Toxicology

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

2001 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).[1-18]

The cumulative AAPCC database now contains nearly 31.4 million human poison exposure cases. This report includes 2,267,979 human exposure cases reported by 64 participating poison centers during 2001, an increase of 4.6% compared with 2000 poisoning reports.

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Centers participating in this report include 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 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; Northern New England Poison 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; Missouri 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; Penn State Poison Center, Hershey, PA; Palmetto Poison Center, Columbia, SC; 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
2001	64	281.3	2,267,979	8.1
Total			31,440,968	

CHARACTERIZATION OF PARTICIPATING CENTERS

Of the 64 reporting centers, 59 submitted data for the entire year. Fifty-two of the 64 participating centers were certified as regional poison centers by the AAPCC at the end of 2001. Annual center call volumes (human exposure cases only) ranged from 10,551 to 91,657 (mean 37,274) for centers participating for the entire year. Penetrance, calculated only for states that were completely served by centers participating in TESS, ranged from 5.8 to 16.8 exposures per 1,000 population with a mean of 8.1 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 281.3 million was served by the participating centers, including 48 entire states and the District of Columbia (Figure 1). Noting the 284.8 million 2001 United States population, the data presented represent an estimated 98.8% of the human poison exposures that precipitated poison center contacts in the US during 2001. 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 16.8 poisonings/1,000 population reported for one state, 4.7 million poisonings would have been reported to poison centers in 2001.

Although this report focuses on the human exposure cases reported to TESS in 2001, the database also contains data (not presented here) on animal poison exposures (113,165 cases, mostly pets), human confirmed nonexposures (6,914), animal confirmed nonexposures (397), and information calls (877,719). This total of 3,266,174 cases and inquiries reported to TESS in 2001 does not reflect the full extent of poison center effort. Approximately 2.3 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 45% of human exposure cases. One follow-up call was placed in 23% of cases; more than one (and up to 77 calls) were placed in 22% of 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 55 centers that participated for the entirety of both 2000 and 2001 shows an increase of 4% in the number of reported poison exposures from 2000 to 2001 within the regions served by these 55 centers.

REVIEW OF THE DATA

A major revision of TESS data fields was implemented on January 1, 2000. In 2001, the generic categorization of calls was revised. Prior revisions occurred in 1984, 1985, and 1993. TESS can now capture an unlimited number of substances for each case. As a result, the 2000 and 2001 data include more substances implicated compared to prior years, reflecting a change in data collection practice rather than in the nature of the poisonings which occurred.

Of the 2,267,979 human exposures reported in 2001, 92.2% occurred at a residence (Table 2). Exposures occurred in the workplace in 2.4% 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 90% of calls logged during this 16-hour period. The average number of human poison exposure consultations handled per day by all participating U.S. poison centers was 6,214. Higher volumes were observed in the warmer months, up to 6,616 per day in August compared to 5,596 consultations per day in January. On average, ignoring time of day and seasonal fluctuations, U.S. poison centers handled one poison exposure every 14 seconds.

The age and gender distribution of human poison exposure victims is outlined in Table 3. Children younger than 3 years of age were involved in 39.0% of cases, and 51.6% occurred in children younger than 6 years. A male predominance is found among poison exposure victims younger

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

	Site of Caller (%)	Site of Exposure (%)
Residence		
Own	76.0	89.2
Other	2.2	3.0
Health care facility	14.1	0.3
Workplace	1.6	2.4
School	0.8	1.6
Public area	0.4	1.3
Restaurant/food service	0.0	0.5
Other	4.7	1.0
Unknown	0.2	0.9

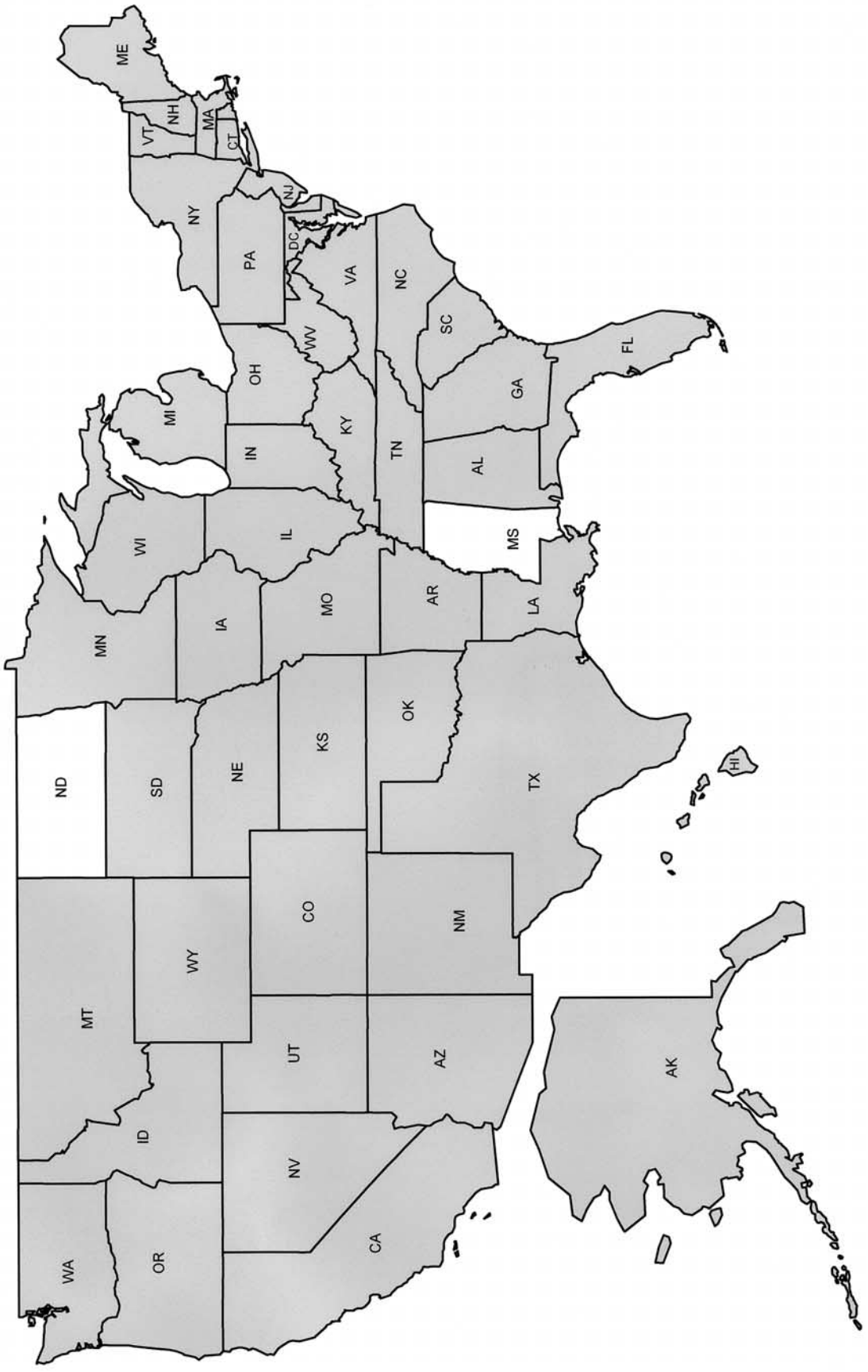

FIGURE 1. Sixty-four poison centers participated in the Toxic Exposure Surveillance System in 2001. The shaded areas denote regions served by reporting centers.

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

Age (yr)	Male		Female		Unknown		Total		Cumulative Total	
	No.	Row %	No.	Row %	No.	Row %	No.	Col %	No.	Col %
< 1	71,480	51.7	66,200	47.9	496	0.4	138,176	6.1	138,176	6.1
1	197,041	52.1	180,421	47.7	777	0.2	378,239	16.7	516,415	22.8
2	193,764	52.7	172,974	47.1	737	0.2	367,475	16.2	883,890	39.0
3	88,358	54.9	72,074	44.8	395	0.2	160,827	7.1	1,044,717	46.1
4	42,000	55.6	33,349	44.1	209	0.3	75,558	3.3	1,120,275	49.4
5	24,638	56.0	19,211	43.7	140	0.3	43,989	1.9	1,164,264	51.3
Unknown child ≤ 5	2,698	51.7	1,855	35.6	661	12.7	5,214	0.2	1,169,478	51.6
6-12	89,042	56.9	66,655	42.6	915	0.6	156,612	6.9	1,326,090	58.5
13-19	72,828	44.0	92,237	55.7	592	0.4	165,657	7.3	1,491,747	65.8
Unknown child	1,916	38.6	1,692	34.1	1,357	27.3	4,965	0.2	1,496,712	66.0
Total children (<20)	783,765	52.4	706,668	47.2	6,279	0.4	1,496,712	66.0	1,496,712	66.0
20-29	79,321	44.2	99,940	55.7	173	0.1	179,434	7.9	1,676,146	73.9
30-39	75,990	42.4	103,168	57.5	140	0.1	179,298	7.9	1,855,444	81.8
40-49	56,400	41.3	80,161	58.7	96	0.1	136,657	6.0	1,992,101	87.8
50-59	30,725	38.5	48,981	61.4	50	0.1	79,756	3.5	2,071,857	91.4
60-69	15,760	36.7	27,133	63.2	22	0.1	42,915	1.9	2,114,772	93.2
70-79	11,387	34.9	21,190	65.0	9	0.0	32,586	1.4	2,147,358	94.7
80-89	5,629	31.8	12,092	68.2	7	0.0	17,728	0.8	2,165,086	95.5
90-99	856	26.7	2,324	72.6	23	0.7	3,203	0.1	2,168,289	95.6
Unknown adult	34,042	38.8	51,458	58.6	2,324	2.6	87,824	3.9	2,256,113	99.5
Total adults	310,110	40.8	446,447	58.8	2,844	0.4	759,401	33.5	2,256,113	99.5
Unknown age	3,978	33.5	5,123	43.2	2,765	23.3	11,866	0.5	2,267,979	100.0
Total	1,097,853	48.4	1,158,238	51.1	11,888	0.5	2,267,979	100.0	2,267,979	100.0

than 13 years of age, but the gender distribution is reversed in teenagers and adults. Of all poison exposures captured, 7,588 occurred in pregnant women. Of those with known pregnancy duration, 32% occurred in the first trimester, 38% in the second trimester, and 30% in the third trimester. In 4.8% of cases (109,781 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 1,074 reported fatalities. Although responsible for the majority of poisoning reports, children younger than 6 years of age comprised just 2.4% (26) of the fatalities. Fifty-nine percent of poisoning fatalities occurred in 20- to 49-year-old individuals.

A single substance was implicated in 92.0% of reports, and 2.6% of patients were exposed to more than two possibly poisonous drugs or products (Table 5). In contrast, 48% of fatal cases involved two or more drugs or products. The overwhelming majority of human exposures were acute (92.4%) compared to only 55.5% of poison-related fatal exposures. Chronic exposures comprised 1.8% of all poison exposure reports, and acute-on-chronic exposures comprised 5.0%. (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

TABLE 4. Distribution of Age and Gender for 1,074 Fatalities

Age (yr)	Male	Female	Unknown	Total	%	Cumulative Total	Cumulative %
< 1	5	3	0	8	0.7	8	0.7
1	6	3	0	9	0.8	17	1.6
2	2	2	0	4	0.4	21	2.0
3	0	0	0	0	0.0	21	2.0
4	2	0	0	2	0.2	23	2.1
5	2	1	0	3	0.3	26	2.4
6-12	3	9	0	12	1.1	38	3.5
13-19	40	37	0	77	7.2	115	10.7
20-29	91	72	0	163	15.2	278	25.9
30-39	123	88	0	211	19.6	489	45.5
40-49	138	120	0	258	24.0	747	69.6
50-59	62	75	0	137	12.8	884	82.3
60-69	41	31	0	72	6.7	956	89.0
70-79	24	32	0	56	5.2	1,012	94.2
80-89	12	11	0	23	2.1	1,035	96.4
90-99	1	6	0	7	0.7	1,042	97.0
Unknown adult	20	6	3	29	2.7	1,071	99.7
Unknown	3	0	0	3	0.3	1,074	100.0
Total	575	496	3	1,074	100.0	1,074	100.0

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

No. of Substances	No. of Cases	% of Cases
1	2,085,550	92.0
2	122,680	5.4
3	35,696	1.6
4	13,516	0.6
5	5,541	0.2
6	2,433	0.1
7	1,164	0.1
8	606	0.0
≥ 9	793	0.0
Total	2,267,979	100.0

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 (85.2%) of poison exposures were unintentional; suicidal intent was present in 7.8% of cases (Table 6A). Therapeutic errors comprised 7.4% of exposures (167,014 cases), with unintentional nonpharmaceutical product misuse comprising another 3.7% of exposures. The types of therapeutic errors observed in each age group are delineated in Table 6B. Approximately 36% of therapeutic errors involved double-dosing. Dispensing cup errors were seen in 4,825 cases, 10-fold dosing errors in 1,330 cases, and dispensing errors in 3,605 cases.

Unintentional poisonings outnumbered intentional poisonings in all age groups (Table 7). In contrast, of the 1,074 human poisoning fatalities reported, 74% of adolescent deaths and 79% of adult deaths (older than 19 years of age) were intentional (Table 8).

Ingestions accounted for 75.8% of exposure routes (Table 9), followed in frequency by dermal, inhalation, and ocular exposures. For the 1,074 fatalities, ingestion, inhalation, and parenteral were the predominant exposure routes.

Clinical effects (signs, symptoms, or laboratory abnormalities) were coded in 30.4% of cases (17.0% had one effect, 7.9% had two effects, 3.7% had three effects, 1.2% had four effects, 0.4% had five effects, and 0.1% had more than five effects). Of 1,481,372 clinical effects coded, 81.1% were deemed related, 9.2% were considered not related, and 9.8% were coded as "unknown if related."

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).[12] Treatment in a health care facility was rendered in 22.0% of cases and recommended in another 2.0% of patients who refused the referral. The percentage of patients treated in a

TABLE 6A. Reason for Human Poison Exposure cases

Reason	No.	%
Unintentional		
General	1,455,602	64.2
Therapeutic error	167,014	7.4
Bite/sting	85,713	3.8
Misuse	82,867	3.7
Environmental	57,209	2.5
Food poisoning	41,319	1.8
Occupational	35,472	1.6
Unknown	6,645	0.3
Total	1,931,841	85.2
Intentional		
Suicidal	176,221	7.8
Abuse	38,640	1.7
Misuse	37,078	1.6
Unknown	10,764	0.5
Total	262,703	11.6
Other		
Malicious	10,709	0.5
Contaminant/tampering	5,537	0.2
Withdrawal (new 2002 reason)	5	0.0
Total	16,251	0.7
Adverse Reaction		
Drug	35,646	1.6
Food	4,033	0.2
Other	9,519	0.4
Total	49,198	2.2
Unknown	7,986	0.4
Total	2,267,979	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	60,686	25.6	12.7	6.0	55.4	0.4
Other incorrect dose	40,709	35.1	14.6	7.3	42.7	0.3
Incorrect formulation or concentration given	16,358	42.2	18.5	5.9	33.0	0.4
Dispensing cup error	4,825	55.4	16.2	5.2	23.0	0.2
Incorrect formulation or concentration dispensed	3,605	36.4	16.7	5.8	40.6	0.6
Incorrect dosing route	4,070	20.8	7.1	5.1	65.7	1.3
10-fold dosing error	1,330	58.8	6.1	3.8	30.3	1.0
Drug interaction	1,041	14.2	8.2	9.9	66.8	1.0

health care facility varied considerably with age. Only 10.3% of children under 6 years and only 13.1% of children between 6 and 12 years were managed in a health care facility compared to 48.1% of teenagers (13 to 19 years of age) and 35.8% of adults (over 19 years of age). Of cases managed in a health care facility, 54.6% were treated and released without admission, 13.9% were admitted for critical care, and 7.4% were admitted for noncritical care. Where treatment was provided in a health care facility, 33.5% of the patients were referred in by the poison center and 66.5% were already in or en route to the health care facility when the poison center was contacted. Health care facilities included acute care hospitals (86.6%), physician offices or clinics (10.2%), and freestanding emergency centers (3.2%).

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. Med-

TABLE 7. Distribution of Reason for Exposure by Age

Reason	< 6 Years		6-12 Years		13-19 Years		>19 Years		Unknown*		Total	
	No.	Row %	No.	Row %	No.	Row %	No.	Row %	No.	Row %	No.	Col%
Unintentional	1,162,769	60.2	143,295	7.4	82,209	4.3	531,676	27.5	11,892	0.6	1,931,841	85.2
Intentional	978	0.4	8,134	3.1	75,687	28.8	174,690	66.5	3,214	1.2	262,703	11.6
Other	1,305	8.0	1,782	11.0	2,389	14.7	10,181	62.6	594	3.7	16,251	0.7
Adverse Reaction	3,934	8.0	2,791	5.7	4,071	8.3	37,813	76.9	589	1.2	49,198	2.2
Unknown	492	6.2	610	7.6	1,301	16.3	5,041	63.1	542	6.8	7,986	0.4
Total	1,169,478	51.6	156,612	6.9	165,657	7.3	759,401	33.5	16,831	0.7	2,267,979	100.0

*Includes unknown child and unknown age.

TABLE 8. Distribution of Reason for Exposure and Age for 1,074 Fatalities

Reason	< 6 Years	6 - 12 Years	13 - 19 Years	> 19 Years	Unknown	Total
Unintentional						
General	14	1	1	2	0	18
Therapeutic error	8	1	2	49	0	60
Bite/sting	0	0	1	2	0	3
Misuse	0	0	2	6	0	8
Environmental	1	4	4	20	0	29
Food poisoning	0	0	0	0	0	0
Occupational	0	0	0	19	1	20
Unknown	0	0	0	1	0	1
Total	23	6	10	99	1	139
Intentional						
Suicide	0	0	35	517	0	552
Abuse	0	1	19	123	1	144
Misuse	0	0	2	58	0	60
Unknown	1	1	1	56	1	60
Total	1	2	57	754	2	816
Other						
Contamination/tampering	0	0	0	0	0	0
Malicious	0	0	0	4	0	4
Total	0	0	0	4	0	4
Adverse Reaction	1	1	2	20	0	24
Unknown	1	3	8	79	0	91
Total	26	12	77	956	3	1,074

TABLE 9. Distribution of Route of Exposure for Human Poison Exposure Cases and 1,074 Fatalities

Route	All Exposure Cases		Fatal Exposure Cases	
	No.	%	No.	%
Ingestion	1,807,448	75.8	893	77.1
Dermal	188,620	7.9	12	1.0
Inhalation	149,812	6.3	109	9.4
Ocular	126,117	5.3	0	0.0
Bites and stings	85,627	3.6	3	0.3
Parenteral	9,658	0.4	58	5.0
Otic	2,336	0.1	0	0.0
Aspiration	1,404	0.1	15	1.3
Rectal	900	0.0	2	0.2
Vaginal	800	0.0	0	0.0
Other	2,851	0.1	3	0.3
Unknown	8,025	0.3	63	5.4
Total	2,383,598	100.0	1,158	100.0

NOTE: Multiple routes of exposure were observed in many poison exposure victims. Percentage is based on the total number of exposure routes (2,383,598 for all patients; 1,158 for fatal cases) rather than the total number of human exposures (2,267,979) or fatalities (1,074).

ical 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 compromise requiring intubation, ventricular tachycardia with hypotension, cardiac or respiratory arrest, esophageal stricture, and disseminated intravascular coagulation). *Death:* The patient died as a result of the exposure or as a direct complication of the exposure. Only those deaths that were probably or undoubtedly related to the exposure are coded here. *Not followed, judged as nontoxic exposure:* No follow-up calls were made to determine the 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 2001 there were 6,914 such human cases reported nationally. An additional 3,718 duplicate reports were excluded (reported to more than one participating poison center).

TABLE 10. Management Site of Human Poison Exposure Cases

Site	No.	%
Managed on-site, non-health care facility	1,689,907	74.5
Managed in health care facility		
Treated and released	272,286	12.0
Admitted to critical care	69,503	3.1
Admitted to noncritical care	37,140	1.6
Admitted to psychiatry	41,248	1.8
Lost to follow-up; left AMA	78,347	3.5
Subtotal	498,524	22.0
Other	21,017	0.9
Refused referral	46,103	2.0
Unknown	12,428	0.5
Total	2,267,979	100.0

ABBREVIATION: AMA, against medical advice

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,

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	308,026	26.3	26,160	16.7	28,015	16.9	89,456	11.8	2,318	13.8	453,975	20.0
Minor effect	104,997	9.0	26,697	17.0	42,421	25.6	174,463	23.0	2,613	15.5	351,191	15.5
Moderate effect	9,357	0.8	3,976	2.5	17,041	10.3	71,570	9.4	596	3.5	102,540	4.5
Major effect	739	0.1	247	0.2	1,761	1.1	11,099	1.5	72	0.4	13,918	0.6
Death	26	0.0	12	0.0	77	0.0	956	0.1	3	0.0	1,074	0.0
No follow-up, nontoxic	300,652	25.7	31,495	20.1	11,608	7.0	59,776	7.9	2,037	12.1	405,568	17.9
No follow-up, minimal toxicity	411,224	35.2	60,166	38.4	44,458	26.8	256,426	33.8	4,454	26.5	776,728	34.2
No follow-up, potentially toxic	16,417	1.4	3,693	2.4	15,656	9.5	59,320	7.8	4,208	25.0	99,294	4.4
Unrelated effect	18,040	1.5	4,166	2.7	4,620	2.8	36,335	4.8	530	3.1	63,691	2.8
Total	1,169,478	51.6	156,612	6.9	165,657	7.3	759,401	33.5	16,831	0.7	2,267,979	100.0

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

Outcome	Unintentional		Intentional		Other		Adverse Reaction		Unknown		Total	
	No.	Col%	No.	Col%	No.	Col%	No.	Col%	No.	Col%	No.	Col%
No effect	399,112	20.7	50,737	19.3	2,434	15.0	926	1.9	766	9.6	453,975	20.0
Minor effect	261,900	13.6	73,079	27.8	3,228	19.9	11,695	23.8	1,289	16.1	351,191	15.5
Moderate effect	48,943	2.5	45,080	17.2	1,044	6.4	6,236	12.7	1,237	15.5	102,540	4.5
Major effect	3,162	0.2	9,628	3.7	93	0.6	583	1.2	452	5.7	13,918	0.6
Death	139	0.0	816	0.3	4	0.0	24	0.0	91	1.1	1,074	0.0
No follow-up, nontoxic	398,952	20.7	4,052	1.5	1,366	8.4	961	2.0	237	3.0	405,568	17.9
No follow-up, minimal toxicity	723,256	37.4	29,000	11.0	4,890	30.1	18,366	37.3	1,216	15.2	776,728	34.2
No follow-up, potentially toxic	47,324	2.5	45,571	17.3	1,656	10.2	2,842	5.8	1,901	23.8	99,294	4.4
Unrelated effect	49,053	2.5	4,740	1.8	1,536	9.5	7,565	15.4	797	10.0	63,691	2.8
Total	1,931,841	85.2	262,703	11.6	16,251	0.7	49,198	2.2	7,986	0.4	2,267,979	100.0

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 1,074 fatal exposures is presented in Table 21. Each of these cases was verified and abstracted by the reporting poison center. After extensive review only those exposures deemed "probably" or "undoubtedly" responsible for the fatality were included in Table 21. Abstracts of selected interesting or unusual cases are presented in the Appendix. Table 21 also reports the highest blood concentration for the responsible agents where that information is known. In addition Table 21 identifies those cases reported indirectly to the poison center (6% of cases) and those cases in which a pre-hospital cardiac and/or respiratory arrest occurred (36% of cases). Deaths are listed in Table 21 according to the agent deemed most responsible for the death by both the reporting center and the reviewers. Additional agents implicated are listed below the primary agent.

The number of fatalities reported in 2001 represents a 17% increase over the number reported in 2000. The reasons for this increase are not known. The number of reported fatalities has been steadily increasing each year, although it has not changed significantly as a percentage of total reported cases (see Table 19). For 2001, 48% of reported deaths involved more than one agent.

There were 26 fatalities reported in children less than 6 years of age. Although this represents a small increase over the 20 deaths reported in 2000, the number is similar to the 24 deaths reported in 1999. As a percentage of the total fatalities, deaths in children have remained essentially unchanged for the last four years, varying from 2.2 to 2.7% of total reported deaths. The most common reason for these pediatric fatalities was "unintentional general." Remarkably, eight of these deaths were due to therapeutic errors. Of the deaths in this age group, nine involved single agent analgesics (two acetaminophen, three aspirin, one methadone, one morphine, and two oxycodone) and only four were due to non-pharmaceutical household products (air freshener, lamp oil, methanol and a battery). There were also two heroin-related deaths. Two deaths resulting from *in utero* exposure, one with acetaminophen and one with methanol, were reported.

In the 6 to 12 year age range there were only twelve deaths reported, similar to recent years. Of this number, four were due to carbon monoxide, with or without smoke. None were reported as suicides, although one was thought secondary to intentional abuse and one was listed as "intentional, unknown."

In the 13 to 19 year age range there were 77 reported fatalities. This number has increased steadily over the last four years. As in previous years the most common reason was suicide (45%) followed by abuse (25%). Somewhat surprisingly, only 21% of the fatalities in this age range involved street drugs.

For all age ranges, the most common class of substances implicated in the fatalities was analgesics, followed by antidepressants, sedatives and hypnotics, street drugs/stimulants, and cardiovascular agents. Analgesics, as the primary substance implicated, account for 32% of fatalities (341 deaths). Of that number, 82 (24%) were caused by

TABLE 13. Duration of Clinical Effects by Medical Outcome

Duration of Effect	Minor Effect (Col%)	Moderate Effect (Col%)	Major Effect (Col%)
≤ 2 hours	40.8	7.4	3.3
> 2 hours, ≤ 8 hours	25.8	22.9	10.0
> 8 hours, ≤ 24 hours	17.2	30.8	27.1
> 24 hours, ≤ 3 days	5.4	16.2	28.0
> 3 days, ≤ 1 week	1.9	6.7	13.6
> 1 week, ≤ 1 month	0.6	2.2	5.4
> 1 month	0.2	0.6	1.2
Anticipated permanent	0.1	0.2	2.7
Unknown	8.1	13.0	8.8

TABLE 14. Decontamination and Therapeutic Intervention

Therapy	No. of patients	%
Decontamination only	1,166,330	51.4
Observation only	287,350	12.7
No therapy provided	240,244	10.6
Decontamination and other therapy	169,570	7.5
Other therapy only (no decontamination)	100,427	4.4
Unknown if therapy provided/patient refused	280,766	12.4

TABLE 15. Therapy Provided in Human Exposure Cases

Therapy	No.
Decontamination	
Dilution/irrigation	1,055,129
Activated charcoal, single dose	141,068
Cathartic	56,784
Gastric lavage	29,798
Ipecac syrup	16,058
Activated charcoal, multidose	8,374
Other emetic	7,408
Whole bowel irrigation	2,489
Measures to Enhance Elimination	
Hemodialysis	1,280
Hemoperfusion	45
Other extracorporeal procedure	26
Specific Antidote Administration	
N-acetylcysteine (oral)	12,744
Benzodiazepines	10,061
Naloxone	9,580
Calcium	2,217
Flumazenil	2,069
N-acetylcysteine (IV)	1,277
Atropine	803
Antivenin	793
Fomepizole	546
Ethanol	542
Glucagon	522
Phytonadione	445
Antivenin (fab fragment)	353
Insulin	323
Fab fragments	314
Physostigmine	302
Pyridoxine	281
Folate	278
Hyperbaric oxygen	234
Succimer	174
Pacemaker	164
Octreotide	157
Pralidoxime (2-PAM)	122
Deferoxamine	98
Dimercaprol (BAL)	93
Methylene blue	86
EDTA	86
Sodium thiosulfate	57
Sodium nitrite	27
Amyl nitrite	13
Penicillamine	11
Other intervention	
Alkalinization	6,944
Transplantation	8
ECMO	6

either acetaminophen or aspirin as single agents. Also of note is the dramatic increase in the number of deaths where long-acting oxycodone was implicated as the first substance: in 2000 there were eight such fatalities while there were 21 in 2001. In all, 49 deaths were reported where a long-acting opioid analgesic product was thought to be the first substance. It is also apparent from review of the aspirin-related deaths that many were the result of a delay in the institution of dialysis. A careful review of the criteria for dialysis, particularly reliance on salicylate blood levels, may be in order.

The second most common class of drugs deemed primarily responsible for death is street drugs. Stimulants and street drugs, as the first substance, accounted for 11% of deaths (119 deaths). An additional 8% of deaths involved street drugs in association with another primary substance. The last two years have seen a major increase

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
2001	2,267,979	51.6	0.7	6.6

in the number of deaths attributed primarily to amphetamine or its derivatives, particularly methylenedioxymethamphetamine (MDMA) with 18 deaths in 2000 and 14 in 2001. There has also been a steady increase in the number of fatalities attributed to methamphetamine over the last three years. For other abuse drugs, particularly cocaine and heroin, there has been little change during the same time period.

The third most common class of drugs associated with death was antidepressants, accounting for 11% of deaths as the primary agent (114 deaths). An additional 9.5% of deaths involved an antidepressant as a secondary agent. A major shift has occurred in the particular drugs involved, with a decline in the numbers of deaths associated with

TABLE 17A. Substances Most Frequently Involved in Human Exposures

Substance	No.	%*
Analgesics	240,757	10.6
Cleaning substances	216,102	9.5
Cosmetics and personal care products	208,171	9.2
Foreign bodies	115,320	5.1
Plants	105,560	4.7
Sedatives/hypnotics/antipsychotics	100,141	4.4
Cough and cold preparations	97,710	4.3
Topicals	95,854	4.2
Bites/envenomations	93,821	4.1
Antidepressants	92,675	4.1
Pesticides	90,010	4.0
Food Products, food poisoning	67,149	3.0
Antihistamines	67,053	3.0
Alcohols	64,462	2.8
Antimicrobials	61,357	2.7
Hydrocarbons	59,738	2.6
Chemicals	56,381	2.5

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 (2,267,979) 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	154,076	13.2
Cleaning substances	123,301	10.5
Analgesics	83,166	7.1
Foreign bodies	82,614	7.1
Topicals	76,795	6.6
Plants	73,287	6.3
Cough and cold preparations	59,949	5.1
Pesticides	46,929	4.0
Vitamins	42,150	3.6
Gastrointestinal preparations	35,633	3.0
Antimicrobials	33,033	2.8
Arts/crafts/office supplies	31,443	2.7
Antihistamines	30,968	2.6
Hormones and hormone antagonists	27,171	2.3
Hydrocarbons	22,319	1.9

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 (1,169,478), rather than the total number of substances.

tricyclic agents, such as amitriptyline and doxepin, and an increase in the number of deaths associated with selective serotonin reuptake inhibitors.

Cardiovascular drugs comprised the fifth most common class of drugs responsible for reported deaths, accounting for 9.1% of the fatalities (98 deaths where cardiovascular drugs were the primary agent). Unfortunately, the significant decrease in deaths due to cardiovascular agents observed in 2000 was not apparent in 2001. The numbers of deaths from these agents in 2001 was similar to that seen in 1998 and 1999. Of the reported deaths involving cardiovascular substances, 51% were due to calcium channel blockers. An additional 21% were due to beta-blockers, a significant increase from previous years. The number of deaths attributed to digoxin remained similar to that seen in previous years. As observed in previous years, the majority of the digoxin-related fatalities were due to therapeutic errors.

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

Substance	No.	%*
Analgesics	102,431	13.5
Sedatives/hypnotics/antipsychotics	76,393	10.1
Cleaning substances	72,430	9.5
Antidepressants	61,367	8.1
Bites/envenomations	58,501	7.7
Alcohols	40,243	5.3
Food products, food poisoning	36,790	4.8
Cosmetics and personal care products	35,942	4.7
Pesticides	34,117	4.5
Chemicals	32,954	4.3
Cardiovascular drugs	32,915	4.3
Fumes/gases/vapors	28,512	3.8
Hydrocarbons	28,453	3.7
Antihistamines	22,536	3.0
Stimulants and street drugs	21,767	2.9
Anticonvulsants	20,748	2.7
Antimicrobials	19,707	2.6
Plants	18,535	2.4
Hormones and hormone antagonists	17,268	2.3
Cough and cold preparations	16,856	2.2

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 18. Categories with Largest Numbers of Deaths

Category	No.	% of All Exposures in Category
Analgesics	531	0.221
Sedative/hypnotics/antipsychotics	266	0.266
Antidepressants	255	0.275
Stimulants and street drugs	207	0.464
Cardiovascular drugs	153	0.280
Alcohols	108	0.168
Chemicals	60	0.106
Anticonvulsants	59	0.187
Gases and fumes	49	0.118
Antihistamines	44	0.066
Muscle relaxants	42	0.228
Hormones and hormone antagonists	36	0.073
Cleaning substances	26	0.012
Automotive products	24	0.173
Asthma therapies	19	0.108
Pesticides	17	0.019

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

The vast majority (76%) of reported fatalities were intentional. The percentage of fatalities attributed to other reasons has remained fairly constant over the last five years (Table 8). As in previous years, a significant percentage (7.8%) of reported fatalities were the result of either an adverse reaction to a medication or to a therapeutic error. Of some interest, there have been no fatalities reported to this database due to food poisoning since 1997.

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 2,267,979 exposures, presented by substance categories. Table 22A focuses on nonpharmaceuticals; Table 22B presents drugs.

TABLE 19. 19-Year Comparisons of Fatality Data

Year	Total Fatalities		Suicides		Pediatric Deaths (< 6 years)	
	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
2001	1,074	0.047	552	51.4	26	2.4

TABLE 20. Frequency of Plant Exposures by Plant Type

Botanical Name	Common Name	Frequency
Capsicum annuum	Pepper	4,095
Spathiphyllum spp.	Peace lily	3,557
Philodendron spp.	Philodendron	3,280
Ilex spp.	Holly	3,091
Euphorbia pulcherrima	Poinsettia	3,073
Phytolacca americana	Pokeweed, inkberry	2,502
Ficus spp.	Rubber tree, weeping fig	1,697
Toxicodendron radicans	Poison ivy	1,513
Dieffenbachia spp.	Dumbcane	1,435
Crassula spp.	Jade plant	1,293
Epipremnum aureum	Pothos, devil's ivy	1,087
Malus spp.	Apple, crabapple (plant parts)	1,018
Chrysanthemum spp.	Chrysanthemum	998
Rhododendron spp.	Rhododendron, azalea	939
Hedera helix	English ivy	936
Nerium oleander	Oleander	894
Eucalyptus spp.	Eucalyptus	820
Schlumbergera Bridgesii	Christmas cactus	816
Taraxacum officinale	Dandelion	791
Pyracantha spp.	Pyracantha	701

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.

Of the 2,555,487 substances logged in Tables 22A and 22B, 53.4% were nonpharmaceuticals and 46.6% were pharmaceuticals. The reason for the exposure was intentional for 29.8% of pharmaceutical substances implicated compared with only 4.8% of nonpharmaceutical substances. Correspondingly, treatment in a health care facility was provided in a higher percentage of exposures to pharmaceutical substances (39.0%) compared with nonpharmaceutical substances (16.4%). Pharmaceutical exposures also had more severe outcomes. Of substances implicated in fatal cases, 84.6% were pharmaceuticals, compared with only 46.6% in nonfatal cases. Similarly, 83.5% 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 2001

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
NONPHARMACEUTICALS								
Alcohols								
1		16 yr	Ethanol	A	Ingestion	Int abuse	222 mg/dL	
2	ip	31 yr	Ethanol	A/C	Ingestion	Unknown		
3		48 yr	Ethanol (withdrawal)	C	Ingestion	Int abuse		
4	ip	48 yr	Ethanol	U	Ingestion	Int abuse		
5		49 yr	Ethanol	A/C	Ingestion	Int abuse		
6		62 yr	Ethanol	U	Ingestion	Int unk	291 mg/dL	
7		47 yr	Ethanol	C	Ingestion	Int abuse		
			acetaminophen				11 µg/mL	
8		48 yr	Ethanol	C	Ingestion	Unknown		
			acetaminophen				38 µg/mL	
9		38 yr	Ethanol	A/C	Ingestion	Int abuse	94 mg/dL	
			acetaminophen/hydrocodone				47 µg/mL¥	
10	p	31 yr	Ethanol	U	Ingestion	Int suicide		
			alprazolam					
11	i	78 yr	Ethanol	U	Ingestion	Unknown	250 mg/dL§	
			diazepam				290 ng/mL§	
							nordiazepam 490 ng/mL§	
							temazepam 2,200 ng/mL§	
12		53 yr	Ethanol	A/C	Ingestion	Int abuse	458 mg/dL	
			methanol				51 mg/dL	
13		59 yr	Ethanol	A/C	Ingestion	Int abuse	206 mg/dL	
			opioid					
14	p	50's yr	Ethanol	C	Ingestion	Int unk		
			pine oil/isopropanol cleaner					
15	p	29 yr	Ethanol	U	Ingestion	Int unk	289 mg/dL	
			unknown drug					
16	a	2 d	Methanol	C	Other	Unknown	61 mg/dL	
17	p	25 yr	Methanol	U	Ingestion	Int suicide	115.3 mg/dL	
18	a	28 yr	Methanol	A	Ingestion	Unknown	54 mg/dL	
19		35 yr	Methanol	A/C	Ingestion	Int misuse	13.4 mg/dL	
20		43 yr	Methanol	A	Ingestion	Int misuse		
21		44 yr	Methanol	A	Ingestion	Int suicide	161 mg/dL	
22	a	47 yr	Methanol	A	Ingestion	Int suicide	300 mg/dL	
23	p	49 yr	Methanol	U	Ingestion	Unknown	555 mg/dL§	
24	p	71 yr	Methanol	U	Unknown	Unknown		
25		46 yr	Methanol	A	Ingestion	Int unk	468 mg/dL	
			atenolol					
26		36 yr	Unknown alcohol	A	Ingestion	Int unk		
			acetaminophen					
See also cases 41, 52, 95, 266, 276, 278 thru 288, 292, 303, 325 thru 327, 338, 348, 376 thru 378, 433, 468, 472, 485 thru 486, 500, 527, 540, 560, 596 thru 597, 610, 620, 627, 638, 645, 683, 697, 706, 722, 794, 814, 816, 821, 826, 875, 877, 887 thru 888, 894, 899, 902, 917 thru 918, 924, 948, 955, 988, 992 thru 993, 997, 1010, 1032, 1066 (ethanol);12 (methanol); 425 (unknown alcohol).								
Automotive products								
27	a	17 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide	62 mg/dL	
28		29 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide	140 mg/dL	
29		30 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide	84 mg/dL	
30		32 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide	285 mg/dL	
31		32 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide	54 mg/dL	
32	p	36 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide	156 mg/dL	
33		37 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide	31 mg/dL	
34		40 yr	Antifreeze (ethylene glycol)	C	Ingestion	Int suicide		
35		41 yr	Antifreeze (ethylene glycol)	A	Parenteral	Unknown		
36		42 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide	124.2 mg/dL	
37		42 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide	83 mg/dL	
							glycolic acid 152 mg/dL	
38		43 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide		
39		46 yr	Antifreeze (ethylene glycol)	U	Ingestion	Int suicide	1,070 mg/dL	
40		17 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide	20 mg/dL	
			acetaminophen					
41		43 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide		
			amphetamine					
			ethanol				60 mg/dL	
42	p	>19 yr	Antifreeze (ethylene glycol)	A	Ing/Inh	Int abuse	19 mg/dL	
			nitrous oxide					
			trichloroethylene					
43		50 yr	Antifreeze (ethylene glycol)	A	Ingestion	Int suicide		
			yohimbine					
44		40 yr	Antifreeze (methanol)	A	Ingestion	Int suicide	250 mg/dL	
45	p	37 yr	Automotive cleaner	A/C	Inhalation	Int abuse		
			(methanol/toluene/methylene chloride)					
46	p	31 yr	Brake fluid (glycols)	A	Ingestion	Int suicide		
47		41 yr	Brake fluid (glycols)	A	Ingestion	Int suicide		
48		16 yr	Carburetor cleaner (hydrocarbon)	A	Inhalation	Int abuse		
49	p	29 yr	Carburetor cleaner (toluene/xylene/methanol)	A	Inhalation	Int abuse		
50	a	30 yr	Carburetor cleaner (methanol)	C	Inhalation	Int abuse	132 mg/dL	
51		34 yr	Windshield washer fluid (methanol)	A	Ingestion	Int suicide		
52	p	>19 yr	Windshield washer fluid (methanol)	A	Ingestion	Int suicide		
			ethanol					

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
Batteries								
53	ap	2 mo	Alkaline battery (AA)	A	Ingestion	Unint gen		
Bites and envenomations								
54		51 yr	*Agkistrodon contortrix*	A	Bite/sting	Bite/sting		
55	a	17 yr	Snake *(crotalinae,* unknown species*)*	A	Bite/sting	Bite/sting		
56	a	30 yr	Snake *(crotalinae,* unknown species*)*	A	Bite/sting	Bite/sting		
Chemicals								
57		37 yr	Ammonia	A	Inhalation	Occ		
58	p	44 yr	Ammonia	A	Derm/Inh	Occ		
59		73 yr	Ammonia	A	Derm/Inh	Occ		
60	a	84 yr	Ammonium alum	C	Other	Ther error	aluminum 645 ng/mL	
61	a	48 yr	Battery acid (sulfuric acid)	A	Ingestion	Int suicide		
62		55 yr	Battery acid (sulfuric acid)	A	Ingestion	Int suicide		
63	p	22 yr	Cyanide	A	Ingestion	Int suicide	>20 µg/mL§	
64	p	24 yr	Cyanide	A	Ingestion	Int suicide		
65	ap	49 yr	Cyanide	A	Ingestion	Int suicide		
66	ip	52 yr	Cyanide	A	Ingestion	Int suicide	66 µg/mL§	
67	p	29 yr	Cyanide, potassium	A	Ingestion	Int suicide		
68	p	32 yr	Cyanide, potassium	A	Ingestion	Int suicide		
69	p	38 yr	Cyanide, potassium	A	Ingestion	Int suicide		
70		40 yr	Cyanide, potassium	A	Ingestion	Int suicide		
71		57 yr	Cyanide, potassium	A	Ingestion	Int suicide		
72	p	69 yr	Cyanide, potassium	A	Ingestion	Int suicide	26.7 µg/mL	
73	p	15 yr	Cyanide, sodium	A	Ingestion	Int suicide		
74	p	>19 yr	Cyanide, sodium	A	Ingestion	Int suicide		
75	ap	70 yr	Cyanide, sodium/cyanide, copper	A	Ingestion	Unint misuse		
76		20 yr	Ethylene glycol	A	Ingestion	Int suicide		
77		25 yr	Ethylene glycol	A	Ingestion	Int suicide	257 mg/dL	
78		29 yr	Ethylene glycol	A	Ingestion	Int suicide	29 mg/dL	≥ 18 h
79		39 yr	Ethylene glycol	A	Ingestion	Int unk		
80		40 yr	Ethylene glycol	A	Ingestion	Unknown		
81	p	40 yr	Ethylene glycol	A	Ing/Unk	Int unk	11 mg/dL	
82		40 yr	Ethylene glycol	A	Ingestion	Int suicide	182 mg/dL	
83		41 yr	Ethylene glycol	A	Ingestion	Int unk		
84		44 yr	Ethylene glycol	A	Ingestion	Unknown	110 mg/dL	
85		45 yr	Ethylene glycol	A	Ingestion	Int abuse		
86		49 yr	Ethylene glycol	U	Ingestion	Unknown		
87		54 yr	Ethylene glycol	A	Ingestion	Unknown	16.6 mg/dL	
88		57 yr	Ethylene glycol	A	Ingestion	Unint misuse	46.3 mg/dL	
89	p	58 yr	Ethylene glycol	A	Ingestion	Int unk	200 mg/dL	
90		63 yr	Ethylene glycol citalopram doxylamine	A	Ingestion	Int suicide	392 mg/dL 250 ng/mL 0.29 µg/mL	
91	p	18 yr	Ethylene glycol unknown insecticide	A	Ingestion	Int suicide		
92		45 yr	Glycol ether	A	Ingestion	Int suicide		
93		55 yr	Hydrochloric acid (7%)	A	Ingestion	Int suicide		
94		70 yr	Hydrochloric acid	A	Ingestion	Int suicide		
95		35 yr	Hydrochloric acid ethanol	A	Ingestion	Int suicide		
96	a	7 yr	Hydrofluoric acid	A	Dermal	Unint gen		
97	ap	41 yr	Methylmercaptan	A	Derm/Inh	Occ	sulfhemoglobin 15 %	
98	ap	47 yr	Methylmercaptan	A	Derm/Inh	Occ	sulfhemoglobin 9 %	
99	ap	56 yr	Methylmercaptan	A	Derm/Inh	Occ	sulfhemoglobin 6 %	
100		66 yr	Nitric acid	A	Inhalation	Occ		
101		80 yr	Sodium arsenite	A	Ingestion	Unknown		
102	p	26 yr	Sodium azide	A	Ingestion	Int suicide		
103	p	>19 yr	Sodium hydroxide	A	Dermal	Occ		
104	p	60 yr	Strychnine amphetamine	A	Unknown	Unknown		
105		17 yr	Strychnine boric acid	A	Ingestion	Int suicide		
106	a	84 yr	Sulfur	A	Inhalation	Int misuse		
107	p	35 yr	Sulfuric acid	A	Ingestion	Int suicide		
108	a	45 yr	Sulfuric acid (concentrated)	A	Ingestion	Int suicide		
109	p	>19 yr	Sulfuric acid	A	Inhalation	Occ		
110	ap	26 yr	Titanium dioxide	A	Inhalation	Occ		
See also cases 105 (boric acid); 174 (cyanide); 956 (ethylene glycol); 1067 (formaldehyde).								
Cleaning substances								
111	p	71 yr	Disinfectant (sodium hydroxide, 0.63%/sodium hypochlorite, ≤ 2.5%)	A	Ingestion	Unknown		
112		43 yr	Disinfectant unknown sedative phenytoin	A	Ingestion	Unknown		
113	a	14 yr	Drain opener (sodium hydroxide, 50-60%)	A	Ingestion	Unint gen		
114	p	26 yr	Drain opener (sodium hydroxide)	A	Inhalation	Unint misuse		
115		32 yr	Drain opener (sulfuric acid)	A	Ingestion	Int suicide		
116	p	44 yr	Drain opener (sodium hydroxide/sodium hypochlorite)	A	Ingestion	Unknown		

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations		Interval after Exposure
117		51 yr	Drain opener (sodium hydroxide, 2.5%/sodium hypochlorite, 6%)	A	Ingestion	Int suicide			
118		53 yr	Drain opener (sodium hydroxide, 0.5-2%/ sodium hypochlorite, 5-10%)	A	Ingestion	Int suicide			
119		62 yr	Drain opener (sulfuric acid)	A	Ingestion	Int suicide			
120		22 yr	Drain opener (sodium hydroxide, >50%) pyrethrin/hydrocarbon	A	Ingestion	Int suicide			
121	ap	16 yr	Oven cleaner (sodium hydroxide/isobutane/propane)	A	Inhalation	Int abuse			
122		74 yr	Pine oil/isopropanol cleaner	A	Asp/Ing	Int suicide			
123		77 yr	Pine oil/isopropanol cleaner	A	Asp/Ing	Int unk	isopropanol 119	mg/dL	
124		45 yr	Rust remover (hydrofluoric acid, 12%/ ammonium bifluoride 16%)	A	Ingestion	Int suicide			
125		87 yr	Tile cleaner (phosphoric acid, 15%/ hydroxyacetic acid, ≤ 2.5%)	A	Ingestion	Unint gen			
126		46 yr	Toilet bowl cleaner (hydrochloric acid)	A	Ingestion	Int suicide			
127		50 yr	Toilet bowl cleaner ((hydrochloric acid, 15%)	A	Ingestion	Int suicide			
128		53 yr	Toilet bowl cleaner	A	Ingestion	Int suicide			
129		54 yr	Toilet bowl cleaner (hydrochloric acid, 8%)	A	Asp/Ing	Int suicide			
130		57 yr	Toilet bowl cleaner (hydrochloric acid, 15-20%)	A	Ingestion	Int suicide			
131	a	58 yr	Toilet bowl cleaner (sodium hypochlorite/sodium hydroxide)	A	Ingestion	Int suicide			
132		60 yr	Toilet bowl cleaner (hydrochloric acid, 15-20%)	A	Ingestion	Int suicide			
133		68 yr	Toilet bowl cleaner ((hydrochloric acid, 15-20%)	A	Ingestion	Int suicide			
See also cases 463 (bleach, hypochlorite); 14 (cleaner, pine oil/isopropanol); 989 (cleanser).									
Industrial cleaners									
134		24 yr	Bleach (sodium hypochlorite)	A	Asp/Ing	Int suicide			
Cosmetics and personal care products									
135		15 mo	Baby oil	A	Asp/Ing	Unint gen			
136		44 yr	Deodorant (fluorocarbon propellant) cocaine	A	Inhalation	Int abuse			
137		20 yr	Mouthwash (ethanol)	U	Ingestion	Unknown	440	mg/dL	
See also case 700 (mouthwash, ethanol).									
Deodorizers									
138	a	5 yr	Air freshener (propylene glycol, 6%/ ethoxylate, 13%)	A	Ingestion	Unint gen			
139		>19 yr	Deodorizer (formaldehyde, 35%/methanol, 11%)	A	Ingestion	Int suicide			
Foreign bodies									
See also cases 327, 484, 589, 666, 921, 1066 (activated charcoal); 876 (foreign body).									
Fumes, gases and vapors									
140	p	37 yr	Argon	A	Inhalation	Occ			
141	ap	38 yr	Carbon dioxide nitrous oxide	A	Inhalation	Ther error			
142	p	5 yr	Carbon monoxide	A	Inhalation	Env			
143	ap	6 yr	Carbon monoxide	A	Inhalation	Env			
144	p	8 yr	Carbon monoxide/smoke	A	Inhalation	Env	35.8	%	
145	ip	12 yr	Carbon monoxide/smoke	A	Inhalation	Env	63.3	%§	
146	ip	10 yr	Carbon monoxide/smoke	A	Inhalation	Env	41.4	%§	
147	ap	13 yr	Carbon monoxide	A	Inhalation	Env			
148	p	17 yr	Carbon monoxide	A	Inhalation	Env	47	%	
149	ip	19 yr	Carbon monoxide/smoke	A	Inhalation	Env	68	%§	
150	ip	19 yr	Carbon monoxide	A	Inhalation	Env			
151	p	20 yr	Carbon monoxide	A	Inhalation	Env	63	%	
152	ip	25 yr	Carbon monoxide/smoke	A	Inhalation	Env	15	%§	
153	p	27 yr	Carbon monoxide	A	Inhalation	Int suicide			
154		30 yr	Carbon monoxide/smoke	A	Inhalation	Env	29	%	
155	p	30's yr	Carbon monoxide	U	Inhalation	Int suicide			
156	p	40 yr	Carbon monoxide	A	Inhalation	Env	52	%	
157	p	40 yr	Carbon monoxide	A	Inhalation	Env	58	%	
158	i	40 yr	Carbon monoxide/smoke	A	Inhalation	Env	74.7	%§	
159		47 yr	Carbon monoxide/smoke	A	Inhalation	Env	52.5	%	
160	p	49 yr	Carbon monoxide	A	Inhalation	Int suicide			
161	p	49 yr	Carbon monoxide	A	Inhalation	Int suicide	69	%§	
162	p	40's yr	Carbon monoxide/smoke	A	Inhalation	Env	40	%	
163	p	52 yr	Carbon monoxide	A	Inhalation	Int suicide	66	%	
164	ip	53 yr	Carbon monoxide/smoke	A	Inhalation	Env	15	%§	
165	p	54 yr	Carbon monoxide	A	Inhalation	Env			
166	i	54 yr	Carbon monoxide/smoke	A	Inhalation	Env	32.3	%§	
167	p	55 yr	Carbon monoxide/smoke	A	Inhalation	Env	45.8	%	
168	ip	66 yr	Carbon monoxide	A	Inhalation	Int suicide	59	%	
169		84 yr	Carbon monoxide/smoke	A	Inhalation	Env	27	%	
170		87 yr	Carbon monoxide/smoke	A	Inhalation	Env	23	%	
171	ip	93 yr	Carbon monoxide/smoke	A	Inhalation	Env	63.8	%§	
172	p	>19 yr	Carbon monoxide	A	Inhalation	Int suicide	68	%	
173	p	>19 yr	Carbon monoxide	A	Inhalation	Unknown	55.5	%	
174		26 yr	Carbon monoxide/smoke cyanide	A	Inhalation	Env	35 40	% µg/mL	

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
175	ip	41 yr	Carbon monoxide marijuana	A	Inhalation	Env	79 %	
176		60 yr	Chlorine gas	A	Inhalation	Unint misuse		
177	ap	33 yr	Hydrogen sulfide	A	Inhalation	Occ		
178	p	35 yr	Hydrogen sulfide	A	Derm/Ing/Inh	Occ		
179		35 yr	Hydrogen sulfide	A	Derm/Ing/Inh	Occ		
180	ap	42 yr	Hydrogen sulfide	A	Unknown	Occ		
181		44 yr	Hydrogen sulfide	A	Derm/Ing/Inh	Occ		
182	ap	60 yr	Hydrogen sulfide	A	Unknown	Occ		
183	ap	67 yr	Hydrogen sulfide	A	Inhalation	Env		
184	ap	73 yr	Hydrogen sulfide	A	Inhalation	Env		
185	p	>19 yr	Hydrogen sulfide	A	Inhalation	Occ		
186	p	>19 yr	Hydrogen sulfide	A	Inhalation	Occ		
187	ap	U	Methane	A	Inhalation	Occ		
See also case 324 (carbon monoxide).								
Heavy metals								
188		50 yr	Dimethylarsenate zinc	U	Ingestion	Int suicide	arsenic 380 µg/dL	
189	a	41 yr	Mercury (vapor)	A	Inhalation	Env		
Hydrocarbons								
190		18 yr	Chlorofluorocarbon	A	Inhalation	Int abuse		
191		16 yr	Chlorofluoromethane	U	Inhalation	Unknown		
192	ap	13 yr	Gasoline	A	Inhalation	Int abuse		
193	a	12 mo	Lamp oil	A	Asp/Ing	Unint gen		
See also cases 1033 (hydrocarbon); 42 (trichloroethylene).								
Paints								
194	p	19 yr	Primer sealer (hydrocarbon)	A	Inhalation	Unint misuse		
Pesticides: Fumigants								
195	a	16 yr	Aluminum phosphide	A	Ingestion	Int suicide		
Pesticides: Fungicides								
196		44 yr	Chlorothalonil aspirin acetaminophen/dextromethorphan/doxylamine/pseudoephedrine[A]	A	Ingestion	Int suicide		
Pesticides: Herbicides								
197		38 yr	Paraquat	A	Ingestion	Int suicide		
198		43 yr	Paraquat	A	Ingestion	Unint misuse		
199	a	46 yr	Paraquat	A	Ingestion	Int suicide		
200		80 yr	Paraquat	A	Ingestion	Int suicide		
Pesticides: Insecticides								
201	p	40's yr	Acephate	A	Ingestion	Int suicide		
202		41 yr	Carbaryl	A	Ingestion	Int suicide		
203	a	2 yr	Endosulfan	A	Ingestion	Unint gen		
See also cases 91(insecticide, unknown); 120 (pyrethrin/hydrocarbon).								
Pesticides: Rodenticides								
204		52 yr	Brodifacoum	C	Ingestion	Int suicide		
205	a	50 yr	Zinc phosphide	A	Ingestion	Int suicide		
Plants								
206	ap	20 yr	*Datura stramonium* seeds (jimson weed) atenolol celecoxib	A	Ingestion	Int suicide	atropine 0.049 µg/mL§ 0.66 µg/mL§	
Tobacco Products								
207	p	20 yr	Tobacco dimenhydrinate	A	Ingestion	Int suicide		
Weapons of Mass Destruction								
208	a	63 yr	Anthrax (*Bacillus anthracis*)	A	Inhalation	Malicious		
PHARMACEUTICALS								
Analgesics								
209	a	1 d	Acetaminophen	C	Other	Ther error	19.1 µg/mL	
210		8 yr	Acetaminophen	C	Ingestion	Ther error	100 µg/mL	
211		16 yr	Acetaminophen	A	Ingestion	Int suicide	96.4 µg/mL	
212		19 yr	Acetaminophen	A	Ingestion	Int misuse	78 µg/mL	19 h
213		20 yr	Acetaminophen	A	Ingestion	Int suicide	120 µg/mL	
214		23 yr	Acetaminophen	U	Ingestion	Int misuse	198 µg/mL	
215		23 yr	Acetaminophen	A	Ingestion	Int suicide	32 µg/mL	
216		26 yr	Acetaminophen	A	Ingestion	Int suicide	583 µg/mL	
217		29 yr	Acetaminophen	A	Ingestion	Int suicide	354 µg/mL	4 h
218		30 yr	Acetaminophen	C	Ingestion	Int misuse	36.6 µg/mL	

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations		Interval after Exposure
219		30 yr	Acetaminophen	C	Ingestion	Int abuse	204.3	µg/mL	
220		31 yr	Acetaminophen	A	Ingestion	Int suicide			
221		33 yr	Acetaminophen	A/C	Ingestion	Int misuse	281	µg/mL	
222		33 yr	Acetaminophen	A	Ingestion	Int suicide	146	µg/mL	
223		33 yr	Acetaminophen	C	Ingestion	Unknown	14	µg/mL	
224		34 yr	Acetaminophen	U	Ingestion	Int unk	28	µg/mL	
225		34 yr	Acetaminophen	A/C	Ingestion	Ther error			
226		34 yr	Acetaminophen	A	Ingestion	Int suicide	120	µg/mL	
227		36 yr	Acetaminophen	A	Ingestion	Int suicide	98.9	µg/mL	36 h
228		36 yr	Acetaminophen	A	Ingestion	Int suicide	544	µg/mL	
229		36 yr	Acetaminophen	C	Ingestion	Int misuse			
230		36 yr	Acetaminophen	C	Ingestion	Int misuse			
231		37 yr	Acetaminophen	U	Ingestion	Unknown	55	µg/mL	
232		37 yr	Acetaminophen	A	Ingestion	Int suicide	109	µg/mL	
233		40 yr	Acetaminophen	A	Ingestion	Int suicide	129	µg/mL	
234		40 yr	Acetaminophen	C	Ingestion	Int misuse	15	µg/mL	
235		41 yr	Acetaminophen	U	Ingestion	Unknown	107.8	µg/mL	
236		41 yr	Acetaminophen	U	Ingestion	Int suicide	48	µg/mL	
237		42 yr	Acetaminophen	C	Ingestion	Int misuse	75	µg/mL	
238	p	43 yr	Acetaminophen	A	Ingestion	Int suicide	44	µg/mL	
239		43 yr	Acetaminophen	C	Ingestion	Ther error	20	µg/mL	
240		43 yr	Acetaminophen	A	Ingestion	Int suicide	175	µg/mL	12 h
241		46 yr	Acetaminophen	C	Ingestion	Int unk	96	µg/mL	
242		46 yr	Acetaminophen	U	Ingestion	Int suicide	57.4	µg/mL	
243		49 yr	Acetaminophen	U	Ingestion	Unknown	15	µg/mL	
244		50 yr	Acetaminophen	C	Ingestion	Ther error	8.6	µg/mL	
245		52 yr	Acetaminophen	A	Ingestion	Int suicide	53.4	µg/mL	19 h
246		52 yr	Acetaminophen	C	Ingestion	Int unk	26	µg/mL	
247		54 yr	Acetaminophen	A	Ingestion	Int suicide			
248		56 yr	Acetaminophen	A	Ingestion	Int suicide	85	µg/mL	19 h
249	a	60 yr	Acetaminophen	A	Ingestion	Int suicide	1145	µg/mL	
250		63 yr	Acetaminophen	U	Ingestion	Unknown			
251		64 yr	Acetaminophen	A	Ingestion	Int suicide	70.3	µg/mL	
252		64 yr	Acetaminophen	U	Ingestion	Unknown	83	µg/mL	
253		65 yr	Acetaminophen	A/C	Ingestion	Int suicide	150	µg/mL	
254		69 yr	Acetaminophen	A	Ingestion	Int suicide	900	µg/mL	
255		74 yr	Acetaminophen	C	Ingestion	Int unk	149	µg/mL	
256		76 yr	Acetaminophen	A	Ingestion	Int suicide	38	µg/mL	
257		76 yr	Acetaminophen	C	Ingestion	Int misuse	31	µg/mL	
258		81 yr	Acetaminophen	A	Ingestion	Int suicide	317	µg/mL	
259		85 yr	Acetaminophen	A/C	Ingestion	Ther error	111	µg/mL	
260		86 yr	Acetaminophen	C	Ingestion	Int misuse	55.8	µg/mL	
261		32 yr	Acetaminophen acetaminophen/butalbital/caffeine acetaminophen/dextromethorphan/ doxylamine/pseudoephedrine	C	Ingestion	Ther error			
262		52 yr	Acetaminophen acetaminophen/diphenhydramine	C	Ingestion	Int misuse	132	µg/mL	
263		>19 yr	Acetaminophen acetaminophen/hydrocodone	A/C	Ingestion	Int suicide	68	µg/mL	
264		41 yr	Acetaminophen acetaminophen/hydrocodone trazodone	A/C	Ingestion	Int suicide	165	µg/mL	
265		27 yr	Acetaminophen acetaminophen/oxycodone	A	Ingestion	Int abuse	73	µg/mL	
266		59 yr	Acetaminophen acetaminophen/propoxyphene ethanol	C	Ingestion	Int misuse	19	µg/mL	
267		38 yr	Acetaminophen aspirin	C	Ingestion	Int misuse	95 26	µg/mL mg/dL	
268		86 yr	Acetaminophen aspirin	A	Ingestion	Int suicide	313 23.8	µg/mL mg/dL	
269		33 yr	Acetaminophen aspirin acetaminophen/pseudoephedrine/ dextromethorphan	U	Ingestion	Int misuse	129 27	µg/mL mg/dL	
270		40 yr	Acetaminophen aspirin baclofen	U	Ingestion	Int unk	17 14	µg/mL mg/dL	
271	p	58 yr	Acetaminophen benzodiazepine	A/C	Ingestion	Int suicide	138.1	µg/mL	
272	p	35 yr	Acetaminophen benzodiazepine opioid[A]	A	Ingestion	Int suicide	208	µg/mL	
273		46 yr	Acetaminophen carbamazepine clonazepam[A]	A	Ingestion	Int suicide	496	µg/mL	
274		23 yr	Acetaminophen cocaine	A/C	Ingestion	Int suicide	189	µg/mL	
275		26 yr	Acetaminophen diazepam	A	Ingestion	Int suicide			
276		43 yr	Acetaminophen diazepam ethanol	C	Ingestion	Ther error	64	µg/mL	

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations		Interval after Exposure
277		22 yr	Acetaminophen diphenhydramine	A	Ingestion	Int abuse	163	µg/mL	
278		34 yr	Acetaminophen ethanol	C	Ingestion	Int misuse			
279		36 yr	Acetaminophen ethanol	U	Ingestion	Unknown	21	µg/mL	
280		36 yr	Acetaminophen ethanol	A	Ingestion	Int suicide	546 226	µg/mL mg/dL	
281		37 yr	Acetaminophen ethanol	A	Ingestion	Int suicide	35	µg/mL	
282		39 yr	Acetaminophen ethanol	A/C	Ingestion	Int suicide	46 306	µg/mL mg/dL	
283		42 yr	Acetaminophen ethanol	C	Ingestion	Ther error	78	µg/mL	
284		42 yr	Acetaminophen ethanol	A	Ingestion	Int suicide	87.6	µg/mL	24 h
285		44 yr	Acetaminophen ethanol	C	Ingestion	Unknown	78	µg/mL	
286		72 yr	Acetaminophen ethanol	C	Ingestion	Int misuse	110	µg/mL	
287		80 yr	Acetaminophen ethanol	U	Ingestion	Int abuse			
288		33 yr	Acetaminophen ethanol ibuprofen[A]	A	Ingestion	Int suicide			
289		23 yr	Acetaminophen ibuprofen	A	Ingestion	Int suicide	50	µg/mL	36-48 h
290		34 yr	Acetaminophen ibuprofen acetaminophen/hydrocodone	A/C	Ingestion	Int misuse	50	µg/mL	
291		50 yr	Acetaminophen ibuprofen acetaminophen/oxycodone	C	Ingestion	Int misuse			
292		29 yr	Acetaminophen ibuprofen ethanol	A/C	Ingestion	Ther error	348	mg/dL	
293		20 yr	Acetaminophen ma huang caffeine/ephedrine	A/C	Ingestion	Int misuse	55	µg/mL	
294	a	16 mo	Acetaminophen methamphetamine	C	Ingestion	Ther error			
295		48 yr	Acetaminophen opioid barbiturate	C	Ingestion	Unint misuse	28	µg/mL	
296		48 yr	Acetaminophen opioid benzodiazepine[A]	U	Ingestion	Int unk	23	µg/mL	
297		50 yr	Acetaminophen phenobarbital primidone	A	Ingestion	Int suicide	198 64.3 84.7	µg/mL µg/mL µg/mL	>12 h >12 h >12 h
298		43 yr	Acetaminophen propoxyphene	A	Ingestion	Int suicide	121	µg/mL	
299		76 yr	Acetaminophen unknown substance	A	Ingestion	Int suicide	165	µg/mL	27 h
300		54 yr	Acetaminophen verapamil chlorpromazine[A]	A/C	Ingestion	Unknown	990	µg/mL	
301		69 yr	Acetaminophen warfarin	U	Ingestion	Unknown			
302		53 yr	Acetaminophen/aspirin ibuprofen	A	Ingestion	Int suicide	152 42	µg/mL¥ mg/dL¶	
303		67 yr	Acetaminophen/aspirin/caffeine ethanol	C	Ingestion	Int misuse	35 23 17	µg/mL¥ mg/dL¶ mg/dL	
304	p	40 yr	Acetaminophen/butalbital/caffeine aspirin	U	Ingestion	Int unk			
305		18 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide	30	µg/mL¥	17 h
306		19 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide	294	µg/mL¥	
307		19 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide			
308		19 yr	Acetaminophen/diphenhydramine	A/C	Ingestion	Int suicide	171 diphenhydramine 0.68	µg/mL¥ µg/mL	
309		22 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide	820	µg/mL¥	26 h
310	p	23 yr	Acetaminophen/diphenhydramine	U	Ingestion	Int misuse	104	µg/mL¥	
311		25 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide	46	µg/mL¥	
312		26 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide			
313	p	30 yr	Acetaminophen/diphenhydramine	U	Ingestion	Int suicide	873	µg/mL¥	
314		34 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide	311	µg/mL¥	
315		37 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide	60	µg/mL¥	18 h
316		37 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide	178	µg/mL¥	
317		45 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide	230	µg/mL¥	
318		49 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide	18.6	µg/mL¥	19 h
319		68 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide			
320	p	74 yr	Acetaminophen/diphenhydramine	A	Ingestion	Int suicide	668.5	µg/mL¥	22 h

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
321		31 yr	Acetaminophen/diphenhydramine acetaminophen/pseudoephedrine/doxylamine	C	Ingestion	Int suicide	19 µg/mL¥	
322	p	16 yr	Acetaminophen/diphenhydramine aspirin	A	Ingestion	Int suicide	149 µg/mL¥§ diphenhydramine 1.7 µg/mL§ 77.3 mg/dL§	
323		20's yr	Acetaminophen/diphenhydramine bisoprolol/hydrochlorothiazide naproxen	A	Ingestion	Int suicide	>200 µg/mL¥	
324		>19 yr	Acetaminophen/diphenhydramine carbon monoxide	A	Unknown	Unknown	5 %	
325		40 yr	Acetaminophen/diphenhydramine ethanol	A/C	Ingestion	Int misuse	39.4 µg/mL¥ 131 mg/dL	
326		53 yr	Acetaminophen/diphenhydramine ethanol	A	Ingestion	Int suicide		
327		31 yr	Acetaminophen/diphenhydramine ethanol activated charcoal	A	Asp/Ing	Int suicide	101 µg/mL¥ 450 mg/dL	
328		30 yr	Acetaminophen/diphenhydramine venlafaxine bupropion[A]	A	Ingestion	Int suicide	80 µg/mL¥	
329		24 yr	Acetaminophen/hydrocodone	A	Ingestion	Int suicide	22 µg/mL¥	
330		29 yr	Acetaminophen/hydrocodone	A	Ingestion	Int suicide	42 µg/mL¥	
331		33 yr	Acetaminophen/hydrocodone	U	Ingestion	Unknown		
332		38 yr	Acetaminophen/hydrocodone	C	Ingestion	Int misuse	70 µg/mL¥	
333		47 yr	Acetaminophen/hydrocodone	U	Ingestion	Int abuse	53.5 µg/mL¥	
334		57 yr	Acetaminophen/hydrocodone	C	Ingestion	Int misuse	137 µg/mL¥	
335		63 yr	Acetaminophen/hydrocodone	A/C	Ingestion	Int suicide		
336		47 yr	Acetaminophen/hydrocodone acetaminophen	C	Ingestion	Ther error	193 µg/mL¥	
337	p	51 yr	Acetaminophen/hydrocodone acetaminophen diphenhydramine[A]	U	Ingestion	Int suicide	141 µg/mL¥	
338		43 yr	Acetaminophen/hydrocodone acetaminophen ethanol	A	Ingestion	Ther error	68.3 µg/mL¥	
339		29 yr	Acetaminophen/hydrocodone acetaminophen/oxycodone	C	Ingestion	Int misuse	34 µg/mL¥	
340		60 yr	Acetaminophen/hydrocodone alprazolam clonazepam[A]	U	Ingestion	Int suicide	187 µg/mL¥	
341		69 yr	Acetaminophen/hydrocodone benzodiazepine	A	Ingestion	Int suicide		
342		29 yr	Acetaminophen/hydrocodone carisoprodol	A	Ingestion	Int suicide	108 µg/mL¥	2 h
343		45 yr	Acetaminophen/hydrocodone carisoprodol	C	Ingestion	Ther error	38 µg/mL¥	
344		51 yr	Acetaminophen/hydrocodone carisoprodol	C	Ingestion	Int misuse		
345		>19 yr	Acetaminophen/hydrocodone carisoprodol	U	Ingestion	Int suicide	33.8 µg/mL¥	
346		53 yr	Acetaminophen/hydrocodone carisoprodol omeprazole[A]	U	Ingestion	Int unk		
347		53 yr	Acetaminophen/hydrocodone clozapine zolpidem	A	Ingestion	Int suicide	493 µg/mL¥	
348	p	20 yr	Acetaminophen/hydrocodone diazepam ethanol	A	Ingestion	Int abuse	63 µg/mL¥ hydrocodone 1600 µg/mL 400 ng/mL§ nordiazepam 800 ng/mL§	
349	p	22 yr	Acetaminophen/hydrocodone heroin alprazolam	A/C	Ingestion	Int abuse	hydrocodone 340 ng/mL	
350	p	45 yr	Acetaminophen/hydrocodone heroin alprazolam	A/C	Ing/Paren	Int abuse		
351		29 yr	Acetaminophen/hydrocodone hydromorphone marijuana	U	Ingestion	Int suicide		
352	p	21 yr	Acetaminophen/hydrocodone hydroxycitric acid/ephedra/caffeine/salicin/l-carnitine/chromium picolinate ibuprofen	U	Ingestion	Unknown		
353	p	33 yr	Acetaminophen/hydrocodone methadone	A/C	Ingestion	Int abuse	53 µg/mL¥ hydrocodone 600 ng/mL§ 0.4 ng/mL§	
354		20 yr	Acetaminophen/hydrocodone morphine	A/C	Ingestion	Int suicide	102 µg/mL¥	
355	p	42 yr	Acetaminophen/hydrocodone propoxyphene bupropion[A]	A	Ingestion	Int suicide	hydrocodone 690 ng/mL§	

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations		Interval after Exposure
356	p	42 yr	Acetaminophen/hydrocodone tramadol alprazolam	A	Ingestion	Int suicide			
357		74 yr	Acetaminophen/hydrocodone salicylate	U	Ing/Unk	Unknown	79 17.2	µg/mL¥ mg/dL	
358		37 yr	Acetaminophen/hydrocodone venlafaxine baclofen	A	Ingestion	Int suicide	23	µg/mL¥	
359	p	14 yr	Acetaminophen/oxycodone	A	Ingestion	Int suicide	157.2	µg/mL¥	4 h
360	p	30 yr	Acetaminophen/oxycodone	C	Ingestion	Int unk			
361		54 yr	Acetaminophen/oxycodone	A/C	Ingestion	Int misuse	228	µg/mL¥	
362	p	69 yr	Acetaminophen/oxycodone	A/C	Ingestion	Ther error			
363		72 yr	Acetaminophen/oxycodone acetaminophen	C	Ingestion	Ther error	51	µg/mL¥	
364		37 yr	Acetaminophen/oxycodone acetaminophen/hydrocodone cocaine[A]	C	Ing/Unk	Int misuse	9 benzoylecgonine 4.97 ecgonine methyl ester 0.4	µg/mL¥ µg/mL µg/mL	
365		64 yr	Acetaminophen/oxycodone acetaminophen/hydrocodone oxycodone[A]	A/C	Ingestion	Int suicide			
366	ip	31 yr	Acetaminophen/propoxyphene	A	Ingestion	Int suicide			
367	p	35 yr	Acetaminophen/propoxyphene	A/C	Ingestion	Int suicide	87.7	µg/mL¥	
368		39 yr	Acetaminophen/propoxyphene	A	Ingestion	Int suicide	325	µg/mL¥	
369	p	57 yr	Acetaminophen/propoxyphene	A/C	Ingestion	Int suicide	130.3	µg/mL¥	
370		48 yr	Acetaminophen/propoxyphene acetaminophen lorazepam	U	Ingestion	Int suicide	>500	µg/mL¥	
371		41 yr	Acetaminophen/propoxyphene aspirin/butalbital/caffeine clonidine	U	Ingestion	Int suicide	40 34.7 butalbital 23	µg/mL¥ mg/dL¶ µg/mL§	
372		46 yr	Acetaminophen/propoxyphene benzodiazepine	A	Ingestion	Int suicide			
373	p	48 yr	Acetaminophen/propoxyphene carisoprodol	A	Ingestion	Int suicide	161	µg/mL¥	
374		64 yr	Acetaminophen/propoxyphene carisoprodol	A/C	Ingestion	Int suicide	169	µg/mL¥	
375	p	50 yr	Acetaminophen/propoxyphene citalopram cyclobenzaprine	A/C	Ingestion	Int suicide	940	µg/mL¥	
376	p	24 yr	Acetaminophen/propoxyphene ethanol	A	Ingestion	Int suicide	311 230	µg/mL¥ mg/dL	
377	p	29 yr	Acetaminophen/propoxyphene ethanol	A	Ingestion	Int suicide	101.6	µg/mL¥	
378	p	45 yr	Acetaminophen/propoxyphene ethanol	A/C	Ingestion	Int unk	182 109	µg/mL¥ mg/dL	
379	p	58 yr	Acetaminophen/propoxyphene lorazepam	A	Ingestion	Int suicide			
380		44 yr	Acetaminophen/propoxyphene meprobamate citalopram[A]	A	Ingestion	Int suicide			
381	p	3 mo	Aspirin	A	Ingestion	Unint gen			
382	a	1 yr	Aspirin	A	Ingestion	Unint gen	123	mg/dL	4-6 h
383	a	14 mo	Aspirin	A	Ingestion	Unint gen	70	mg/dL	
384		16 yr	Aspirin	A	Ingestion	Int suicide	104.6	mg/dL	15 h
385		19 yr	Aspirin	A	Ingestion	Int suicide	89	mg/dL	
386		20 yr	Aspirin	A	Ingestion	Int suicide	111	mg/dL	
387		22 yr	Aspirin	A	Ingestion	Int suicide	119	mg/dL	
388		23 yr	Aspirin	A	Ingestion	Int suicide	113	mg/dL	
389		29 yr	Aspirin	A	Ingestion	Int suicide	87	mg/dL	
390		39 yr	Aspirin	A	Ingestion	Int unk	95.14	mg/dL	
391		40 yr	Aspirin	U	Ingestion	Unknown	68	mg/dL	
392	a	45 yr	Aspirin	A	Ingestion	Int suicide	109	mg/dL	10 h
393		46 yr	Aspirin	A	Ingestion	Int suicide	76	mg/dL	
394		48 yr	Aspirin	A	Ingestion	Int suicide	77	mg/dL	
395	a	48 yr	Aspirin	A	Ingestion	Int suicide	110.3	mg/dL	24 h
396		49 yr	Aspirin	U	Ingestion	Int suicide			
397		55 yr	Aspirin	A	Ingestion	Ther error	82	mg/dL	
398		56 yr	Aspirin	A	Ingestion	Int suicide	125	mg/dL	
399		56 yr	Aspirin	A/C	Ingestion	Int unk	73.1	mg/dL	
400	p	57 yr	Aspirin	U	Ingestion	Int suicide	75.5	mg/dL	
401		58 yr	Aspirin	A	Ingestion	Int suicide			
402		64 yr	Aspirin	A	Ingestion	Int unk	132.7	mg/dL	
403		65 yr	Aspirin	A	Ingestion	Int suicide	121	mg/dL	10 h
404		66 yr	Aspirin	A	Ingestion	Int suicide	100	mg/dL	15 h
405		67 yr	Aspirin	A	Ingestion	Int suicide	111	mg/dL	
406		71 yr	Aspirin	A	Ingestion	Int unk	57	mg/dL	12 h
407		71 yr	Aspirin	A/C	Ingestion	Int misuse	39	mg/dL	
408		72 yr	Aspirin	A/C	Ingestion	Ther error	54	mg/dL	
409		77 yr	Aspirin	A	Ingestion	Int suicide			
410		91 yr	Aspirin	U	Ingestion	Unknown	98	mg/dL	
411		58 yr	Aspirin acetaminophen	U	Ingestion	Int suicide	66 340	mg/dL µg/mL	

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations		Interval after Exposure
412		72 yr	Aspirin	A	Ingestion	Int suicide	82	mg/dL	
			acetaminophen				202	µg/mL	
413		87 yr	Aspirin	A	Ingestion	Int suicide	121.3	mg/dL	
			acetaminophen				218	µg/mL	
414		35 yr	Aspirin	A	Ingestion	Int suicide	105	mg/dL	
			acetaminophen/diphenhydramine				187	µg/mL¥	
415		46 yr	Aspirin	U	Ingestion	Int suicide			
			acetaminophen/propoxyphene						
416		49 yr	Aspirin	A	Ingestion	Int suicide	50	mg/dL	
			chlorpromazine						
			venlafaxine[A]						
417		56 yr	Aspirin	A	Ingestion	Int suicide	81	mg/dL	
			colchicine						
418		22 yr	Aspirin	A	Ingestion	Int suicide	130	mg/dL	
			diphenhydramine				10	µg/mL§	
419		49 yr	Aspirin	U	Ingestion	Int suicide			
			fluvoxamine						
420		51 yr	Aspirin	A	Ingestion	Int suicide	71	mg/dL	
			ibuprofen						
421		29 yr	Aspirin	A	Asp/Ing/ Paren	Int suicide	54.8	mg/dL	
			ibuprofen						
			naproxen[A]						
422		37 yr	Aspirin	A	Ingestion	Int suicide	69.5	mg/dL	
			olanzapine						
			bupropion						
423		63 yr	Aspirin	A	Ingestion	Int suicide	63	mg/dL	
			theophylline				46	µg/mL	
			amphetamine[A]						
424		69 yr	Aspirin	A	Ingestion	Int suicide	72.8	mg/dL	
			tramadol						
425		47 yr	Aspirin	A	Ingestion	Int suicide	104.8	mg/dL	
			unknown alcohol						
426		18 yr	Aspirin	A/C	Ingestion	Int suicide	69	mg/dL	10 h
			valproic acid				1200	µg/mL	10 h
			acetaminophen/diphenhydramine				24	µg/mL¥	2 h
427		46 yr	Aspirin/caffeine/codeine	A/C	Ingestion	Int unk	8	mg/dL	
428	ip	48 yr	Codeine	A	Ingestion	Int suicide	22.8	µg/mL§	
			butalbital				28	µg/mL§	
			promethazine[A]				620	ng/mL§	
429	ip	43 yr	Codeine	A/C	Ingestion	Int abuse	morphine 200	ng/mL§	
			cocaine				benzoylecgonine 0.239	µg/mL§	
			diazepam[A]				290	ng/mL§	
							nordiazepam 290	µg/mL§	
430	a	45 yr	Colchicine	C	Ingestion	Int misuse	6.1	ng/mL	
431		46 yr	Colchicine	A	Ingestion	Int suicide			
432		72 yr	Colchicine	C	Ing/Paren	Ther error			
433		50 yr	Colchicine	A/C	Ingestion	Int suicide			
			ethanol						
434		16 yr	Colchicine	A	Ingestion	Int suicide			
			ibuprofen						
			loratadine						
435		54 yr	Colchicine	A/C	Ingestion	Int suicide			
			lovastatin						
			indomethacin						
436		50 yr	Colchicine	A/C	Ingestion	Int suicide			
			oxycodone						
			risperidone[A]						
437	p	24 yr	Fentanyl	A	Ingestion	Int abuse			
438		40 yr	Fentanyl	A	Parenteral	Int abuse			
439	p	42 yr	Fentanyl patch	C	Dermal	Unknown			
440	ap	U	Fentanyl	U	Ingestion	Int unk			
441		25 yr	Fentanyl patch	A/C	Ingestion	Int unk	2	ng/mL§	
			alprazolam				45	ng/mL§	
			cocaine[A]						
442		48 yr	Fentanyl patch	A/C	Derm/Ing	Int suicide			
			oxycodone						
			methadone						
443	p	20 yr	Fentanyl patch	A	Ingestion	Int suicide			
			propoxyphene						
			gabapentin[A]						
444		26 yr	Fentanyl patch	U	Unknown	Unknown			
			zolpidem						
			olanzapine						
445		30's yr	Hydromorphone	U	Ingestion	Int suicide			
446		38 yr	Ibuprofen	A/C	Ingestion	Int suicide			
447		63 yr	Ibuprofen	A	Ingestion	Int suicide			
448		71 yr	Ibuprofen	C	Ingestion	Int abuse			
449		66 yr	Ibuprofen	A/C	Ingestion	Int misuse			
			celecoxib						
450		25 yr	Meperidine	A	Parenteral	Adv rxn			
451		35 yr	Meperidine	C	Parenteral	Ther error			
			hydromorphone						
452	p	24 yr	Methadone	A	Ingestion	Int suicide			
453	p	25 yr	Methadone	A	Ingestion	Int unk	0.76	µg/mL§	
454	p	20's yr	Methadone	A/C	Ingestion	Int abuse	1.0	µg/mL§	

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations		Interval after Exposure
455	p	30 yr	Methadone	A	Ingestion	Int suicide			
456	p	45 yr	Methadone	A	Unknown	Int abuse			
457	p	45 yr	Methadone	A	Unknown	Int abuse			
458		47 yr	Methadone	A/C	Ingestion	Int suicide			
459		>19 yr	Methadone	U	Unknown	Int abuse	1.28	µg/mL	
460	p	54 yr	Methadone	A/C	Ingestion	Int suicide	0.25	µg/mL§	
			acetaminophen/hydrocodone				38	µg/mL¥	
							hydrocodone 30	ng/mL§	
461	i	39 yr	Methadone	U	Ingestion	Unknown	0.73	µg/mL§	
			amitriptyline				370	ng/mL§	
							nortriptyline 320	ng/mL§	
			diazepam[A]						
462	p	17 yr	Methadone	A/C	Ingestion	Int abuse			
			amphetamines						
			phencyclidine[A]						
463	p	27 yr	Methadone	U	Ingestion	Int abuse	0.55	µg/mL§	
			bleach (hypochlorite)						
			oxycodone[A]						
464		52 yr	Methadone	A/C	Ingestion	Int suicide			
			clonazepam						
465	a	41 yr	Methadone	A	Ing/Inh	Int abuse			
			cocaine (crack)						
			methylphenidate						
466	ip	19 yr	Methadone	U	Paren/Unk	Unknown	0.94	µg/mL§	
			diazepam				1,160	ng/mL§	
							nordiazepam 150	ng/mL§	
467	p	40 yr	Methadone	U	Unknown	Unknown	1.1	µg/mL§	
			diazepam				415	ng/mL§	
							nordiazepam 709	ng/mL§	
468	p	43 yr	Methadone	U	Ingestion	Int abuse			
			ethanol						
469	i	44 yr	Methadone	A	Ingestion	Unknown			
			fluoxetine						
470	i	42 yr	Methadone	U	Ingestion	Unknown	0.61	µg/mL§	
			hydroxyzine				0.02	µg/mL§	
			diazepam[A]				150	µg/mL§	
							nordiazepam 1,080	µg/mL§	
471	ip	43 yr	Methadone	A/C	Ingestion	Int abuse	0.31	µg/mL§	
			mirtazapine				80	ng/mL§	
			clonazepam[A]						
472	ip	26 yr	Methadone	A	Ingestion	Int abuse	0.24	µg/mL§	
			oxycodone				150	ng/mL§	
			ethanol				67	mg/dL§	
473	p	37 yr	Methadone	U	Ingestion	Int suicide			
			prochlorperazine						
474	ip	4 yr	Methadone	A	Ingestion	Unint gen	0.48	µg/mL§	
			promethazine				1,680	ng/mL§	
			diphenhydramine				0.2	µg/mL§	
475	a	9 mo	Morphine	A	Parenteral	Ther error			
476	ip	20 yr	Morphine	A/C	Ingestion	Int abuse	160	ng/mL§	
477		55 yr	Morphine	A	Ingestion	Int unk	opioid 5,000	ng/mL	
478	p	55 yr	Morphine	U	Ingestion	Unknown			
479		55 yr	Morphine (long-acting)	A	Ingestion	Int unk			
480	p	57 yr	Morphine (long-acting)	A/C	Ingestion	Int suicide			
481		70 yr	Morphine	A/C	Ingestion	Unknown			
482		75 yr	Morphine (long-acting)	A/C	Ingestion	Int suicide			
483		79 yr	Morphine	A	Ingestion	Int suicide			
484	a	59 yr	Morphine (long-acting)	A/C	Asp/Ing	Ther error			
			activated charcoal						
485	p	37 yr	Morphine	A	Ingestion	Int unk	510	ng/mL	
			ethanol				128	mg/dL	
486		38 yr	Morphine	A/C	Ingestion	Int abuse	770	ng/mL§	
			ethanol				24.27	mg/dL	
487	i	49 yr	Morphine	A	Ingestion	Int suicide	1,500	ng/mL§	
			fluoxetine						
488	ip	44 yr	Morphine	A/C	Ingestion	Int misuse	4,000	ng/mL§	
			promethazine				220	ng/mL§	
			diazepam[A]				96	ng/mL§	
							nordiazepam 370	ng/mL§	
489		47 yr	Morphine (long-acting)	A/C	Ingestion	Int suicide			
			temazepam						
			lorazepam						
490	p	16 yr	Morphine	A	Ingestion	Int abuse	800	ng/mL§	
			trazodone						
491		70 yr	Nalbuphine	A	Parenteral	Ther error			
			methadone						
492	p	18 yr	Opioid	A/C	Unknown	Unknown			
493	p	22 yr	Opioid	U	Ingestion	Unknown			
494	p	23 yr	Opioid	U	Unknown	Int unk			
495	p	47 yr	Opioid	A	Ingestion	Int unk			
496	p	46 yr	Opioid	A/C	Ing/Paren	Int abuse			
			amitriptyline				270	ng/mL	
							nortriptyline 202	ng/mL	
			propoxyphene[A]						
497	p	23 yr	Opioid	A	Ingestion	Int suicide			
			benzodiazepine						

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
498		24 yr	Opioid benzodiazepine amphetamine	A/C	Ingestion	Int abuse		
499		34 yr	Opioid benzodiazepine cocaine[A]	A	Ingestion	Int suicide		
500	ip	23 yr	Opioid ethanol gamma hydroxybutyrate	A	Ingestion	Int abuse	morphine 96 ng/mL§ 217 mg/dL§ 4 µg/mL§	
501	p	30 yr	Opium	A/C	Parenteral	Int abuse		
502		52 yr	Oxaprozin zolpidem cyclobenzaprine[A]	A	Ingestion	Int suicide		
503	ap	13 mo	Oxycodone (long-acting)	A	Ingestion	Unint gen		
504		22 mo	Oxycodone (long-acting)	A	Ingestion	Unint gen		
505	aip	9 yr	Oxycodone (long-acting)	A	Ingestion	Unknown		
506	p	22 yr	Oxycodone	A	Ingestion	Int suicide		
507	p	25 yr	Oxycodone (long-acting)	A/C	Parenteral	Int abuse		
508	i	31 yr	Oxycodone	U	Unknown	Unknown	1,200 ng/mL§	
509		33 yr	Oxycodone (long-acting)	A	Ingestion	Int suicide		
510		43 yr	Oxycodone	A	Ingestion	Int suicide	330 ng/mL	
511	p	44 yr	Oxycodone (long-acting)	A	Ingestion	Int suicide		
512	p	44 yr	Oxycodone (long-acting)	U	Ingestion	Int suicide		
513	p	48 yr	Oxycodone (long-acting)	U	Ing/Unk	Unknown		
514		74 yr	Oxycodone (long-acting)	A/C	Ingestion	Int suicide		
515	p	>19 yr	Oxycodone (long-acting)	A	Ingestion	Int abuse		
516	p	51 yr	Oxycodone (long-acting) acetaminophen/butalbital acetaminophen/hydrocodone[A]	A/C	Ingestion	Ther error		
517		91 yr	Oxycodone (long-acting) acetaminophen/diphenhydramine	A/C	Ingestion	Int suicide	70 µg/mL¥§	
518		67 yr	Oxycodone (long-acting) acetaminophen/hydrocodone	A/C	Ingestion	Int misuse		
519	ip	50 yr	Oxycodone (long-acting) alprazolam marijuana	A/C	Ing/Inh	Int misuse	980 ng/mL§ 20 ng/mL§ delta-9-THC 15 ng/mL§ delta-9-carboxyTHC 24 ng/mL§	
520	p	22 yr	Oxycodone (long-acting) alprazolam trazodone[A]	A	Ingestion	Int abuse		
521	p	30 yr	Oxycodone carisoprodol diazepam	A	Ingestion	Int suicide		
522	ip	31 yr	Oxycodone clonazepam sertraline[A]	A/C	Ingestion	Int suicide	70 ng/mL§ 15 ng/mL§ 7-aminoclonazepam 250 ng/mL§ 75 ng/mL§	
523	ip	19 yr	Oxycodone cocaine	A/C	Ing/Inh	Int abuse	350 ng/mL§ benzoylecgonine 2.4 µg/mL§	
524	p	40 yr	Oxycodone cyclobenzaprine	A	Ingestion	Int suicide	314 ng/mL§	
525		49 yr	Oxycodone diazepam acetaminophen	A	Ingestion	Int suicide		
526	ip	38 yr	Oxycodone diazepam cocaine[A]	A/C	Ingestion	Int abuse	1,400 ng/mL§	
527	p	23 yr	Oxycodone (long-acting) ethanol	A	Ingestion	Int abuse		
528		40 yr	Oxycodone fluoxetine diazepam	A	Ingestion	Int suicide	600 ng/mL§ 800 ng/mL§ nordiazepam 200 ng/mL§	
529		52 yr	Oxycodone (long-acting) gabapentin	A	Ingestion	Int suicide		
530	i	40 yr	Oxycodone (long-acting) hydroxyzine diazepam[A]	U	Ing/Paren	Int abuse	190 ng/mL§ 520 ng/mL§ nordiazepam 720 ng/mL§	
531	p	38 yr	Oxycodone (long-acting) ibuprofen/hydrocodone clonazepam[A]	A	Ingestion	Int suicide		
532	ip	22 yr	Oxycodone (long-acting) methamphetamine clonazepam	A/C	Ingestion	Int misuse	370 ng/mL§ 50 ng/mL§	
533	ip	40 yr	Oxycodone morphine clonazepam	A/C	Ingestion	Int misuse	45 ng/mL§ 43 ng/mL§ 7-aminoclonazepam 62 ng/mL§	
534	ip	42 yr	Oxycodone (long-acting) nortriptyline clonazepam	A/C	Ingestion	Int misuse	720 ng/mL§ 500 ng/mL§ 9.1 ng/mL§	
535	p	63 yr	Pentazocine/naloxone amitriptyline	A/C	Ingestion	Int suicide		

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
536	i	30 yr	Propoxyphene	U	Ingestion	Unknown	0.83 µg/mL§	
	p						norpropoxyphene 0.13 µg/mL§	
537	p	40 yr	Propoxyphene	A/C	Ingestion	Int abuse		
538	p	35 yr	Propoxyphene	A	Ingestion	Int suicide		
			carisoprodol					
			amitriptyline					
539		31 yr	Propoxyphene	U	Ing/Unk	Unknown	0.615 µg/mL§	
							norpropoxyphene 0.255 µg/mL§	
			clonazepam				61 ng/mL§	
			venlafaxine				2,140 ng/mL§	
							desmethylvenlafaxine 512 ng/mL§	
540		38 yr	Propoxyphene	A	Ingestion	Int suicide		
			ethanol					
541	ip	28 yr	Propoxyphene	U	Ingestion	Unknown	2.05 µg/mL§	
			zolpidem				280 ng/mL§	
			acetaminophen				229 µg/mL§	
542		40 yr	Salicylate	U	Ingestion	Unknown	60 mg/dL	
543	a	17 yr	Salicylate	A	Ingestion	Int suicide	95 mg/dL	
			acetaminophen				67 µg/mL	
544		46 yr	Salicylate	A	Ingestion	Int suicide	59 mg/dL	
			acetaminophen				51 µg/mL	
545		51 yr	Salicylate	A	Ingestion	Int suicide	67 mg/dL	
			mirtazapine				440 ng/mL	
			lithium[A]					
546	p	38 yr	Salsalate	A	Ingestion	Int suicide	salicylate 85.8 mg/dL	
			buspirone					
547	ap	>19 yr	Tramadol	A/C	Ingestion	Int suicide	>7 µg/mL§	
548		50 yr	Tramadol	U	Ingestion	Int suicide	11 µg/mL	
			carisoprodol					
			acetaminophen					
549	p	>19 yr	Tramadol	A	Ingestion	Unknown		
			metoclopramide					
			bupropion[A]					

See also cases 7 thru 8, 26, 40, 336 thru 338, 363, 370, 411 thru 413, 525, 541, 543 thru 544, 548, 586, 734, 800, 812, 826, 838, 897, 952 (acetaminophen); 516 (acetaminophen/butalbital); 261, 681 (acetaminophen/butalbital/caffeine); 871 (acetaminophen/codeine); 262, 414, 426, 517, 823 (acetaminophen/diphenhydramine); 9, 263 thru 264, 290, 364 thru 365, 460, 516, 518, 649, 720, 726, 735, 738 (acetaminophen/hydrocodone); 265, 291, 339, 679, 874 (acetaminophen/oxycodone); 266, 415, 587, 615, 633, 657, 882, 892 (acetaminophen/propoxyphene); 196, 267 thru 270, 304, 322, 644, 656, 664, 766, 939 (aspirin); 371(aspirin/butalbital/caffeine); 767 (aspirin/caffeine); 206, 449, 814 (celecoxib); 893, 1004 (codeine); 417 (colchicine); 555 (fentanyl); 351, 451 (hydromorphone); 288 thru 292, 302, 352, 420 thru 421, 434, 685 (ibuprofen); 531 (ibuprofen/hydrocodone); 435 (indomethacin); 353, 442, 491, 598, 686, 796, 898, 901, 910, 1050, 1062 (methadone); 354, 533, 924, 1000 (morphine); 323, 421 (naproxen); 13, 272, 295 thru 296, 675, 736, 889 thru 890, 903, 987, 1002 thru 1003, 1064, 1068 (opioid); 365, 436, 442, 463, 472, 866, 882, 1004 (oxycodone); 676 (pentazocine/naloxone); 298, 355, 443, 496, 728, 901 thru 902, 911 (propoxyphene); 568, 655 (rofecoxib); 357, 783, 835 (salicylate); 1000 (salsalate); 356, 424, 568, 593, 621, 759, 866 (tramadol).

Anesthetics

550	ap	28 yr	Ketamine	A/C	Parenteral	Int abuse		
551	p	21 yr	Ketamine	A	Ing/Unk	Int abuse		
			heroin					
			amphetamines[A]					
552	ap	19 yr	Nitrous oxide	A	Inhalation	Int abuse		
553	p	38 yr	Sevoflurane	U	Inhalation	Int misuse		
554	p	42 yr	Sevoflurane	U	Unknown	Int suicide		
555	a	5 yr	Sevoflurane/isoflurane	A	Inh/Unk	Adv rxn		
			nitrous oxide					
			fentanyl					

See also cases 559, 1061 (ketamine); 42, 141, 555, 1001 (nitrous oxide).

Anticholinergics

556		65 yr	Atropine/hyoscyamine/methenamine/ methylene blue/ phenyl salicylate/benzoic acid	A	Ingestion	Int unk		
			barbiturate					

See also cases 567, 912 (benztropine).

Anticoagulants

See also cases 301, 563, 732 (warfarin).

Anticonvulsants

557		33 yr	Carbamazepine	A/C	Ingestion	Int suicide	55 µg/mL	
558		44 yr	Carbamazepine	A/C	Ingestion	Int suicide	95.3 µg/mL	
559		19 yr	Carbamazepine	A	Ingestion	Int unk		
			benzodiazepine					
			ketamine					
560		45 yr	Carbamazepine	U	Ingestion	Int suicide	23.9 µg/mL§	
			ethanol				288 mg/dL§	

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations		Interval after Exposure
561	ip	25 yr	Carbamazepine	A/C	Ingestion	Int suicide	60	µg/mL§	
							10,11 epoxide 45	µg/mL§	
			imipramine				450	ng/mL§	
							desipramine 320	ng/mL§	
			sertraline[A]				1,900	ng/mL§	
							desmethylsertraline 330	ng/mL§	
562		57 yr	Carbamazepine	U	Ingestion	Int suicide	102	µg/mL	
			olanzapine						
			clonidine[A]						
563		49 yr	Carbamazepine	A/C	Ingestion	Int suicide	55.6	µg/mL	
			warfarin						
			bupropion						
564	a	15 mo	Fosphenytoin	A	Parenteral	Ther error	phenytoin 110	µg/mL§	
565	p	54 yr	Gabapentin	A	Ingestion	Int suicide			
566		>19 yr	Gabapentin	A/C	Ingestion	Unknown			
567		31 yr	Gabapentin	A/C	Ingestion	Int suicide			
			risperidone						
			benztropine[A]						
568		50 yr	Gabapentin	A	Ingestion	Int suicide			
			tramadol						
			rofecoxib						
569		37 yr	Levetiracetam	A/C	Ingestion	Int unk			
			phenytoin						
			clonazepam[A]						
570		71 yr	Phenytoin	C	Ingestion	Adv rxn	2.44	µg/mL	
571		85 yr	Phenytoin	A/C	Ingestion	Int suicide	42	µg/mL	
			primidone				phenobarbital 48	µg/mL	
572		24 yr	Valproic acid	A	Ingestion	Int suicide	1,600	µg/mL	
573		30 yr	Valproic acid	A	Ingestion	Int suicide	1,545	µg/mL	
574		52 yr	Valproic acid	C	Ingestion	Int suicide	1,450	µg/mL	
575		60 yr	Valproic acid	A/C	Ingestion	Int suicide	893	µg/mL	
576	p	25 yr	Valproic acid	A	Ingestion	Int suicide	600	µg/mL	
			olanzapine						
See also cases 273, 591, 928 (carbamazepine); 443, 529, 607, 768, 881, 893, 920 (gabapentin); 662, 949 (lamotrigine); 921 (oxcarbazepine); 112, 569, 774 (phenytoin); 297 571, 745 (primidone); 615 (topiramate); 426, 603, 616, 667, 686, 798, 937 (valproic acid).									
Antidepressants									
577		27 yr	Amitriptyline	A	Ingestion	Int suicide			
578		36 yr	Amitriptyline	A	Ingestion	Int suicide			
579	p	40 yr	Amitriptyline	U	Ingestion	Int suicide			
580	p	42 yr	Amitriptyline	A	Ingestion	Int suicide			
581	p	46 yr	Amitriptyline	U	Ingestion	Int suicide	5,340	ng/mL§	
582		47 yr	Amitriptyline	A	Ingestion	Int suicide			
583		47 yr	Amitriptyline	A/C	Ingestion	Int suicide			
584	a	53 yr	Amitriptyline	A/C	Ingestion	Int suicide			
585		59 yr	Amitriptyline	U	Ingestion	Int suicide			
586		19 yr	Amitriptyline	A/C	Ing/Inh	Int suicide			
			acetaminophen				68	µg/mL	3 h
			cocaine[A]						
587		41 yr	Amitriptyline	A/C	Ing/Unk	Int suicide	tricyclic antidepressant 517	ng/mL	
			acetaminophen/propoxyphene				44	µg/mL¥	
			cocaine						
588		20 yr	Amitriptyline	A	Ingestion	Int unk			
			alprazolam						
589		29 yr	Amitriptyline	A/C	Asp/Ing	Int suicide			
			alprazolam						
			activated charcoal						
590		41 yr	Amitriptyline	A/C	Ingestion	Int suicide			
			amphetamine/dextroamphetamine						
			clonazepam[A]						
591	i	63 yr	Amitriptyline	A/C	Ingestion	Int unk	408	ng/mL	>36 h
			carbamazepine						
592	i	50 yr	Amitriptyline	A	Ingestion	Int suicide			
			citalopram						
			diazepam[A]						
593		38 yr	Amitriptyline	A	Ingestion	Int suicide	9,520	ng/mL§	
							nortriptyline 2,110	ng/mL§	
			cyclobenzaprine						
			tramadol				0.76	µg/mL	
594	p	48 yr	Amitriptyline	A	Ingestion	Int suicide			
			cyclobenzaprine						
			trimethobenzamide						
595	p	43 yr	Amitriptyline	A/C	Ingestion	Int suicide	182	ng/mL	
			diazepam				1,380	ng/mL	
							nordiazepam 1,630	ng/mL	
							oxazepam 110	ng/mL	
596	p	37 yr	Amitriptyline	A	Ingestion	Int suicide	13,000	ng/mL§	
			ethanol				187	mg/dL§	
597		64 yr	Amitriptyline	A/C	Ingestion	Int suicide	548	ng/mL	
							nortriptyline 253	ng/mL	
			ethanol				84	mg/dL	
			diazepam				200	ng/mL§	
							nordiazepam 140	ng/mL§	

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
598	ip	44 yr	Amitriptyline	A/C	Ingestion	Int suicide	2,300 ng/mL§	
							nortriptyline 560 ng/mL§	
			methadone				0.1 µg/mL§	
			verapamil				0.07 µg/mL§	
599	p	31 yr	Amitriptyline	A	Ingestion	Int suicide		
			olanzapine					
			clonazepam					
600		29 yr	Amitriptyline	U	Ingestion	Int suicide		
			paroxetine					
601	i	51 yr	Amitriptyline	A	Ingestion	Int suicide	25,100 ng/mL§	
	p		trazodone				39,900 ng/mL§	
			diphenhydramine					
602		37 yr	Amitriptyline	A	Ingestion	Int suicide		
			unknown drug					
603		51 yr	Amitriptyline	A	Ingestion	Int suicide		
			valproic acid					
604		33 yr	Amitriptyline/perphenazine	A/C	Ingestion	Int suicide		
605		26 yr	Amoxapine	A/C	Ingestion	Int suicide		
606		38 yr	Amoxapine	U	Ingestion	Int suicide		
607		38 yr	Amoxapine	A	Ingestion	Int suicide		
			quetiapine					
			gabapentin					
608		15 yr	Bupropion	A/C	Ingestion	Int suicide		
609	ip	17 yr	Bupropion	A	Ingestion	Int suicide	7,100 ng/mL§	
			fluvoxamine				780 ng/mL§	
610		52 yr	Bupropion	A/C	Ingestion	Int suicide		
			fluvoxamine					
			ethanol					
611	p	34 yr	Bupropion	U	Ingestion	Int suicide		
			isotretinoin					
			diphenhydramine					
612		42 yr	Bupropion	A	Ingestion	Unknown		
			methylphenidate					
613		42 yr	Bupropion	A	Ingestion	Int suicide	2,800 ng/mL	
			methylphenidate					
614		67 yr	Bupropion (long-acting)	A/C	Ingestion	Int suicide		
			sertraline					
615		42 yr	Bupropion	U	Ingestion	Int suicide		
			topiramate					
			acetaminophen/propoxyphene					
616	p	19 yr	Bupropion	A	Ingestion	Int suicide		
			valproic acid					
			olanzapine					
617	p	51 yr	Citalopram	A/C	Ingestion	Int suicide		
618	p	31 yr	Citalopram	A/C	Ingestion	Int suicide		
			bupropion					
			amphetamine/dextroamphetamine[A]					
619	ip	31 yr	Citalopram	A/C	Ingestion	Int suicide	940 ng/mL§	
			carisoprodol				39 µg/mL§	
			meprobamate				50 µg/mL§	
620	p	41 yr	Citalopram	A/C	Ingestion	Int abuse		
			ethanol					
621		53 yr	Citalopram	A/C	Ingestion	Int suicide		
			metaxalone					
			tramadol[A]					
622		59 yr	Clomipramine	A	Ingestion	Int suicide	2,050 ng/mL§	
623	p	10 yr	Desipramine	C	Ingestion	Int unk		
624		40 yr	Desipramine	A	Ingestion	Int suicide		
625	p	>19 yr	Desipramine	A	Ingestion	Int suicide		
626		19 yr	Desipramine	A	Ingestion	Int suicide		
			alprazolam					
			olanzapine					
627		39 yr	Desipramine	A	Ingestion	Int suicide	tricyclic 782 ng/mL	
			ethanol					
628	p	15 yr	Desipramine	A	Ingestion	Int suicide		
			risperidone					
629		39 yr	Doxepin	A	Ingestion	Int suicide		
630		50 yr	Doxepin	A/C	Ingestion	Int suicide	198 ng/mL	
631	i	43 yr	Doxepin	A	Ingestion	Int suicide	9,200 ng/mL§	
			alprazolam				7,200 ng/mL§	
			citalopram					
632	p	36 yr	Doxepin	A	Ingestion	Int suicide		
			bupropion					
633	p	44 yr	Doxepin	A	Ingestion	Int suicide		
			cyclobenzaprine					
			acetaminophen/propoxyphene[A]					
634		39 yr	Doxepin	A/C	Ingestion	Int suicide	5,700 ng/mL	
			olanzapine				1.35 µg/mL	
			paroxetine[A]				0.85 µg/mL	
635		37 yr	Doxepin	U	Ing/Inh	Int suicide		
			risperidone					
			cocaine					
636		40 yr	Doxepin	A	Ingestion	Int suicide		
			venlafaxine					
			paroxetine[A]					

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
637		22 yr	Fluoxetine citalopram levothyroxine	U	Ingestion	Int suicide		
638	p	46 yr	Fluoxetine ethanol	A/C	Ingestion	Int suicide	3,700 ng/mL§ norfluoxetine 1,900 ng/mL§ 320 mg/dL§	
639	p	22 yr	Fluoxetine mirtazepine venlafaxine	U	Ingestion	Int suicide	1,400 ng/mL§ norfluoxetine 980 ng/mL§	
640	p	25 yr	Fluoxetine trazodone clonazepam[A]	A/C	Ingestion	Int suicide		
641		81 yr	Fluvoxamine mirtazepine	A/C	Ingestion	Int suicide		
642	p	14 yr	Imipramine	A	Ingestion	Int suicide		
643		44 yr	Imipramine amitriptyline	A	Ingestion	Int suicide	1,190 ng/mL desipramine 226 ng/mL 514 ng/mL nortriptyline 26 ng/mL	
644		61 yr	Imipramine carisoprodol aspirin	A	Ingestion	Int suicide		
645	p	44 yr	Imipramine ethanol	A/C	Ingestion	Int suicide	2,920 ng/mL§ desipramine 390 ng/mL§ 150 mg/dL§	
646	a	47 yr	Lithium	A/C	Ingestion	Unint unk	3.1 mEq/L	
647		53 yr	Lithium	C	Ingestion	Unknown	3.4 mEq/L	
648		57 yr	Lithium	C	Ingestion	Ther error	4.7 mEq/L	
649		46 yr	Lithium acetaminophen/hydrocodone sertraline[A]	A	Ingestion	Int suicide	2.3 mEq/L 60 ng/mL norsertraline 230 ng/mL	
650		54 yr	Lithium fluvastatin rosiglitazone[A]	A/C	Ingestion	Int suicide	6.0 mEq/L	
651	p	38 yr	Lithium venlafaxine benzodiazepine	A	Ingestion	Int suicide		
652	p	18 yr	Nortriptyline	A	Ingestion	Int suicide		
653	p	48 yr	Nortriptyline flurazepam diazepam	A	Ingestion	Int suicide		
654		40 yr	Nortriptyline olanzapine citalopram	A	Ingestion	Int suicide		
655		20 yr	Nortriptyline rofecoxib trimethoprim/sulfamethoxazole	A	Ingestion	Int suicide		
656		26 yr	Paroxetine aspirin ziprasidone[A]	A	Ingestion	Int suicide	48.7 mg/dL	
657		43 yr	Paroxetine buspirone acetaminophen/propoxyphene[A]	U	Ingestion	Int suicide		
658		36 yr	Paroxetine olanzapine trazodone[A]	A	Ingestion	Int suicide		
659		49 yr	Phenelzine	A/C	Ingestion	Int suicide		
660		52 yr	Phenelzine fluoxetine	A/C	Ingestion	Int suicide		
661		16 yr	Phenelzine selegiline	C	Ingestion	Ther error		
662		76 yr	Tranylcypromine lamotrigine olanzapine[A]	U	Ingestion	Adv rxn	46.6 ng/mL	
663	p	34 yr	Trazodone alprazolam	A	Ingestion	Int suicide		
664		58yr	Trazodone aspirin chlordiazepoxide	A/C	Ingestion	Int suicide	97 mg/dL	
665	p	43 yr	Trazodone haloperidol	A	Ingestion	Int suicide		
666		48 yr	Trazodone paroxetine activated charcoal	A/C	Asp/Ing	Int suicide		
667		45 yr	Trazodone valproic acid metformin	A/C	Ingestion	Int suicide	1,500 µg/mL	
668	p	28 yr	Trazodone venlafaxine bupropion	A/C	Ingestion	Int suicide		
669	p	42 yr	Tricyclic antidepressant alprazolam	A	Ingestion	Int suicide		

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations		Interval after Exposure
670		48 yr	Tricyclic antidepressant amphetamine benzodiazepine	A	Ing/Unk	Unknown			
671		57 yr	Tricyclic antidepressant benzodiazepine barbiturate	A/C	Ingestion	Int suicide			
672		46 yr	Tricyclic antidepressant cocaine quetiapine	A	Ingestion	Int suicide			
673		23 yr	Tricyclic antidepressant diphenhydramine	A	Ingestion	Int suicide			
674	p	43 yr	Tricyclic antidepressant methamphetamine phencyclidine	A	Ingestion	Int suicide			
675	p	44 yr	Tricyclic antidepressant opioid barbiturate	A	Ingestion	Int suicide	5,890 4,990 0.08	ng/mL§ ng/mL§ µg/mL§	
676		41 yr	Tricyclic antidepressant pentazocine/naloxone clonazepam[A]	A	Ingestion	Int suicide			
677		44 yr	Venlafaxine (long-acting)	A/C	Ingestion	Int suicide			
678		>19 yr	Venlafaxine	A	Ingestion	Int suicide			
679	p	39 yr	Venlafaxine acetaminophen/oxycodone	U	Ingestion	Unknown			
680		31 yr	Venlafaxine citalopram cyclobenzaprine[A]	A	Ingestion	Int suicide			
681	p	35 yr	Venlafaxine diazepam acetaminophen/butalbital/caffeine	C	Ingestion	Int unk			
682		40 yr	Venlafaxine diphenhydramine oxazepam[A]	A	Ingestion	Int suicide			
683		43 yr	Venlafaxine (long-acting) ethanol	A	Ingestion	Int suicide			
684	p	58 yr	Venlafaxine fluvoxamine	A	Ingestion	Int suicide	37,000 o-desmethylvenlafaxine 2,000 630	ng/mL§ ng/mL§ ng/mL§	
685		42 yr	Venlafaxine metformin ibuprofen	A	Ingestion	Int unk	3,400	ng/mL	
686	ip	35 yr	Venlafaxine methadone valproic acid[A]	U	Ingestion	Unknown	5,100 0.34 44	ng/mL§ µg/mL§ µg/mL§	
687		50 yr	Venlafaxine methamphetamine amphetamine	A	Ingestion	Int suicide	23,000 0.4	ng/mL§ µg/mL§	
688	p	25 yr	Venlafaxine sertraline mirtazapine	A	Ingestion	Int unk			
689		50 yr	Venlafaxine valsartan	A	Ingestion	Int suicide			
690	p	40 yr	Venlafaxine verapamil	A	Ingestion	Int suicide			

See also cases 461, 496, 535, 538, 643, 765, 773, 860, 879, 934, 990 (amitriptyline); 328, 355, 422, 549, 563, 618, 632, 668, 742, 758, 916, 935 thru 936, 940 (bupropion); 90, 375, 380, 592, 631, 637, 654, 680, 697, 726, 767, 776, 941 (citalopram); 793 (doxepin); 469, 487, 528, 660, 817, 913, 919 (fluoxetine); 419, 609 thru 610, 684 (fluvoxamine); 561 (imipramine); 545, 900 (lithium); 471, 545, 639, 641, 688, 773 (mirtazapine); 704 (nialamide); 534, 723 (nortriptyline); 600, 634, 636, 666, 858, 883 (paroxetine); 661 (selegiline); 522, 561, 614, 649, 688, 701, 799, 863, 909, 947 (sertraline); 264, 490, 520, 601, 640, 658, 746, 877, 923, 946 (trazodone); 784, 835, 862, 943, 1005 (tricyclic antidepressant);328, 358, 416, 539, 636, 639, 651, 668, 1035 (venlafaxine).

Antihistamines

691	p	14 yr	Diphenhydramine	A	Ingestion	Int suicide			
692	p	21 yr	Diphenhydramine	A	Ingestion	Int suicide			
693	p	22 yr	Diphenhydramine	A	Ingestion	Int suicide			
694		28 yr	Diphenhydramine	A	Ingestion	Int suicide			
695		29 yr	Diphenhydramine	A	Parenteral	Ther error			
696		31 yr	Diphenhydramine	A	Ingestion	Int suicide			
697		35 yr	Diphenhydramine citalopram ethanol	A	Ing/Unk	Int suicide			
698	p	41 yr	Diphenhydramine haloperidol diazepam[A]	A	Parenteral	Adv rxn			
699	p	45 yr	Diphenhydramine metoprolol	U	Ingestion	Int suicide	5.5 1,700	µg/mL ng/mL	
700		28 yr	Diphenhydramine mouthwash (ethanol, 21.6%)	A	Ingestion	Int suicide			
701		19 yr	Diphenhydramine sertraline metaxalone	A/C	Ingestion	Int suicide			

See also cases 207 (dimenhydrinate); 277, 337, 418, 474, 601, 611, 673, 682, 769, 838, 919, 940, 1031 (diphenhydramine); 90, 850 (doxylamine); 470, 530, 863 (hydroxyzine); 434 (loratadine); 817 (meclizine); 428, 474, 488 (promethazine).

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
Antimicrobials								
702		44 yr	Amphotericin B	A	Parenteral	Ther error		
703		43 yr	Didanosine stavudine	C	Ingestion	Adv rxn		
704	p	31 yr	Hydroxychloroquine nialamide	A	Ingestion	Int suicide		
705	p	20 yr	Isoniazid	A	Ingestion	Int suicide	77 µg/mL§	
706		42 yr	Itraconazole atorvastatin ethanol	C	Ingestion	Adv rxn		
See also cases 938 (amantadine); 948 (cefprozil); 721 (clarithromycin); 703 (stavudine);655 (trimethoprim/sulfamethoxazole).								
Antineoplastics								
707	a	81 yr	Methotrexate	C	Ingestion	Ther error	0.12 µmol/L	
708		44 yr	Vinblastine	A/C	Parenteral	Adv rxn		
Asthma therapies								
709		52 yr	Theophylline	A/C	Ingestion	Int suicide	86 µg/mL	
710		57 yr	Theophylline	A/C	Ingestion	Int unk	55.7 µg/mL	
711		65 yr	Theophylline	C	Ingestion	Ther error	71 µg/mL	
712		66 yr	Theophylline	C	Ingestion	Adv rxn	53 µg/mL	
713		70 yr	Theophylline	C	Ingestion	Ther error	44.1 µg/mL	
714		71 yr	Theophylline	C	Ingestion	Adv rxn	25.7 µg/mL	
715	a	71 yr	Theophylline (long-acting)	A/C	Ingestion	Int suicide	132 µg/mL	7h
716		72 yr	Theophylline	C	Ingestion	Ther error	38 µg/mL	
717		76 yr	Theophylline (long-acting)	A/C	Ingestion	Ther error		
718		76 yr	Theophylline	C	Ingestion	Ther error	30.6 µg/mL	
719		88 yr	Theophylline	C	Ingestion	Ther error	38 µg/mL	
720		71 yr	Theophylline acetaminophen/hydrocodone	C	Ingestion	Ther error	72.8 µg/mL	
721		82 yr	Theophylline clarithromycin	C	Ingestion	Ther error	63 µg/mL	
722		17 yr	Theophylline ethanol	A	Ingestion	Int suicide	139 µg/mL 47 mg/dL	
723		53 yr	Theophylline nortriptyline glyburide	A	Ingestion	Int suicide	142 µg/mL	
See also cases 423, 820 (theophylline).								
Cardiovascular drugs								
724		50 yr	Amlodipine	A/C	Ingestion	Int unk		
725		64 yr	Amlodipine	A/C	Ingestion	Int suicide		
726	p	36 yr	Amlodipine acetaminophen/hydrocodone citalopram	A	Ingestion	Int suicide		
727		65 yr	Amlodipine atenolol alprazolam[A]	A	Ingestion	Int suicide	0.15 µg/mL§ 1.9 µg/mL§	
728		40's yr	Amlodipine labetalol propoxyphene	A/C	Ingestion	Int suicide		
729		65 yr	Amlodipine losartan alprazolam[A]	A/C	Ingestion	Int suicide		
730		38 yr	Amlodipine risperidone trihexyphenidyl	A/C	Ingestion	Int suicide		
731		23 yr	Amlodipine unknown drug	A	Ingestion	Int suicide		
732		63 yr	Amlodipine warfarin potassium chloride	U	Ingestion	Int suicide		
733		45 yr	Atenolol	A/C	Ingestion	Int suicide		
734	p	45 yr	Atenolol acetaminophen	A/C	Ingestion	Int suicide		
735		50 yr	Atenolol sildenafil acetaminophen/hydrocodone[A]	A/C	Ingestion	Int suicide		
736		42 yr	Atenolol verapamil opioid	A	Ingestion	Int suicide		
737	p	48 yr	Atenolol/chlorthalidone valsartan diltiazem	U	Ingestion	Int suicide		
738	p	72 yr	Beta blocker diazepam acetaminophen/hydrocodone	A	Ingestion	Int suicide		
739		50 yr	Calcium channel antagonist	U	Ingestion	Int suicide		
740		47 yr	Cardiac glycoside (bufotoxin)	A	Ingestion	Int abuse		
741		55 yr	Carvedilol	C	Ingestion	Adv rxn		
742		52 yr	Carvedilol amlodipine/benazepril bupropion[A]	U	Ingestion	Int suicide		

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations		Interval after Exposure
743	a	60 yr	Cerivastatin gemfibrozil	C	Ingestion	Ther error			
744		51 yr	Clonidine amlodipine benazepril[A]	A	Ingestion	Int suicide			
745		48 yr	Clonidine lorazepam primidone[A]	A	Ingestion	Int suicide	102 phenobarbital 35.7	µg/mL µg/mL	
746		41 yr	Clonidine trazodone buspirone	A/C	Ingestion	Int suicide			
747	a	1 mo	Digoxin	C	Parenteral	Ther error	22	ng/mL	
748	p	2 yr	Digoxin	C	Ingestion	Ther error			
749		54 yr	Digoxin	C	Ingestion	Ther error	6.4	ng/mL	
750		68 yr	Digoxin	A/C	Ingestion	Unknown	10.5	ng/mL	
751		70 yr	Digoxin	C	Ingestion	Ther error	3.2	ng/mL	
752		76 yr	Digoxin	C	Ingestion	Ther error	3	ng/mL	
753		78 yr	Digoxin	C	Ingestion	Ther error	4.7	ng/mL	
754		82 yr	Digoxin	C	Ingestion	Ther error	3	ng/mL	
755		89 yr	Digoxin	C	Ingestion	Unknown	4.0	ng/mL	
756		91 yr	Digoxin	C	Ingestion	Ther error	2.9	ng/mL	
757		93 yr	Digoxin	C	Ingestion	Unknown	3.4	ng/mL	
758		64 yr	Digoxin doxazosin bupropion[A]	A	Ingestion	Int suicide	>8	ng/mL	
759	p	60's yr	Digoxin tramadol	A	Ingestion	Int suicide	0.45	µg/mL	
760		28 yr	Diltiazem (long-acting)	A	Ingestion	Int suicide			
761	p	42 yr	Diltiazem (long-acting)	A	Ingestion	Int suicide			
762	p	45 yr	Diltiazem (long-acting)	A/C	Ingestion	Int suicide			
763		70 yr	Diltiazem (long-acting)	A	Ingestion	Int suicide			
764		75 yr	Diltiazem (long-acting)	A	Ingestion	Int suicide			
765		60 yr	Diltiazem (long-acting) amitriptyline	A	Ingestion	Int suicide			
766		48 yr	Diltiazem aspirin simvistatin[A]	A/C	Ingestion	Int suicide	14.8	mg/dL	
767		62 yr	Diltiazem aspirin/caffeine citalopram	A/C	Ingestion	Unknown			
768		55 yr	Diltiazem (long-acting) atenolol gabapentin	A/C	Ingestion	Int unk			
769		56 yr	Diltiazem diphenhydramine	A	Ingestion	Int suicide			
770		19 yr	Diltiazem (long-acting) metoprolol (long-acting)	A	Ingestion	Int suicide			
771		79 yr	Diltiazem metoprolol	C	Ing/Paren	Ther error			
772		41 yr	Diltiazem metoprolol (long-acting) zolpidem[A]	A/C	Ingestion	Int suicide			
773		60 yr	Diltiazem mirtazapine amitriptyline	A/C	Ingestion	Int suicide			
774		30 yr	Diltiazem phenytoin spironolactone	A	Ingestion	Int suicide			
775		39 yr	Diltiazem ramipril	A/C	Ingestion	Int suicide			
776	ip	78 yr	Diltiazem zolpidem citalopram	A	Ingestion	Int suicide	1.1 600 500	µg/mL§ ng/mL§ ng/mL§	
777	p	76 yr	Disopyramide	A	Ingestion	Int suicide			
778	p	20 yr	Flecainide metoprolol	A	Ingestion	Int suicide			
779		>19 yr	Losartan	C	Ingestion	Adv rxn			
780		47 yr	Metoprolol	A	Ingestion	Unknown			
781	a	2 yr	Metoprolol losartan pioglitazone[A]	A	Ingestion	Unint gen			
782		64 yr	Metoprolol potassium chloride cyclobenzaprine[A]	A/C	Ingestion	Int suicide			
783		47 yr	Metoprolol salicylate tizanidine	A/C	Ingestion	Int suicide	1.16 23.3	µg/mL mg/dL	
784		44 yr	Metoprolol tricyclic antidepressant	A	Ingestion	Unknown			
785		49 yr	Metoprolol verapamil	A	Ingestion	Int suicide			
786		37 yr	Nifedipine (long-acting) benazepril	A/C	Ingestion	Int suicide			

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations		Interval after Exposure
787		78 yr	Nifedipine clonidine glyburide[A]	A/C	Ingestion	Int suicide			
788	a	48 yr	Nitroglycerin	A	Parenteral	Ther error			
789	p	72 yr	Procainamide	C	Ingestion	Ther error	21 N-acetylprocainamide 62.3	µg/mL µg/mL	
790	p	86 yr	Procainamide	C	Ingestion	Ther error	9 N-acetylprocainamide 25	µg/mL µg/mL	
791	p	55 yr	Propafenone	A/C	Ingestion	Int suicide			
792		67 yr	Propafenone	A/C	Ingestion	Int suicide			
793		46 yr	Propranolol doxepin	A	Ingestion	Int suicide			
794	p	44 yr	Propranolol ethanol disulfuram	A/C	Ingestion	Int suicide			
795		58 yr	Propranolol haloperidol	A	Ingestion	Adv rxn			
796	p	23 yr	Propranolol lorazepam methadone	A	Ingestion	Int suicide			
797		32 yr	Propranolol quetiapine alprazolam[A]	A	Ingestion	Int suicide			
798	p	30 yr	Propranolol quetiapine valproic acid[A]	A/C	Ingestion	Int suicide			
799	p	26 yr	Propranolol sertraline	A/C	Ingestion	Int suicide			
800		72 yr	Unknown antihypertensive acetaminophen	A	Ingestion	Int suicide	80.4	µg/mL	
801	p	8 yr	Verapamil	A	Ingestion	Unknown			
802		24 yr	Verapamil	C	Ingestion	Int misuse			
803		24 yr	Verapamil (long-acting)	A/C	Ingestion	Int suicide			
804		37 yr	Verapamil	A	Ingestion	Int suicide			
805		41 yr	Verapamil	A	Ingestion	Int suicide			
806		53 yr	Verapamil (long-acting)	U	Ingestion	Int unk			
807		54 yr	Verapamil (long-acting)	U	Ingestion	Int suicide			
808		66 yr	Verapamil (long-acting)	A	Ingestion	Int suicide			
809		69 yr	Verapamil (long-acting)	A	Ingestion	Int suicide			
810		86 yr	Verapamil (long-acting)	U	Ingestion	Unknown			
811		91 yr	Verapamil	A	Ingestion	Int suicide			
812		50 yr	Verapamil (long-acting) acetaminophen	A/C	Ingestion	Int suicide	314	µg/mL	
813		40 yr	Verapamil atenolol losartan/hydrochlorothiazide[A]	A	Ingestion	Int suicide			
814		30 yr	Verapamil celecoxib ethanol	A/C	Ingestion	Int suicide			
815		53 yr	Verapamil enalapril	A	Ingestion	Int suicide			
816		52 yr	Verapamil ethanol	A	Ingestion	Int suicide			
817	p	60 yr	Verapamil fluoxetine meclizine[A]	A/C	Ingestion	Int suicide			
818	p	42 yr	Verapamil metoprolol	A/C	Ingestion	Int suicide	13.9 3.48	µg/mL µg/mL	
819		49 yr	Verapamil (long-acting) metoprolol lorazepam	A	Ingestion	Int suicide			
820		38 yr	Verapamil theophylline metformin[A]	A/C	Ingestion	Int suicide	48	µg/mL	
821		65 yr	Verapamil/trandolapril ethanol	A/C	Ingestion	Int suicide			

See also cases 744 (amlodipine); 742 (amlodipine/benazepril); 25, 206, 727, 768, 813 (atenolol); 706 (atorvastatin); 744, 786 (benazepril); 323 (bisoprolol/hydrochlorothiazide); 371, 562, 787 (clonidine); 737, 839 (diltiazem); 758 (doxazosin); 815 (enalapril); 650 (fluvastatin); 743, 844 (gemfibrozil); 728 (labetalol); 729, 781 (losartan); 813 (losartan/hydrochlorothiazide); 435 (lovastatin); 699, 770 thru 772, 778, 818 thru 819 (metoprolol); 955 (propranolol); 775 (ramipril); 766 (simvastatin); 689 737, 851 (valsartan); 300, 598, 690, 736, 785, 937 (verapamil); 43 (yohimbine).

Cough and cold preparations

822	p	16 yr	Acetaminophen/chlorpheniramine/ dextromethorphan ephedrine	A	Ingestion	Int suicide			
823	p	38 yr	Acetaminophen/dextromethorphan/ pseudoephedrine/doxylamine acetaminophen/diphenhydramine	U	Ingestion	Unknown			
824	ap	15 mo	Benzonatate	A	Ingestion	Unint gen			
825	p	35 yr	Benzonatate	A	Ingestion	Int suicide			

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations		Interval after Exposure
826		63 yr	Dextromethorphan acetaminophen ethanol[A]	U	Ingestion	Int abuse			
827	p	59 yr	Hydrocodone/guaifenesin codeine/guaifenesin	A/C	Ingestion	Int suicide	hydrocodone 272 hydromorphone 26 codeine 0.283 morphine 91	ng/mL§ ng/mL§ µg/mL§ ng/mL§	
828	p	43 yr	Loratadine/pseudoephedrine	A	Ingestion	Int suicide			
See also cases 196, 261 (acetaminophen/dextromethorphan/doxylamine/pseudoephedrine); 269 (acetaminophen/pseudoephedrine/dextromethorphan); 321 (acetaminophen/pseudoephedrine/doxylamine); 827 (codeine/guaifenesin); 822, 1047 (ephedrine); 869 (pseudoephedrine).									
Dietary supplements/herbals/homeopathics									
829	p	17 yr	Aconitum napellus/eucalyptus globulus/ipecacuanha/ethanol phosphorus/artentum nitricum/paris quadrifolia/ethanol	A	Ingestion	Adv rxn			
830	a	17 yr	Dinitrophenol	U	Unknown	Unknown			
831		22 yr	Dinitrophenol	C	Ingestion	Ther error	9	µg/mL	
832	p	14 yr	Ephedra extract/cola nut/white willow bark/cameo colinate unknown drug	U	Unknown	Unknown			
833	p	30 yr	Ma huang	A	Ingestion	Adv rxn			
834	a	53 yr	Ma huang	A/C	Ingestion	Int unk			
835		16 yr	Ma huang salicylate tricyclic antidepressant	A	Ingestion	Int suicide	 25.4	 mg/dL	
836		26 yr	Ma huang/norephedrine/yohimbine/diiodothyronine/caffeine/sodium usniate	C	Ingestion	Adv rxn			
837	p	20 yr	Unknown dietary supplement	A	Ingestion	Ther error			
See also cases 829 (phosphorus/artentum nitricum/paris quadrifolia/ethanol); 293 (ma huang); 352 (hydroxycitric acid/ephedra/caffeine/salicin/l-carnitine/chromium picolinate).									
Diuretics See also case 923 (furosemide); 774 (spironolactone).									
Electrolytes and minerals									
838		29 yr	Iron acetaminophen diphenhydramine	A	Ingestion	Int suicide	1,764 56	µg/dL µg/mL	
839		41 yr	Potassium diltiazem cyclobenzaprine[A]	A/C	Ingestion	Int suicide			
840		58 yr	Potassium chloride metformin	A	Ingestion	Int suicide	11.8	mEq/L	
See also cases 732, 782 (potassium chloride); 188 (zinc).									
Gastrointestinal preparations									
841	p	46 yr	Diphenoxylate/atropine	A	Ingestion	Int suicide			
842	a	83 yr	Psyllium hydrophillic mucilloid	A	Asp/Ing	Unint gen			
843	ap	4 yr	Sodium phosphate/sodium biphosphate	A	Rectal	Ther error			
See also cases 844 (loperamide); 549 (metoclopramide); 346, 896 (omeprazole).									
Hormones and hormone antagonists									
844		34 yr	Glipizide gemfibrozil loperamide	A	Ingestion	Int suicide			
845	p	31 yr	Insulin	A/C	Parenteral	Int suicide			
846		31 yr	Insulin	A	Parenteral	Int suicide			
847		32 yr	Insulin	A/C	Parenteral	Int suicide			
848	a	51 yr	Insulin	A	Parenteral	Malicious	4,633	µU/mL	
849		32 yr	Insulin clonazepam caffeine	A	Ing/Paren	Malicious			
850		77 yr	Insulin doxylamine	A	Ing/Paren	Int suicide	free insulin 230 total insulin 710 0.09	µU/mL§ µU/mL§ µg/mL§	
851	p	48 yr	Insulin valsartan	A	Ing/Paren	Int suicide			
852		41 yr	Metformin	C	Ingestion	Adv rxn			
853		68 yr	Metformin	C	Ingestion	Adv rxn			
854		75 yr	Metformin	C	Ingestion	Ther error			
855		77 yr	Metformin	C	Ingestion	Adv rxn			
856		90 yr	Metformin	C	Ingestion	Adv rxn			
857		26 yr	Metformin cyclobenzaprine	A	Ingestion	Int suicide			
858		60 yr	Metformin paroxetine	A/C	Ingestion	Int suicide			
859		51 yr	Metformin zolpidem	A/C	Ingestion	Int suicide			
860	p	27 yr	Oral contraceptive amitriptyline	C	Ingestion	Adv rxn			

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
See also cases 723, 787 (glyburide); 637 (levothyroxine); 667, 685, 820, 840, 900 (metformin); 781 (pioglitazone); 650 (rosiglitazone).								
Miscellaneous drugs								
861		14 yr	Epinephrine	A	Parenteral	Ther error		
862	p	42 yr	Ergotamine/caffeine tricyclic antidepressant	A	Ingestion	Int suicide		
863	p	16 yr	Neostigmine sertraline hydroxyzine	A	Ingestion	Int suicide		
864		50 yr	Nicotine (patch) nicotine (gum)	A	Ingestion	Int misuse		
865	p	66 yr	Papaverine/phentolamine/prostaglandin E-1	U	Parenteral	Adv rxn		
866	p	20's yr	Rocuronium oxycodone (long-acting) tramadol	U	Parenteral	Int suicide		
867	a	2 yr	Sodium phenylbutyrate	A/C	Ingestion	Ther error		
868	a	10 yr	Succinylcholine	A	Unknown	Adv rxn		
869	p	16 yr	Sumatriptan zolmitriptan pseudoephedrine	C	Ingestion	Int suicide		
See also cases 794 (disulfiram); 611 (isotretinoin); 864 (nicotine); 735, 883 (sildenafil); 869 (zolmitriptan).								
Muscle relaxants								
870	ap	43 yr	Baclofen	A/C	Parenteral	Ther error		
871	p	57 yr	Baclofen acetaminophen/codeine	A	Ingestion	Int suicide		
872	p	24 yr	Carisoprodol	A	Ingestion	Int suicide	22 µg/mL§ meprobamate 19.5 µg/mL§	
873		45 yr	Carisoprodol	A	Ingestion	Int suicide		
874		68 yr	Carisoprodol acetaminophen/oxycodone	A/C	Ingestion	Int suicide	56 µg/mL¥	
875	p	37 yr	Carisoprodol diazepam ethanol	A/C	Ingestion	Int suicide		
876		25 yr	Carisoprodol foreign body	A	Ingestion	Int suicide		
877	p	45 yr	Methocarbamol ethanol trazodone[A]	A/C	Ingestion	Int suicide	76 mg/dL	
878	p	43 yr	Tizanidine	A	Ingestion	Int suicide		
See also cases 270, 358 (baclofen); 342 thru 346, 373 thru 374, 521, 538, 548, 619, 644, 1030 (carisoprodol); 375, 502, 524, 593 thru 594, 633, 680, 782, 839, 857 (cyclobenzaprine); 621, 701 (metaxalone); 783 (tizanidine).								
Sedatives/hypnotics/antipsychotics								
879	p	45 yr	Alprazolam amitriptyline	A/C	Ingestion	Int suicide	62 ng/mL§ 940 ng/mL§ nortriptyline 1,000 ng/mL§	
880		31 yr	Alprazolam flurazepam	A	Ingestion	Int unk		
881		>19 yr	Alprazolam meprobamate gabapentin[A]	A/C	Ingestion	Unknown	148 ng/mL§	
882	p	37 yr	Alprazolam oxycodone (long-acting) acetaminophen/propoxyphene[A]	U	Ingestion	Unknown		
883	p	32 yr	Alprazolam paroxetine sildenafil	A	Ingestion	Int suicide		
884	p	40 yr	Barbiturate amphetamines	A	Ingestion	Int suicide		
885	p	19 yr	Benzodiazepine amphetamines	U	Ingestion	Unknown		
886	p	47 yr	Benzodiazepine cocaine heroin	A/C	Ing/Paren	Int abuse		
887	p	33 yr	Benzodiazepine ethanol	A	Ingestion	Int suicide		
888	p	52 yr	Benzodiazepine ethanol	A	Ingestion	Int suicide		
889	i	42 yr	Benzodiazepine opioid	U	Unknown	Int suicide		
890		35 yr	Benzodiazepine opioid barbiturate[A]	U	Ingestion	Int suicide		
891	p	36 yr	Chloral hydrate	A	Ingestion	Int suicide		
892	p	28 yr	Chloral hydrate acetaminophen/propoxyphene	A/C	Ingestion	Int suicide		
893	ip	36 yr	Chloral hydrate codeine gabapentin[A]	A/C	Ingestion	Int abuse	1,1,1 trichloroethanol 98 µg/mL§ 0.78 µg/mL§ 23 µg/mL§	
894	p	21 yr	Chloral hydrate ethanol	A	Ingestion	Int unk		
895	p	44 yr	Chlordiazepoxide	A/C	Ingestion	Int suicide	7,600 ng/mL	
896		53 yr	Chlordiazepoxide/clidinium omeprazole	U	Ingestion	Int suicide		

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
897	p	50 yr	Clonazepam	A/C	Ingestion	Int suicide		
			acetaminophen				158 µg/mL	
898		40 yr	Clonazepam	A	Ingestion	Int unk	benzodiazepine 90 ng/mL	
			alprazolam					
			methadone				0.32 µg/mL	
899	p	19 yr	Clonazepam	A	Ing/Inh	Unknown		
			ethanol					
			marijuana					
900		27 yr	Clonazepam	A	Ingestion	Int suicide		
			metformin					
			lithium[A]				4.1 mEq/L	
901		38 yr	Clonazepam	A/C	Ingestion	Int suicide		
			methadone					
			propoxyphene					
902	p	20 yr	Clonazepam	U	Ingestion	Int suicide		
			propoxyphene					
			ethanol					
903		70 yr	Clorazepate	U	Ingestion	Int misuse		
			amphetamine					
			opioid					
904		48 yr	Clorazepate	A/C	Ingestion	Int suicide	nordiazepam 3.1 ng/mL	
							oxazepam 250 ng/mL	
			modafinil					
			olanzapine[A]					
905	ip	38 yr	Clozapine	A/C	Ingestion	Unint misuse	2,200 ng/mL§	
906	p	20 yr	Diazepam	U	Ingestion	Int suicide		
907	p	33 yr	Diazepam	A	Ingestion	Unknown		
908		61 yr	Diazepam	A/C	Ingestion	Int suicide		
909	p	24 yr	Diazepam	U	Ing/Unk	Unknown		
			cocaine					
			sertraline					
910		36 yr	Diazepam	A/C	Ingestion	Unknown	nordiazepam 779 µg/mL	
							oxazepam 4,821 µg/mL	
							temazepam 1,534 ng/mL	
			methadone				0.83 µg/mL	
			amphetamine					
911		67 yr	Diazepam	A	Ingestion	Int suicide		
			propoxyphene					
912		30 yr	Flurazepam	U	Unknown	Unknown		
			benztropine					
			quetiapine					
913	p	22 yr	Haloperidol	A/C	Ingestion	Int suicide		
			fluoxetine					
914		45 yr	Olanzapine	A/C	Ingestion	Int suicide		
915		65 yr	Olanzapine	A/C	Ingestion	Int suicide		
916		>19 yr	Olanzapine	A	Ingestion	Int suicide		
			bupropion					
917	p	37 yr	Olanzapine	A	Ingestion	Int suicide		
			ethanol					
918	p	60 yr	Olanzapine	A/C	Ingestion	Int suicide	1,946 ng/mL§	
			ethanol				139 mg/dL§	
919	p	43 yr	Olanzapine	A	Ingestion	Int suicide		
			fluoxetine					
			diphenhydramine					
920	p	40 yr	Olanzapine	A/C	Ingestion	Int suicide		
			gabapentin				41.2 µg/mL§	
921		50 yr	Olanzapine	A/C	Asp/Ing	Int suicide		
			oxcarbazepine					
			activated charcoal					
922	p	32 yr	Olanzapine	A	Ingestion	Int suicide	7,000 ng/mL§	
			quetiapine				700 ng/mL§	
923	p	32 yr	Olanzapine	A/C	Ingestion	Int suicide		
			trazodone					
			furosemide					
924	p	34 yr	Pentobarbital	A	Ingestion	Int suicide	10 µg/mL	18 h
			ethanol					
			morphine				0.14 µg/mL	
925		54 yr	Phenobarbital	A	Ingestion	Unknown	>100 µg/mL	
926		72 yr	Phenobarbital	A/C	Ingestion	Int suicide	155.6 µg/mL	
927	p	52 yr	Phenobarbital	U	Ingestion	Int suicide	140 µg/mL	
			alprazolam					
928	p	32 yr	Phenobarbital	A/C	Ingestion	Int suicide	66 µg/mL	
			carbamazepine				18 µg/mL	
929		41 yr	Phenobarbital	A/C	Ingestion	Int suicide	53 µg/mL	
			clorazepate					
930		45 yr	Phenobarbital	A/C	Ingestion	Int suicide		
			cocaine					
931	p	21 yr	Phenobarbital	A	Ingestion	Int suicide	66 µg/mL§	
			diazepam				2,600 ng/mL§	
							nordiazepam 980 ng/mL§	
932		20 yr	Quetiapine	A/C	Ingestion	Int suicide		
933	p	39 yr	Quetiapine	A	Ingestion	Int suicide		
934		56 yr	Quetiapine	A	Ingestion	Int suicide		
			amitriptyline					

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
935	p	33 yr	Quetiapine	A	Ingestion	Int suicide	7,000 ng/mL§	
			bupropion				1,900 ng/mL§	
936	ip	43 yr	Quetiapine	A/C	Ingestion	Int suicide	3,400 ng/mL§	
			bupropion				32 ng/mL§	
937		38 yr	Quetiapine	A	Ingestion	Int suicide		
			verapamil					
			valproic acid[A]					
938		24 yr	Risperidone	A	Ingestion	Int suicide		
			amantadine					
939	p	40's yr	Risperidone	U	Ingestion	Int unk		
			aspirin					
			alprazolam					
940		33 yr	Risperidone	A/C	Ingestion	Int unk		
			bupropion (long-acting)					
			diphenhydramine					
941		50 yr	Risperidone	A/C	Ingestion	Int suicide		
			perphenazine					
			citalopram					
942	p	18 yr	Thioridazine	C	Ingestion	Adv rxn		
943		72 yr	Thioridazine	A	Ingestion	Int suicide	4,600 ng/mL§	
							mesoridazine 1,720 ng/mL§	
			temazepam					
			tricyclic antidepressant					
944	p	45 yr	Zolpidem	U	Ingestion	Unknown		
945	p	>19 yr	Zolpidem	A	Ingestion	Int suicide		
946		45 yr	Zolpidem	A/C	Ingestion	Int suicide		
			clonazepam					
			trazodone					
947	p	42 yr	Zolpidem	A/C	Ingestion	Int suicide		
			diazepam					
			sertraline[A]					
948		37 yr	Zolpidem	U	Ingestion	Unknown		
			ethanol					
			cefprozil					
949	p	33 yr	Zolpidem	A	Ingestion	Int suicide		
			lamotrigine					

See also cases 10, 340, 349, 350, 356, 441, 519 thru 520, 588 thru 589, 626, 631, 663, 669, 727, 729, 797, 898, 927, 939 (alprazolam); 295, 556, 671, 675, 890, 951, 1029 (barbiturate); 271 thru 272, 296, 341, 372, 497 thru 499, 559, 651, 670 thru 671, 952, 988, 1003, 1064, 1073 (benzodiazepine); 546, 657, 746 (buspirone); 428 (butalbital); 664 (chlordiazepoxide); 300, 416 (chlorpromazine); 273, 340, 464, 471, 522, 531 thru 534, 539, 569, 590, 599, 640, 676, 849, 946 (clonazepam); 929 (clorazepate); 347 (clozapine); 11, 275 thru 276, 348, 429, 461, 466 thru 467, 470, 488, 521, 525 thru 526, 528, 530, 592, 595, 597, 653, 681, 698, 738, 875, 931, 947, 990 thru 991, 999 (diazepam); 653, 880 (flurazepam); 665, 698, 795 (haloperidol); 370, 379, 489, 745, 796, 819 (lorazepam); 380, 619, 881 (meprobamate); 991 (midazolam); 422, 444, 562, 576, 599, 616, 626, 634, 654, 658, 662, 904 (olanzapine); 682 (oxazepam); 941 (perphenazine); 297 (phenobarbital); 473 (prochlorperazine); 607, 672, 797 thru 798, 912, 922 (quetiapine); 436, 567, 628, 635, 730 (risperidone); 112 (sedative, unknown); 489, 943 (temazepam);594 (trimethobenzamide); 730 (trihexyphenidyl); 656 (ziprasidone); 347, 444, 502, 541, 772, 776, 859, 1050 (zolpidem).

Stimulants and street drugs

950		30 yr	Amphetamine	A	Inhalation	Int abuse	0.57 µg/mL§	
							methamphetamine 6.09 µg/mL§	
951		34 yr	Amphetamine	A	Ingestion	Int suicide		
			barbiturate					
952	p	18 yr	Amphetamine	A	Unknown	Int abuse		
			benzodiazepine					
			acetaminophen[A]				54 µg/mL	
953	i	34 yr	Amphetamine	A/C	Unknown	Int abuse		
			cocaine					
954	p	17 yr	Amphetamine	U	Ingestion	Int suicide		
			cocaine					
			methamphetamine					
955	p	21 yr	Amphetamine	A	Ingestion	Int abuse		
			ethanol					
			propranolol					
956		27 yr	Amphetamine	A	Ing/Inh	Int suicide		
			ethylene glycol					
957		20 yr	Amphetamines	A	Ingestion	Int abuse		
			lysergic acid diethylamide					
958		31 yr	Amphetamine	A	Inh/Unk	Int abuse		
			marijuana					
959		58 yr	Amyl nitrite	A	Inhalation	Int abuse		
960	p	18 yr	Cocaine	A	Ingestion	Int misuse	1.07 µg/mL§	
							benzoylecgonine 12.53 µg/mL§	
961	p	23 yr	Cocaine	A/C	Unknown	Int abuse		
962	p	23 yr	Cocaine	U	Ingestion	Int abuse		
963		25 yr	Cocaine	A	Ingestion	Int abuse		
964	p	28 yr	Cocaine	A/C	Unknown	Int abuse		
965		28 yr	Cocaine	A	Ingestion	Int misuse		
966	i	28 yr	Cocaine	A	Unknown	Int abuse		
967	p	30 yr	Cocaine	A	Inhalation	Int abuse	benzoylecgonine 0.69 µg/mL§	
968		30 yr	Cocaine	A	Ingestion	Int abuse	benzoylecgonine 1.32 µg/mL§	

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations		Interval after Exposure
969	p	31 yr	Cocaine	A/C	Inhalation	Int abuse			
970		32 yr	Cocaine	U	Rectal	Unknown			
971	p	34 yr	Cocaine (crack)	A/C	Ing/Inh	Int abuse			
972	p	34 yr	Cocaine	A	Parenteral	Int misuse			
973	p	35 yr	Cocaine	A/C	Inhalation	Int abuse			
974	p	35 yr	Cocaine	A/C	Inhalation	Int abuse	benzoylecgonine 0.53	µg/mL§	
							ecgonine methyl ester 2.8	µg/mL§	
975	ap	37 yr	Cocaine	A	Unknown	Int abuse	benzoylecgonine 1.3	µg/mL	
976		38 yr	Cocaine	A	Ingestion	Int misuse			
977	p	39 yr	Cocaine (crack)	U	Inhalation	Int abuse			
978	p	40 yr	Cocaine (crack)	A	Ingestion	Int misuse			
979	p	40 yr	Cocaine	A	Unknown	Int suicide			
980		41 yr	Cocaine	U	Unknown	Int abuse			
981		42 yr	Cocaine	A/C	Inhalation	Int abuse			
982		43 yr	Cocaine	A/C	Ingestion	Int misuse			
983		49 yr	Cocaine	A	Unknown	Int abuse			
984		50 yr	Cocaine	A	Inhalation	Int abuse			
985		51 yr	Cocaine	U	Unknown	Int unk			
986		U	Cocaine	A/C	Inhalation	Int abuse			
987	p	29 yr	Cocaine	A	Unknown	Int unk			
			amphetamine						
			opioid						
988		49 yr	Cocaine	A	Ing/Inh	Int misuse			
			benzodiazepine						
			ethanol						
989		>19 yr	Cocaine	A	Inh/Unk	Int abuse			
			cleanser						
990		38 yr	Cocaine	A	Ing/Unk	Int abuse			
			diazepam						
			amitriptyline						
991	i	33 yr	Cocaine	A	Unknown	Unknown	0.04	µg/mL§	
			diazepam				20	ng/mL§	
			midazolam				20	ng/mL§	
992		25 yr	Cocaine	A	Ingestion	Int misuse	5.5	µg/mL	
			ethanol				204	mg/dL	
993	p	34 yr	Cocaine (crack)	A/C	Ing/Inh	Int abuse			
			ethanol						
994	p	21 yr	Cocaine	A	Ing/Inh	Int unk			
			heroin						
995	ip	29 yr	Cocaine	A/C	Ingestion	Int abuse	cocaethylene 0.042	µg/mL§	
							benzoylecgonine 1.5	µg/mL§	
			heroin				morphine 140	ng/mL§	
996	p	30 yr	Cocaine (crack)	A/C	Ing/Paren	Int abuse			
			heroin						
			amphetamines[A]						
997		45 yr	Cocaine (crack)	A	Ing/Inh/	Int abuse			
			heroin		Paren		morphine 55	ng/ml§	
			ethanol				276	mg/dL§	
998		35 yr	Cocaine	C	Inh/Unk	Int abuse			
			marijuana						
999		38 yr	Cocaine	A	Ingestion	Int abuse			
			methylenedioxymethamphetamine						
			diazepam						
1000		38 yr	Cocaine	A	Ingestion	Int suicide	0.1	µg/mL§	
			morphine				60	ng/mL§	
			salsalate				salicylate 94.4	ng/mL§	
1001	p	22 yr	Cocaine	U	Inhalation	Int abuse	0.228	µg/mL	
			nitrous oxide						
1002	p	19 yr	Cocaine	U	Unknown	Unknown			
			opioid						
1003	p	23 yr	Cocaine	A	Ingestion	Int misuse			
			opioid						
			benzodiazepine						
1004	ip	38 yr	Cocaine	A/C	Ing/Paren	Int abuse	0.250	µg/mL§	
			oxycodone						
			codeine				0.03	µg/mL§	
							morphine 200	ng/mL§	
1005		41 yr	Cocaine	A/C	Ing/Inh	Int suicide			
			tricyclic antidepressant						
1006	p	45 yr	Ephedrine	C	Ingestion	Int unk			
1007		20 yr	Gamma hydroxybutyrate	U	Ingestion	Int unk	230	µg/mL	
1008		>19 yr	Gamma hydroxybutyrate	A	Ingestion	Unknown			
1009	p	32 yr	Gamma hydroxybutyrate	A	Ingestion	Int abuse	730	µg/mL	
			cocaine				benzoylecognine 0.85	µg/mL	
			methylenedioxymethamphetamine				1.1	µg/mL	
1010	p	25 yr	Gamma hydroxybutyrate	A	Ingestion	Unknown			
			ethanol						

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case		Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
1011		36 yr	Gamma hydroxybutyrate marijuana	A	Ing/Inh	Int misuse		
1012		9 mo	Heroin	A	Ingestion	Unint gen		
1013		11 mo	Heroin	A	Ingestion	Int unk	1,300 ng/mL§	
1014	ip	17 yr	Heroin	A	Parenteral	Int abuse	morphine 240 ng/mL	
1015	p	18 yr	Heroin	A	Parenteral	Int abuse		
1016		26 yr	Heroin	C	Parenteral	Int abuse		
1017	p	26 yr	Heroin	A/C	Parenteral	Int abuse		
1018		31 yr	Heroin	U	Unknown	Int unk		
1019	p	32 yr	Heroin	U	Unknown	Unknown		
1020	p	34 yr	Heroin	U	Parenteral	Int abuse		
1021	p	36 yr	Heroin	A	Parenteral	Int abuse		
1022	p	36 yr	Heroin	A/C	Parenteral	Int abuse		
1023	ip	41 yr	Heroin	A	Unknown	Int abuse		
1024	p	42 yr	Heroin	U	Parenteral	Int abuse		
1025		47 yr	Heroin	A/C	Parenteral	Int abuse		
1026	p	50 yr	Heroin	U	Parenteral	Int abuse		
1027	ip	55 yr	Heroin	A/C	Unknown	Int abuse	morphine 20 ng/mL§	
1028	p	>19 yr	Heroin	A	Parenteral	Int abuse		
1029	p	40's yr	Heroin cocaine barbiturate	A	Ing/Inh/ Paren	Int abuse		
1030		45 yr	Heroin cocaine carisoprodol	A	Unknown	Int abuse	morphine 540 ng/mL§	
1031	p	22 yr	Heroin diphenhydramine	U	Ing/Unk	Int unk		
1032	ip	19 yr	Heroin ethanol	A/C	Ing/Unk	Int abuse	morphine 47 ng/mL§	
1033		>19 yr	Heroin hydrocarbon	U	Asp/Ing/Inh/ Paren	Int suicide		
1034	p	38 yr	Heroin marijuana	A	Inh/Paren	Int abuse		
1035		31 yr	Heroin venlafaxine	U	Unknown	Unknown		
1036		16 yr	Lysergic acid diethylamide	A	Unknown	Int abuse		
1037		21 yr	Methamphetamine	A	Ingestion	Int misuse		
1038	p	27 yr	Methamphetamine	A	Parenteral	Int abuse	0.37 µg/mL	
1039	p	29 yr	Methamphetamine	A	Ingestion	Int misuse	7.36 µg/mL§	
1040		30 yr	Methamphetamine	U	Unknown	Int abuse		
1041	p	32 yr	Methamphetamine	A/C	Inhalation	Int misuse		
1042	p	35 yr	Methamphetamine	A	Ingestion	Int misuse		
1043	p	37 yr	Methamphetamine	A	Unknown	Int abuse		
1044	p	39 yr	Methamphetamine	U	Unknown	Int abuse		
1045	p	31 yr	Methamphetamine cocaine	A	Parenteral	Int abuse		
1046		33 yr	Methamphetamine cocaine	A/C	Ingestion	Int abuse		
1047	p	>19 yr	Methamphetamine ephedrine	A	Paren/Unk	Int abuse		
1048		30 yr	Methamphetamine heroin	C	Ing/Paren	Int abuse		
1049	p	35 yr	Methamphetamine marijuana	A	Ingestion	Int misuse		
1050	p	23 yr	Methamphetamine methadone zolpidem	U	Ing/Unk	Int abuse		
1051	ap	12 yr	Methylenedioxymethamphetamine	A	Ingestion	Int abuse	3.3 µg/mL§	
1052		16 yr	Methylenedioxymethamphetamine	A	Ingestion	Int abuse		
1053	p	18 yr	Methylenedioxymethamphetamine	A	Ingestion	Int abuse		
1054	a	19 yr	Methylenedioxymethamphetamine	A	Ingestion	Int misuse		
1055		20 yr	Methylenedioxymethamphetamine	U	Ingestion	Int abuse		
1056	p	21 yr	Methylenedioxymethamphetamine	A	Ingestion	Int abuse		
1057		21 yr	Methylenedioxymethamphetamine	U	Ingestion	Int abuse		
1058	p	teen	Methylenedioxymethamphetamine	A	Ingestion	Int abuse		
1059	p	18 yr	Methylenedioxymethamphetamine amphetamines	C	Ingestion	Int abuse		
1060		21 yr	Methylenedioxymethamphetamine cocaine	A	Ingestion	Int abuse		
1061		23 yr	Methylenedioxymethamphetamine ketamine marijuana	A	Ingestion	Int abuse		
1062	p	26 yr	Methylenedioxymethamphetamine methadone	A	Ingestion	Int abuse	0.61 µg/mL§ 0.67 µg/mL§	
1063		40 yr	Methylenedioxymethamphetamine methamphetamine marijuana	C	Ing/Inh	Int abuse		
1064	p	17 yr	Methylenedioxymethamphetamine opioid benzodiazepine	A	Ingestion	Int abuse	0.064 µg/mL	

TABLE 21. Summary of Fatal Exposures Reported to TESS in 2001 (Continued)

Case	Age	Substances	Chronicity	Route	Reason	Blood Concentrations	Interval after Exposure
1065	46 yr	Phencyclidine	A/C	Unknown	Int abuse		
1066	38 yr	Phencyclidine activated charcoal ethanol^A	A	Asp/Ing/Inh	Int abuse		
1067	21 yr	Phencyclidine marijuana formaldehyde	A	Inhalation	Int abuse		
1068	21 yr	Phencyclidine opioid cocaine^A	A	Ing/Inh	Int suicide		
See also cases 41, 104, 423, 462, 498, 551, 670, 687, 884 thru 885, 903, 910, 987, 996, 1059 (amphetamine); 590, 618 (amphetamine/dextroamphetamine); 849 (caffeine);293 (caffeine/ephedrine); 136, 274, 364, 429, 441, 465, 499, 523, 526, 586 thru 587, 635, 672, 886, 909, 930, 953 thru 954, 1009, 1029 thru 1030, 1045 thru 1046,1060, 1068 (cocaine); 500 (gamma hydroxybutyrate); 349 thru 350, 551, 886, 994 thru 997, 1048 (heroin); 957 (lysergic acid diethylamide); 175, 351, 519, 899, 958, 998, 1011, 1034, 1049, 1061, 1063, 1067 (marijuana); 294, 532, 674, 687, 954, 1063 (methamphetamine); 999, 1009 (methylenedioxymethamphetamine); 465, 612 thru 613 (methylphenidate); 904 (modafinil); 462, 674 (phencyclidine).							
Topical Preparations							
1069	8 yr	Methyl salicylate	U	Ingestion	Unknown	55 mg/dL	
1070	29 yr	Methyl salicylate benzoin iodine^A	A	Ingestion	Int suicide	63 mg/dL	
See also cases 1070 (benzoin); 1070 (iodine).							
Unknown substances							
1071	26 yr	Unknown drug	U	Ingestion	Malicious		
1072	49 yr	Unknown drug	A	Ingestion	Int suicide		
1073	45 yr	Unknown drug benzodiazepine	A	Ingestion	Int abuse		
See also cases 15, 602, 731, 832 (unknown drug); 299 (unknown substance).							
Veterinary Drugs							
1074	50 yr	Pentobarbital/phenytoin	A	Parenteral	Int suicide		

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
^ Additional substances
a Abstract provided in Appendix
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 Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Adhesives/glues														
Cyanoacrylate	10,981	3,929	2,184	4,738	10,743	132	57	38	2,410	1,197	2,143	465	3	0
Epoxy	888	333	61	489	858	12	5	13	253	155	181	56	3	0
Toluene/xylene	1,216	707	205	298	1,154	43	4	13	188	264	243	39	4	0
Non-toxic	1,630	1,137	354	133	1,564	45	17	4	56	203	81	3	0	0
Unknown	4,455	2,321	562	1,534	4,269	89	30	61	753	823	748	163	7	0
Category total	19,170	8,427	3,366	7,192	18,588	321	113	129	3,660	2,642	3,396	726	17	0
Alcohols														
Ethanol: beverage	40,782	1,265	5,935	33,124	5,838	33,462	390	639	29,951	4,558	12,769	8,128	1,636	93
Ethanol: other	2,553	1,647	210	687	2,344	166	24	14	332	742	297	40	13	1
Higher alcohol	222	112	29	80	212	7	1	2	67	51	53	18	1	0
Isopropanol	8,285	5,215	650	2,376	7,219	953	55	11	1,684	2,593	1,487	310	62	0
Methanol	1,142	233	154	743	925	108	87	4	506	280	235	76	24	12
Rubbing alcohols														
Ethanol with methyl salicylate	48	36	4	8	47	1	0	0	10	16	7	3	0	0
Ethanol without methyl salicylate	356	255	22	78	329	23	3	0	41	170	42	4	1	0
Isopropanol with methyl salicylate	334	238	22	73	305	25	2	1	87	124	62	11	5	0
Isopropanol without methyl salicylate	9,745	6,561	755	2,404	8,779	878	71	7	1,502	2,664	1,564	229	29	0
Unknown rubbing alcohol	52	28	4	20	44	8	0	0	12	13	8	2	0	0
Other	85	43	9	32	81	1	1	1	17	28	16	3	0	0
Unknown	858	95	126	618	302	510	9	16	494	99	200	146	32	2
Category total	64,462	15,728	7,920	40,243	26,425	36,142	643	695	34,703	11,338	16,740	8,970	1,803	108
Arts/crafts/office supplies														
Artist paint, non-water color	3,091	2,221	403	445	3,020	31	3	36	147	472	204	32	0	0
Chalk	1,655	1,494	115	35	1,626	23	4	2	27	242	43	3	0	0
Clay	2,197	1,886	194	108	2,164	22	4	7	85	283	91	14	1	0
Crayon	2,732	2,454	176	84	2,713	14	1	3	45	304	40	0	0	0
Glaze	196	82	60	54	188	5	2	1	25	48	21	1	0	0
Office supplies: miscellaneous	365	116	53	189	357	7	1	0	52	70	60	7	0	0
Pencil	3,148	1,521	1,336	264	3,038	56	45	2	113	251	284	8	1	0
Pen/ink	18,575	9,807	7,995	691	18,033	468	37	27	379	2,473	568	32	2	0
Typewriter correction fluid	2,259	1,591	452	204	2,114	114	27	3	158	560	215	14	1	1
Water color	1,141	1,000	88	53	1,134	3	3	1	12	153	23	0	0	0
Other	12,796	8,976	2,860	909	12,549	191	21	27	329	1,646	535	51	1	0
Unknown	425	295	100	26	415	8	1	1	26	81	16	1	0	0
Category total	48,580	31,443	13,832	3,062	47,351	942	149	110	1,398	6,583	2,100	163	6	1
Automotive/aircraft/boat products														
Brake fluid	1,498	342	121	1,017	1,413	76	7	1	581	291	480	109	7	2
Ethylene glycol	4,938	713	691	3,476	4,392	453	65	13	1,676	980	932	315	126	16
Glycol: other	126	42	20	61	114	9	3	0	34	34	29	7	1	0
Glycol and methanol	144	36	25	83	125	19	0	0	55	46	37	6	2	0
Hydrocarbon	3,206	1,369	369	1,442	2,990	173	27	11	970	794	896	181	14	2
Methanol	1,459	380	217	846	1,284	158	11	2	633	448	321	96	26	3
Non-toxic	30	14	1	15	30	0	0	0	2	11	3	0	0	0
Other	2,190	929	334	908	2,113	44	13	14	657	382	622	146	5	1
Unknown	262	67	41	153	233	17	6	4	104	28	102	24	3	0
Category total	13,853	3,892	1,819	8,001	12,694	949	132	45	4,712	3,014	3,422	884	184	24
Batteries														
Automotive battery	1,550	107	201	1,219	1,511	18	8	7	451	126	574	148	3	0
Disc batteries														
Alkaline (MnO_2)	60	37	10	11	52	2	4	0	34	30	2	2	0	0
Lithium	96	41	23	30	90	5	0	0	49	21	18	8	0	0
Mercuric oxide	8	4	1	3	8	0	0	0	5	5	0	0	0	0
Nickel cadmium	10	4	2	4	10	0	0	0	1	3	1	0	0	0
Silver oxide	38	16	6	16	37	0	0	0	26	29	0	0	0	0
Zinc-air	66	33	7	26	64	1	0	0	47	37	4	1	0	0
Other	13	8	1	4	12	0	0	0	5	7	2	0	0	0
Unknown	1,714	1,072	391	241	1,656	46	3	0	1,123	876	71	22	2	0
Dry cell battery	5,245	2,643	1,250	1,309	4,990	201	29	14	758	1,158	1,094	206	2	1
Other	167	78	35	52	161	3	1	1	21	24	31	9	1	0
Unknown	96	34	18	40	86	7	1	0	19	17	25	5	0	0
Category total	9,063	4,077	1,945	2,955	8,677	283	46	22	2,539	2,333	1,822	401	8	1
Bites and envenomations														
Aquatic														
Coelenterate	1,121	104	600	410	1,120	0	1	0	149	18	507	65	0	0
Fish	1,386	26	238	1,114	1,378	1	0	6	416	17	417	121	3	0
Other/unknown	487	262	57	163	482	2	2	1	74	50	77	20	0	0

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

Insects														
Ant/fire ant	2,532	912	389	1,219	2,511	4	15	2	208	66	696	105	7	0
Bee/wasp/hornet	13,671	2,489	2,855	8,243	13,658	5	0	6	1,145	117	4,340	628	19	0
Caterpillar	2,372	637	629	1,097	2,354	8	4	6	187	64	702	61	2	0
Centipede/millipede	1,575	261	310	987	1,574	1	0	0	105	48	443	30	1	0
Mosquito	510	125	98	283	509	1	0	0	63	8	113	25	0	0
Scorpion	14,569	1,179	2,844	10,497	14,562	3	1	1	851	90	2,952	518	13	0
Tick	3,045	725	612	1,682	3,042	0	1	1	481	119	443	68	4	0
Other	17,957	3,710	3,042	11,077	17,792	20	118	19	2,426	440	3,517	960	19	0
Mammals														
Bat	404	53	98	244	399	1	0	0	175	87	48	5	0	0
Cat	820	107	196	510	819	0	0	1	396	6	197	29	0	0
Dog	1,675	385	681	589	1,675	0	0	0	1,114	45	407	83	1	0
Fox	20	7	7	6	20	0	0	0	16	7	0	1	0	0
Human	97	27	21	46	84	0	12	0	31	5	22	4	0	0
Raccoon	138	7	29	97	138	0	0	0	65	8	25	0	0	0
Rodent/lagomorph	1,733	412	640	659	1,719	2	10	2	353	65	371	20	1	0
Skunk	258	29	65	161	253	1	4	0	14	17	43	2	0	0
Other	1,617	292	516	770	1,599	3	4	5	679	73	244	55	2	0
Reptile: other/unknown	1,023	280	369	360	987	19	0	15	206	61	270	37	0	1
Snakes														
Copperhead	769	36	152	575	767	1	0	1	671	9	251	353	22	1
Coral	68	3	12	53	65	2	0	1	55	3	41	6	0	0
Cottonmouth	133	5	35	92	133	0	0	0	108	2	55	47	1	0
Crotaline: unknown	22	2	10	10	22	0	0	0	14	1	9	3	0	1
Rattlesnake	1,135	57	201	870	1,130	2	0	1	1,027	21	243	530	112	1
Exotic snakes														
Poisonous	96	3	14	76	93	3	0	0	75	7	22	33	10	0
Nonpoisonous	166	13	66	85	166	0	0	0	53	5	55	11	0	0
Unknown if poisonous	4	0	2	2	4	0	0	0	3	0	2	0	0	0
Nonpoisonous snake	2,129	193	901	1,019	2,123	2	0	4	510	76	794	51	1	0
Unknown snake	1,918	159	576	1,156	1,917	0	1	0	1,194	93	813	317	36	0
Spiders														
Black widow	2,609	209	389	1,997	2,608	1	0	0	787	137	741	355	16	0
Brown recluse	2,566	203	367	1,964	2,562	1	0	2	992	40	549	615	30	0
Necrotizing spider:other	183	26	25	131	182	0	1	0	49	3	40	29	1	0
Tarantula	235	23	85	127	228	3	0	4	38	6	82	12	0	0
Other spider	10,714	1,352	1,936	7,347	10,696	4	4	3	1,489	160	2,705	719	9	0
Unknown insect or spider	3,877	558	625	2,676	3,872	1	1	1	625	25	917	150	2	0
Other/unknown														
bite/envenomation	187	28	47	107	187	0	0	0	48	2	71	14	0	0
Category total	93,821	14,899	19,739	58,501	93,430	91	179	82	16,892	2,001	23,224	6,082	312	4
Building and construction products														
Caulking compound and putty	2,960	2,054	164	729	2,906	25	7	21	246	600	240	39	2	0
Cement, concrete	1,785	442	150	1,172	1,738	19	4	18	693	211	405	358	13	0
Insulation														
Asbestos	191	16	15	149	187	3	1	0	45	17	24	3	1	0
Fiberglass	1,478	571	248	648	1,445	8	3	18	168	156	273	48	2	0
Urea/formaldehyde	66	25	8	33	62	1	1	2	12	11	10	3	0	0
Other	269	143	25	98	262	3	1	2	24	50	31	6	0	0
Unknown	90	31	14	44	88	0	2	0	18	8	10	5	0	0
Soldering flux	424	159	42	219	408	5	4	7	136	80	118	37	0	0
Other	2,406	1,453	153	768	2,353	25	7	19	341	436	318	71	1	0
Unknown	159	34	21	101	157	1	0	1	32	19	43	7	0	0
Category total	9,828	4,928	840	3,961	9,606	90	30	88	1,715	1,588	1,472	577	19	0
Chemicals														
Acetone	1,244	439	150	636	1,146	62	14	12	387	243	291	70	7	0
Acids														
Hydrochloric	3,449	197	573	2,597	3,343	56	19	21	1,308	286	1,189	451	14	2
Hydrofluoric	1,195	45	93	1,043	1,170	18	2	4	928	92	430	324	34	1
Other	5,636	626	930	3,979	5,409	99	54	54	2,295	597	1,835	748	57	8
Unknown	530	48	61	416	441	11	75	2	212	79	130	94	7	0
Alkali	5,242	1,124	909	3,150	5,030	101	54	41	2,227	575	1,509	848	76	1
Ammonia	5,415	1,207	713	3,419	5,083	202	51	49	1,645	600	1,780	618	25	3
Borate/boric acid	2,853	1,413	308	1,107	2,650	149	26	19	473	728	309	56	3	1
Chlorate	62	18	12	32	62	0	0	0	27	14	19	8	2	0
Cyanide	304	17	17	263	237	37	21	0	199	64	71	38	7	14
Dioxin	21	2	6	13	19	0	1	1	7	1	2	0	0	0
Ethylene glycol	895	137	95	655	626	227	8	5	494	183	125	97	96	18
Formaldehyde/formalin	1,489	186	343	913	1,329	101	24	21	651	157	421	155	13	1
Glycol: other	1,732	628	430	644	1,624	68	21	16	466	282	475	87	13	1
Ketone	766	231	54	476	746	9	4	4	316	132	213	68	2	0
Methylene chloride	853	189	125	529	817	26	3	7	282	127	238	77	3	0
Nitrate and nitrite	1,145	272	442	418	1,058	55	14	14	268	217	235	37	3	0
Phenol/creosote	1,395	267	137	967	1,352	22	2	13	540	157	392	151	5	0

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

Strychnine	52	16	12	24	27	16	7	1	25	11	3	5	2	0
Toluene diisocyanate	796	125	88	575	779	10	0	6	192	75	154	53	6	0
Other	21,307	6,687	3,204	11,098	19,750	602	461	40	4,680	3,302	3,895	1,022	86	10
Category total	56,381	13,874	8,702	32,954	52,698	1,871	861	693	18,465	8,204	14,253	5,206	473	60
Cleaning substances (household)														
Ammonia cleaner	2,572	1,163	230	1,167	2,451	90	14	14	463	444	616	130	10	0
Automatic dishwasher detergents														
Granular	5,440	4,645	163	616	5,391	19	26	4	271	1,899	838	61	3	0
Liquid or gel	3,353	2,827	84	429	3,326	11	9	6	241	1,035	684	67	4	0
Tablet	86	76	1	9	86	0	0	0	2	33	9	2	0	0
Rinse agent	1,060	1,004	16	37	1,055	2	1	2	47	258	138	4	1	0
Other/unknown	957	769	39	148	945	6	4	2	57	294	159	19	0	0
Bleaches														
Borate	526	304	46	172	515	8	2	0	72	116	115	15	0	0
Hypochlorite	51,815	21,342	5,489	24,627	49,004	1,997	502	240	9,407	7,542	14,387	2,239	70	3
Nonhypochlorite	607	251	79	271	574	21	4	5	104	80	138	27	1	0
Other/unknown	306	125	28	148	278	19	4	3	68	41	82	22	0	0
Carpet/upholstery cleaner	5,130	3,827	310	970	4,984	58	13	71	520	1,186	848	77	8	0
Cleansers														
Anionic/nonionic	2,054	1,456	147	441	1,983	49	13	8	246	477	330	48	5	0
Other/unknown	2,145	1,260	208	657	2,023	80	24	12	398	505	458	87	3	1
Disinfectants														
Hypochlorite	3,587	1,561	463	1,545	3,440	74	40	26	752	503	1,005	262	3	0
Phenol	1,950	1,189	240	513	1,808	103	26	8	354	372	465	65	5	0
Pine oil	5,233	3,204	497	1,510	4,774	389	41	17	1,253	1,398	1,126	140	20	2
Other/unknown	4,123	2,655	492	954	3,909	141	45	20	622	842	989	106	3	0
Drain cleaners														
Acid: hydrochloric	313	24	34	247	291	18	0	4	73	34	118	37	1	0
Acid: sulfuric	571	48	46	472	546	16	4	3	250	47	207	123	7	1
Acid: other/unknown	75	10	2	63	73	1	0	1	26	4	30	13	1	0
Alkali	3,861	618	332	2,859	3,588	214	18	32	1,239	514	1,161	538	51	5
Other/unknown	708	106	72	519	645	35	12	14	180	111	186	56	7	1
Fabric softeners/antistatic agents														
Aerosol/spray	92	56	13	20	88	3	0	1	8	18	12	3	1	0
Liquid	1,235	1,018	63	150	1,204	23	2	4	108	360	164	13	1	0
Solid/sheet	416	364	21	29	406	6	1	3	11	81	32	2	1	0
Other/unknown	68	57	3	8	66	2	0	0	8	23	4	3	0	0
Glass cleaners														
Ammonia	1,071	806	113	148	1,014	44	11	1	117	289	194	10	3	0
Anionic/nonionic	127	86	13	27	123	2	1	0	20	38	21	2	0	0
Isopropanol	8,065	6,489	657	884	7,700	281	66	11	604	1,927	1,311	77	7	0
Other/unknown	2,309	1,649	259	396	2,153	130	22	1	302	594	404	38	2	0
Hand dishwashing														
Anionic/nonionic	6,340	4,357	485	1,475	6,087	102	85	63	441	812	1,361	84	3	0
Other/unknown	2,223	1,371	207	636	2,088	47	46	42	122	284	421	24	0	0
Laundry additives														
Bluing/brightening agent	65	31	7	26	63	0	0	1	18	21	9	7	0	0
Detergent booster	95	53	6	35	95	0	0	0	11	17	24	3	0	0
Enzyme/microbiological additive	75	52	3	20	75	0	0	0	11	15	23	1	0	0
Water softener	25	9	3	13	22	0	2	1	3	6	1	0	0	0
Other/unknown	618	497	25	94	602	8	1	6	78	139	100	18	2	0
Laundry detergents														
Granular	6,606	5,545	309	732	6,460	88	18	36	622	1,504	1,532	99	2	0
Liquid	4,109	2,952	272	872	3,922	97	15	73	511	756	1,002	99	2	0
Soap	114	71	11	31	107	2	1	4	8	22	17	2	0	0
Other/unknown	261	165	25	68	245	8	3	4	56	51	69	10	0	0
Laundry prewash/stain removers														
Dry solvent-based	4	3	0	0	4	0	0	0	0	1	1	0	0	0
Liquid solvent-based	487	383	23	77	483	4	0	0	49	130	70	12	1	0
Spray solvent-based	333	290	10	33	330	3	0	0	40	76	73	9	0	0
Other/unknown solvent-based	58	46	2	10	57	0	0	1	8	14	7	0	0	0
Dry surfactant-based	279	251	4	22	277	0	1	1	16	68	33	4	0	0
Liquid surfactant-based	2,009	1,798	55	151	1,987	15	6	0	184	445	306	50	1	0
Spray surfactant-based	561	515	17	28	555	2	4	0	74	99	114	22	0	0
Other/unknown surfactant-based	21	18	1	2	21	0	0	0	3	3	4	1	0	0
Other/unknown	353	252	24	75	346	2	1	4	53	96	73	9	0	0
Miscellaneous cleaners														
Acid	1,447	736	88	614	1,405	24	11	7	319	305	372	85	1	0
Alkali	12,607	7,814	1,032	3,689	12,143	321	79	55	2,857	3,065	2,972	725	33	0
Anionic/nonionic	6,742	4,425	566	1,717	6,435	170	42	87	935	1,357	1,312	157	4	0
Cationic	2,801	1,263	358	1,152	2,595	127	54	17	780	578	723	164	0	0
Ethanol	400	253	42	101	381	11	6	2	69	82	90	13	0	0
Glycols	1,938	1,367	137	408	1,864	39	27	8	275	518	378	51	2	0

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

Isopropanol	4,243	2,541	662	1,018	4,024	157	42	17	703	1,075	969	80	8	0
Methanol	47	26	3	18	46	0	0	1	16	13	11	1	0	0
Phenol	179	91	8	78	161	12	1	4	34	34	46	6	0	0
Other/unknown	6,198	3,778	554	1,834	5,968	120	67	33	1,072	1,517	1,288	224	11	0
Oven cleaners														
Acid	20	9	2	9	20	0	0	0	3	3	4	2	0	0
Alkali	2,731	596	363	1,732	2,650	51	7	21	1,017	303	812	434	14	1
Detergent	6	2	0	4	6	0	0	0	1	2	0	1	0	0
Other/unknown	346	101	46	197	337	3	3	3	129	46	96	53	1	0
Rust removers														
Alkali	18	3	1	14	18	0	0	0	5	2	7	3	0	0
Anionic/nonionic	1	0	0	1	1	0	0	0	0	0	0	0	0	0
Hydrofluoric acid	549	66	36	439	497	10	3	35	203	94	256	73	7	1
Other acid	231	55	18	157	219	10	1	0	62	46	76	20	0	0
Other/unknown	298	57	22	218	282	4	4	7	63	38	96	32	1	0
Spot removers/dry cleaning agents														
Anionic/nonionic	578	456	26	95	571	1	3	2	70	113	100	10	0	0
Glycol	117	69	12	35	113	0	1	3	8	22	15	6	0	0
Perchloroethylene	18	7	0	11	16	1	0	1	5	3	5	1	1	0
Isopropanol	15	9	2	4	14	0	0	0	2	2	4	0	0	0
Other halogenated hydrocarbon	74	34	3	36	71	0	0	3	10	14	22	1	0	0
Other nonhalogenated hydrocarbon	76	35	11	30	65	10	0	0	14	17	18	4	0	0
Other/unknown	137	104	7	26	132	2	1	2	14	34	20	4	0	0
Starch/fabric finish/sizing	1,035	856	72	104	999	33	3	0	56	206	84	10	1	0
Toilet bowl cleaners														
Acid	4,141	1,789	341	1,984	3,933	171	8	25	961	824	1,162	343	16	7
Alkali	1,518	1,148	71	294	1,483	32	1	2	198	449	262	49	2	0
Other/unknown	2,583	1,998	100	474	2,515	55	7	5	287	697	276	64	0	1
Wall/floor/tile cleaners														
Acid	3,541	1,564	241	1,704	3,401	74	14	47	931	634	1,275	292	4	1
Alkali	8,887	6,031	657	2,145	8,486	283	73	36	1,643	2,222	2,275	331	11	1
Anionic/nonionic	1,520	869	123	521	1,460	40	4	16	299	289	318	45	3	0
Cationic	797	505	65	223	758	30	7	1	172	190	205	31	0	0
Ethanol	11	9	0	2	11	0	0	0	1	3	2	0	0	0
Glycol	1,463	1,018	101	338	1,399	49	8	6	200	354	230	42	0	0
Isopropanol	465	356	32	72	445	16	2	1	55	151	75	8	1	0
Methanol	1	0	0	1	1	0	0	0	1	0	0	0	1	0
Other/unknown	725	382	67	275	679	28	9	6	163	128	182	42	0	1
Wheel cleaner: HF/bifluoride	100	37	8	54	99	0	1	0	70	13	42	18	1	0
Category total	203,095	118,107	17,526	66,264	193,972	6,104	1,577	1,202	33,834	41,067	47,551	8,165	352	26
Industrial cleaners														
Acid	2,261	773	200	1,266	2,158	70	16	14	661	398	585	190	16	0
Alkali	3,479	942	517	1,995	3,268	120	56	28	1,632	482	1,224	489	27	0
Anionic/nonionic	1,675	865	184	613	1,562	66	22	21	382	304	436	69	1	0
Cationic	1,951	997	258	679	1,804	107	29	6	505	361	536	94	6	0
Disinfectant	144	32	15	96	128	10	6	0	62	19	52	8	0	0
Other/unknown	3,497	1,585	375	1,517	3,359	67	41	23	835	597	854	197	7	0
Category total	13,007	5,194	1,549	6,166	12,279	440	170	92	4,077	2,161	3,687	1,047	57	0
Cosmetics/personal care products														
Baby oil	1,520	1,354	55	109	1,497	18	2	3	78	336	128	4	0	1
Bath oil/bubble bath	6,750	6,223	320	196	6,657	43	9	34	195	1,386	687	22	0	0
Cream/lotion/make-up	19,359	15,849	1,137	2,320	18,680	287	60	322	768	3,414	1,376	99	4	0
Dental care products														
Denture cleaner	1,398	246	73	1,072	1,353	31	6	5	93	324	119	6	0	0
Toothpaste with fluoride	22,790	20,730	860	1,163	22,175	214	51	340	391	5,014	1,328	38	4	0
Toothpaste without fluoride	1,335	1,158	58	116	1,289	15	1	30	25	287	76	3	0	0
Other	2,036	1,127	321	583	1,962	20	1	51	127	335	263	21	2	0
Deodorant	10,334	8,809	568	935	9,700	138	11	480	285	1,543	990	56	2	0
Depilatory	1,809	528	299	961	1,282	65	8	453	359	201	514	168	7	0
Douche	140	116	7	17	135	1	0	4	5	31	8	1	0	0
Eye product	1,618	1,182	82	351	1,593	7	2	16	146	262	215	37	0	0
Hair care products														
Coloring agent	2,125	938	206	966	1,888	21	4	210	406	362	535	111	3	0
Curl activator	49	37	3	9	44	2	1	2	14	18	12	1	0	0
Oil	180	142	15	22	171	4	1	3	31	37	26	11	0	0
Permanent wave solution	425	203	34	185	376	5	1	43	140	87	114	43	2	0
Relaxer: sodium hydroxide	743	559	35	145	729	3	0	11	323	172	237	95	1	0
Relaxer: other alkaline	904	714	40	147	888	2	0	14	396	230	282	108	5	0
Relaxer: other non-alkaline	51	40	2	9	50	0	0	1	10	13	10	1	0	0
Rinse/conditioner/relaxer	2,287	1,827	191	257	2,195	65	7	20	241	554	257	48	0	0
Shampoo	7,763	5,953	682	1,099	7,358	262	15	120	516	1,392	1,275	79	4	0
Spray	2,494	1,529	408	544	2,102	354	22	9	439	581	508	61	6	0
Other	2,352	1,626	248	473	2,197	68	9	74	357	488	389	71	1	0

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

Lipstick/balm: with camphor	1,272	1,164	63	42	1,241	25	1	5	27	211	68	5	1	0
Lipstick/balm: without camphor	3,016	2,831	122	59	2,983	22	1	9	35	405	84	7	0	0
Mouthwash														
Ethanol	15,057	3,866	2,721	8,391	13,782	1,178	54	24	1,213	2,934	1,148	246	31	2
Non-ethanol	476	217	102	157	427	38	1	9	51	126	46	5	0	0
Fluoride	2,179	1,475	529	171	2,148	26	0	4	32	464	77	2	0	0
Unknown	253	43	93	114	232	14	4	1	36	18	100	9	0	0
Nail products														
Acrylic nail adhesive	1,530	562	507	451	1,510	11	2	7	549	162	466	101	0	0
Acrylic nail primer	276	229	16	31	271	2	0	3	113	47	97	40	0	0
Acrylic nail remover	51	31	8	12	49	0	1	1	11	13	9	1	0	0
Polish	10,635	9,547	594	463	10,510	102	12	9	565	2,105	1,472	56	0	0
Polish remover: acetone	3,161	2,460	275	416	3,072	64	17	6	277	993	514	18	2	0
Polish remover: other	2,235	1,756	202	265	2,168	49	10	8	197	662	404	23	0	0
Polish remover: unknown	8,986	6,665	960	1,336	8,676	246	50	8	889	2,298	1,434	61	8	0
Other	1,864	1,214	130	514	1,823	13	0	28	410	438	401	86	0	0
Perfume/cologne/aftershave	21,241	18,201	1,668	1,331	20,585	503	93	40	1,273	5,762	3,857	138	10	0
Peroxide	16,338	7,323	1,648	7,253	15,625	324	88	283	1,148	2,988	2,558	214	9	0
Powder: talc	3,644	3,192	207	230	3,559	49	18	14	276	756	799	37	1	0
Powder: without talc	2,012	1,929	38	42	1,994	11	4	2	84	303	394	14	1	0
Soap	16,697	12,808	1,352	2,488	15,968	284	121	309	827	2,938	2,243	126	3	0
Suntan/sunscreen	8,786	7,673	598	497	8,569	29	7	177	350	1,351	1,679	49	1	0
Category totals	208,171	154,076	17,477	35,942	199,513	4,615	695	3,192	13,708	42,041	27,199	2,322	108	3
Deodorizers														
Air fresheners														
Aerosol	2,799	2,086	437	272	2,646	122	22	5	301	481	735	56	1	0
Liquid	2,814	2,018	355	412	2,723	67	15	5	354	633	545	27	0	1
Solid	5,268	4,752	231	274	5,222	29	12	4	212	1,125	712	23	0	0
Other/unknown	2,730	2,104	297	321	2,659	46	18	5	260	523	803	26	1	0
Diaper pail deodorizer	105	97	6	2	104	1	0	0	5	27	3	0	0	0
Toilet bowl deodorizer	921	839	33	49	910	7	0	4	102	333	83	4	0	0
Other	4,887	3,597	356	918	4,720	93	37	34	612	1,110	868	81	2	1
Unknown	116	92	5	19	113	2	0	1	20	36	23	1	0	0
Category totals	19,640	15,585	1,720	2,267	19,097	367	104	58	1,866	4,268	3,772	218	4	2
Dyes														
Fabric	681	508	95	74	657	7	8	8	46	178	28	6	0	0
Food	1,108	883	170	55	1,052	43	2	10	17	172	72	4	0	0
Leather	99	81	7	9	99	0	0	0	3	16	4	0	0	0
Other	694	371	206	114	650	18	4	22	80	141	66	17	1	0
Unknown	84	50	12	20	75	2	1	6	11	16	7	3	0	0
Category totals	2,666	1,893	490	272	2,533	70	15	46	157	523	177	30	1	0
Essential oils														
Clove oil	430	315	26	88	411	9	0	10	58	100	116	8	0	0
Cinnamon oil	518	336	111	69	464	29	1	22	56	28	249	16	0	0
Eucalyptus oil	358	216	24	117	341	8	1	8	72	126	74	8	1	0
Pennyroyal oil	29	9	5	15	15	13	0	1	17	7	6	1	0	0
Tea tree oil	280	171	31	77	260	8	0	11	36	85	57	2	1	0
Other/unknown	4,841	3,795	312	722	4,683	69	23	65	429	1,201	920	58	5	0
Category totals	6,456	4,842	509	1,088	6,174	136	25	117	668	1,547	1,422	93	7	0
Fertilizers														
Household plant food	4,057	2,491	516	1,031	3,989	36	21	9	115	736	112	11	0	0
Outdoor fertilizer	4,113	2,720	460	910	4,034	32	29	18	201	862	238	33	2	0
Plant hormone	128	51	15	61	121	4	0	3	26	24	20	3	3	0
Other	546	318	75	150	525	5	14	1	46	110	52	3	0	0
Unknown	1,867	1,261	200	397	1,805	27	13	21	150	337	142	21	0	0
Category totals	10,711	6,841	1,266	2,549	10,474	104	77	52	538	2,069	564	71	5	0
Fire extinguishers	3,501	342	1,001	2,097	3,200	78	190	17	856	528	1,012	164	3	0
Food products/food poisoning	67,149	18,845	10,714	36,790	62,707	540	1,017	2,789	5,063	5,846	9,526	2,372	85	0
Foreign bodies/toys/miscellaneous														
Ash	527	451	21	52	522	4	1	0	24	60	48	2	0	0
Bubble blowing solution	4,909	4,584	234	84	4,892	7	6	4	117	703	1,046	27	0	0
Charcoal	714	563	40	108	667	33	6	7	60	124	43	6	15	4
Christmas ornament	1,227	899	93	227	1,223	4	0	0	59	249	90	3	0	0
Coin	3,645	2,967	584	84	3,586	49	4	0	1,011	989	321	45	2	0
Desiccant	39,832	35,898	2,424	1,337	39,504	229	76	8	1,082	5,004	251	12	0	0
Feces/urine	6,575	5,448	387	696	6,362	37	148	18	154	884	188	15	0	0
Glass	2,214	767	270	1,151	2,067	25	117	4	291	334	227	24	0	0
Glow product	7,185	3,230	3,581	335	7,037	122	16	5	494	944	1,424	35	0	0
Incense, punk	294	257	12	24	291	1	1	1	18	70	21	1	0	0
Soil	2,582	2,244	133	197	2,565	6	5	4	53	370	103	7	0	0

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

Thermometers														
Mercury	17,457	7,465	4,374	5,370	17,322	94	29	5	1,025	2,928	153	17	2	0
Other	2,003	793	527	644	1,966	22	10	2	76	478	58	4	0	0
Unknown	229	94	67	65	223	1	4	1	11	49	8	0	0	0
Toy	8,087	5,292	2,474	295	7,932	118	13	19	431	991	902	25	1	0
Other	17,367	11,355	3,075	2,831	16,749	313	153	128	1,629	2,755	1,201	168	7	1
Unknown	473	307	86	77	443	4	25	1	45	94	52	5	0	0
Category totals	115,320	82,614	18,382	13,577	113,351	1,069	614	207	6,580	17,026	6,136	396	27	5
Fumes/gases/vapors														
Carbon dioxide	650	43	255	344	606	32	8	4	118	91	153	34	3	1
Carbon monoxide	17,251	2,181	3,101	11,361	16,775	363	14	43	5,318	3,670	4,902	1,299	161	35
Chloramine	3,079	105	262	2,693	2,983	81	2	12	656	189	1,107	413	9	0
Chlorine: acid mixed with hypochlorite	565	13	63	486	549	15	0	1	145	30	218	102	1	0
Chlorine: other	6,498	520	1,231	4,605	6,257	139	23	72	2,030	341	2,629	1,001	23	1
Hydrogen sulfide	1,397	125	182	1,056	1,380	2	3	7	384	161	355	111	17	10
Methane and natural gas	5,551	803	1,235	3,362	5,490	40	5	11	1,145	1,226	1,767	203	14	1
Polymer fume fever	14	4	1	9	14	0	0	0	3	0	4	0	0	0
Propane/simple asphyxiant	2,547	268	578	1,676	2,346	184	4	10	780	382	718	241	18	0
Other	1,975	262	289	1,386	1,905	31	7	25	629	255	503	178	12	1
Unknown	1,928	127	214	1,534	1,855	5	54	7	424	262	511	102	2	0
Category totals	41,455	4,451	7,411	28,512	40,160	892	120	192	11,632	6,607	12,867	3,684	260	49
Heavy metals														
Aluminum	970	467	102	387	922	12	15	13	106	143	65	14	0	0
Arsenic (excluding pesticide)	1,680	161	101	1,050	1,374	32	148	12	1,136	541	275	82	19	2
Barium	35	1	10	24	24	2	0	8	16	3	7	5	0	0
Cadmium	99	12	2	83	89	0	0	1	56	10	16	9	4	0
Copper	1,116	204	380	528	1,044	34	11	21	309	171	292	57	4	0
Fireplace flame colors	20	16	1	3	20	0	0	0	1	5	2	0	0	0
Gold	3	1	0	2	3	0	0	0	1	1	0	0	0	0
Lead	3,324	1,596	484	1,182	3,185	35	30	14	1,212	717	194	114	16	0
Manganese	60	7	15	37	51	1	3	4	25	6	13	3	2	0
Mercury: elemental	3,550	686	857	1,894	3,379	76	39	21	600	1,225	77	43	5	1
Mercury: other/unknown	482	253	30	194	460	14	2	4	90	115	21	8	1	0
Metal fume fever	932	20	45	855	915	4	9	3	235	8	260	130	6	0
Selenium	150	66	7	75	131	6	0	12	40	26	21	4	1	0
Thallium	51	9	2	39	38	0	5	5	22	7	6	4	2	0
Other	1,528	476	200	834	1,417	25	23	43	386	219	186	66	12	0
Unknown	37	8	4	25	31	0	2	1	17	4	1	1	0	0
Category totals	14,037	3,983	2,240	7,212	13,083	241	287	162	4,252	3,201	1,436	540	72	3
Hydrocarbons														
Benzene	127	12	19	90	125	0	0	2	71	17	35	12	1	0
Carbon tetrachloride	60	4	6	48	54	1	3	0	27	9	15	4	1	0
Diesel fuel	1,077	217	107	743	1,033	33	7	1	274	170	355	45	2	0
Fluorochlorocarbon/propellant	7,766	568	1,321	5,726	7,239	432	48	34	1,556	1,505	1,861	373	23	3
Gasoline	20,439	5,712	3,691	10,815	19,100	1,119	142	54	3,129	3,311	7,449	594	27	1
Halogenated hydrocarbon: other	588	108	71	402	542	17	24	4	235	70	186	54	3	0
Kerosene	2,340	1,276	283	755	2,223	67	42	4	725	526	674	170	16	0
Lamp oil	2,980	2,522	107	346	2,932	28	12	3	1,016	950	771	238	24	1
Lighter fluid/naphtha	3,616	1,823	394	1,369	3,375	145	66	20	1,107	789	1,065	189	14	0
Lubricating oil/motor oil	4,102	2,734	388	962	3,981	71	42	6	633	1,360	626	71	4	0
Mineral seal oil	174	148	7	17	171	2	0	1	20	85	18	3	0	0
Mineral spirits/varsol	4,263	1,880	528	1,820	3,982	168	80	23	1,012	918	1,086	186	22	0
Toluene/xylene	2,091	446	219	1,393	1,922	134	10	21	885	263	683	205	19	1
Turpentine	910	274	134	494	803	82	13	9	229	184	236	43	7	0
Other	6,670	3,517	711	2,367	6,413	154	44	48	1,500	1,655	1,364	319	21	0
Unknown	2,535	1,078	303	1,106	2,413	74	34	11	745	580	619	157	10	1
Category totals	59,738	22,319	8,289	28,453	56,308	2,527	567	241	13,164	12,392	17,043	2,663	194	7
Lacrimators														
Capsicum defense spray	275	83	100	88	245	6	21	2	50	4	174	7	0	0
Lacrimator: CN	1,626	339	511	708	1,296	70	205	22	297	54	766	99	1	0
Lacrimator: CR	1	0	0	1	1	0	0	0	1	0	0	1	0	0
Lacrimator: CS	147	41	46	57	125	10	10	0	36	4	75	8	0	0
Lacrimator: DM	1	0	0	1	1	0	0	0	0	1	0	0	0	0
Other	169	21	25	123	166	0	1	0	31	4	59	5	0	0
Unknown	74	17	18	39	62	1	10	0	6	0	30	3	0	0
Category totals	2,293	501	700	1,017	1,896	87	247	24	421	67	1,104	123	1	0
Matches/fireworks/explosives														
Explosive	250	110	74	63	213	15	20	1	58	52	42	13	0	0
Firework	504	387	82	34	493	8	3	0	67	147	65	10	0	0
Match	1,341	1,237	42	59	1,332	7	0	1	37	308	21	1	0	0

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

Other	69	27	15	27	67	2	0	0	17	8	12	6	0	0
Unknown	6	4	2	0	6	0	0	0	0	3	1	0	0	0
Category totals	2,170	1,765	215	183	2,111	32	23	2	179	518	141	30	0	0
Mushrooms														
Coprine	7	1	4	2	5	2	0	0	6	2	0	1	0	0
Cyclopeptide	44	10	13	21	34	10	0	0	37	8	16	7	7	0
Gastrointestinal irritant	167	65	27	75	137	23	1	5	88	34	62	25	0	0
Hallucinogenic	667	62	367	225	148	504	10	3	456	44	102	268	12	0
Ibotenic acid	34	5	9	20	20	12	0	2	27	4	11	7	2	0
Miscellaneous, nontoxic	195	77	23	93	174	7	1	13	24	45	51	2	0	0
Monomethylhydrazine	44	3	3	37	43	0	0	1	16	13	13	10	0	0
Muscarine	10	4	1	5	7	3	0	0	7	2	1	1	0	0
Orellanine	2	0	0	2	0	1	0	0	2	0	1	0	0	0
Other potentially toxic	16	7	1	8	14	1	1	0	7	7	1	1	0	0
Unknown	7,297	5,303	979	970	6,637	573	11	59	2,130	3,787	755	278	17	0
Category totals	8,483	5,537	1,427	1,458	7,219	1,136	24	83	2,800	3,946	1,013	600	38	0
Paints and stripping agents														
Paints														
Anti-algae	17	3	0	14	16	0	0	1	7	1	2	3	0	0
Anti-corrosion	74	10	11	52	73	0	0	1	17	7	24	4	0	0
Oil-base	4,268	1,265	783	2,174	4,002	195	14	46	908	611	1,024	255	11	1
Water-base	5,937	4,425	420	1,068	5,847	50	8	32	386	854	390	62	3	0
Stains	1,059	410	111	531	1,034	6	1	18	203	189	220	42	1	0
Stripping agents														
Methylene chloride	1,086	203	94	778	1,057	21	1	6	375	92	426	110	6	0
Other	941	170	52	710	910	18	2	10	291	85	306	110	4	0
Unknown	289	85	33	166	282	5	0	2	95	44	102	25	2	0
Varnish, lacquer	769	241	92	429	748	15	3	3	166	105	205	30	2	0
Other paint/varnish/lacquer	1,174	503	124	539	1,142	16	5	10	213	178	235	46	1	0
Unknown paint/varnish/lacquer	8,977	5,582	743	2,593	8,705	153	31	75	1,122	1,509	891	196	7	0
Category totals	24,591	12,897	2,463	9,054	23,816	479	65	204	3,783	3,675	3,825	883	37	1
Pesticides														
Fungicides (non-medicinal)														
Carbamate	219	65	28	123	211	2	1	4	58	44	38	8	2	0
Copper compound	22	3	0	19	22	0	0	0	4	0	6	1	0	0
Mercurial	12	6	1	5	11	1	0	0	4	4	0	0	0	0
Non-mercurial	19	4	0	15	19	0	0	0	7	3	10	0	0	0
Phthalimide	127	62	16	49	122	4	0	1	23	28	14	4	0	0
Wood preservative	549	132	49	363	538	2	3	6	107	82	100	13	1	0
Other/unknown	620	155	64	391	599	6	1	14	162	84	135	28	2	1
Fumigants														
Aluminum phosphide	61	2	2	57	51	2	0	8	31	4	23	9	0	0
Metam sodium	49	1	4	43	45	3	1	0	29	8	14	8	1	1
Methyl bromide	4	0	0	4	4	0	0	0	2	0	2	2	0	0
Sulfuryl fluoride	437	68	61	304	428	4	1	3	48	60	47	8	1	0
Other	61	7	4	49	60	0	0	1	9	4	31	1	0	0
Unknown	62	6	3	52	58	2	0	2	14	3	18	4	0	0
Herbicides (includes algicides, defoliants, dessicants, plant growth regulators)														
Carbamate	47	11	4	32	47	0	0	0	23	6	15	3	0	0
2,4-D or 2,4,5-T	155	43	20	92	152	1	1	1	28	28	27	2	0	0
Chlorophenoxy	1,948	594	169	1,150	1,840	34	9	55	427	339	395	71	9	0
Diquat	409	88	30	285	378	8	0	19	79	105	101	22	0	0
Glyphosate	4,426	1,248	365	2,782	4,110	51	25	231	811	1,072	1,027	83	8	0
Paraquat	81	6	5	69	73	5	1	1	54	5	18	8	2	4
Paraquat/diquat	1	0	0	1	1	0	0	0	1	0	0	1	0	0
Triazine	333	67	43	221	323	6	1	3	94	59	80	12	1	0
Urea	79	29	6	43	73	2	2	1	25	11	16	6	0	0
Other	1,527	415	172	916	1,468	14	4	35	429	227	323	62	4	0
Unknown	372	93	56	221	351	6	6	8	89	44	70	12	0	0
Insecticides (includes insect growth regulators, molluscicides, nematicides)														
Arsenic pesticide	404	324	14	65	390	11	3	0	43	148	16	5	2	0
Borate/boric acid	3,340	2,781	154	392	3,272	51	10	4	302	800	134	17	0	0
Carbamate only	2,659	1,189	254	1,192	2,527	80	20	26	553	519	376	105	15	1
Carbamate with other insecticide	591	193	54	338	553	21	9	6	99	118	108	23	3	0
Chlorinated hydrocarbon only	1,781	672	295	797	1,631	73	4	68	659	485	349	70	13	1
Chlorinated hydrocarbon with other insecticide	163	49	22	89	158	1	1	2	42	23	34	9	0	0
Insect growth regulator	171	93	14	63	166	2	0	3	22	34	18	1	0	0
Metaldehyde	225	126	14	84	220	2	2	1	36	64	14	3	1	0
Nicotine	17	4	6	7	15	2	0	0	6	1	2	4	0	0
Organophosphate	9,564	3,074	797	5,545	9,073	253	67	145	2,387	1,959	1,721	486	68	1
Organophosphate/carbamate	282	84	28	169	268	7	6	1	52	49	63	8	1	0
Organophosphate/other insecticide	1,379	387	142	844	1,312	44	3	20	309	271	336	73	5	0

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

Piperonyl butoxide only	4	2	1	1	4	0	0	0	0	0	1	0	0	0
Piperonyl butoxide/pyrethrin	3,642	1,348	536	1,723	3,362	101	21	155	664	590	796	159	8	0
Pyrethrin or pyrethroid	329	103	48	177	312	6	1	8	58	48	60	10	0	0
Pyrethrin	3,572	1,272	396	1,869	3,329	79	20	141	644	725	804	177	4	1
Pyrethroid	9,751	3,105	1,158	5,405	9,091	241	51	351	1,792	1,669	2,220	379	16	0
Rotenone	102	33	18	51	97	2	1	2	21	23	18	3	0	0
Veterinary insecticide	147	51	11	84	140	1	1	4	16	33	23	4	0	0
Other	6,146	3,553	588	1,938	5,945	73	22	98	731	1,169	699	110	7	1
Unknown	3,508	994	412	2,048	3,235	99	74	80	849	512	666	146	7	1
Repellents														
Bird, dog, deer or other mammal repellent	175	89	16	66	172	0	1	2	14	25	36	2	0	0
Insect repellent with DEET	5,727	4,007	904	791	5,430	66	36	185	558	1,145	1,306	80	6	0
Insect repellent without DEET	969	700	153	107	926	7	3	29	58	182	156	10	1	0
Insect repellent: unknown	182	99	29	54	176	1	0	5	20	34	46	11	0	0
Naphthalene	1,709	1,229	100	362	1,675	24	5	4	346	678	145	19	5	0
Paradichlorobenzene	46	24	3	18	41	3	1	1	11	9	6	1	0	0
Other moth repellent	103	81	3	19	102	0	1	0	10	32	6	0	0	0
Unknown moth repellent	2,408	1,573	162	642	2,302	69	10	25	467	809	197	47	8	0
Rodenticides														
ANTU	3	1	1	1	3	0	0	0	1	0	0	0	0	0
Anticoagulant: warfarin-type	492	414	22	53	457	28	6	0	166	178	13	4	1	0
Anticoagulant: long-acting, superwarfarin	16,423	14,607	472	1,254	15,715	571	98	13	5,104	5,373	214	86	26	2
Bromethalin	333	275	15	38	313	17	2	0	105	133	10	2	0	0
Cholecalciferol	19	18	0	1	19	0	0	0	5	7	0	0	0	0
Monofluoroacetate	10	2	3	5	10	0	0	0	2	2	0	1	1	0
Strychnine	160	21	24	112	75	46	30	1	82	37	14	16	6	2
Vacor	4	3	0	0	4	0	0	0	4	1	0	0	0	0
Zinc phosphide	156	74	11	66	137	15	1	1	54	47	14	1	0	1
Other	400	261	48	85	366	17	7	2	84	113	25	10	2	0
Unknown	1,294	909	90	276	1,108	121	52	3	561	418	43	11	5	0
Category totals	90,010	46,929	8,120	34,117	85,115	2,287	625	1,779	19,495	20,683	13,199	2,461	242	17
Photographic products														
Developer/fixing/stop bath	521	55	183	276	503	10	0	8	161	66	163	31	0	0
Photographic coating fluid	5	3	0	2	5	0	0	0	1	0	0	1	0	0
Other	564	225	91	240	537	19	1	6	97	93	102	32	1	0
Unknown	25	5	6	13	23	2	0	0	7	2	9	2	0	0
Category totals	1,115	288	280	531	1,068	31	1	14	266	161	274	66	1	0
Plants														
Amygdalin/cyanogenic glycoside	3,072	2,122	553	382	2,963	58	3	47	114	706	108	14	4	0
Anticholinergic	1,144	380	496	261	623	489	10	12	575	196	152	363	35	1
Cardiac glycoside	2,566	1,720	424	412	2,462	89	3	9	272	795	141	25	1	0
Colchicine	25	14	4	6	24	1	0	0	3	13	0	0	0	0
Depressant	131	62	12	57	88	35	0	8	46	34	19	12	3	0
Dermatitis	22,914	9,832	4,333	8,478	20,768	365	804	855	2,000	2,027	6,014	816	12	0
Gastrointestinal irritant	17,888	14,275	1,550	1,987	17,341	327	9	198	1,062	4,370	1,241	187	9	0
Hallucinogenic	404	163	88	151	226	124	0	53	164	85	44	75	7	1
Nicotine	225	61	63	101	213	7	2	3	101	26	89	23	4	0
Non-toxic	17,350	14,415	1,531	1,311	16,861	179	20	282	484	2,210	658	102	3	0
Oxalate	12,010	10,741	712	527	11,865	101	4	33	388	3,386	1,370	59	1	0
Solanine	1,477	1,157	127	186	1,434	26	0	16	153	497	84	12	0	0
Stimulant	315	191	52	70	278	23	1	8	48	87	32	13	0	0
Toxalbumin	188	93	24	70	167	10	6	0	82	68	36	7	1	0
Other toxic	3,626	2,681	405	527	3,427	94	7	90	328	879	327	68	10	0
Unknown toxic or unknown if toxic	22,225	15,380	2,663	4,009	21,411	363	103	314	1,486	4,775	1,555	273	10	0
Category totals	105,560	73,287	13,037	18,535	100,151	2,291	972	1,928	7,306	20,154	11,870	2,049	100	2
Polishes and waxes	7,360	5,758	447	1,130	7,167	140	23	25	894	2,398	1,156	132	8	0
Radioisotopes	330	29	63	229	297	8	6	12	73	31	25	24	1	0
Sporting equipment														
Fishing bait	64	45	12	6	62	2	0	0	7	14	5	0	0	0
Fishing product: other	13	8	3	2	11	1	0	1	6	2	4	0	0	0
Golf ball	51	4	33	14	46	4	0	1	14	8	22	2	0	0
Gun bluing	20	7	1	11	19	0	0	1	8	4	4	2	0	0
Hunting product: other	340	180	70	86	313	16	9	1	98	101	38	3	0	0
Other	195	119	51	23	184	6	2	3	20	59	14	1	0	0
Unknown	5	4	0	1	5	0	0	0	1	3	0	0	0	0
Category totals	688	367	170	143	640	29	11	7	154	191	87	8	0	0
Swimming pool/aquarium	8,804	3,858	1,653	3,214	8,332	84	13	372	1,529	1,534	2,596	545	15	0
Tobacco products	7,710	6,813	209	666	7,407	201	36	52	1,503	2,604	1,732	144	15	1

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

Weapons of mass destruction														
Anthrax	1,273	48	91	1,087	620	4	599	10	351	199	49	12	1	1
Other biological weapon	130	16	35	77	106	0	20	2	13	9	5	0	0	0
Nerve gas	4	0	0	4	2	0	0	1	2	0	0	1	0	0
Other chemical weapon	40	2	3	35	15	0	25	0	8	4	3	21	0	0
Suspicious powder in envelope/package	665	26	53	559	140	1	513	0	137	212	20	1	1	0
Other suspicious powder	526	26	55	420	113	1	407	1	147	172	26	4	0	0
Other suspicious substance	757	23	50	547	100	3	647	3	214	138	157	11	1	0
Category totals	3,395	141	287	2,729	1,096	9	2,211	17	872	734	260	50	3	1
Other/unknown nondrug substances	22,858	10,130	3,858	8,442	19,658	530	1,827	464	3,839	3,920	3,224	638	78	1
Total number of nonpharmaceuticals	1,365,471	704,660	179,666	469,506	1,268,293	65,216	13,695	15,214	223,593	237,595	239,327	52,527	4,536	316
% of nonpharmaceuticals		51.6%	13.2%	34.4%	92.9%	4.8%	1.0%	1.1%	16.4%	17.4%	17.5%	3.8%	0.3%	0.0%
% of all substances	53.4%	27.6%	7.0%	18.4%	49.6%	2.6%	0.5%	0.6%	8.7%	9.3%	9.4%	2.1%	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 Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Analgesics														
Acetaminophen only														
Adult formulation	28,991	6,679	10,400	11,711	13,463	15,083	18	291	17,153	8,478	4,436	2,203	516	63
Pediatric formulation	19,484	17,324	1,946	190	19,041	320	12	95	2,390	4,401	347	67	15	0
Unknown formulation	8,041	1,799	2,626	3,512	3,201	4,599	5	111	5,380	2,150	1,440	868	298	57
Acetaminophen in combination with:														
Aspirin with other ingredient	386	136	101	146	205	161	0	17	173	91	84	26	3	0
Aspirin without other ingredient	5,916	1,861	1,835	2,190	2,914	2,744	6	227	3,021	1,583	1,223	428	32	2
Codeine	5,866	997	1,199	3,615	2,340	3,085	3	396	3,391	1,311	1,448	551	121	1
Hydrocodone	15,142	1,383	2,250	11,354	5,123	8,804	11	1,031	9,030	2,651	3,784	1,627	503	47
Oxycodone	4,847	557	587	3,659	1,777	2,620	6	379	2,677	861	1,132	546	131	12
Propoxyphene	5,853	625	782	4,393	2,006	3,476	4	297	3,717	1,173	1,512	709	196	23
Other opioid	956	101	157	693	349	534	0	67	536	167	222	112	36	0
Other drug: adult formulation	17,163	2,308	4,279	10,439	5,354	11,295	6	397	11,599	3,663	4,484	2,297	405	33
Other drug: pediatric formulation	164	125	32	7	155	4	0	5	20	37	14	1	1	0
Aspirin alone														
Adult formulation	5,249	1,669	1,577	1,961	2,616	2,500	5	105	2,921	1,536	960	565	49	14
Pediatric formulation	631	459	88	82	569	53	0	8	138	240	38	14	3	0
Unknown formulation	11,195	2,065	3,909	5,129	3,838	7,040	7	198	7,862	2,713	2,434	1,830	289	52
Aspirin in combination with:														
Carisoprodol	469	17	57	393	110	336	0	14	354	59	147	96	32	1
Codeine	304	46	36	219	93	186	0	22	203	56	85	42	9	1
Oxycodone	223	21	14	182	76	118	1	20	129	36	46	34	7	0
Propoxyphene	51	7	6	37	23	26	0	2	32	10	9	12	1	0
Other opioid	62	5	5	52	24	30	0	5	38	16	13	8	2	0
Other drug: adult formulation	1,344	339	258	728	673	573	4	70	686	302	269	142	25	1
Nonaspirin salicylate	1,095	535	167	390	822	231	1	36	357	296	153	62	10	3
Opioids														
Codeine	1,328	479	310	526	831	378	1	107	441	264	211	84	14	6
Meperidine	684	78	86	507	261	327	0	84	403	109	148	104	30	2
Methadone	1,939	128	165	1,621	582	1,109	8	156	1,362	156	368	466	231	36
Morphine	1,890	173	255	1,440	796	878	6	169	1,119	255	355	281	121	22
Oxycodone	4,410	376	465	3,508	1,724	2,236	10	362	2,562	610	1,025	727	205	42
Pentazocine	206	14	18	171	80	98	1	26	99	20	49	29	6	3
Propoxyphene	567	69	56	434	192	335	0	31	381	101	116	92	35	14
Tramadol	3,628	358	477	2,769	1,175	2,109	3	297	2,426	747	976	547	144	10
Other/unknown	4,181	497	505	3,134	1,548	1,929	13	572	2,409	525	913	709	296	38
Other nonsteroidal antiinflammatory drugs														
Colchicine	195	45	20	128	123	42	0	29	98	44	28	22	4	8
Cox-2 inhibitor	6,253	2,223	584	3,413	3,993	1,722	3	505	2,399	1,815	838	438	100	8
Ibuprofen	60,304	33,574	13,387	13,069	42,510	16,610	25	1,004	17,950	16,258	5,893	1,740	228	20
Ibuprofen with hydrocodone	49	6	3	39	14	32	0	2	37	12	8	11	4	1
Indomethacin	673	179	93	397	353	233	0	83	281	158	127	63	4	1
Ketoprofen	457	268	73	114	343	94	0	18	122	163	42	16	1	0
Naproxen	12,001	2,451	3,639	5,811	5,603	5,608	7	710	5,652	3,154	2,068	725	95	5
Other	5,832	1,890	776	3,123	3,852	1,634	10	311	2,027	1,515	821	337	81	4
Unknown	8	1	2	5	3	4	0	1	4	1	0	3	0	0
Phenacetin	4	2	2	0	3	1	0	0	2	1	1	0	0	0
Phenazopyridine	1,023	716	84	221	858	101	0	62	250	385	120	35	5	1
Salicylamide	73	57	2	14	65	5	0	2	20	40	2	1	1	0
Other	1,408	500	112	787	1,094	40	1	271	154	131	434	25	6	0
Unknown	212	24	69	118	48	151	0	11	137	32	56	18	0	0
Category total	240,757	83,166	53,494	102,431	130,823	99,494	177	8,606	112,142	58,326	38,879	18,713	4,295	531
Anesthetics														
Inhalation anesthetics														
Nitrous oxide	212	18	67	120	90	85	1	35	95	10	39	28	5	5
Other	198	12	27	154	161	23	5	8	96	24	78	20	1	3
Unknown	1	0	1	0	0	1	0	0	1	0	0	1	0	0
Ketamine and analogs	356	8	122	219	62	278	6	7	283	35	79	121	32	4
Local/topical anesthetics														
Dibucaine	54	47	0	7	54	0	0	0	6	22	2	2	0	0
Lidocaine	1,763	969	210	566	1,584	66	5	99	362	486	282	73	19	0
Other/unknown	5,515	3,963	448	1,081	5,129	133	16	227	824	2,015	555	87	29	0
Other	35	6	3	24	20	4	0	10	21	6	4	7	1	0
Unknown	6	1	2	3	2	1	0	3	1	0	1	0	0	0
Category total	8,140	5,024	880	2,174	7,102	591	33	389	1,689	2,598	1,040	339	87	12
Anticholinergic drugs	5,650	1,524	744	3,340	3,387	1,844	6	346	2,960	1,415	1,058	852	186	8
Anticoagulants														
Glycoprotein IIA/IIB inhibitor	3	0	0	3	3	0	0	0	3	2	0	1	0	0
Heparin	149	28	5	114	100	12	1	34	98	28	16	39	3	0
Warfarin (excluding rodenticide)	2,304	764	94	1,435	1,757	401	3	127	1,008	654	120	253	60	4
Other antiplatelet	945	226	23	693	778	107	0	55	293	307	71	58	10	0
Other	24	11	1	10	21	0	0	3	14	6	3	2	1	0

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

Substances Implicated in the Exposure	No. of Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Unknown	24	12	5	7	15	2	5	2	12	8	2	2	0	0
Category total	3,449	1,041	128	2,262	2,674	522	9	221	1,428	1,005	212	355	74	4
Anticonvulsants														
Carbamazepine	5,973	1,532	1,278	3,129	3,542	2,066	1	283	3,651	1,168	1,478	990	309	10
Phenytoin	3,941	628	304	2,979	2,095	1,371	7	380	2,597	854	937	663	108	6
Primidone	428	51	31	344	333	82	2	8	173	77	111	34	9	3
Succinimide	100	44	34	20	83	13	0	3	37	34	14	3	1	0
Valproic acid	9,778	1,080	2,403	6,222	3,979	5,321	5	365	6,548	2,301	2,404	1,428	412	15
Other	11,387	1,267	1,977	8,045	4,738	5,940	7	580	7,426	2,499	2,864	1,651	536	25
Unknown	13	1	2	9	3	10	0	0	8	2	1	4	2	0
Category total	31,620	4,603	6,029	20,748	14,773	14,803	22	1,619	20,440	6,935	7,809	4,773	1,377	59
Antidepressants														
Cyclic antidepressants														
Amitriptyline	7,348	911	912	5,459	2,289	4,737	6	198	5,751	1,108	1,739	1,810	867	41
Amoxapine	32	6	1	25	12	16	0	2	24	2	9	4	4	4
Desipramine	275	30	47	195	107	155	0	10	196	52	41	54	29	6
Doxepin	1,635	93	144	1,378	389	1,178	0	44	1,296	225	373	430	208	10
Imipramine	1,172	269	333	560	634	481	0	47	743	307	241	179	80	5
Maprotiline	29	4	3	21	10	19	0	0	22	3	8	4	4	0
Nortriptyline	1,185	133	163	883	439	667	2	60	817	225	230	252	87	6
Protriptyline	27	6	4	16	15	12	0	0	15	8	6	4	1	0
Other cyclic antidepressant	1,297	94	179	1,014	421	783	0	35	1,014	177	282	355	189	13
Unknown cyclic antidepressant	28	2	4	22	4	24	0	0	27	2	6	5	8	3
Cyclic antidepressant formulated with a benzodiazepine	54	9	1	43	24	28	0	2	40	13	14	12	3	0
Cyclic antidepressant formulated with a phenothiazine	174	29	15	130	76	93	0	4	121	30	40	34	11	1
Lithium	4,607	253	811	3,503	1,612	2,399	8	475	3,568	868	1,061	1,134	280	8
MAO inhibitor	344	53	16	273	205	93	0	39	208	87	51	65	23	6
SSRI	41,714	6,502	10,065	24,788	14,749	24,806	41	1,789	27,606	11,176	9,683	5,244	1,232	73
Trazodone	12,956	866	1,948	9,978	3,268	9,116	10	470	9,703	2,529	4,232	2,011	398	17
Other	19,727	2,766	3,768	13,035	7,360	11,279	8	949	13,899	4,714	4,802	3,426	973	62
Unknown	71	6	20	44	11	54	0	5	56	12	14	8	1	0
Category total	92,675	12,032	18,434	61,367	31,625	55,940	75	4,129	65,106	21,538	22,832	15,031	4,398	255
Antihistamines														
Diphenhydramine: unknown if OTC or Rx	27,079	12,557	4,678	9,693	17,237	9,019	15	670	11,223	6,236	5,217	2,888	442	26
Diphenhydramine: Rx	27	6	8	13	17	9	0	0	7	10	2	0	0	0
Diphenhydramine: OTC	1,157	481	210	457	691	440	1	23	503	241	256	145	17	0
H2 receptor antagonist	8,763	4,644	1,289	2,784	6,968	1,479	7	277	2,305	2,597	842	402	73	1
Other	30,027	13,280	7,040	9,589	21,701	7,190	15	993	10,146	8,302	4,174	2,023	345	17
Category total	67,053	30,968	13,225	22,536	46,614	18,137	38	1,963	24,184	17,386	10,491	5,458	877	44
Antimicrobials														
Antibiotics														
Systemic	37,526	18,226	6,282	12,784	27,583	5,393	32	4,415	7,782	6,892	4,049	1,349	202	7
Topical	7,728	5,898	488	1,313	7,529	53	2	141	213	1,422	352	31	4	0
Unknown	705	178	172	350	353	206	1	144	253	101	149	42	6	0
Antifungals														
Systemic	1,300	643	155	493	1,015	120	2	159	281	300	120	40	9	2
Topical	7,679	5,716	357	1,585	7,454	70	3	148	337	1,385	513	41	3	0
Unknown	15	4	0	11	14	1	0	0	5	2	4	0	0	0
Anthelmintics														
Diethylcarbamazine	154	83	12	59	152	2	0	0	10	28	5	0	0	0
Piperazine	411	318	26	65	399	8	1	0	52	143	17	3	0	0
Other	905	523	86	291	852	22	4	26	172	228	98	19	6	0
Unknown	16	11	3	2	16	0	0	0	3	3	2	0	0	0
Antiparasitics														
Antimalarial	500	153	82	265	356	89	0	51	227	144	65	53	10	1
Metronidazole	1,390	350	170	858	837	281	1	266	372	254	189	59	11	0
Other	113	51	12	49	99	5	1	7	18	15	11	3	0	0
Antituberculars														
Isoniazid	426	68	165	191	188	188	0	42	320	95	58	70	80	1
Rifampin	73	18	14	40	47	13	0	13	34	16	15	6	4	0
Other	23	6	1	16	12	2	0	9	7	3	2	4	0	0
Antivirals														
Amantadine	94	17	20	56	52	31	0	9	54	26	14	16	5	0
Anti-influenza agent: other	130	39	26	65	85	24	0	21	40	24	30	10	0	0
Antiretroviral	730	130	41	553	371	301	0	57	421	220	109	78	8	2
Systemic	952	340	117	489	718	145	0	86	252	222	87	40	14	0
Topical	159	56	22	79	142	1	0	16	8	27	14	0	0	0
Unknown	89	31	15	41	50	24	0	14	37	23	8	9	2	0
Other	210	167	8	34	196	4	0	10	27	58	18	2	1	0

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

Substances Implicated in the Exposure	No. of Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Unknown	29	7	4	18	14	10	2	3	11	8	6	2	1	0
Category total	61,357	33,033	8,278	19,707	48,534	6,993	49	5,637	10,936	11,639	5,935	1,877	366	13
Antineoplastics	957	187	69	689	720	86	1	147	406	215	139	78	30	2
Asthma therapies														
Albuterol	7,210	5,507	956	725	6,593	328	13	263	1,427	2,039	1,027	405	6	0
Aminophylline/theophylline	1,146	229	138	774	760	273	0	94	639	264	171	235	63	18
Terbutaline and other beta-2 agonist	1,458	797	293	360	1,260	120	2	74	282	432	175	88	7	0
Other beta agonist	738	179	243	314	635	63	1	37	228	95	200	82	4	1
Leukotriene antagonist/inhibitor	6,308	4,756	931	614	5,916	322	1	66	1,026	2,309	252	66	18	0
Other	754	523	78	147	662	49	8	33	110	181	51	23	6	0
Unknown	16	3	7	6	6	8	1	1	10	2	3	4	1	0
Category total	17,630	11,994	2,646	2,940	15,832	1,163	26	568	3,722	5,322	1,879	903	105	19
Cardiovascular drugs														
ACE inhibitor	9,827	3,436	606	5,734	7,886	1,667	4	235	3,895	3,648	774	761	160	7
Alpha blocker	1,493	427	62	998	1,175	238	0	72	668	532	163	161	25	3
Angiotensin receptor blocker	2,578	786	134	1,644	2,158	324	2	88	904	1,012	214	156	32	6
Antiarrhythmic: other	1,193	248	34	899	1,050	86	0	51	466	449	82	93	21	6
Antihyperlipidemic	5,504	2,002	334	3,147	4,445	667	2	368	1,509	1,492	387	305	74	8
Antihypertensive	1,039	349	426	264	831	159	0	42	502	379	164	110	15	1
Beta blocker	12,587	3,099	1,098	8,320	9,301	2,818	5	376	6,155	4,836	1,039	1,369	302	39
Calcium antagonist	9,264	2,249	501	6,475	7,157	1,820	1	249	4,825	3,527	804	1,119	286	60
Cardiac glycoside	2,977	784	105	2,079	2,361	295	2	268	1,493	917	202	521	131	13
Clonidine	4,721	1,438	1,587	1,676	3,238	1,329	3	111	2,973	1,061	1,092	1,028	151	7
Hydralazine	165	43	14	108	127	29	0	8	73	55	18	23	4	0
Long-acting nitrate	681	213	12	453	558	99	0	24	294	271	71	73	10	1
Nitroglycerin	2,069	1,144	103	816	1,750	258	6	50	664	901	152	127	11	1
Nitroprusside	26	3	0	23	12	0	0	14	24	6	4	6	1	0
Vasodilator: other	344	125	16	200	289	38	0	16	114	127	39	19	7	1
Vasopressor	10	4	2	3	8	1	0	1	3	0	2	1	0	0
Other	73	28	4	41	55	11	0	6	33	18	8	9	2	0
Unknown	60	14	9	35	31	26	0	2	32	9	7	7	3	0
Category total	54,611	16,392	5,047	32,915	42,432	9,865	25	1,981	24,627	19,240	5,222	5,888	1,235	153
Cold and cough preparations	97,710	59,949	20,671	16,856	79,925	14,414	53	3,106	21,869	23,657	14,279	4,281	312	14
Diagnostic agents	503	103	43	338	412	6	5	79	222	72	103	45	3	0
Dietary supplements/herbals/homeopathic														
Amino acids														
Creatine	249	74	57	117	141	51	2	51	117	28	39	28	5	0
Other amino acid dietary supplement	111	54	13	43	82	14	1	14	26	23	13	7	0	0
Cultural medicines														
Ayurvedic	5	4	0	1	4	0	1	0	2	2	0	0	0	0
Asian	95	36	7	50	65	6	1	22	51	21	17	3	2	0
Hispanic	5	1	0	4	1	1	0	3	4	0	0	3	0	0
Other	20	7	3	10	9	5	0	6	10	3	4	1	0	0
Botanical products														
Ginkgo biloba	204	112	20	71	152	23	0	28	71	53	27	10	5	0
Echinacea	513	348	43	121	415	26	0	69	71	110	33	12	0	0
Ginseng	384	179	63	140	262	72	1	46	121	88	69	28	6	0
Kava kava	336	75	45	213	144	124	0	59	165	65	57	33	5	1
Ma huang/ephedra (single ingredient)	812	216	200	389	406	293	0	103	440	167	196	139	10	3
Citrus aurantium (single ingredient)	4	2	0	2	3	1	0	0	2	1	0	2	0	0
St. John's wort	304	142	57	101	184	83	0	31	106	89	35	26	0	0
Valerian	291	58	30	199	127	113	1	44	147	58	57	28	3	0
Yohimbe	34	7	3	24	19	5	0	10	15	5	7	8	0	0
Multi-botanical with ma huang	7,115	1,998	1,986	3,090	3,301	2,663	9	1,075	3,849	1,398	1,575	1,325	87	3
Multi-botanical without ma huang or citrus aurantium	887	453	127	303	582	172	1	129	295	215	133	47	7	0
Multi-botanical with citrus aurantium	17	9	1	6	9	4	0	4	5	5	5	0	0	0
Other single ingredient botanical	1,318	660	114	537	966	104	5	234	314	259	174	56	9	0
Homeopathic	4,360	3,825	180	347	4,037	171	6	144	445	1,158	156	55	3	2
Hormonal products														
Androgen/precursor (dietary supplement)	15	5	1	9	7	5	0	3	7	4	1	1	3	0
Phytoestrogen	129	49	13	65	83	12	1	32	40	27	15	7	1	0
Glandular	20	11	5	4	10	2	0	7	8	3	2	4	0	0
Melatonin	51	25	8	18	32	18	0	1	22	17	12	3	1	0

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

Substances Implicated in the Exposure	No. of Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Other dietary supplements														
Blue-green algae	18	11	2	5	13	0	0	4	5	1	2	0	0	0
Glucosamine (with or without chondroitin)	61	36	6	18	55	2	0	4	9	19	5	0	0	0
Other single ingredient non-botanical	64	32	9	23	44	10	0	9	18	12	10	3	0	1
Unknown supplement/homeopathic	2,046	840	354	839	1,246	437	3	339	817	482	306	206	25	2
Category total	19,468	9,269	3,347	6,749	12,399	4,417	32	2,471	7,182	4,313	2,950	2,035	172	12
Diuretics														
Furosemide	2,665	970	192	1,486	2,189	387	0	67	1,010	846	307	226	48	3
Thiazide	2,764	987	227	1,537	2,158	530	2	63	1,055	924	264	202	50	4
Other	1,976	735	167	1,063	1,579	299	0	89	662	592	226	116	17	3
Unknown	305	104	26	175	228	57	0	19	116	101	29	27	3	0
Category total	7,710	2,796	612	4,261	6,154	1,273	2	238	2,843	2,463	826	571	118	10
Electrolytes and minerals														
Calcium	4,261	3,364	332	550	4,075	123	6	57	364	878	158	44	8	0
Chromium, trivalent	12	9	1	2	11	1	0	0	2	3	2	0	0	0
Colloidal silver	1	0	1	0	1	0	0	0	0	0	0	0	0	0
Fluoride	3,635	3,157	331	139	3,561	36	0	35	179	947	306	19	0	0
Geranium	1	1	0	0	1	0	0	0	0	1	0	0	0	0
Iron	3,550	2,094	470	968	2,890	545	2	102	1,145	1,065	411	128	18	1
Magnesium	762	291	128	338	646	49	10	54	165	189	101	33	4	0
Potassium	1,748	626	116	999	1,453	204	10	66	585	578	142	116	19	5
Sodium	2,438	1,553	470	403	2,260	115	39	17	267	545	337	45	1	0
Vanadium	1	0	0	1	0	1	0	0	1	0	0	1	0	0
Zinc	1,412	797	137	468	1,270	54	0	84	214	240	181	32	4	1
Multi-mineral dietary supplement	18	12	2	4	16	2	0	0	3	6	2	1	0	0
Multi-mineral, multi-herbal dietary supplement	142	76	19	46	110	17	0	15	35	30	17	5	7	0
Other	636	447	52	132	541	42	3	38	112	186	41	16	2	0
Unknown	14	6	2	6	11	0	1	2	4	3	1	0	0	0
Category total	18,631	12,433	2,061	4,056	16,846	1,189	71	470	3,076	4,671	1,699	440	63	7
Eye/ear/nose/throat preparations														
Nasal preparations														
Tetrahydrozoline	50	31	4	15	47	0	1	2	8	21	7	0	0	0
Other decongestant	2,243	1,024	245	967	2,033	78	1	129	315	639	347	46	4	0
Other	601	380	30	190	575	10	1	15	37	124	77	5	0	0
Unknown	12	3	4	5	11	0	0	1	5	1	6	3	0	0
Ophthalmic preparations														
Contact lens product	2,655	1,659	190	795	2,621	17	5	11	283	370	431	78	1	0
Glaucoma therapy	135	46	6	83	114	2	1	18	27	42	12	6	1	0
Tetrahydrozoline	1,319	891	135	285	1,147	62	88	18	382	625	105	31	6	0
Other sympathomimetic	593	302	91	194	484	30	32	44	157	218	88	11	1	0
Other	1,251	646	150	450	1,154	31	4	61	141	189	149	41	2	0
Unknown	40	8	16	13	24	9	1	5	19	4	5	1	0	0
Otic preparations														
Combination product	1,175	848	115	204	1,168	1	1	4	118	336	218	18	0	0
Other	2,616	1,263	262	1,075	2,589	14	1	12	237	354	765	48	1	0
Unknown	37	9	8	19	37	0	0	0	8	9	14	2	0	0
Steroid, topical for eye/nose/throat	508	227	61	217	476	6	0	25	30	63	95	7	1	0
Throat preparations														
Lozenge without local anesthetic	772	594	75	101	719	28	0	24	41	124	42	7	0	0
Lozenge with local anesthetic	229	135	55	39	201	20	1	7	19	48	14	3	0	0
Other	338	178	87	72	268	49	1	19	64	96	43	10	2	0
Category total	14,574	8,244	1,534	4,724	13,668	357	138	395	1,891	3,263	2,418	317	19	0
Gastrointestinal preparations														
Antacids														
Salicylate-containing	2,281	1,705	245	325	2,034	117	1	127	214	545	114	27	3	0
Proton pump inhibitor	5,305	2,125	434	2,723	3,911	1,057	2	316	1,681	1,485	558	312	88	4
Other	16,982	15,282	688	972	16,580	229	17	140	529	2,639	436	65	9	0
Antidiarrheals														
Diphenoxylate/atropine	412	153	49	210	243	141	0	24	281	131	76	64	16	1
Loperamide	983	537	111	335	764	148	0	65	292	327	112	47	11	1
Non-opioid	449	366	31	51	430	11	1	7	19	69	12	2	2	0
Paregoric	28	17	3	8	24	2	0	2	7	10	5	3	1	0
Other opioid	1	0	1	0	1	0	0	0	0	0	0	0	0	0
Antispasmodics														
Anticholinergic	1,097	297	218	576	607	408	0	68	585	302	211	143	25	0
Other	152	46	27	79	94	50	0	5	80	38	32	19	5	0
Laxative	13,404	9,150	1,376	2,830	12,038	779	203	363	1,611	2,151	1,817	270	12	3
Other	7,529	5,935	372	1,207	6,816	412	6	278	1,243	1,701	461	289	35	1
Unknown	48	20	8	20	30	17	0	1	19	15	12	1	2	0
Category total	48,671	35,633	3,563	9,336	43,572	3,371	230	1,396	6,561	9,413	3,846	1,242	209	10

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

Substances Implicated in the Exposure	No. of Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Hormones and hormone antagonists														
Androgen	593	221	93	278	376	154	3	56	196	108	60	47	12	0
Corticosteroid	11,333	6,490	1,355	3,438	9,920	652	10	732	1,232	1,885	778	269	29	1
Estrogen	4,412	2,826	224	1,347	3,942	346	1	107	796	1,041	239	124	35	0
Insulin	1,686	118	108	1,445	1,205	407	9	52	707	480	105	334	50	8
Oral contraceptive	9,948	8,189	972	758	9,196	564	16	153	845	1,776	335	38	2	1
Oral hypoglycemics														
Biguanide	2,904	637	271	1,984	2,172	615	3	88	1,346	1,094	259	301	56	14
Sulfonylurea	3,746	1,496	208	2,025	2,914	694	1	113	2,542	1,596	301	731	99	5
Thiazolidinedione	1,044	416	50	574	847	162	0	33	505	504	75	88	17	2
Other/unknown	251	103	15	131	199	39	1	7	144	123	11	25	5	0
Progestin	1,234	604	157	469	1,033	95	4	99	200	245	76	25	5	0
Selective estrogen receptor modulator	660	262	47	350	576	59	0	23	173	246	37	26	6	0
Thyroid preparation	9,092	4,812	722	3,530	8,033	872	1	162	1,963	2,108	470	301	68	4
Other hormone	1,925	842	353	721	1,374	415	9	121	574	541	251	81	12	1
Other hormone antagonist	397	147	39	211	337	44	0	14	103	109	26	15	1	0
Unknown hormone or antagonist	18	8	2	7	13	2	2	1	8	5	2	1	0	0
Category total	49,243	27,171	4,616	17,268	42,137	5,120	60	1,761	11,334	11,861	3,025	2,406	397	36
Miscellaneous drugs														
Allopurinol	395	168	24	201	321	61	0	12	132	136	18	31	9	0
Disulfiram	418	16	13	383	109	228	3	74	224	44	94	73	17	1
L-dopa and related drug	914	256	19	636	779	81	0	46	324	237	142	75	10	0
Ergot alkaloid	385	168	50	164	233	113	0	37	247	147	62	36	11	1
Methysergide	1	1	0	0	1	0	0	0	0	1	0	0	0	0
Neuromuscular blocking agent	21	2	2	15	12	4	0	5	10	1	4	1	4	2
Nicotine pharmaceutical	676	258	75	339	472	66	0	135	136	145	120	45	6	2
Other	14,735	5,809	1,604	7,208	11,927	1,585	65	1,091	4,131	3,232	2,358	927	164	9
Category total	17,545	6,678	1,787	8,946	13,854	2,138	68	1,400	5,204	3,943	2,798	1,188	221	15
Muscle relaxants														
Carisoprodol (formulated alone)	6,991	339	781	5,823	1,383	5,305	3	168	5,452	784	2,488	1,304	357	20
Cyclobenzaprine	5,771	972	906	3,839	2,027	3,558	1	125	4,132	1,178	1,612	985	238	10
Methocarbamol	1,452	165	232	1,035	505	870	1	52	938	309	380	184	38	1
Other	4,032	699	517	2,777	1,688	1,976	2	313	2,536	824	965	657	222	11
Unknown	139	13	24	97	19	118	0	2	96	23	38	18	5	0
Category total	18,385	2,188	2,460	13,571	5,622	11,827	7	660	13,154	3,118	5,483	3,148	860	42
Narcotic antagonists	296	6	36	249	89	148	0	53	213	40	61	64	21	0
Radiopharmaceuticals	17	1	1	15	9	0	0	7	12	3	3	4	0	0
Sedative/hypnotics/antipsychotics														
Atypical antipsychotic	20,340	1,422	4,391	14,380	6,127	13,205	18	780	15,583	3,469	5,981	4,326	1,208	56
Barbiturates														
Long-acting	2,908	575	259	2,045	1,577	1,182	5	77	1,633	584	565	425	192	14
Short/intermediate-acting	1,048	60	125	852	286	702	3	33	778	148	313	202	76	6
Unknown type	24	0	4	20	1	19	0	1	24	0	4	7	10	1
Benzodiazepine	54,354	5,211	5,732	42,858	13,583	38,734	265	1,092	40,832	8,867	17,933	8,538	2,328	146
Buspirone	2,726	340	351	2,017	1,012	1,547	1	143	1,803	686	705	359	88	3
Chloral hydrate	238	53	28	153	84	130	2	19	188	27	81	44	26	4
Ethchlorvynol	22	5	1	16	13	9	0	0	14	5	4	3	2	0
Glutethimide	3	0	0	3	1	2	0	0	2	1	0	0	1	0
Meprobamate	167	9	19	138	44	108	0	10	130	24	41	46	14	3
Methaqualone	24	1	6	17	3	19	0	0	18	2	7	4	2	0
Phenothiazine	6,031	870	828	4,280	2,618	2,837	14	493	4,027	1,155	1,301	1,338	270	12
Sleep aid (OTC)	1,108	79	181	834	212	873	0	12	880	188	331	227	43	0
Other	10,874	643	1,564	8,559	2,782	7,498	12	457	8,032	1,616	3,858	1,766	422	19
Unknown	274	15	33	221	45	199	14	8	226	34	74	48	10	2
Category total	100,141	9,283	13,522	76,393	28,388	67,064	334	3,125	74,170	16,806	31,198	17,333	4,692	266
Serums, toxoids, vaccines	1,981	475	263	1,202	1,427	13	0	536	634	129	481	98	7	0
Stimulants and street drugs														
Amphetamine	9,540	3,048	3,750	2,691	5,858	3,161	55	338	5,256	2,380	1,908	1,510	230	25
Amyl/butyl nitrite	101	9	18	70	56	42	1	1	63	7	16	22	2	1
Caffeine	5,562	842	2,723	1,956	1,965	3,246	17	294	2,717	627	1,580	973	27	1
Cocaine	5,539	78	633	4,761	546	4,739	46	30	4,946	649	1,195	1,720	556	73
Diet aids														
Phenylpropanolamine	384	132	112	139	214	154	0	13	208	100	65	55	4	0
Phenylpropanolamine and caffeine	45	16	17	12	27	16	0	2	30	17	6	7	1	1
Other: OTC	238	69	58	111	119	69	0	48	122	46	62	26	1	0
Other: Rx	93	30	25	38	48	38	0	5	58	26	18	18	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 Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Unknown	107	21	37	49	36	54	1	15	64	18	28	9	1	0
Ephedrine	1,908	370	410	1,104	672	1,104	3	103	1,200	334	418	427	36	3
GHB and analog/precursor	1,916	13	382	1,495	283	1,205	322	19	1,590	44	338	753	363	6
Hallucinogenic amphetamine	2,672	28	1,108	1,470	393	2,068	154	24	2,100	136	486	851	218	16
Heroin	1,821	11	176	1,612	153	1,587	12	28	1,645	189	343	528	257	33
LSD	765	15	454	280	141	557	41	6	554	60	117	320	19	2
Marijuana	3,473	138	1,420	1,876	511	2,746	70	63	2,760	276	892	998	196	16
Mescaline/peyote	207	61	40	100	158	42	2	4	64	16	48	32	1	0
Methamphetamine	2,500	89	482	1,863	411	1,966	57	37	1,921	150	413	706	143	21
Methylphenidate	6,722	1,403	3,754	1,525	4,551	1,891	19	198	2,915	1,737	1,167	796	71	3
Phencyclidine	582	17	172	381	80	463	16	5	515	27	114	222	57	6
Phenylpropanolamine look-alike drug	15	4	2	9	7	6	0	2	6	3	2	1	0	0
Other stimulant	185	41	45	97	68	103	0	13	124	44	47	29	1	0
Other hallucinogen	9	0	5	4	0	9	0	0	9	1	0	7	0	0
Unknown hallucinogen	14	0	6	8	3	9	1	0	9	0	2	7	0	0
Other stimulant/street drug	38	5	15	18	8	26	0	2	30	5	11	12	2	0
Unknown stimulant/street drug	184	8	73	98	23	129	25	4	135	11	49	54	6	0
Category total	44,620	6,448	15,917	21,767	16,331	25,430	842	1,254	29,041	6,903	9,325	10,083	2,192	207
Topical preparations														
Acne preparation	2,455	1,403	525	516	2,292	71	2	90	172	491	346	37	2	0
Boric acid/borate	145	80	12	53	139	4	1	1	16	26	14	2	0	0
Calamine	3,276	2,403	176	689	3,243	19	1	12	175	568	201	9	0	0
Camphor	8,505	6,518	537	1,430	8,287	154	13	46	829	2,648	1,168	73	16	0
Camphor/methyl salicylate	1,497	1,287	70	138	1,464	10	0	22	154	498	202	8	1	0
Diaper care/rash product	43,371	41,647	686	975	43,304	26	11	24	423	6,147	770	18	3	0
Hexachlorophene antiseptic	133	102	9	21	130	1	0	2	8	21	16	2	0	0
Hydrogen peroxide	7,934	3,305	790	3,820	7,739	134	20	41	419	975	1,158	56	3	0
Iodine or iodide antiseptic	1,537	534	280	712	1,307	154	11	56	395	373	316	55	5	1
Mercury antiseptic	201	146	11	43	190	7	1	3	32	70	13	5	0	0
Methyl salicylate	9,140	7,148	674	1,297	8,998	49	22	69	824	2,303	1,760	47	6	2
Minoxidil	41	23	2	16	35	1	3	2	7	8	7	1	0	0
Podophyllin	70	21	10	39	55	8	0	7	20	15	10	4	0	0
Silver nitrate	217	22	102	90	187	13	1	16	64	14	61	10	1	0
Topical steroid	7,305	5,170	514	1,596	7,152	50	8	89	186	997	366	21	1	0
Topical steroid with antibiotic	1,208	935	85	181	1,182	7	0	19	53	184	85	7	0	0
Wart preparation	1,571	1,037	201	331	1,511	25	3	32	166	348	263	34	1	0
Other liniment	2,717	1,664	189	850	2,515	18	2	181	190	494	631	49	1	0
Other topical antiseptic	4,531	3,350	365	800	4,338	109	25	54	409	1,149	473	47	6	0
Category total	95,854	76,795	5,238	13,597	94,068	860	124	766	4,542	17,329	7,860	485	46	3
Veterinary drugs	3,488	1,487	278	1,685	3,333	61	6	79	394	895	603	57	6	0
Vitamins														
Multiple vitamin tablets: adult formulations														
No iron, no fluoride	2,611	1,701	262	639	2,191	240	3	172	387	553	212	54	6	0
With iron, no fluoride	6,436	4,552	503	1,367	5,777	531	1	120	1,065	1,859	351	68	11	0
With iron carbonyl (no fluoride)	81	67	6	8	74	6	1	0	7	22	6	0	0	0
With iron, with fluoride	91	72	7	12	82	7	0	2	15	28	3	4	0	0
No iron, with fluoride	53	47	2	3	51	1	0	1	3	16	2	0	1	0
Multiple vitamin tablets: pediatric formulations														
No iron, no fluoride	7,281	6,407	816	49	7,169	100	5	2	243	1,449	147	5	0	0
With iron, no fluoride	16,723	15,107	1,491	108	16,518	169	3	28	1,429	4,579	628	30	2	0
With iron carbonyl (no fluoride)	26	19	6	1	22	1	2	1	2	5	2	1	0	0
With iron, with fluoride	280	251	24	4	274	5	0	0	28	75	10	0	0	0
No iron, with fluoride	1,289	1,221	66	1	1,282	7	0	0	38	322	12	0	0	0
Multiple vitamin liquids: adult formulations														
No iron, no fluoride	116	62	18	35	96	15	0	5	27	38	13	3	1	0
With iron, no fluoride	176	79	27	69	146	20	1	9	35	40	15	2	1	0
With iron, with fluoride	6	5	0	1	5	0	0	1	0	0	0	0	0	0
No iron, with fluoride	292	291	1	0	292	0	0	0	11	43	4	0	0	0
Multiple vitamin liquids: pediatric formulations														
No iron, no fluoride	265	251	13	1	259	1	0	5	9	58	10	1	0	0
With iron, no fluoride	567	543	18	6	554	4	1	8	34	134	26	6	0	0
With iron, with fluoride	77	76	1	0	77	0	0	0	7	14	2	1	0	0
No iron, with fluoride	374	362	9	2	371	0	0	3	8	69	6	1	0	0
Multiple vitamins, unspecified adult formulations														
No iron, no fluoride	47	26	5	16	34	8	0	5	13	6	5	1	0	0
With iron, no fluoride	2,133	1,449	221	462	1,847	235	3	44	413	622	148	35	3	0
With iron, with fluoride	14	8	1	5	12	1	0	1	2	2	1	0	0	0
No iron, with fluoride	28	24	3	1	27	0	0	1	0	10	1	0	0	0
Multiple vitamins, unspecified pediatric formulations														
No iron, no fluoride	96	83	11	2	93	2	0	0	5	28	3	0	0	0
With iron, no fluoride	149	136	13	0	147	2	0	0	18	48	3	1	0	0
With iron, with fluoride	7	3	3	1	6	0	0	1	0	1	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 Exposures	Age (yr)			Reason				Treated in Health Care Facility	Outcome				
		<6	6-19	>19	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
No iron, with fluoride	50	50	0	0	50	0	0	0	1	11	0	0	0	0
Other vitamins														
Vitamin A	2,751	2,467	68	207	2,687	34	1	29	97	466	68	6	0	0
Niacin (B3)	2,304	458	350	1,482	1,053	296	3	945	348	111	758	69	3	0
Pyridoxine (B6)	443	259	57	125	324	89	0	28	128	106	42	21	10	0
Other B complex vitamins	2,164	1,472	154	525	1,831	222	0	101	394	457	146	40	12	0
Vitamin C	2,434	1,877	260	290	2,217	140	7	65	214	522	126	17	3	0
Vitamin D	277	155	20	98	237	24	0	15	63	60	20	14	2	0
Vitamin E	2,019	1,561	123	329	1,889	74	2	49	202	407	83	25	1	0
Other	764	510	76	175	647	64	1	52	135	166	67	24	1	0
Unknown	748	499	104	140	627	80	5	29	149	193	51	18	2	0
Category total	53,172	42,150	4,739	6,164	48,968	2,378	39	1,722	5,530	12,520	2,972	447	59	0
Unknown drug	14,108	3,561	3,220	7,017	6,593	4,969	1,047	826	8,581	2,949	2,213	1,873	504	8
Total number of pharmaceuticals	1,190,016	504,634	192,882	485,303	778,311	354,473	3,519	45,950	464,093	269,967	187,639	100,384	22,931	1,730
% of pharmaceuticals		42.4%	16.2%	40.8%	65.4%	29.8%	0.3%	3.9%	39.0%	22.7%	15.8%	8.4%	1.9%	0.1%
% of all substances	46.6%	19.7%	7.5%	19.0%	30.5%	13.9%	0.1%	1.8%	18.2%	10.6%	7.3%	3.9%	0.9%	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.

Cases 16 and 18. A 28-year-old woman, 28 weeks pregnant, HIV positive and a cocaine abuser, presented to the ED with a refractory metabolic acidosis (pH 7.0) and Kussmaul respirations. Further history revealed a similar unexplained episode 6 weeks earlier, which resolved with treatment of the acidosis. On evaluation, the fetus was noted to be in severe distress and was delivered by emergent caesarian section. The infant was born with metabolic acidosis (pH 7.26) and severe bilateral intracranial hemorrhages, and remained ventilator dependent. Toxic alcohol poisoning was suspected, and an ethanol infusion was initiated in the mother. The mother's serum **methanol** concentration, measured several hours after admission, was 54 mg/dL, and hemodialysis was initiated. After hemodialysis, ethanol was discontinued and fomepizole was started. Despite these interventions, her condition deteriorated further and mechanical ventilation was initiated; hemodialysis continued periodically for severe renal failure. Sepsis developed, refractory hypotension ensued, and the patient expired. The infant's methanol concentration was 61 mg/dL, and he expired on the third day of life.

Case 22. A 47-year-old woman ingested an unknown quantity of a blue liquid in an apparent suicide attempt. She presented to the ED despondent but rapidly became agitated

and then obtunded. She was intubated and found to be profoundly acidotic. The diagnosis of toxic alcohol ingestion was entertained and fomepizole was administered. A **methanol** concentration of 300 mg/dL was confirmed and the patient was dialyzed approximately five hours after presentation. Despite aggressive care the patient remained comatose after six days and supportive care was withdrawn.

Case 27. A 17-year-old boy ingested approximately 200 to 300 mL of **antifreeze** containing **ethylene glycol** about 12 to 16 hours prior to presentation to the hospital. He was transported by EMS, obtunded and with Kussmaul respirations. He reportedly had been nauseated and had vomited approximately 9 hours prior to admission. He had a blood pressure of 153/92 mm Hg and a heart rate of 100 beats/min. Urine fluorescence was noted in the ED. A loading dose of fomepizole was administered. An initial arterial blood gas showed: pH, 6.93; pCO_2, 17 mm Hg; Po_2, 76 mm Hg; and lactate, 8.1 mmol/L. Sodium bicarbonate was given. A renal consultation was obtained and the patient was admitted to the ICU. Other laboratory values were: BUN, 15 mg/dL; creatinine, 2.3 mg/dL; sodium, 150 mEq/L; potassium, 8.4 mEq/L; bicarbonate, less than 5 mEq/L. The patient was hemodialyzed approximately 5 hours after admission. Intravenous thiamine and pyridoxine were also administered. Laboratory values obtained after 3 hours of dialysis were: pH, 7.14; pCO_2, 28 mm Hg; pO_2, 114 mm Hg, and bicarbonate, 14 mEq/L. His ethylene glycol concentration from admission was 62 mg/dL and, when repeated 3 hours into dialysis, it was 26 mg/dL. Dialysis was terminated after 4 hours. An ethylene glycol concentration at that time was 17 mg/dL. The patient developed premature ventricular contractions in the ICU at approximately 14 hours after hospital admission. This progressed to ventricular tachycardia. He was treated with amiodarone and an epinephrine infusion. A head CT was obtained which showed massive cerebral edema and possible herniation. Brain death was confirmed and life support was withdrawn approximately 48 hours after admission.

Case 50. A 30-year-old alcoholic man with a several-day history of inhaling **carburetor cleaner** had seizure activity prior to arrival in the ED. Pre-intubation he had an arterial pH of 6.3 with a bicarbonate of 4 mEq/L. Profound acidemia persisted despite vigorous resuscitative care. He was transferred to a tertiary care facility and treated with fomepizole after a **methanol** concentration returned at 132 mg/dL. He expired before hemodialysis could be initiated.

Case 53. A 2-month-old boy was home alone with his 5-year-old and 8-year-old siblings. When the mother returned, she found the baby blue and drove him to the ED. When intubation was attempted, the baby "vomited" an intact AA **alkaline battery** and went into cardiac arrest. The child was resuscitated but died approximately 18 hours later of the hypoxic injury.

Case 55. A 17-year-old girl was brought to the ED by EMS after being bitten on the hand by a **snake**. She ran to a nearby fire-rescue building, where they felt she was experiencing an allergic reaction. She was treated with epinephrine and diphenhydramine and transported to the nearest ED. During transport she may have had a seizure and may have been hypotensive. In the ED her oxygen saturation was in the 70's while on 2 L/min of oxygen. The oxygen saturation increased to 94% when she was placed on 100% oxygen by non-rebreather mask. On auscultation she had bilateral rales, which the physician suspected might be secondary to aspiration. Her blood pressure was 77/45 mm Hg. The physician noted two puncture marks on her right hand without any local swelling or ecchymosis. Crotalid antivenin Fab therapy was begun. She was intubated due to respiratory distress and pulmonary edema. Dopamine was started for hemodynamic support. Approximately 6 hours later, there was still no swelling or discoloration at the bite site. Despite the administration of antivenin, her clinical condition gradually deteriorated and she expired on the fifth hospital day. She never developed laboratory evidence of coagulopathy and the affected limb never demonstrated any discoloration or swelling.

Case 56. A 30-year-old man was comatose following a bite from his pet **rattlesnake**. In the ED the patient was found to have a coagulopathy and a subarachnoid hemorrhage. Laboratory values on admission were: INR, 5.5; platelet count, 7,000/μL. The patient received 10 to 20 vials of crotalid antivenin and was admitted to the ICU. His condition continued to worsen and support was withdrawn on the day after admission.

Case 60. An 84-year-old man with prostate cancer was admitted to the hospital for hematuria. Treatment included bladder irrigation with 1% **ammonium alum**. The patient's bladder ruptured, requiring surgical repair. On day 3 the patient became increasingly confused and lethargic. At that time a serum calcium concentration was 6.4 mg/dL and creatinine 2.5 mg/dL. Deferoxamine chelation was begun in association with dialysis. An aluminum concentration drawn prior to dialysis was reported to be 615 ng/mL. Hemodialysis alone was continued despite mental status changes and renal failure. The patient died after 13 days of hospitalization. An aluminum concentration drawn post-dialysis on day 12 was reported after death as 645 ng/mL.

Case 61. A 48-year-old man presented to the ED about 2 hours after an ingestion of **battery acid (sulfuric acid)**. On admission, the patient was awake and alert with a blood pressure, 150/87 mm Hg; heart rate, 103 beats/min; respiratory rate, in the 20's; and oxygen saturation, 97%. His chief complaints were nausea, vomiting and abdominal pain. Subsequently, he developed tachypnea and dyspnea requiring intubation. One vocal cord was edematous and erythematous. His initial laboratory values were: arterial pH, 7.17; pCO_2, 23 mm Hg; pO_2, 131 mm Hg; bicarbonate, 10 mEq/L; base deficit, 18.8 mEq/L; potassium 6.3 mEq/L (hemolyzed); chloride, 99 mEq/L; BUN, 13 mg/dL, creatinine, 1.3 mg/dL; bicarbonate, 8 mEq/L; glucose, 220 mg/dL; lactate 2.7 mEq/L. His chest and abdominal X-rays were unremarkable with no signs of perforation. A diagnostic peritoneal lavage was performed which showed 50 white blood cells/μL and 4000 red blood cells/μL. The patient was then taken to the OR for an exploratory laparotomy. Portions of his stomach and intestines were necrotic and resected. Only the esophagus, proximal stomach, distal transverse and descending colon were not removed. His liver was hyperemic but not necrotic, and the rest of his abdominal organs were not necrotic at the time of surgery. The patient survived for one more day before going into cardiac arrest and expiring. On post-mortem, necrosis involved the rest of his gastrointestinal tract and abdominal organs, including the esophagus, the rest of the colon, the

medial aspect of the right liver lobe, the tail of the pancreas, the left diaphragm, and the overlying serosa and abdominal musculature. His trachea and bronchi were noted to be erythematous.

Case 65. A 49-year-old man was presumably celebrating with his two children. He had brought home pizza and poured some soda from an already open bottle. His daughter drank some but his son did not. The father drank some soda from his daughter's glass, then poured the remainder from the bottle down the sink and went into the basement. He came back upstairs and fell to the ground. EMS was called and the patient was transported to the emergency department. Upon presentation to the ED, the patient had oral burns and was in cardiac arrest. EMS indicated that the room smelled like ammonia. The thiosulfate portion of the cyanide antidote kit was administered, but the patient did not respond and was declared dead. The daughter responded to therapy. The father was known to work in a jewelry shop. Health Department laboratory results showed that the soda had a pH of 7 and a **cyanide** concentration of 100 mg/L.

Case 75. A previously healthy 70-year-old retired chemist unintentionally ingested a swallow of a sample of **sodium cyanide/copper cyanide** etching solution he had stored in a soda bottle. He noted immediate burning in the throat and soon experienced nausea, vomiting, and difficulty breathing. EMS was summoned. Over the next 25 minutes, the patient's breathing worsened and his mental status declined. He developed apnea and was intubated by paramedics. Upon arrival in the ED, the patient had bradycardia (heart rate, 40-50 beats/min), hypotension (blood pressure, 80/60 mm Hg), and a severe metabolic acidosis (pH, 6.94; Pco_2, 48 mm Hg). Gastric aspiration was performed. The patient received 300 mg of sodium nitrite and 12.5 g sodium thiosulfate. Five minutes later, metabolic acidosis was minimally improved (pH, 6.99; pCO_2, 55 mm Hg). Additional doses of sodium nitrite (total of all doses: 600 mg) and sodium thiosulfate (total of all doses: 50 g) were administered. The patient also received a total of 200 mEq of sodium bicarbonate. He woke up and became "alert and appropriate", and his heart rate and blood pressure improved. Blood gas analysis showed: pH, 7.38; pCO_2, 38 mm Hg; methemoglobin, 3.3%. The patient was extubated the following day. Twenty-four hours post ingestion, his condition had improved greatly. Enzyme testing revealed cardiac damage: creatine kinase, 468 U/L, with 18.5% MB fraction; troponin, 3.0 ng/mL. Liver injury was also noted: AST, 2,271 IU/L; ALT, 2,183 IU/L. An acetaminophen concentration determined on the initial blood sample was negative. Liver and renal function continued to deteriorate and pancreatic injury became evident. BAL administration was considered for possible copper toxicity, but was not administered. The patient received hemodialysis treatments and intensive supportive care for liver failure, but eventually died 11 days post ingestion. Autopsy revealed extensive hepatic necrosis with a markedly elevated liver copper level (50.1 mg/g tissue).

Case 96. A 7-year-old girl was playing in her back yard when she inadvertently stepped into a 5-gallon bucket containing about a gallon of **hydrofluoric acid,** 70%. The family rinsed the chemical off the child's legs and then drove her to the hospital. The child had hydrofluoric acid burns to the backs of the legs bilaterally up to the buttocks, covering an estimated 10% of her total body surface area. She was further decontaminated in the ED, calcium gel was placed on her burns, and an intravenous calcium infusion was begun. She suffered a cardiorespiratory arrest and was resuscitated. She was then transferred to the regional burn center. On arrival there she experienced a second cardiac arrest. A serum calcium concentration measured at that time was 5.5 mg/dL. Despite aggressive therapy she died six hours after the exposure. Post-mortem examination confirmed that the death was due to the effects of hydrofluoric acid exposure.

Cases 97, 98 & 99. Three chemical plant employees, ages 41, 47 and 56 years, were involved in an explosion and fire involving a rail car filled with **methylmercaptan**. There was a prolonged extrication time from the hot zone. Two men were transported to the ED and neither could be resuscitated; the third man was pronounced dead at the scene. The strong sulfur odor on the two transported bodies necessitated the closure and decontamination of the ED. Sulfhemoglobin concentrations were 15%, 9%, and 6%, respectively.

Case 106. An 84-year-old man developed distress after inhaling fumes from a bowl of 100% **sulfur** that was on fire. He was using the product to exterminate rodents when it ignited. He apparently immediately walked outdoors where he collapsed. He was intubated by paramedics, but shortly after arrival in the ED he went into cardiac arrest and expired.

Case 108. A 45-year-old man presented to the ED within 30 minutes of ingesting 3 to 4 ounces of concentrated **sulfuric acid** in a suicide attempt. On presentation it was noted that the patient had perioral burns, was not able to speak, and was experiencing respiratory distress. His vital signs on presentation were: blood pressure, 207/100 mm Hg; heart rate, 63 beats/min; and respiratory rate, 20 breaths/min. The patient quickly developed a rigid abdomen. He was intubated in the ED and underwent esophagogastroscopy. Third degree burns were noted from the oropharynx to the stomach. The patient underwent resection of the esophagus, stomach, and part of the bowel. He was admitted to a burn unit where he survived for almost two weeks before expiring from complications, including sepsis.

Case 110. A 26-year-old man collapsed at his workplace while pressure-cleaning the inside of a tank containing **titanium dioxide**. Resuscitation efforts were instituted by paramedics on arrival at the scene, but were unsuccessful. When paramedics attempted to intubate the patient, they noted that the oropharynx and lungs were full of what was described as white paste. Death was felt to be due to inhalation of this particulate chemical.

Case 113. A 14-year-old girl unintentionally drank from a glass in which a **drain opener** (sodium hydroxide, 50 to 60%) had been dissolved in water. She was seen in the ED 10 minutes after the ingestion, already vomiting bright red blood. The patient was transferred to a tertiary care facility. On arrival she was in considerable pain and was medicated with morphine. Endoscopy revealed extensive burns from the oral pharynx to the duodenum, with full thickness circumferential burns. The pediatric surgeons elected to treat her symptomatically. Nine days into the hospitalization repeat endoscopy showed fibrin formation in the esophagus, granulation tissue forming in the duodenum and diffuse

fibrinous exudates. Thirty days after the ingestion she was taken to the OR for esophagogastrectomy with colonic interposition and an attempt at creating a pouch for a stomach out of her jejunum. She never regained consciousness after surgery. She developed sepsis and ARDS and eventually expired on the 89th day of hospitalization.

Case 121. A 16-year-old boy, under house arrest for drug abuse, stumbled out of his bedroom and passed out. EMS was called, but resuscitation efforts were unsuccessful. A red and yellow can of **oven cleaner** containing **sodium hydroxide** was found in his room. He did not have a history of inhalation abuse. Mass spectral analysis of his blood found only the propellants **isobutane** and **propane**.

Case 131. A 58-year-old man presented to the ED with acute burning chest pain. ECG changes were suggestive of myocardial ischemia, and the patient underwent cardiac catheterization, which was normal. In route to the catheterization laboratory he stated that he had ingested two bottles of **toilet bowl cleaner (sodium hypochlorite/sodium hydroxide**) in a suicide attempt that morning, prior to presenting to the ED. He denied any other ingestion. He was taken for a CT scan, which showed evidence of gastric perforation. Exploratory laparotomy showed gastric perforation with extensive intra-abdominal caustic necrosis. Subsequent management was supportive, and he expired within 24 hours of the ingestion.

Case 138. A 5-year-old girl, with a history of Angelman syndrome and a seizure disorder, ingested an unknown amount of an **air freshener** containing **propylene glycol (6%)** and **ethoxylate (13%)** approximately 8.5 hours prior to arrival to the ED. She had vomited chunks of the air freshener in the morning while under the care of her father. She was found unarousable and in respiratory distress by her mother returning from work that evening. In the ED, she was unresponsive, hyperpneic and required intubation. Initial laboratory values were: arterial pH, 7.0; osmolality, 364 mOsm/kg H_2O; lactate, 29.9 mmol/L; ammonia, 302 μmol/L; anion gap, 36 mEq/L. Treatment included intravenous ethanol, fomepizole, thiamine, pyridoxine, leucovorin, and empiric hemodialysis. Other laboratory results at presentation were: sodium, 150 mEq/L; acetone, negative; isopropanol, negative; methanol, negative; ethylene glycol, negative; HPLC, presence of hydroxyzine metabolites; iron, 29 mg/dL; valproic acid, <1 μg/mL (repeated); lead, 12 μg/dL; propylene glycol, 66 mg/dL (pre-dialysis). Additional history revealed that seizure control with valproic acid had been discontinued several months prior and the patient was being controlled with a ketogenic diet. She was occasionally given hydroxyzine at bedtime for allergies. The family presented a bag of emesis, which had the same consistency and fragrance as a purchased sample of the air freshener. Post-dialysis laboratory values were: propylene glycol, 24.3 mg/dL; ammonia, 60 μmol/L; anion gap, 30 mEq/L; and lactate, 8.5 mmol/L. Ammonia and lactate concentrations began to rise and further hemodialysis was attempted, but the patient experienced bradycardia and hypotension. Following stabilization with vasopressors and inotropes, additional hemodialysis was performed, but the patient expired within 36 hours of presentation despite subsequent propylene glycol concentrations of <10 mg/dL. The autopsy, including histology of the liver, was negative.

Case 141. A 38-year-old woman, with a history of depression, was being treated with carbon dioxide therapy by an alternative medicine physician. She had 12 uneventful prior sessions. Therapy typically began with pre-treatment with atenolol (100 mg) and acetaminophen/butalbital/caffeine (2 tablets). Approximately two hours later, she received, via face mask, varying mixtures of **nitrous oxide**, **carbon dioxide** and oxygen. During the therapy, the physician adjusted the concentration of the gases initially to attain a 1:1 ratio of carbon dioxide and oxygen and ultimately a 3:2 ratio of carbon dioxide and oxygen. The carbon dioxide was then discontinued and the patient was given 100% oxygen. Shortly thereafter, the patient was noted to be in respiratory and, subsequently, cardiac arrest. While awaiting the arrival of EMS, the physician performed CPR for approximately 15 to 20 minutes. Once EMS arrived, she was intubated and ACLS was performed for another 15 to 20 minutes, leading to resuscitation. In the ED, the patient received midazolam and an amiodarone infusion. She had a normal head CT and her toxicology screen was positive for benzodiazepines and barbiturates. Her only neurologic function was spontaneous respiration. She was admitted to the MICU with severe anoxic injury. A repeat head CT showed a loss of gray-white matter differentiation. Eleven days post exposure she was extubated and transferred to the medical floor; she expired 2 weeks later.

Cases 143 and 147. A 6-year-old boy was found unresponsive in the family's camper on the back of a pickup truck. The truck had been idling in traffic for a long period. The child was taken to the ED where he was pronounced dead from **carbon monoxide** poisoning. Police investigation showed a leak in the truck's exhaust system. The child's 13-year-old sibling also died in the same incident.

Case 177. A 33-year-old commercial fisherman was fishing for squid when he went down into the hold of the ship and immediately lost consciousness. He suffered a cardiac arrest and was unable to be resuscitated in the field. A co-worker went down after him and also lost consciousness; the co-worker was successfully resuscitated and discharged from the hospital one month later. It is unknown if there was an odor of rotten eggs in the hold of the ship. The coroner reported findings consistent with **hydrogen sulfide** poisoning.

Cases 180 & 182. Two men, ages 42 and 60 years, were found dead near a well. They had been "acidizing" the well with an unknown acid. There was a "rotten egg" odor at the site thought to be **hydrogen sulfide**. One patient had coins in his pocket that had turned black.

Cases 183 & 184. Two men, ages 67 and 73 years, were found unconscious in a well after cleaning the area with muriatic acid. There was a strong smell of rotten eggs, presumed to be **hydrogen sulfide**. Both men experienced cardiopulmonary arrest during transport to the ED. One man never regained consciousness and died two days later despite intensive supportive care. The second man did regain consciousness, but died suddenly 3 days later.

Case 187. An adult man was working in a purging tank at a natural gas plant when he was overcome by **methane**. He collapsed and was unconscious approximately 20 minutes before EMS arrival. He was brought to the ED in cardiorespiratory arrest, but was unable to be resuscitated.

Two other workers exposed in the same tank were evaluated in the ED for drowsiness; they did not notice any odors.

Case 189. A 41-year-old dentist unintentionally dropped some old dental amalgam on the hot burner of his stove. Thick white fumes were produced. After 15 minutes he opened the windows and turned on a fan, but stayed in the kitchen. About an hour after exposure, the patient started to vomit. He called his girlfriend several times to say he was also short of breath and finally called an ambulance to take him to the hospital. On arrival in the ED, he was cyanotic with dyspnea and tachypnea. Crackles were heard on chest auscultation and his chest x-ray showed diffuse infiltrates. His oxygen saturation was 80% on room air and up to 96% on high flow oxygen. An arterial blood gas showed a respiratory alkalosis with severe hypoxia. He was slightly drowsy. His initial laboratories showed a spot urine **mercury** of 44,000 ng/mL and an elevated creatinine of 2.0 mg/dL. His creatinine normalized but he became hypoxic. He was started on chelation therapy with DMSA and also received steroids for his lungs. The patient's status remained stable for 48 hours. He then became febrile to 43° C, hypotensive (unresponsive to pressors), impossible to ventilate with a pCO_2 persistently above 100 mm Hg, and died.

Case 192. A 13-year-old boy with a recent history of intentional abuse of gasoline fumes drove a four wheel all terrain vehicle a distance from his home with a friend and began huffing **gasoline** from the gas tank. He lost consciousness and was transported home on the vehicle by the friend, where 911 was called. EMS found the child in full cardiopulmonary arrest. Resuscitation efforts by EMS and the local ED were unsuccessful.

Case 193. A 12-month-old boy ingested approximately one mouthful of **lamp oil** containing 99% paraffin and 1% unspecified petroleum distillates. He began to cough immediately, and was referred to an ED for treatment. He arrived at the hospital within thirty minutes of the exposure and was immediately intubated and transferred to a children's hospital due to respiratory distress. He was placed on ECMO within six hours of exposure. Bilateral pleural effusions developed and chest tubes were inserted. He received intravenous hydrochlorothiazide and surfactant via bronchoscopy. Six days after exposure he improved, with minimal aeration in the upper lobes and a pO_2 of 48 mm Hg. Improvement was transient. He remained on ECMO and expired 31 days after the exposure.

Case 195. A 16-year-old girl with a history of multiple previous suicide attempts was brought to the ED two hours after a suicide attempt with an unknown substance, possibly a pesticide. The patient was unresponsive, hypotensive, cyanotic, had shallow breathing, and was "clenching her mouth", resembling seizure activity. Laboratory values were: pH, 6.7; pCO_2, 76 mm Hg; pO_2, 70 mm Hg; HCO_3, 17 mEq/L. Despite supportive care the patient died shortly after ED arrival. The medical examiner determined that the cause of death was the ingestion of an **aluminum phosphide** rodenticide from Nicaragua.

Case 199. A 46-year-old man was brought to an ED 48 hours after a suicide attempt with an unknown amount of **paraquat**. The patient was comatose and in respiratory, hepatic and renal failure. He also had caustic burns to the esophagus. Laboratory results were: pH, 7.35; pCO_2, 35 mm Hg; pO_2, 55 mm Hg. The patient died of respiratory failure on the fifth day of hospitalization.

Case 203. A 2-year-old boy ingested a liquid pesticide that had been transferred to an unlabeled soda bottle and left temporarily on the kitchen counter. Prior to the arrival of EMS the child began having tonic-clonic seizures. On arrival in the ED the child was in status epilepticus. Administration of atropine, pralidoxime, diazepam, lorazepam, phenytoin and phenobarbital did not control the seizures. He was intubated, placed on a ventilator and transferred to a tertiary care facility. There he had vomiting, tachycardia, hyperthermia (42° C) and persistent seizures. At the time of transfer the pesticide was identified as **endosulfan**. Pralidoxime and atropine were discontinued and a midazolam infusion was begun, which controlled the seizures. The child became hypotensive and required fluids, dopamine, epinephrine and norepinephrine to maintain his blood pressure. Phenobarbital and midazolam were discontinued because of hypotension. The child showed no movement but the EEG showed some activity. An MRI showed profound attenuation in both cerebral hemispheres, the brainstem and parts of the cerebellum with a suggestion of herniation. A radionuclide brain flow study failed to demonstrate blood flow. The child experienced multi-organ system failure and expired on the third hospital day.

Case 205. A 50-year-old man swallowed an unknown amount of a Mexican **rodenticide** containing **zinc phosphide**. The patient "washed the poison down" with water. He was brought to the ED by his sister one hour after the ingestion. His vital signs were normal at that time. The patient developed pulmonary edema, hypotension, and metabolic acidosis while in the hospital. He expired 11 hours after arrival.

Case 206. A 20-year-old man was found unconscious by his family in the early morning. He had vomited during the night. ***Datura stramonium*** seeds, **atenolol**, and **celecoxib** were found in his room. He had a respiratory arrest and was intubated and transported to the ED where he was tachycardic and comatose. His initial arterial pH was 6.67. Soon after arrival in the ED he developed seizures. Rhabdomyolysis developed with a creatine kinase greater than 12,000 U/L within four hours of arrival. He developed a ventricular arrhythmia, remained hypotensive and, despite maximal supportive care, died about nine hours after admission. The medical examiner's report listed the cause of death as pulmonary edema secondary to atenolol and atropine overdose. Post-mortem toxicologic analysis revealed a blood atenolol concentration of 0.66 μg/mL and an atropine blood concentration of 0.049 μg/mL.

Case 208. A 63-year-old man presented to the ED with nausea, vomiting, muscle weakness, and a clinical picture of meningitis with encephalopathy. A CSF culture was positive for ***Bacillus anthracis*** at both the state health department laboratory and the CDC. The patient was diagnosed as having pulmonary anthrax. Despite therapy with intravenous ciprofloxacin and anthrax vaccine, the patient expired on the fourth hospital day from hemorrhagic complications of pulmonary anthrax.

Case 209. A 27-week pregnant woman presented to the ED following an **acetaminophen** overdose. Her acetaminophen concentration was 90 μg/ml an unknown time following ingestion. The female fetus developed evidence of

fetal distress and was delivered by caesarian section. The infant had respiratory distress at delivery, could not be adequately ventilated, and expired. The following pre-mortem laboratory values were obtained on the infant: pH, 6.61; pCO_2, 65 mm Hg; pO_2, 54 mm Hg; calculated HCO_3, 8 mEq/L; lactate, 15 mEq/L; AST, <6 IU/L; ALT, 5 IU/L; alkaline phosphatase, 98 IU/L; total bilirubin, 0.8 mg/dL; acetaminophen, 19.1 μg/mL; CSF glucose, 136 mg/dL; CSF protein, 188 mg/dL; and CSF WBC, 61/μL.

Case 249. A 60-year-old malnourished woman with a history of colon cancer was found unresponsive on the bathroom floor with an empty bottle of **acetaminophen** nearby. The patient was transported to the hospital, intubated and placed on a ventilator. A CT scan of the head was interpreted as normal. Initial laboratory results were: AST, 5,388 IU/L; ALT, 3,780 IU/ L; acetaminophen, 1,118 μg/mL. The time of ingestion was unknown. N-acetylcysteine therapy was begun via nasogastric tube. A repeat acetaminophen concentration one to two hours after arrival was 1,145 μg/mL. Her blood pressure fell to 80 mm Hg systolic but responded to a fluid bolus. The patient continued to deteriorate rapidly. Dopamine and fresh frozen plasma were administered. Her AST rose to 10,000 IU/L and ALT to 7,000 IU/L. She arrested less than 24 hours after arrival at the hospital and expired.

Case 294. A 16-month-old child developed liver failure following a brief illness for which he was reportedly treated with excessive **acetaminophen** for fever control. A urine drug screen revealed **methamphetamine**, and the social history was notable for family involvement in home methamphetamine production. N-acetylcysteine was administered intravenously and the patient was transferred to a tertiary care facility for liver transplant evaluation. During the course of this evaluation, he developed cerebral edema and died approximately two weeks after the onset of symptoms.

Case 382. A 1-year-old girl ingested an unknown number of enteric-coated **aspirin** tablets. In the ED 4 to 6 hours later, she had vomited and was jittery. Her heart rate was 120 beats/min and her blood pressure was 130/80 mm Hg. The salicylate concentration was 123 mg/dL. Before the child could be transferred to a hospital capable of emergency pediatric hemodialysis, she become hypotensive with bradycardia. She then had a cardiac arrest and could not be resuscitated. The time from presentation to death was about 2 hours.

Case 383. A 14-month-old girl presented to the ED with a blood glucose of 7 mg/dL, an anion-gap acidosis and an ammonia concentration greater than 500 μmol/L. The child suffered a cardiorespiratory arrest but was successfully resuscitated after 15 min of CPR. She was transferred to a tertiary care facility where a **salicylate** concentration was measured at 64.3 mg/dL. Subsequently concentrations of 60 and 70 mg/dL were measured. Blood glucose was corrected and blood pressure was maintained on dopamine. Hypokalemia initially prevented adequate urinary alkalinization. The following day her ammonia concentration had decreased to 45 μmol/L but liver enzymes were elevated. An acetaminophen concentration at that time was negative. A CT scan of the head showed cerebral edema. Despite aggressive supportive care the child's neurologic condition never improved. She was removed from life support seven days later and expired.

Case 392. A 45-year-old woman presented to the ED approximately four hours post ingestion of 500 **aspirin** tablets. Upon arrival in the ED, activated charcoal with a cathartic was administered. After admission to the ICU the patient was confused and combative. A salicylate concentration obtained approximately four hours post-ingestion was 80 mg/dL, but increased to 109 mg/dL within approximately six hours. An abdominal X-ray showed bezoars in the stomach. Whole bowel irrigant was administered via NG tube. The patient deteriorated rapidly, becoming totally unresponsive. She was intubated, placed on a ventilator and prepared for hemodialysis. Her condition continued to deteriorate and she expired prior to hemodialysis.

Case 395. A lethargic 48-year-old man arrived at the ED stating that he had ingested 40 **aspirin** tablets in a suicide attempt 12 hours prior to admission. His vital signs were: heart rate, 110 beats/min; respiratory rate, 24 breaths/min; blood pressure, 130/80 mm Hg. He was afebrile. The first salicylate concentration, at approximately 14 hours post ingestion, was 74 mg/dL; the second, 10 hours later, was 110.3 mg/dL. Serum alkalinization with sodium bicarbonate was initiated, but the patient expired shortly thereafter.

Case 430. A 45-year-old clinical pharmacist was admitted to the hospital with shortness of breath. He was found to have a severe metabolic acidosis (pH, 6.9; bicarbonate, 15 mEq/L; anion gap, 37 mEq/L), renal failure (BUN, 121 mg/dL; creatinine, 6.7 mg/dL), an elevated serum creatine kinase, thrombocytopenia, and leukopenia (white blood cells, 200/μL). He was intubated but remained communicative and steadfastly denied any drug use or overdose despite a past history of intravenous abuse of diazepam. He developed hypotension, fever and ARDS and expired 10 days after admission. Because his presentation was suggestive of **colchicine** poisoning, a blood sample was sent on the day after he was admitted, and this later returned with an elevated concentration of 6.1 ng/mL.

Case 440. An adult male was found dead after reportedly ingesting 24 **fentanyl** 800 μg lozenges on a stick.

Case 465. A 41-year-old woman with a history of heavy drug abuse was brought to the ED after a night of ingesting **methadone** and **methylphenidate** and snorting **crack cocaine**. She was stuporous with a low oxygen saturation and was given a dose of naloxone enroute to the ED. In the ED she was alert and oriented and remained asymptomatic over a 5 hour period of observation. She was discharged home and went to bed. An hour later she was found unresponsive with snoring respirations. She wakened during attempted nasal intubation enroute to the ED. Her oxygen saturation was 88% and another dose of naloxone was administered. She was admitted to the hospital and, over the following four hours, became completely alert and oriented and was ambulating normally. By 24 hours after her initial presentation, she was again drowsy with a 50% oxygen saturation. After another dose of naloxone and 100% oxygen she was agitated for a brief period but had good respiratory effort and 96 to 98% oxygen saturation. Several hours later she had a sudden severe respiratory event requiring intubation and ventilatory support. Over the following week she developed pulmonary edema and was unable to be weaned

from the ventilator. She died on the tenth hospital day when life support was discontinued.

Case 475. A 9-month-old girl was admitted to the hospital for surgery. After surgery an order was written for her to receive 0.5 mg of parenteral **morphine** every two hours for pain control. A decimal point was misplaced and the child died after receiving two doses of 5.0 mg morphine two hours apart.

Case 484. A 59-year-old woman, in a nursing facility with metastatic lung cancer, was administered 5 **morphine** 100 mg tablets (long acting). The nurse had crushed the tablets to place them in food and there was concern that the sustained release effect would be lost. **Activated charcoal** was administered at the nursing facility. The patient vomited, aspirated stomach contents and her oxygen saturation dropped to 40%. Naloxone was given with no improvement, and she was transported to the local ED where additional naloxone was given. Shortly thereafter the patient developed seizures, presumed to be due to withdrawal, as the patient had been on morphine chronically. Diazepam was administered, but invasive procedures were withheld due to the advanced cancer. The patient was in respiratory distress, and had apparently aspirated the charcoal. Over the next two days the patient was given morphine for pain and diazepam for occasional discrete seizures. Tachycardia and hypotension persisted. On her second hospital day she suffered a cardiopulmonary arrest and died.

Case 503. A 13-month-old boy ingested an **oxycodone** tablet of unknown strength that he found on the floor at his grandmother's house. He ingested the tablet between 12 and 16 hours prior to presenting to the ED. Upon arrival in the ED the patient was having seizures and experienced a respiratory arrest. He was treated with naloxone and benzodiazepines and placed on a ventilator. He was also given activated charcoal via nasogastric tube. The patient continued to have seizures and phenobarbital and fosphenytoin were added. He responded to the anticonvulsants and his vital signs became stable. The patient's pupillary reactivity deteriorated from sluggish to nonreactive, and his level of consciousness never improved. A CT scan of the head confirmed cerebral edema and hemorrhage. The patient expired three days post ingestion.

Case 505. A 9-year-old girl was discovered in bed at her grandmother's house not breathing. Twenty of her grandmother's **oxycodone** 80 mg tablets were found to be missing. Earlier in the evening, the girl had left the room for about 15 minutes, then came back into the room for an additional 15 minutes, and then became sleepy and went to bed. At postmortem eighteen intact tablets were found in the girl's stomach with an additional tablet found in three pieces with possible bite marks on it. It remains unknown if she took them on her own or was forced to take them. The coroner did not find any marks or injuries to suggest forcible ingestion.

Case 543. A 17-year-old girl presented 10 hours post-ingestion of an unknown amount of **acetaminophen**. An ingestion of more than 10 grams of acetaminophen was suspected. Co-ingestants were initially denied. Medical care was sought due to vomiting and abdominal pain. An initial acetaminophen concentration was 67 μg/mL The patient denied **salicylate** ingestion despite an initial salicylate concentration of 33.7 mg/dL. She was started on oral NAC therapy followed by one dose of promethazine given as an anti-emetic. Through the evening she became agitated, and developed tachycardia and hyperventilation. A repeat salicylate concentration was 95 mg/dL. She had a cardiac arrest approximately 12 hours post admission and could not be resuscitated.

Case 547. An adult man presented in the ED following the ingestion of an unknown quantity of **tramadol**. He was treated in the ED with lavage, activated charcoal and a cathartic. He was discharged to a prison infirmary where he was found unresponsive and in cardiopulmonary arrest 12 hours later. He died en route to the hospital. An autopsy showed concentrations of tramadol greater than 7 μg/mL.

Case 550. A 28-year-old woman injected **ketamine** with her boyfriend. The boyfriend fell asleep and when he awoke she was cyanotic. She was transported to the ED where they performed cardiopulmonary resuscitation. She was unresponsive, ventilator dependent and hypotensive, requiring dopamine. Laboratory data showed: creatine kinase, 173 IU/L; AST, 2,018 IU/L; ALT, 2,915 IU/L; acetaminophen, <1 μg/mL; salicylate, $<$ 1 mg/dL; BUN, 16 mg/dL; and creatinine, 2.3 mg/dL. Twenty hours later, she remained unresponsive with minimal brain function. Cardiac function stabilized without vasopressors. Laboratory showed: creatine kinase greater than 12,000 IU/L; AST, 5,634 IU/L; ALT 3,937 IU/L; BUN, 31 mg/dL; and creatinine 2.7 mg/dL. Dialysis was started for anuria. Twenty-four hours later her creatine kinase remained elevated at 35,850 IU/L while AST declined to 1,972 IU/L and AST 2,625 IU/L. She remained on the ventilator with decerebrate posturing. A CT scan showed anoxic brain injury. Nine days after presentation she was declared brain dead and removed from the ventilator. She died six days later.

Case 552. A 19-year-old man was huffing **nitrous oxide** from a bag placed over his head. He was found in asystole and could not be resuscitated.

Case 555. A 5-year-old boy became somnolent, then hypercarbic, then had a cardiac arrest 10-15 minutes after a dental extraction procedure using **sevoflurane/isoflurane**, **nitrous oxide** and **fentanyl**. He was resuscitated and given dantrolene for presumed malignant hyperthermia. The patient exhibited massive rhabdomyolysis associated with the hyperthermia. Later that day he was pronounced brain dead.

Case 564. A 15-month-old child with Down syndrome suffered a seizure and was taken to the local ED. An order was written for 200 mg of **fosphenytoin**. Shortly after receiving this dose, he died. Subsequently, it was noticed that there was 2000 mg of fosphenytoin missing from the dispensing machine. On post mortem, the patient's serum phenytoin concentration was 110 μg/mL.

Case 584. A 53-year-old man presented to the ED after ingesting 28 **amitriptyline** 100 mg tablets. Initially, the patient was awake, alert and oriented. One hour later he was unresponsive, but not intubated. He was treated with gastric lavage and given activated charcoal. Naloxone was administered with no response. His heart rate was in the 150's; his blood pressure was reportedly within normal limits. The QRS complex was reported as "not very wide". The patient then had a brief seizure, followed by a respiratory and then cardiac arrest. Despite resuscitative measures, only an idioventricular rhythm with very wide complexes was observed. Despite aggressive resuscitation efforts with bicarbonate,

atropine, dopamine, vasopressin, calcium, defibrillation, and temporary pacing (pacer did not capture), the patient expired 3.5 hours after the overdose.

Case 646. A 47-year-old woman was transferred to the ED from a nursing home due to mental status changes, confusion, ataxia, and hypotension. She had been in the nursing home due to a history of alcohol abuse and a mental disorder, for which she had been treated chronically with **lithium**. An initial lithium concentration was 3.1 mEq/L. She developed severe hypotension (palpable systolic blood pressure, 50 mm Hg), tachycardia (heart rate, 180 beats/min), and renal failure. Norepinephrine and dopamine were both initiated, but the patient's condition deteriorated quickly. She expired approximately 36 hours after admission.

Case 707. An 81-year-old woman was found by a neighbor on the floor, too weak to stand. The patient was in her usual state of good health until nine days prior to admission when she began to develop oral ulcers and odynophagia, which limited her oral intake. She had been evaluated two days prior to admission and found to have no recent fever, rash, or exposure to new medications or herbal remedies. The patient was being treated for hypertension, hyperlipidemia, and osteoporosis with hydrochlorothiazide, felodipine, fluvastatin, conjugated equine estrogens, and medroxyprogesterone, all of which had been refilled 22 days earlier. A topical solution was prescribed to treat the aphthae. On admission, she was afebrile and hemodynamically stable, but profoundly dehydrated. There were severe, confluent oral ulcerations without associated cutaneous, ocular, or genital abnormalities. The cardiopulmonary examination was unremarkable except for tachycardia. Laboratory results included: white blood cell count, 300/μL; platelets, 15,000/μL; hemoglobin, 9.0 g/dL; potassium, 2.5 mEq/L; BUN, 52 mg/dL; creatinine, 2.0 mg/dL; creatine kinase, 902 U/L; troponin I, undetectable. The electrocardiogram revealed a sinus tachycardia and non-specific changes consistent with the hypokalemia. The chest radiograph was unremarkable. A family member retrieved the patient's medication bottles for review and identification. The bottle labeled "medroxyprogesterone 2.5 mg" contained both this medication and **methotrexate** 2.5 mg tablets. She was treated promptly with high-dose leucovorin, 100 mg IV every 4 hours, filgrastim, platelet transfusions, fluids, and broad-spectrum antibiotics. A computer-generated list of all medications dispensed to the patient and her late-husband in the preceding three years did not include methotrexate. Her initial serum methotrexate concentration was 0.12 μmol/L and became undetectable on the third measurement, 24 hours after admission. Her hospital course was complicated by severe sepsis from aspiration pneumonia, respiratory failure requiring mechanical ventilation, and a non-Q-wave myocardial infarction. Despite aggressive supportive therapy, she died on the twelfth hospital day.

Case 715. A 71-year-old man was discovered by his wife ingesting the contents of a bottle of sustained-release **theophylline** 100 mg tablets. It was estimated that he took 90 to 100 tablets. EMS was called and the patient arrived in the ED 30 minutes post ingestion. Gastric lavage was performed, with the return of pill fragments. Activated charcoal and metoclopramide were administered. A theophylline concentration was 3 μg/mL. Over the next two hours the patient's blood pressure decreased and his heart rate increased into the 160's. A repeat theophylline concentration, drawn 2.5 hours post ingestion, was 81 μg/mL. Dobutamine and norepinephrine were administered and cardioversion was performed. He was intubated and transported to a tertiary care hospital. On arrival in the ICU the patient was sedated, his pupils were equal and reactive and he had occasional jerky movements of his extremities. ECG revealed a narrow supraventricular tachycardia of 172 beats/min. A theophylline concentration measured 7 hours post ingestion was 132 μg/mL. His blood pressure remained low at 60/40 mm Hg, despite high doses of dobutamine and norepinephrine. Charcoal hemoperfusion was started and continued for six hours. His theophylline concentration decreased to 4.1 μg/mL. The patient continued to be hypotensive. Despite charcoal hemoperfusion and aggressive supportive care, including high dose vasopressors, he developed a worsening acidosis and renal failure. The patient expired on his second hospital day, less than 24 hours after the ingestion.

Case 743. A 60-year-old man was admitted to the hospital with hemiparesis thought to be secondary to a pontine infarct. Three weeks after admission, during rehabilitation, he awoke with slurred speech, dysphasia and an inability to walk. He was transferred to the medical service. Laboratory values at that time were: BUN, 120 mg/dL; creatinine, 5.4 mg/dL; creatine kinase, 105,000 IU/L; AST, 1871 U/L; ALT, 818 U/L; and normal electrolytes. The patient had been receiving both **cerivastatin** and **gemfibrozil**; both were discontinued. Two days later he was dialyzed for renal failure. He also required surgery for a lacerated femoral artery, damaged during a catheter insertion. The day after surgery he developed a coagulopathy and gastrointestinal bleeding, requiring fresh frozen plasma and DDAVP. His creatine kinase concentrations peaked at 289,000 IU/L. He developed a fever to 41.6°C with negative cultures. On his ninth day on the medical service he developed hypotension, unresponsive to vasopressors, and died. At autopsy he was found to have severe rhabdomyolysis, including the myocardium.

Case 747. A six-week-old girl, born premature with Down syndrome, had recent surgical procedures for duodenal atresia and a cardiac cushion defect. During recovery from a nosocomial pulmonary infection she developed premature atrial contractions which were treated with intravenous **digoxin**. One hour following her third dose the patient developed ventricular fibrillation, then asystole. Cardiopulmonary resuscitation ensued for three hours, then the patient was then placed on extracorporeal membrane oxygenation. The digoxin concentration was 22 ng/ml and digoxin immune Fab was administered. On reviewing the case, the hospital pharmacy determined that the patient was unintentionally given an excessive amount of digoxin on the third dose. The patient remained in sinus rhythm, but support was eventually withdrawn because of severe hypoxic brain damage, and the patient expired.

Case 781. A 2-year-old girl was brought to the ED after ingesting several of her grandfather's medications. Implicated substances included **metoprolol**, **losartan**, **pioglitazone**, spironolactone and furosemide. At the time of presentation the child's vital signs and examination were reported to be normal. An IV was started and air transport

to a tertiary care hospital was arranged. During transport, the child had an acute respiratory arrest followed by asystole. She could not be resuscitated.

Case 788. A 48-year-old woman was admitted to the hospital with agitation, shortness of breath and pulseless extremities. She had a past medical history of coronary artery disease with a previous CABG done nine years earlier. She was treated with aspirin and begun on a **nitroglycerin** infusion. Due to agitation she was taken for a CT scan of her brain. During transfer, and also during the scanning procedure, the nitroglycerin pump was inadvertently removed and the infusion rate was not controlled. The patient became profoundly hypotensive and unresponsive. Despite discontinuation of the nitroglycerin and administration of fluids and pressor agents, the patient expired.

Case 824. A 15-month-old girl ingested an entire bottle of 30 **benzonatate**. Approximately 20 minutes after the ingestion, her mother called EMS. When they arrived on the scene the child was in asystole with apnea. The child was resuscitated and intubated. On arrival in the ED her heart rate was 105 beats/min with a systolic blood pressure of 123 mm Hg. The child never regained consciousness and expired eight days later.

Case 830. A 17-year-old boy was transferred from an outlying hospital ED with a suspected overdose of **dinitrophenol**. The patient had a body temperature of 41.1° C, a blood glucose of 1,100 mg/dL, metabolic acidosis and ARDS. He had been successfully resuscitated from three cardiac arrests since arriving at the ED. He died later that evening following unsuccessful attempts to resuscitate him from a fourth cardiac arrest.

Case 834. A 53-year-old woman was found unconscious by family members after ingesting an unknown number of tablets of **ma huang** two days prior to presentation. She had shallow breathing and was intubated by EMS. In the ED, a head CT scan demonstrated a massive right-sided hemorrhage. The urine drug screen was only positive for THC. Low dose dopamine was started. An EEG and neurologic examination confirmed brain death.

Case 842. An 83-year-old woman with advanced dementia, hypertension, diabetes and possible previous stroke, aspirated **psyllium hydrophillic mucilloid** powder. Her family described severe coughing and shortness of breath. In the ED vital signs included: respiratory rate, 36 breaths/min; heart rate, 130 beats/min; and blood pressure, 163/69 mm Hg. Pulse oximetry was reportedly "stable" on 10 L of oxygen by mask. Initial chest X-ray showed an infiltrate, which rapidly coalesced into a dense opacification of the left lung. She became hypotensive with increasing respiratory distress, requiring intubation in the ED. A copious amount of "thick orange jelly type material" was suctioned from her trachea. Initial laboratory assessment, including cardiac enzymes, was unremarkable. She was admitted to the ICU and treated with dopamine, antibiotics and assisted ventilation. Her clinical condition deteriorated and she expired the following day.

Case 843. A 4-year-old boy suffered a cardiorespiratory arrest at home and could not be resuscitated. The patient had been seen earlier in the day by his physician for constipation. He had subsequently received two pediatric and one adult **sodium phosphate/sodium biphosphate enemas**. Postmortem examination showed acute bowel perforation.

Case 848. A 51-year-old woman was brought to the ED after being found unresponsive by her husband. An initial blood glucose was 19 mg/dL but improved only to 20 mg/dL despite treatment with $D_{50}W$. In the ED she was treated with glucagon, additional $D_{50}W$ boluses and a $D_{10}W$ infusion. Dopamine was started for hypotension. Her husband was a non-insulin dependent diabetic and concern for sulfonylurea overdose was entertained; octreotide was then added to her therapeutic regime. Other medications that were available to the patient were diazepam, buspirone, and bupropion. The patient failed to regain meaningful consciousness and the family decided to withdraw care. She died 11 days after presentation. A C-peptide concentration from admission was 0.7 ng/mL (normal 0.4-4.5), and an **insulin** concentration was 4,633 μU/mL (normal 5-35).

Case 867. A 2-year-old boy with a urea cycle defect and profound mental retardation was admitted to the hospital for fever, cyanosis and pneumonia. On the fourth hospital day, he inadvertently received 32 mL of his **sodium phenylbutyrate** solution orally over 12 hours, for a total dose of 27 g. He was receiving this medication chronically, as therapy for his urea cycle defect, but his usual dose was 2.5 mL orally every 6 hours. He was lethargic and soon became hypotensive. The patient was intubated and hemodialysis was initiated. Shortly after dialysis, his platelets fell to 12,000/μL and gastrointestinal bleeding began. His blood pressure fell, requiring fluid resuscitation and epinephrine and dopamine infusions. Other laboratory values included: pH, 7.5; INR, 3.8; fibrinogen, 93 mg/dL. Blood cultures grew *Klebsiella pneumoniae* and *Pseudomonas aeruginosa*. A CT scan of his head demonstrated possible brainstem bleeding and herniation. He deteriorated and died. Autopsy showed diffuse hemorrhage of the brain, spinal cord and retroperitoneum, and cerebellar tonsillar herniation.

Case 868. A 10-year-old boy experienced a cardiorespiratory arrest 18 hours after surgery using **succinylcholine** as an induction agent. He was resuscitated, but became acidotic and had an elevated creatine kinase of 206,000 U/L and a temperature of 41.1° C. He expired.

Case 870. A 43-year-old man, a C3-C4 quadriplegic receiving **baclofen** by intrathecal pump, was found at home unresponsive and in ventricular fibrillation. He was defibrillated several times and intubated prior to ED arrival. His baclofen pump had a history of malfunctioning. He was found to have fixed and dilated pupils and was flaccid with some spasticity in his legs. His heart rate was 110-120 beats/min and his blood pressure was 114/83 mm Hg initially, on dopamine and norepinephrine. The patient was declared brain dead later that day and life support was withdrawn.

Case 975. A 37-year-old man was found in asystole when EMS arrived at his residence. He was intubated and advanced cardiac life support measures were instituted. On arrival in the ED he was febrile, with tachycardia, hypertension and seizures. Further history revealed that, following an argument with his wife, he had tried to elude the police. When found by EMS there was a bag of white powder thought to be **cocaine** next to the patient and an additional bag was found in his throat when he was intubated. Maximum supportive care was continued. On hospital day two an EEG showed no brain activity. He died 96 hours after hospital admission. The autopsy listed the cause of death as cerebral edema with bilateral pulmonary con-

gestion, edema and cardiomegaly secondary to complications of cocaine toxicity. Toxicologic analysis of hospital blood from admission showed a benzoylecgonine concentration of 1.3 μg/mL and an ethanol concentration of 120 mg/dL.

Case 1051. A 12-year-old girl began having seizures at home. She then vomited and lost consciousness. Paramedics found her in cardiorespiratory arrest and CPR was begun during transport to the ED. She could not be resuscitated. Her temperature was 39.2°C. History, obtained from her boyfriend after her death, revealed that he had given her an "Ecstasy" during a kiss about 1.5 hours before the seizure. At autopsy **methylenedioxymethamphetamine** concentrations were 2.0 μg/mL in femoral blood and 3.3 μg/mL in cardiac blood.

Case 1054. In an apparent attempt to dispose of drug during a police confrontation, a 19-year-old man ingested approximately six tablets of **methylenedioxymethamphetamine**. The patient had seizure-like behavior prior to arrival in the ED. Upon presentation about 2 hours post ingestion, he was extremely agitated, with a heart rate of 170 beats/min, a blood pressure of 130/80 mm Hg and a normal body temperature. The patient was administered parenteral haloperidol, diphenhydramine and propranolol. By four hours post ingestion, he had been intubated and was given small doses of diazepam and lorazepam. Approximately an hour later, the patient's status worsened with hyperthermia (42.2° C, rectally), hypotension and ventricular dysrhythmias. His PTT at that time was found to be greater than 250 s. Dopamine, lidocaine and external cooling with ice were used in an effort to control his rapidly deteriorating status. The patient arrested, and despite aggressive attempts at resuscitation, expired approximately 6 hours post ingestion.