Toxicology

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

2000 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; are used to support regulatory actions; and 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).[1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17]

The cumulative AAPCC database now contains nearly 29.2 million human poison exposure cases. This report includes 2,168,248 human exposure cases reported by 63 participating poison centers during 2000, a decrease of 1.5% compared with 1999 poisoning reports.

CHARACTERIZATION OF PARTICIPATING CENTERS

Of the 63 reporting centers, 59 submitted data for the entire year. Fifty-two of the 63 participating centers were certified as regional poison centers by the AAPCC in 2000.

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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; Arkansas Poison and Drug Information Center, Little Rock, AR; California Poison Control System—Fresno/Madera Division, CA; California Poison Control System—Sacramento Division, CA; California Poison Control System—San Diego Division, CA; California Poison Control System—San Francisco Division, 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, Tampa, FL; Florida Poison Information Center, Jacksonville, FL; Florida Poison Information Center, Miami, FL; Georgia Poison Center, Atlanta, GA; Illinois Poison Control Center, Chicago, IL; Indiana Poison Center, Indianapolis, IN; Iowa Statewide Poison Control Center, Sioux City, IA; Mid-America Poison Control Center, Kansas City, KS; Kentucky Regional Poison Center, Louisville, KY; Louisiana Drug and Poison Information Center, Monroe, LA; Maine Poison Control Center, Portland, ME; Maryland Poison Center, Baltimore, MD; Regional Center for Poison Control and Prevention Serving Massachusetts and Rhode Island, Boston, MA; Children's Hospital of Michigan Regional Poison Control Center, Detroit, MI; DeVos Children's Hospital Regional Poison Center, Grand Rapids, MI; Hennepin Regional Poison Center, Minneapolis, 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, Sleepy Hollow, NY; Long Island Regional Poison and Drug Information Center, Mineola, NY; Finger Lakes Regional Poison and Drug Information Center, Rochester, NY; Central New York Poison Control Center, Syracuse, NY; Western New York Regional Poison Control Center, Buffalo, NY; Carolinas Poison Center, Charlotte, NC; Cincinnati Drug and Poison Information Center, Cincinnati, OH; Central Ohio Poison Center, Columbus, OH; Greater Cleveland Poison Control Center, Cleveland, OH; Oklahoma Poison Control Center, Oklahoma City, OK; Oregon Poison Center, Portland, OR; Pittsburgh Poison Center, Pittsburgh, PA; The Poison Control Center, Philadelphia, PA; Central Pennsylvania Poison Center, Hershey, PA; Middle Tennessee Poison 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 Panhandle Poison Center, 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 Clinics Poison Control Center, Madison, WI; Children's Hospital of Wisconsin Poison Center, 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
1996	67	232.3	2,155,952	9.3
1997	66	250.1	2,192,088	8.8
1998	65	257.5	2,241,082	8.7
1999	64	260.9	2,201,156	8.4
2000	63	270.6	2,168,248	8.0
Total			29,172,989	

Annual center call volumes (human exposure cases only) ranged from 11,735 to 82,166 (mean 35,039) for centers participating for the entire year. Penetrance, calculated only for states that were completely served by centers participating in TESS, ranged from 5.6 to 16.7 exposures per 1,000 population with a mean of 8.0 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 270.6 million was served by the participating centers, including 43 entire states, portions of 2 states, and the District of Columbia (Figure 1). Noting the 281.4 million 2000 United States population, the data presented represent an estimated 96.2% of the human poison exposures that precipitated poison center contacts in the US during 2000. Extrapolating from the 2,168,248 human poison exposures reported in this database, 2.3 million human poison exposures are estimated to have been reported to all US poison centers in 2000. 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 16.7 poisonings/1,000 population reported for one state, 4.7 million poisonings would have been reported to poison centers in 2000.

Although this report focuses on the human exposure cases reported to TESS in 2000, the database also contains data (not presented here) on animal poison exposures (102,212 cases, mostly pets), human confirmed nonexposures (6,926), animal confirmed nonexposures (367), and information calls (738,109). This total of 3,015,862 cases and inquiries reported to TESS in 2000 does not reflect the full extent of poison center effort. Approximately 2.1 million follow-up calls were placed by poison centers during the year to provide further patient guidance, confirm compliance with recommendations, and gather final outcome data. Follow-ups were done in 44% of human exposure cases.

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 56 centers that participated for the entirety of both 1999 and 2000 shows an increase of 1.0% in the number of reported poison exposures from 1999 to 2000 within the regions served by these 56 centers.

REVIEW OF THE DATA

A major revision of TESS data fields was implemented on January 1, 2000. Prior revisions occurred in 1984, 1985, and 1993. TESS can now capture an unlimited number of substances for each case, and centers are required to submit at least 3 substances for exposures involving 3 or more substances (previously only 2 substances could be coded for each case). As a result, the 2000 data include more substances implicated compared to 1999, reflecting a change in data collection practice rather than in the nature of the poisonings which occurred. Also new in 2000, quantity data are captured and reported for each substance implicated, although 41% of cases had quantity specified as unknown. Scenario information was added in 2000, and is especially useful for the analysis of therapeutic errors. Other TESS improvements include collecting data on additional clinical effects, therapies, and routes.

Of the 2,168,248 human exposures reported in 2000, 92.0% occurred at a residence (Table 2). Exposures occurred in the workplace in 2.5% of cases, in schools (1.6%), health care facilities (0.3%), and restaurants or food services (0.5%). Poison center peak call volumes were noted from 4 to 10 PM, although call frequency remained consistently high between 8 AM and midnight, with 91% of calls logged during this 16-hour period. Although the average number of poison center consultations handled per day by all participating US poison centers was 5,924, higher volumes were observed in the warmer months (up to 6,374/day in August) compared to 5,234 consultations per day in January. On average, ignoring time of day and seasonal fluctuations, US poison centers handled one poison exposure every 15 seconds.

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

	Site of Caller (%)	Site of Exposure (%)
Residence		
Own	76.3	88.9
Other	2.4	3.2
Health care facility	13.9	0.3
Workplace	1.6	2.5
School	0.8	1.6
Public area	0.4	1.2
Restaurant/food service	0.0	0.5
Other	4.3	1.0
Unknown	0.2	0.9

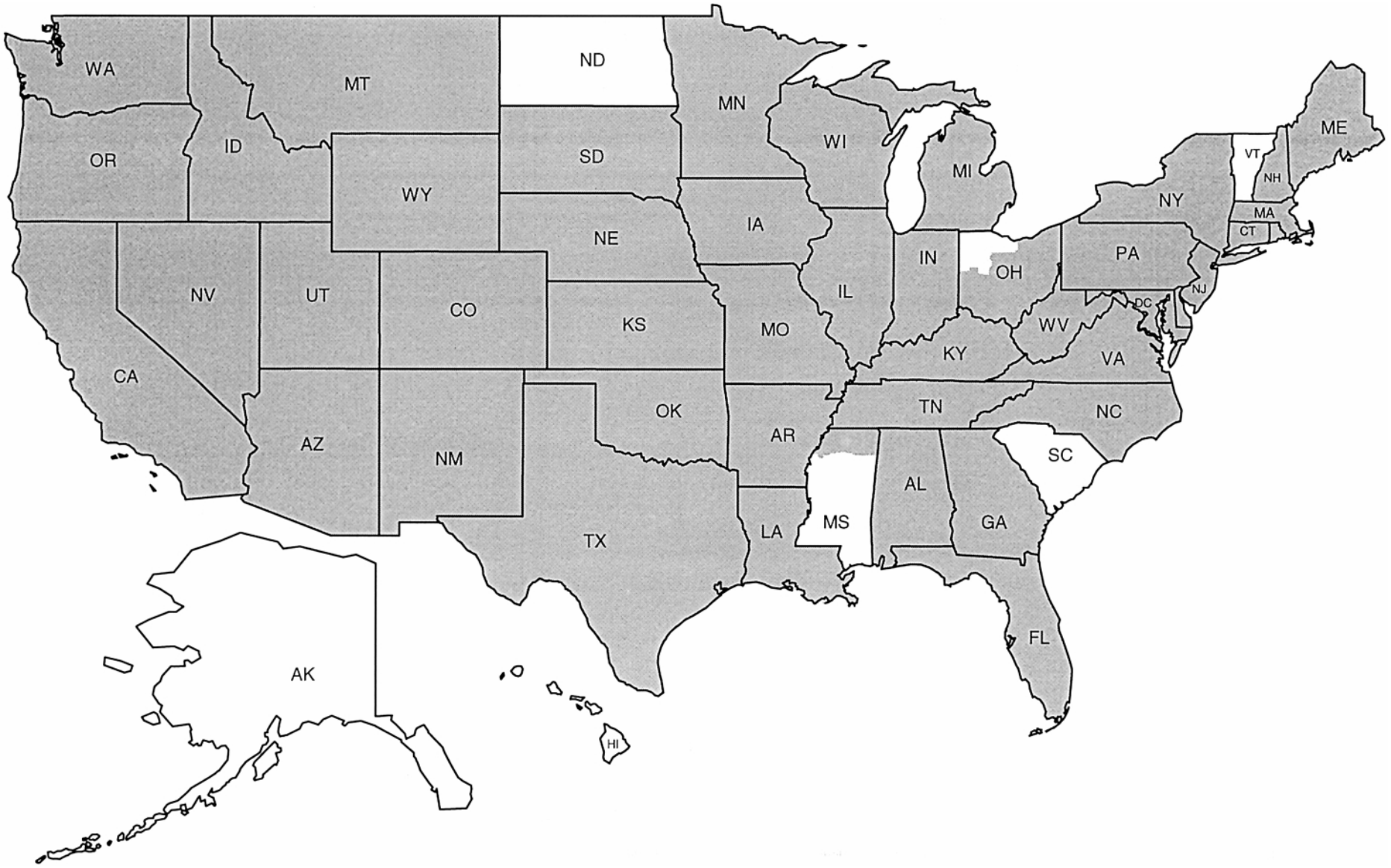

FIGURE 1. Sixty-three poison centers participated in the Toxic Exposure Surveillance System in 2000. The shaded areas denote regions served by reporting centers.

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

	Male		Female		Unknown		Total		Cumulative Total	
Age (yr)	No.	Row %	No.	Row %	No.	Row %	No.	Col %	No.	Col %
<1	71,834	51.5	67,262	48.2	399	0.3	139,495	6.4	139,495	6.4
1	191,559	52.0	176,530	47.9	541	0.1	368,630	17.0	508,125	23.4
2	189,084	52.6	169,822	47.2	569	0.2	359,475	16.6	867,600	40.0
3	85,026	54.8	70,012	45.1	246	0.2	155,284	7.2	1,022,884	47.2
4	39,912	55.2	32,247	44.6	123	0.2	72,282	3.3	1,095,166	50.5
5	24,122	56.4	18,534	43.4	96	0.2	42,752	2.0	1,137,918	52.5
Unknown child ≤5	2,389	49.0	1,964	40.3	525	10.8	4,878	0.2	1,142,796	52.7
6-12	85,381	56.5	64,780	42.8	1,060	0.7	151,221	7.0	1,294,017	59.7
13-19	69,632	43.4	89,826	56.0	1,047	0.7	160,505	7.4	1,454,522	67.1
Unknown child	939	38.5	871	35.7	628	25.8	2,438	0.1	1,456,960	67.2
Total children (<20)	759,878	52.2	691,848	47.5	5,234	0.4	1,456,960	67.2	1,456,960	67.2
20-29	76,257	44.3	95,457	55.5	261	0.2	171,975	7.9	1,628,935	75.1
30-39	73,557	42.2	100,639	57.7	175	0.1	174,371	8.0	1,803,306	83.2
40-49	53,133	41.5	74,801	58.4	61	0.0	127,995	5.9	1,931,301	89.1
50-59	27,766	38.4	44,460	61.5	35	0.0	72,261	3.3	2,003,562	92.4
60-69	13,998	35.8	25,043	64.1	15	0.0	39,056	1.8	2,042,618	94.2
70-79	10,371	34.3	19,863	65.7	11	0.0	30,245	1.4	2,072,863	95.6
80-89	5,053	31.3	11,087	68.7	4	0.0	16,144	0.7	2,089,007	96.3
90-99	756	25.7	2,176	74.1	4	0.1	2,936	0.1	2,091,943	96.5
Unknown adult	23,696	38.7	36,073	59.0	1,419	2.3	61,188	2.8	2,153,131	99.3
Total adults	284,587	40.9	409,599	58.8	1,985	0.3	696,171	32.1	2,153,131	99.3
Unknown age	5,488	36.3	7,491	49.6	2,138	14.1	15,117	0.7	2,168,248	100.0
Total	1,049,953	48.4	1,108,938	51.1	9,357	0.4	2,168,248	100.0	2,168,248	100.0

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 40.0% of cases, and 52.7% 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. Of all poison exposures captured, 8,438 occurred in pregnant women. Of those with known pregnancy duration, 32% occurred in the first trimester, 38% in the second trimester, and 31% in the third trimester. In 4.2% of cases (90,226 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).

Fatalities differed from the total exposure data set in several ways. Table 4 presents the age and gender distribution for the 920 reported fatalities. Although responsible for the majority of poisoning reports, children younger than 6

TABLE 4. Distribution of Age and Gender for 920 Fatalities

Age (yr)	Male	Female	Unknown	Total	%	Cumulative Total	Cumulative %
<1	2	3	0	5	0.5	5	0.5
1	4	3	0	7	0.8	12	1.3
2	2	2	0	4	0.4	16	1.7
3	0	1	0	1	0.1	17	1.8
4	0	1	0	1	0.1	18	2.0
5	0	2	0	2	0.2	20	2.2
6-12	2	4	0	6	0.7	26	2.8
13-19	42	24	0	66	7.2	92	10.0
20-29	85	65	0	150	16.3	242	26.3
30-39	93	84	0	177	19.2	419	45.5
40-49	114	100	1	215	23.4	634	68.9
50-59	59	63	0	122	13.3	756	82.2
60-69	33	23	0	56	6.1	812	88.3
70-79	20	22	0	42	4.6	854	92.8
80-89	16	17	0	33	3.6	887	96.4
90-99	3	8	0	11	1.2	898	97.6
Unknown adult	12	8	0	20	2.2	918	99.8
Unknown	2	0	0	2	0.2	920	100.0
Total	489	430	1	920	100.0	920	100.0

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

No. of Substances	No. of Cases	% of Cases
1	2,000,385	92.3
2	116,204	5.4
3	30,734	1.4
4	11,854	0.5
5	4,946	0.2
6	2,026	0.1
7	982	0.0
8	485	0.0
≥9	632	0.0
Total	2,168,248	100.0

years of age comprised just 2.2% (20) of the fatalities. Fifty-nine percent of poisoning fatalities occurred in 20- to 49-year-old individuals.

A single substance was implicated in 92.3% of reports, and 2.4% of patients were exposed to more than two possibly poisonous drugs or products (Table 5). In contrast, 45% of fatal cases involved two or more drugs or products. The overwhelming majority of human exposures were acute (93.0%) compared to only 53.4% of poison-related fatal exposures. Chronic exposures comprised 2.0% of all poison exposure reports, and acute-on-chronic exposures comprised 4.2%. (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 which are known to interact are also included. *Unintentional misuse:* Unintentional improper or incorrect use of a nonpharmaceutical substance. Unintentional misuse differs from intentional misuse in that the exposure was unplanned or not foreseen by the patient. *Bite/sting:* All animal bites and stings, with or without envenomation, are included. *Food poisoning:* Suspected or confirmed food poisoning; ingestion of food contaminated with microorganisms is included. *Unintentional unknown:* An exposure determined to be unintentional but the exact reason is unknown. *Suspected suicidal:* An exposure resulting from the inappropriate use of a substance for reasons that are suspected to be self destructive or manipulative. *Intentional misuse:* An exposure resulting from the intentional improper or incorrect use 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 where the victim was likely attempting to achieve a euphoric or psychotropic effect. All recreational use of substances for any effect is 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 the product, as opposed to overdose, misuse or abuse. Included are cases with an unwanted effect due to an allergic, hypersensitive, or idiosyncratic response to the 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 (85.9%) of poison exposures were unintentional; suicidal intent was present in 7.5% of cases (Table 6A). Therapeutic errors comprised 7.0% of exposures (152,101 cases), with unintentional nonpharmaceutical product misuse comprising another 3.3% of exposures (72,233 cases). The types of therapeutic errors observed in each age group are delineated in Table 6B. Approximately one-third of therapeutic errors involved double-dosing. Dispensing cup errors were seen in 4,165 cases and 10-fold dosing errors in 1,349 cases.

Unintentional poisonings outnumbered intentional poisonings in all age groups (Table 7). In contrast, of the 920

TABLE 6A. Reason for Human Poison Exposure Cases

Reason	No.	%
Unintentional		
General	1,418,573	65.4
Therapeutic error	152,101	7.0
Bite/sting	83,366	3.8
Misuse	72,233	3.3
Environmental	50,370	2.3
Food poisoning	41,110	1.9
Occupational	36,975	1.7
Unknown	7,937	0.4
Total	1,862,665	85.9
Intentional		
Suicidal	162,473	7.5
Abuse	35,848	1.7
Misuse	35,811	1.7
Unknown	10,795	0.5
Total	244,927	11.3
Other		
Malicious	7,038	0.3
Contaminant/tampering	4,675	0.2
Total	11,713	0.5
Adverse Reaction		
Drug	31,245	1.4
Other	7,913	0.4
Food	3,195	0.1
Total	42,353	2.0
Unknown	6,590	0.3
Total	2,168,248	100.0

TABLE 6B. Scenarios for Therapeutic Errors

	Number of Cases	<6 Years (Row %)	6-12 Years (Row %)	13-19 Years (Row %)	>19 Years (Row %)	Unknown (Row %)
Inadvertently took/given medication twice	50,411	25.0	12.5	6.0	55.9	0.5
Other incorrect dose	36,795	36.4	14.9	7.8	40.5	0.4
Other/unknown therapeutic error	33,322	26.6	14.5	7.4	50.9	0.6
Incorrect formulation or concentration given	14,660	43.3	19.4	5.4	31.5	0.5
Dispensing cup error	4,165	55.1	15.9	5.9	22.6	0.4
Incorrect formulation or concentration dispensed	3,600	38.0	17.7	6.1	37.4	0.7
Incorrect dosing route	3,498	25.1	8.8	4.8	59.8	1.4
10-fold dosing error	1,349	54.3	7.5	3.6	33.4	1.2
Drug interaction	951	15.4	8.7	10.4	64.9	0.6

human poisoning fatalities reported, 94% of adolescent deaths and 79% of adult deaths (older than 19 years of age) were intentional (Table 8).

Ingestions accounted for 76.2% of exposure routes (Table 9), followed in frequency by dermal, inhalation, and ocular exposures. For the 920 fatalities, ingestion, inhalation, and parenteral were the predominant exposure routes.

Clinical effects (signs, symptoms, or laboratory abnormalities) were coded in 30.7% of cases (17.2% had one effect, 8.0% had two effects, 3.5% had three effects, 1.3% had four effects, 0.4% had five effects, and 0.3% had more than five effects). Of 1,422,308 clinical effects coded, 80.8% were deemed related, 9.0% were considered not related, and 10.2% were coded as "unknown if related."

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	1,136,961	61.0	138,756	7.4	81,101	4.4	493,467	26.5	12,380	0.7	1,862,665	85.9
Intentional	983	0.4	8,148	3.3	72,731	29.7	159,139	65.0	3,926	1.6	244,927	11.3
Other	971	8.3	1,555	13.3	2,019	17.2	6,920	59.1	248	2.1	11,713	0.5
Adverse Reaction	3,432	8.1	2,332	5.5	3,493	8.2	32,601	77.0	495	1.2	42,353	2.0
Unknown	449	6.8	430	6.5	1,161	17.6	4,044	61.4	506	7.7	6,590	0.3
Total	1,142,796	52.7	151,221	7.0	160,505	7.4	696,171	32.1	17,555	0.8	2,168,248	100.0

*Unknown child plus unknown age (excludes unknown adult).

TABLE 8. Distribution of Reason for Exposure and Age for 920 Fatalities

Reason	<6 Years	6-12 Years	13-19 Years	>19 Years	Unknown	Total
Unintentional						
General	5	0	0	10	0	15
Therapeutic error	1	0	1	39	0	41
Bite/sting	1	0	0	2	0	3
Misuse	1	0	1	1	0	3
Environmental	3	1	1	20	0	25
Food poisoning	0	0	0	0	0	0
Occupational	0	0	0	14	0	14
Unknown	1	0	0	2	0	3
Total	12	1	3	88	0	104
Intentional						
Suicide	0	2	25	449	0	476
Abuse	0	2	31	107	1	141
Misuse	2	0	3	43	0	48
Unknown	0	0	3	56	0	59
Total	2	4	62	655	1	724
Other						
Contamination/tampering	0	0	0	1	0	1
Malicious	1	1	0	4	0	6
Total	1	1	0	5	0	7
Adverse Reaction	2	0	0	17	0	19
Unknown	3	0	1	61	1	66
Total	20	6	66	826	2	920

TABLE 9. Distribution of Route of Exposure for Human Poison Exposure Cases and 920 Fatalities

Route	All Exposure Cases		Fatal Exposure Cases	
	No.	%	No.	%
Ingestion	1,729,950	76.2	765	76.4
Dermal	172,415	7.6	11	1.1
Inhalation	138,647	6.1	85	8.5
Ocular	123,262	5.4	1	0.1
Bites and stings	83,429	3.7	3	0.3
Parenteral	8,445	0.4	57	5.7
Otic	1,962	0.1	0	0.0
Aspiration	1,438	0.1	20	2.0
Rectal	817	0.0	0	0.0
Vaginal	622	0.0	1	0.1
Other	2,730	0.1	0	0.0
Unknown	7,471	0.3	58	5.8
Total	2,271,188	100.0	1,001	100.0

NOTE. Multiple routes of exposure were observed in many poison exposure victims. Percentage is based on the total number of exposure routes (2,271,188 for all patients; 1,001 for fatal cases) rather than the total number of human exposures (2,168,248) or fatalities (920).

The majority of cases reported to poison centers were managed in a non-health care facility (78%), usually at the site of exposure, the patient's own home (Table 10). Treatment in a health care facility was rendered in 21.9% of cases and recommended in another 2.0% of patients who refused the referral. The percentage of patients treated in a health care facility varied considerably with age. Only 10.4% of children under 6 years and only 13.3% of children between 6 and 12 years were managed in a health care facility compared to 47.9% of teenagers (13 to 19 years of age) and 36.5% of adults (over 19 years of age). Of cases managed in a health care facility, 55.8% were treated and released without admission, 13.9% were admitted for critical care, and 7.5% were admitted for noncritical care. Where treatment was provided in a health care facility, 32.5% of the patients were referred in by the poison center and 67.5% were already in or en route to the health care facility when the poison center was contacted. Health care facilities included acute care hospitals (86.2%), physician offices or clinics (10.8%), and freestanding emergency centers (3.0%).

TABLE 10. Management Site of Human Poison Exposure Cases

Site	No.	%
Managed on-site, non-health care facility	1,620,661	74.7
Managed in health care facility		
Treated and released	264,950	12.2
Admitted to critical care	65,965	3.0
Admitted to noncritical care	35,498	1.6
Admitted to psychiatry	36,697	1.7
Lost to follow-up; left AMA	71,969	3.3
Subtotal	475,079	21.9
Other	18,651	0.9
Refused referral	42,516	2.0
Unknown	11,341	0.5
Total	2,168,248	100.0

Abbreviation: AMA, against medical advice.

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 shows a greater frequency of serious outcomes in intentional exposures. Table 13 demonstrates an increasing duration of the clinical effects observed with more severe outcomes. Medical outcome categories were 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 systemic in nature than minor symptoms. Usually some form of treatment is indicated. Symptoms were not life-threatening and the patient had no residual disability or disfigurement (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 compro-

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	309,109	27.0	24,668	16.3	27,472	17.1	77,472	11.1	1,956	11.1	440,677	20.3
Minor effect	107,780	9.4	26,816	17.7	40,256	25.1	159,745	22.9	2,590	14.8	337,187	15.6
Moderate effect	9,692	0.8	3,947	2.6	16,383	10.2	68,383	9.8	876	5.0	99,281	4.6
Major effect	691	0.1	246	0.2	1,589	1.0	10,002	1.4	133	0.8	12,661	0.6
Death	20	0.0	6	0.0	66	0.0	826	0.1	2	0.0	920	0.0
No follow-up, nontoxic	283,481	24.8	29,363	19.4	10,766	6.7	52,442	7.5	1,594	9.1	377,646	17.4
No follow-up, minimal toxicity	398,718	34.9	58,669	38.8	43,948	27.4	237,986	34.2	5,539	31.6	744,860	34.4
No follow-up, potentially toxic	15,519	1.4	3,399	2.2	15,494	9.7	54,761	7.9	4,288	24.4	93,461	4.3
Unrelated effect	17,786	1.6	4,107	2.7	4,531	2.8	34,554	5.0	577	3.3	61,555	2.8
Total	1,142,796	52.7	151,221	7.0	160,505	7.4	696,171	32.1	17,555	0.8	2,168,248	100.0

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

	Unintentional		Intentional		Other		Adverse Reaction		Unknown		Total	
Outcome	No.	Col %	No.	Col %	No.	Col %	No.	Col %	No.	Col %	No.	Col %
No effect	390,554	21.0	47,623	19.4	1,189	10.2	651	1.5	660	10.0	440,677	20.3
Minor effect	257,668	13.8	66,669	27.2	2,730	23.3	9,117	21.5	1,003	15.2	337,187	15.6
Moderate effect	50,319	2.7	41,544	17.0	946	8.1	5,481	12.9	991	15.0	99,281	4.6
Major effect	3,101	0.2	8,605	3.5	81	0.7	492	1.2	382	5.8	12,661	0.6
Death	104	0.0	724	0.3	7	0.1	19	0.0	66	1.0	920	0.0
No follow-up, nontoxic	371,714	20.0	3,925	1.6	1,045	8.9	721	1.7	241	3.7	377,646	17.4
No follow-up, minimal toxicity	694,730	37.3	28,776	11.7	3,695	31.5	16,605	39.2	1,054	16.0	744,860	34.4
No follow-up, potentially toxic	45,693	2.5	42,609	17.4	1,199	10.2	2,494	5.9	1,466	22.2	93,461	4.3
Unrelated effect	48,782	2.6	4,452	1.8	821	7.0	6,773	16.0	727	11.0	61,555	2.8
Total	1,862,665	85.9	244,927	11.3	11,713	0.5	42,353	2.0	6,590	0.3	2,168,248	100.0

mise 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 outcome of the exposure because the substance implicated was nontoxic, the amount implicated was insignificant, or the route of exposure was unlikely to result in a clinical effect. *Not followed, minimal clinical effects possible:* No follow-up calls were made to determine the patient's outcome because the exposure was likely to result in only minimal toxicity of a trivial nature. (The patient was expected to experience no more than a minor effect.) *Unable to follow, judged as a potentially toxic exposure:* The patient was lost to follow-up, refused follow-up, or was not followed but the exposure was significant and may have resulted in a moderate, major, or fatal outcome. *Unrelated effect:* The exposure was probably not responsible for the effect. *Confirmed nonexposure:* This outcome option was coded to designate cases where there was reliable and objective evidence that an exposure initially believed to have occurred actually never occurred (eg, all missing pills are later located). All cases coded as confirmed non-exposure are excluded from this report. In 2000 there were 6,926 such cases reported nationally. An additional 2,945 duplicate reports were excluded (reported to more than one participating poison center).

TABLE 13. Duration of Clinical Effects by Medical Outcome

Duration of Effect	Minor Effect (Col %)	Moderate Effect (Col %)	Major Effect (Col %)
≤2 hours	42.6	7.4	2.8
>2 hours, ≤8 hours	26.2	22.7	9.7
>8 hours, ≤24 hours	17.5	31.5	27.2
>24 hours, ≤3 days	5.4	16.9	28.8
>3 days, ≤1 week	1.9	7.3	15.1
>1 week, ≤1 month	0.5	2.3	5.6
>1 month	0.2	0.6	1.4
Anticipated permanent	0.0	0.2	2.6
Unknown	5.7	11.0	6.9

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. Table 16 demonstrates a continuing decline in the use of ipecac-induced emesis in the treatment of poisoning.

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 lead this list. Table 19 shows little variation over the past 18 years in the percentage of cases reported to TESS that are fatal poisonings and in the percentage of reported fatalities due to suicide. In contrast, the percentage of reported fatalities involving children under 6 years has declined. A breakdown of plant exposures is provided for those most commonly implicated (Table 20).

A summary of the 920 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 concentration of implicated substances is provided when available to the reporting poison center. Pre-hospital cardiac and/or respiratory arrests occurred in 34% of all fatalities, and these are indicated in Table 21.

All fatality abstracts from participating centers were reviewed in detail. Selected representative, interesting or unusual cases are presented in the Appendix. After extensive

TABLE 14. Decontamination and Therapeutic Intervention

Therapy	No. of Patients	%
Decontamination only	1,123,502	51.8
Observation only	289,559	13.4
No therapy provided	235,836	10.9
Decontamination and other therapy	152,524	7.0
Other therapy only (no decontamination)	94,464	4.4
Unknown if therapy provided/patient refused	249,383	11.5

TABLE 15. Therapy Provided in Human Exposure Cases

Therapy	No.
Decontamination	
Dilution/irrigation	1,004,402
Activated charcoal, single dose	133,656
Cathartic	58,925
Gastric lavage	32,663
Ipecac syrup	18,177
Activated charcoal, multidose	12,255
Other emetic	6,789
Whole bowel irrigation	2,399
Measures to Enhance Elimination	
Hemodialysis	1,207
Hemoperfusion	43
Other extracorporeal procedure	39
Specific Antidote Administration	
N-acetylcysteine (oral)	11,648
Naloxone	8,667
Benzodiazepines	6,260
Flumazenil	1,949
Calcium	1,865
N-acetylcysteine (IV)	965
Antivenin	888
Atropine	817
Ethanol	617
Glucagon	432
Phytonadione	419
Fab fragments	328
Fomepizole	305
Pyridoxine	297
Insulin	275
Hyperbaric oxygen	268
Folate	253
Physostigmine	204
Succimer	179
Pacemaker	141
Pralidoxime (2-PAM)	121
Deferoxamine	97
Methylene blue	85
EDTA	81
Antivenin (fab fragment)	73
Dimercaprol (BAL)	73
Sodium thiosulfate	52
Octreotide	46
Sodium nitrite	23
Amyl nitrite	18
Penicillamine	10
Other intervention	
Alkalinization	6,680
Transplantation	17
ECMO	13

review, 920 fatalities reported in 2000 were deemed related to the exposure. This represents a 5% increase compared to 1999.

Analgesics were the primary substance in 30% of all reported fatalities, with acetaminophen, aspirin and other salicylates accounting for 72% of analgesic fatalities. Eighty-four percent of these analgesic fatalities were intentional, predominantly suicides. The increasing use and abuse of oxycodone is reflected in an increase in oxycodone fatalities. In 2000, oxycodone (formulated without acetaminophen) was involved in 16 fatalities (primary substance in 11) compared with 12 deaths in 1999 (primary substance in 10). All but 2 of the oxycodone fatalites were intentional and 6 resulted from intentional abuse. An additional 8 cases involved oxycodone formulated with acetaminophen.

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
1996	2,155,952	52.8	1.8	7.3
1997	2,192,088	52.5	1.5	7.1
1998	2,241,082	52.7	1.2	6.8
1999	2,201,156	50.5	1.0	6.6
2000	2,168,248	52.7	0.8	6.7

Antidepressants were the second most common substance involved in fatalities. Of 128 fatalities in which antidepressants were the primary substance, 69% involved tricyclic antidepressants. While benzodiazepines continue to be responsible for 36% of sedative hypnotic deaths, atypical neuroleptics such as clozapine, olanzapine, quetiapine, and risperidone were the primary substances in 33% of fatalities

TABLE 17A. Substances Most Frequently Involved in Human Exposures

Substance	No.	%*
Analgesics	227,738	10.5
Cleaning substances	206,636	9.5
Cosmetics and personal care products	203,736	9.4
Foreign bodies	107,832	5.0
Plants	106,385	4.9
Cough and cold preparations	98,008	4.5
Bites/envenomations	90,784	4.2
Sedatives/hypnotics/antipsychotics	89,761	4.1
Topicals	89,458	4.1
Pesticides	86,880	4.0
Antidepressants	83,963	3.9
Food products, food poisoning	67,010	3.1
Alcohols	63,125	2.9
Hydrocarbons	59,889	2.8
Antihistamines	58,792	2.7
Antimicrobials	58,765	2.7
Chemicals	56,265	2.6

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

Substance	No.	%*
Cosmetics and personal care products	152,218	13.3
Cleaning substances	120,434	10.5
Analgesics	82,038	7.2
Foreign bodies	77,763	6.8
Plants	75,619	6.6
Topicals	71,679	6.3
Cough and cold preparations	61,034	5.3
Pesticides	46,703	4.1
Vitamins	41,199	3.6
Gastrointestinal preparations	36,434	3.2
Antimicrobials	32,345	2.8
Arts/crafts/office supplies	30,900	2.7
Antihistamines	26,906	2.4
Hormones and hormone antagonists	25,045	2.2
Hydrocarbons	23,418	2.0

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 18. Categories with Largest Numbers of Deaths

Category	No.	% of All Exposures in Category
Analgesics	405	0.178
Antidepressants	242	0.288
Sedative/hypnotics/antipsychotics	225	0.251
Stimulants and street drugs	187	0.470
Cardiovascular drugs	108	0.216
Alcohols	103	0.163
Anticonvulsants	43	0.154
Muscle relaxants	41	0.262
Gases and fumes	40	0.100
Chemicals	35	0.062
Antihistamines	30	0.051
Cleaning substances	29	0.014
Automotive products	20	0.145
Antimicrobials	19	0.032
Pesticides	17	0.020
Hydrocarbons	16	0.027

NOTE. Tables 18, 22A and 22B are based on an unlimited number of substances coded per exposure, while Table 21 has up to 3 substances coded.

in this category. Within the cardiovascular category, calcium channel blockers continue to be responsible for the majority (61%) of deaths. Despite the large number of beta blocker exposures, these drugs were the primary substance in only 7 deaths.

Stimulants and street drugs had the highest proportion of exposures result in fatalities. Stimulants such as amphetamines, methamphetamine, methylenedioxymethamphetamine, cocaine and similar drugs were the primary substances in 61% of stimulant and street drug deaths. The number of amphetamine-related deaths is up considerably, from 13 in 1999 to 39 in 2000, largely because of substituted (designer) amphetamines. Methylenedioxymethamphetamine (MDMA, Ecstasy) was involved in 23 fatalities and was the primary substance in 18 deaths. All of the MDMA deaths resulted from intentional abuse and with the exception of one case, all of these deaths occurred in persons between 17 and 24 years of age. In one MDMA-related death, severe hyponatremia developed, probably as a result of MDMA-induced SIADH compounded by significant water intake. Given the practice by MDMA users to keep well hydrated, this case may not be an isolated incident. An

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

Substance	No.	%*
Analgesics	92,245	13.3
Sedatives/hypnotics/antipsychotics	67,946	9.8
Cleaning substances	66,384	9.5
Antidepressants	55,429	8.0
Bites/envenomations	55,145	7.9
Alcohols	37,451	5.4
Food products, food poisoning	35,860	5.2
Cosmetics and personal care products	33,511	4.8
Chemicals	31,739	4.6
Pesticides	31,285	4.5
Cardiovascular drugs	28,941	4.2
Fumes/gases/vapors	27,486	3.9
Hydrocarbons	27,419	3.9
Antihistamines	19,570	2.8
Anticonvulsants	17,851	2.6
Antimicrobials	17,683	2.5
Stimulants and street drugs	17,423	2.5
Plants	17,261	2.5
Cough and cold preparations	16,866	2.4

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.

TABLE 19. 18-Year Comparisons of Fatality Data

	Total Fatalities		Suicides		Pediatric Deaths (<6 years)	
Year	No.	% of Cases	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
1996	726	0.034	358	49.3	29	4.0
1997	786	0.036	418	53.2	25	3.2
1998	775	0.035	421	54.3	16	2.1
1999	873	0.040	472	54.1	24	2.7
2000	920	0.042	476	51.7	20	2.2

TABLE 20. Frequency of Plant Exposures by Plant Type

Botanical Name	Common Name	Frequency
Capsicum annuum	Pepper	4,041
Spathiphyllum spp.	Peace lily	3,504
Philodendron spp.	Philodendron	3,433
Ilex spp.	Holly	3,359
Euphorbia pulcherrima	Poinsettia	3,308
Phytolacca americana	Pokeweed, inkberry	2,203
Ficus spp.	Rubber tree, weeping fig	1,877
Dieffenbachia spp.	Dumbcane	1,694
Crassula spp.	Jade plant	1,466
Toxicodendron radicans	Poison ivy	1,456
Epipremnum aureum	Pothos, devil's ivy	1,209
Chrysanthemum spp.	Chrysanthemum	1,080
Hedera helix	English ivy	1,024
Malus spp.	Apple, crabapple (plant parts)	980
Eucalyptus spp.	Eucalyptus	977
Nerium oleander	Oleander	848
Rhododendron spp.	Rhododendron, azalea	816
Schlumbergera Bridgesii	Christmas cactus	801
Taraxacum officinale	Dandelion	794
Saintpaulia ionantha	African violet	774

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.

amphetamine analog, paramethoxyamphetamine, was involved in two deaths and may signal an emerging drug of abuse. Heroin continues as a major player and is the primary substance in 29% of deaths in this category. Fatalities from GHB and its analogs did not decline, despite more stringent federal legislation enacted in 2000.

Pediatric fatalities continue to decrease. Only 20 of 920 fatalities involved children under 6 years of age. Of these, 10 involved nonpharmaceuticals, mainly substances found in and around the home such as pine oil cleaner, hair products, cat litter, kerosene, herbicides, and methanol. Of the pediatric pharmaceutical fatalities, 4 were attributed to long-acting opioids (methadone and morphine), possibly signaling a trend. While the majority of these deaths were unintentional, two deaths in 2-month-old children resulted from intentional administration of drugs to induce sleep, and one death in a 12-month-old child resulted from malicious administration of pine oil.

There were only 6 deaths in 6-12 year olds, 4 of which were suicides (2) or abuse (2). One of the deaths in this age group was malicious. In adolescents (13 to 19 years of age), 94% of deaths were the result of intentional exposures with 38% resulting from suicides and 47% from substance abuse. Of the 66 deaths in the 13-19 age group, only 10 involved nonpharmaceutical substances. Of these 10 deaths, 8 resulted from abuse of volatile substances (7) and jimson weed (1). Stimulant and street drugs accounted for 32% of adolescent deaths.

Among nonpharmaceuticals, the largest single category responsible for fatalities was fumes and gases, which included 25 carbon monoxide exposures. There were 3 deaths from envenomations: two rattlesnake and one scorpion bite. Of 5 plant related deaths, three resulted from intentional abuse of *Datura stramonium* (jimson weed).

Activated charcoal was administered to 6.7% of patients in this database. While activated charcoal is generally well-tolerated, its potent toxicity should not be neglected. Activated charcoal aspiration was implicated as partially responsible for 8 deaths. In all 8 cases, the other substance(s) involved produced CNS depression, placing the patient at risk for aspiration.

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 2,168,248 exposures, presented by substance categories. Table 22A focuses on nonpharmaceuticals; Table 22B presents drugs. Of the 2,426,349 substances logged in Tables 22A and 22B, 54.2% were nonpharmaceuticals and 45.8% were pharmaceuticals. The reason for the exposure was intentional for 29.1% of pharmaceutical substances implicated compared with only 4.7% of nonpharmaceutical substances. Correspondingly, treatment in a health care facility was provided in a higher percentage of exposures to pharmaceutical substances (38.4%) compared with nonpharmaceutical substances (16.5%). Pharmaceutical exposures also had more severe outcomes. Of substances implicated in fatal cases, 82.5% were pharmaceuticals, compared with only 45.8% in nonfatal cases. Similarly, 82.8% 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 health care providers who provided comprehensive data to the poison centers for inclusion in this database.

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
NONPHARMACEUTICALS							
Adhesives/glue							
1[P]	12 yr	Unknown adhesive	A/C	Inhalation	Int abuse		
		marijuana				tetrahydrocannabinol 3.0 ng/mL	
						carboxy-tetrahydrocannabinol 7.1 ng/mL	
Alcohols							
2	36 yr	Ethanol	C	Ingestion	Int abuse	137 mg/dL	
3	44 yr	Ethanol	C	Ingestion	Int abuse		
4	45 yr	Ethanol	U	Ingestion	Int unk	389 mg/dL	
5[P]	48 yr	Ethanol	A	Ingestion	Int abuse	514 mg/dL	
6	49 yr	Ethanol	C	Ingestion	Unknown		
7	50 yr	Ethanol	A/C	Ingestion	Int abuse		
8[P]	61 yr	Ethanol	C	Ingestion	Int abuse	230 mg/dL	
9	38 yr	Ethanol	C	Ingestion	Int abuse		
		acetaminophen				34 μg/mL	
10[P]	58 yr	Ethanol	A/C	Ingestion	Int abuse	230 mg/dL	
		benzodiazepine					
11	20 yr	Ethanol	A	Ing/Unk	Int abuse	277 mg/dL	8 h
		cocaine					
12[P]	21 yr	Ethanol	A	Ing/Inh	Int abuse	567 mg/dL	8 h
		cocaine					
		marijuana					
13	24 yr	Ethanol	A	Ingestion	Int suicide	477 mg/dL	
		cyclobenzaprine					
14[P]	50 yr	Ethanol	A	Ingestion	Int suicide		
		diphenhydramine					
		citalopram					
15[P]	30s yr	Ethanol	U	Ingestion	Int abuse		
		gamma hydroxybutyrate					
16	37 yr	Ethanol	C	Ingestion	Int abuse		
		lorazepam					
		haloperidol					
17[P]	26 yr	Ethanol	A/C	Ingestion	Int abuse		
		morphine					
18[P]	43 yr	Ethanol	A/C	Ingestion	Int suicide		
		oxycodone					
		acetaminophen/codeine					
19[P]	44 yr	Ethanol	A	Ingestion	Int suicide	325 mg/dL	
		trazodone					
		lithium[A]				0.6 mEq/L	
20	37 yr	Isopropanol	A	Ingestion	Int suicide		
21	50 yr	Isopropanol	U	Ingestion	Unknown	50 mg/dL§	
22[P]	55 yr	Isopropanol	A	Ingestion	Int suicide		
23	63 yr	Isopropanol	A	Ingestion	Int unk	300 mg/dL§	
24[a]	3 mo	Methanol	A	Ingestion	Unint misuse	269 mg/dL	
25	28 yr	Methanol	A	Ingestion	Int abuse		
26	37 yr	Methanol	A	Ingestion	Int abuse	425 mg/dL	
27	37 yr	Methanol	A	Ingestion	Unknown	72 mg/dL	
28	39 yr	Methanol	A	Ingestion	Unknown	497 mg/dL	
29	44 yr	Methanol	A	Ingestion	Int suicide	400-500 mg/dL	
30[P]	82 yr	Methanol	U	Ingestion	Unknown	404 mg/dL§	
31	59 yr	Methanol	C	Ingestion	Int abuse		
		ethanol					
32	40 yr	Methanol	A	Ingestion	Int suicide		
		ethylene glycol					
33	35 yr	Methanol	A	Ingestion	Int suicide		
		formaldehyde embalming fluid					
34[P]	36 yr	Methanol	A	Ingestion	Int suicide	465 mg/dL	
		phenobarbital					
35	57 yr	Unknown alcohol	A	Ingestion	Int abuse		
		canned heat (ethanol)				21 mg/dL	
		mouthwash (ethanol)					

See also cases 31, 35, 53, 185, 195, 264 thru 272, 292, 308, 309, 332, 352, 385, 392, 393, 410, 416, 452, 460, 495, 502, 530, 543 thru 545, 557, 565, 582 thru 585, 614, 622, 694, 763, 766, 771, 788, 791, 804, 820, 841, 842, 855, 856, 858, 878, 879, 882 thru 887, 910, 911 (ethanol); 327 (isopropanol).

Automotive products							
36	26 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide	116 mg/dL	
37[P]	27 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide		
38[P]	35 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide	128 mg/dL	
39	38 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide	29 mg/dL	

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
40	39 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide		
41	40 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide	7.1 mg/dL	
42	40 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide	106 mg/dL	
43	40s yr	Antifreeze (ethylene glycol)	A	Ingestion	Unknown	50 mg/dL	
44	43 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide		
45	44 yr	Antifreeze (ethylene glycol)	U	Ingestion	Int unk		
46	44 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int unk	169 mg/dL	
47	48 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int misuse	1,262 mg/dL	
48	69 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide	330 mg/dL	
49	>19 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide	46 mg/dL	
50	48 yr	Antifreeze (ethylene glycol) acetaminophen/diphenhydramine	A	Ingestion	Int suicide		
51	13 yr	Antifreeze (ethylene glycol) boric acid	A	Ingestion	Int suicide	58 mg/dL	
52	37 yr	Antifreeze (ethylene glycol) cleaner (isopropanol, 10-40%/ethylene glycol monobutylether, 10-30%)	A	Ingestion	Int suicide	217.8 mg/dL	
53	57 yr	Antifreeze (ethylene glycol) ethanol	A	Ingestion	Int unk		
54	35 yr	Antifreeze (ethylene glycol) methamphetamine	A/C	Ing/Paren	Int suicide		
55	37 yr	Windshield washer fluid (methanol)	A	Ingestion	Int unk	53 mg/dL	>48 h
Bites and envenomations							
56[ap]	62 yr	*Centruroides exilicauda*	A	Bite/sting	Bite/sting		
57[a]	2 yr	*Crotalus adamanteus*	A	Bite/sting	Bite/sting		
58[ap]	45 yr	*Crotalus horridus horridus*	A	Bite/sting	Bite/sting		
Chemicals							
59[p]	30 yr	Acetone paint thinner	A	Inhalation	Int suicide		
60[a]	37 yr	Ammonia	A	Derm/Inh/Oc	Occ		
61[p]	60 yr	Ammonia	A	Inhalation	Env		
62	47 yr	Boric acid	A	Ingestion	Int suicide		
63[a]	92 yr	Copper acetate arsenite	A	Ingestion	Int suicide		
64	27 yr	Cyanide	A	Ingestion	Int suicide	7.81 μg/mL	
65[p]	38 yr	Cyanide	A	Ingestion	Int suicide		
66[p]	51 yr	Cyanide, silver	A	Derm/Inh	Occ		
67[a]	62 yr	Cyanide, potassium	A	Ingestion	Unint gen	1.6 μg/mL	
68[a]	68 yr	Cyanide, potassium	A	Ingestion	Unint gen	12 μg/mL	
69	20 yr	Ethylene glycol	A	Ingestion	Int suicide	23.2 mg/dL	
70	21 yr	Ethylene glycol	A	Ingestion	Int suicide		
71	26 yr	Ethylene glycol	A	Ingestion	Int suicide	257 mg/dL	
72	29 yr	Ethylene glycol	A	Ingestion	Int suicide	660 mg/dL	
73	32 yr	Ethylene glycol	A	Ingestion	Int unk		
74	44 yr	Ethylene glycol	A	Ingestion	Int suicide	142 mg/dL	
75[p]	60 yr	Ethylene glycol	A	Ingestion	Int suicide		
76	61 yr	Ethylene glycol	U	Ingestion	Unknown	215 mg/dL	
77[a]	66 yr	Ethylene glycol	A	Ingestion	Unknown	125.2 mg/dL	
78	31 yr	Ethylene glycol amitriptyline clonazepam[A]	A	Ingestion	Int suicide	68 mg/dL	
79	34 yr	Hydrochloric acid	A	Ingestion	Int suicide		
80	35 yr	Hydrochloric acid	A	Ingestion	Int suicide		
81	65 yr	Hydrochloric acid	A	Ingestion	Int suicide		
82	75 yr	Hydrochloric acid	A	Ingestion	Int suicide		
83[p]	55 yr	Hydrofluoric acid	A	Derm/Inh	Occ		
84[p]	20 yr	Liquid nitrogen	A	Inhalation	Occ		
85	38 yr	Methylene chloride	A	Derm/Inh	Occ	carboxyhemoglobin 4.8%	
86	>19 yr	Phenol	A	Derm/Inh	Occ		
See also cases 148 (cyanide); 32, 566 (ethylene glycol); 33 (formaldehyde embalming fluid).							
Cleaning substances							
87	32 yr	Ammonia cleaner (<10%)	A	Ingestion	Int suicide		
88	41 yr	Ammonia cleaner	A	Ingestion	Int suicide		
89	56 yr	Automatic dishwasher detergent	A	Ingestion	Int misuse		
90[a]	92 yr	Bleach, household (hypochlorite)	A	Ingestion	Unint gen		
91	46 yr	Drain opener	A	Ingestion	Int suicide		

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
92	47 yr	Drain opener (sodium hydroxide, 2.4%/sodium hypochlorite, 6%)	A	Ingestion	Int suicide		
93	49 yr	Drain opener (sodium hydroxide, 100%)	A	Ingestion	Int suicide		
94	51 yr	Drain opener (sulfuric acid, 93%)	A	Ingestion	Int suicide		
95	87 yr	Floor cleaner	A	Asp/Ing	Int suicide		
96[ap]	12 mo	Pine oil cleaner	A	Ingestion	Malicious		
97[p]	65 yr	Pine oil cleaner (diethylene glycol)	U	Ingestion	Unknown		
98[a]	72 yr	Pine oil/isopropanol cleaner	A	Asp/Ing	Unint gen		
99	45 yr	Pine oil/isopropanol cleaner bleach, household (hypochlorite)	A	Ingestion	Int suicide		
100[a]	43 yr	Rust remover (hydrofluoric acid, 6-8%)	A	Ingestion	Int suicide		
101	53 yr	Rust remover (hydrofluoric acid, 6-8%)	A	Ingestion	Int suicide		
102	41 yr	Tile cleaner (phosphoric acid, 15%) sodium hypochlorite	A	Inhalation	Unint misuse		
103	55 yr	Toilet bowl cleaner (hydrochloric acid, 15%)	A	Ingestion	Int suicide		
104	63 yr	Toilet bowl cleaner (hydrochloric acid, 15-20%)	A	Ingestion	Int suicide		
105	73 yr	Toilet bowl cleaner (alkali)	A	Ingestion	Int suicide		
106	87 yr	Toilet bowl cleaner (hydrochloric acid, 14%)	A	Ingestion	Int suicide		
107	50 yr	Toilet bowl cleaner (hydrochloric acid, 14.5%) diphenhydramine	A	Ingestion	Int suicide		
108[p]	49 yr	Unknown cleaning solution	A	Inhalation	Env		
See also cases 99 (bleach, household); 190 (cleaner, ethylene glycol monobutylether); 52 (cleaner, isopropanol/ethylene glycol monobutylether); 102 (sodium hypochlorite).							
Industrial cleaners							
109	94 yr	Cationic detergent (7.7%)	A	Ingestion	Unint gen		
110	74 yr	Cleaner (limonene)	A	Ingestion	Int suicide		
Cosmetics and personal care products							
111	92 yr	Denture cleaner	A	Asp/Ing	Unint gen		
112[a]	9 mo	Hair oil/conditioner (isoparaffin/butyl ether)	A	Asp/Ing	Unint gen		
113	66 yr	Mouthwash (ethanol)	A/C	Ingestion	Int abuse	480 mg/dL	
114[a]	27 yr	Shaving powder (calcium carbonate/barium sulfide)	A	Ingestion	Int suicide		
See also case 35 (mouthwash, ethanol).							
Deodorizers							
115[p]	10 yr	Air freshener (aerosol)	A	Inhalation	Int abuse		
116[p]	17 yr	Air freshener (butane/isobutane/propane propellant)	A	Inhalation	Int abuse		
117[ap]	15 yr	Air freshener (butane/isobutane/propane propellant) cocaine	A	Inhalation	Int abuse		
Dyes							
118	90 yr	Dye	A	Ingestion	Adv rxn		
Fertilizers							
119[a]	29 yr	Root stimulator (phosphoric acid, 20%/potash, 10%/ammonia nitrogen, 5%/chlorine, 3%)	A	Ingestion	Unint gen		
Food Products/Food Poisoning							
120[a]	53 yr	*Clostridium botulinum* heroin	C	Parenteral	Cont/tamp		
See also case 917 (water).							
Foreign Bodies							
121	62 yr	Calcium chloride desiccant	A	Ingestion	Int suicide		
122[a]	4 yr	Cat litter	A	Asp/Ing	Unint gen		
See also cases 321, 488, 494, 528, 738, 763, 790, 805 (activated charcoal); 589 (foreign body).							
Fumes, gases and vapors							
123[p]	39 yr	Acetylene	A	Inhalation	Occ		
124[p]	41 yr	Acetylene	U	Inhalation	Int suicide		
125	2 yr	Carbon monoxide/smoke	A	Inhalation	Env	10.6%§	

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
126[p]	7 yr	Carbon monoxide/smoke	A	Inhalation	Env	27.2%	
127[p]	17 yr	Carbon monoxide	A	Inhalation	Env	70.1%§	
128[p]	24 yr	Carbon monoxide/smoke	A	Inhalation	Env		
129[p]	30 yr	Carbon monoxide	A	Inhalation	Env	30%	
130[p]	37 yr	Carbon monoxide	A	Inhalation	Int suicide	33.9%	
131	40 yr	Carbon monoxide	C	Inhalation	Env	38%	
132[ip]	50 yr	Carbon monoxide	A	Inhalation	Int suicide		
133[p]	50s yr	Carbon monoxide/smoke	A	Inhalation	Env	72%	
134[p]	52 yr	Carbon monoxide/smoke	A	Inhalation	Env	56.8%§	
135[p]	58 yr	Carbon monoxide	U	Inhalation	Env		
136[p]	61 yr	Carbon monoxide	C	Inhalation	Env		
137[p]	62 yr	Carbon monoxide/smoke	A	Inhalation	Env	33.6%	
138	66 yr	Carbon monoxide/smoke	A	Inhalation	Env	42%	
139[p]	81 yr	Carbon monoxide/smoke	A	Inhalation	Env		
140[p]	83 yr	Carbon monoxide/smoke	A	Inhalation	Env	17.2%	
141	83 yr	Carbon monoxide	A	Inhalation	Env	21%	
142	83 yr	Carbon monoxide	C	Inhalation	Env		
143[p]	>19 yr	Carbon monoxide	A	Inhalation	Env	64%	
144[p]	>19 yr	Carbon monoxide	U	Inhalation	Env		
145	>19 yr	Carbon monoxide/smoke	A	Inhalation	Env	39.8%	
146	41 yr	Carbon monoxide acetaminophen/codeine	A	Ing/Inh	Int suicide		
147	77 yr	Carbon monoxide acetaminophen/propoxyphene furosemide	A/C	Ing/Inh	Int suicide	25%	
148[p]	46 yr	Carbon monoxide/smoke cyanide	A	Inhalation	Env	46.3%	
149	27 yr	Carbon monoxide propane	A	Inhalation	Unknown	22%	
150[p]	35 yr	Hydrogen sulfide	A	Derm/Inh	Env		
151[p]	45 yr	Hydrogen sulfide	A	Inhalation	Occ		
152[p]	>19 yr	Hydrogen sulfide methane	A	Inhalation	Occ		
153[p]	53 yr	Nitrogen	A	Inhalation	Ther error		
154[p]	70 yr	Nitrogen	A	Inhalation	Ther error		
155[p]	76 yr	Nitrogen	A	Inhalation	Ther error		
156[p]	77 yr	Nitrogen	A	Inhalation	Ther error		
157[p]	19 yr	Propane	A/C	Inhalation	Int abuse		
See also cases 152 (methane); 149 (propane).							
Heavy metals							
158[a]	31 yr	Arsenic	A/C	Ingestion	Malicious		
159	61 yr	Arsenic	C	Ingestion	Malicious		
160[a]	2 yr	Lead	C	Ingestion	Env	391 μg/dL	
161[a]	60 yr	Mercury	A	Inhalation	Occ	>400 μg/dL	
162[a]	48 yr	Thallium	A/C	Ingestion	Malicious		
Hydrocarbons							
163[p]	44 yr	Benzene xylene ethylbenzene	A	Inhalation	Occ		
164[p]	16 yr	Butane	U	Inhalation	Int abuse		
165[p]	13 yr	Chlorofluorocarbon	C	Inhalation	Int abuse		
166[p]	19 yr	Difluoroethane propellant (duster)	A	Inhalation	Int abuse		
167[a]	12 mo	Kerosene	A	Asp/Ing	Unint gen		
168[p]	40 yr	Lacquer thinner (toluene/methanol/aliphatic ketones)	A	Ingestion	Int suicide		
169	52 yr	Lighter fluid	A	Asp/Ing	Int suicide		
170[p]	28 yr	Naphtha	A	Inhalation	Occ		
171[p]	34 yr	Naphtha	A	Inhalation	Occ		
172	72 yr	Paint thinner	A	Asp/Ing	Int suicide		
173[p]	16 yr	Tetrafluoroethylene (99%)/d-limolene (1%)	U	Inhalation	Int abuse		
174	66 yr	Turpentine warfarin	A	Asp/Ing	Int suicide		
See also cases 163 (ethylbenzene); 59 (paint thinner); 437 (petroleum distillate); 163 (xylene).							
Pesticides: Fumigants							
175[ap]	5 yr	Aluminum phosphide	A	Inhalation	Env		
176[a]	24 yr	Aluminum phosphide	A	Ingestion	Int unk		
177	>19 yr	Aluminum phosphide	A	Ingestion	Int suicide		

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
Note: Since TESS is transitioning to a new coding system, the three aluminum phosphide cases listed above are included as "Fumes and gases" in Table 22A.							
Pesticides: Fungicides							
178[p]	25 yr	Wood preservative (arsenic acid)	A	Ingestion	Int suicide	1.1 μg/dL	
Pesticides: Herbicides							
179	>19 yr	Algicide (copper triethanolamine)	A	Ingestion	Int suicide		
180	80 yr	2,4 dichlorophenoxyacetic acid	A	Ingestion	Int suicide		
181[a]	57 yr	Diquat (2.4%)	A	Ingestion	Int suicide		
182	37 yr	Glyphosate	A	Ingestion	Int suicide		
183[a]	>19 yr	Glyphosate	A	Vaginal	Int misuse		
184[a]	18 mo	Paraquat	A	Derm/Ing	Unint gen	715 ng/mL	3 h
185[a]	23 yr	Paraquat	A	Ingestion	Int suicide		
		ethanol				315 mg/dL	
		cocaine					
186	67 yr	Unknown herbicide	A	Ingestion	Unint gen		
Pesticides: Insecticides							
187[p]	49 yr	Diazinon	A	Ingestion	Int suicide		
188[a]	50 yr	Malathion	A	Ingestion	Int suicide		
189	82 yr	Malathion	A	Ingestion	Int suicide		
190[p]	49 yr	Malathion	A	Ingestion	Int suicide		
		cleaner (ethylene glycol monobutyl ether)					
191[a]	79 yr	Sodium fluoride	A	Ingestion	Int suicide		
		unknown antihypertensive					
192	45 yr	Unknown insecticide	U	Unknown	Unknown		
Pesticides: Rodenticides							
193[a]	26 yr	Anticoagulant rodenticide	C	Ingestion	Int suicide		
194[ap]	41 yr	Strychnine	A	Ingestion	Int suicide	2.1 μg/mL§	
195[p]	32 yr	Unknown rodenticide	A	Ingestion	Int unk		
		propoxyphene				6.2 μg/mL	
		ethanol				198 mg/dL	
See also case 51 (boric acid).							
Plants							
196[p]	21 yr	*Datura stramonium* (jimson weed)	U	Ingestion	Int abuse		
197	38 yr	*Datura stramonium* (jimson weed)	A	Ingestion	Int abuse		
198[ap]	18 yr	*Datura stramonium* seeds (jimson weed)	A	Ingestion	Int abuse		
		amphetamine					
		methamphetamine					
199[a]	94 yr	*Fraxinus americana*	C	Ingestion	Ther error		
		senna/cascara containing herbal					
200[ap]	18 yr	*Phytolacca americana* root (pokeweed)	A	Ingestion	Unint misuse		
See also cases 566 (Hypericum perforatum); 734 (Morinda cirifolia).							
PHARMACEUTICALS							
Analgesics							
201[a]	3 yr	Acetaminophen	U	Unknown	Unint unk		
202	17 yr	Acetaminophen	A	Ingestion	Int suicide	140 μg/mL	
203	17 yr	Acetaminophen	A	Ingestion	Int suicide	80 μg/mL	36 h
204	20 yr	Acetaminophen	A	Ingestion	Int suicide	164 μg/mL	18 h
205	20 yr	Acetaminophen	A	Ingestion	Int suicide		
206	22 yr	Acetaminophen	C	Ingestion	Int misuse	>300 μg/mL	
207	24 yr	Acetaminophen	A	Ingestion	Int suicide	60 μg/mL	~72 h
208	25 yr	Acetaminophen	C	Ingestion	Int misuse	28.6 μg/mL	
209	26 yr	Acetaminophen	C	Ingestion	Int misuse	32 μg/mL	
210	26 yr	Acetaminophen	A/C	Ingestion	Int suicide	28 μg/mL	7 h
211	27 yr	Acetaminophen	U	Ingestion	Int suicide		
212	29 yr	Acetaminophen	A	Ingestion	Int suicide	103 μg/mL	20 h
213	29 yr	Acetaminophen	A	Ingestion	Int suicide		
214	30 yr	Acetaminophen	A	Ingestion	Int suicide	65 μg/mL	36 h
215	32 yr	Acetaminophen	A	Ingestion	Int suicide	9.5 μg/mL	36 h
216	32 yr	Acetaminophen	A	Ingestion	Int suicide	110 μg/mL	18 h
217	33 yr	Acetaminophen	C	Ingestion	Int misuse	44 μg/mL	
218	34 yr	Acetaminophen	U	Ingestion	Int unk	7 μg/mL	
219	34 yr	Acetaminophen	U	Ingestion	Unknown	93 μg/mL	
220	36 yr	Acetaminophen	U	Ingestion	Unknown	38 μg/mL	
221	37 yr	Acetaminophen	U	Ingestion	Unknown		
222	39 yr	Acetaminophen	C	Ingestion	Int misuse	32 μg/mL	

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
223	40 yr	Acetaminophen	U	Ingestion	Int suicide	311 μg/mL	12 h
224	40 yr	Acetaminophen	C	Ingestion	Int misuse	17 μg/mL	
225	40 yr	Acetaminophen	A	Ingestion	Int suicide		
226	42 yr	Acetaminophen	C	Ingestion	Int misuse	78 μg/mL	
227	43 yr	Acetaminophen	A	Ingestion	Int suicide	741 μg/mL	
228	45 yr	Acetaminophen	U	Ingestion	Unknown	150 μg/mL	
229	46 yr	Acetaminophen	C	Ingestion	Int misuse	135 μg/mL	
230	48 yr	Acetaminophen	A	Ingestion	Int suicide	39 μg/mL	
231	50 yr	Acetaminophen	A	Ingestion	Int suicide	59 μg/mL	
232	50 yr	Acetaminophen	A	Ingestion	Int suicide	235 μg/mL	
233	51 yr	Acetaminophen	A	Ingestion	Int suicide	71 μg/mL	
234	52 yr	Acetaminophen	C	Ingestion	Int misuse	7.5 μg/mL	
235	52 yr	Acetaminophen	A	Ingestion	Int unk	1.5 μg/mL	
236	52 yr	Acetaminophen	U	Ingestion	Int suicide	150 μg/mL	
237	53 yr	Acetaminophen	C	Ingestion	Int misuse	122 μg/mL	
238	53 yr	Acetaminophen	A	Ingestion	Int suicide	11 μg/mL	
239	55 yr	Acetaminophen	A	Ingestion	Int suicide	872 μg/mL	
240	57 yr	Acetaminophen	A/C	Ingestion	Ther error	73 μg/mL	
241	58 yr	Acetaminophen	U	Ingestion	Unknown	106 μg/mL	
242	59 yr	Acetaminophen	A	Ingestion	Int suicide	260 μg/mL	24 h
243	60 yr	Acetaminophen	A	Ingestion	Int suicide	89 μg/mL	
244	62 yr	Acetaminophen	C	Ingestion	Ther error	200 μg/mL	
245	64 yr	Acetaminophen	U	Ingestion	Unknown	17.3 μg/mL	
246	72 yr	Acetaminophen	C	Ingestion	Unknown		
247	76 yr	Acetaminophen	U	Ingestion	Int unk	127 μg/mL	
248	80 yr	Acetaminophen	U	Ingestion	Unint unk	243 μg/mL	
249	37 yr	Acetaminophen acetaminophen/hydrocodone	C	Ingestion	Ther error		
250	78 yr	Acetaminophen acetaminophen/oxycodone	C	Ingestion	Int misuse	9.3 μg/mL	
251	40 yr	Acetaminophen amphetamine cyclobenzaprine[A]	A	Ingestion	Int suicide		
252	33 yr	Acetaminophen aspirin	A	Ingestion	Int suicide	32 μg/mL 16.4 mg/dL	
253	38 yr	Acetaminophen aspirin	U	Ingestion	Int misuse	93 μg/mL 46 mg/dL	
254	37 yr	Acetaminophen aspirin carisoprodol	U	Ingestion	Int suicide	53 μg/mL 12.3 mg/dL	
255	36 yr	Acetaminophen barbiturate opioid[A]	U	Ing/Unk	Unknown		
256	23 yr	Acetaminophen benzodiazepine	A	Ingestion	Int suicide		
257	43 yr	Acetaminophen benzodiazepine	A	Ingestion	Int suicide		
258	79 yr	Acetaminophen benzodiazepine opioid	A	Ingestion	Int suicide	200 μg/mL	
259	26 yr	Acetaminophen carisoprodol	U	Ingestion	Unknown	69 μg/mL	
260	55 yr	Acetaminophen cocaine	A	Ingestion	Int unk	258 μg/mL	
261	91 yr	Acetaminophen cocaine	A	Ingestion	Int suicide	1,006 μg/mL	
262	35 yr	Acetaminophen cocaine propoxyphene	A	Ing/Unk	Int suicide	>200 μg/mL	
263	33 yr	Acetaminophen diphenhydramine	A	Ingestion	Int suicide	101 μg/mL	>24 h
264	31 yr	Acetaminophen ethanol	A	Ingestion	Int suicide		
265	33 yr	Acetaminophen ethanol	C	Ingestion	Int misuse		
266	42 yr	Acetaminophen ethanol	A	Ingestion	Int suicide	101 μg/mL	19 h
267	49 yr	Acetaminophen ethanol	A	Ingestion	Int suicide	99 μg/mL	26 h
268	50 yr	Acetaminophen ethanol	U	Ingestion	Int suicide	43 μg/mL	

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
269	58 yr	Acetaminophen ethanol	U	Ingestion	Int misuse	64 μg/mL	
270[p]	59 yr	Acetaminophen ethanol	U	Ingestion	Int unk	50 μg/mL	
271	71 yr	Acetaminophen ethanol	C	Ingestion	Int misuse	197 μg/mL	
272	26 yr	Acetaminophen ethanol cocaine	A	Ing/Inh	Int unk		
273	39 yr	Acetaminophen lithium	U	Ingestion	Ther error	74 μg/mL 1.6 mEq/L	
274	44 yr	Acetaminophen lithium venlafaxine	A/C	Ingestion	Int misuse	251 μg/mL 2.8 mEq/L	
275[a]	36 yr	Acetaminophen naproxen	C	Ingestion	Int unk	83.2 μg/mL	
276	22 yr	Acetaminophen nefazodone trazodone	A/C	Ingestion	Int suicide		
277	49 yr	Acetaminophen opioid	U	Ingestion	Unknown	143 μg/mL	
278	39 yr	Acetaminophen paroxetine olanzapine	A	Ingestion	Int suicide	352 μg/mL	
279	62 yr	Acetaminophen phenobarbital	A	Ingestion	Int suicide	51 μg/mL 67 μg/mL	>24 h >24 h
280	70 yr	Acetaminophen salicylate	A/C	Ingestion	Int suicide	80 μg/mL 62 mg/dL	
281	40 yr	Acetaminophen trazodone fluoxetine	U	Ingestion	Int suicide	22 μg/mL	
282	43 yr	Acetaminophen unknown drug	A	Ingestion	Int suicide		
283	50 yr	Acetaminophen unknown drug	A	Ingestion	Int suicide	433 μg/mL	
284	49 yr	Acetaminophen/aspirin	C	Ingestion	Unknown	122 μg/mL¥	
285	20s yr	Acetaminophen/aspirin/caffeine acetaminophen metoprolol[A]	A	Ingestion	Int suicide	251 μg/mL¥ 83 mg/dL¶	
286	40 yr	Acetaminophen/butalbital/caffeine	A	Ingestion	Int suicide	633 μg/mL¥	
287	40 yr	Acetaminophen/butalbital/caffeine diphenhydramine	A	Ingestion	Unknown	20 μg/mL¥ 1.26 μg/mL§	
288	22 yr	Acetaminophen/codeine	A	Ingestion	Int suicide	70 μg/mL¥	
289	55 yr	Acetaminophen/codeine	A	Ingestion	Int suicide	379 μg/mL¥	20 h
290	38 yr	Acetaminophen/codeine acetaminophen/hydrocodone	A	Ingestion	Int suicide		
291[p]	44 yr	Acetaminophen/codeine alprazolam cyclobenzaprine[A]	A/C	Ingestion	Int suicide		
292	55 yr	Acetaminophen/codeine ethanol	C	Ingestion	Int misuse	66 μg/mL¥	
293	52 yr	Acetaminophen/codeine fosinopril gabapentin[A]	A/C	Ingestion	Int suicide		
294[p]	17 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide		
295	22 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide	226 μg/mL¥ diphenhydramine 1.2 μg/mL	>37 h
296	30 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide		
297	31 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide		
298[i]	36 yr	Acetaminophen/diphenhydramine	U	Ingestion	Int suicide		
299	38 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide	132.4 μg/mL¥	
300	38 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int unk		
301	42 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide	29.9 μg/mL¥	
302	43 yr	Acetaminophen/diphenhydramine	C	Ingestion	Int suicide	27 μg/mL¥	
303[p]	50 yr	Acetaminophen/diphenhydramine	U	Ingestion	Int suicide	992 μg/mL¥	22 h
304	71 yr	Acetaminophen/diphenhydramine	C	Ingestion	Int suicide	71 μg/mL¥	
305[p]	81 yr	Acetaminophen/diphenhydramine	U	Ingestion	Unknown	83 μg/mL¥	
306	59 yr	Acetaminophen/diphenhydramine acetaminophen/propoxyphene	A	Ingestion	Int suicide	679 μg/mL¥ diphenhydramine 171 μg/mL propoxyphene 2.85 μg/mL	

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
307	29 yr	Acetaminophen/diphenhydramine clonazepam trazodone[A]	A	Ingestion	Int suicide	672 μg/mL¥	
308	24 yr	Acetaminophen/diphenhydramine ethanol	A/C	Ingestion	Int suicide	278 μg/mL¥	10 h
309	32 yr	Acetaminophen/diphenhydramine ethanol	A	Ingestion	Int suicide	460 μg/mL¥	
310	39 yr	Acetaminophen/diphenhydramine salicylate	U	Ingestion	Unknown	166 μg/mL¥ 23.3 mg/dL	
311	19 yr	Acetaminophen/hydrocodone	A/C	Ingestion	Int abuse	41.4 μg/mL¥	
312[P]	27 yr	Acetaminophen/hydrocodone	A	Ingestion	Int suicide	415 μg/mL¥	
313[P]	30 yr	Acetaminophen/hydrocodone	A/C	Ingestion	Int abuse	12 μg/mL¥§ hydrocodone 200 ng/mL§ dihydrocodone 70 ng/mL§	
314	34 yr	Acetaminophen/hydrocodone	A	Ingestion	Int misuse	140 μg/mL	
315	43 yr	Acetaminophen/hydrocodone	C	Ingestion	Int misuse		
316	45 yr	Acetaminophen/hydrocodone	A/C	Ingestion	Int suicide	102 μg/mL¥	
317	48 yr	Acetaminophen/hydrocodone	A/C	Ingestion	Int unk	80 μg/mL¥	1 h
318	67 yr	Acetaminophen/hydrocodone	C	Ingestion	Int misuse	10 μg/mL¥	
319	>19 yr	Acetaminophen/hydrocodone	C	Ingestion	Ther error	98 μg/mL¥	
320	57 yr	Acetaminophen/hydrocodone acetaminophen/hydrocodone	A	Ingestion	Int unk	15.2 μg/mL¥	
321	63 yr	Acetaminophen/hydrocodone activated charcoal	A	Asp/Ing	Int suicide		
322	22 yr	Acetaminophen/hydrocodone alprazolam	A	Ingestion	Int abuse	15 μg/mL¥	
323[P]	28 yr	Acetaminophen/hydrocodone alprazolam carisoprodol	A	Ingestion	Int suicide		
324[P]	44 yr	Acetaminophen/hydrocodone alprazolam diazepam	A	Ingestion	Int suicide		
325[P]	19 yr	Acetaminophen/hydrocodone carisoprodol	A/C	Ingestion	Int abuse		
326	26 yr	Acetaminophen/hydrocodone carisoprodol	C	Ingestion	Int abuse		
327	45 yr	Acetaminophen/hydrocodone carisoprodol isopropanol	A/C	Ingestion	Int unk		
328	44 yr	Acetaminophen/hydrocodone carisoprodol sertraline[A]	A/C	Ingestion	Int suicide	91.7 μg/mL¥	
329	80 yr	Acetaminophen/hydrocodone clonazepam	A/C	Ingestion	Int suicide	99 μg/mL¥	
330[P]	19 yr	Acetaminophen/hydrocodone diazepam	A	Ingestion	Int unk	26 μg/mL¥§ hydrocodone 320 ng/mL§ 220 ng/mL§ nordiazepam 180 ng/mL§	
331	29 yr	Acetaminophen/hydrocodone diazepam	A	Ingestion	Int suicide		
332	57 yr	Acetaminophen/hydrocodone ethanol	C	Ingestion	Int misuse	92 μg/mL¥	
333	53 yr	Acetaminophen/hydrocodone methamphetamine chlordiazepoxide	U	Ingestion	Int misuse	139 μg/mL¥	
334	38 yr	Acetaminophen/hydrocodone tramadol cyclobenzaprine	A/C	Ingestion	Int suicide		
335	28 yr	Acetaminophen/hydrocodone tricyclic antidepressant	A/C	Ingestion	Int suicide	44 μg/mL¥	
336	48 yr	Acetaminophen/hydrocodone tricyclic antidepressant aspirin	A/C	Ingestion	Int suicide		
337	31 yr	Acetaminophen/hydrocodone valproic acid tricyclic antidepressant	A/C	Ingestion	Int suicide	15 μg/mL¥ 109 μg/mL	
338	45 yr	Acetaminophen/hydrocodone zolpidem clonazepam[A]	A	Ingestion	Int suicide	200 μg/mL¥	
339[P]	25 yr	Acetaminophen/oxycodone	A/C	Ingestion	Unknown	14.6 μg/mL¥	
340	48 yr	Acetaminophen/oxycodone	U	Ingestion	Int unk		

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
341[ip]	32 yr	Acetaminophen/oxycodone acetaminophen/propoxyphene acetaminophen/hydrocodone[A]	A	Ingestion	Int suicide		
342[p]	27 yr	Acetaminophen/oxycodone fentanyl	A	Derm/Par	Int misuse		
343[p]	27 yr	Acetaminophen/propoxyphene	A	Ingestion	Int suicide	199 μg/mL¥	
344	38 yr	Acetaminophen/propoxyphene	U	Ingestion	Int suicide	132 μg/mL¥	
345	43 yr	Acetaminophen/propoxyphene	C	Ingestion	Int misuse	39.6 μg/mL¥	
346	54 yr	Acetaminophen/propoxyphene	A/C	Ingestion	Int suicide	101 μg/mL¥	
347	59 yr	Acetaminophen/propoxyphene	C	Ingestion	Unknown	80 μg/mL¥ propoxyphene 0.19 μg/mL norpropoxyphene 1.66 μg/mL	
348[p]	59 yr	Acetaminophen/propoxyphene	A/C	Ingestion	Int suicide		
349	60 yr	Acetaminophen/propoxyphene	C	Ingestion	Int misuse	168 μg/mL¥	
350	62 yr	Acetaminophen/propoxyphene	U	Unknown	Unknown		
351[p]	34 yr	Acetaminophen/propoxyphene diazepam amitriptyline	A	Ingestion	Int suicide	150 μg/mL¥	
352[p]	36 yr	Acetaminophen/propoxyphene ethanol alprazolam	A	Ingestion	Int suicide	92 μg/mL¥	
353	33 yr	Acetaminophen/propoxyphene methamphetamine	U	Ingestion	Int suicide	225 μg/mL¥ propoxyphene 0.29 μg/mL norpropoxyphene 1.26 μg/mL	
354[p]	45 yr	Acetaminophen/propoxyphene tramadol clonazepam[A]	U	Ingestion	Int suicide		
355	68 yr	Acetaminophen/propoxyphene tricyclic antidepressant paroxetine	A	Ingestion	Int suicide	100 μg/mL¥ 300-500 ng/mL	
356[p]	35 yr	Acetaminophen/propoxyphene zaleplon	A	Ingestion	Int suicide	127 μg/mL¥	
357[a]	15 yr	Aspirin	A	Ingestion	Int suicide	91 mg/dL	
358	15 yr	Aspirin	A	Ingestion	Int suicide	76 mg/dL	
359	18 yr	Aspirin	A	Ingestion	Int suicide	92 mg/dL	11 h
360	19 yr	Aspirin	A	Ingestion	Int suicide	90 mg/dL	
361	22 yr	Aspirin	A	Ingestion	Int suicide	120 mg/dL	
362	26 yr	Aspirin	A	Ingestion	Int suicide	70.6 mg/dL	
363	30 yr	Aspirin	A	Ingestion	Int suicide	71 mg/dL	
364	33 yr	Aspirin	C	Ingestion	Int suicide	130 mg/dL	
365	34 yr	Aspirin	A	Ingestion	Int suicide	93.6 mg/dL	
366[a]	35 yr	Aspirin	A	Ingestion	Int suicide	48 mg/dL	
367	38 yr	Aspirin	A	Ingestion	Int suicide	64.3 mg/dL	
368	40 yr	Aspirin	A	Ingestion	Int suicide	140 mg/dL	
369	43 yr	Aspirin	A	Ingestion	Int suicide	117.6 mg/dL	
370	45 yr	Aspirin	A	Ingestion	Int suicide	117.5 mg/dL	
371	49 yr	Aspirin	A	Ingestion	Int suicide	106.8 mg/dL	12 h
372	53 yr	Aspirin	A	Ingestion	Int suicide	139 mg/dL	
373	54 yr	Aspirin	A	Ingestion	Int suicide	79 mg/dL	
374	55 yr	Aspirin	A	Ingestion	Int suicide	145 mg/dL	
375	57 yr	Aspirin	A	Ingestion	Int suicide	106 mg/dL	
376	57 yr	Aspirin	U	Ingestion	Int suicide	40 mg/dL	
377	61 yr	Aspirin	A	Ingestion	Int suicide	74 mg/dL	
378	64 yr	Aspirin	A	Ingestion	Int suicide	125 mg/dL	
379	64 yr	Aspirin	A	Ingestion	Int suicide	89 mg/dL	
380	73 yr	Aspirin	A	Ingestion	Int suicide	97.8 mg/dL	
381	82 yr	Aspirin	A	Ingestion	Int suicide	112 mg/dL	
382	88 yr	Aspirin	A	Ingestion	Unint gen	95 mg/dL	6 h
383	88 yr	Aspirin	A	Ingestion	Int suicide	100 mg/dL	
384	>19 yr	Aspirin acetaminophen	U	Ingestion	Int unk	97.8 mg/dL 159 μg/mL	
385	40 yr	Aspirin acetaminophen ethanol	U	Ingestion	Int unk	74.9 mg/dL 177 μg/mL 193 mg/dL	
386	47 yr	Aspirin acetaminophen quetiapine	A	Ingestion	Int suicide	76 mg/dL	
387	44 yr	Aspirin acetaminophen/hydrocodone valproic acid	A/C	Ingestion	Int suicide	46 mg/dL 6 μg/mL¥ 23.9 μg/mL	

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
388	24 yr	Aspirin	A	Ingestion	Int suicide	99 mg/dL	
		amphetamine					
389	40 yr	Aspirin	A	Ingestion	Int suicide		
		carbamazepine					
		aspirin/carisoprodol					
390	59 yr	Aspirin	A	Ingestion	Int suicide	97.6 mg/dL	
		chlorpromazine					
391	36 yr	Aspirin	A	Ingestion	Int suicide	92 mg/dL	14 h
		diazepam					
392	44 yr	Aspirin	C	Ingestion	Int misuse	73.2 mg/dL	
		ethanol					
393	52 yr	Aspirin	A	Ingestion	Int suicide	53 mg/dL	10 h
		ethanol				205 mg/dL	10 h
394	43 yr	Aspirin	A	Ingestion	Int suicide	72 mg/dL	
		fexofenadine					
		acetaminophen				65 μg/mL	
395	32 yr	Aspirin	U	Ingestion	Int abuse	70 mg/dL	
		guaifenesin/dextromethorphan					
396	52 yr	Aspirin	A/C	Ingestion	Int suicide	59 mg/dL	
		paroxetine					
397	30 yr	Aspirin	A/C	Ingestion	Int suicide	85 mg/dL	
		valproic acid				242 μg/mL	
		olanzapine[A]					
398[p]	73 yr	Aspirin/propoxyphene	A	Ingestion	Int suicide		
399	33 yr	Codeine	U	Unknown	Int suicide	0.37 μg/mL§	
		butalbital				12 μg/mL§	
		acetaminophen				87 μg/mL	
400	23 yr	Codeine	A	Ingestion	Int suicide	0.7 μg/mL§	
		morphine				500 ng/mL§	
401	25 yr	Colchicine	A	Ingestion	Int suicide	13 ng/mL	
402[a]	34 yr	Colchicine	A/C	Ingestion	Int suicide	5.9 ng/mL	48 h
403	50 yr	Colchicine	A/C	Ingestion	Int suicide		
404	67 yr	Colchicine	C	Parenteral	Adv rxn		
405	89 yr	Colchicine	A	Parenteral	Ther error		
406	32 yr	Colchicine	A	Ingestion	Int suicide		
		valproic acid				95 μg/mL	
		amitriptyline[A]					
407[p]	20 yr	Fentanyl patch	A	Dermal	Int unk		
408[ap]	29 yr	Fentanyl patch	A	Inhalation	Int abuse		
409[ap]	40 yr	Fentanyl patch	A	Inhalation	Int abuse		
410[ap]	32 yr	Fentanyl patch	U	Ingestion	Int abuse		
		ethanol					
411[p]	55 yr	Fentanyl patch	A/C	Derm/Ing/ Unk	Unknown		
		oxycodone (long-acting)					
412[p]	45 yr	Hydrocodone	A	Ingestion	Int suicide		
		cocaine				benzoylecgonine 0.36 μg/mL§	
						ecgonine methyl ester 0.04 μg/mL§	
413[p]	48 yr	Hydrocodone	U	Ingestion	Unknown		
		diazepam					
		temazepam[A]					
414	90 yr	Ibuprofen	C	Ingestion	Int unk		
415	25 yr	Ibuprofen	A	Ingestion	Int suicide		
		acetaminophen/dextromethorphan/ doxylamine/pseudoephedrine				25 μg/mL¥	
416	22 yr	Ibuprofen	A	Ingestion	Int suicide		
		ethanol				200 mg/dL	
417	42 yr	Levomethadyl acetate	A/C	Ingestion	Int unk		
418[p]	39 yr	Meperidine	U	Ing/Paren	Int suicide		
		prochlorperazine					
		amitriptyline					
419	22 yr	Meperidine/promethazine	U	Parenteral	Int misuse		
420[ap]	8 mo	Methadone	C	Ingestion	Unknown	0.23 μg/mL§	
421[a]	22 mo	Methadone	A	Ingestion	Unint gen	0.1 μg/mL	
422[ap]	14 yr	Methadone	U	Ingestion	Int abuse		
423[p]	20 yr	Methadone	U	Ingestion	Int unk		
424[p]	24 yr	Methadone	A/C	Ingestion	Int unk		
425	37 yr	Methadone	A/C	Ingestion	Int unk		
426	39 yr	Methadone	U	Ingestion	Int abuse		
427	39 yr	Methadone	A/C	Ingestion	Int unk	0.36 μg/mL	
		acetaminophen/hydrocodone					

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
428	46 yr	Methadone acetaminophen/hydrocodone diazepam[A]	A/C	Ing/Paren	Int abuse	 79 μg/mL¥	
429	43 yr	Methadone acetaminophen/propoxyphene benzodiazepine[A]	A/C	Ingestion	Int abuse		
430[p]	20 yr	Methadone alprazolam	U	Ingestion	Unknown		
431[p]	32 yr	Methadone alprazolam carisoprodol	A	Ingestion	Int suicide		
432[p]	28 yr	Methadone amphetamines	U	Unknown	Unknown		
433[p]	19 yr	Methadone cocaine diazepam	A	Ingestion	Int abuse	0.12 μg/mL§ 0.14 μg/mL§ 400 ng/mL§ nordiazepam 400 ng/mL§	
434[p]	35 yr	Methadone diazepam acetaminophen/hydrocodone	A/C	Ingestion	Int abuse		
435	32 yr	Methadone mirtazapine	A/C	Ingestion	Int suicide		
436	52 yr	Methadone mirtazapine	A	Ingestion	Int suicide	3.1 μg/mL§	
437[p]	15 mo	Methadone petroleum distillate	A	Asp/Ing	Unknown		
438[p]	18 mo	Morphine (long acting)	A	Ingestion	Unknown	500 ng/mL§	
439	17 yr	Morphine (long-acting)	A	Ingestion	Int suicide		
440[p]	28 yr	Morphine (long-acting)	U	Ingestion	Int abuse		
441	31 yr	Morphine (long-acting)	A/C	Ingestion	Unknown		
442[p]	37 yr	Morphine (long-acting)	A/C	Ingestion	Int unk		
443[p]	43 yr	Morphine (long-acting)	A	Ingestion	Int suicide		
444	45 yr	Morphine (long-acting)	A	Ingestion	Unknown		
445	66 yr	Morphine (long-acting)	A/C	Ingestion	Int suicide		
446[p]	59 yr	Morphine (long-acting) acetaminophen/hydrocodone temazepam[A]	A/C	Ingestion	Int unk	 371 μg/mL¥	 0.5 h
447[p]	43 yr	Morphine alprazolam	A	Ingestion	Int suicide		
448[p]	34 yr	Morphine (long-acting) clonazepam	A	Ingestion	Int suicide		
449[p]	31 yr	Morphine codeine citalopram	U	Ingestion	Int unk	210 ng/mL§	
450[p]	37 yr	Morphine metoprolol	U	Ingestion	Int suicide		
451[ip]	22 yr	Morphine (long-acting) morphine	C	Ingestion	Ther error	1200 ng/mL§	
452[p]	34 yr	Morphine oxycodone (long-acting) ethanol	A	Ingestion	Int abuse		
453[p]	39 yr	Opioid	U	Unknown	Unknown		
454	51 yr	Opioid	U	Unknown	Unknown		
455[p]	46 yr	Opioid alprazolam	A/C	Ingestion	Unknown		
456[p]	26 yr	Opioid benzodiazepine	A	Parenteral	Int abuse		
457[p]	37 yr	Opioid benzodiazepine	A	Ing/Paren	Int abuse		
458[p]	49 yr	Opioid benzodiazepine marijuana	U	Unknown	Int unk		
459[p]	41 yr	Opioid cocaine barbiturate[A]	A	Unknown	Int unk		
460[p]	48 yr	Opioid ethanol	A/C	Ing/Paren	Int abuse	 350 mg/dL	
461[p]	>19 yr	Opioid zolpidem	U	Ingestion	Unknown		
462[p]	15 yr	Oxycodone (long-acting)	U	Ingestion	Unknown	500 ng/mL§	
463[p]	33 yr	Oxycodone (long-acting)	U	Unknown	Int suicide		

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
464[P]	>19 yr	Oxycodone (long-acting)	A	Ingestion	Int unk		
465[P]	17 yr	Oxycodone alprazolam	A	Ingestion	Int suicide		
466	45 yr	Oxycodone (long-acting) benztropine	U	Ingestion	Int suicide		
467[P]	>19 yr	Oxycodone carisoprodol	A	Parenteral	Int abuse		
468[P]	21 yr	Oxycodone diazepam	U	Ingestion	Int abuse		
469[P]	36 yr	Oxycodone (long-acting) gabapentin paroxetine	A/C	Ingestion	Int suicide		
470[P]	41 yr	Oxycodone (long-acting) lorazepam carisoprodol	A/C	Ing/Paren	Int abuse	150 ng/mL§	
471[P]	24 yr	Oxycodone (long-acting) methylenedioxymethamphetamine promethazine	A	Ingestion	Int abuse	50 ng/mL§ 0.2 μg/mL§	
472	21 yr	Oxycodone (long-acting) trazodone carisoprodol[A]	A/C	Ingestion	Int suicide		
473[a]	86 yr	Phenylbutazone	U	Ingestion	Int misuse		
474[P]	40 yr	Propoxyphene methadone benzodiazepine	U	Ingestion	Int misuse		
475[P]	38 yr	Salicylate	U	Ingestion	Int suicide	104.5 mg/dL	
476	49 yr	Salsalate	A	Ingestion	Int suicide	salicylate 90 mg/dL	
477	69 yr	Tolmetin	A	Ingestion	Int suicide		

See also cases 9, 285, 384 thru 386, 394, 399, 500, 501, 504, 526, 590, 666, 734, 775, 834 (acetaminophen); 762 (acetaminophen/aspirin/caffeine); 527 (acetaminophen/butalbital); 606, 742, (acetaminophen/butalbital/caffeine); 18, 146 (acetaminophen/codeine); 50 (acetaminophen/diphenhydramine); 249, 290, 320, 341, 387, 427, 428, 434, 446, 562, 570, 587, 631, 758, 778 (acetaminophen/hydrocodone); 250, 542, 765, 808 (acetaminophen/oxycodone); 147, 306, 341, 429, 621, 624, 702, 709, 755, 764 (acetaminophen/propoxyphene); 252 thru 254, 336, 720, 741 (aspirin); 389, 768 (aspirin/carisoprodol); 449 (codeine); 342 (fentanyl); 718, 887 (hydromorphone); 474, 627 thru 629, 780, 789, 846, 899 (methadone); 17, 400, 451, 772, 794 (morphine); 275, 567, 599, 695 (naproxen); 255, 258, 277, 482, 539, 552, 604, 678, 776, 780, 816, 817, 847 thru 849, 851 (opioid); 18, 411, 452, 703, 834 (oxycodone); 195, 262, 554, 555, 890 (propoxyphene); 280, 310 (salicylate); 334, 354, 757 (tramadol).

Anesthetics

478	>19 yr	Bupivacaine	A	Parenteral	Ther error		
479[a]	16 yr	Bupivacaine lidocaine	A	Parenteral	Ther error		
480[a]	58 yr	Isoflurane	A	Inhalation	Adv rxn		
481	20 yr	Ketamine amphetamine heroin	A	Unknown	Unknown		
482	26 yr	Ketamine benzodiazepine opioid[A]	A/C	Unknown	Int unk		
483[a]	86 yr	Lidocaine	A	Parenteral	Ther error		
484[P]	>19 yr	Lidocaine	U	Unknown	Unknown	12.65 μg/mL§	
485[P]	21 yr	Nitrous oxide	A	Inhalation	Int abuse		
486	47 yr	Unknown inhalational anesthetic	A	Inhalation	Adv rxn		

See also cases 536 (ketamine); 479 (lidocaine); 889 (nitrous oxide).

Anticholinergic drugs

487[P]	38 yr	Benztropine clozapine haloperidol	C	Ingestion	Adv rxn		
488	29 yr	Benztropine risperidone activated charcoal	A/C	Asp/Ing	Int suicide		

See also cases 466, 784 (benztropine).

Anticoagulants

489[P]	59 yr	Warfarin	C	Ingestion	Unint unk		
490	74 yr	Warfarin	U	Ingestion	Adv rxn		
491	87 yr	Warfarin	C	Ingestion	Ther error		

See also cases 174, 687 (warfarin).

Anticonvulsants

492	20 yr	Carbamazepine	A/C	Ingestion	Unint gen	24 μg/mL	
493	>19 yr	Carbamazepine	A/C	Ingestion	Int suicide		
494	27 yr	Carbamazepine activated charcoal	A/C	Asp/Ing	Int suicide	67.1 μg/mL	

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
495[p]	42 yr	Carbamazepine	A/C	Ingestion	Int suicide	49 μg/mL	
		bupropion					
		ethanol					
496	54 yr	Gabapentin	A/C	Ingestion	Int suicide		
497[a]	31 yr	Valproic acid	A	Ingestion	Int suicide	>1,200 μg/mL	
498[a]	45 yr	Valproic acid	A/C	Ingestion	Int suicide	1,609 μg/mL	13 h
499[p]	52 yr	Valproic acid	U	Ingestion	Int suicide	951 μg/mL	
500[a]	23 yr	Valproic acid	A/C	Ingestion	Int suicide	70 μg/mL	
		acetaminophen					
501	28 yr	Valproic acid	A/C	Ingestion	Int suicide	165 μg/mL	
		acetaminophen				91 μg/mL	
		lorazepam[A]					
502	48 yr	Valproic acid	A	Ingestion	Int suicide	542 μg/mL	
		ethanol					
503	19 yr	Valproic acid	A/C	Ingestion	Int suicide	384 μg/mL	
		olanzapine					
		gabapentin[A]					
504[a]	5 yr	Valproic acid	C	Ingestion	Adv rxn	249 μg/mL	
		sodium bromide					
		acetaminophen				12 μg/mL	

See also cases 389, 563, 631, 632 (carbamazepine); 293, 469, 503, 547, 610, 784, 800, 810 (gabapentin); 723 (lamotrigine); 504 (sodium bromide); 337, 387, 397, 406, 632, 730, 801 (valproic acid).

Antidepressants

505[aip]	2 mo	Amitriptyline	U	Ingestion	Int misuse		
506	12 yr	Amitriptyline	A	Ingestion	Int suicide	10,800 ng/mL§	
						nortriptyline 3,700 ng/mL§	
507[ap]	13 yr	Amitriptyline	A	Ingestion	Int suicide	1,700 ng/mL§	
						nortriptyline 1,900 ng/mL§	
508[p]	21 yr	Amitriptyline	A	Ingestion	Int suicide		
509	21 yr	Amitriptyline	A	Ingestion	Int suicide		
510	26 yr	Amitriptyline	A	Ingestion	Int suicide		
511	27 yr	Amitriptyline	A	Ingestion	Int suicide		
512[p]	29 yr	Amitriptyline	U	Ingestion	Int suicide		
513[p]	30s yr	Amitriptyline	U	Ingestion	Int suicide		
514[p]	32 yr	Amitriptyline	A	Ingestion	Int suicide		
515	37 yr	Amitriptyline	A/C	Ingestion	Int suicide		
516	37 yr	Amitriptyline	A	Ingestion	Int suicide	290 ng/mL§	
517[p]	38 yr	Amitriptyline	U	Ingestion	Int suicide		
518[p]	41 yr	Amitriptyline	A	Ingestion	Int suicide		
519	42 yr	Amitriptyline	A/C	Ingestion	Int suicide		
520	44 yr	Amitriptyline	A/C	Ingestion	Int suicide		
521[p]	49 yr	Amitriptyline	U	Ingestion	Int suicide		
522	49 yr	Amitriptyline	A/C	Ingestion	Int suicide		
523	51 yr	Amitriptyline	A/C	Ingestion	Int suicide		
524	57 yr	Amitriptyline	U	Ingestion	Int unk		
525	Unk	Amitriptyline	A	Ingestion	Unknown	5,700 ng/mL§	
526[p]	57 yr	Amitriptyline	A	Ingestion	Int suicide		
		acetaminophen					
527	39 yr	Amitriptyline	A/C	Ingestion	Int suicide		
		acetaminophen/butalbital				132 μg/mL¥	
		alprazolam					
528	43 yr	Amitriptyline	A	Asp/Ing	Int suicide		
		activated charcoal					
529[p]	44 yr	Amitriptyline	A	Ingestion	Int suicide	3,540 ng/mL§	
		alprazolam					
530[p]	37 yr	Amitriptyline	A/C	Ingestion	Int suicide	1,100 ng/mL	
						nortriptyline 100 ng/mL	
		alprazolam					
		ethanol				242 mg/dL	
531	74 yr	Amitriptyline	A/C	Ingestion	Int suicide		
		alprazolam					
		flurazepam					
532	43 yr	Amitriptyline	A/C	Ingestion	Int suicide	1,320 ng/mL§	
						nortriptyline 400 ng/mL§	
		amlodipine					
533	49 yr	Amitriptyline	A/C	Ingestion	Int suicide		
		amlodipine					
		atenolol					
534	41 yr	Amitriptyline	A	Ingestion	Int suicide		
		amphetamine					
		benzodiazepine					

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
535[P]	38 yr	Amitriptyline barbiturate	A	Ingestion	Int suicide	tricyclic antidepressant >500 ng/mL	
536	30 yr	Amitriptyline chlorpromazine ketamine[A]	A/C	Ing/Unk	Int suicide		
537	35 yr	Amitriptyline clonazepam imipramine	A	Ingestion	Int suicide		
538	45 yr	Amitriptyline clonidine bupropion	A/C	Ingestion	Int suicide	4,490 ng/mL§ nortriptyline 650 ng/mL§	
539	40 yr	Amitriptyline cocaine opioid[A]	A	Ing/Unk	Int suicide		
540[P]	23 yr	Amitriptyline cyclobenzaprine	A/C	Ingestion	Int suicide	9,800 ng/mL§ nortriptyline 430 ng/mL§	
541	24 yr	Amitriptyline desipramine risperidone[A]	A	Ingestion	Int suicide		
542[P]	19 yr	Amitriptyline doxepin acetaminophen/oxycodone	A/C	Ingestion	Int suicide		
543[P]	20 yr	Amitriptyline ethanol	A	Ingestion	Int unk		
544[P]	48 yr	Amitriptyline ethanol	A/C	Ingestion	Int suicide	278 mg/dL	
545[P]	42 yr	Amitriptyline ethanol trazodone	A/C	Ingestion	Int abuse		
546	56 yr	Amitriptyline fluoxetine paroxetine	A	Ingestion	Int suicide		
547	54 yr	Amitriptyline gabapentin zolpidem[A]	A/C	Ingestion	Int suicide		
548	49 yr	Amitriptyline haloperidol	A/C	Ingestion	Int suicide		
549	16 yr	Amitriptyline hydroxyzine methylphenidate	U	Ingestion	Int suicide	1,380 ng/mL§ nortriptyline 450 ng/mL§	
550	48 yr	Amitriptyline imipramine	U	Ingestion	Int suicide		
551[P]	19 yr	Amitriptyline methamphetamine	A	Ingestion	Int unk		
552[P]	37 yr	Amitriptyline opioid	A/C	Ingestion	Int suicide		
553	60 yr	Amitriptyline paroxetine heroin	A	Ing/Unk	Int suicide	1,000 ng/mL§	
554[P]	41 yr	Amitriptyline propoxyphene	A/C	Ingestion	Int suicide	700 ng/mL§ nortriptyline 400 ng/mL§ 0.8 μg/mL§	
555[a]	44 yr	Amitriptyline propoxyphene clorazepate	A/C	Ingestion	Int suicide		
556[P]	40 yr	Amitriptyline propranolol	A/C	Ingestion	Int suicide		
557	40s yr	Amitriptyline sertraline ethanol	A/C	Ingestion	Int suicide	320 ng/mL§ nortriptyline 120 ng/mL§ 320 ng/mL§ desmethylsertraline 490 ng/mL§	
558	30 yr	Amitriptyline trazodone quetiapine	A	Ingestion	Int suicide		
559	36 yr	Amitriptyline/perphenazine amphetamine	A	Ingestion	Int suicide		
560[P]	17 yr	Bupropion	A	Ingestion	Int suicide		

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
561[P]	41 yr	Bupropion	A	Ingestion	Int suicide		
562	36 yr	Bupropion (long-acting) acetaminophen/hydrocodone carisoprodol	A/C	Ingestion	Int suicide	67 μg/mL¥	
563	37 yr	Bupropion carbamazepine olanzepine[A]	A/C	Ingestion	Int suicide	31.2 μg/mL§	
564	36 yr	Bupropion clonazepam trazodone[A]	U	Ingestion	Int suicide		
565[P]	51 yr	Bupropion (long-acting) ethanol	U	Ingestion	Int suicide		
566[P]	36 yr	Bupropion ethylene glycol *Hypericum perforatum*[A]	A/C	Ingestion	Int suicide	14,700 ng/mL§ 2.6 mg/dL	
567	46 yr	Bupropion (long-acting) naproxen cocaine	A/C	Ing/Unk	Int unk		
568	21 yr	Bupropion olanzapine clonazepam	A	Ingestion	Int suicide		
569	35 yr	Bupropion (long-acting) venlafaxine methylphenidate[A]	A/C	Ingestion	Int suicide		
570[P]	51 yr	Citalopram acetaminophen/hydrocodone amlodipine	A	Ingestion	Int suicide		
571	>19 yr	Citalopram nortriptyline	A	Ingestion	Int suicide		
572[P]	16 yr	Desipramine	A	Ingestion	Int suicide	5,230 ng/mL	
573[P]	26 yr	Desipramine	A	Ingestion	Int suicide		
574	40 yr	Desipramine	A	Ingestion	Int suicide		
575	35 yr	Dothiepin	A/C	Ingestion	Int suicide		
576	44 yr	Doxepin	A	Ingestion	Int suicide	31,100 ng/mL§ nordoxepin 940 ng/mL§	
577[P]	45 yr	Doxepin	A/C	Ingestion	Int suicide		
578	59 yr	Doxepin	A/C	Ingestion	Int suicide		
579	56 yr	Doxepin carisoprodol lorazepam	A/C	Ingestion	Int suicide		
580[P]	91 yr	Doxepin diphenhydramine	A	Ingestion	Int suicide		
581	48 yr	Doxepin doxazosin benazepril	A	Ingestion	Int suicide		
582[P]	25 yr	Doxepin ethanol	A	Ingestion	Int suicide	1,350 ng/mL	
583	35 yr	Doxepin ethanol	A/C	Ingestion	Int suicide	90 mg/dL	
584[P]	43 yr	Doxepin ethanol	A	Ingestion	Int suicide		
585[P]	>19 yr	Doxepin fluoxetine ethanol	A/C	Ingestion	Int suicide		
586	49 yr	Doxepin lorazepam sertraline[A]	A/C	Ingestion	Int suicide	380 ng/mL	
587[P]	44 yr	Fluoxetine bupropion acetaminophen/hydrocodone	U	Ingestion	Unknown		
588	74 yr	Fluoxetine diphenhydramine oxazepam[A]	A	Ingestion	Int suicide		
589[P]	50 yr	Fluoxetine foreign body	U	Asp/Ing	Unknown	840 ng/mL§ norfluoxetine 160 ng/mL§	
590	54 yr	Fluoxetine fosinopril acetaminophen	A	Ingestion	Int suicide	265 μg/mL	4-6 h
591	40 yr	Fluvoxamine	A	Ingestion	Int suicide		
592[I]	7 yr	Imipramine	A/C	Ingestion	Malicious		

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
593	18 yr	Imipramine	A/C	Ingestion	Int suicide		
594	22 yr	Imipramine	A	Ingestion	Int suicide		
595[p]	26 yr	Imipramine	A/C	Ingestion	Int suicide		
596	39 yr	Imipramine	A/C	Ingestion	Int suicide		
597	45 yr	Imipramine	A/C	Ingestion	Int suicide	3,020 ng/mL desipramine 1,360 ng/mL	
598	61 yr	Imipramine	A	Ingestion	Int suicide		
599[p]	15 yr	Imipramine promethazine naproxen	A	Ingestion	Int suicide		
600	45 yr	Lithium	C	Ingestion	Ther error	4.9 mEq/L	
601	50 yr	Lithium	C	Ingestion	Ther error	2.8 mEq/L	
602	41 yr	Lithium haloperidol	A/C	Ingestion	Int suicide	2.9 mEq/L	
603	40 yr	Lithium levothyroxine furosemide	A/C	Ingestion	Int suicide	3.1 mEq/L	
604[p]	34 yr	Lithium opioid benzodiazepine	A/C	Ingestion	Int suicide		
605	80 yr	Lithium temazepam	A/C	Ingestion	Int suicide	3.1 mEq/L	
606	44 yr	Mirtazapine acetaminophen/butalbital/caffeine trazodone[A]	A	Ingestion	Int suicide	179 μg/mL¥	
607	40 yr	Nefazodone	A	Ingestion	Int suicide		
608	49 yr	Nortriptyline	A/C	Ingestion	Int unk		
609	53 yr	Nortriptyline amitriptyline lorazepam[A]	U	Ingestion	Int suicide	1,740 ng/mL 403 ng/mL	
610[a]	11 yr	Nortriptyline gabapentin	A	Ingestion	Int suicide		
611[p]	46 yr	Paroxetine	A	Ingestion	Int suicide		
612	54 yr	Paroxetine	A	Ingestion	Int suicide		
613	35 yr	Paroxetine buspirone	A/C	Ingestion	Int unk		
614	41 yr	Paroxetine ethanol	A/C	Ingestion	Int suicide	161 mg/dL	
615	42 yr	Paroxetine olanzapine trazodone[A]	U	Ingestion	Unknown		
616[p]	50 yr	Paroxetine quetiapine hydroxyzine	U	Ingestion	Int suicide		
617	55 yr	Paroxetine tranylcypromine	A/C	Ingestion	Int suicide		
618	48 yr	Phenelzine ephedrine	A	Ingestion	Adv rxn		
619[a]	45 yr	Tranylcypromine venlafaxine clonazepam	A/C	Ingestion	Int suicide		
620	58 yr	Tranylcypromine zolpidem	A/C	Ingestion	Int suicide		
621	54 yr	Trazodone acetaminophen/propoxyphene alprazolam[A]	A/C	Ingestion	Int misuse	44 μg/mL¥	
622[p]	44 yr	Trazodone ethanol	A/C	Ingestion	Int suicide	250 mg/dL	
623[p]	>19 yr	Tricyclic antidepressant	U	Ingestion	Unknown	791 ng/mL	
624[p]	25 yr	Tricyclic antidepressant acetaminophen/propoxyphene paroxetine[A]	A/C	Ingestion	Int suicide		
625	51 yr	Tricyclic antidepressant alprazolam	A	Ingestion	Int suicide		
626[p]	42 yr	Tricyclic antidepressant amphetamine nefazodone	U	Ingestion	Unknown		
627[p]	40 yr	Tricyclic antidepressant barbiturate methadone	A	Ingestion	Int suicide		

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
628[p]	43 yr	Tricyclic antidepressant methadone	U	Ingestion	Unknown		
629[p]	49 yr	Tricyclic antidepressant methadone	A	Ingestion	Int suicide	2,280 ng/mL	
630	41 yr	Venlafaxine	A	Ingestion	Int suicide		
631	35 yr	Venlafaxine carbamazepine acetaminophen/hydrocodone[A]	U	Ingestion	Int suicide		
632	36 yr	Venlafaxine valproic acid carbamazepine	A/C	Ingestion	Int suicide	 150 μg/mL 26 μg/mL	
633	19 yr	Venlafaxine zolpidem methylphenidate	A	Ingestion	Int suicide		

See also cases 78, 351, 406, 418, 609, 835, 836, 846, 898 (amitriptyline); 495, 538, 587, 761, 801 (bupropion); 14, 449, 690, 703, 785 (citalopram); 799 (cyclic antidepressant); 541 (desipramine); 542 (doxepin); 281, 546, 585 (fluoxetine); 537, 550 (imipramine); 19, 273, 274, 783, 792 (lithium); 435, 436, 639, 755, 793 (mirtazapine); 276, 626 (nefazodone); 571 (nortriptyline); 278, 355, 396, 469, 546, 553, 624, 663, 757, 898 (paroxetine); 328, 557, 586, 873 (sertraline); 617 (tranylcypromine); 19, 276, 281, 307, 472, 545, 558, 564, 606, 615, 756, 804, 815 (trazodone); 335 thru 337, 355, 643, 818 (tricyclic antidepressant); 274, 569, 619, 688, 709, 795, 805 (venlafaxine).

Antihistamines

634[p]	22 yr	Cetirizine unknown drug	A	Ingestion	Int suicide		
635[ap]	2 mo	Diphenhydramine	A	Ingestion	Int misuse	1.6 μg/mL	
636	18 yr	Diphenhydramine	A	Ingestion	Int suicide	10.2 μg/mL	
637	34 yr	Diphenhydramine	A	Ingestion	Int suicide		
638[p]	45 yr	Diphenhydramine	A	Ingestion	Int suicide		
639[p]	55 yr	Diphenhydramine quetiapine mirtazapine[A]	A/C	Ingestion	Int suicide		
640[p]	25 yr	Doxylamine	A	Ingestion	Int suicide		
641[p]	39 yr	Hydroxyzine	A	Ingestion	Int suicide	33 μg/mL§	
642	60 yr	Promethazine	U	Ingestion	Int unk		
643	38 yr	Promethazine cocaine tricyclic antidepressant[A]	A	Ing/Inh	Int suicide		

See also cases 14, 107, 263, 287, 580, 588, 690, 724 (diphenhydramine); 394 (fexofenadine); 549, 616, 668 (hydroxyzine); 664 (meclizine); 471, 599 (promethazine).

Antimicrobials

644[p]	60 yr	Amoxicillin	A	Ingestion	Adv rxn		
645[a]	44 yr	Didanosine stavudine	C	Ingestion	Adv rxn		
646[a]	18 yr	Hydroxychloroquine	A/C	Ingestion	Int suicide		
647	28 yr	Hydroxychloroquine	A	Ingestion	Int suicide	3.1 μg/mL	
648	30's yr	Hydroxychloroquine	U	Ingestion	Int suicide		
649	49 yr	Isoniazid	C	Ingestion	Adv rxn		
650[ap]	18 mo	Norfloxacin sulfonamide antibiotic	A	Ingestion	Adv rxn		
651	55 yr	Tobramycin	C	Parenteral	Ther error	>40 μg/mL	

See also cases 800 (indinavir); 662 (levofloxacin); 645 (stavudine); 650 (sulfonamide antibiotic); 744 (tilmicosin).

Antineoplastics

652	57 yr	Fluorouracil	A/C	Parenteral	Ther error		
653	39 yr	Unknown antineoplastic	C	Ingestion	Adv rxn		

Asthma therapies

654	65 yr	Theophylline (long-acting)	A/C	Ingestion	Int suicide	133.6 μg/mL	
655	70 yr	Theophylline	C	Ingestion	Int misuse	63.4 μg/mL	
656	72 yr	Theophylline	A/C	Ingestion	Int suicide	106 μg/mL	
657	72 yr	Theophylline (long-acting)	C	Ingestion	Int misuse	60.1 μg/mL	
658	75 yr	Theophylline	C	Ingestion	Ther error	62.2 μg/mL	
659	79 yr	Theophylline	C	Ingestion	Ther error	38 μg/mL	
660	80 yr	Theophylline	C	Ingestion	Ther error	65 μg/mL	
661	88 yr	Theophylline	C	Ingestion	Ther error	32.8 μg/mL	
662	74 yr	Theophylline levofloxacin	C	Ingestion	Ther error	43 μg/mL	

Cardiovascular drugs

663	73 yr	Amlodipine donepezil paroxetine[A]	A/C	Ingestion	Int suicide		

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
664	31 yr	Amlodipine nadolol meclizine	A	Ingestion	Int suicide		
665[p]	30 yr	Atenolol	A	Ingestion	Int suicide		
666	44 yr	Atenolol acetaminophen	A/C	Ingestion	Int suicide		
667[a]	79 yr	Atenolol terazosin digoxin[A]	A/C	Ingestion	Ther error	1.7 ng/mL	
668[p]	42 yr	Clonidine hydroxyzine clonidine patch	A/C	Derm/Ing	Int suicide		
669[p]	51 yr	Clonidine zolpidem methocarbamol	A/C	Ingestion	Unknown		
670[a]	87 yr	Digitoxin	A	Ingestion	Int suicide	146.2 ng/mL	12 h
671	70 yr	Digoxin	C	Ingestion	Ther error	8.9 ng/mL	
672	77 yr	Digoxin	C	Ingestion	Ther error	3.1 ng/mL	
673	80 yr	Digoxin	C	Ingestion	Ther error	3.8 ng/mL	
674	82 yr	Digoxin	C	Ingestion	Ther error	4.4 ng/mL	
675	85 yr	Digoxin	C	Ingestion	Ther error	3.4 ng/mL	
676	97 yr	Digoxin	C	Ingestion	Ther error	3.8 ng/mL	
677	96 yr	Digoxin laxative atenolol	C	Ingestion	Unknown		
678	48 yr	Digoxin metoprolol (long-acting) opioid[A]	A	Ingestion	Int suicide	12.9 ng/mL	
679	21 yr	Diltiazem (long-acting)	A	Ingestion	Int suicide		
680	40 yr	Diltiazem (long-acting)	A	Ingestion	Int suicide		
681	51 yr	Diltiazem (long-acting)	A/C	Ingestion	Int suicide		
682	54 yr	Diltiazem (long-acting)	A/C	Ingestion	Int suicide		
683	68 yr	Diltiazem	A/C	Ingestion	Int suicide		
684	77 yr	Diltiazem	A	Parenteral	Adv rxn		
685	88 yr	Diltiazem	A	Parenteral	Ther error		
686	47 yr	Diltiazem (long-acting) benazepril hydrochlorothiazide/triamterene	A/C	Ingestion	Int suicide		
687	46 yr	Diltiazem benazepril warfarin	A/C	Ingestion	Int suicide	21.16 μg/mL§	
688	53 yr	Diltiazem (long-acting) clonazepam venlafaxine[A]	A/C	Ingestion	Int suicide		
689[p]	45 yr	Diltiazem digoxin	A	Ingestion	Int suicide		
690[p]	32 yr	Diltiazem diphenhydramine citalopram	A	Ingestion	Int suicide		
691	67 yr	Diltiazem (long-acting) doxazosin	A/C	Ingestion	Int suicide		
692[a]	52 yr	Diltiazem (long-acting) metformin	A	Ingestion	Int suicide		
693	46 yr	Diltiazem (long-acting) metoprolol	A	Ingestion	Int suicide		
694	60 yr	Diltiazem nadolol ethanol	A/C	Ingestion	Int suicide		
695	48 yr	Diltiazem naproxen	A	Ingestion	Int suicide	0.252 μg/mL§ 260 μg/mL§	
696	89 yr	Methyldopa	U	Ingestion	Unknown		
697	65 yr	Metoprolol	A	Ingestion	Int suicide		
698	87 yr	Metoprolol alprazolam isosorbide dinitrate[A]	A/C	Ingestion	Int suicide		
699	52 yr	Metoprolol amlodipine isosorbide mononitrate[A]	A/C	Ingestion	Int suicide		
700[p]	30 yr	Nifedipine	A/C	Ingestion	Int suicide		
701	51 yr	Nifedipine (long-acting)	A/C	Ingestion	Int suicide		

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
702	54 yr	Nifedipine	U	Ingestion	Int suicide		
		acetaminophen/propoxyphene				130 μg/mL¥	
		ephedrine					
703[p]	48 yr	Nisoldipine	A	Ingestion	Int suicide		
		citalopram					
		oxycodone[A]				0.06 ng/mL§	
704	64 yr	Procainamide	U	Unknown	Unknown		
705	68 yr	Procainamide	C	Ingestion	Ther error	18.3 μg/mL	
706	72 yr	Procainamide	C	Ingestion	Ther error	13 μg/mL	
						N-acetylprocainamide 27 μg/mL	
707[p]	74 yr	Procainamide	C	Ingestion	Ther error	19.6 μg/mL	
						N-acetylprocainamide 41.1 μg/mL	
708	30 yr	Propafenone	A	Ingestion	Int suicide		
709[p]	44 yr	Propranolol	U	Ingestion	Int suicide		
		venlafaxine					
		acetaminophen/propoxyphene[A]				99 μg/mL¥	
710[p]	39 yr	Verapamil	A	Ingestion	Int suicide		
711	40 yr	Verapamil	A	Ingestion	Int suicide		
712	42 yr	Verapamil (long-acting)	A	Ingestion	Int suicide		
713	42 yr	Verapamil (long-acting)	A/C	Ingestion	Int misuse		
714	50 yr	Verapamil (long-acting)	A/C	Ingestion	Int suicide		
715[p]	53 yr	Verapamil	A/C	Ingestion	Int suicide	3.18 μg/mL	
716	74 yr	Verapamil (long-acting)	A	Ingestion	Int suicide	1.41 μg/mL§	
						norverapamil 1.35 μg/mL§	
717	81 yr	Verapamil	A/C	Ingestion	Int suicide		
		fosinopril					
718[p]	45 yr	Verapamil	A	Ingestion	Int suicide		
		hydromorphone					
		metaxalone[A]					
719	59 yr	Verapamil	A/C	Ingestion	Int suicide		
		losartan					
		captopril[A]					
720	68 yr	Verapamil	A	Ingestion	Int suicide		
		metoprolol					
		aspirin[A]					
721[p]	43 yr	Verapamil (long-acting)	A	Ingestion	Int suicide	5 μg/mL§	
		metoprolol				24.2 μg/mL§	
		diazepam				1,520 ng/mL§	
						nordiazepam 2,240 ng/mL§	
722	56 yr	Verapamil	A/C	Ingestion	Int suicide		
		quinapril					
723	50 yr	Verapamil	A/C	Ingestion	Int suicide		
		zolpidem					
		lamotrigine					

See also cases 532, 533, 570, 699 (amlodipine); 533, 677 (atenolol); 581, 686, 687 (benazepril); 719 (captopril); 538, 668 (clonidine); 667, 689 (digoxin); 581, 691 (doxazosin); 293, 590, 717 (fosinopril); 698 (isosorbide mononitrate); 752, 793 (lisinopril); 719 (losartan); 285, 450, 678, 693, 720, 721 (metoprolol); 664, 694 (nadolol); 556 (propranolol); 722 (quinapril); 667 (terazosin); 191 (unknown antihypertensive).

Cough and cold preparations

724[p]	45 yr	Acetaminophen/chlorpheniramine/	A	Ingestion	Int suicide	180 μg/mL¥§	
		pseudoephedrine					
		diphenhydramine				23 μg/mL§	
725[p]	78 yr	Acetaminophen/dextromethorphan/	C	Ingestion	Ther error	28 μg/mL¥§	
		pseudoephedrine					
726[ap]	19 yr	Benzonatate	A	Ingestion	Int suicide		
727[p]	16 yr	Chlorpheniramine/hydrocodone	A	Ingestion	Int abuse	hydrocodone 31 ng/mL§	
		diazepam					
		alprazolam					

See also cases 415 (acetaminophen/dextromethorphan/doxylamine/pseudoephedrine); 618, 702 (ephedrine); 395 (guaifenesin/dextromethorphan).

Diagnostic Agents

728[a]	77 yr	Barium	A	Asp/Ing	Adv rxn		
729	43 yr	Diatrizoate meglumine/sodium citrate/	A	Parenteral	Ther error		
		edetate disodium					

Dietary supplements/herbals/homeopathics

730[p]	24 yr	Ma huang/caffeine	A	Ingestion	Int unk		
		olanzapine					
		valproic acid					

See also case 199 (senna/cascara containing herbal).

Diuretics

731	50 yr	Acetazolamide	C	Ingestion	Adv rxn		

See also cases 781 (amiloride); 147, 603 (furosemide); 686 (hydrochlorothiazide/triamterene).

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
Electrolytes and minerals							
732	37 yr	Magnesium	A	Inhalation	Occ		
733	43 yr	Potassium chloride	A	Ingestion	Int suicide	>10 mEq/L	
734	45 yr	Potassium	A/C	Ingestion	Int suicide	9 mEq/L	
		Morinda citrifolia					
		acetaminophen[A]					
735[a]	14 yr	Sodium chloride	A	Ingestion	Int misuse	sodium 195 mEq/L	
						chloride 160 mEq/L	
Gastrointestinal preparations							
736[a]	2 yr	Diphenoxylate/atropine	C	Ingestion	Ther error		
737[p]	22 yr	Diphenoxylate/atropine	U	Ingestion	Int unk		
738	70 yr	Metoclopramide	A	Asp/Ing	Int suicide		
		activated charcoal					
See also case 677 (laxative).							
Hormones and hormone antagonists							
739	54 yr	Insulin	A/C	Parenteral	Int suicide		
740[a]	75 yr	Insulin	A	Parenteral	Malicious		
741	37 yr	Insulin	A	Ing/Paren	Int suicide		
		aspirin				25 mg/dL	
742	42 yr	Metformin	A/C	Ingestion	Int suicide		
		acetaminophen/butalbital/caffeine				174 μg/mL¥	
See also cases 773 (glyburide); 603 (levothyroxine); 692 (metformin).							
Miscellaneous drugs							
743[p]	68 yr	Carbidopa/levodopa	A/C	Ingestion	Int unk		
		ropinirole					
		entacapone					
744[ap]	41 yr	Epinephrine	A	Parenteral	Int suicide		
		tilmicosin					
745	34 yr	Quinine	A	Ingestion	Int suicide		
746[a]	44 yr	Succinylcholine	A	Parenteral	Adv rxn		
See also cases 663 (donepezil); 743 (entacapone); 743 (ropinirole).							
Muscle relaxants							
747	49 yr	Baclofen	A/C	Ingestion	Int suicide		
748	48 yr	Baclofen	A	Ingestion	Int suicide		
		clonazepam					
749	17 yr	Carisoprodol	A	Ingestion	Int suicide		
750	37 yr	Carisoprodol	A	Ingestion	Int suicide		
751	40's yr	Carisoprodol	U	Ingestion	Int suicide		
752	54 yr	Carisoprodol	A	Ingestion	Int suicide		
		benzodiazepine					
		lisinopril					
753	50 yr	Carisoprodol	A/C	Ingestion	Int suicide		
		cyclobenzaprine				508 ng/mL	
		amphetamine					
754[p]	25 yr	Cyclobenzaprine	U	Ingestion	Int suicide		
755[p]	43 yr	Cyclobenzaprine	U	Unknown	Int suicide		
		acetaminophen/propoxyphene					
		mirtazapine					
756	43 yr	Cyclobenzaprine	A/C	Ingestion	Int suicide		
		trazodone					
		lorazepam					
757	28 yr	Metaxalone	A	Ingestion	Int suicide		
		paroxetine					
		tramadol[A]					
758	55 yr	Methocarbamol	A	Ingestion	Int suicide		
		acetaminophen/hydrocodone				59.7 μg/mL¥	12 h
		diazepam[A]					
See also cases 254, 259, 323, 325 thru 328, 431, 467, 470, 472, 562, 579, 777 thru 779, 873 (carisoprodol); 13, 251, 291, 334, 540, 753 (cyclobenzaprine); 718 (metaxalone); 669 (methocarbamol).							
Sedatives/hypnotics/antipsychotics							
759	36 yr	Alprazolam	A	Ingestion	Int suicide		
760[p]	41 yr	Alprazolam	A	Ingestion	Int suicide	150 ng/mL§	
761	46 yr	Alprazolam	A/C	Ingestion	Int suicide	27 ng/mL	
		bupropion				1,100 ng/mL§	
		olanzapine					

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
762	44 yr	Alprazolam clonazepam acetaminophen/aspirin/caffeine[A]	A	Ingestion	Int suicide		
763	42 yr	Alprazolam ethanol activated charcoal	A	Asp/Ing	Int suicide		
764[p]	42 yr	Alprazolam zaleplon acetaminophen/propoxyphene[A]	A/C	Ingestion	Int suicide		
765[p]	56 yr	Benzodiazepine acetaminophen/oxycodone	A	Ingestion	Int suicide		
766[p]	34 yr	Benzodiazepine ethanol marijuana	A/C	Ing/Unk	Unknown		
767[p]	41 yr	Benzodiazepine heroin marijuana	A/C	Ing/Inh/ Paren	Unknown		
768	46 yr	Butalbital aspirin/carisoprodol	A	Ingestion	Int suicide		
769[p]	22 yr	Butalbital zolpidem heroin[A]	A	Ing/Inh	Int abuse	 morphine 600 ng/mL§	
770[p]	46 yr	Chlorpromazine	U	Ingestion	Int suicide		
771[p]	47 yr	Clorazepate ethanol	A	Ingestion	Int suicide		
772	45 yr	Clozapine morphine lorazepam	A/C	Ingestion	Ther error		
773	40 yr	Clozapine thioridazine glyburide[A]	A/C	Ingestion	Int suicide	2,300 ng/mL§ desmethylclozapine 720 ng/mL§ 380 ng/mL§	
774	81 yr	Diazepam	A	Ingestion	Int suicide		
775	53 yr	Diazepam acetaminophen	U	Ingestion	Int suicide	 550 μg/mL	
776[p]	23 yr	Diazepam amphetamine opioid	A	Unknown	Unknown		
777[p]	26 yr	Diazepam carisoprodol	A	Ingestion	Int suicide	500 ng/mL nordiazepam 900 ng/mL	9 d 9 d
778[p]	35 yr	Diazepam carisoprodol acetaminophen/hydrocodone	A	Ingestion	Int suicide		
779[p]	38 yr	Diazepam cocaine carisoprodol	A/C	Ing/Unk	Int abuse		
780	26 yr	Diazepam methadone opioid	A/C	Ing/Unk	Int suicide		
781	50 yr	Diazepam olanzapine amiloride[A]	A/C	Ingestion	Int suicide		
782	69 yr	Fluphenazine	A	Parenteral	Ther error		
783	55 yr	Fluphenazine quetiapine lithium	A/C	Ingestion	Int suicide	 2.2 mEq/L	
784	21 yr	Haloperidol benztropine gabapentin	A/C	Ingestion	Int suicide		
785	83 yr	Lorazepam risperidone citalopram	A/C	Ingestion	Unknown		
786	49 yr	Loxapine	U	Ingestion	Unknown		
787[a]	72 yr	Meprobamate	A	Ingestion	Int suicide	282 μg/mL	
788	33 yr	Mesoridazine ethanol	A/C	Ingestion	Int suicide	 77 mg/dL	
789[p]	20 yr	Methaqualone methadone alprazolam	C	Ingestion	Int suicide		

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
790	19 yr	Olanzapine activated charcoal	A	Asp/Ing	Int unk		
791	27 yr	Olanzapine ethanol	A/C	Ingestion	Int abuse		
792	26 yr	Olanzapine lithium	C	Ingestion	Adv rxn		
793	65 yr	Olanzapine mirtazapine lisinopril	U	Ingestion	Int unk		
794[p]	27 yr	Olanzapine morphine (long-acting)	A/C	Ingestion	Int suicide		
795	20 yr	Olanzapine venlafaxine	A/C	Ingestion	Int suicide		
796	60 yr	Phenobarbital	U	Unknown	Unknown	93.6 μg/mL	
797[ap]	54 yr	Pentobarbital diazepam	A	Parenteral	Int suicide		
798[ap]	35 yr	Quetiapine	U	Ingestion	Int suicide	13,960 ng/mL§	
799	65 yr	Quetiapine cyclic antidepressant	A/C	Ingestion	Int suicide		
800[p]	36 yr	Quetiapine gabapentin indinavir[A]	C	Ingestion	Adv rxn		
801[p]	16 yr	Quetiapine valproic acid bupropion (long-acting)	A/C	Ingestion	Int suicide		
802[p]	43 yr	Risperidone	A/C	Ingestion	Int suicide		
803[p]	44 yr	Risperidone lorazepam	A/C	Ingestion	Int suicide		
804	42 yr	Risperidone trazodone ethanol	A/C	Ingestion	Int suicide		
805	53 yr	Risperidone venlafaxine activated charcoal	A/C	Asp/Ing	Int suicide		
806	43 yr	Risperidone zolpidem buspirone[A]	A/C	Ingestion	Int suicide		
807[p]	42 yr	Secobarbital	A	Ingestion	Int suicide		
808	70 yr	Secobarbital diazepam acetaminophen/oxycodone	A	Ingestion	Int suicide	13.3 μg/mL	
809	61 yr	Trifluoperazine	A/C	Ingestion	Int suicide		
810	38 yr	Zolpidem gabapentin	A/C	Ingestion	Int suicide		

See also cases 291, 322 thru 324, 352, 430, 431, 447, 455, 465, 527, 529 thru 531, 621, 625, 698, 727, 789, 835, 877 (alprazolam); 255, 459, 535, 627, 816, 843 (barbiturate); 10, 256 thru 258, 429, 456 thru 458, 474, 482, 534, 604, 752, 817, 840, 844, 849, 851, 912 (benzodiazepine); 613, 806 (buspirone); 399 (butalbital); 333 (chlordiazepoxide); 390, 536 (chlorpromazine); 78, 307, 329, 338, 354, 448, 537, 564, 568, 619, 688, 748, 762 (clonazepam); 555 (clorazepate); 487 (clozapine); 324, 330, 331, 351, 391, 413, 428, 433, 434, 468, 721, 727, 758, 797, 808, 881, 888 (diazepam); 531 (flurazepam); 16, 487, 548, 602 (haloperidol); 16, 470, 501, 579, 586, 609, 756, 772, 803 (lorazepam); 278, 397, 503, 563, 568, 615, 730, 761, 781, 815 (olanzapine); 588 (oxazepam); 34, 279 (phenobarbital); 418 (prochlorperazine); 386, 558, 616, 639, 783, 914 (quetiapine); 488, 541, 785 (risperidone); 413, 446, 605 (temazepam); 773 (thioridazine); 356, 764 (zaleplon); 338, 461, 547, 620, 633, 669, 723, 769, 806 (zolpidem).

Stimulants and street drugs							
811	21 yr	Amphetamine	U	Unknown	Int abuse		
812	45 yr	Amphetamine	U	Ingestion	Int abuse		
813	62 yr	Amphetamine	A	Unknown	Int abuse		
814[a]	83 yr	Amphetamine cocaine	U	Unknown	Int unk		
815	30 yr	Amphetamine olanzapine trazodone	U	Ingestion	Int unk		
816[p]	59 yr	Amphetamine opioid barbiturate[A]	A	Ingestion	Int suicide		
817	57 yr	Amphetamine opioid benzodiazepine	U	Unknown	Unknown		
818	29 yr	Amphetamine tricyclic antidepressant unknown drug	U	Unknown	Int unk		
819[p]	40 yr	1,4 butanediol	A	Ingestion	Int abuse	7.6 μg/mL§ gamma hydroxybutyrate 280 μg/mL§	

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
820[P]	16 yr	Caffeine	A	Ing/Inh	Int suicide		
		ethanol				200 mg/dL	
821[P]	18 yr	Cocaine	A	Ingestion	Int misuse		
822[P]	19 yr	Cocaine	A	Ingestion	Int misuse		
823[P]	20 yr	Cocaine (crack)	A	Ingestion	Int misuse		
824	23 yr	Cocaine	A	Ingestion	Int misuse		
825	24 yr	Cocaine	U	Unknown	Int abuse		
826[P]	27 yr	Cocaine	A/C	Inhalation	Int abuse		
827[P]	28 yr	Cocaine	A	Inhalation	Int abuse		
828[P]	30 yr	Cocaine	A/C	Unknown	Int abuse		
829	33 yr	Cocaine	A	Ingestion	Int misuse		
830	35 yr	Cocaine	A	Unknown	Int abuse		
831	39 yr	Cocaine	A/C	Inhalation	Int abuse		
832[P]	42 yr	Cocaine	U	Unknown	Unknown		
833[P]	56 yr	Cocaine	A	Ingestion	Int misuse		
834	38 yr	Cocaine	A	Ingestion	Int abuse	benzoylecgonine 0.59 μg/mL	
		acetaminophen				12 μg/mL	
		oxycodone				1,400 ng/mL	
835	42 yr	Cocaine	A	Ingestion	Unknown		
		amitriptyline					
		alprazolam					
836[P]	15 yr	Cocaine	A	Ing/Inh/	Int abuse		
		amitriptyline		Paren			
		marijuana					
837[P]	28 yr	Cocaine	U	Ing/Inh	Int abuse		
		amphetamine					
838	40 yr	Cocaine	A	Unknown	Int abuse		
		amphetamine					
839	33 yr	Cocaine	U	Inhalation	Int abuse		
		amyl or isobutyl nitrite					
840	42 yr	Cocaine	U	Ing/Unk	Int suicide		
		benzodiazepine					
841[P]	45 yr	Cocaine (crack)	A/C	Ing/Inh	Int abuse		
		ethanol				60 mg/dL	
842[P]	52 yr	Cocaine	U	Ing/Unk	Int abuse		
		ethanol				105 mg/dL	
843[a]	47 yr	Cocaine (crack)	A/C	Inh/Paren	Int abuse		
		heroin					
		barbiturates					
844[P]	33 yr	Cocaine (crack)	A/C	Parenteral	Int abuse		
		heroin					
		benzodiazepine					
845[P]	35 yr	Cocaine	A	Unknown	Int abuse		
		heroin					
		phencyclidine					
846[P]	23 yr	Cocaine	A	Ing/Unk	Int abuse		
		methadone					
		amitriptyline					
847[P]	39 yr	Cocaine	A/C	Unknown	Int abuse		
		opioid					
848[P]	46 yr	Cocaine	U	Unknown	Int unk		
		opioid					
849[P]	33 yr	Cocaine	A	Unknown	Int unk		
		opioid					
		benzodiazepine					
850[a]	24 yr	Cocaine	A/C	Ing/Unk	Int abuse		
		paramethoxyamphetamine				0.602 μg/mL§	
851[P]	44 yr	Diethylpropion	A/C	Ingestion	Int abuse		
		benzodiazepine					
		opioid					
852[P]	20 yr	Gamma hydroxybutyrate	A	Ingestion	Int abuse		
853[P]	20 yr	Gamma hydroxybutyrate	A/C	Ingestion	Int abuse		
854[P]	41 yr	Gamma hydroxybutyrate	A	Ingestion	Int suicide		
855	22 yr	Gamma hydroxybutyrate	A	Ingestion	Int abuse		
		ethanol					
856	23 yr	Gamma hydroxybutyrate	A	Ingestion	Int abuse		
		ethanol					
857[P]	27 yr	Gamma hydroxybutyrate	A	Ingestion	Int abuse		
		methylenedioxymethamphetamine					

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
858[P]	18 yr	Gamma hydroxybutyrate	A	Ingestion	Int abuse		
		methylenedioxymethamphetamine					
		ethanol					
859[P]	18 yr	Heroin	U	Parenteral	Int abuse		
860[P]	20 yr	Heroin	U	Parenteral	Int abuse	morphine 250 ng/mL§	
861[P]	26 yr	Heroin	A/C	Parenteral	Int abuse		
862[P]	29 yr	Heroin	A	Inhalation	Int abuse		
863[P]	29 yr	Heroin	C	Unknown	Int abuse		
864[P]	35 yr	Heroin	U	Parenteral	Int abuse		
865[P]	38 yr	Heroin	A	Parenteral	Int abuse		
866[P]	39 yr	Heroin	A	Parenteral	Int abuse		
867[P]	45 yr	Heroin	A	Parenteral	Int abuse	morphine 100 ng/mL	
868[P]	46 yr	Heroin	U	Parenteral	Int abuse		
869[P]	50 yr	Heroin	U	Unknown	Int abuse		
870[P]	52 yr	Heroin	A/C	Parenteral	Int abuse		
871[P]	54 yr	Heroin	A	Parenteral	Int abuse		
872[P]	Unk	Heroin	A/C	Inhalation	Int abuse		
873[P]	19 yr	Heroin	A/C	Ing/Paren	Int abuse	morphine 130 ng/mL§	
		carisoprodol				8.2 μg/mL§	
						meprobamate 6.1 μg/mL§	
		sertraline				620 ng/mL§	
						desmethylsertraline 1700 ng/mL§	
874[P]	16 yr	Heroin	A	Parenteral	Int abuse	morphine 20 ng/mL§	
		cocaine					
875[P]	26 yr	Heroin	A	Inhalation	Int abuse		
		cocaine					
876[P]	32 yr	Heroin	A	Unknown	Int abuse	morphine 67 ng/mL§	
		cocaine					
877	20 yr	Heroin	A	Unknown	Int unk		
		cocaine					
		alprazolam					
878[P]	22 yr	Heroin	A	Ing/Paren	Int abuse	morphine 70 ng/mL§	
		cocaine					
		ethanol					
879	36 yr	Heroin	A	Ing/Paren	Int abuse		
		cocaine					
		ethanol					
880[P]	25 yr	Heroin	A/C	Parenteral	Int abuse		
		cocaine					
		marijuana					
881	40 yr	Heroin	U	Ing/Paren	Int unk		
		diazepam				444 ng/mL	
						nordiazepam 844 ng/mL	
882[P]	20 yr	Heroin	A/C	Ing/Paren	Int suicide		
		ethanol					
883[P]	28 yr	Heroin	A	Ing/Paren	Int abuse		
		ethanol				250 mg/dL	
884[P]	34 yr	Heroin	A/C	Ing/Paren	Int abuse		
		ethanol				100 mg/dL	
885[P]	36 yr	Heroin	A/C	Ing/Paren	Int abuse		
		ethanol				330 mg/dL	
886[P]	38 yr	Heroin	A/C	Ing/Paren	Int abuse	140 ng/mL	
		ethanol				60 mg/dL	
887[P]	37 yr	Heroin	A	Ing/Paren	Int suicide		
		hydromorphone					
		ethanol				231 mg/dL	
888[P]	30 yr	Heroin	A	Unknown	Int abuse		
		methylenedioxymethamphetamine				0.297 μg/mL	
						methylenedioxyamphetamine 0.081 μg/mL	
		diazepam					
889[ip]	18 yr	Heroin	A/C	Inh/Paren	Int abuse		
		nitrous oxide					
890[P]	25 yr	Heroin	A/C	Parenteral	Int abuse		
		propoxyphene					
891[P]	31 yr	Lysergic acid diethylamide	U	Unknown	Unknown		
892	19 yr	Methamphetamine	U	Unknown	Int abuse		
893[a]	22 yr	Methamphetamine	A	Ingestion	Int misuse		
894[P]	22 yr	Methamphetamine	U	Unknown	Int abuse		
895	26 yr	Methamphetamine	A	Ingestion	Int misuse		
896	28 yr	Methamphetamine	U	Unknown	Int abuse		
897[P]	36 yr	Methamphetamine	C	Ingestion	Int abuse		

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2000 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
898[p]	36 yr	Methamphetamine amitriptyline paroxetine[A]	A	Ingestion	Int unk	0.51 μg/mL§ 140 ng/mL§ nortriptyline 260 ng/mL§ 840 ng/mL§	
899[a]	29 yr	Methamphetamine cocaine methadone[A]	U	Ing/Inh	Int unk		
900	17 yr	Methylenedioxymethamphetamine	A	Ingestion	Int abuse		
901[p]	18 yr	Methylenedioxymethamphetamine	A	Ingestion	Int abuse		
902[p]	18 yr	Methylenedioxymethamphetamine	A	Ingestion	Int abuse		
903	19 yr	Methylenedioxymethamphetamine	A	Ingestion	Int abuse		
904	20 yr	Methylenedioxymethamphetamine	A	Ingestion	Int abuse		
905[a]	21 yr	Methylenedioxymethamphetamine	A	Ingestion	Int abuse	1.7 μg/mL	
906	22 yr	Methylenedioxymethamphetamine	A	Ingestion	Int abuse		
907	23 yr	Methylenedioxymethamphetamine	A	Ingestion	Int abuse	amphetamine 0.23 μg/mL§ methamphetamine 1 μg/mL§	
908[p]	27 yr	Methylenedioxymethamphetamine	A	Ingestion	Int abuse		
909[a]	48 yr	Methylenedioxymethamphetamine	U	Unknown	Int abuse		
910[p]	24 yr	Methylenedioxymethamphetamine cocaine ethanol	A	Ingestion	Int abuse		
911[p]	19 yr	Methylenedioxymethamphetamine ethanol	A	Ingestion	Int abuse		
912[ap]	22 yr	Methylenedioxymethamphetamine gamma hydroxybutyrate benzodiazepine[A]	A	Unknown	Int abuse	3.9 μg/mL§ 240 μg/mL§ 250 ng/mL§	
913[p]	19 yr	Methylenedioxymethamphetamine heroin	A/C	Ing/Paren	Int abuse		
914[p]	15 yr	Methylenedioxymethamphetamine heroin quetiapine	A	Ingestion	Int abuse		
915	18 yr	Methylenedioxymethamphetamine marijuana lysergic acid diethylamide	A	Ing/Inh	Int abuse		
916	19 yr	Methylenedioxymethamphetamine phencyclidine	A	Ingestion	Int abuse		
917[p]	19 yr	Methylenedioxymethamphetamine water propoxyphene	A	Ingestion	Int abuse	0.12 μg/mL	
918[a]	19 yr	Paramethoxyamphetamine methylenedioxymethamphetamine	A	Ingestion	Int abuse		
919[p]	20 yr	Phencyclidine cocaine methamphetamine	A	Inhalation	Int abuse		

See also cases 198, 251, 388, 432, 481, 534, 559, 626, 753, 776, 837, 838 (amphetamine); 839 (amyl or isobutyl nitrite); 11, 12, 117, 185, 260 thru 262, 272, 412, 433, 459, 539, 567, 643, 779, 814, 874 thru 880, 899, 910, 919 (cocaine); 15, 912 (gamma hydroxybutyrate); 120, 481, 553, 767, 769, 843 thru 845, 913, 914 (heroin); 915 (lysergic acid diethylamide); 1, 12, 458, 766, 767, 836, 880, 915 (marijuana); 54, 198, 333, 353, 551, 919 (methamphetamine); 471, 857, 858, 888, 918 (methylenedioxymethamphetamine); 549, 569, 633 (methylphenidate); 850 (paramethoxyamphetamine); 845, 916 (phencyclidine). Note: TESS is transitioning to a new coding system, thus the GHB fatalities listed here are included as dietary supplements in Table 22B.

Unknown substances							
920	45 yr	Unknown drug	A	Unknown	Int suicide		

See also cases 282, 283, 634, 818 (unknown drug);

ABBREVIATIONS: C, chronic exposure; A, acute exposure; A/C, acute on chronic; U, unknown; Oc, ocular; Inh, inhalation; Ing, ingestion; 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.

§Concentration obtained postmortem

¥Acetaminophen concentration

¶Salicylate concentration

[A]Additional substances not listed

#Concentration includes metabolite and parent compound

[a]Abstract provided in Appendix

[©]Reported by medical examiner to poison center. No abstract or additional clinical or scenario data available. The term "long-acting" is used throughout for all sustained release, extended release, delayed release, or long-acting formulations.

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

Substances Implicated in the Exposure	No. of Exposure	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														
Cyanoacrylate	10,647	3,693	2,223	4,564	10,413	149	50	25	2,422	1,087	2,205	529	3	0
Epoxy	881	332	65	481	861	9	2	7	278	179	183	79	3	0
Toluene/xylene	1,261	777	200	274	1,193	56	5	1	180	273	258	58	2	0
Non-toxic	1,494	1,046	322	119	1,444	38	9	3	61	217	94	7	0	0
Unknown	4,396	2,343	611	1,362	4,239	103	17	29	745	878	694	155	7	1
Category total	18,679	8,191	3,421	6,800	18,150	355	83	65	3,686	2,634	3,434	828	15	1
Alcohols														
Ethanol: beverage	36,869	1,395	5,577	29,335	5,499	30,138	326	558	26,765	4,069	11,347	7,287	1,328	82
Ethanol: other	4,806	2,315	588	1,887	3,590	1,143	28	40	1,287	1,101	869	272	57	3
Higher alcohol	179	86	25	67	167	8	1	1	52	49	38	12	0	0
Isopropanol	8,705	5,499	782	2,362	7,688	912	52	21	1,775	2,455	1,647	351	58	2
Methanol	1,090	229	164	676	949	100	12	6	514	244	282	70	30	11
Rubbing alcohols														
Ethanol with methyl salicylate	28	21	0	7	28	0	0	0	4	5	6	1	0	0
Ethanol without methyl salicylate	314	226	22	66	298	15	0	1	42	96	52	3	1	0
Isopropanol with methyl salicylate	297	216	19	60	270	25	0	0	64	114	50	9	3	0
Isopropanol without methyl salicylate	9,868	6,785	743	2,310	8,976	821	50	1	1,534	2,800	1,745	230	30	3
Unknown rubbing alcohol	9	7	0	1	8	1	0	0	3	1	3	0	0	0
Other	84	33	8	42	72	5	1	5	28	17	10	13	0	0
Unknown	876	99	122	638	278	566	7	8	532	89	198	156	26	2
Category total	63,125	16,911	8,050	37,451	27,823	33,734	477	641	32,600	11,040	16,247	8,404	1,533	103
Arts/crafts/office supplies														
Artist paint, non-water color	1,967	1,412	269	278	1,923	29	4	9	102	318	142	19	5	0
Chalk	1,801	1,645	120	31	1,787	12	2	0	32	292	77	1	0	0
Clay	2,144	1,846	179	115	2,122	14	1	7	74	265	85	13	1	0
Crayon	2,571	2,323	161	83	2,552	17	0	1	43	288	57	2	0	0
Glaze	150	70	42	36	146	1	1	2	15	33	18	0	0	0
Office supplies: miscellaneous	427	212	29	185	422	2	1	2	56	73	51	10	0	0
Pencil	3,105	1,540	1,284	260	3,012	54	34	0	121	254	271	8	0	0
Pen/ink	18,601	9,391	8,507	617	18,014	507	40	32	361	2,524	630	27	1	0
Typewriter correction fluid	2,300	1,585	506	197	2,169	114	15	1	156	624	201	11	0	0
Water color	1,942	1,591	184	158	1,912	14	2	14	48	268	82	6	0	0
Other	13,073	9,001	3,149	883	12,726	271	29	41	348	1,725	543	43	2	0
Unknown	374	284	60	28	362	8	1	2	12	52	9	1	0	0
Category total	48,455	30,900	14,490	2,871	47,147	1,043	130	111	1,368	6,716	2,166	141	9	0
Automotive/aircraft/boat products														
Ethylene glycol	4,884	699	666	3,448	4,369	438	40	11	1,629	937	918	324	120	19
Glycol: other	1,530	442	152	912	1,454	62	12	1	535	311	479	81	9	0
Glycol and methanol	319	149	43	125	301	13	5	0	84	56	86	13	1	0
Hydrocarbon	3,272	1,471	356	1,408	3,097	131	35	4	957	815	953	156	19	0
Methanol	1,328	348	199	766	1,207	109	10	0	568	379	319	76	17	1
Non-toxic	39	28	3	8	38	0	0	0	4	5	3	1	0	0
Other	2,229	927	297	988	2,147	41	19	18	726	375	732	152	5	0
Unknown	205	57	26	120	192	10	2	0	101	32	67	28	0	0
Category total	13,806	4,121	1,742	7,775	12,805	804	123	34	4,604	2,910	3,557	831	171	20
Batteries														
Automotive battery	1,445	117	201	1,095	1,414	15	6	8	453	105	492	176	0	0
Disc batteries														
Alkaline (MnO_2)	48	35	5	5	47	0	0	0	30	19	4	2	1	0
Lithium	85	35	16	34	79	5	0	0	49	18	14	6	2	0
Mercuric oxide	9	0	0	9	9	0	0	0	1	4	1	0	0	0
Nickel cadmium	4	2	2	0	4	0	0	0	0	1	0	0	0	0
Silver oxide	20	9	4	7	20	0	0	0	12	12	1	0	0	0
Zinc-air	53	27	7	19	52	1	0	0	34	37	0	0	0	0
Other	5	4	0	1	5	0	0	0	3	1	0	0	0	0
Unknown	1,580	968	374	233	1,538	37	0	1	1,063	776	59	17	3	0
Dry cell battery	4,737	2,391	1,038	1,278	4,513	184	14	10	736	1,080	1,015	193	5	0
Other	108	43	18	46	103	2	2	1	22	21	33	4	0	0
Unknown	33	9	6	17	33	0	0	0	3	3	9	2	0	0
Category total	8,127	3,640	1,671	2,744	7,817	244	22	20	2,406	2,077	1,628	400	11	0

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

Substances Implicated in the Exposure	No. of Exposure	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Bites and envenomations														
Aquatic														
Coelenterate	992	112	512	362	989	1	0	2	139	14	306	63	3	0
Fish	1,351	26	237	1,080	1,340	1	0	8	394	6	396	128	3	0
Other/unknown	497	275	60	156	483	6	2	6	66	51	48	23	1	0
Insects														
Ant/fire ant	2,767	1,066	377	1,308	2,748	4	9	6	248	57	707	122	3	0
Bee/wasp/hornet	13,036	2,495	2,714	7,721	13,031	4	1	0	1,210	70	4,272	635	20	0
Caterpillar	2,242	568	602	1,058	2,229	5	2	6	177	45	635	56	2	0
Centipede/millipede	194	74	38	81	194	0	0	0	10	15	47	5	0	0
Mosquito	620	148	121	345	618	0	2	0	86	27	140	22	0	0
Scorpion	13,755	1,066	2,780	9,872	13,754	0	1	0	842	48	3,263	459	13	1
Tick	3,579	863	780	1,893	3,573	0	1	1	538	134	519	55	2	0
Other	16,346	3,536	2,828	9,814	16,194	17	103	19	2,300	348	3,200	870	10	0
Mammals														
Bat	396	53	93	242	392	2	0	1	162	68	58	3	0	0
Cat	839	138	193	500	839	0	0	0	434	9	206	31	0	0
Dog	1,848	337	832	658	1,847	0	0	0	1,199	53	454	87	4	0
Fox	22	0	5	14	22	0	0	0	15	2	2	1	0	0
Human	77	18	25	32	68	0	8	0	37	3	20	6	0	0
Raccoon	111	5	31	71	110	0	1	0	57	5	21	4	0	0
Rodent/lagomorph	1,774	425	676	651	1,762	2	9	1	353	68	348	18	0	0
Skunk	251	37	69	139	250	0	0	1	20	19	71	12	0	0
Other	1,525	286	484	720	1,520	2	1	0	627	76	272	33	0	0
Reptile: other/unknown	1,111	326	422	351	1,092	11	1	6	223	50	319	34	2	0
Snakes														
Copperhead	709	38	146	521	707	1	0	1	616	13	267	288	18	0
Coral	69	0	16	51	67	1	0	1	56	2	35	15	0	0
Cottonmouth	100	1	29	67	99	1	0	0	89	0	33	35	4	0
Crotaline: unknown	9	1	7	1	9	0	0	0	7	0	4	2	0	0
Rattlesnake	1,040	64	172	797	1,033	5	1	1	890	25	215	478	89	2
Exotic snakes														
Poisonous	83	6	11	63	81	1	0	1	68	4	19	31	3	0
Nonpoisonous	176	15	65	92	172	1	0	3	55	0	62	2	0	0
Unknown if poisonous	15	0	5	8	15	0	0	0	7	0	9	0	0	0
Nonpoisonous snake	2,081	213	896	956	2,078	0	1	1	508	66	792	45	2	0
Unknown snake	1,923	170	607	1,123	1,920	2	0	0	1,187	80	864	319	22	0
Spiders														
Black widow	2,422	214	386	1,799	2,419	1	1	0	804	142	681	356	21	0
Brown recluse	2,364	200	339	1,787	2,361	0	0	2	996	15	456	592	21	0
Necrotizing spider: other	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tarantula	231	19	80	129	230	0	0	1	49	5	75	11	0	0
Other spider	10,305	1,431	1,922	6,818	10,292	3	2	5	1,692	155	2,517	757	13	0
Unknown insect or spider	5,834	951	1,040	3,817	5,833	0	0	1	649	56	1,277	172	1	0
Other/unknown bite/envenomation	90	19	19	48	89	0	0	0	29	3	25	6	0	0
Category total	90,784	15,196	19,619	55,145	90,460	71	146	74	16,839	1,734	22,635	5,776	257	3
Building and construction products														
Caulking compound and putty	3,077	2,175	172	722	3,035	26	4	12	252	601	229	45	2	0
Cement, concrete	1,618	398	121	1,080	1,586	18	2	10	666	180	350	328	12	0
Insulation														
Asbestos	204	27	17	157	197	1	1	5	32	17	9	7	0	0
Fiberglass	1,516	615	250	640	1,483	10	1	20	194	166	283	48	0	0
Urea/formaldehyde	73	36	7	29	71	0	0	2	12	18	5	5	0	0
Other	262	142	22	97	257	2	0	3	25	37	29	8	0	0
Unknown	43	19	7	16	40	1	2	0	11	5	11	2	0	0
Soldering flux	394	168	47	173	385	6	1	1	128	71	91	41	1	0
Other	2,097	1,323	152	596	2,064	17	6	8	317	391	278	79	3	0
Unknown	84	17	6	58	82	0	1	1	32	9	15	12	1	0
Category total	9,368	4,920	801	3,568	9,200	81	18	62	1,669	1,495	1,300	575	19	0
Chemicals														
Acetone	1,381	487	135	744	1,280	66	18	10	410	235	344	91	5	1
Acids														
Hydrochloric	2,934	133	502	2,227	2,842	60	13	13	1,141	191	1,008	448	16	4
Hydrofluoric	1,366	74	74	1,193	1,354	5	0	3	1,105	83	447	414	26	1
Other	5,429	594	991	3,722	5,239	103	28	46	2,324	491	1,929	779	36	0
Unknown	498	43	86	360	461	18	9	3	221	36	149	104	6	0
Alkali	5,499	1,299	977	3,131	5,296	90	62	39	2,371	664	1,594	934	52	0

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

Substances Implicated in the Exposure	No. of Exposure	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Ammonia	5,467	1,226	741	3,378	5,159	195	61	33	1,725	560	1,711	672	25	2
Borate/boric acid	2,876	1,486	271	1,086	2,675	151	34	10	498	703	273	54	7	2
Chlorate	53	15	10	27	50	2	1	0	12	7	9	1	0	0
Cyanide	305	11	13	277	266	14	20	2	200	50	82	31	7	6
Dioxin	16	0	0	16	15	0	0	0	9	0	0	1	1	0
Ethylene glycol	953	148	109	678	698	215	14	3	535	155	148	114	119	12
Formaldehyde/formalin	1,316	186	247	851	1,186	99	16	13	522	158	395	89	9	1
Glycol: other	1,666	579	462	599	1,571	64	13	13	471	282	429	98	8	0
Ketone	884	266	67	541	862	3	14	4	404	151	243	99	2	0
Methylene chloride	791	158	101	518	766	14	6	3	296	122	241	87	6	1
Nitrate and nitrite	1,116	325	390	385	1,024	73	10	7	251	219	217	47	2	0
Phenol/creosote	1,444	308	185	925	1,404	23	2	13	503	178	375	163	6	1
Strychnine	35	14	5	16	28	2	3	2	13	12	5	1	0	0
Toluene diisocyanate	955	134	90	720	931	14	1	6	270	90	207	76	1	0
Other	18,090	5,932	2,658	9,178	16,865	565	233	355	5,095	3,203	3,574	1,209	76	4
Unknown	3,191	1,454	517	1,167	2,953	73	106	43	556	410	391	117	11	0
Category total	56,265	14,872	8,631	31,739	52,925	1,849	664	621	18,932	8,000	13,771	5,629	421	35
Cleaning substances (household)														
Ammonia cleaner	2,846	1,262	264	1,307	2,682	120	20	18	482	487	754	170	12	2
Automatic dishwasher detergents														
Granular	5,434	4,685	181	558	5,397	18	16	2	259	2,006	871	54	1	0
Liquid or gel	3,503	2,993	106	394	3,476	16	5	5	242	1,152	714	64	0	1
Rinse agent	1,043	987	14	40	1,038	5	0	0	81	239	153	19	0	0
Other/unknown	989	788	43	153	978	7	2	2	70	332	153	23	1	0
Bleaches														
Borate	446	245	36	160	433	7	2	3	39	86	95	18	0	0
Hypochlorite	47,779	18,863	5,334	23,158	45,195	1,914	436	165	8,825	6,424	13,355	2,307	53	2
Nonhypochlorite	698	325	68	288	667	24	4	3	104	135	182	25	0	0
Other/unknown	97	48	14	31	88	4	2	1	17	9	29	6	0	1
Carpet/upholstery cleaner	4,823	3,662	294	851	4,709	33	22	54	482	1,105	833	87	4	0
Cleansers														
Anionic/nonionic	3,114	2,278	197	622	3,015	69	14	14	394	793	493	82	2	0
Other/unknown	1,067	580	134	342	1,015	39	10	2	224	232	253	47	1	0
Disinfectants														
Hypochlorite	7,654	4,852	680	2,059	7,428	140	49	31	1,278	1,779	1,896	323	8	0
Phenol	3,091	2,078	318	676	2,943	104	23	16	438	624	784	89	5	0
Pine oil	7,138	4,657	630	1,768	6,585	440	71	23	1,570	1,878	1,512	197	22	2
Other/unknown	3,161	1,892	391	851	2,982	139	22	17	579	645	819	87	5	0
Drain cleaners														
Acid	1,009	106	102	787	968	27	5	8	363	126	311	189	9	1
Alkali	3,890	630	336	2,862	3,614	232	21	14	1,277	447	1,202	575	61	3
Other/unknown	460	74	43	337	439	15	0	5	120	64	125	53	1	0
Fabric softeners/antistatic agents														
Aerosol/spray	55	28	8	19	52	1	2	0	2	8	22	0	0	0
Dry/powder	7	4	1	2	7	0	0	0	3	3	1	1	0	0
Liquid	1,148	937	61	147	1,114	28	2	4	105	341	167	13	0	0
Solid/sheet	364	323	14	25	353	4	0	7	14	80	20	2	1	0
Other/unknown	40	28	0	12	39	1	0	0	2	17	3	0	0	0
Glass cleaners														
Ammonia	1,143	897	117	129	1,089	36	13	5	85	333	176	16	0	0
Anionic/nonionic	147	75	16	54	136	6	1	3	27	17	35	5	0	0
Isopropanol	8,123	6,510	670	912	7,777	269	59	12	651	1,953	1,441	76	5	0
Other/unknown	2,295	1,730	238	318	2,184	97	7	2	240	621	408	34	1	0
Hand dishwashing														
Anionic/nonionic	7,335	5,112	555	1,638	7,071	95	91	75	455	1,048	1,587	82	4	0
Other/unknown	1,597	1,011	134	446	1,502	19	31	44	97	172	325	23	0	0
Laundry additives														
Bluing/brightening agent	63	30	18	15	60	2	0	0	11	22	8	3	0	0
Detergent booster	135	80	10	44	131	3	0	1	18	31	36	5	0	0
Enzyme/microbiological additive	104	78	3	23	102	1	0	0	14	32	15	3	0	0
Water softener	35	16	4	15	34	1	0	0	3	7	6	0	0	0
Other/unknown	2,009	1,689	116	200	1,944	34	8	22	156	472	240	27	0	0

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

Substances Implicated in the Exposure	No. of Exposure	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Laundry detergents														
Granular	7,146	5,975	356	802	6,975	93	29	46	695	1,657	1,687	130	6	0
Liquid	3,771	2,647	275	832	3,591	100	11	66	520	668	939	104	6	0
Soap	161	101	14	44	154	1	1	5	18	28	37	2	0	0
Other/unknown	210	128	13	67	191	10	4	5	57	46	70	3	1	0
Laundry prewash/stain removers														
Liquid solvent-based	410	340	22	47	403	6	0	1	47	108	74	8	0	0
Spray solvent-based	331	278	15	34	330	0	0	1	26	83	77	6	1	0
Other/unknown solvent-based	25	17	2	6	24	0	0	1	4	10	3	1	0	0
Dry surfactant-based	198	169	6	23	198	0	0	0	12	54	42	0	0	0
Liquid surfactant-based	2,171	1,952	75	135	2,145	14	7	4	218	468	360	51	5	0
Spray surfactant-based	281	250	8	22	274	2	4	0	42	50	79	8	0	0
Other/unknown surfactant-based	40	38	0	2	40	0	0	0	2	13	3	0	0	0
Other/unknown	62	51	2	9	61	0	0	1	12	13	21	5	0	0
Miscellaneous cleaners														
Acid	830	341	58	423	801	19	4	5	227	167	211	75	3	0
Alkali	9,477	5,472	779	3,148	9,173	201	62	33	2,451	2,190	2,421	707	31	0
Anionic/nonionic	6,413	4,257	482	1,633	6,148	139	54	65	942	1,307	1,359	153	5	0
Cationic	2,799	1,311	327	1,130	2,635	115	32	9	791	558	761	178	5	1
Ethanol	846	609	90	138	812	24	9	0	86	176	207	10	0	0
Glycols	3,139	2,384	194	544	3,061	48	16	11	365	775	686	52	3	0
Isopropanol	2,379	1,459	454	455	2,238	103	28	8	336	542	529	40	5	2
Methanol	56	36	5	15	56	0	0	0	17	16	13	1	0	0
Phenol	215	117	15	81	205	8	0	2	49	49	70	7	1	0
Other/unknown	3,626	2,138	353	1,112	3,434	115	59	14	785	850	820	158	4	1
Oven cleaners														
Acid	22	9	4	9	22	0	0	0	5	4	4	2	0	0
Alkali	2,760	670	336	1,705	2,668	49	22	15	1,102	257	856	446	20	0
Detergent	22	7	4	11	22	0	0	0	4	2	5	3	0	0
Other/unknown	295	85	31	173	278	7	7	2	104	33	103	33	3	0
Rust removers														
Alkali	20	3	4	13	19	0	0	0	10	5	9	1	0	0
Anionic/nonionic	3	2	0	1	3	0	0	0	0	0	0	0	0	0
Hydrofluoric acid	315	64	27	221	303	9	0	3	206	56	118	61	4	2
Other acid	634	220	44	361	601	24	3	5	145	134	170	39	2	0
Other/unknown	303	63	19	217	291	6	0	5	63	42	85	41	1	0
Spot removers/dry cleaning agents														
Anionic/nonionic	637	519	23	91	626	7	1	3	57	120	124	8	0	0
Glycol	92	57	9	25	88	3	0	1	12	20	24	1	0	0
Isopropanol	14	10	1	3	13	1	0	0	3	5	2	0	0	0
Perchloroethylene	28	16	5	7	28	0	0	0	5	7	7	4	0	0
Other halogenated hydrocarbon	108	47	6	50	107	0	0	1	26	22	23	8	0	0
Other nonhalogenated hydrocarbon	101	67	9	25	98	2	1	0	12	33	30	1	1	0
Other/unknown	143	97	9	35	142	1	0	0	11	31	27	2	0	0
Starch/fabric finish/sizing	1,167	972	97	95	1,133	27	5	2	49	203	109	15	0	0
Toilet bowl cleaners														
Acid	3,497	1,272	356	1,835	3,309	168	5	9	963	611	1,107	407	21	5
Alkali	1,271	1,026	45	194	1,244	21	4	1	178	423	191	40	3	0
Other/unknown	1,967	1,516	92	344	1,922	43	2	0	226	501	188	36	3	0
Wall/floor/tile cleaners														
Acid	3,230	1,507	252	1,434	3,111	82	13	20	823	564	1,216	273	8	1
Alkali	7,952	5,572	609	1,732	7,681	185	44	36	1,339	1,929	2,076	298	11	1
Anionic/nonionic	1,182	724	95	357	1,134	34	5	8	229	222	220	31	1	0
Cationic	902	606	76	219	866	29	6	1	177	220	237	29	0	0
Ethanol	6	4	0	2	5	1	0	0	2	3	1	1	0	0
Glycol	1,807	1,296	147	356	1,728	53	13	9	219	404	295	53	3	0
Isopropanol	757	598	55	100	734	20	2	0	93	214	139	24	1	0
Methanol	1	0	1	0	1	0	0	0	0	0	0	0	0	0
Other/unknown	617	411	52	152	595	12	6	3	123	146	143	24	0	2
Category total	197,281	117,063	17,103	61,712	188,968	5,732	1,397	959	32,615	39,759	47,002	8,285	354	27

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

Substances Implicated in the Exposure	No. of Exposure	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Industrial cleaners														
Acid	1,519	534	140	828	1,476	32	8	3	518	275	379	206	9	0
Alkali	3,129	869	463	1,753	2,958	100	52	13	1,526	393	1,074	471	20	0
Anionic/nonionic	914	474	100	333	854	44	9	5	224	173	250	39	0	0
Cationic	1,298	457	202	627	1,196	82	11	7	472	186	418	86	2	1
Other/unknown	2,495	1,037	303	1,131	2,383	69	32	9	780	399	728	165	7	1
Category total	9,355	3,371	1,208	4,672	8,867	327	112	37	3,520	1,426	2,849	967	38	2
Cosmetics/personal care products														
Bath oil/bubble bath	7,120	6,610	292	211	7,039	38	9	33	169	1,430	764	17	0	0
Cream/lotion/make-up	18,929	15,557	1,106	2,210	18,329	256	43	289	795	3,453	1,377	115	3	0
Dental care products														
Denture cleaner	1,313	222	52	1,028	1,273	26	5	5	78	292	105	7	0	1
Toothpaste with fluoride	22,291	20,229	856	1,169	21,625	241	59	364	360	5,505	1,262	46	0	0
Toothpaste without fluoride	1,835	1,585	88	161	1,751	23	8	52	32	443	106	8	0	0
Other	1,602	1,026	201	366	1,525	29	0	45	137	311	214	8	3	0
Deodorant	10,095	8,512	653	911	9,497	134	26	434	335	1,639	950	38	1	0
Depilatory	1,375	446	261	654	1,000	80	7	285	296	158	339	141	5	1
Douche	123	98	10	15	121	2	0	0	6	34	8	2	0	0
Eye product	1,618	1,134	114	360	1,588	5	3	22	157	245	204	30	0	0
Hair care products														
Coloring agent	1,937	891	225	804	1,710	25	8	194	375	346	482	106	5	0
Rinse/conditioner/relaxer	3,598	2,720	284	579	3,457	68	3	69	938	818	798	244	3	1
Shampoo	7,824	6,142	593	1,062	7,426	262	20	107	526	1,469	1,367	77	0	0
Spray	2,638	1,679	379	565	2,265	336	18	15	427	579	593	61	9	0
Other	3,289	2,281	306	682	3,104	78	14	91	558	712	600	135	5	0
Lipstick/balm: with camphor	958	894	47	14	938	12	0	8	18	148	30	1	1	0
Lipstick/balm: without camphor	2,729	2,587	91	48	2,697	11	3	18	37	359	81	3	0	0
Mouthwash														
Ethanol	14,394	3,822	2,607	7,873	13,187	1,106	57	28	1,188	2,783	1,247	192	33	2
Non-ethanol	317	121	70	124	283	33	0	0	51	84	39	5	0	0
Fluoride	2,073	1,444	478	151	2,034	20	1	15	34	520	78	5	0	0
Unknown	258	51	107	95	234	15	7	2	39	21	94	6	0	0
Nail products														
Polish	10,451	9,341	644	442	10,332	90	18	9	535	2,179	1,576	52	1	0
Polish remover: acetone	2,950	2,329	253	363	2,859	68	16	4	296	928	525	19	2	0
Polish remover: other	2,147	1,672	218	252	2,076	55	9	6	198	623	427	25	1	0
Polish remover: unknown	9,106	6,789	1,047	1,246	8,801	223	59	12	894	2,391	1,533	75	2	0
Other	3,414	1,911	605	874	3,358	28	5	18	1,036	611	924	246	4	0
Perfume/cologne/aftershave	22,571	19,540	1,729	1,258	21,897	503	109	43	1,326	6,147	4,088	153	7	0
Peroxide	15,950	7,333	1,610	6,889	15,219	378	64	267	1,149	2,868	2,634	212	9	0
Powder: talc	4,071	3,618	217	226	4,008	45	5	12	334	862	929	57	3	0
Powder: without talc	1,412	1,351	24	35	1,406	5	1	0	39	222	298	13	1	0
Soap	17,305	13,407	1,415	2,428	16,614	293	102	286	818	3,519	2,481	134	5	0
Suntan/sunscreen	8,043	6,876	731	416	7,865	31	9	137	365	1,149	1,853	68	2	0
Category total	203,736	152,218	17,313	33,511	195,518	4,519	688	2,870	13,546	42,848	28,006	2,301	105	5
Deodorizers														
Air fresheners	11,935	9,887	1,079	940	11,650	215	48	16	872	2,547	2,392	119	4	3
Diaper pail deodorizer	215	207	2	6	214	1	0	0	7	76	7	2	0	0
Toilet bowl deodorizer	890	804	36	50	884	4	1	1	83	297	73	3	0	0
Other	3,521	2,418	335	746	3,399	72	33	12	554	756	665	72	3	0
Unknown	95	68	8	19	89	4	1	1	13	25	18	2	0	0
Category total	16,656	13,384	1,460	1,761	16,236	296	83	30	1,529	3,701	3,155	198	7	3
Dyes														
Chlorate	2	1	0	1	2	0	0	0	1	0	0	0	0	0
Fabric	773	590	90	90	764	4	1	4	59	215	33	5	0	0
Food	1,181	996	127	53	1,142	25	3	10	31	220	43	4	1	0
Leather	106	87	12	7	105	0	0	1	5	13	7	1	0	0
Other	628	383	149	87	595	11	1	19	71	156	49	11	1	0
Unknown	79	54	9	16	76	0	0	2	9	16	7	0	0	0
Category total	2,769	2,111	387	254	2,684	40	5	36	176	620	139	21	2	0
Essential oils	4,960	3,595	444	898	4,743	103	14	97	590	1,038	1,245	87	4	0

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

Substances Implicated in the Exposure	No. of Exposure	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Fertilizers														
Household plant food	4,380	2,807	521	1,034	4,333	25	13	8	127	877	131	7	1	0
Outdoor fertilizer	3,769	2,627	377	740	3,703	28	18	20	172	807	188	29	1	0
Plant hormone	130	64	11	54	129	1	0	0	28	23	12	1	0	0
Other	481	264	73	140	472	6	3	0	33	81	42	4	0	1
Unknown	2,059	1,399	230	404	2,022	12	8	12	170	377	150	28	2	0
Category total	10,819	7,161	1,212	2,372	10,659	72	42	40	530	2,165	523	69	4	1
Fire extinguishers	3,384	271	1,052	1,988	3,121	108	109	14	881	456	1,087	216	3	0
Food products/poisoning	67,010	19,608	10,782	35,860	63,354	529	847	2,184	5,002	5,905	9,497	2,321	69	3
Foreign bodies/toys/miscellaneous														
Ash	576	495	23	58	570	2	3	1	24	101	43	4	0	0
Bubble blowing solution	5,096	4,788	227	79	5,068	13	7	7	116	697	1,164	17	1	0
Charcoal	844	631	58	150	776	58	4	5	81	146	41	19	19	8
Christmas ornament	1,109	869	74	163	1,103	2	0	3	59	248	77	7	0	0
Coin	3,720	3,032	608	75	3,671	38	3	5	1,154	974	342	44	6	0
Desiccant	35,189	31,869	2,027	1,136	34,906	184	79	7	920	4,673	207	8	2	0
Feces/urine	6,392	5,407	336	626	6,259	24	99	7	148	896	153	20	0	0
Glass	1,947	697	222	999	1,863	21	59	2	237	293	192	28	4	0
Incense, punk	251	216	17	18	247	1	1	2	12	48	18	2	0	0
Soil	2,498	2,183	107	205	2,480	10	2	5	69	404	102	5	0	0
Thermometers	18,265	8,321	4,660	5,000	18,083	133	30	5	1,090	3,084	217	12	0	0
Toy	7,600	4,928	2,382	265	7,486	83	10	19	427	1,120	966	22	0	0
Other	24,163	14,224	6,725	2,998	22,994	532	456	154	2,146	3,709	2,672	222	12	2
Unknown	182	103	30	48	151	9	15	5	31	50	21	1	0	0
Category total	107,832	77,763	17,496	11,820	105,657	1,110	768	227	6,514	16,443	6,215	411	44	10
Fumes/gases/vapors														
Carbon dioxide	626	78	246	290	585	28	6	4	110	135	117	43	0	0
Carbon monoxide	17,174	2,246	3,205	11,340	16,718	369	15	31	5,938	2,582	4,905	1,585	177	25
Chloramine	3,238	102	236	2,845	3,144	82	5	6	749	120	1,220	512	1	0
Chlorine: acid mixed with hypochlorite	435	11	46	376	429	6	0	0	153	14	170	109	0	0
Chlorine: other	5,957	453	1,110	4,319	5,789	106	11	43	1,774	274	2,308	1,091	12	0
Hydrogen sulfide	1,382	162	190	1,000	1,375	2	1	3	351	145	350	113	10	3
Methane and natural gas	4,738	791	965	2,912	4,704	25	2	2	1,139	1,008	1,254	215	12	1
Polymer fume fever	6	0	1	5	6	0	0	0	2	2	0	1	0	0
Propane/simple asphyxiant	2,632	242	623	1,702	2,388	224	8	10	865	279	796	264	9	4
Other	2,172	235	322	1,574	2,091	42	7	24	743	198	564	205	11	7
Unknown	1,494	102	196	1,123	1,439	14	7	4	365	148	361	133	2	0
Category total	39,854	4,422	7,140	27,486	38,668	898	62	127	12,189	4,905	12,045	4,271	234	40
Heavy metals														
Aluminum	939	444	79	408	893	17	13	8	123	152	52	15	2	0
Arsenic (excluding pesticide)	1,022	119	85	790	729	34	149	18	573	148	118	74	7	2
Barium	28	5	4	18	23	0	0	3	15	4	8	1	1	0
Cadmium	94	10	6	77	85	0	3	1	57	14	13	7	2	0
Copper	1,129	208	369	526	1,030	61	8	22	317	169	318	62	6	0
Fireplace flame colors	13	11	2	0	13	0	0	0	2	4	4	0	0	0
Gold	4	1	0	3	3	0	0	1	0	1	0	0	0	0
Lead	2,918	1,362	445	1,069	2,802	51	22	6	1,080	556	165	80	12	1
Manganese	69	13	25	30	59	5	0	1	37	2	16	9	1	0
Mercury	4,186	980	1,239	1,843	3,950	131	43	25	1,095	1,412	103	40	4	1
Metal fume fever	988	14	60	907	977	2	0	8	273	22	257	131	2	0
Selenium	139	57	11	71	117	7	0	13	37	31	21	1	1	0
Thallium	66	10	3	50	43	5	7	6	29	4	4	7	1	1
Other	834	194	113	463	746	27	12	41	359	113	165	61	5	0
Unknown	40	6	2	31	32	2	2	1	21	2	4	1	2	0
Category total	12,469	3,434	2,443	6,286	11,502	342	259	154	4,018	2,634	1,248	489	46	5
Hydrocarbons														
Benzene	211	17	18	155	206	4	0	0	118	19	70	24	1	1
Carbon tetrachloride	46	5	6	32	43	2	1	0	27	14	9	5	2	0
Diesel fuel	1,251	208	252	754	1,206	34	6	3	303	305	351	62	2	0
Fluorochlorocarbon/propellant	6,862	584	980	5,145	6,516	265	29	39	1,365	1,227	1,485	401	26	3

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

Substances Implicated in the Exposure	No. of Exposure	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Gasoline	20,003	5,859	3,730	10,239	18,761	1,092	89	30	3,127	3,239	7,650	675	31	0
Halogenated hydrocarbon: other	638	143	75	411	594	33	2	6	285	72	205	71	5	0
Kerosene	2,613	1,434	333	830	2,522	69	17	2	768	588	775	212	16	1
Lighter fluid/naphtha	3,708	1,993	404	1,280	3,473	170	46	15	1,087	882	1,027	224	15	3
Lubricating oil/motor oil	3,659	2,461	309	872	3,554	74	28	0	556	1,240	589	77	2	0
Mineral seal oil	183	153	6	24	179	2	1	1	17	94	16	1	1	0
Mineral spirits/varsol	4,223	1,860	566	1,763	3,960	180	53	21	983	897	1,112	207	18	2
Toluene/xylene	2,112	495	278	1,312	1,931	144	14	17	937	251	695	268	18	3
Turpentine	828	285	142	390	740	73	10	3	205	175	223	30	6	1
Other	6,405	3,212	746	2,366	6,134	178	42	40	1,458	1,545	1,281	407	19	2
Unknown	7,147	4,709	544	1,846	6,952	116	52	20	2,128	2,013	1,716	534	51	0
Category total	59,889	23,418	8,389	27,419	56,771	2,436	390	197	13,364	12,561	17,204	3,198	213	16
Lacrimators														
Lacrimator: CN	1,804	423	575	749	1,440	61	259	16	272	39	846	82	2	0
Lacrimator: CR	1	0	1	0	1	0	0	0	0	0	0	0	0	0
Lacrimator: CS	101	38	40	23	98	2	1	0	8	0	63	2	0	0
Other	101	9	13	77	98	1	0	2	25	5	26	4	1	0
Unknown	177	36	64	75	155	3	13	2	31	4	82	6	0	0
Category total	2,184	506	693	924	1,792	67	273	20	336	48	1,017	94	3	0
Matches/fireworks/explosives														
Explosive	236	121	60	52	217	11	2	3	55	52	42	8	1	0
Firework	514	406	73	30	501	7	4	2	62	143	68	12	1	0
Match	1,466	1,362	48	54	1,451	12	3	0	58	364	30	3	1	0
Other	61	33	9	19	58	2	0	1	17	11	9	6	0	0
Unknown	3	2	0	1	3	0	0	0	2	0	0	2	0	0
Category total	2,280	1,924	190	156	2,230	32	9	6	194	570	149	31	3	0
Mushrooms														
Coprine	8	3	3	2	7	0	0	1	2	3	1	0	0	0
Cyclopeptide	30	10	4	16	22	8	0	0	22	6	8	6	1	0
Gastrointestinal irritant	160	63	32	64	135	23	0	0	67	37	47	23	1	0
Hallucinogenic	623	42	329	244	125	489	6	0	420	39	123	238	8	0
Ibotenic acid	23	2	4	17	10	13	0	0	17	0	6	7	1	0
Miscellaneous, nontoxic	191	95	16	79	180	4	0	6	42	57	40	6	2	0
Monomethylhydrazine	36	2	4	29	34	2	0	0	17	2	19	6	0	0
Muscarine	2	1	1	0	2	0	0	0	0	0	0	0	0	0
Orellanine	1	0	0	1	1	0	0	0	1	0	1	0	0	0
Other potentially toxic	12	6	4	2	12	0	0	0	5	4	1	1	0	0
Unknown	8,308	6,233	1,089	958	7,586	635	12	54	2,334	4,487	741	301	15	0
Category total	9,394	6,457	1,486	1,412	8,114	1,174	18	61	2,927	4,635	987	588	28	0
Paints and stripping agents														
Paints														
Anti-algae	13	0	1	12	13	0	0	0	4	1	3	1	0	0
Anti-corrosion	83	26	15	41	81	2	0	0	21	5	24	8	0	0
Oil-base	3,895	1,124	802	1,883	3,622	187	52	29	815	523	1,067	207	49	0
Water-base	4,867	3,645	323	877	4,793	28	11	34	354	826	318	57	3	0
Stains	1,026	406	86	520	1,002	11	4	9	165	154	231	38	2	0
Stripping agents														
Methylene chloride	1,052	166	87	786	1,023	19	2	8	349	73	401	104	6	0
Other	803	143	70	580	775	17	0	10	251	69	250	101	3	0
Unknown	284	65	30	188	275	7	1	1	95	30	90	30	1	0
Varnish, lacquer	805	241	88	465	778	15	5	4	193	103	207	50	4	0
Other paint/varnish/lacquer	1,124	543	112	461	1,086	24	7	7	198	171	193	40	1	0
Unknown paint/varnish/lacquer	9,622	5,960	867	2,727	9,379	163	24	48	1,209	1,497	917	228	12	0
Category total	23,574	12,319	2,481	8,540	22,827	473	106	150	3,654	3,452	3,701	864	81	0
Pesticides														
Fungicides (non-medicinal)														
Carbamate	227	66	21	136	220	1	2	4	65	43	34	23	0	0
Mercurial	7	6	0	1	7	0	0	0	2	2	0	0	0	0
Non-mercurial	314	67	27	215	297	4	1	12	101	48	76	14	0	0
Phthalimide	152	81	12	58	150	1	1	0	30	32	15	5	0	0
Wood preservative	575	130	44	384	562	4	0	9	144	72	114	28	1	1
Other/unknown	390	113	58	194	377	7	0	5	85	69	82	13	0	0

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

Substances Implicated in the Exposure	No. of Exposure	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Herbicides														
Carbamate	26	7	3	16	25	0	0	1	13	3	7	2	0	0
Chlorophenoxy	2,154	663	217	1,215	2,080	23	12	38	518	351	377	96	6	1
Diquat	167	67	15	85	162	3	0	2	37	36	27	5	0	1
Paraquat	93	10	7	75	82	4	4	3	66	9	21	11	1	2
Paraquat/diquat	2	0	0	2	2	0	0	0	0	0	1	0	0	0
Triazine	361	72	28	246	351	4	2	4	111	38	77	22	2	0
Urea	71	17	9	44	69	2	0	0	32	11	13	2	0	0
Other	6,082	1,697	572	3,715	5,660	72	24	309	1,232	1,492	1,266	168	10	2
Unknown	292	82	55	153	268	7	6	10	76	37	49	11	0	1
Insecticides														
Arsenic pesticide	358	291	19	46	352	4	2	0	34	145	8	2	0	0
Borate/boric acid	2,614	2,167	116	322	2,567	34	5	4	219	649	90	19	1	0
Carbamate only	2,746	1,145	272	1,290	2,590	97	26	28	610	520	388	141	7	0
Carbamate with other insecticide	700	253	90	347	667	17	6	9	100	133	135	36	1	0
Chlorinated hydrocarbon only	2,064	818	353	867	1,918	64	4	73	699	573	400	67	37	0
Chlorinated hydrocarbon with other insecticide	141	41	18	77	132	6	2	1	34	22	29	5	0	0
Metaldehyde	262	159	26	74	252	8	0	2	41	75	17	3	2	0
Nicotine	7	3	1	3	7	0	0	0	1	3	3	0	0	0
Organophosphate	10,073	3,224	841	5,801	9,609	276	62	100	2,720	1,902	1,635	517	89	5
Organophosphate/carbamate	308	99	43	165	294	10	0	4	48	58	62	11	0	0
Organophosphate/ chlorinated hydrocarbon	157	25	31	99	150	4	0	3	33	31	30	11	1	0
Organophosphate/other insecticide	1,290	446	122	711	1,238	29	7	14	262	222	276	75	5	0
Organophosphate/carbamate/ chlorinated hydrocarbon	46	9	4	31	44	2	0	0	11	9	11	1	0	0
Piperonyl butoxide only	189	67	31	87	172	3	3	9	51	30	41	11	0	0
Piperonyl butoxide/pyrethrin	6,379	2,337	814	3,160	5,945	180	52	198	1,208	1,038	1,304	382	9	0
Pyrethrins only	7,380	2,589	921	3,785	6,914	212	30	219	1,617	1,192	1,499	410	14	0
Rotenone	82	22	11	49	80	1	0	1	12	15	17	3	0	0
Veterinary insecticide	4,140	2,124	517	1,470	3,990	71	14	63	472	882	624	82	4	0
Other	3,627	2,400	244	925	3,533	41	14	30	491	716	309	81	4	1
Unknown	3,650	1,042	396	2,152	3,371	118	91	56	954	497	627	201	13	0
Repellents														
Insect repellent	6,135	4,415	976	718	5,855	56	37	184	545	1,282	1,198	88	5	0
Naphthalene	1,659	1,310	98	240	1,626	19	10	3	371	726	103	16	0	0
Paradichlorobenzene	43	31	3	9	43	0	0	0	3	13	6	0	0	0
Other moth repellent	78	63	4	11	78	0	0	0	3	20	7	0	0	0
Unknown moth repellent	2,439	1,716	161	517	2,371	46	14	6	462	880	173	28	1	0
Rodenticides														
ANTU	2	2	0	0	2	0	0	0	0	1	0	0	0	0
Anticoagulant: warfarin-type	1,181	1,026	37	111	1,122	47	10	1	366	414	17	14	1	1
Anticoagulant: long-acting, superwarfarin	16,006	14,354	476	1,107	15,411	477	95	7	4,974	5,684	216	83	35	0
Cyanide	1	1	0	0	1	0	0	0	0	0	0	0	0	0
Monofluoroacetate	9	3	3	3	5	3	1	0	5	2	2	0	3	0
Strychnine	149	20	10	113	75	41	24	2	86	21	15	15	12	1
Vacor	2	1	1	0	1	0	1	0	1	1	0	0	0	0
Other	771	524	58	171	713	40	11	4	237	236	22	20	6	0
Unknown	1,279	898	76	285	1,078	135	55	2	588	417	44	22	9	1
Category total	86,880	46,703	7,841	31,285	82,518	2,173	628	1,420	19,770	20,652	11,467	2,744	279	17
Photographic products														
Developer/fixing/stop bath	533	60	173	290	511	5	5	12	172	61	174	26	2	0
Photographic coating fluid	7	4	0	3	7	0	0	0	3	1	3	0	0	0
Other	417	169	66	179	404	9	1	2	76	79	92	14	0	0
Unknown	20	2	8	9	20	0	0	0	4	1	5	1	0	0
Category total	977	235	247	481	942	14	6	14	255	142	274	41	2	0

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

Substances Implicated in the Exposure	No. of Exposure	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Plants														
Amygdalin/cyanogenic glycoside	2,970	2,148	488	317	2,872	44	1	43	119	619	87	11	0	0
Anticholinergic	1,036	363	431	233	555	457	5	13	511	209	139	302	35	3
Cardiac glycoside	2,297	1,589	345	355	2,179	96	5	15	269	737	116	18	6	0
Colchicine	21	15	0	6	19	1	0	1	7	9	0	1	0	0
Depressant	92	37	10	44	56	30	1	5	38	20	17	7	3	0
Dermatitis	22,854	10,370	4,169	8,043	20,917	462	571	830	1,841	2,085	5,858	744	17	1
Gastrointestinal irritant	18,124	14,795	1,467	1,781	17,582	316	15	197	1,027	4,585	1,271	199	3	1
Hallucinogenic	360	160	72	125	237	85	1	36	116	72	37	56	4	0
Nicotine	285	95	65	118	277	1	3	4	120	35	106	20	0	0
Non-toxic	17,996	15,159	1,530	1,223	17,562	153	19	250	473	2,510	651	85	3	0
Oxalate	12,360	10,981	815	538	12,180	150	1	25	408	3,628	1,501	70	0	0
Solanine	1,616	1,313	113	179	1,569	19	1	27	155	603	94	16	0	0
Stimulant	299	171	48	77	260	26	1	12	81	95	29	15	1	0
Toxalbumin	231	98	47	83	200	28	1	2	107	97	32	13	0	0
Other toxic	3,745	2,856	368	504	3,555	89	5	92	332	928	309	81	9	0
Unknown	22,099	15,469	2,873	3,635	21,371	381	43	282	1,472	5,161	1,489	260	13	1
Category total	106,385	75,619	12,841	17,261	101,391	2,338	673	1,834	7,076	21,393	11,736	1,898	94	6
Polishes and waxes	6,867	5,432	444	953	6,682	136	20	26	861	2,265	1,075	126	6	0
Radioisotopes	219	15	18	170	192	1	1	15	82	34	12	8	3	0
Sporting equipment														
Fishing bait	53	36	9	7	51	0	1	1	7	13	4	0	0	0
Fishing product: other	17	12	0	5	17	0	0	0	4	7	2	0	0	0
Golf ball	46	5	31	8	41	4	1	0	9	4	20	1	0	0
Golf product: other	1	1	0	0	1	0	0	0	1	0	0	0	0	0
Gun bluing	48	19	3	24	44	4	0	0	25	13	13	5	0	0
Hunting product: other	378	191	101	84	348	12	17	0	110	126	29	8	0	0
Other	233	148	55	28	223	8	1	1	34	75	17	1	0	0
Unknown	5	2	2	1	5	0	0	0	1	5	0	0	0	0
Category total	781	414	201	157	730	28	20	2	191	243	85	15	0	0
Swimming pool/aquarium	7,126	3,458	1,224	2,341	6,973	72	7	73	1,187	1,194	1,811	480	7	0
Tobacco products	7,847	6,983	239	607	7,592	153	37	51	1,458	2,778	1,821	144	7	0
Other/unknown nondrug substances	15,749	6,856	2,583	6,045	13,819	327	1,046	353	2,915	2,408	2,247	562	52	2
Total number of nonpharmaceuticals	1,314,886	693,491	175,342	434,464	1,228,877	61,681	9,283	12,625	217,484	230,881	231,335	53,013	4,124	299
% of nonpharmaceuticals		52.7%	13.3%	33.0%	93.5%	4.7%	0.7%	1.0%	16.5%	17.6%	17.6%	4.0%	0.3%	0.0%
% of all substances	54.2%	28.6%	7.2%	17.9%	50.6%	2.5%	0.4%	0.5%	9.0%	9.5%	9.5%	2.2%	0.2%	0.0%

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

Substances Implicated in the Exposure	No. of Exposure	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 formulation	28,009	6,333	10,336	11,124	12,981	14,638	17	256	16,635	8,381	4,168	1,961	547	56
Pediatric formulation	20,629	18,343	1,988	279	20,130	388	10	90	2,518	4,874	347	81	22	1
Unknown formulation	7,733	1,712	2,615	3,294	3,148	4,417	2	90	5,159	2,186	1,385	763	287	42
Acetaminophen in combination with:														
Aspirin with other ingredient	5,925	1,953	1,875	2,055	3,052	2,620	4	220	2,944	1,641	1,217	383	26	2
Aspirin without other ingredient	23	12	4	7	13	9	0	0	11	4	5	0	0	1
Codeine	5,812	1,045	1,166	3,536	2,456	2,936	5	373	3,356	1,293	1,455	537	111	9
Oxycodone	4,171	477	573	3,052	1,617	2,174	1	327	2,234	697	978	421	108	8
Propoxyphene	5,578	647	773	4,096	1,915	3,384	1	219	3,691	1,170	1,519	678	171	23
Other opioid	13,857	1,321	2,207	10,136	4,919	7,816	16	944	8,038	2,386	3,369	1,457	403	45
Other drug: adult formulation	16,058	2,358	4,014	9,515	5,301	10,317	3	319	10,693	3,563	4,192	1,934	333	23
Other drug: pediatric formulation	271	200	58	13	257	3	0	9	25	66	34	2	0	0
Aspirin alone														
Adult formulation	5,283	1,657	1,708	1,878	2,621	2,521	5	112	2,927	1,543	891	578	44	13
Pediatric formulation	589	438	88	62	532	47	0	10	125	196	52	7	0	0
Unknown formulation	10,777	2,040	3,857	4,760	3,789	6,702	5	197	7,537	2,685	2,325	1,744	253	39
Aspirin in combination with:														
Codeine	368	59	47	253	124	221	0	16	247	64	92	58	16	0
Oxycodone	205	22	31	148	74	118	0	11	113	29	45	21	10	0
Propoxyphene	47	11	6	30	24	20	0	2	29	12	12	9	1	1
Other opioid	28	4	6	18	10	18	0	0	15	6	4	5	1	0
Other drug: adult formulation	2,145	387	506	1,229	902	1,119	5	96	1,254	473	510	225	53	2
Other drug: pediatric formulation	4	4	0	0	4	0	0	0	1	1	1	1	0	0
Nonaspirin salicylate	1,129	593	153	381	848	224	0	52	369	315	161	61	6	0
Opioids														
Codeine	1,283	489	275	507	806	371	4	92	438	252	226	85	11	3
Meperidine	674	74	100	491	246	307	2	106	395	105	152	129	32	2
Methadone	1,436	114	138	1,159	455	827	9	104	1,035	130	245	351	157	26
Morphine	1,531	146	173	1,181	649	703	6	141	886	191	268	262	87	21
Oxycodone	2,885	283	289	2,259	1,315	1,296	8	218	1,559	396	660	394	126	16
Pentazocine	196	11	26	156	60	103	0	30	108	23	49	29	8	0
Propoxyphene	561	56	57	441	181	350	0	22	366	87	138	85	38	8
Other/unknown	3,661	415	449	2,740	1,356	1,721	12	489	2,076	504	803	560	258	38
Other nonsteroidal antiinflammatory drugs														
Colchicine	159	48	12	96	105	33	0	19	102	49	29	16	4	6
Ibuprofen	57,876	32,987	12,459	12,131	41,216	15,539	36	942	16,790	16,233	5,500	1,571	225	5
Indomethacin	676	165	97	407	350	246	1	74	321	168	141	45	12	0
Other	22,479	6,013	4,705	11,557	12,456	8,371	12	1,513	9,529	5,946	3,503	1,372	260	13
Unknown	5	1	2	2	3	2	0	0	3	2	1	1	0	0
Phenacetin	4	0	2	2	1	2	0	1	3	1	1	1	0	0
Phenazopyridine	949	672	101	168	811	84	1	52	240	329	119	29	2	0
Salicylamide	78	58	11	8	62	14	0	2	26	29	9	1	0	0
Other	4,471	862	548	2,997	2,154	1,793	2	485	2,198	808	1,235	500	126	2
Unknown	173	28	65	77	54	110	0	7	111	34	43	18	2	0
Category total	227,738	82,038	51,520	92,245	126,997	91,564	167	7,640	104,107	56,872	35,884	16,375	3,740	405
Anesthetics														
Inhalation anesthetics														
Nitrous oxide	217	17	70	125	101	73	1	41	99	16	42	36	6	2
Other	234	24	33	171	180	17	4	32	125	20	73	33	8	1
Unknown	8	0	0	8	3	2	0	3	8	0	1	1	1	1
Ketamine and analogs	380	7	113	252	53	309	8	4	330	27	78	137	24	3
Local/topical	7,002	4,770	625	1,562	6,448	206	16	324	1,219	2,382	851	175	30	5
Other	44	6	5	31	32	2	0	9	35	8	10	10	1	0
Unknown	8	1	2	5	5	1	1	1	3	0	2	0	0	0
Category total	7,893	4,825	848	2,154	6,822	610	30	414	1,819	2,453	1,057	392	70	12
Anticholinergic drugs	5,314	1,490	701	3,072	3,183	1,760	2	293	2,809	1,351	995	797	189	7
Anticoagulants														
Heparin	138	23	6	101	100	9	0	29	77	17	16	22	6	0
Warfarin (excluding rodenticide)	2,139	770	85	1,268	1,703	331	2	90	915	613	118	213	64	7
Other	582	161	21	398	496	56	0	29	198	187	51	31	6	0
Unknown	12	7	0	5	9	3	0	0	9	5	1	1	0	0
Category total	2,871	961	112	1,772	2,308	399	2	148	1,199	822	186	267	76	7

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

Substances Implicated in the Exposure	No. of Exposure	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Anticonvulsants														
Carbamazepine	6,096	1,641	1,282	3,125	3,767	2,011	5	242	3,737	1,273	1,508	993	309	8
Phenytoin	4,021	706	353	2,915	2,226	1,369	0	332	2,614	885	931	683	138	2
Succinimide	83	40	23	20	75	8	0	0	20	24	8	3	0	0
Valproic acid	9,514	1,042	2,326	6,048	3,880	5,204	7	319	6,414	2,360	2,283	1,402	373	16
Other	8,111	984	1,314	5,735	3,423	4,171	9	427	5,231	1,879	1,979	1,162	357	16
Unknown	15	5	2	8	7	6	0	1	8	3	7	1	0	1
Category total	27,840	4,418	5,300	17,851	13,378	12,769	21	1,321	18,024	6,424	6,716	4,244	1,177	43
Antidepressants														
Cyclic antidepressants														
Amitriptyline	7,961	958	1,021	5,887	2,420	5,202	4	190	6,388	1,131	1,811	2,105	928	68
Amoxapine	49	6	5	38	14	29	0	6	33	10	8	8	8	0
Desipramine	297	36	46	209	117	159	0	15	205	47	58	67	23	4
Doxepin	1,769	125	158	1,471	438	1,253	2	48	1,414	247	425	438	212	13
Imipramine	1,428	328	458	636	781	573	1	63	889	384	287	235	76	10
Maprotilline	24	3	5	16	7	15	1	1	19	7	7	4	3	0
Nortriptyline	1,198	147	157	884	479	646	2	52	806	213	247	232	96	4
Protriptyline	20	2	5	13	9	9	0	2	15	4	6	2	1	0
Other cyclic antidepressant	824	65	99	647	411	363	1	36	498	152	214	149	47	11
Unknown cyclic antidepressant	20	3	7	10	7	12	1	0	19	1	4	8	3	0
Cyclic antidepressant formulated with a benzodiazepine	96	14	11	71	41	54	0	0	67	21	16	13	14	0
Cyclic antidepressant formulated with a phenothiazine	184	33	12	138	82	98	1	2	129	45	38	44	7	1
Lithium	4,663	288	804	3,507	1,629	2,479	6	434	3,617	876	1,075	1,141	267	13
MAO inhibitor	360	38	14	305	192	118	0	48	230	75	57	70	31	4
SSRI	36,672	5,651	9,010	21,554	12,696	22,186	29	1,519	24,561	10,030	8,440	4,665	894	54
Trazodone	12,656	897	1,830	9,751	3,427	8,681	9	430	9,414	2,569	3,955	1,981	382	25
Other	15,703	2,114	3,134	10,269	5,748	9,110	5	728	11,157	3,811	3,662	2,740	753	35
Unknown	39	2	11	23	11	26	0	1	25	5	10	5	1	0
Category total	83,963	10,710	16,787	55,429	28,509	51,013	62	3,575	59,486	19,628	20,320	13,907	3,746	242
Antihistamines														
Diphenhydramine	25,820	11,968	4,525	9,135	16,608	8,497	14	599	10,587	6,139	4,953	2,626	355	13
H2 receptor antagonist	6,639	3,633	776	2,188	5,197	1,174	3	241	1,817	1,901	627	289	59	1
Other	26,333	11,305	6,627	8,247	18,838	6,608	12	762	9,491	7,459	3,786	1,909	306	16
Category total	58,792	26,906	11,928	19,570	40,643	16,279	29	1,602	21,895	15,499	9,366	4,824	720	30
Antimicrobials														
Antibiotics														
Systemic	35,675	17,815	6,278	11,331	26,106	5,579	21	3,881	7,718	6,916	3,940	1,232	152	10
Topical	7,181	5,510	477	1,162	6,999	47	2	126	186	1,267	320	28	1	0
Unknown	816	235	235	339	414	250	4	144	296	124	160	36	7	0
Antifungals														
Systemic	1,276	632	159	475	973	113	1	183	292	320	117	49	10	0
Topical	7,739	5,870	392	1,449	7,513	65	6	151	323	1,453	492	37	2	0
Unknown	16	6	2	8	13	3	0	0	2	1	3	0	0	0
Anthelmintics														
Diethylcarbamazine	164	96	10	58	159	4	0	0	10	51	2	1	0	0
Piperazine	435	308	44	79	417	10	2	4	51	137	17	3	0	0
Other	882	529	82	266	838	8	2	32	162	210	105	24	3	0
Unknown	15	8	2	5	15	0	0	0	4	6	0	1	0	0
Antiparasitics														
Antimalarial	427	119	70	236	303	70	0	48	187	126	51	42	9	3
Metronidazole	1,346	328	196	812	816	289	2	232	389	256	191	60	7	0
Other	142	79	10	51	116	8	1	17	20	32	7	4	1	0
Antituberculars														
Isoniazid	422	61	176	181	165	223	0	30	321	109	54	60	87	1
Rifampin	60	20	10	29	41	8	0	11	25	11	13	2	1	0
Other	35	4	3	25	20	6	0	9	17	5	6	2	1	0
Antivirals														
Systemic	1,822	538	187	1,081	1,126	515	2	168	785	458	263	146	28	5
Topical	42	21	3	17	35	1	0	6	3	12	3	2	0	0
Unknown	64	25	5	33	39	18	0	7	28	15	10	3	3	0
Other	185	137	15	33	168	9	0	8	32	51	15	4	0	0
Unknown	21	4	4	13	10	8	0	3	9	3	7	2	0	0
Category total	58,765	32,345	8,360	17,683	46,286	7,234	43	5,060	10,860	11,563	5,776	1,738	312	19

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

Substances Implicated in the Exposure	No. of Exposure	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Antineoplastics	1,431	441	105	862	1,184	95	9	134	513	399	153	100	24	2
Asthma therapies														
Aminophylline/theophylline	1,395	261	131	999	941	325	0	114	793	311	212	298	77	10
Terbutaline and other beta-2 agonists	8,529	6,386	1,233	891	7,678	512	17	302	1,924	2,427	1,219	602	21	0
Other beta agonist	2,657	585	669	1,374	1,182	1,209	4	239	1,470	504	551	523	43	2
Other	4,982	3,573	766	633	4,566	332	4	71	879	1,758	254	92	14	0
Unknown	12	4	3	5	5	5	0	2	6	1	5	1	0	0
Category total	17,575	10,809	2,802	3,902	14,372	2,383	25	728	5,072	5,001	2,241	1,516	155	12
Cardiovascular drugs														
ACE inhibitor	8,715	3,218	565	4,875	6,974	1,469	0	243	3,396	3,488	655	669	128	13
Alpha blocker	1,591	483	85	1,020	1,307	201	0	76	684	589	189	162	19	4
Antiarrhythmic: other	1,167	250	47	863	1,030	92	0	39	460	439	75	87	33	5
Antihypertensive	7,281	2,399	2,009	2,833	5,496	1,542	11	170	4,045	2,132	1,315	1,243	189	7
Beta blocker	11,064	2,829	1,076	7,070	8,225	2,491	2	292	5,399	4,249	936	1,172	307	18
Calcium antagonist	8,975	2,201	516	6,182	6,957	1,743	2	227	4,729	3,462	803	986	317	44
Cardiac glycoside	2,960	843	102	1,986	2,371	295	1	252	1,535	939	208	508	154	11
Hydralazine	214	67	22	124	180	29	0	4	110	88	25	21	2	0
Long-acting nitrate	737	232	26	459	630	94	1	8	280	300	64	55	13	3
Nitroglycerin	2,112	1,111	119	865	1,756	299	6	43	717	990	176	109	24	1
Nitroprusside	42	4	4	34	18	0	0	24	40	3	4	14	4	0
Vasodilator: other	336	137	24	171	279	37	0	17	115	122	36	21	2	0
Vasodilator: unknown	4	1	1	2	3	1	0	0	1	1	1	0	0	0
Vasopressor	6	0	0	6	2	1	0	3	6	0	4	0	0	0
Other	4,699	1,749	481	2,436	3,953	550	4	177	1,424	1,380	451	303	63	1
Unknown	29	9	3	15	16	10	1	2	18	8	6	0	1	1
Category total	49,932	15,533	5,080	28,941	39,197	8,854	28	1,577	22,959	18,190	4,948	5,350	1,256	108
Cold and cough preparations	98,008	61,034	19,824	16,866	81,519	13,393	63	2,835	21,554	24,360	14,600	3,992	283	6
Diagnostic agents	475	86	45	332	408	10	0	56	191	58	89	36	6	2
Dietary supplements/ herbals/homeopathic	16,929	7,387	2,730	6,684	9,986	4,713	370	1,674	7,060	3,374	2,299	2,483	641	15
Diuretics														
Furosemide	2,502	953	189	1,336	2,069	356	2	60	962	817	315	197	33	2
Thiazide	2,423	899	204	1,306	1,899	445	1	69	919	840	234	183	34	2
Other	1,844	696	159	979	1,461	288	1	83	630	604	189	120	27	3
Unknown	351	152	18	179	279	50	2	18	149	130	42	30	3	0
Category total	7,120	2,700	570	3,800	5,708	1,139	6	230	2,660	2,391	780	530	97	7
Electrolytes and minerals														
Calcium	4,266	3,486	312	455	4,081	128	3	53	301	844	148	36	7	0
Fluoride	3,681	3,228	318	131	3,617	33	0	30	191	1,028	337	15	1	0
Iron	3,648	2,217	506	900	2,988	557	1	94	1,159	1,115	443	131	17	0
Magnesium	630	244	97	280	524	62	5	37	166	167	84	35	3	1
Potassium	1,681	644	129	897	1,387	217	5	60	573	536	149	103	18	3
Sodium	2,735	1,849	508	363	2,594	102	20	15	277	608	414	27	1	1
Zinc	1,684	964	171	535	1,523	69	1	86	242	274	219	52	3	0
Other	715	455	80	176	575	77	1	59	152	203	68	21	2	0
Unknown	12	5	0	7	11	0	0	1	3	2	0	2	0	0
Category total	19,052	13,092	2,121	3,744	17,300	1,245	36	435	3,064	4,777	1,862	422	52	5
Eye/ear/nose/throat preparations														
Nasal preparations														
Tetrahydrozoline	54	41	4	9	51	1	0	2	21	29	3	0	0	0
Other decongestant	2,053	966	228	851	1,869	68	10	102	343	639	294	57	5	0
Other	558	366	40	148	540	2	0	16	25	99	73	8	1	0
Unknown	8	4	1	3	6	0	0	2	2	1	2	0	0	0
Ophthalmic preparations														
Contact lens product	2,677	1,700	209	752	2,641	16	6	13	233	349	383	62	0	0
Glaucoma therapy	113	34	7	71	97	2	0	12	29	29	16	6	0	0
Tetrahydrozoline	1,487	1,009	159	310	1,328	65	75	14	456	744	119	35	2	0
Other sympathomimetic	517	276	70	168	430	20	21	45	147	196	82	11	1	0
Other	1,178	597	114	456	1,071	20	5	78	141	168	155	24	4	0
Unknown	17	7	3	7	11	3	0	3	4	2	1	0	0	0

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

Substances Implicated in the Exposure	No. of Exposure	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Otic preparations														
Combination product	1,177	864	130	179	1,167	2	0	8	101	333	226	17	0	0
Other	2,502	1,190	236	1,059	2,477	10	3	12	260	364	724	58	0	0
Unknown	30	12	5	13	30	0	0	0	3	5	11	0	0	0
Steroid, topical for eye/nose/throat	620	322	80	214	575	16	0	26	43	85	106	14	0	0
Throat preparations														
Lozenge without local anesthetic	706	559	71	71	662	16	0	26	35	145	46	4	0	0
Lozenge with local anesthetic	230	140	55	35	209	15	0	6	19	59	13	3	1	0
Other	335	183	90	61	286	36	2	11	64	113	52	4	0	0
Unknown	2	1	0	1	2	0	0	0	1	0	1	0	0	0
Category total	14,264	8,271	1,502	4,408	13,452	292	122	376	1,927	3,360	2,307	303	14	0
Gastrointestinal preparations														
Antacids														
Salicylate-containing	2,308	1,788	253	260	2,114	88	1	103	190	587	101	15	1	0
Other	18,234	16,580	705	919	17,856	206	15	140	534	2,912	394	49	3	1
Antidiarrheals														
Diphenoxylate/atropine	1,099	513	131	447	782	230	1	73	530	361	169	84	18	2
Non-opioid	654	495	48	109	596	36	1	17	89	173	34	10	0	0
Paregoric	37	19	5	13	23	10	0	4	16	12	7	3	1	0
Other opioid	224	145	20	59	191	23	1	9	48	104	19	5	1	0
Antispasmodics														
Anticholinergic	1,149	330	214	594	584	485	0	73	643	335	220	134	33	0
Other	16	5	2	8	12	2	0	1	7	2	1	2	1	0
Laxative	13,183	9,202	1,277	2,642	11,850	802	152	354	1,603	2,210	1,789	252	18	1
Other	9,265	6,376	592	2,239	7,947	867	9	412	1,993	2,290	676	393	68	7
Unknown	2,189	981	197	990	1,623	438	1	115	676	662	217	116	33	2
Category total	48,358	36,434	3,444	8,280	43,578	3,187	181	1,301	6,329	9,648	3,627	1,063	177	13
Hormones and hormone antagonists														
Androgen	508	232	53	223	341	125	2	34	155	108	40	37	7	0
Corticosteroid	10,102	5,773	1,238	3,041	8,813	601	5	662	1,141	1,764	678	230	34	0
Estrogen	4,124	2,720	211	1,177	3,741	292	3	82	676	976	208	114	34	2
Insulin	1,445	83	96	1,245	1,044	332	9	43	603	452	86	270	39	3
Oral contraceptive	9,107	7,527	892	657	8,460	500	8	125	745	1,776	321	37	2	0
Oral hypoglycemics	6,910	2,493	513	3,865	5,388	1,284	3	211	4,103	2,934	584	1,029	159	3
Progestin	1,261	633	182	442	1,057	110	2	88	219	278	63	32	9	0
Thyroid preparation	8,205	4,530	711	2,934	7,302	748	3	125	1,768	1,965	385	252	70	1
Other hormone	1,991	920	386	670	1,443	453	5	85	596	544	253	96	11	0
Other hormone antagonist	366	127	47	187	305	47	0	13	85	81	33	5	1	0
Unknown hormone or antagonist	16	7	1	7	10	4	0	2	9	4	2	1	0	0
Category total	44,035	25,045	4,330	14,448	37,904	4,496	40	1,470	10,100	10,882	2,653	2,103	366	9
Miscellaneous drugs														
Allopurinol	378	174	27	175	321	46	0	9	104	130	30	15	5	1
Disulfiram	382	23	14	332	105	219	6	47	229	42	85	59	18	0
L-dopa and related drug	786	245	20	514	670	76	1	33	282	259	115	49	10	1
Ergot alkaloid	385	195	39	150	275	80	0	28	236	149	55	32	5	0
Neuromuscular blocking agent	31	1	1	29	18	1	0	12	23	0	2	10	3	1
Nicotine pharmaceutical	743	257	77	402	483	72	3	183	175	178	138	56	3	0
Other	12,917	5,541	1,440	5,831	10,546	1,403	60	856	3,475	3,070	1,975	727	100	5
Category total	15,622	6,436	1,618	7,433	12,418	1,897	70	1,168	4,524	3,828	2,400	948	144	8
Muscle relaxants														
Carisoprodol (formulated alone)	6,126	311	605	5,131	1,427	4,461	8	144	4,786	693	2,125	1,163	318	24
Cyclobenzaprine	5,186	871	841	3,399	1,885	3,149	5	101	3,667	1,064	1,474	891	220	9
Methocarbamol	1,347	181	200	947	506	780	4	45	830	317	325	150	31	3
Other	2,917	541	385	1,955	1,244	1,452	3	184	1,834	613	664	467	173	5
Unknown	94	6	22	61	15	78	0	1	63	11	27	9	2	0
Category total	15,670	1,910	2,053	11,493	5,077	9,920	20	475	11,180	2,698	4,615	2,680	744	41
Narcotic antagonists	236	3	21	208	58	150	1	26	179	17	58	66	16	0
Radiopharmaceuticals	16	0	2	14	9	0	0	5	11	6	4	1	0	0
Sedative/hypnotics/antipsychotics														
Barbiturates														
Long-acting	3,368	646	281	2,399	1,913	1,348	6	57	1,834	617	740	469	214	9
Short/intermediate-acting	1,100	70	138	866	301	742	4	36	855	158	347	222	72	6
Unknown type	16	1	2	11	1	14	1	0	15	0	3	4	5	1
Benzodiazepine	49,849	4,945	5,292	38,831	12,787	35,213	256	980	37,224	7,964	16,298	7,822	1,982	126
Chloral hydrate	226	70	23	128	100	94	3	23	158	23	65	50	14	0

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

Substances Implicated in the Exposure	No. of Exposure	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Ethchlorvynol	48	4	3	41	10	35	0	2	41	3	7	14	9	0
Glutethimide	13	2	3	8	6	5	1	0	10	2	2	2	3	0
Meprobamate	140	11	10	118	39	95	0	4	114	25	45	25	11	1
Methaqualone	53	3	16	32	9	43	0	0	39	8	14	11	1	1
Phenothiazine	6,825	957	925	4,846	2,950	3,282	10	485	4,654	1,264	1,519	1,524	298	17
Sleep aid (OTC)	1,152	87	192	852	224	913	1	6	889	211	344	213	38	0
Other	26,754	2,064	4,713	19,653	8,071	17,372	20	1,008	19,865	4,733	8,150	5,023	1,155	64
Unknown	217	10	36	161	27	166	11	7	160	19	67	32	7	0
Category total	89,761	8,870	11,634	67,946	26,438	59,322	313	2,608	65,858	15,027	27,601	15,411	3,809	225
Serums, toxoids, vaccines	1,772	396	252	1,092	1,251	12	3	500	569	124	314	113	7	0
Stimulants and street drugs														
Amphetamine	19,467	4,656	8,290	6,297	10,385	8,190	236	445	10,931	4,118	3,650	3,523	520	66
Amyl/butyl nitrite	82	12	8	60	43	36	1	1	46	8	15	15	1	1
Caffeine	6,279	885	3,354	1,979	2,212	3,700	15	287	3,084	697	1,710	1,104	34	1
Cocaine	5,000	77	637	4,179	490	4,344	46	27	4,504	658	1,049	1,449	444	59
Diet aids														
Phenylpropanolamine	1,052	362	365	319	560	442	1	43	582	322	169	148	5	0
Phenylpropanolamine and caffeine	142	43	39	60	77	53	0	11	87	35	28	28	4	0
Other: OTC	350	125	76	145	185	107	1	57	150	65	77	54	2	0
Other: Rx	116	40	27	47	52	56	0	8	83	31	28	16	1	0
Unknown	194	54	59	81	83	79	0	31	107	45	37	34	2	0
Heroin	1,855	10	178	1,637	149	1,645	20	15	1,680	194	298	554	272	44
LSD	1,024	23	602	378	131	825	53	5	780	49	198	392	38	2
Marijuana	3,077	122	1,336	1,574	439	2,492	48	40	2,402	241	775	834	184	11
Mescaline/peyote	229	52	47	126	177	47	0	2	71	11	67	34	1	0
Phencyclidine	555	16	160	370	88	435	13	4	481	32	90	206	61	3
Phenylpropanolamine look-alike drug	21	2	9	10	7	14	0	0	12	3	5	5	0	0
Other stimulant	220	43	83	92	74	129	1	16	154	39	63	44	4	0
Other hallucinogen	2	0	2	0	0	0	2	0	1	0	0	1	0	0
Unknown hallucinogen	10	0	6	4	0	6	4	0	8	0	1	5	1	0
Other stimulant/street drug	24	0	8	15	6	11	7	0	11	1	4	4	1	0
Unknown stimulant/street drug	101	7	43	50	19	68	9	4	69	8	24	25	11	0
Category total	39,800	6,529	15,329	17,423	15,177	22,679	457	996	25,243	6,557	8,288	8,475	1,586	187
Topical preparations														
Acne preparation	2,181	1,232	480	454	2,015	58	1	103	161	427	326	18	2	0
Boric acid/borate	165	95	11	58	162	3	0	0	18	33	17	1	0	0
Calamine	3,392	2,482	199	703	3,343	34	1	13	187	656	220	18	0	0
Camphor	8,243	6,336	500	1,379	8,032	148	13	45	928	2,646	1,189	71	10	0
Camphor/methyl salicylate	1,282	1,080	55	144	1,256	10	0	15	138	444	195	6	1	0
Diaper care/rash product	40,505	38,831	739	892	40,443	19	11	21	354	6,169	842	13	1	0
Hexachlorophene antiseptic	102	65	10	26	97	2	0	3	15	14	16	6	0	0
Hydrogen peroxide	7,191	3,147	729	3,298	6,967	149	32	42	403	996	1,140	47	2	0
Iodine or iodide antiseptic	1,536	544	265	705	1,317	161	9	45	387	356	328	47	0	0
Mercury antiseptic	206	162	17	25	194	9	0	3	22	59	9	0	1	0
Methyl salicylate	9,000	6,997	686	1,287	8,852	64	10	68	792	2,175	1,824	71	1	0
Podophyllin	47	17	6	22	43	2	1	1	15	9	10	3	0	0
Silver nitrate	188	24	69	94	169	7	0	12	35	18	54	9	2	0
Topical steroid	6,906	4,990	429	1,444	6,770	40	3	89	140	1,017	354	31	0	0
Wart preparation	1,446	948	196	292	1,388	19	4	33	167	338	250	34	1	0
Topical steroid with antibiotic	1,277	964	98	211	1,250	7	0	19	49	234	102	9	0	0
Other liniment	2,759	1,642	179	921	2,539	10	8	200	190	544	651	42	1	0
Other topical antiseptic	3,032	2,123	231	663	2,911	64	8	48	327	811	346	42	3	0
Category total	89,458	71,679	4,899	12,618	87,748	806	101	760	4,328	16,946	7,873	468	25	0
Veterinary drugs	3,265	1,656	223	1,352	3,200	53	3	8	256	760	420	44	2	0
Vitamins														
Multiple vitamin tablets: adult formulations														
No iron, no fluoride	2,776	1,838	296	630	2,334	240	0	197	414	609	231	52	8	0
With iron, no fluoride	6,280	4,399	605	1,250	5,574	570	4	121	1,054	1,916	347	58	6	0
With iron, with fluoride	96	80	12	4	92	2	2	0	14	31	6	0	0	0
No iron, with fluoride	30	24	5	1	28	1	0	1	3	12	0	0	0	0
Multiple vitamin tablets: pediatric formulations														
No iron, no fluoride	8,552	7,548	946	54	8,409	117	4	17	289	1,785	175	8	0	0
With iron, no fluoride	16,161	14,430	1,634	84	15,915	223	2	15	1,332	4,568	663	43	1	0
With iron, with fluoride	661	638	20	3	655	4	1	1	35	120	18	3	0	0
No iron, with fluoride	1,325	1,262	57	5	1,319	6	0	0	41	320	23	0	0	0

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

Substances Implicated in the Exposure	No. of Exposure	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Multiple vitamin liquids: adult formulations														
No iron, no fluoride	95	54	10	30	85	5	0	5	17	36	7	1	0	0
With iron, no fluoride	177	74	29	74	144	21	0	12	29	31	13	3	0	0
With iron, with fluoride	3	3	0	0	3	0	0	0	0	0	0	0	0	0
No iron, with fluoride	3	3	0	0	3	0	0	0	0	0	0	0	0	0
Multiple vitamin liquids: pediatric formulations														
No iron, no fluoride	258	245	8	5	254	2	1	1	9	56	10	1	0	0
With iron, no fluoride	620	590	26	3	606	1	1	12	50	133	37	2	0	0
With iron, with fluoride	108	105	2	0	106	0	0	0	5	22	5	0	0	0
No iron, with fluoride	491	480	10	1	489	0	0	2	8	101	10	0	0	0
Multiple vitamins, unspecified adult formulations														
No iron, no fluoride	22	13	3	5	21	0	0	1	0	2	1	0	0	0
With iron, no fluoride	2,371	1,644	271	444	2,101	210	2	51	437	679	161	39	4	0
With iron, with fluoride	4	3	0	1	4	0	0	0	0	1	0	0	0	0
No iron, with fluoride	22	20	1	0	22	0	0	0	0	7	0	0	0	0
Multiple vitamins, unspecified pediatric formulations														
No iron, no fluoride	53	40	12	1	52	1	0	0	1	15	1	0	0	0
With iron, no fluoride	74	61	12	1	74	0	0	0	4	14	3	0	0	0
With iron, with fluoride	5	5	0	0	5	0	0	0	0	1	1	0	0	0
No iron, with fluoride	47	47	0	0	47	0	0	0	1	14	1	0	0	0
Other vitamins														
Vitamin A	1,030	817	51	157	968	28	0	31	86	198	44	9	2	0
Niacin (B3)	2,209	490	367	1,333	1,084	285	1	831	351	124	758	66	4	0
Pyridoxine (B6)	410	241	59	108	304	76	0	30	105	85	36	26	7	0
Other B complex vitamins	1,886	1,263	113	506	1,579	201	3	97	330	397	137	53	9	0
Vitamin C	2,697	2,063	314	313	2,494	137	2	62	207	552	131	19	5	0
Vitamin D	267	154	19	92	237	20	0	10	54	50	25	10	3	0
Vitamin E	2,053	1,633	110	306	1,907	90	1	51	186	425	77	17	3	0
Other	625	407	75	140	531	52	1	39	109	151	50	13	3	0
Unknown	774	525	117	127	666	78	0	29	133	194	52	16	0	0
Category total	52,185	41,199	5,184	5,678	48,112	2,370	25	1,616	5,304	12,649	3,023	439	55	0
Unknown drug	13,325	3,568	2,993	6,485	6,503	4,511	1,000	785	7,931	2,631	2,136	1,747	411	7
Total number of pharmaceuticals	1,111,465	486,771	182,317	433,785	738,725	323,155	3,229	39,816	427,011	258,295	172,591	90,834	19,900	1,412
% of pharmaceuticals		43.8%	16.4%	39.0%	66.5%	29.1%	0.3%	3.6%	38.4%	23.2%	15.5%	8.2%	1.8%	0.1%
% of all substances	45.8%	20.1%	7.5%	17.9%	30.4%	13.3%	0.1%	1.6%	17.6%	10.6%	7.1%	3.7%	0.8%	0.1%

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APPENDIX

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

Case 24. A 3-month-old boy became apneic after ingesting a bottle of formula that had been reconstituted with **methanol** instead of water. On arrival to the hospital, the patient was unresponsive to pain, with fixed, dilated pupils. Treatment included intubation, fomepizole, folic acid, leucovorin and hemodialysis. Serial methanol levels at 0, 5, and 8 hours post-arrival were 269, 201, and 68 mg/dL, respectively. On day two, the methanol level was 10 mg/dL and hemodialysis was discontinued. Brain death was confirmed on the third hospital day.

Case 56. A 62-year-old woman with a history of mild atopy and several prior scorpion stings was stung by a scorpion at home. Within minutes, nausea, vomiting, respiratory distress, and cardiopulmonary arrest occurred. Neurologic signs typical of scorpion envenomation were absent. Treatment included ACLS measures, antihistamines, dopamine and steroids. The patient expired from anoxic brain injury 3 days later. The scorpion was retrieved and identified as ***Centruroides exilicauda.***

Case 57. A 2-year-old boy was bitten just proximal to the knee by an eastern diamondback rattlesnake (***Crotalus adamanteus***). Findings included one fang mark and minimal local signs. On arrival at the hospital, vital signs were: blood pressure, 98/48 mm Hg; and heart rate, 130 beats/min. Listlessness, progressive swelling at the site of the bite, hypotension and bleeding from his cutdown site, nose, mouth, and gastrointestinal tract ensued. Treatment included 90 vials of polyvalent crotalidae antivenom, vasopressors and blood products. Within 24 hours, he had fixed, dilated pupils and no response to pain. A CT scan revealed bilateral cerebral infarctions and he was declared brain dead.

Case 58. A 45-year-old man was bitten under the right nipple by a timber rattlesnake (***Crotalus horridus horridus***) during a snake-handling congregational meeting. Church members reportedly prayed over him for the next two days until he died. At autopsy, systemic petechiae, marked ecchymosis of his anterior chest wall, and hemorrhagic mediastinitis were noted.

Case 60. A 37-year-old man was involved in an industrial accident with heated **ammonia.** He suffered first and second degree burns of the shoulders, back, arms, face, and lips. Other findings included ocular irritation, dyspnea, oxygen desaturation, and infiltrates on chest X-ray. Ocular irrigation and emergent tracheostomy were performed. Subsequent care included intravenous fluids, analgesics, sedatives and burn care. He expired within 11 hours of exposure.

Case 63. A 92-year-old man ingested **copper acetate arsenite** in a suicide attempt and developed vomiting and diarrhea within 2 hours. Early findings included hypotension and hypokalemia. Treatment was initiated with sodium bicarbonate, potassium, vasopressors, dimercaprol and whole bowel irrigation. Altered mental status, persistent hypotension, and decreased urine output were noted. A 24-hour urinary arsenic level while on dimercaprol was 4,304 μg/L. The patient expired on the fourth hospital day.

Cases 67 and 68. A 68-year-old man and 62-year-old woman ingested unknown amounts of **potassium cyanide** from a bowl on the kitchen table. Evidently the solution was used by a roommate to clean electronic equipment. On EMS arrival, the man was unresponsive, hypotensive, and tachycardic. The woman was awake and alert, but was tachycardic and hypotensive. Both were treated with nitrites and sodium thiosulfate in the ED. The man improved briefly but then suffered a cardiorespiratory arrest and died. The woman developed a seizure and became hypotensive 1 hour after antidote administration. She received an additional 6.26 grams of sodium thiosulfate, but expired three hours after admission. Premortem blood cyanide levels were 1.6 μg/mL for the woman and 12 μg/mL for the man.

Case 77. A 66-year-old man with a past history of hypertension and alcohol abuse presented to the ED with complaints of generalized weakness, abdominal pain, and vomiting, consistent with acute pancreatitis. He was acidotic with an arterial pH of 7.05. There was no history of toxic exposure, but the evaluation revealed an **ethylene glycol** level of 125.2 mg/dL. Treatment included intubation, prolonged hemodialysis utilizing a bicarbonate bath, intravenous sodium bicarbonate and intravenous ethanol. Complications included seizures, pneumonia and renal failure, with a creatinine of 5.5 mg/dL on the third hospital day. He remained dialysis- and ventilator-dependent and expired eight weeks after admission.

Case 90. A 92-year-old woman with Alzheimer's disease ingested approximately 120 to 180 mL of **household hypochlorite bleach** (unknown concentration). Four hours post ingestion, symptoms included stridor and difficulty handling secretions. During intubation, swelling of the posterior pharynx, whitish ulcerations and an oral pH of 10 were noted. Endoscopy revealed extensive esophageal burns with gastritis. There was no evidence of pneumomediastinum on chest CT scan. She expired 9 days later.

Case 96. A 12-month-old girl suffered a cardiac arrest while drinking carrot juice from a bottle. Resuscitative efforts were not successful. Further investigation determined the child was forced by the caregiver to drink **pine oil cleaner.**

Case 98. A 72-year-old woman with a history of severe dementia drank 840 mL of **pine oil/isopropanol cleaner.** Rapid onset of vomiting, frothing at the mouth, incoherent speech, and dyspnea occurred, with evidence of aspiration pneumonia. Treatment included oxygen, broad-spectrum antibiotics, and steroids. Progressive hypoxemia and respiratory failure developed, and she expired on the 13th hospital day.

Case 100. A 43-year-old man ingested 10 ounces of **hydrofluoric acid**-containing **rust stain remover** in a suicide attempt. Six hours later, he presented with hypotension, tachycardia, abdominal pain and vomiting. Laboratory results included: calcium, 4.1 mg/dL; magnesium, 0.5 mEq/L; potassium, 5.5 mEq/L; and arterial pH, 7.32. The patient was intubated and given magnesium citrate via nasogastric tube. The initial ECG showed QT interval prolongation that

initially improved after administration of large doses of intravenous magnesium sulfate and calcium chloride. Ultimately, however, recurrent ventricular fibrillation was refractory to treatment with antidysrhythmics, defibrillation, and additional large doses of calcium chloride. A final calcium level was 20 mg/dL.

Case 112. A 9-month-old girl ingested a **hair care product** containing **isoparaffin, paraffin,** and **butyl ether.** She developed progressive respiratory distress, hypotension, lethargy, and cyanosis. Initial therapy included intubation, fluids and vasopressors. The chest X-ray showed hyperinflation and diffuse pneumonitis. Fever was noted on the first hospital day. Oliguric renal failure, ascites, peripheral edema, hypernatremia and hypokalemia developed over the next 2 days. Additional therapy included antibiotics, high frequency oscillatory ventilation, milrinone (for deteriorating cardiac function), nitroprusside, ECMO, and hemodialysis. The patient expired on the seventh hospital day. Autopsy findings included interstitial and intra-alveolar fibrosis with bacteremia.

Case 114. A 27-year-old male inmate was found unresponsive with evidence of recent emesis after ingesting a **shaving powder** containing **calcium carbonate** and **barium sulfide.** In the hospital, posterior oropharyngeal and epiglottic edema were noted during intubation. Within 3 hours, ventricular tachycardia developed and was treated with cardioversion. Over the next 8 hours, recurrent ventricular tachycardia and other conduction disturbances occurred. Severe hypokalemia (potassium 1.1 mEq/L) was refractory to supplementation. Hemodialysis was initiated using a high potassium bath. During hemodialysis, the patient arrested (potassium was 2.1 mEq/L) and afterwards remained unresponsive. Brain death was evident on EEG. Autopsy findings included gastric irritation, pulmonary congestion, and superficial esophageal erosions.

Case 117. A 15-year-old boy suffered a cardiac arrest after sniffing **air freshener** containing a **butane, isobutane** and **propane propellant.** He received CPR from family members and was resuscitated by EMS. He expired in the ED after experiencing recurrent ventricular dysrhythmias, hypotension, and hypoxia. The urine drug screen was positive for **cocaine.**

Case 119. A 29-year-old mentally retarded woman drank an unknown volume of a **root stimulator** containing **phosphoric acid (20%), potash (10%), ammonia nitrogen (5%), chlorine (3%),** and indole-3-butyric acid (0.0004%). She vomited immediately and was given baking soda to induce further emesis. En route to the hospital, the patient became unresponsive with a heart rate of 90 beats/min, no palpable blood pressure, pinpoint pupils, diarrhea, and salivation. In the hospital she was awake with normal vital signs and an unremarkable examination of the oropharynx. Initial laboratory results were: potassium, 8.5 mEq/L; chloride, 127 mEq/L; phosphorus, 8.0 mg/dL; creatine kinase, 2,278 U/L; and pH, 7.22. The patient remained lethargic and persistently tachycardic, with decreasing platelets and hemoglobin levels. Additional treatment included intubation, vasopressors and blood product administration. Death was attributed to a small bowel infarction from chemical poisoning.

Case 120. A 53-year-old man with a history of **heroin** skin popping presented to the ED with lid lag, proximal muscle weakness, swallowing dysfunction, and inability to raise his head from the bed. Hip flexor weakness was also noted, but he was able to walk. A Tensilon test was done twice with no response. Type A **botulism** was diagnosed. Treatment included one vial of botulinum antitoxin and antibiotics. Mechanical ventilation became necessary, and the patient expired after developing hypoxia and bradycardia on the 14th hospital day. The urine toxicology screen was positive for opiates.

Case 122. A 4-year-old girl with a history of pica was found eating pieces of **cat litter.** She choked, was given water and developed respiratory distress. In the ED, attempts to secure an airway were unsuccessful. The medical examiner ruled that she died from unintentional aspiration of cat litter that hardened upon hydration.

Case 158. A previously healthy 31-year-old man developed severe gastroenteritis with vomiting, abdominal pain and bloody diarrhea. Within 48 hours, there was evidence of renal insufficiency, hepatitis, rhabdomyolysis, anemia and cardiomyopathy. Endoscopy revealed colitis. A bone marrow biopsy showed "toxic insult". The patient improved over 7 days and was discharged. One week later, he presented with recurrent gastrointestinal symptoms. At that time, a urinary **arsenic** level from the previous admission was noted to be 16,250 μg/L. Dimercaprol was started, but he suffered a cardiac arrest within several hours. The reason for exposure was determined to be malicious.

Case 160. A 2-year-old immigrant presented with diarrhea, vomiting, and severe hypochromic anemia. The child was described as sleepy, fussy, and limp, with a heart rate of 60 to 80 beats/min. Increasing listlessness associated with tachycardia and hypotension developed over the next 3 to 4 hours. The patient then became apneic and developed seizures. Laboratory studies were: hemoglobin, 6.1 gm/dL; malaria smear, negative; white blood cells, 8,600/μL; **lead,** 391 μg/dL; FEP, 539 μg/dL. No lead lines were noted on X-ray. Treatment included vasopressors, intubation, dimercaprol, calcium disodium EDTA, and blood transfusion. There was clinical evidence of increased intracranial pressure, diabetes insipidus, and Fanconi's syndrome. The patient expired on the second hospital day. She had been seen ingesting paint chips, which were also noted in the emesis. Autopsy findings were consistent with exposure over approximately a 2-week period, based on high proximal hair and absent distal hair levels.

Case 161. A 60-year-old gold miner was extracting gold by heating a gold/**mercury** amalgam in an enclosed space. He developed dyspnea, chest discomfort, diffuse infiltrates, and hypoxemia. A mercury level of greater than 400 μg/dL was obtained. Despite chelation with DMPS and declining mercury levels, the patient's condition continued to worsen, necessitating mechanical ventilation. Complications included pulmonary barotrauma and progressive respiratory acidosis. Life support was withdrawn on hospital day 16.

Case 162. A 48-year-old man complained of progressive numbness and pain in his feet. On physical examination he was areflexic. Within the next 24 to 48 hours the patient's reflexes began to return, however he became lethargic and confused. Nonspecific ST segment changes were noted on EKG and the serum creatinine was elevated. Lumbar puncture, blood count, and other chemistries were nondiagnostic. On the fourth hospital day, after developing refractory hy-

potension and bradycardia, the patient expired. A urine **thallium** result from that day was 50,000 μg/L. The postmortem examination did not reveal other contributing causes of death. The medical examiner concluded that the exposure had occurred over a chronic period (1 month) followed by a large acute ingestion.

Case 167. A 2-year-old boy poured an unknown amount of **kerosene** down the throat of his 12-month-old brother. On arrival the child was lethargic, difficult to arouse, and was intubated. The initial chest X-ray was negative. At 2 hours post-ingestion, the oxygen saturation was 88% despite an $FI0_2$ of 1.0 and a PEEP of 7 cm water. The patient's condition stabilized somewhat for three days, except for mild metabolic acidosis. Thereafter, he became febrile, had increasing oxygen requirements, and recurrent respiratory arrests. He expired on the eighth hospital day despite additional treatment with high frequency ventilation, dobutamine, milrinone, and vasopressors.

Case 175. A 5-year-old girl developed respiratory distress and cardiac arrest at home. Four other family members were also ill, but less severely. The patient's father was a professional exterminator who placed a cupful of **aluminum phosphide** rodenticide pellets in a hole adjacent to the basement foundation. The family became ill following a significant rainfall. Air sampling revealed the presence of phosphine gas in the basement.

Case 176. A 24-year-old woman was transferred to the US from Mexico 2 days after the ingestion of **aluminum phosphide.** Initially, the patient was awake with complaints of abdominal pain. Laboratory analysis showed severe metabolic acidosis, prolongation of the PT and PTT, significant liver enzyme elevations, and renal failure. Wide-complex tachycardia and refractory hypotension developed. Cardiovascular collapse and death occurred within 12 hours of the transfer.

Case 181. A 57-year-old suicidal woman ingested a cup of **diquat** weed killer. Initially, she was awake and alert with a green discoloration and slight swelling of the tongue. Activated charcoal was administered. Other treatment included intubation, benzodiazepines, sodium bicarbonate, diuretics, hemodialysis, antibiotics, steroids, vasopressors and insulin. Notably, there was sloughing of the oropharyngeal mucosa with bleeding from the lips and tongue. Ultimately, coma, fever, renal failure, hematuria, guaiac positive diarrhea, metabolic acidosis, rhabdomyolysis, ARDS and brainstem edema developed. Significant laboratory findings included: ethanol, 215 mg/dL; salicylates, negative; creatinine, 4.6 mg/dL; AST, 799 U/L; and CPK 37,683 U/L. She expired on the sixth hospital day.

Case 183. The husband of a pregnant woman (28 weeks) reportedly instilled **glyphosate** into her vagina in an effort to induce an abortion. It is unknown how long the product remained there prior to irrigation. She developed vomiting the next day, and 3 days post-exposure had pneumonia, respiratory distress and jaundice. Necrotic areas in the vulvar and vaginal regions were noted. The patient delivered a stillborn infant. Over the next 48 hours, her condition deteriorated. She expired as a result of a suspected pelvic abscess, ARDS, pulmonary embolism and sepsis.

Case 184. An 18-month-old boy ingested an unknown amount of **paraquat** solution from a bottle found in his father's landscaping truck. Vomiting occurred within 30 minutes. Mild hypoxemia developed within the first 24 hours, followed by progressive hepatic, renal and cardiopulmonary dysfunction. Multiple-dose activated charcoal was initiated 2 hours post ingestion. Additional treatment included inhaled nitric oxide, hemodialysis and *N*-acetylcysteine. Serum paraquat levels at 3 and 24 hours post ingestion were 715 ng/mL and 266 ng/mL, respectively. The patient expired 11 days post ingestion.

Case 185. A 23-year-old man using **ethanol** and **cocaine** ingested approximately 50 mL of a 20% **paraquat** solution 1 hour prior to arrival at the hospital. The physical examination was remarkable for stable vital signs, miosis, and green emesis. Laboratory findings included ethanol, 315 mg/dL. Treatment included gastric lavage, activated charcoal, *N*-acetylcysteine and methylprednisolone. Complications included metabolic acidosis, obtundation requiring intubation, severe hypoxemia and shock. He expired on the second hospital day.

Case 188. A 50-year-old man collapsed and had foaming of the mouth after drinking **malathion.** Initial findings included flaccidity, diaphoresis, miosis, clear lung fields, a heart rate of 94 beats/min and a blood pressure of 162/100 mm Hg. Treatment included pre-hospital intubation, gastric lavage, activated charcoal, and multiple doses of both atropine and pralidoxime. Hospital staff complained of a strong garlic odor emanating from the patient's mouth. He developed fever, seizures, and hypotension and was treated with additional atropine, pralidoxime, vasopressors and diazepam. Following several cardiorespiratory arrests, an EEG showed minimal brain activity and life support was withdrawn on the fourth hospital day.

Case 191. A 79-year-old woman presented 1 hour after the ingestion of a roach killer containing 95% **sodium fluoride** and an **unknown antihypertensive.** She had carpal pedal spasm, ventricular dysrhythmias, severe hypocalcemia and mild acidosis. Treatment included defibrillation, lidocaine and calcium gluconate. Despite this therapy, she experienced several hours of recurrent dysrhythmias, hypotension and pulseless electrical activity. Enzymatic evidence of myocardial injury was present. Calcium levels normalized with hemodialysis, but the patient expired from metabolic/anoxic encephalopathy, multisystem organ failure and disseminated intravascular coagulation.

Case 193. A 26-year-old suicidal man ingested an unknown amount of an **anticoagulant rodenticide.** The patient suffered a cerebral hemorrhage and required mechanical ventilation. Additional history revealed that hematuria, bleeding gums and epistaxis were noted previously by his family. The PT was 212 seconds. Treatment included phytonadione and fresh frozen plasma. Brain death was confirmed with a nuclear scan.

Case 194. A 41-year-old man ingested a bottle of **strychnine-containing rodenticide** mixed in tea. When paramedics arrived 30 minutes later he was awake, but was shaking, hypertensive and tachycardic. He was treated with diazepam but became asystolic en route and was not successfully resuscitated. The autopsy revealed marked pulmonary congestion and hemorrhagic edema, tongue contusions and lacerations, and a postmortem blood strychnine level of 2.1 μg/mL.

Case 198. An 18-year-old woman was found dead in a farm field near where her abandoned car had been discov-

ered 13 days earlier. The investigation revealed that shortly after she ingested **jimson weed seeds** to get high, she became disoriented and left her vehicle. An autopsy determined cause of death to be cold exposure. Jimson weed seeds were found in her stomach. Post-mortem toxicology testing was positive for **amphetamine** and **methamphetamine.**

Case 199. A 94-year-old and her 56-year-old granddaughter became unconscious after taking mail-order purgative **herbal** capsules containing **senna, cascara,** and beet and carrot greens. The patients also ingested a tea made from the leaves of the white ash tree **(*Fraxinus americana*).** These products were being administered by a mentally ill relative who believed the patients had "parasites". The 94-year-old woman died one week after hospital admission. The outcome of the other patient is not known.

Case 200. An 18-year-old landscaper ingested 4 to 5 inches of a white root thought to be a parsnip. Within 90 minutes, he complained of severe epigastric pain and vomiting. Approximately 30 minutes later, he was found in ventricular fibrillation by paramedics. Resuscitative efforts were not successful. The plant was positively identified as ***Phytolacca americana*** **(pokeweed**).

Case 201. A 2½-year-old East Indian girl presented with vomiting and diarrhea, seizures, hypoglycemia, elevated liver enzymes and hypotension. She was diagnosed with fulminant hepatic failure. The parents had painted her body with henna as treatment for chronic eczema. An **acetaminophen** level was in the therapeutic range, even though the parents denied its administration. Despite treatment with *N*-acetylcysteine, the patient died from massive hepatic necrosis and cerebral edema.

Case 275. A 36-year-old woman ingested 32 **acetaminophen** 500 mg and 10 **naproxen** 220 mg tablets over 23 hours, possibly for tooth pain. She complained of abdominal pain on admission and was treated with *N*-acetylcysteine. Initial laboratory findings were: acetaminophen, 83.2 μg/mL; AST, 540 U/L; ALT, 3,415 U/L; total bilirubin, 18 mg/dL; and PT, greater than 100 sec. Complications included GI bleeding and hypotension. Transaminases peaked at 19,000 U/L (AST) and 8,000 U/L (ALT). The patient expired five days after ingestion. The autopsy revealed hepatic necrosis due to acetaminophen.

Case 357. A 15-year-old girl ingested 341 **aspirin** tablets approximately 18 hours prior to presentation. She was described as awake and vomiting but not verbally responsive. Vital signs were: temperature, 39° C; heart rate, 182 beats/min; respiratory rate, 36 breaths/min; blood pressure, 120/90 mm Hg. Treatment included activated charcoal, intravenous fluids, potassium, and sodium bicarbonate. Forty minutes after arrival, the patient had a generalized seizure and received additional sodium bicarbonate, dextrose and lorazepam. Endotracheal intubation was performed. Ventricular fibrillation developed shortly thereafter and resuscitative efforts were not successful. The salicylate level was 91 mg/dL.

Case 366. A 35-year-old woman detained by police for driving erratically was found with 2 empty bottles of enteric-coated **aspirin** (up to 500 tablets) and a suicide note. She had a history of depression and was also taking clozapine and sertraline. Findings on arrival to the ED included tremor, agitation, vomiting, mild tachycardia and tachypnea. Treatment included H_2 blockers, metoclopramide, midazolam, gastric lavage and activated charcoal. Laboratory results were: arterial pH, 7.46; P_{CO_2}, 20.6 mm Hg; P_{O_2}, 127 mm Hg; bicarbonate, 15.3 mEq/L; and salicylate, 48 mg/dL. Further blood tests were refused. The patient deteriorated abruptly and developed seizures and cardiac arrest. She expired approximately 6.5 hours after arrival.

Case 402. A 34-year-old woman admitted for presumed alcoholic pancreatitis was discovered to have ingested **colchicine** 36 hours prior to arrival. Initial laboratory results were: white blood cells, 31,000/μL; lipase, 133 U/L; creatinine, 1.5 mg/dL; and AST, 236 U/L. The patient's mental and hemodynamic status rapidly declined necessitating intubation, vasopressors and inotropes. Delayed complications included ARDS, pancytopenia, renal failure, persistent hypotension, and necrosis of the phalanges. Additional treatment over the next 20 days included granulocyte colony stimulating factor, multiple blood product transfusions, high dose vasopressors and continuous veno-venous hemofiltration. Colchicine levels 48 hours post ingestion were 5.9 ng/mL (serum) and 210 ng/mL (urine). She died shortly after removal of life support on the 20th hospital day.

Cases 408 and 409. A 29-year-old man and a 40-year-old man were found dead in their homes. The previous day, they had illegally purchased 7 **fentanyl patches** of unknown strength. They smoked the drug together and then returned to their respective homes.

Case 410. A 32-year-old man was found in asystole near an unconscious friend. The two patients had split and chewed a **fentanyl patch** and ingested approximately 20 **beers.** Return of spontaneous circulation was noted following prolonged ACLS measures and high doses of naloxone. The patient was hypothermic and vasopressor-dependent. He expired 34 hours after arrival.

Case 420. An 8-month-old girl was found dead and could not be resuscitated. Initially, sudden infant death syndrome was thought to be the cause of death. A post-mortem **methadone** level was 0.23 μg/mL. It unknown whether the patient was breast- or bottle-fed. Both parents were on a methadone maintenance program.

Case 421. A 22-month-old boy was found apneic with fixed dilated pupils 30 minutes after being seen in the back seat of his grandfather's car. The patient was resuscitated but expired several days after admission. The grandfather was in a methadone program, and the child's antemortem **methadone** level was 0.1 μg/mL.

Case 422. A 14-year-old boy with a history of dimenhydrinate abuse was witnessed by his brother ingesting an unknown amount of his caregiver's **methadone.** He suffered a pre-hospital arrest but was resuscitated. Subsequent complications included hypoxemia, pulmonary infiltrates and barotrauma. In addition to ACLS measures, additional treatment included dopamine and neostigmine. ARDS worsened and he remained unresponsive. Life support was discontinued on the fourth hospital day.

Case 473. An 86-year-old man took his horse's **phenylbutazone** for its anti-inflammatory effects over an unknown time period. He presented with acute renal and hepatic failure. There was also evidence of an acute myocardial infarction. He expired within 24 hours of admission.

Case 479. A 16-year-old boy was injected with **bupivacaine** and **lidocaine** during a pre-operative femoral nerve block procedure. He developed seizures then suffered a cardiac arrest.

Case 480. A 58-year-old man developed hyperthermia (temperature, 39.3° C) without rigidity 5 hours after anesthesia with **isoflurane.** The body temperature increased to 42.2° C despite active cooling measures. Although the patient did not seem rigid, the P_{CO_2} increased to 59 mm Hg. After treatment with dantrolene, lowering of the P_{CO_2} and temperature were noted. Creatine kinase was elevated at 866 U/L. Brain death was diagnosed and the patient expired the following evening. A similar case was reported by the same poison center (Case 486).

Case 483. An 86-year-old man developed dyspnea at home. Emergency medical technicians found him in ventricular tachycardia and administered a 200 mg intravenous bolus of **lidocaine,** followed by an infusion. En route to the ED, the patient became unresponsive, had a brief seizure and was given diazepam. It was discovered that he had received approximately 1,500 mg of lidocaine in error. Further treatment included intubation and supportive care. He was not able to be resuscitated following a subsequent cardiorespiratory arrest.

Case 497. A 31-year-old man ingested 250 tablets of enteric-coated **valproic acid** two hours prior to arrival. The patient was initially drowsy. The next day, increasing CNS depression and erratic respiratory effort necessitated intubation. Hypotension and acidosis were noted. He was treated with multiple-dose activated charcoal, whole bowel irrigation, lactulose and hemodialysis. Laboratory studies were: valproic acid (initial), 434.9 μg/mL; valproic acid (day 2), greater than 1,200 μg/mL; ammonia (day 2), 1,672 μg/dL; AST, 111 U/L. Ultimately, the patient developed fever and ARDS. He expired on the third hospital day, despite declining valproic acid and ammonia levels.

Case 498. A 45-year-old man ingested 207.5 grams of **valproic acid** in a suicide attempt. He was initially asymptomatic. Gastric lavage and administration of activated charcoal were performed. The initial valproic acid level was 108 μg/mL. Ten hours after ingestion, the patient was unresponsive but hemodynamically stable. Three hours later the valproic acid level was 1,609 μg/mL and respiratory arrest, hypotension and supraventricular tachycardia occurred, necessitating intubation, vasopressors, sodium bicarbonate and antidysrhythmics. Further complications included metabolic acidosis, renal failure, ARDS, pancreatitis, myocarditis and sepsis. The patient expired 79 hours post ingestion.

Case 500. A 23-year-old woman on **valproic acid** presented with lethargy, vomiting, hypotension, fever and tachycardia. One day earlier, she had complained of epigastric pain and left a note stating that she had taken 30 **acetaminophen** tablets in a suicide attempt. Laboratory results were: glucose, 20 mg/dL; lactate, 18 mmol/L; ammonia, 596 (units not specified); acetaminophen, negative; and valproic acid, 70 μg/mL. Treatment included intubation, hypertonic dextrose, fluids, vasopressors, a sodium bicarbonate infusion, fresh frozen plasma and oral *N*-acetylcysteine. Terminal complications included pulmonary edema and acute oliguric renal failure.

Case 504. A 5-year-old girl with a history of seizures and acute lymphocytic leukemia in remission presented with flu-like symptoms, seizures, and a temperature of 40.6° C. Her medications included **valproic acid** and **sodium bromide.** A few doses of **acetaminophen** had been given for fever control. Laboratory revealed the following: AST, 6,908 U/L; ALT, 2,448 U/L; chloride, 107 mEq/L; ammonia, 133 μmol/L; valproic acid, 249 μg/mL; and acetaminophen, 12 μg/mL. All bacterial, viral and fungal cultures were negative, bone marrow aspirate showed no recurrence of leukemia, and liver biopsy showed massive hepatic necrosis. She was treated with fresh frozen plasma and intravenous carnitine but developed fulminant hepatic failure and cerebral edema.

Case 505. A 2-month-old malnourished and dehydrated girl died after being given "adult" doses of **amitriptyline** to make her sleep.

Case 507. A 13-year-old girl was found in cardiac arrest. In the ED, she had wide-complex tachycardia, severe hypotension and acidosis. Treatment included epinephrine, norepinephrine, and sodium bicarbonate. She was declared brain dead and expired following another cardiac arrest. The urine drug screen was positive for tricyclic antidepressants. Post-mortem levels of **amitriptyline** and nortriptyline were 1,700 ng/mL and 1,900 ng/mL in peripheral blood.

Case 555. A 44-year-old paraplegic man presented with CNS depression after an unknown acute overdose. Potential medications included **clorazepate,** oxybutynin, cyclobenzaprine, **propoxyphene, amitriptyline,** baclofen, cisapride, omeprazole, diosmin and glycopyrrolate. During observation, vital signs were stable and there was no QRS prolongation on EKG. The patient could be aroused. A positive benzodiazepine drug screen initiated the use of flumazenil, resulting in multiple generalized tonic-clonic seizures. The patient was treated with diazepam and phenytoin, but then experienced a cardiac arrest. He was resuscitated, but expired 2 days later.

Case 610. An 11-year-old girl ingested 80 of her mother's **nortriptyline** 75 mg tablets and an unknown amount of **gabapentin.** In the hospital waiting room, she lost consciousness and experienced seizures. Hypotension and wide-complex tachycardia were noted. Initial treatment included intubation and phenobarbital. Ultimately, cardiac arrest occurred and further treatment included epinephrine, sodium bicarbonate, lidocaine, lorazepam, vecuronium, phenytoin, high-dose epinephrine and sodium bicarbonate infusions. Laboratory results were: sodium, 183 mEq/L; potassium, 2.2 mEq/L; and pH, 7.75. Additional dysrhythmias were treated with tromethamine and amiodarone. Ultimately, the patient developed disseminated intravascular coagulation, inoperable ischemic bowel with perforation, sepsis, hypoglycemia and oliguria.

Case 619. A 45-year-old man with a history of depression and previous monoamine oxidase inhibitor overdose was taking **tranylcypromine, venlafaxine** and **clonazepam.** He was found naked and unconscious at home. In the ED, he was unresponsive with significant motor agitation, flushing, mydriasis, dry mucous membranes, decreased bowel sounds, fever and tachycardia. Initial treatment included diazepam and haloperidol. After generalized seizures occurred, additional therapy included lorazepam, midazolam, physostigmine, neuromuscular paralysis and intubation.

Laboratory studies revealed metabolic acidosis and hypoglycemia. Symptoms progressed to include severe hyperthermia (rectal temperature 42.8° C), widened QRS complexes and hypotension. Despite aggressive cooling measures and treatment with sodium bicarbonate, the patient developed ventricular dysrhythmias. Benzoylecgonine was detected in the urine at autopsy.

Case 635. A 2-month-old boy was brought to the ED in cardiorespiratory arrest and was not successfully resuscitated. Post-mortem examination revealed an elevated **diphenhydramine** level of 1.6 μg/mL in heart blood and 0.7 μg/mL in vitreous humor. Petechial cerebral hemorrhages were also noted. The patient's father admitted to administering up to 2.5 sleeping pills containing 25 mg diphenhydramine each.

Case 645. A 44-year-old man with AIDS on **didanosine, stavudine** and hydroxyurea developed altered mental status, severe lactic acidosis and pancreatitis. Toxicologic screening tests were negative. Over the next week, the acidosis improved but other complications developed, including worsened pancreatitis, hypotension and acute renal failure.

Case 646. An 18-year-old woman with a history of rheumatoid arthritis ingested 40 to 50 of her own **hydroxychloroquine** tablets 1 hour prior to arrival at the hospital. The patient was described as sleepy. Within 45 minutes, pulseless ventricular tachycardia occurred and was treated with defibrillation, epinephrine and sodium bicarbonate. One hour later, the patient arrested again, and did not respond to epinephrine, sodium bicarbonate, or high dose diazepam.

Case 650. An 18-month-old girl was given **norfloxacin** and a Chinese patent medication thought to contain a **sulfonamide** antibiotic, for a gastrointestinal illness. The child had a prolonged prehospital seizure and died en route to the hospital.

Case 667. A 79-year-old man doubled his daily dose of **atenolol, terazosin, digoxin,** allopurinol, coumadin, lisinopril and spironolactone. He presented with lethargy, hypoxia, bradycardia and hypotension. Laboratory results were: digoxin, 1.7 ng/mL; creatinine, 5.4 mg/dL; potassium, 6.6 mEq/L; and arterial pH, 6.99. He experienced a seizure which was treated with diazepam. Additional treatment included glucagon, atropine, intubation, vasopressors, insulin, sodium polystyrene sulfonate, glucose and calcium. He transiently improved, but expired the next day.

Case 670. An 87-year-old woman presented 2 hours after a suicidal ingestion of approximately 90 **digitoxin** tablets obtained in Germany. Symptoms included emesis of pill fragments and atrial fibrillation with a slow ventricular response. The patient received pre-hospital activated charcoal. Initial laboratory results were: digoxin, 2.5 ng/mL; potassium, 4.9 mEq/L; creatinine, 1.1 mg/dL. A serum digitoxin level approximately 12 hours after the ingestion was 146.2 ng/mL (therapeutic, 10-30). Approximately 40 hours post ingestion, ventricular fibrillation developed, and resuscitation was not successful. The autopsy revealed moderately severe dilated cardiomyopathy and generalized arteriosclerosis.

Case 692. A 52-year-old man ingested up to 40 **metformin** 500 mg and 20 **sustained-release diltiazem** 240 mg tablets in a suicide attempt 1 to 3 hours prior to arrival at the ED. He was somnolent with the following vital signs: heart rate, 52 beats/min; respiratory rate, 9 breaths/min; and blood pressure, 102/68 mm Hg. Severe acidosis was present with a lactate level of 22.8 mmol/L. Treatment included intubation, gastric lavage, activated charcoal with sorbitol, whole bowel irrigation, dopamine, calcium gluconate, sodium bicarbonate, glucagon, norepinephrine, dobutamine and phenylephrine. Glucagon, insulin, and hypertonic dextrose infusions were also given. A transvenous pacemaker was placed but did not result in an increased heart rate. Hemodialysis was attempted, and an intra-aortic balloon pump was inserted. Despite this, hypotension was refractory and the patient died approximately 16 hours post ingestion.

Case 726. A 19-year-old woman suffered a pre-hospital cardiac arrest after ingesting one bottle of **benzonatate** perles. She was resuscitated following a prolonged down time, but did not recover from severe anoxic brain injury. Drug screens were positive for cannabinoids and negative for salicylates and acetaminophen.

Case 728. A 77-year-old man with a history of COPD aspirated **barium** during a radiographic study. The chest X-ray showed bilateral infiltrates. The patient required intubation. Complications included progressive respiratory and metabolic acidosis, hypotension and an inability to ventilate the patient. He expired within 24 hours.

Case 735. A 14-year-old boy collapsed and had seizures shortly after returning home from a party where he consumed pills and then drank **salt** water to induce vomiting. On presentation he was comatose, tachycardic, hypertensive, and hyperthermic, with dilated pupils. The EKG showed supraventricular tachycardia. Laboratory results were: sodium, 195 mEq/L; chloride, 160 mEq/L; and ethanol, 35 mg/dL. Treatment included intubation, activated charcoal with sorbitol, barbiturates, benzodiazepines, intravenous fluids, vasopressors, sodium bicarbonate and cooling measures. The patient developed increased intracranial pressure and herniation less than 24 hours after ingestion.

Case 736. A 2-year-old boy was given 8 to16 drops of a **diphenoxylate/atropine**-containing antidiarrheal every 4 hours for 2 days. At home, he developed dyspnea, tachypnea, lethargy and eye deviation. Findings in the ED included respiratory depression and a temperature of 41.7° C. Laboratory results included: sodium, 153 mEq/L; chloride, 119 mEq/L; bicarbonate, 9 mEq/L; BUN, 31 mg/dL; creatinine, 1.5 mg/dL; INR, 2.29; PTT, 82.5 seconds; and pH, 7.14. Treatment included naloxone 4 mg (with no response), intubation, acetaminophen, activated charcoal, physostigmine and fluid boluses. Subsequently, the patient developed diarrhea, pulmonary edema, cardiac arrest, and expired on the second hospital day.

Case 740. A 75-year-old woman presented in status epilepticus. Pre-hospital personnel found a bottle of regular **insulin** and syringes in the wastebasket. She had no history of diabetes, and foul play was suspected. The glucose level on admission was 18 mg/dL. Treatment included sugared milk and lactose by nasogastric tube, intravenous hypertonic dextrose, and fosphenytoin. Two days later, the patient remained comatose with recurrent seizures. She expired on the third hospital day. Post mortem examination showed cerebral ischemic changes, and the cause of death was determined to be hypoglycemia due to insulin administration.

Case 744. A 41-year-old woman was found dead in a bathroom and could not be resuscitated. There were several syringes and vials of **epinephrine** and **tilmicosin** at the scene. Levels of both substances were reportedly elevated.

Case 746. A 44-year-old man was admitted for pneumococcal sepsis. **Succinylcholine** was given prior to intubation. Over the next 12 hours, he developed hyperthermia (42.2° C), mild muscle rigidity and rhabdomyolysis. Treatment included external cooling and dantrolene. There was no family history of malignant hyperthermia. Cardiogenic shock developed and he expired the next day.

Case 787. A 72-year-old woman developed respiratory failure following the ingestion of 100 **meprobamate** tablets. The next day, the patient remained unresponsive with fixed, dilated pupils. She was anuric and required ventilatory and vasopressor support. Life support was withdrawn on the third hospital day. The meprobamate level was 282 μg/mL.

Case 797. A 54-year-old female animal control officer was found unconscious with a needle and syringe still in her arm. Nearby, vials of **pentobarbital** and **diazepam,** used for animal euthanasia, were found. With bystander CPR and ACLS measures, return of spontaneous circulation was obtained. She remained unresponsive and vasopressor-dependent. She expired the next day.

Case 798. A 35-year-old man seen in the ED three weeks earlier for a suicide attempt was found in cardiac arrest following a suspected overdose of **quetiapine.** The autopsy showed evidence of aspiration of gastric contents. Postmortem laboratory results were: blood quetiapine, 13,960 ng/mL; gastric quetiapine, 179,000 ng/mL; liver quetiapine, 28,000 ng/gm; and alprazolam, 45.2 ng/mL.

Case 814. An 83-year-old, HIV-positive man was found unresponsive in his assisted-living apartment. Findings in the ED included hypertension, rapid atrial fibrillation and a right bundle branch block. The urine drug screen was positive for **amphetamines** and **cocaine.** Treatment included intubation, pacemaker placement and labetalol. A CT scan of head was negative. Subsequent complications included hypotension, requiring vasopressor therapy, oliguric renal failure and fever. The patient expired on the second hospital day.

Case 843. A 47-year-old man with a history of long-term **crack cocaine** and **heroin** abuse presented with nausea, bilious emesis, and a history of pain in the chest and epigastrium 24 hours after incarceration. His presenting EKG was markedly abnormal with ST elevation and biphasic T waves in the anterior leads. Treatment included aspirin, nitrates, and prochloperazine. During a 12-hour period of cardiac monitoring, the patient had no chest pain. Three sets of cardiac isoenzymes were normal, the EKG changes were static, and an echocardiogram was normal. The patient was about to be discharged back to police custody when he was found with pulseless electrical activity. He did not respond to resuscitative efforts. The post-mortem examination showed a 95% stenosis of the left anterior descending artery, increased heart size, and the presence of cocaine metabolites, opiates and **barbiturates** in the urine.

Case 850. A 24-year-old man with a history of polydrug abuse presented with diaphoresis, tremor, agitation and tachycardia after taking "ecstasy." Initial labs showed evidence of dehydration and renal insufficiency. He deteriorated rapidly and developed respiratory failure, hyperthermia (rectal temp 42.2° C), and bradycardia. Treatment included intubation, benzodiazepines and atropine. He expired within 5 hours of presentation. The initial urine drug screen was positive for **cocaine,** amphetamines, cannabinoids and benzodiazepines. The autopsy showed pulmonary congestion. Methylene dioxymethamphetamine was not present but the blood **paramethoxyamphetamine** level was 0.602 μg/mL.

Case 893. A 22-year-old man was brought to the ED by police 1 hour after ingesting 3,200 mg of crystal **methamphetamine** to avoid arrest. Findings included hallucinations, severe hyperthermia, tachycardia, intense muscle spasms, hypertonicity, acidosis and hypoxemia. A "coffee ground" return was noted during gastric lavage. Treatment included activated charcoal, cooling measures, diazepam, chlorpromazine, dantrolene, propranolol and sodium bicarbonate. Despite this therapy, hyperthermia persisted. Subsequent complications included recurrent cardiorespiratory arrests, hyperkalemia, rhabdomyolysis and renal failure. The patient expired on the third hospital day.

Case 899. A 29-year-old man presented unresponsive in respiratory distress following exposure to unknown amounts of **crank (methamphetamine), cocaine, methadone,** marijuana and unknown benzodiazepines. Initial vital signs were: heart rate, 200 beats/minute; blood pressure, 240/140 mm Hg; and rectal temperature, 43.3° C. Treatment included intubation, naloxone, diazepam, metoprolol, vasopressors and cooling measures. The patient became hemodynamically unstable and developed renal failure, rhabdomyolysis and excessive blood loss. He expired within 24 hours of arrival.

Case 905. A 21-year-old woman presented pulseless and apneic following the ingestion of 2 "ecstasy" pills. She was resuscitated, but was vasopressor-dependent and suffered anoxic encephalopathy. She expired 14 hours after arrival. The antemortem serum **methylenedioxymethamphetamine** level was 1.7 μg/mL and methylenedioxyamphetamine level was 0.056 μg/mL.

Case 909. A 48-year-old man presented with psychosis, agitation, hypotension, tachycardia and hyperthermia. Following treatment with haloperidol and lorazepam, he had a respiratory arrest. Laboratory studies showed a severe metabolic acidosis with hyperkalemia, and elevated anion and osmolar gaps. The urine drug screen was positive for amphetamines. Despite treatment with intravenous fluids, dopamine, transvenous pacing and benztropine, he became unresponsive and ventilator dependent. He did not respond to additional therapeutic measures including cooling, treatment for hyperkalemia, sodium bicarbonate, and benzodiazepines. He developed rhabdomyolysis, disseminated intravascular coagulation and a bleeding diathesis, then expired. Later, a history of using one "hit" of **methylenedioxymethamphetamine** was elicited.

Case 912. A 22-year-old man suffered a cardiac arrest after abusing **gammahydroxybutyrate** (GHB) and **methylenedioxymethamphetamine** at a local night club. Ethanol, cocaine metabolites and **benzodiazepines** were detected in the urine. Additional results were: urine methylenedioxymethamphetamine, 4.3 μg/mL; serum methylenedioxymethamphetamine, 3.9 μg/mL; methylenedioxyam-

phetamine, not detected; total cross-reactive benzodiazepines, 250 ng/mL; and GHB, 240 μg/mL.

Case 918. A 19-year-old man with a history of ecstasy (methylenedioxymethamphetamine) and **paramethoxyamphetamine** abuse presented with diaphoresis, hallucinations and a heart rate of 190 beats/minute. He was treated with lorazepam, diazepam and esmolol. The patient became unresponsive and hypotensive, necessitating intubation and vasopressor therapy. He expired 14 hours after admission. Antemortem urine was positive for 4-methoxyamphetamine, methylenedioxyamphetamine and other amphetamine congeners.