed DIC and generalized bleeding, and died within 12 hours. Pertinent laboratory results at the time of the cardiac arrest included creatine phosphokinase, 2,000 IU/L and potassium, 8.0 mEq/L.

Case 638. A 66-year-old man with a history of angina, hypertension, psychosis, and previous suicide attempts intentionally ingested an 8-day supply of **risperidone**, 240 mg of nifedipine, 400 mg of sertraline, 1.6 mg of **clonidine**, and 10 to 15 mg of clonazepam. In the ED, the patient was arousable with slightly labored respirations. Treatment included cardiac monitoring, gastric lavage, activated charcoal, sorbitol, naloxone, and flumazenil. The patient seized, became apneic and was intubated. Recurrent seizures required diazepam and phenobarbital therapy. Later that day, his temperature rose to 41.7°C. He was treated with antipyretics and dantrolene. He deteriorated and developed persistent seizures and ultimately ventricular fibrillation. Resuscitation attempts were unsuccessful.

Case 644. A 12-year-old autistic boy presented with a 40-hour duration of vomiting and poor oral intake. There was no history of diarrhea or fever. The diagnosis of gastroenteritis was made, and the patient was treated with **trimethobenzamide** suppositories. Over the next 24 hours, vomiting decreased, but the child was anuric and continued to complain of abdominal pain. Later, he was found flaccid, cyanotic, pulseless, and apneic by his brother. Prehospital CPR, intubation, epinephrine, and bicarbonate therapy was administered. ACLS measures continued in the ED with the return of spontaneous circulation. The patient suffered anoxic encephalopathy and subsequently died. Autopsy findings included hepatic microvesicular fatty change and axonal changes. Both urine and blood (26.8 μg/mL) trimethobenzamide levels were elevated. The cause of death was anoxic encephalopathy secondary to cardiopulmonary arrest.

Case 652. Paramedics were called to transport an 11-month-old girl to the ED after the alleged ingestion of an unknown rat poison. En route, the child developed seizures and ventricular tachycardia. In the ED, she was treated with intubation, gastric lavage, and naloxone. The electrocardiogram showed a wide-complex tachycardia and a prolonged QT_c. Deterioration of the cardiac rhythm occurred, and the patient was treated with atropine, epinephrine, and defibrillation. Despite initial stabilization, the child died because of refractory ventricular fibrillation. Laboratory results included: arterial pH, 6.51; Po_2, 105 mm Hg; Pco_2, 94 mm Hg; glucose, "normal." The urine drug screen was positive for cocaine metabolites. On autopsy, crack cocaine particles were noted in the duodenum. Postmortem toxicologic analysis revealed the following cocaine levels: heart, 17.74 μg/mL; blood, 25.66 μg/mL; liver, 11.56 mg/kg; brain, 29.55 mg/kg. The parents later admitted that they had seen the child's 2-year-old sibling feeding her **crack cocaine.**

Case 709. A 1-day-old girl born to a mother with a history of **methamphetamine** abuse developed tonic-clonic seizures. The mother admitted to methamphetamine use 3 days before delivery. The patient had agitation, fluctuating temperature, poor urine output, and intermittent apnea. Seizure control necessitated intubation and phenobarbital therapy. The patient remained sedated and died on the 6th hospital day. Autopsy findings included bilateral cerebral artery infarction with brain stem hemorrhage and herniation.

Case 711. A 30-year-old man presented to the ED a few hours after snorting and ingesting crank (**methamphetamine**). He complained of sweating, chills, weakness, shakiness, and chest pain radiating to the neck. Flushing, tachycardia, hypotension, oliguria, and hyperkalemia were noted. Treatment included dopamine, norepinephrine, and hemodialysis. Swan-Ganz catheter insertion revealed a very low cardiac index and systemic vascular resistance. Shortly thereafter, the patient deteriorated further. Ventricular fibrillation progressed to asystole, and then to refractory pulseless electrical activity despite intubation and aggressive resuscitation. Death occurred within 1 hour. Autopsy findings included cystic medial necrosis of the ascending aorta with dissection and rupture into the pericardial sac (50 mL fluid); two vessel coronary atherosclerosis; pulmonary congestion and edema; renal congestion; and acute erosive hemorrhagic gastritis. The toxicology screen was positive for amphetamines.

Case 718. A 25-year-old woman was found unconscious and in respiratory arrest in a hotel room. A young male was found dead in the same room, which smelled strongly of **ethyl ether.** Equipment and chemicals used to produce **methamphetamine** were found in the bathroom, and paraphernalia for smoking methamphetamine along with large amounts of the drug were seen on a table. The patient was transported to the ED after intubation. Resuscitative efforts were not successful, and she was pronounced dead approximately 1 hour after arrival. The cause of death was determined to be from methamphetamine poisoning with ethyl ether as a possible contributing factor.

Case 724. A 1-year-old boy was unresponsive and cyanotic, with shallow respirations on presentation to the ED 12 to 14 hours after the ingestion of an unknown number of **prenatal vitamins with iron.** The initial vital signs were blood pressure, 40/29 mm Hg; and respirations, 28 breaths/min. The patient was treated with fluids and fresh frozen plasma through internal jugular and left ankle cutdown sites. A continuous infusion of deferoxamine was started (19 mg/kg/h). Two hours after arrival, the child was semicomatose and had evidence of disseminated intravascular coagulopathy. Further treatment included epinephrine, dopamine, dobutamine, and blood transfusions. Despite resuscitative efforts and transfer to a tertiary care facility, the patient died 11 hours after arrival. (Of note, the patient's sibling was evaluated for a possible iron ingestion one night earlier. It was not known at that time that the younger child had also ingested the prenatal vitamins). Laboratory results included: serial serum iron levels, 5,900 μg/dL, 6,000 μg/dL, 5,927 μg/dL; serial total iron binding capacity, 9,195 μg/dL, 2,196 μg/dL; PT, 27.3 seconds; PTT, 150 seconds; sodium, 145 mEq/L; potassium, 2.5 mEq/l; chloride, 109 mEq/L; bicarbonate, 17 mEq/L; BUN, 20 mg/dL; creatinine, 0.7 mg/dL; ALT 100 IU/L; AST 291 IU/L; LDH, 3,512 IU/L. Abdominal X-ray showed one tablet visible in the gastric region.