Background. The American Association of Poison Control Centers (AAPCC; http://www.aapcc.org) maintains the national database of information logged by the country’s 61 Poison Control Centers (PCCs). Case records in this database are from self-reported calls: they reflect only information provided when the public or healthcare professionals report an actual or potential exposure to a substance (e.g., an ingestion, inhalation, or topical exposure.), or request information/educational materials. Exposures do not necessarily represent a poisoning or overdose. The AAPCC is not able to completely verify the accuracy of every report made to member centers. Additional exposures may go unreported to PCCs, and data referenced from the AAPCC should not be construed to represent the complete incidence of national exposures to any substance(s). U.S. Poison Centers make possible the compilation and reporting of this report through their staffs’ meticulous documentation of each case using standardized definitions and compatible computer systems. The 61 participating poison centers in 2005 are:

- Regional Poison Control Center, Birmingham, AL
- Alabama Poison Center, Tuscaloosa, AL
- Arizona Poison and Drug Information Center, Tucson, AZ;
- Banner Poison Control Center, Phoenix, AZ
- Arkansas Poison and Drug Information Center, Little Rock, AK
- 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, KA
- 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
- Mississippi Regional Poison Control Center, Jackson, MS
- Missouri Regional Poison Control Center, St Louis, MO
- Nebraska Regional Poison Center, Omaha, NE
- 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
- Long Island Regional Poison and Drug Information Center, Mineola, NY
- Ruth A. Lawrence Poison and Drug Information Center, Rochester, NY
- Upstate (formerly Central) New York Poison Control Center, Syracuse, NY
- Western New York Poison 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;
- Puerto Rico Poison Center, San Juan, PR
- Palmetto Poison Center, Columbia, SC
- Tennessee Poison Center, Nashville, TN
- Central Texas Poison Center, Temple, TX
- North Texas Poison Center, Dallas, TX
- Southeast Texas Poison Center, Galveston, TX

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The American Association of Poison Control Centers (AAPCC) is a not-for-profit nongovernmental association representing the United States’ 61 Poison Control Centers (PCCs) and their staffs. The AAPCC compiles the information reported by the regional PCCs into its national database. These data are used to identify hazards early, focus prevention education, guide clinical research, direct training, and detect chemical/bioterrorism incidents. AAPCC data have prompted product reformulations, repackaging, recalls, and bans; are used to support regulatory actions; and contribute to post-marketing surveillance on newly released drugs and products.

From its inception in 1983, the AAPCC’s number of poisonings and exposures reported by the country’s PCCs has grown dramatically, with increases in the number of participating poison centers, population served by those centers, and reported human exposures (Table 1A) (1–22).

### Database Fluidity

Information in the AAPCC’s database is dynamic, with follow-up calls and updated information allowing for changes in coding of some cases over time. The information reported in this article reflects only those cases classified as:

### Table 1A

| Year | No. of participating centers | Population served (in millions) | Human exposures reported | Exposures per thousand population |
|------|-----------------------------|---------------------------------|-------------------------|----------------------------------|
| 1983 | 16                          | 43.1                            | 251,012                 | 5.8                              |
| 1984 | 47                          | 99.8                            | 730,224                 | 7.3                              |
| 1985 | 56                          | 113.6                           | 900,513                 | 7.9                              |
| 1986 | 57                          | 132.1                           | 1,098,894               | 8.3                              |
| 1987 | 63                          | 137.5                           | 1,166,940               | 8.5                              |
| 1988 | 64                          | 155.7                           | 1,368,748               | 8.8                              |
| 1989 | 70                          | 182.4                           | 1,581,540               | 8.7                              |
| 1990 | 72                          | 191.7                           | 1,713,462               | 8.9                              |
| 1991 | 73                          | 200.7                           | 1,837,939               | 9.2                              |
| 1992 | 68                          | 196.7                           | 1,864,188               | 9.5                              |
| 1993 | 64                          | 181.3                           | 1,751,476               | 9.7                              |
| 1994 | 65                          | 215.9                           | 1,926,438               | 8.9                              |
| 1995 | 67                          | 218.5                           | 2,023,089               | 9.3                              |
| 1996 | 67                          | 232.3                           | 2,155,952               | 9.3                              |
| 1997 | 66                          | 250.1                           | 2,192,088               | 8.8                              |
| 1998 | 65                          | 257.5                           | 2,241,082               | 8.7                              |
| 1999 | 64                          | 260.9                           | 2,201,156               | 8.4                              |
| 2000 | 63                          | 270.6                           | 2,168,248               | 8.0                              |
| 2001 | 64                          | 281.3                           | 2,267,979               | 8.1                              |
| 2002 | 64                          | 291.6                           | 2,380,028               | 8.2                              |
| 2003 | 64                          | 294.7                           | 2,395,582               | 8.1                              |
| 2004 | 62                          | 293.7                           | 2,438,643               | 8.3                              |
| 2005 | 61                          | 296.4                           | 2,424,180               | 8.2                              |
| Total|                             |                                 | 41,079,401              |                                  |

Human exposures to substances as reported to U.S. Poison Control Centers (PCCs) and transmitted to the AAPCC national database 1983–2005. Each case record represents a closed case where a caller reported an actual or suspected exposure to a substance. Duplicate cases reported to more than one PCC are not counted.
• exposure calls (non-administrative, non-information calls; the caller was concerned about an exposure to a substance)
• having occurred in humans (no animal species)
• where the call status has been deemed closed (the PCC has determined no further information is available or no further follow-up/recommendations will be made). Most calls are closed within the first few hours; some calls about patients admitted to hospitals remain open for weeks or months depending on the particulars of a case.

Database Record Count – Exposures Reported in Humans

The cumulative AAPCC database now contains over 49 million case records of which 41.08 million represent human exposure cases. This report includes 2,424,180 human exposure cases reported to all 61 participating PCCs during 2005. While an additional 2,093 calls were classified as open at the time of preparation of this report, all prior Annual Data Reports have looked only at closed human exposure calls and for appropriate comparison this report does the same.

Trends in Reported Poisonings/Exposures

The data do not directly identify a trend in the overall incidence of poisonings in the United States because the percentage of actual exposures and poisonings reported to PCCs is unknown (Fig. 1).

Although this report focuses on the human exposure cases reported to Poison Control Centers in 2005, the database also contains data on animal exposures (Table 1B), human confirmed nonexposures (7,983), animal confirmed nonexposures (375), and information calls (1,400,904) (Table 1C).

An additional 4,688 duplicate reports (reported to more than 1 participating poison center) were excluded. This total of 3,825,084 exposure cases and information calls reported to PCCs in 2005 does not reflect the full extent of poison center effort, such as prevention and education.

In addition, 3,976,586 million follow-up calls were placed by PCCs in 2005 to provide further patient guidance, confirm compliance with recommendations, and gather final outcome data. Follow-ups were done in 44.9% of human exposure cases. One follow-up call was made in 22.2% of human exposure cases, and multiple follow-up calls (range 2–125) were placed in 21.8% of cases.

Information (Non-exposure) Calls to Poison Centers

Data from 1,400,904 information calls reported to PCCs in 2005 was transmitted to the AAPCC database, including 376,040 calls coded in optional reporting categories such as administrative, immediate referral, and prevention/safety/education (Table 1B). Information calls are not required to be recorded by PCCs and may be reported inconsistently. Overall, the volume of information calls handled by U.S. PCCs increased 9.5% from 2004 to 2005.

The most frequent information call was for drug identification, comprising of 848,082 calls to PCCs during the year. Of these, 129,825 (15.3%) could not be identified over the telephone. Of the drug identification calls, 78.2% were received from the public, 8.6% from health professionals, and 12.4% from law enforcement. Forty-nine percent of drug identification
requests involved drugs sometimes involved in abuse; however, these cases were categorized based on the abuse potential, generally without knowledge of whether abuse was actually intended.

Drug information calls (176,782 calls) comprised 12.6% of all information calls. Of these, 19.2% were questions about drug-drug interactions, 15.7% were questions about therapeutic use and indications, and 10.6% were questions about adverse effects. Environmental inquiries comprised 2.4% of all information calls. Of these environmental inquiries, 20.2% related to cleanup of mercury thermometers and 13.0% involved pesticides.

Poison information comprised 7.0% of information calls, with 12.3% of these information calls involving food poisoning or food preparation practices and 9.4% involving plant toxicity.

**CHARACTERIZATION OF PARTICIPATING POISON CONTROL CENTERS 2005**

All 61 participating centers submitted data to the AAPCC for all of 2005. Fifty-six centers (92%) were fully certified by the AAPCC at the end of 2005.

The annual human exposure case volume by center ranged from 11,478 to 113,740 (mean 40,852) for centers. The entire population of the 50 states, the District of Columbia and Puerto Rico (296.4 million people (23)) was served by PCCs in 2005.

The average number of human poison exposure consultations handled per day by all U.S. poison centers was 6,462. Higher volumes were observed in the warmer months, with a mean of 6,965 consultations per day in June compared with 6,015 per day in December. On average, ignoring time of day and seasonal fluctuations, U.S. PCCs received one call concerning a suspected or actual human poisoning/exposure every 13 seconds.

Due to variations in poison center penetrance (number of calls made to a PCC per 1,000 population served), it is difficult to extrapolate the number of actual poisonings occurring annually in the United States using AAPCC data alone. Using U.S. census data, the number of human exposure cases reported to any poison center per 1,000 population was calculated by caller state. The minimum penetrance of calls from a state per 1,000 population was 3.4. The maximum number of calls from a state per 1,000 population was 24.3. Mean penetrence across states, the District of Columbia and Puerto Rico was 8.7 and the median was 8.3. If all centers had reached the penetrence level of 24.3 reported exposures in humans per 1,000 population as reported for 1 state, 7.2 million exposures in humans would have been reported to PCCs in 2005. Using the average penetrance of 8.7 calls per 1,000 population, 2.6 million calls would have been reported.

**Management of Calls – Specialized Poison Emergency Providers**

Calls received at U.S. PCCs are managed by healthcare professionals who have received additional training in managing poisoning emergencies. Poison Center operation as well as clinical education and instruction are directed by Managing Directors (most are PharmDs and RNs with American Board of Applied Toxicology (ABAT) board certification). Medical direction is provided by Medical Directors who are board certified medical toxicologists (MD or DO). At some poison centers, the Managing and Medical Director positions are held by the same person.

Specialists in Poison Information (SPIs) are primarily PharmDs, RNs and RPhs. They work under the supervision of a Certified Specialist in Poison Information (CSPI). SPIs must log a minimum of 2,000 calls at a poison control center to become eligible to take the certifying exam for specialists in poison information.

Poison Information Providers (PIPs) are allied healthcare professionals-in-training. They handle information-type and non-medical (non-hospital) calls and work under the supervision of at least one Certified Specialist in Poison Information (CSPI). Non-medical calls are those which do not require management recommendations to another allied healthcare professional.

U.S. PCCs employ the full-time equivalent of 75 PIPs and 635 SPIs (of whom more than 75% are CSPIs) (24).

**REVIEW OF 2005 HUMAN EXPOSURE DATA**

No changes to the data collection format were implemented in 2005. Prior revisions had occurred in 1984, 1985, 1993, 2000, 2001, and 2002. Data reported after January 1, 2000, allow an unlimited number of substances for each case, a factor that should be considered when comparing substance data with prior years.
**TABLE 1C**

Distribution of information calls

| Information call type | No. of calls | % of info. calls |
|-----------------------|--------------|------------------|
| **Drug identification** |              |                  |
| Public inquiry: drug sometimes involved in abuse | 339,334 | 24.22 |
| Public inquiry: drug not known to be abused | 212,256 | 15.15 |
| Public inquiry: unknown abuse potential | 12,623 | 0.90 |
| Public inquiry: unable to identify | 99,365 | 7.09 |
| HCP inquiry: drug sometimes involved in abuse | 18,547 | 1.32 |
| HCP inquiry: drug not known to be abused | 34,980 | 2.50 |
| HCP inquiry: unknown abuse potential | 2,332 | 0.17 |
| HCP inquiry: unable to identify | 17,048 | 1.22 |
| Law enf. inquiry: drug sometimes involved in abuse | 56,353 | 4.02 |
| Law enf. inquiry: drug not known to be abused | 33,596 | 2.40 |
| Law enf. inquiry: unknown abuse potential | 2,125 | 0.15 |
| Law enf. inquiry: unable to identify | 13,412 | 0.96 |
| Other drug ID | 6,111 | 0.44 |
| **Subtotal** | 848,082 | 60.54 |
| **Drug information** |              |                  |
| Adverse effects (no known exposure) | 18,824 | 1.34 |
| Brand/generic name clarifications | 4,985 | 0.36 |
| Calculations | 438 | 0.03 |
| Compatibility of parenteral medications | 281 | 0.02 |
| Compounding | 1,130 | 0.08 |
| Contraindications | 2,149 | 0.15 |
| Dietary supplement, herbal, and homeopathic | 1,779 | 0.13 |
| Dosage | 15,838 | 1.13 |
| Dosage form/formulation | 4,466 | 0.32 |
| Drug use during breast-feeding | 7,547 | 0.54 |
| Drug-drug interactions | 33,866 | 2.42 |
| Drug-food interactions | 2,070 | 0.15 |
| Foreign drug | 2,489 | 0.18 |
| Generic substitution | 920 | 0.07 |
| Indications/therapeutic use | 27,805 | 1.98 |
| Medication administration | 4,200 | 0.30 |
| Medication availability | 1,440 | 0.10 |
| Medication disposal | 979 | 0.07 |
| Pharmacokinetics | 4,087 | 0.29 |
| Pharmacology | 2,747 | 0.20 |
| Regulatory | 2,728 | 0.19 |
| Stability/storage | 3,753 | 0.27 |
| Therapeutic drug monitoring | 1,038 | 0.07 |
| Other drug info | 31,223 | 2.23 |
| **Subtotal** | 176,782 | 12.62 |
| **Environmental information** |              |                  |
| Environmental information | 34,259 | 2.45 |
| Medical information | 32,497 | 2.32 |
| Occupational information | 1,819 | 0.13 |
| Poison information | 97,382 | 6.95 |
| Prevention/safety/education | 47,602 | 3.40 |
| Teratogenicity information | 5,720 | 0.41 |
| Other information | 39,752 | 2.84 |
| Substance abuse | 13,094 | 0.93 |
| Administrative | 37,097 | 2.65 |
| Caller referred | 66,818 | 4.77 |
| **Total** | 1,400,904 | 100.00 |

Distribution of information calls as reported to the AAPCC by 60 of 61 U.S. Poison Control Centers in 2005.
Exposure Site
Of the 2,424,180 human exposures reported in 2005, 92.7% occurred at a residence (Table 2). Exposures occurred in the workplace in 2.1% of cases, schools (1.4%), health care facilities (0.3%), and restaurants or food services (0.3%). Poison center peak call volumes were from 4 to 11 p.m., although call frequency remained consistently high between 8 a.m. and midnight, with 89.7% of calls logged during this 16-hour period.

Age and Gender Distribution
The age and gender distribution of human poison exposure victims is outlined in Table 3. Children younger than three years were involved in 38.1% of cases, and 50.9% occurred in children younger than six years. A male predominance is found among recorded cases involving children younger than 13 years, but this gender distribution is reversed in teenagers and adults, with women comprising the majority of reported poison exposure victims.

Exposures in Pregnancy
Of all poison exposures captured, 8,636 occurred in pregnant women. Of those with known pregnancy duration, exposures reported in patients reported as being pregnant, 32% occurred in the first trimester, 33% in the second trimester, and 26% in the third trimester. In 8.2% of cases (199,127 cases), multiple patients were implicated in the poison exposure episode (i.e., cases were coded as being related to another case, as in siblings sharing a household product, or multiple patients inhaling vapors at a hazardous material spill).

Fatalities (Tables 4 and 21)
Fatalities differed from the total exposure data set in several ways. Table 4 presents the age and sex distribution for the 1,261 reported fatalities. Although children younger than six years were involved in the majority of poisoning reports, they comprised just 1.9% (24) of the recorded and verified fatalities. Fifty-six percent of poisoning fatalities occurred in 20- to 49-year-old individuals. Table 21 is a log of each of the 1,261 fatalities reported to PCCs.

A single substance was implicated in 91.3% of reported human exposures, and 8.7% of patients were exposed to two or more drugs or products (Table 5). In contrast, 640 (50.8%) of fatal case reports noted exposure to two or more drugs or products.

Chronicity
The overwhelming majority of human exposures were acute (91.5%), compared to just 51.0% of reported poisoning-related fatalities (643 of 1,261). Chronic exposures comprised 1.9% of all poison exposure reports, and acute-on-chronic exposures comprised 5.8% (chronic exposures were defined as continuous or repeated exposures occurring over a period exceeding eight hours).

Reason for Exposure
Specialists in Poison Information (ISPIs) coded the reasons for exposure reported by callers to PCCs according to the following definitions:

- Unintentional general: All unintentional exposures not otherwise defined as follows.
- Environmental: Any passive, nonoccupational exposure that results from contamination of air, water, or soil. Environmental exposures are usually caused by manmade contaminants.
- Occupational: An exposure that occurs as a direct result of the person being on the job or in the workplace.
- Therapeutic error: An unintentional deviation from a proper therapeutic regimen that results in the wrong dose, incorrect route of administration, administration to the wrong person, or administration of the wrong substance. Only exposures to medications or products used as medications are included. Drug interactions resulting from unintentional administration of drugs or foods which are known to interact are also included.
- Unintentional misuse: Unintentional improper or incorrect use of a nonpharmaceutical substance. Unintentional misuse differs from intentional misuse in that the exposure was unplanned or not foreseen by the patient.

### Table 2

| Site of caller (%) | Site of exposure (%) |
|--------------------|---------------------|
| Residence          |                     |
| Own                | 75.12               | 89.65               |
| Other              | 2.34                | 3.08                |
| Health care facility| 14.60               | 0.27                |
| Workplace          | 1.50                | 2.08                |
| School             | 0.59                | 1.40                |
| Public area        | 0.37                | 1.14                |
| Restaurant/food service| 0.03            | 0.33                |
| Other              | 5.15                | 0.94                |
| Unknown            | 0.32                | 1.09                |

Percentages of caller site and exposure site in calls regarding exposures in humans as made to U.S. Poison Control Centers in 2005.
### TABLE 3
Age and gender distribution of human exposure cases reported to U.S. Poison Control Centers in 2005.

| Age (y)   | Male No. | % of age group total | Female No. | % of age group total | Unknown Gender No. | % of age group total | Total No. | % of total exposures | Cumulative total No. | Col % |
|-----------|----------|----------------------|------------|----------------------|--------------------|---------------------|------------|----------------------|----------------------|-------|
| <1        | 67,084   | 52.0%                | 61,568     | 47.7%                | 444                | 0.3%                | 129,096    | 5.3%                | 129,096              | 5.3% |
| 1         | 203,968  | 52.0%                | 187,774    | 47.9%                | 528                | 0.1%                | 392,270    | 16.2%               | 521,366              | 21.5% |
| 2         | 211,357  | 52.6%                | 190,178    | 47.3%                | 607                | 0.2%                | 402,142    | 16.6%               | 923,508              | 38.1% |
| 3         | 96,927   | 55.6%                | 77,172     | 44.2%                | 328                | 0.2%                | 174,427    | 7.2%                | 1,097,935            | 45.3% |
| 4         | 46,702   | 56.3%                | 35,988     | 43.4%                | 217                | 0.3%                | 82,907     | 3.4%                | 1,180,842            | 48.7% |
| 5         | 27,418   | 56.8%                | 20,698     | 42.9%                | 158                | 0.3%                | 48,274     | 2.0%                | 1,229,116            | 50.7% |
| Unknown child <= 5 | 2,301   | 50.3%                | 1,854      | 40.5%                | 424                | 9.3%                | 4,579      | 0.2%                | 1,233,695            | 50.9% |
| 6–12      | 86,958   | 57.3%                | 63,671     | 42.0%                | 1,119              | 0.7%                | 151,748    | 6.3%                | 1,385,443            | 57.2% |
| 13–19     | 77,287   | 45.1%                | 93,362     | 54.5%                | 743                | 0.4%                | 171,392    | 7.1%                | 1,556,835            | 64.2% |
| Unknown child | 2,534   | 37.2%                | 2,266      | 33.2%                | 2,017              | 29.6%               | 6,817      | 0.3%                | 1,563,652            | 64.5% |
| Total children <20 y | 822,536 | 52.6%                | 734,531    | 47.0%                | 6,585              | 0.4%                | 1,563,652  | 64.5%               | 1,563,652            | 64.5% |
| 20–29     | 88,662   | 45.4%                | 106,503    | 54.5%                | 269                | 0.1%                | 195,434    | 8.1%                | 1,759,086            | 72.6% |
| 30–39     | 70,787   | 42.9%                | 94,245     | 57.1%                | 144                | 0.1%                | 165,176    | 6.8%                | 1,924,262            | 79.4% |
| 40–49     | 60,715   | 41.5%                | 85,345     | 58.4%                | 99                 | 0.1%                | 146,159    | 6.0%                | 2,070,421            | 85.4% |
| 50–59     | 38,765   | 39.0%                | 60,610     | 61.0%                | 55                 | 0.1%                | 99,430     | 4.1%                | 2,169,851            | 89.5% |
| 60–69     | 20,571   | 36.7%                | 35,496     | 63.3%                | 17                 | 0.0%                | 56,084     | 2.3%                | 2,225,935            | 91.8% |
| 70–79     | 13,665   | 35.0%                | 25,411     | 65.0%                | 10                 | 0.0%                | 39,086     | 1.6%                | 2,265,021            | 93.4% |
| 80–89     | 7,642    | 33.1%                | 15,422     | 66.8%                | 13                 | 0.1%                | 23,077     | 1.0%                | 2,288,098            | 94.4% |
| 90+       | 1,084    | 26.9%                | 2,941      | 72.9%                | 8                  | 0.2%                | 4,033      | 0.2%                | 2,292,131            | 94.6% |
| Unknown adult | 46,536 | 39.1%                | 68,127     | 60.9%                | 4,339              | 3.6%                | 119,002    | 4.9%                | 2,411,133            | 99.5% |
| Total adults | 348,427 | 41.1%                | 494,100    | 58.3%                | 4,954              | 0.6%                | 847,481    | 35.0%               | 847,481              | —     |
| Unknown age | 4,384   | 33.6%                | 5,518      | 42.3%                | 3,145              | 24.1%               | 13,047     | 0.5%                | 2,424,180            | 100.0% |
| Total     | 1,175,347| 48.5%                | 1,234,149  | 50.9%                | 14,684             | 0.6%                | 2,424,180  | 100.0%              | 2,424,180            | 100.0% |

Age and gender distribution of human exposure cases reported to U.S. Poison Control Centers in 2005.
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 or euphoric 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.

Withdrawal: Effect related to decline in blood concentration of a pharmaceutical or other substance after discontinuing therapeutic use or abuse of that substance.

Adverse reaction: An adverse event occurring with normal, prescribed, labeled, or recommended use of substances.

### TABLE 4
Distribution of age and gender for 1,261 fatalities

| Age (y) | Male | Female | Unknown | Total (%) | Cumulative total (%) |
|---------|------|--------|---------|-----------|----------------------|
| <1      | 1    | 2      | 1       | 4 (0.3%)  | 4 (0.3%)             |
| 1       | 4    | 2      | 0       | 6 (0.5%)  | 10 (0.8%)            |
| 2       | 1    | 1      | 0       | 2 (0.2%)  | 12 (1.0%)            |
| 3       | 2    | 4      | 0       | 6 (0.5%)  | 18 (1.4%)            |
| 4       | 1    | 1      | 0       | 2 (0.2%)  | 20 (1.6%)            |
| 5       | 4    | 0      | 0       | 4 (0.3%)  | 24 (1.9%)            |
| Unknown child (<6) | 0    | 0      | 0       | 0 (0.0%)  | 24 (1.9%)            |
| 6–12    | 8    | 4      | 0       | 12 (1.0%) | 36 (2.9%)            |
| 13–19   | 47   | 30     | 0       | 77 (6.1%) | 113 (9.0%)           |
| Unknown child (<19) | 0    | 1      | 0       | 1 (0.1%)  | 114 (9.0%)           |
| 20–29   | 106  | 83     | 0       | 189 (15.0%) | 303 (24.0%)          |
| 30–39   | 112  | 113    | 0       | 225 (17.8%) | 528 (41.9%)          |
| 40–49   | 146  | 146    | 0       | 292 (23.2%) | 820 (65.0%)          |
| 50–59   | 98   | 90     | 0       | 188 (14.9%) | 1,008 (79.9%)        |
| 60–69   | 48   | 42     | 0       | 90 (7.1%)  | 1,098 (87.1%)        |
| 70–79   | 21   | 15     | 0       | 36 (2.9%)  | 1,134 (89.9%)        |
| 80–89   | 23   | 37     | 0       | 60 (4.8%)  | 1,194 (94.7%)        |
| 90+     | 4    | 15     | 0       | 19 (1.5%)  | 1,213 (96.2%)        |
| Unknown adult | 22  | 9      | 2       | 33 (2.6%)  | 1,246 (98.8%)        |
| Unknown age | 10  | 4      | 1       | 15 (1.2%)  | 1,261 (100.0%)       |
| Total   | 658  | 599    | 4       | 1,261 (100.0%) | 1,261 (100.0%) |

Age and gender distribution of human exposure cases reported to result in death; as reported to U.S. Poison Control Centers in 2005.

### TABLE 5
Number of substances involved in human exposure cases

| No. of substances | No of cases | % of cases |
|-------------------|-------------|------------|
| 1                 | 2,212,235   | 91.3       |
| 2                 | 141,092     | 5.8        |
| 3                 | 41,407      | 1.7        |
| 4                 | 15,907      | 0.7        |
| 5                 | 6,691       | 0.3        |
| 6                 | 3,163       | 0.1        |
| 7                 | 1,654       | 0.1        |
| 8                 | 839         | 0.0        |
| > = 9             | 1,192       | 0.0        |
| Total             | 2,424,180   | 100.0      |

Number of substances involved in human exposure cases.

- 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 or euphoric 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.
- Withdrawal: Effect related to decline in blood concentration of a pharmaceutical or other substance after discontinuing therapeutic use or abuse of that substance.
- Adverse reaction: An adverse event occurring with normal, prescribed, labeled, or recommended use of substances.
the product, as opposed to overdose, misuse, or abuse. Included are cases with an unwanted effect because of 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 (83.8%) of poison exposures were unintentional; suicidal intent was present in 8.1% of cases (Table 6A). Therapeutic errors accounted for 9.9% of exposures (241,033 cases), with unintentional nonpharmaceutical product misuse comprising another 4.2% of exposures. The types of therapeutic errors observed in each age group are delineated in Table 6B. Thirty-two percent of therapeutic errors involved double-dosing. Dispensing cup errors were seen in 5,466 cases, 10-fold dosing errors in 1,369 cases, iatrogenic or dispensing errors in 5,022 cases, and errors resulting from exposure to multiple products with common ingredients in 7,081 cases.

Unintentional poisonings outnumbered intentional poisonings in all age groups (Table 7). In contrast, of the 1,261 human poisoning fatalities reported, 89.6% of adolescent deaths and 76.6% of adult deaths (older than 19 years) were intentional (Table 8).

### Route of Exposure

Ingestion was the route of exposure in 76.7% of cases (Table 9), followed in frequency by dermal, inhalation, and ocular routes. For the 1,261 fatalities, ingestion, inhalation, and parenteral were the predominant exposure routes.

### Clinical Effects

The AAPCC database allows for the coding of up to 131 clinical effects (signs, symptoms, or laboratory abnormalities) per case. Clinical effects were coded in 882,083 (36.4%) of cases (18.9% had 1 effect, 9.6% had 2 effects, 4.9% had 3 effects, 1.8% had 4 effects, 0.6% had 5 effects, and 0.6% had >5 effects coded). Of 1,641,600 total clinical effects coded, 80.2% were deemed related to the exposure(s), 8.9% were considered not related, and 10.9% were coded as unknown if related.

### Case Management Site

The majority of cases reported to PCCs were managed in a non–health care facility (75.5%), usually at the site of exposure, the patient’s own residence (Table 10). This includes the 2.0% of cases that were referred to a health care facility but refused to go. Treatment in a health care facility was rendered in 22.8% of cases.

The percentage of patients treated in a health care facility varied considerably with age. Only 10.5% of children younger than six years and only 13.5% of children between six and 12 years were managed in a health care facility, compared with 48.5% of teenagers (13–19 years) and 37.1% of adults (age>19 years).

Of cases managed in a health care facility, 51.4% were treated and released without admission, 14.5% were admitted for critical care, and 8.0% were admitted for noncritical care.

Where treatment was provided in a health care facility, 37.2% of the patients were referred by the PCC, and 62.8% were already in or en route to the health care facility when the poison center was contacted.
Table 11 displays the medical outcome of the human poison exposure cases distributed by age, showing a greater rate of severe outcomes in the older age groups. Table 12 compares medical outcome and reason for exposure and shows a greater frequency of serious outcomes in intentional exposures. Table 13 demonstrates an increasing duration of the clinical effects observed with more severe outcomes.

Medical outcome categories were as follows:

- **No effect**: The patient did not develop any signs or symptoms as a result of the exposure.
- **Minor effect**: The patient developed some signs or symptoms as a result of the exposure, but they were minimally bothersome and generally resolved rapidly with no residual disability or disfigurement. A minor effect is often limited to the skin or mucus membranes (e.g., self-limited gastrointestinal symptoms, drowsiness, skin irritation, first-degree dermal burn, sinus tachycardia without hypotension, and transient cough).
- **Moderate effect**: The patient exhibited signs or symptoms as a result of the exposure that were more pronounced, more prolonged, or more systemic in nature than minor symptoms. Usually, some form of treatment is indicated. Symptoms were not life-threatening, and the patient had no residual disability or disfigurement.

### Table 6B

| Scenarios for therapeutic errors | <6 y (Row %) | 6–12 y (Row %) | 13–19 y (Row %) | >19 y (Row %) | Unknown (Row %) |
|----------------------------------|-------------|---------------|----------------|-------------|----------------|
| Inadvertently took/given medication twice | 25.0 | 12.5 | 5.6 | 56.5 | 0.4 |
| Other incorrect dose | 38.2 | 12.4 | 7.3 | 41.8 | 0.3 |
| Wrong medication taken/given | 17.9 | 12.6 | 6.6 | 62.5 | 0.4 |
| Inadvertently took/given someone else’s medication | 21.8 | 19.2 | 7.3 | 51.5 | 0.2 |
| Medication doses given/taken too close together | 25.2 | 10.7 | 7.0 | 56.9 | 0.3 |
| Other/unknown therapeutic error | 24.4 | 11.1 | 7.4 | 56.2 | 0.9 |
| Confused units of measure | 59.5 | 15.7 | 5.8 | 18.9 | 0.2 |
| Incorrect dosing route | 12.7 | 5.3 | 3.5 | 77.6 | 0.9 |
| More than one product containing same ingredient | 33.5 | 15.1 | 12.2 | 38.9 | 0.3 |
| Incorrect formulation or concentration given | 54.1 | 17.4 | 4.3 | 23.9 | 0.4 |
| Dispensing cup error | 62.3 | 17.1 | 5.1 | 15.4 | 0.1 |
| Health professional/iatrogenic error | 32.1 | 10.1 | 6.1 | 50.3 | 1.4 |
| Incorrect formulation or concentration dispensed | 44.5 | 16.0 | 6.1 | 32.8 | 0.5 |
| 10-Fold dosing error | 66.0 | 5.0 | 2.5 | 25.9 | 0.6 |
| Drug interaction | 10.5 | 7.4 | 7.3 | 74.1 | 0.6 |
| Exposure through breast milk | 92.7 | 0.0 | 0.5 | 6.3 | 0.5 |

399,030 human exposure cases reported to U.S. Poison Control Centers in 2005 included scenario coding. There are 56 'standard scenarios' covering scenarios ranging from incorrect dosing to use of child-resistant containers to iatrogenic ‘therapeutic misadventures.’ Table 6B shows the number of cases where various therapeutic error scenarios were coded. More than one scenario can be coded in order to describe a case.

### Table 7

| Distribution of reason for exposure by age |
|-------------------------------------------|
| Reason | <6 y | 6–12 y | 13–19 y | >19 y | Unknown | Total |
|--------|------|--------|---------|------|---------|-------|
| Unintentional | 1,225,561 | 60.3 | 137,294 | 6.8 | 82,964 | 4.1 |
| Intentional | 1,144 | 0.4 | 8,827 | 2.9 | 79,420 | 26.0 |
| Other | 1,183 | 7.8 | 1,668 | 10.9 | 2,420 | 15.9 |
| Adverse reaction | 5,151 | 8.4 | 3,264 | 5.3 | 4,994 | 8.1 |
| Unknown | 656 | 5.9 | 695 | 6.3 | 1,594 | 14.4 |
| Total | 1,233,695 | 50.9 | 151,748 | 6.3 | 171,392 | 7.1 |

Table 11 displays the medical outcome of the human poison exposure cases distributed by age, showing a greater rate of 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.
disfigurement (e.g., corneal abrasion, acid-base disturbance, high fever, disorientation, hypotension that is rapidly responsive to treatment, and isolated brief seizures that respond readily to treatment).

- **Major effect**: The patient exhibited signs or symptoms as a result of the exposure that were life-threatening or resulted in significant residual disability or disfigurement (e.g., repeated seizures or status epilepticus, respiratory compromise requiring intubation, ventricular tachycardia with hypotension, cardiac or respiratory arrest, esophageal stricture, and disseminated intravascular coagulation).

- **Death**: The patient died as a result of the exposure or as a direct complication of the exposure. 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.

- **Unable to follow, judged as a potentially toxic exposure**: The patient was lost to follow-up, refused follow-up, or was not followed, but the exposure was significant and may have resulted in a moderate, major, or fatal outcome.

- **Unrelated effect**: The exposure was probably not responsible for the effect.

- **Confirmed nonexposure**: This outcome option was coded to designate cases where there was reliable and objective evidence that an exposure initially believed to have occurred actually never occurred (e.g., all missing pills are later located). All cases coded as confirmed nonexposure are excluded from this report.

Tables 14 and 15 outline the use of decontamination procedures, specific antidotes, and measures to enhance elimination in the treatment for patients reported in this database. These
must be interpreted as minimum frequencies because of the limitations of telephone data gathering.

Table 16 demonstrates the continuing decline in the use of ipecac-induced emesis in the treatment of poisoning. Ipecac was administered in only 3,027 (0.12%) human poison exposures in 2005. A 35.6% decrease in ipecac syrup use in 2005 compared with 2004 was observed, likely as a result of ipecac use guidelines issued in late 2003. At that time, a joint Guidelines Consensus Panel formed by the American Association of Poison Control Centers, American College of Medical Toxicology, and American Academy of Clinical Toxicology issued a guideline which concluded that the circumstances in which ipecac syrup is the appropriate or desired method of gastric decontamination are rare (25). In a separate report, the American Academy of Pediatrics concluded not only that ipecac should no longer be used routinely as a home treatment strategy, but also recommended disposal of ipecac currently in homes (26).

Table 17A presents the most common substance categories involved in human exposures, listed by frequency of exposure. Tables 17B and 17C present similar data for children and adults, respectively, and show the considerable differences between pediatric and adult poison exposures.

Table 18 lists the substance categories associated with reported deaths; analgesics and sedative/hypnotics/antipsychotics lead this list. Although analgesics are the most frequently involved substance category for both deaths and nonlethal human exposures, there is otherwise little correlation between the frequency of exposures to a substance and the number of deaths. Note that Table 18 accounts for all substances to which a patient has reportedly been exposed (i.e., a patient exposed to an analgesic may have also been exposed to another category of product).

Table 19 shows little variation over the past two decades in the percentage of cases reported to the AAPCC’s national database that are fatal poisonings, and in the percentage of reported fatalities as a result of suicide. A breakdown of plant exposures is provided for those most commonly implicated (Table 20).

### Fatalities (Table 21 and Appendix B)

U.S. PCCs recorded 1,589 calls where the medical outcome was death and there appeared to be a correlation between the reported substance(s) to which a patient was exposed and the fatality. Three-hundred twenty-eight cases were eventually determined to to be unrelated to a poison exposure or coded incorrectly as a death (including 16 fatalities reported to one poison center which were unable to be verified). A case log summary of these 1,261 fatal human exposures is presented in Table 21. Each fatality case is abstracted by the reporting poison center and verified for accuracy as much as possible. After extensive review by both local/regional PCC staff and AAPCC reviewers, exposures determined to be either “probably” or “undoubtedly” responsible for the fatality were counted and included in Table 21.

Narrative abstracts of selected interesting or unusual cases (including most incidents with multiple fatalities), and pediatric cases in which the patient is less than six years of age (excluding carbon monoxide cases) are included in Appendix B.

| Route                      | In all exposure cases | In fatal exposure cases |
|----------------------------|-----------------------|-------------------------|
|                            | No.   | %    | No.   | %    |
| Ingestion                  | 1,955,021 | 76.7 | 1,020 | 69.9 |
| Dermal                     | 194,954  | 7.7  | 14    | 1.0  |
| Inhalation                 | 150,831  | 5.9  | 145   | 9.9  |
| Ocular                     | 133,270  | 5.2  | 1     | 0.1  |
| Bites and stings           | 82,151   | 3.2  | 7     | 0.5  |
| Parenteral                 | 13,667   | 0.5  | 70    | 4.8  |
| Unknown                    | 8,821    | 0.3  | 162   | 11.1 |
| Otic                       | 2,714    | 0.1  | 0     | 0.0  |
| Other                      | 2,536    | 0.1  | 4     | 0.3  |
| Aspiration                 | 1,672    | 0.1  | 36    | 2.5  |
| Rectal                     | 918      | 0.0  | 0     | 0.0  |
| Vaginal                    | 839      | 0.0  | 1     | 0.1  |
| Total                      | 2,547,394| 100.0| 1,460 | 100.0|

Multiple routes of exposure were observed in many poison exposure victims. Percentage is calculated on the total number of exposure routes (2,547,394 for all patients; 1,460 for fatal cases), rather than the total number of human exposures (2,424,180) or fatalities (1,261).
| Outcome                        | <6 y | % <6 y | 6–12 y | % 6–12 y | 13–19 y | % 13–19 y | >19 y | % >19 y | Unknown | % Unknown | Total | % Total |
|-------------------------------|------|--------|--------|----------|---------|-----------|-------|---------|---------|-----------|-------|---------|
| No effect                     | 309,199 | 25.1   | 24,886 | 16.4     | 26,993  | 15.7      | 98,672 | 11.6    | 3,365   | 16.9      | 463,115 | 19.1    |
| Minor effect                  | 103,370 | 8.4    | 24,780 | 16.3     | 43,538  | 25.4      | 190,227 | 22.4    | 2,436   | 12.3      | 364,351 | 15.0    |
| Moderate effect               | 9,821  | 0.8    | 3,991  | 2.6      | 18,218  | 10.6      | 85,011  | 10.0    | 581     | 2.9       | 117,622 | 4.9     |
| Major effect                  | 759    | 0.1    | 224    | 0.1      | 1,994   | 1.2       | 13,505  | 1.6     | 63      | 0.3       | 16,545  | 0.7     |
| Death                         | 24     | 0.0    | 12     | 0.0      | 77      | 0.0       | 1,134   | 0.1     | 14      | 0.1       | 1,261   | 0.1     |
| No follow-up, nontoxic        | 255,339 | 20.7   | 23,096 | 15.2     | 9,477   | 5.5       | 54,402  | 6.4     | 1,572   | 7.9       | 343,886 | 14.2    |
| No follow-up, minimal toxicity| 516,724 | 41.9   | 66,945 | 44.1     | 49,462  | 28.9      | 295,056 | 34.8    | 5,798   | 29.2      | 933,985 | 38.5    |
| No follow-up, potentially toxic| 20,545 | 1.7    | 4,119  | 2.7      | 17,170  | 10.0      | 73,587  | 8.7     | 5,543   | 27.9      | 120,964 | 5.0     |
| Unrelated effect              | 17,914 | 1.5    | 3,695  | 2.4      | 4,463   | 2.6       | 35,890  | 4.2     | 490     | 2.5       | 62,452  | 2.6     |
| Total                         | 1,233,695 | 100.0  | 151,748| 100.0    | 171,392 | 100.0     | 847,483 | 100.0   | 19,862  | 100.0     | 2,424,180 | 100.0  |
| Outcome                        | Unintentional | Intentional | Other | Adverse reaction | Unknown | Total  |
|-------------------------------|--------------|-------------|-------|------------------|---------|--------|
|                               | No.         | Col%        | No.   | Col%            | No.     | Col%   |
| No effect                     | 405,092     | 19.9        | 54,278 | 17.8            | 1,607   | 10.5   | 1,239   | 2.0   | 899     | 8.1   | 463,115 | 19.1 |
| Minor effect                  | 261,971     | 12.9        | 82,814 | 27.2            | 3,239   | 21.2   | 14,603  | 23.8  | 1,724   | 15.6  | 364,351 | 15.0 |
| Moderate effect               | 49,692      | 2.4         | 57,247 | 18.8            | 1,194   | 7.8    | 7,687   | 12.5  | 1,802   | 16.3  | 117,622 | 4.9  |
| Major effect                  | 2,852       | 0.1         | 12,139 | 4.0            | 123     | 0.8    | 747     | 1.2   | 684     | 6.2   | 16,545  | 0.7  |
| Death                         | 172         | 0.0         | 952    | 0.3            | 9       | 0.1    | 28      | 0.0   | 100     | 0.9   | 1,261   | 0.1  |
| No follow-up, nontoxic        | 337,141     | 16.6        | 4,452  | 1.5            | 899     | 5.9    | 1,148   | 1.9   | 246     | 2.2   | 343,886 | 14.2 |
| No follow-up, minimal toxicity| 871,253     | 42.9        | 33,205 | 10.9           | 5,309   | 34.8   | 22,655  | 36.9  | 1,563   | 14.1  | 933,985 | 38.5 |
| No follow-up, potentially toxic| 57,508     | 2.8         | 54,359 | 17.8          | 1,861   | 12.2   | 4,379   | 7.1   | 2,857   | 25.8  | 120,964 | 5.0  |
| Unrelated effect              | 45,857      | 2.3         | 5,511  | 1.8            | 1,012   | 6.6    | 8,887   | 14.5  | 1,184   | 10.7  | 62,451  | 2.6  |
| Total                         | 2,031,538   | 100.0       | 304,957 | 100.0       | 15,253  | 100.0  | 61,373  | 100.0 | 11,059  | 100.0 | 2,424,180 | 100.0 |
Table 21 also reports the highest blood concentrations for responsible agents when that information is known. In addition, Table 21 identifies those cases reported indirectly to the poison center (81, or 6.4% of 1,261 cases), and those cases in which a prehospital cardiac and/or respiratory arrest occurred (626, or 49.6% of cases).

Deaths are categorized in Table 21 according to the agent deemed most responsible for the death, by agreement of the medical director of the reporting center and at least two additional toxicologist reviewers. A single agent was reported as the probable cause in 621 (49.6%) deaths. Additional agents implicated (up to a maximum of 3 total agents) are listed below the primary agent. Cases in which more than three agents were involved are also identified, but agents beyond the first three are not listed in Table 21.

Characteristics of 1,261 Fatalities

The age distribution of reported fatalities is similar to that in past years, with the overwhelming majority of fatal cases occurring in adults age > 19 years (91%).

Pediatric Fatalities – Age Less than 6 Years

There were 24 fatalities reported in children younger than six years, similar to numbers reported over the last decade (Table 19). These pediatric cases represented 1.9% of total reported fatalities, similar to percentages reported over most of the last six years. The percentage of pediatric fatalities related to total pediatric calls was 0.003%. By comparison, 1.2% of all adult exposures reported recorded death as the medical outcome. Of the reported deaths in children younger than six years of age, 16 were known to be unintentional (Table 8). Two deaths in children younger than six years of age were coded as resulting from malicious intent. Of the 14 medication-associated deaths, one was from a nonprescription medication and 13 were associated with prescription medications (often not the child’s prescription). Of the prescription medications, five contained opioids, including three from methadone. While this number is less than the nine reported last year, it still represents a worrisome increase in opioid-related deaths in this age range compared to earlier years. There were three fatalities related to household products, a decrease from previous years.

Pediatric Fatalities – Ages 6–12 Years

In the age range 6 to 12 years, there were 12 reported fatalities, of which 9 were from carbon monoxide exposures.

Adolescent Fatalities – Ages 13–19 Years

In the age range 13 to 19 years, there were 77 reported fatalities, slightly higher than the mean of 71 deaths in this age group reported annually since 1999, but lower than the 90 reported in 2004. Looking at the reasons for the adolescent fatalities, 39.0% were presumed suicides, and 36.4% were caused by intentional abuse. These numbers are similar to those in most recent years except for 2003 when abuse was the most common reason. As in past years, only a small number (4/77 (5.2%)) of adolescent fatalities were coded as being unintentional; two cases were due to carbon monoxide.

All Fatalities – All Ages

The most common classes of substances involved across all fatalities were analgesics, sedative/hypnotics/antipsychotics, antidepressants and stimulants/street drugs (Table 18). This relative order is similar to that seen in recent years.
TABLE 15
Therapy provided in human exposure cases (frequency, divided by patient age groups)

| Therapy                                      | <6 y   | 6–12 y  | 13–19 y | >19 y  | Unknown | Total    |
|----------------------------------------------|--------|---------|---------|--------|---------|----------|
| **Decontamination**                          |        |         |         |        |         |          |
| Dilution/irrigation                          | 672,437| 71,836  | 47,992  | 282,751| 4,872   | 1,079,888|
| Activated charcoal, single dose              | 26,026 | 2,049   | 23,486  | 67,323 | 212     | 119,096  |
| Cathartic                                    | 5,932  | 634     | 8,034   | 23,942 | 82      | 38,624   |
| Gastric lavage                               | 633     | 82      | 2,339   | 9,175  | 26      | 12,255   |
| Other emetic                                 | 3,711   | 436     | 884     | 3,680  | 65      | 8,776    |
| Ipecac syrup                                 | 1,999   | 164     | 209     | 649    | 6       | 3,027    |
| Whole bowel irrigation                       | 211     | 31      | 508     | 2,054  | 5       | 2,809    |
| **Measures to enhance elimination**          |        |         |         |        |         |          |
| Activated charcoal, multidose                | 312     | 63      | 895     | 2,895  | 5       | 4,170    |
| Hemodialysis                                 | 7       | 10      | 101     | 1,610  | 2       | 1,730    |
| Other extracorporeal procedure               | 2       | 0       | 3       | 30     | 0       | 35       |
| Hemoperfusion                                | 1       | 0       | 2       | 27     | 0       | 30       |
| **Other interventions**                      |        |         |         |        |         |          |
| Food/snack given                             | 123,394 | 10,191  | 5,858   | 28,823 | 313     | 168,579  |
| Other procedure                              | 46,713  | 10,442  | 15,719  | 92,764 | 973     | 166,611  |
| Intravenous fluids                           | 4,576   | 1,294   | 14,998  | 64,918 | 136     | 85,922   |
| Fresh air                                    | 8,367   | 5,522   | 6,515   | 61,888 | 2,504   | 84,796   |
| Oxygen                                       | 1,384   | 673     | 2,663   | 25,409 | 195     | 30,324   |
| Antihistamines                               | 3,229   | 2,149   | 2,188   | 13,346 | 130     | 21,042   |
| Antibiotics                                  | 2,382   | 1,258   | 1,594   | 13,396 | 97      | 18,727   |
| Intubation                                   | 431     | 110     | 1,352   | 13,440 | 42      | 15,375   |
| Mechanical ventilation                       | 353     | 83      | 1,164   | 11,655 | 32      | 13,287   |
| Antiemetic administration                    | 318     | 195     | 2,570   | 5,661  | 17      | 8,761    |
| Sedation                                     | 241     | 71      | 869     | 6,844  | 16      | 8,041    |
| Steroids                                     | 773     | 539     | 596     | 5,815  | 61      | 7,784    |
| Bronchodilators                              | 513     | 236     | 397     | 4,371  | 23      | 5,540    |
| Vasopressors                                 | 57      | 30      | 237     | 3,362  | 7       | 3,693    |
| Glucose                                      | 232     | 29      | 179     | 1,909  | 1       | 2,350    |
| Neuromuscular blocker                        | 46      | 15      | 176     | 1,175  | 3       | 1,415    |
| Antihypertensive blocker                     | 7       | 8       | 104     | 1,171  | 4       | 1,294    |
| Anticonvulsants                              | 76      | 24      | 130     | 697    | 2       | 929      |
| Cardiopulmonary resuscitation (CPR)          | 27      | 8       | 65      | 573    | 3       | 676      |
| Antiarrhythmic                               | 14      | 5       | 62      | 436    | 0       | 517      |
| Pacemaker                                    | 2       | 0       | 9       | 196    | 1       | 208      |
| Cardioversion                                | 3       | 0       | 17      | 178    | 0       | 198      |
| Alkalization                                 | 126     | 75      | 1,709   | 6,776  | 27      | 8,713    |
| Hyperbaric oxygen                            | 40      | 43      | 37      | 323    | 3       | 446      |
| ECMO                                         | 3       | 0       | 2       | 1      | 0       | 6        |
| Organ transplantation                        | 1       | 1       | 3       | 21     | 0       | 26       |
| **Specific antidote administration**         |        |         |         |        |         |          |
| Benzodiazepine                               | 730     | 302     | 3,105   | 14,038 | 25      | 18,200   |
| N-acetylcysteine (oral)                      | 216     | 82      | 3,433   | 9,446  | 39      | 13,216   |
| Naloxone                                     | 523     | 109     | 1,306   | 10,899 | 30      | 12,867   |
| Calcium                                      | 7,771   | 409     | 222     | 1,767  | 4       | 10,173   |
| N-acetylcysteine (IV)                        | 121     | 53      | 1,805   | 5,052  | 10      | 7,041    |
| Flumazenil                                   | 83      | 11      | 182     | 1,757  | 8       | 2,041    |
| Nalinefene                                   | 1       | 0       | 3       | 8      | 0       | 12       |
| Hydroxocobalam                               | 0       | 0       | 0       | 4      | 0       | 4        |

Continued
Looking only at primary agents thought responsible for a poisoning death, the order changes to analgesics, stimulants/street drugs, antidepressants, cardiovascular agents, and sedative/hypnotics/antipsychotics:

In 416 fatalities, an analgesic was felt to be the primary responsible agent. Forty-eight were associated with acetaminophen as a single agent, 47 with acetaminophen plus one or two other drugs, and 92 with an acetaminophen combination product (often acetaminophen plus an opioid).

There were 20 fatalities where aspirin as a single agent was felt to be responsible. Nine acute cases recorded salicylate concentrations measured >100 mg/dL. Most of these cases did not undergo dialysis within a useful time frame. These data suggest that more aggressive and earlier use of dialysis may be indicated in the treatment of large salicylate ingestions.

Sixty-nine deaths were attributed to methadone (versus 76 cases in 2004) and 31 were attributed to oxycodone (versus 31 cases in 2004). Long-acting opioid preparations (controlled release or transdermal) other than methadone were felt to be the primary responsible agent in 32 deaths in 2005.

The second most common class of drugs associated with fatalities as the primary agent was stimulants and street drugs (148). Cocaine was noted as the primary agent in 76 cases. There was a marked jump in cases where heroin was coded as the primary agent, with 38 deaths in 2005 compared to 22 deaths in 2004 and 23 deaths in 2003. Twenty-six deaths were thought primarily related to methamphetamine use (compared to 26 cases in 2004). For the first time in three years (since 2002), gamma-hydroxybutyrate was listed as the likely cause of a poisoning fatality.

Antidepressants were the third most common class of drugs reported. When coded as the primary agent, they account for 128 deaths, similar to other recent years. Buproprion (35 deaths) surpassed amitriptyline (21 deaths) as the single most commonly recorded antidepressant associated with fatalities.

The fourth most common class of drugs associated with fatalities as the primary agent was cardiovascular agents, accounting for 120 deaths. The two most common drugs in this class were verapamil and diltiazem, accounting for 30 and 23 deaths, respectively. Long-acting preparations accounted for 33 of the deaths in this class.

### Table 15 (Continued)

| Therapy                  | <6 y | 6–12 y | 13–19 y | >19 y | Unknown | Total |
|--------------------------|------|--------|---------|-------|---------|-------|
| Fomepizole               | 97   | 17     | 79      | 1,012 | 1       | 1,206 |
| Antivenom (Fab)          | 74   | 100    | 116     | 846   | 4       | 1,140 |
| Atropine                 | 83   | 20     | 59      | 861   | 2       | 1,025 |
| Glucagon                 | 18   | 8      | 42      | 876   | 0       | 944   |
| Insulin                  | 3    | 4      | 39      | 774   | 1       | 821   |
| Phytanadione             | 51   | 5      | 70      | 524   | 1       | 651   |
| Fab fragments            | 21   | 26     | 22      | 514   | 1       | 584   |
| Folate                   | 13   | 0      | 31      | 538   | 0       | 582   |
| Pyridoxine               | 17   | 12     | 68      | 307   | 1       | 405   |
| Ethanol                  | 22   | 4      | 32      | 320   | 0       | 378   |
| Antivenom (excluding Fab)| 40   | 38     | 28      | 227   | 0       | 333   |
| Succimer                 | 130  | 9      | 6       | 80    | 2       | 227   |
| Octreotide               | 33   | 4      | 22      | 144   | 0       | 203   |
| Phystostigmine           | 6    | 3      | 52      | 121   | 0       | 182   |
| EDTA                     | 70   | 7      | 0       | 21    | 1       | 99    |
| Methylene blue           | 14   | 1      | 6       | 75    | 0       | 96    |
| Pralidoxime (2-PAM)      | 15   | 1      | 2       | 71    | 0       | 89    |
| Deferoxamine             | 28   | 0      | 23      | 31    | 0       | 82    |
| Dimercaprol (BAL)        | 28   | 2      | 1       | 29    | 1       | 61    |
| Sodium thiosulfate       | 2    | 2      | 2       | 47    | 2       | 55    |
| Sodium nitrite           | 0    | 0      | 6       | 24    | 2       | 32    |
| Penicillamine            | 1    | 0      | 1       | 8     | 0       | 10    |
| Amyl nitrite             | 1    | 0      | 2       | 5     | 0       | 8     |
The fifth most common class of drugs as the primary agent associated with deaths were the sedative hypnotics/antipsychotics. These drugs were reported as an agent of exposure 415 times, with 76 cases listing a sedative/hypnotic/antipsychotic as the primary agent. As in recent years past, alprazolam and quetiapine are the most common drugs involved, most typically in combination with other drugs.

The vast majority (75.4%) of reported fatalities in 2005, as in past years, were the result of intentional actions. The percentage of fatalities attributable to other reasons remained little changed from previous years (Table 8). A disturbing number of deaths continue to occur because of therapeutic errors; the 61 cases reported in 2005 are more than the numbers in the three previous years (41 cases in 2004, 48 cases in 2003, and 54 in 2002). Adverse drug reactions were also reported as contributing to 28 deaths.

The 10 occupational-related deaths in 2005 were similar to 2004, but fewer than in any year since 1999 (11 cases in 2004). As in the previous 3 years, there were no reported fatalities from product tampering.

### TABLE 16
Decontamination trends

| Year | Human exposures reported | Ipecac administered (% of all exposures) | Activated charcoal administered (% of all exposures) | % of exposures involving children <6 y | Ipecac administered (% of child exposures) | Activated charcoal administered (% of child exposures) |
|------|--------------------------|----------------------------------------|----------------------------------------------------|--------------------------------------|------------------------------------------|----------------------------------------------------|
| 1985 | 886,389                  | 132,947 (15.0)                         | 41,063 (4.6)                                       | 568,691 (64.2)                       | 94,919 (10.7)                             | 14,718 (1.7)                                       |
| 1986 | 1,095,228                | 145,516 (13.3)                         | 56,481 (5.2)                                       | 690,137 (63.0)                       | 99,688 (9.1)                              | 18,191 (1.7)                                       |
| 1987 | 1,164,648                | 117,840 (10.1)                         | 60,310 (5.2)                                       | 730,228 (62.7)                       | 83,443 (7.2)                              | 18,507 (1.6)                                       |
| 1988 | 1,364,113                | 114,654 (8.4)                          | 88,876 (6.5)                                       | 843,106 (61.8)                       | 80,749 (5.9)                              | 26,118 (1.9)                                       |
| 1989 | 1,578,968                | 110,545 (7.0)                          | 101,368 (6.4)                                      | 963,924 (61.0)                       | 79,192 (5.0)                              | 30,345 (1.9)                                       |
| 1990 | 1,646,946                | 98,986 (6.0)                           | 108,341 (6.6)                                      | 999,751 (60.7)                       | 73,469 (4.5)                              | 31,579 (1.9)                                       |
| 1991 | 1,836,364                | 94,877 (5.2)                           | 129,092 (7.0)                                      | 1,099,179 (59.9)                     | 73,069 (4.0)                              | 36,177 (2.0)                                       |
| 1992 | 1,862,796                | 79,493 (4.3)                           | 135,625 (7.3)                                      | 1,094,256 (58.7)                     | 63,486 (3.4)                              | 38,937 (2.1)                                       |
| 1993 | 1,747,147                | 65,078 (3.7)                           | 127,893 (7.3)                                      | 978,560 (56.0)                       | 50,834 (2.9)                              | 35,791 (2.0)                                       |
| 1994 | 1,926,992                | 51,356 (2.7)                           | 138,247 (7.2)                                      | 1,042,651 (54.1)                     | 41,489 (2.2)                              | 35,670 (1.9)                                       |
| 1995 | 2,023,089                | 47,359 (2.3)                           | 155,880 (7.7)                                      | 1,070,472 (52.9)                     | 38,372 (1.9)                              | 38,095 (1.9)                                       |
| 1996 | 2,155,952                | 39,376 (1.8)                           | 157,331 (7.3)                                      | 1,137,263 (52.7)                     | 32,622 (1.5)                              | 37,986 (1.8)                                       |
| 1997 | 2,192,088                | 32,098 (1.5)                           | 156,213 (7.1)                                      | 1,150,931 (52.5)                     | 26,536 (1.2)                              | 35,856 (1.6)                                       |
| 1998 | 2,241,082                | 26,653 (1.2)                           | 152,134 (6.8)                                      | 1,180,989 (52.7)                     | 22,247 (1.0)                              | 34,302 (1.5)                                       |
| 1999 | 2,201,156                | 21,942 (1.0)                           | 145,853 (6.6)                                      | 1,154,799 (52.5)                     | 18,326 (0.8)                              | 33,812 (1.5)                                       |
| 2000 | 2,168,248                | 18,177 (0.8)                           | 145,911 (6.7)                                      | 1,142,796 (52.7)                     | 15,239 (0.7)                              | 31,554 (1.5)                                       |
| 2001 | 2,267,979                | 16,058 (0.7)                           | 149,442 (6.6)                                      | 1,169,478 (51.6)                     | 13,389 (0.6)                              | 30,367 (1.3)                                       |
| 2002 | 2,380,028                | 13,555 (0.6)                           | 149,527 (6.3)                                      | 1,227,381 (51.6)                     | 11,163 (0.5)                              | 30,340 (1.3)                                       |
| 2003 | 2,395,582                | 9,284 (0.4)                            | 140,412 (5.9)                                      | 1,245,584 (52.0)                     | 7,310 (0.3)                               | 28,888 (1.2)                                       |
| 2004 | 2,438,643                | 4,701 (0.2)                            | 135,969 (5.6)                                      | 1,250,536 (51.3)                     | 3,366 (0.1)                               | 28,335 (1.2)                                       |
| 2005 | 2,424,180                | 3,027 (0.1)                            | 123,263 (5.1)                                      | 1,233,695 (50.9)                     | 1,999 (0.1)                               | 26,338 (1.1)                                       |

### Demographic Data

Tables 22A and 22B provide summary demographic data on patient age, reason for exposure, medical outcome, and use of a health care facility for all 2,424,166 exposures, presented by substance categories. Table 22A focuses on nonpharmaceuticals; Table 22B presents drug/pharmaceuticals. Of the 2,765,665 substances logged in Tables 22A and 22B, 48.9% were nonpharmaceuticals, and 51.1% were pharmaceuticals.

The reason for the exposure was intentional for 29.2% of pharmaceutical substances implicated, compared with 5.6% of nonpharmaceutical substances. Correspondingly, treatment in a health care facility was provided in a higher percentage of exposures to pharmaceutical substances (41.4%), compared with nonpharmaceutical substances (18.5%). Pharmaceutical exposures also had more severe outcomes. Of substances implicated in fatal cases, 84.8% were pharmaceuticals, compared with 51.0% of substances reported in nonfatal cases. Similarly, 85.9% of substances implicated in major outcomes were pharmaceuticals.
In 2005, real-time monitoring of cases submitted to the AAPCC’s national database was expanded to include new surveillance case definitions, and enhanced toxicosurveillance at the regional PCC level. Monitoring results were reviewed daily by a team of five medical and clinical toxicologists working across four time zones. The core approach included monitoring of increased PCC case activity, increased reporting of clinical effects as compared to a three-year baseline, and cases that met surveillance case definitions as described in the 2003 AAPCC Annual Report.

Sixty of 61 U.S. PCCs continue to submit data to the AAPCC’s database in almost real time, with most centers submitting cases every 4 to 10 minutes. When outliers are identified, surveillance query results are automatically sent for analysis to toxicologists at the AAPCC. When reports of potential public health importance are detected, additional information is obtained via e-mail or phone from reporting PCCs. Public health issues are brought to the attention of the National Center for Environmental Health/Agency for Toxic Substances Disease Registry at the Centers for Disease Control and Prevention. Affected state or local health departments are also alerted.

Data on clinical effect anomalies are provided daily to 43 individual poison centers, covering all, or parts of, 39 states. In a few cases, results are also sent directly to state or local health departments. In most states, results are interpreted by PCC staff before the results are communicated to the appropriate health authorities.

Individual PCCs have developed surveillance case definitions, and new monitors identify cases that meet these definitions. Current surveillance definitions identify cases that have clinical effects suggestive of nerve agents, cyanide, arsenic, botulism, ricin, anthrax (systemic and dermal), irritant gases,
smallpox, arenavirus, radiation, and puffer fish ingestions with neurological effects. These monitors have been implemented in response to public health issues or concerns, and are run daily at 1- to 12-hour intervals. Cases coded as specific substances, for example, arsenic, ricin, carbon monoxide, and food poisoning/food products, are also monitored. Surveillance processes and anomaly definitions continue to be developed, refined, and evaluated.

Most notably in 2005, information collected by U.S. PCCs in Gulf Coast states was used to provide post-hurricane situation awareness on substances of interest following Hurricanes Katrina (August 2005) and Rita (September 2005). Daily reports were generated and evaluated by toxicologists at the AAPCC and Centers for Disease Control (CDC) in order to identify and target where to deploy additional personnel, educational materials and public service announcements. Substances of interest included carbon monoxide, snake envenomations, reports of suspected food poisoning and water contamination, and gasoline (hydrocarbon) ingestion which may correlate with gas siphoning. This reporting system has remained in place since 2005 and continues to be used for hurricane season 2006.

### Database Enhancements

In 2005, the AAPCC embarked on one of its largest and most important projects since its founding in 1958: development of new database software and migration to web-hosting of the information currently stored in the AAPCC’s national poisoning and exposure database. Since 1993, the database has been used to answer many toxicology related questions from individual poison centers, academic researchers, public health personnel, and corporate research and development teams.

The new new web-based software for querying, reporting and surveillance application will allow the AAPCC, its

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**TABLE 17C**

Substances most frequently involved in adult exposures (>19 years)

| Substance                              | No.   | %  |
|----------------------------------------|-------|----|
| Analgesics                             | 126,901| 15.0 |
| Sedative/hypnotics/antipsychotics      | 101,853| 12.0 |
| Cleaning substances (household)        | 77,087 | 9.1  |
| Antidepressants                        | 65,573 | 7.7  |
| Bites and envenomations                | 57,579 | 6.8  |
| Cardiovascular drugs                   | 49,096 | 5.8  |
| Alcohols                               | 44,137 | 5.2  |
| Pesticides                            | 42,472 | 5.0  |
| Cosmetics/personal care products       | 37,834 | 4.5  |
| Food products/food poisoning           | 36,005 | 4.2  |
| Hydrocarbons                           | 28,281 | 3.3  |
| Chemicals                              | 27,876 | 3.3  |
| Fumes/gases/vapors                     | 26,679 | 3.1  |
| Anticonvulsants                        | 26,374 | 3.1  |
| Antihistamines                         | 24,745 | 2.9  |
| Antimicrobials                         | 23,950 | 2.8  |
| Stimulants and street drugs            | 23,238 | 2.7  |
| Hormones and hormone antagonists       | 22,406 | 2.6  |
| Cold and cough preparations            | 21,257 | 2.5  |
| Muscle relaxants                       | 17,687 | 2.1  |
| Topical preparations                   | 15,042 | 1.8  |
| Gastrointestinal preparations          | 12,591 | 1.5  |
| Foreign bodies/toys/miscellaneous      | 11,599 | 1.4  |

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

*Percentages are based on the total number of exposures in adults older than 19 years (847,483) rather than the total number of substances.

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**TABLE 18**

Categories associated with largest number of reported deaths

| Substance                              | No. of cases with substance | % of all exposures in category |
|----------------------------------------|-----------------------------|-------------------------------|
| Analgesics                             | 696                         | 0.246                         |
| Sedative/hypnotics/antipsychotics      | 384                         | 0.284                         |
| Antidepressants                        | 317                         | 0.323                         |
| Stimulants and street drugs            | 253                         | 0.551                         |
| Cardiovascular drugs                   | 234                         | 0.300                         |
| Alcohols                               | 131                         | 0.179                         |
| Anticonvulsants                        | 79                          | 0.199                         |
| Antihistamines                         | 78                          | 0.103                         |
| Fumes/gases/vapors                     | 77                          | 0.197                         |
| Muscle relaxants                       | 73                          | 0.310                         |
| Hormones and hormone antagonists       | 57                          | 0.113                         |
| Chemicals                              | 55                          | 0.119                         |
| Unknown drug                           | 50                          | 0.287                         |
| Cleaning substances (household)        | 36                          | 0.016                         |
| Gastrointestinal preparations          | 29                          | 0.059                         |
| Pesticides                            | 23                          | 0.023                         |
| Automotive/aircraft/boat products      | 22                          | 0.040                         |
| Antimicrobials                         | 20                          | 0.030                         |
| Miscellaneous drugs                    | 19                          | 0.084                         |
| Cold and cough preparations            | 18                          | 0.016                         |
| Diuretics                              | 17                          | 0.173                         |
| Hydrocarbons                           | 13                          | 0.024                         |
| Anticoagulants                         | 12                          | 0.219                         |

Substance categories associated with deaths reported by 60 of 61 U.S. Poison Control Centers (PCCs). Numbers represent total exposures associated with 1,261 fatalities; each fatality may have had exposure to more than one category of agent.
member centers and public health agencies to study U.S. poisoning exposures. Users will be able to access local and regional data for their own areas and view national aggregate data. The new application allows for increased “drill-down” capability and Mapping (GIS). Custom surveillance definitions will be available along with ad hoc reporting tools. The new software will serve the AAPCC well into the 21st century.

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| Case | Age | Substances                  | Chronicity | Route       | Reason      | Blood concentrations | Interval after exposure |
|------|-----|-----------------------------|------------|-------------|-------------|----------------------|-------------------------|
| 1    | 17 yr | ethanol                     | A          | Ingestion   | Int abuse   | 340 mg/dL            |                         |
| 2 p  | 25 yr | ethanol                     | C          | Ingestion   | Int abuse   | 30 mg/dL            | 30 mg/dL                |
| 3    | 36 yr | ethanol                     | A/C        | Ingestion   | Int abuse   | 1,199 mg/dL         |                         |
| 4    | 42 yr | ethanol                     | C          | Ingestion   | Int abuse   |                       |                         |
| 5    | 46 yr | ethanol                     | A          | Ingestion   | Int abuse   |                       |                         |
| 6    | 71 yr | ethanol                     | C          | Ingestion   | Unknown     | 67 mg/dL             |                         |
| 7    | 79 yr | ethanol                     | A          | Ingestion   | Unknown     | 515 mg/dL            |                         |
| 8 i  | >19 yr| ethanol                     | U          | Ingestion   | Int abuse   |                       |                         |
| 9    | 55 yr | alcohol                     | U          | Ingestion   | Int abuse   |                       |                         |
|      |      | amphetamines                |            |             |             |                      |                         |
|      |      | tricyclic antidepressant^A  |            |             |             |                      |                         |
| 10 p | 53 yr | ethanol                     | A          | Ingestion   | Int abuse   | 532 mg/dL            |                         |
|      |      | benzodiazepine              |            |             |             |                      |                         |
| 11 p | 60 yr | ethanol                     | A/C        | Ingestion   | Int suicide | 180 mg/dL            | 180 mg/dL               |
|      |      | bromethalin                 |            |             |             |                      |                         |
|      |      | household cleaner           |            |             |             |                      |                         |
| 12   | 59 yr | ethanol                     | C          | Ing/Inh     | Int suicide | 34 mg/dL             |                         |
|      |      | cocaine                     |            |             |             |                      |                         |
|      |      | marijuana                   |            |             |             |                      |                         |
| 13   | 49 yr | ethanol                     | A          | Ingestion   | Unknown     |                       |                         |
|      |      | ethylene glycol             |            |             |             |                      |                         |
| 14 p | 62 yr | ethanol                     | U          | Derm/Ing    | Unknown     | 220 mg/dL            | 1.2 ng/mL               |
|      |      | fentanyl patch              |            |             |             |                      |                         |
|      |      | metoclopramide^A            |            |             |             |                      |                         |
| 15   | 62 yr | ethanol                     | C          | Ingestion   | Int abuse   |                       |                         |
|      |      | isopropyl alcohol           |            |             |             |                      |                         |
|      |      | quetiapine                  |            |             |             |                      |                         |
| 16   | 50 yr | ethanol                     | C          | Ingestion   | Int abuse   |                       |                         |
|      |      | kava kava                   |            |             |             |                      |                         |
|      |      | valerian^A                  |            |             |             |                      |                         |
| 17   | 25 yr | ethanol                     | C          | Ing/Inh     | Withdrawal  |                       |                         |
|      |      | marijuana                   |            |             |             |                      |                         |
| 18 p | 51 yr | ethanol                     | U          | Ingestion   | Int suicide | 340 mg/dL            | 70 ng/mL               |
|      |      | oxycodone                   |            |             |             | 100 ng/mL            |                         |
|      |      | trazodone^A                 |            |             |             |                      |                         |
| 19   | 61 yr | isopropyl alcohol           | U          | Ingestion   | Int suicide | 16 mg/dL acetone     | 17 mg/dL               |
|      |      | ethanol                     |            |             |             |                      |                         |
|      |      | cocaine                     |            |             |             |                      |                         |
|      |      | fomepizole                  |            |             |             |                      |                         |
| 20   | 43 yr | methanol                    | A          | Ingestion   | Unknown     | 139 mg/dL            |                         |
| 21   | 44 yr | methanol                    | A          | Ingestion   | Int suicide | 256 mg/dL            |                         |
| 22   | 56 yr | methanol                    | A          | Ingestion   | Int suicide | 193 mg/dL            |                         |
| 23   | 57 yr | methanol                    | A          | Ingestion   | Int suicide | 265 mg/dL            |                         |
| 24   | 44 yr | methanol                    | A          | Ing/Unk     | Int suicide | 197 mg/dL            |                         |
| 25   | 44 yr | methanol                    | A          | Ing/Paren   | Int suicide |                       |                         |
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| Case ID | Age | Sex | Substance | Route | Method | Outcome |
|---------|-----|-----|-----------|-------|--------|---------|
| 26      | 42yr| unk | alcohol   | Ingestion | Int | suicide |
| 27p     | 48yr| unk | alcohol   | Ingestion | Int | suicide |

See also cases 19, 48, 55, 59, 60, 80, 92, 113, 185, 218, 219, 289, 292 thru 294, 296, 299 thru 308, 314, 351, 352, 385 thru 390, 419, 420, 451, 452, 468, 482, 486, 492, 534, 555, 556, 593, 596, 604, 614, 619, 648, 691, 701 thru 703, 728, 729, 732, 734, 735, 745, 768, 787, 792, 813, 877, 891, 892, 939, 944, 957, 958, 966, 1,016 thru 1,018, 1,030, 1,036, 1,092, 1,093, 1,156, 1,157, 1,223 (ethanol); 15, 114, 314, 605 (isopropyl alcohol).

#### Automotive/aircraft/boat products

| Case ID | Age | Sex | Substance | Route | Method | Outcome |
|---------|-----|-----|-----------|-------|--------|---------|
| 28      | 27yr| antifreeze (ethylene glycol) | Ingestion | Int | suicide |
| 29i     | 40yr| antifreeze (ethylene glycol) | Ingestion | Int | suicide |
| 30p     | 40'syr| antifreeze (ethylene glycol) | Ingestion | Int | suicide |
| 31p     | 41yr| antifreeze (ethylene glycol) | Ingestion | Int | suicide |
| 32      | 47yr| antifreeze (ethylene glycol) | Ingestion | Int | suicide |
| 33      | 48yr| antifreeze (ethylene glycol) | Ingestion | Int | suicide |
| 34      | 51yr| antifreeze (ethylene glycol) | Ingestion | Int | suicide |
| 35p     | 54yr| antifreeze (ethylene glycol) | Ingestion | Int | suicide |
| 36p     | 55yr| antifreeze (ethylene glycol) | Ingestion | Int | suicide |
| 37      | 59yr| antifreeze (ethylene glycol) | Ingestion | Int | suicide |
| 38      | 64yr| antifreeze (ethylene glycol) | Ingestion | Int | suicide |
| 39      | 76yr| antifreeze (ethylene glycol) | Ingestion | Unint | misuse |
| 40      | 25yr| antifreeze (ethylene glycol) | Ingestion | Int | suicide |

#### Acetaminophen / diphenhydramine

| Case ID | Age | Sex | Substance | Route | Method | Outcome |
|---------|-----|-----|-----------|-------|--------|---------|
| 42      | 45yr| antifreeze (ethylene glycol) | Ingestion | Int | suicide |

#### Acetaminophen / oxycodone

| Case ID | Age | Sex | Substance | Route | Method | Outcome |
|---------|-----|-----|-----------|-------|--------|---------|
| 43      | 27yr| antifreeze (ethylene glycol) | Int/Paren/Unk | Unint | misuse |

#### Midazolam / cocaine

| Case ID | Age | Sex | Substance | Route | Method | Outcome |
|---------|-----|-----|-----------|-------|--------|---------|
| 44      | 55yr| antifreeze (ethylene glycol) | Ingestion | Int | suicide |

#### Automotive product (methanol)

| Case ID | Age | Sex | Substance | Route | Method | Outcome |
|---------|-----|-----|-----------|-------|--------|---------|
| 45p     | 35yr| automotive product (methanol) | Ingestion | Int | suicide |
| 46p     | 29yr| brake fluid (glycol ethers/ diethylene glycol) | Asp/Ing | Int | suicide |
| 47      | 30'syr| carburetor cleaner (ethylene glycol) | Ingestion | Int | suicide |

#### Fuel injector (methanol)

| Case ID | Age | Sex | Substance | Route | Method | Outcome |
|---------|-----|-----|-----------|-------|--------|---------|
| 48      | 41yr| fuel injector (methanol) | Ingestion | Int | abuse |

#### Methanol / glycol

| Case ID | Age | Sex | Substance | Route | Method | Outcome |
|---------|-----|-----|-----------|-------|--------|---------|
| 49      | 46yr| methanol / glycol | Ingestion | Int | unk | methanol 449 mg/dL |
| 50      | 55yr| windshield washer (methanol) | Ingestion | Int | abuse |
| 51      | 25yr| windshield washer fluid | Ingestion | Int | suicide |

#### Windshield washer fluid (methanol)

| Case ID | Age | Sex | Substance | Route | Method | Outcome |
|---------|-----|-----|-----------|-------|--------|---------|
| 52      | 53yr| windshield washer fluid | Ingestion | Int | suicide |

### Batteries

| Case ID | Age | Sex | Substance | Route | Method | Outcome |
|---------|-----|-----|-----------|-------|--------|---------|
| 53      | 18mo| button (disc) battery | Ingestion | Unint | gen |

### Bites and envenomations

| Case ID | Age | Sex | Species | Route | Method | Outcome |
|---------|-----|-----|---------|-------|--------|---------|
| 54      | 55yr| Crotalus adamanteus | Bite / sting | Bite / sting |
| 55ip    | 25yr| Crotalus horridus horridus | Bite / sting | Bite / sting |

#### Ethanol

| Case ID | Age | Sex | Substance | Route | Method | Outcome |
|---------|-----|-----|-----------|-------|--------|---------|
| 56ip    | 44yr| Hymenoptera | Bite / sting | Bite / sting |
| 57p     | 32yr| rattlesnake | Bite / sting | Bite / sting |

Continued
TABLE 21  
(Continued)

| Case | Age | Substances | Chronicity | Route  | Reason       | Blood concentrations | Interval after exposure |
|------|-----|------------|------------|--------|--------------|----------------------|-------------------------|
| 58   | 44 yr | rattlesnake | A          | Bite/sting | Bite/sting  | 160 mg/dL           | §                       |
| 59 p | 43 yr | snake, crotaline ethanol | A          | Bite/sting | Bite/sting  | 120 mg/dL           | §                       |
| 60 ip| 44 yr | snake, crotaline ethanol | A          | Bite/sting | Bite/sting  |                      | §                       |

Building and construction products
| Case | Age | Substances                                                                 | Chronicity | Route  | Reason       | Blood concentrations | Interval after exposure |
|------|-----|-----------------------------------------------------------------------------|------------|--------|--------------|----------------------|-------------------------|
| 61   | 64 yr | propane/n-butylacetate/isobutane/hydrocarbon                                | A          | Inhalation | Env          |                      | §                       |

See also case 86 (soldering flux (hydrochloric acid)).

Chemicals
| Case | Age | Substances                                                                 | Chronicity | Route  | Reason       | Blood concentrations | Interval after exposure |
|------|-----|-----------------------------------------------------------------------------|------------|--------|--------------|----------------------|-------------------------|
| 62   | 19 yr | ammonia bleach (sodium hypochlorite)                                       | A          | Asp/Ing | Int suicide  |                      | §                       |
| 63 p | 23 yr | cyanide                                                                    | A          | Ingestion | Int suicide  | >10 μg/mL            | §                       |
| 64 p | 51 yr | cyanide                                                                    | A          | Ingestion | Int suicide  | 3.3 μg/mL            | §                       |
| 65   | 51 yr | cyanide                                                                    | A          | Ingestion | Int suicide  | 0.34 μg/mL           | §                       |
| 66   | 55 yr | cyanide                                                                    | A          | Ingestion | Int suicide  | 2 μg/mL              | §                       |
| 67   | 54 yr | cyanide                                                                    | A          | Inhalation | Env          |                      | §                       |
| 68   | 26 yr | ethylene glycol                                                            | A          | Ingestion | Int suicide  | 81 mg/dL             | §                       |
| 69   | 41 yr | ethylene glycol                                                            | A          | Ingestion | Unknown      | 12 mg/dL             | §                       |
| 70 p | 41 yr | ethylene glycol                                                            | A          | Ingestion | Int suicide  | 90 mg/dL             | §                       |
| 71   | 43 yr | ethylene glycol                                                            | A          | Ingestion | Int suicide  |                      | §                       |
| 72   | 47 yr | ethylene glycol                                                            | A          | Ingestion | Int suicide  | 1,033 mg/dL          | §                       |
| 73   | 50 yr | ethylene glycol                                                            | A          | Ingestion | Int suicide  |                      | §                       |
| 74   | 50 yr | ethylene glycol                                                            | A          | Ingestion | Int suicide  |                      | §                       |
| 75   | 55 yr | ethylene glycol                                                            | A          | Ingestion | Int suicide  | 202.6 mg/dL          | §                       |
| 76   | 63 yr | ethylene glycol                                                            | A          | Ingestion | Int suicide  | 865 mg/dL            | §                       |
| 77   | 78 yr | ethylene glycol                                                            | A          | Ingestion | Int suicide  | 104.3 mg/dL          | §                       |
| 78   | 41 yr | ethylene glycol                                                            | A          | Ingestion | Int suicide  |                      | §                       |
| 79   | 48 yr | ethylene glycol                                                            | A          | Ingestion | Int suicide  | 83 mg/dL             | §                       |
| 80 p | 49 yr | ethylene glycol ethanol acetic acid (4–6%)                                  | A          | Ingestion | Malicious    |                      | §                       |
| 81   | 63 yr | ethylene glycol fentanyl patch                                              | A          | Derm/Ing | Int suicide  |                      | §                       |
| 82   | 42 yr | ethylene glycol lamotrigine                                                | A          | Ingestion | Int suicide  |                      | §                       |
| 83   | 47 yr | ethylene glycol risperidone                                                | A          | Ing/Paren | Unknown      | 80.5 mg/dL           | §                       |
| 84   | 40 yr | ethylene glycol unk drug                                                   | U          | Ing/Unk  | Int suicide  |                      | §                       |
| 85 p | 24 yr | formaldehyde/methanol                                                       | A          | Ingestion | Int suicide  | methanol 43 mg/dL    | §                       |
| 86   | 47 yr | hydrochloric acid soldering flux (hydrochloric acid)                        | A          | Ingestion | Int suicide  |                      | §                       |
| #  | Age  | Substance                                           | Route   | Outcome       |
|----|------|-----------------------------------------------------|---------|---------------|
| 87 | 58   | hydrofluoric acid/sulfuric acid/phosphoric acid     | Ingestion | Unint misuse  |
| 88 | 50’s | methyl bromide                                      | Unknown | Occ           |
| 89 | 55   | unk acid                                            | Ingestion | Int suicide  |
| 90 | 20   | unk chemical                                        | Ingestion | Int suicide  |
| 91 | 81   | unk chemical                                        | Ingestion | Unknown      |
| 92 | 53   | unk chemical                                        | U       | Ingestion     | Int abuse    |

See also cases 221, 705, 1062 (activated charcoal); 381, 1196 (cocaïne); 184 (cyanide); 13,308 (ethylene glycol); 157 (hydrochloric acid); 324, 783,1157 (unk chemical).

Cleaning substances (household)

| #  | Age  | Substance                                           | Route   | Outcome       |
|----|------|-----------------------------------------------------|---------|---------------|
| 93 | 67   | bleach, household (hypochlorite)                    | Ingestion | Unint gen    |
| 94 | 67   | bleach, industrial (sodium hypochlorite)            | Ingestion | Int suicide  |
| 95 | 67   | cleaner (anionic/nonionic)                          | Asp/Ing  | Unint misuse  |
| 96 | 48   | dishwashing detergent (anionic/nonionic)            | Asp/Ing  | Unint misuse  |
| 97 | 83   | dishwashing detergent (anionic/nonionic)            | Asp/Ing  | Unint misuse  |
| 98 | 85   | dishwashing detergent (anionic/nonionic)            | Ingestion | Unint misuse  |
| 99 | 85   | dishwashing detergent (anionic/nonionic)            | Asp/Ing  | Unint misuse  |
| 100| 87   | disinfectant (cationic)                             | Asp/Ing  | Unint misuse  |
| 101| 54   | drain opener (alkali)                               | Ingestion | Int suicide  |
| 102| 50   | drain opener (hydrochloric acid, 10–20%)            | Ingestion | Int suicide  |
| 103| 78   | drain opener (sodium hydroxide)                     | Ingestion | Unint gen    |
| 104| 58   | drain opener (sodium hydroxide/sodium hypochlorite)| Ingestion | Int suicide  |
| 105| ip   | drain opener (sodium hydroxide/sodium hypochlorite)| Derm/Ing | Int suicide  |
| 106| 80   | drain opener (sulfuric acid)                        | Ingestion | Unknown      |
| 107| 60   | laundry detergent (solvent-based) metal polish      | Asp/Ing  | Int suicide  |
| 108| p    | pine oil cleaner                                    | Asp/Ing  | Unknown      |
| 109| p    | pine oil/isopropyl alcohol cleaner                  | Asp/Ing  | Unint gen    |
| 110| p    | pine oil/isopropyl alcohol cleaner                  | Asp/Ing  | Unint misuse  |
| 111| p    | pine oil/isopropyl alcohol cleaner                  | Ingestion | Unint misuse |
| 112| p    | pine oil/isopropyl alcohol cleaner                  | Asp/Ing  | Unknown      |

Continued
| Case | Age  | Substances                                      | Chronicity | Route | Reason     | Blood concentrations | Interval after exposure |
|------|------|-------------------------------------------------|------------|-------|------------|-----------------------|-------------------------|
| 113  | 78 yr| pine oil/isopropyl alcohol cleaner ethanol      | A/C        | Asp/Ing| Int unk    |                        |                         |
| 114  | 44 yr| pine oil/isopropyl alcohol cleaner isopropyl alcohol mouthwash (ethanol) | A          | Ingestion | Int suicide |                        |                         |
| 115  | 31 yr| sodium carbonate/silicate/perborate             | A          | Ingestion | Int unk    |                        |                         |
| 116  | 60 yr| toilet bowl cleaner                             | A          | Ingestion | Int suicide |                        |                         |
| 117  | 48 yr| wheel cleaner (hydrofluoric acid)               | A          | Ingestion | Unint misuse |                        |                         |
|      |      | See also cases 1,235 (bleach (hypochlorite)); 62 (bleach (sodium hypochlorite)); 232 (chlorine); 1,235 (fabric softener); 11 (household cleaner); 353 (household cleaner (unknown)); 973 (pine oil/isopropyl alcohol cleaner); 1,155 (toilet bowl cleaner (iodine)). |
|      |      | Cosmetics/personal care products                |            |       |            |                        |                         |
| 118  | 19 yr| depilatory (calcium hydroxide/thioliglycolate)  | A          | Ingestion | Int suicide |                        |                         |
| 119  | Unk  | hair spray                                      | C          | Inhalation | Int abuse   |                        |                         |
| 120  | 44 yr| mouthwash (ethanol)                             | U          | Ingestion | Int unk    | 210 mg/dL§            |                         |
|      |      | thioridazine                                    |            |         |            | 590 ng/mL§           |                         |
|      |      | valproic acid                                    |            |         |            | 50 μg/mL§            |                         |
| 121  | 30 yr| mouthwash (phenol, 1.4%)                         | A          | Ingestion | Unknown    |                        |                         |
|      |      | See also case 114 (mouthwash (ethanol))          |            |       |            |                        |                         |
|      |      | See also cases 1,220 (air freshener (fatty alcohol ethoxylate)) |
|      |      | Deodorizers                                      |            |       |            |                        |                         |
| 122  | 13 yr| air freshener                                    | U          | Inhalation | Unknown    |                        |                         |
| 123  | 26 yr| holding tank deodorant (methanol/formaldehyde)  | A          | Ingestion | Int suicide |                        |                         |
|      |      | See also case 1,220 (air freshener (fatty alcohol ethoxylate)) |
|      |      | Essential oils                                   |            |       |            |                        |                         |
| 124  | 27 yr| Mentha pulegium/citronella/other herbals         | A/C        | Ingestion | Adv rxn    |                        |                         |
|      |      | aceite de resina                                 |            |         |            |                        |                         |
|      |      | Food products/food poisoning                     |            |       |            |                        |                         |
| 125  | 82 yr| Clostridium botulinum                            | A          | Ingestion | Food Pois |                        |                         |
| 126  | 67 yr| Clostridium perfringens                          | A          | Ingestion | Food Pois |                        |                         |
|      |      | See also case 80 (acetic acid (4–6%)).            |            |       |            |                        |                         |
|      |      | Foreign bodies/toys/miscellaneous                |            |       |            |                        |                         |
|      |      | See also cases 722, 799, 810, 894 (activated charcoal) |
|      |      | Fumes/gases/vapors                               |            |       |            |                        |                         |
| 127  | 3 yr | carbon monoxide                                  | A          | Inhalation | Env        |                        | >30%                     |
| 128  | 7 yr | carbon monoxide                                  | A          | Inhalation | Env        |                        |                         |
| 129  | 8 yr | carbon monoxide                                  | A          | Inhalation | Malicious  |                        |                         |
| 130  | 8 yr | carbon monoxide                                  | A          | Inhalation | Malicious  |                        |                         |
| 131  | 11 yr| carbon monoxide                                  | A          | Inhalation | Env        |                        | 54%                      |
| 132  | 14 yr| carbon monoxide                                  | A          | Inhalation | Env        |                        | 58%§                     |
| 133  | 15 yr| carbon monoxide                                  | A          | Inhalation | Env        |                        | 58%§                     |
| Page | Age  | Substance        | Route   | Environment | Outcome | Note |
|------|------|------------------|---------|-------------|---------|------|
| 134  | 23 yr| carbon monoxide  | A       | Inhalation  | Unknown |      |
| 135  | 27 yr| carbon monoxide  | U       | Inhalation  | Env     |      |
| 136  | 35 yr| carbon monoxide  | A       | Inhalation  | Env     | 40.5%|
| 137  | 38 yr| carbon monoxide  | A       | Inhalation  | Occ     | 52%  |
| 138  | 41 yr| carbon monoxide  | A       | Inhalation  | Unknown | 31%  |
| 139  | 42 yr| carbon monoxide  | A       | Inhalation  | Int suicide |     |
| 140  | 42 yr| carbon monoxide  | A       | Inhalation  | Malicious |   |
| 141  | 48 yr| carbon monoxide  | A       | Inhalation  | Env     | 52%  |
| 142  | 49 yr| carbon monoxide  | A       | Inhalation  | Env     |      |
| 143  | 50’s yr| carbon monoxide | A | Inhalation  | Env     | 62%  |
| 144  | 52 yr| carbon monoxide  | A       | Inhalation  | Env     | 76%  |
| 145  | 67 yr| carbon monoxide  | A       | Inhalation  | Env     | 52%  |
| 146  | 67 yr| carbon monoxide  | A       | Inhalation  | Env     |      |
| 147  | 69 yr| carbon monoxide  | A       | Inhalation  | Int suicide |     |
| 148  | 87 yr| carbon monoxide  | A       | Inhalation  | Env     | 68%  |
| 149  | 89 yr| carbon monoxide  | A       | Inhalation  | Int suicide | 79%  |
| 150  | 90 yr| carbon monoxide  | A       | Inhalation  | Int suicide | 82%  |
| 151  | >19 yr| carbon monoxide  | A      | Inhalation  | Env     |      |
| 152  | >19 yr| carbon monoxide  | A      | Inhalation  | Int suicide |     |
| 153  | >19 yr| carbon monoxide  | A      | Inhalation  | Env     | 52.7%|
| 154  | >19 yr| carbon monoxide  | A      | Inhalation  | Env     |      |
| 155  | 19 yr| carbon monoxide  | A      | Ing/Inh     | Int suicide |     |
|      |      | acetaminophen/   |         |             |         |      |
|      |      | dextromethorphan/|         |             |         |      |
|      |      | doxylamine/      |         |             |         |      |
|      |      | pseudoephedrine  |         |             |         |      |
| 156  | 50 yr| carbon monoxide  | A      | Ing/Inh     | Int suicide |     |
|      |      | acetaminophen/   |         |             |         | 251 μg/mL ^{\text{\textsuperscript{\textregistered}}} |
|      |      | propoxyphene     |         |             |         |      |
|      |      | alprazolam       |         |             |         |      |
| 157  | 46 yr| carbon monoxide  | A      | Inhalation  | Env     | 48.4%|
|      |      | hydrochloric acid |         |             |         |      |
|      |      | other swimming pool product | | | | |
| 158  | 36 yr| carbon monoxide  | A      | Ing/Inh     | Int suicide |     |
|      |      | hydrocodone      |         |             |         | 72%  |
|      |      |                  |         |             |         | 1,750 ng/mL ^{\text{\textsuperscript{\textregistered}}} |
| 159  | 17 mo| carbon monoxide/smoke | A | Inh/Unk | Env |      |
| 160  | 3 yr | carbon monoxide/smoke | A | Inhalation  | Env     | 66%  |
| 161  | 3 yr | carbon monoxide/smoke | A | Inhalation  | Env     | 30%  |
| 162  | 4 yr | carbon monoxide/smoke | A | Inhalation  | Env     |      |
| 163  | 7 yr | carbon monoxide/smoke | A | Inhalation  | Malicious | 56%  |
| 164  | 11 yr| carbon monoxide/smoke | A | Inhalation  | Env     | 40%  |
| 165  | 6–12 yr| carbon monoxide/smoke | A | Inhalation  | Env     |      |
| 166  | 6–12 yr| carbon monoxide/smoke | A | Inhalation  | Env     |      |
| 167  | 19 yr| carbon monoxide/smoke | A | Inhalation  | Env     | 50%  |
| 168  | 32 yr| carbon monoxide/smoke | A | Inhalation  | Env     | 2%   |
| 169  | 38 yr| carbon monoxide/smoke | A | Inhalation  | Env     | 50%  |
| 170  | 41 yr| carbon monoxide/smoke | A | Inhalation  | Env     | 57%  |
| 171  | 44 yr| carbon monoxide/smoke | A | Inhalation  | Env     | 63%  |
| 172  | 49 yr| carbon monoxide/smoke | A | Inhalation  | Env     |      |
| 173  | 51 yr| carbon monoxide/smoke | A | Inhalation  | Env     | 44%  |
| 174  | 51 yr| carbon monoxide/smoke | A | Inhalation  | Env     | 28.7%|
| 175  | 51 yr| carbon monoxide/smoke | A | Inhalation  | Env     |      |

Continued
TABLE 21
(Continued)

| Case | Age   | Substances                  | Chronicity | Route   | Reason          | Blood concentrations | Interval after exposure |
|------|-------|-----------------------------|------------|---------|-----------------|-----------------------|-------------------------|
| 176  | ip    | 56 yr carbon monoxide/smoke | A          | Inhalation | Env             |                       |                         |
| 177  | p     | 60’s yr carbon monoxide/smoke | A          | Inhalation | Env             |                       |                         |
| 178  |       | 70 yr carbon monoxide/smoke | A          | Inhalation | Env             |                       |                         |
| 179  | p     | 70 yr carbon monoxide/smoke | A          | Inhalation | Env             |                       |                         |
| 180  | p     | 86 yr carbon monoxide/smoke | A          | Inhalation | Env             | 30%                   |                         |
| 181  |       | 90 yr carbon monoxide/smoke | A          | Inhalation | Env             | 31%                   |                         |
| 182  | p     | >19 yr carbon monoxide/smoke | A          | Inhalation | Env             | 41%                   |                         |
| 183  |       | 95 yr carbon monoxide/smoke | A          | Inhalation | Env             |                       |                         |
| 184  | p     | 7 yr carbon monoxide/smoke  | A          | Inhalation | Env             | 34%                   |                         |
| 185  | ip    | 22 yr carbon monoxide/smoke | A          | Ing/Inh  | Env             | > 50%§                | 110 mg/dL§              |
| 186  |       | 28 yr chlorine              | A          | Inhalation | Env             |                       |                         |
| 187  | p     | 27 yr helium                | A          | Inhalation | Int unk        |                       |                         |
| 188  | p     | 57 yr helium                | A          | Inhalation | Int suicide    |                       |                         |
| 189  | p     | 41 yr hydrogen sulfide      | A          | Inhalation | Occ             |                       |                         |
| 190  | p     | 56 yr hydrogen sulfide      | A          | Inhalation | Occ             |                       |                         |
| 191  | p     | >19 yr hydrogen sulfide     | A          | Inhalation | Occ             |                       |                         |
| 192  | p     | >19 yr hydrogen sulfide     | A          | Inhalation | Occ             |                       |                         |
| 193  | p     | >19 yr hydrogen sulfide     | A          | Inhalation | Occ             |                       |                         |
| 194  | p     | Unk hydrogen sulfide        | A          | Inhalation | Occ             |                       |                         |
| 195  |       | 29 yr nitrogen              | A          | Inhalation | Occ             |                       |                         |
| 196  |       | 57 yr nitrogen              | A          | Inhalation | Occ             |                       |                         |

See also cases 67, 201, 1050 (carbon monoxide).

Hydrocarbons

| Case | Age   | Substances                | Chronicity | Route   | Reason          | Blood concentrations | Interval after exposure |
|------|-------|---------------------------|------------|---------|-----------------|-----------------------|-------------------------|
| 197  | p     | 19 yr chlorofluorocarbon  | A          | Inhalation | Int suicide    |                       |                         |
| 198  | ip    | 37 yr chlorofluorocarbon  | A          | Inhalation | Int abuse      |                       |                         |
| 199  | p     | 41 yr chlorofluorocarbon  | A          | Inhalation | Int abuse      |                       |                         |
| 200  | p     | 58 yr chlorofluorocarbon  | A          | Inhalation | Env            |                       |                         |
| 201  | p     | 50’s yr chlorofluorocarbon| A          | Inhalation | Env            |                       |                         |
| 202  | p     | 27 yr difluoroethane      | A/C        | Inhalation | Int abuse      |                       |                         |
| 203  |       | 15 mo gasoline            | A          | Asp/Ing  | Unint gen      |                       |                         |
| 204  |       | 30’s yr kerosene          | A          | Ingestion | Unint misuse   |                       |                         |
| 205  |       | 61 yr kerosene            | A          | Ing/Inh   | Unknown        |                       |                         |
| 206  | p     | 2 yr lighter fluid (naptha)| A          | Asp/Ing  | Unint gen      |                       |                         |

See also cases 1,135 (chlorofluorocarbon); 107 (hydrocarbon/mineral oil).

Mushrooms

| Case | Age   | Substances                | Chronicity | Route   | Reason          | Blood concentrations | Interval after exposure |
|------|-------|---------------------------|------------|---------|-----------------|-----------------------|-------------------------|
| 207  |       | 56 yr Amanita bisporigera | A          | Ingestion | Unint misuse   |                       |                         |
| 208  |       | 56 yr Amanita bisporigera | A          | Ingestion | Unint misuse   |                       |                         |
| 209  |       | 70’s yr Amanita phalloides| A          | Ingestion | Unint misuse   |                       |                         |

Pesticides: Fumigants

| Case | Age   | Substances                | Chronicity | Route   | Reason          | Blood concentrations | Interval after exposure |
|------|-------|---------------------------|------------|---------|-----------------|-----------------------|-------------------------|
| 210  |       | 15 yr aluminum phosphide  | A          | Ingestion | Int suicide    |                       |                         |
| 211  |       | 20 yr aluminum phosphide  | A          | Inh/Unk  | Env             |                       |                         |
| 212  | i     | 81 yr phosphine           | A          | Inhalation | Malicious     |                       |                         |
| 213  |       | 37 yr sulfuryl fluoride   | A          | Inhalation | Env            |                       |                         |

Pesticides: Herbicides (incl. algaecides, defoliants, desiccants, plant growth regulators)

| Case | Age   | Substances                | Chronicity | Route   | Reason          | Blood concentrations | Interval after exposure |
|------|-------|---------------------------|------------|---------|-----------------|-----------------------|-------------------------|
| 214  |       | 40 yr diquat               | A          | Ingestion | Int suicide    |                       |                         |
215 45 yr glyphosate A Ingestion Int suicide
216 69 yr glyphosate A Ingestion Int suicide
217 77 yr herbicide, unknown A Ingestion Unint misuse
218 41 yr paraquat A Ingestion Int suicide
219 62 yr paraquat A Ingestion Int suicide
220 p 44 yr aldicarb A Ingestion Int suicide
221 38 yr aldicarb A Asp/Ing Int suicide
222 18 mo allethrin/piperonyl butoxide/activated charcoal A Asp/Ing Unint gen
223 p 64 yr carbamate unknown drug A Ingestion Int suicide
224 p 60 yr chlorpyrifos/allethrin/butyl propasol/hydrocarbons A Unknown Int misuse
225 p 44 yr malathion A/C Derm/Inh Unint misuse
226 23 yr sodium sulfur arsenate A Ingestion Int suicide arsenic 65 μg/mL
227 p 22 yr terbufos A Unknown Unknown
228 p 46 yr unk pesticide A Ingestion Int suicide
See also cases 580 (carbaryl); 219 (organophosphate).

Pesticides: Insecticides (incl. insect growth regulators, molluscicides, nematicides)
229 61 yr anticoagulant rodenticide (long-acting) A Ingestion Int suicide
230 21 yr bromethalin A Ingestion Int suicide
See also case 11 (bromethalin).

Plants
231 4 yr Senecio longilobus C Ingestion Unint gen

Polishes and waxes
See also case 107 (metal polish (naphtha/ammonia)).

Swimming pool/aquarium
232 55 yr algicide (copper, 7.1%) chlorine zolpidemA A Ingestion Int suicide
See also case 157 (other swimming pool product).

Other/unknown nondrug substances
233 47 yr unk substance U Unknown Unknown
234 48 yr unk substance U Unknown Int unk
235 32 yr unk substance opioid U Unknown Int suicide
See also cases 119 (furniture polish); 1229 (unk substance); 1160 (unknown drug).

Pharmaceuticals
Analgesics
236 14 yr acetaminophen A Ingestion Int suicide
237 19 yr acetaminophen A Ingestion Int suicide 138 μg/mL 16 h
238 20 yr acetaminophen A Ingestion Int suicide 90 μg/mL
239 21 yr acetaminophen A Ingestion Int suicide 58 μg/mL
240 21 yr acetaminophen A Ingestion Int suicide 96 μg/mL
241 21 yr acetaminophen A Ingestion Int suicide 82.4 μg/mL

Continued
TABLE 21
(Continued)

| Case | Age   | Substances            | Chronicity | Route    | Reason      | Blood concentrations | Interval after exposure |
|------|-------|-----------------------|------------|----------|-------------|-----------------------|-------------------------|
| 242  | 22 yr | acetaminophen         | A          | Ingestion| Int suicide | 89 μg/mL              |                         |
| 243  | 25 yr | acetaminophen         | A          | Ingestion| Int suicide | 9 μg/mL               | 3 d                     |
| 244  | 27 yr | acetaminophen         | A          | Ingestion| Ther err    | 47.6 μg/mL            |                         |
| 245  | 28 yr | acetaminophen         | U          | Ingestion| Int suicide | 150 μg/mL            |                         |
| 246  | 30 yr | acetaminophen         | C          | Ingestion| Int misuse  | 79 μg/mL              |                         |
| 247  | 30 yr | acetaminophen         | A          | Ingestion| Int suicide | 151.8 μg/mL            |                         |
| 248  | 31 yr | acetaminophen         | A          | Ingestion| Int suicide |                       |                         |
| 249  | 32 yr | acetaminophen         | A          | Ingestion| Int suicide | 225 μg/mL            |                         |
| 250  | 33 yr | acetaminophen         | A          | Ingestion| Int suicide | 111.3 μg/mL           |                         |
| 251  | 33 yr | acetaminophen         | C          | Ingestion| Int unk     | 50 μg/mL              |                         |
| 252  | 34 yr | acetaminophen         | C          | Ingestion| Int unk     | 106 μg/mL            |                         |
| 253  | 40 yr | acetaminophen         | C          | Ingestion| Ther err    | 90 μg/mL              |                         |
| 254  | 41 yr | acetaminophen         | U          | Ingestion| Int unk     | 57 μg/mL              |                         |
| 255  | 41 yr | acetaminophen         | C          | Ingestion| Int suicide | 150 μg/mL            |                         |
| 256  | 44 yr | acetaminophen         | A          | Ingestion| Int suicide | 225 μg/mL            | 9 h                     |
| 257  | 44 yr | acetaminophen         | U          | Ingestion| Int unk     | 276 μg/mL            |                         |
| 258  | 44 yr | acetaminophen         | C          | Ingestion| Ther err    | 63 μg/mL              |                         |
| 259  | 45 yr | acetaminophen         | C          | Ingestion| Int misuse  | 108.8 μg/mL           |                         |
| 260  | 45 yr | acetaminophen         | A/C        | Ingestion| Ther err    | 421 μg/mL            |                         |
| 261  | 47 yr | acetaminophen         | A          | Ingestion| Int misuse  | 41 μg/mL              |                         |
| 262  | 48 yr | acetaminophen         | A          | Ingestion| Int suicide | 188 μg/mL            |                         |
| 263  | 48 yr | acetaminophen         | A          | Ingestion| Int unk     | 392 μg/mL            |                         |
| 264  | 49 yr | acetaminophen         | A          | Ingestion| Int suicide | 57 μg/mL              |                         |
| 265  | 49 yr | acetaminophen         | C          | Ingestion| Int unk     | 256 μg/mL            |                         |
| 266  | 50 yr | acetaminophen         | C          | Ingestion| Int misuse  | 86.5 μg/mL            |                         |
| 267  | 51 yr | acetaminophen         | A          | Ingestion| Int suicide | 32 μg/mL              | 36 h                    |
| 268  | 52 yr | acetaminophen         | A/C        | Ingestion| Ther err    | 84 μg/mL              |                         |
| 269  | 52 yr | acetaminophen         | A          | Ingestion| Int suicide | 494 μg/mL            |                         |
| 270  | 55 yr | acetaminophen         | C          | Ingestion| Int unk     | 40 μg/mL              |                         |
| 271  | 56 yr | acetaminophen         | C          | Ingestion| Int unk     | 1 μg/mL               |                         |
| 272  | 56 yr | acetaminophen         | A          | Ingestion| Int suicide | 14 μg/mL              |                         |
| 273  | 60 yr | acetaminophen         | A          | Ingestion| Int suicide | 47 μg/mL              |                         |
| 274  | 65 yr | acetaminophen         | C          | Ingestion| Int misuse  | 48.3 μg/mL            |                         |
| 275  | 68 yr | acetaminophen         | A          | Ingestion| Int suicide | 78 μg/mL              |                         |
| 276  | 69 yr | acetaminophen         | A          | Ingestion| Int suicide | 200 μg/mL            |                         |
| 277  | 70 yr | acetaminophen         | A          | Ingestion| Int suicide | 188 μg/mL            |                         |
| 278  | 73 yr | acetaminophen         | A/C        | Ingestion| Int suicide | 207 μg/mL            |                         |
| 279  | 74 yr | acetaminophen         | C          | Ingestion| Ther err    | 108.8 μg/mL           |                         |
| 280  | 75 yr | acetaminophen         | C          | Ingestion| Ther err    | 41 μg/mL              |                         |
| 281  | 77 yr | acetaminophen         | U          | Ingestion| Unknown     | 14 μg/mL              |                         |
| 282  | 82 yr | acetaminophen         | A          | Ingestion| Int suicide | 392 μg/mL            |                         |
| 283  | 86 yr | acetaminophen         | C          | Ingestion| Ther err    | 421 μg/mL            |                         |
| 284  | 37 yr | acetaminophen         | A/C        | Ingestion| Ther err    | 58 μg/mL              |                         |
| 285  | 36 yr | acetaminophen         | U          | Ingestion| Ther err    | 392 μg/mL            |                         |
| 286  | 84 yr | acetaminophen         | C          | Ingestion| Ther err    | 421 μg/mL            |                         |
| Patient ID | Age | Event | Method | Diagnosis | Substance(s) | Concentration(s) |
|------------|-----|-------|--------|-----------|--------------|-----------------|
| 287        | 40  | U     | Ingestion | Int suicide | acetaminophen | 306 μg/mL |
|            |     |       |         |            | acetaminophen/dextromethorphan/doxylamine/pseudoephedrine/aspirin | |
| 288        | 46  | C     | Ingestion | Int misuse | acetaminophen/hydrocodone | 7.4 mg/dL |
|            |     |       |         |            | acetaminophen | 160 μg/mL |
| 289        | 56  | A     | Ingestion | Int misuse | acetaminophen/oxycodeone | 331.8 μg/mL |
|            |     |       |         |            | ethanol | |
| 290        | 81  | A     | Ingestion | Int suicide | acetaminophen/amitriptyline/benzodiazepine | 248 μg/mL |
|            |     |       |         |            | | |
| 291        | 36  | C     | Ingestion | Ther err | acetaminophen | 54.5 μg/mL |
|            |     |       |         |            | aspirin | 7.2 mg/dL |
| 292        | 31  | U     | Ingestion | Int suicide | acetaminophen | 123 μg/mL |
|            |     |       |         |            | aspirin | |
| 293        | 31  | C     | Ingestion | Int unk | acetaminophen | 4.8 μg/mL |
|            |     |       |         |            | aspirin/ethanol | |
| 294        | 21  | A     | Ingestion | Int suicide | acetaminophen | 18 mg/dL |
|            |     |       |         |            | clonazepam/ethanol | 1,062 μg/mL |
|            |     |       |         |            | | 4 h |
| 295        | 30  | A     | Ingestion | Int suicide | acetaminophen | 48 mg/dL |
|            |     |       |         |            | clonazepam/venlafaxine (long-acting) | 12 μg/mL |
| 296        | 53  | A     | Ingestion | Int suicide | acetaminophen | 48 μg/mL |
|            |     |       |         |            | cocaine/ethanol | benzoylcegonine |
|            |     |       |         |            | | 0.14 μg/mL |
| 297        | 57  | A     | Ingestion | Int suicide | acetaminophen | 24 μg/mL |
|            |     |       |         |            | diphenhydramine | |
| 298        | 36  | A     | Ingestion | Int suicide | acetaminophen | 38 μg/mL |
|            |     |       |         |            | diphenhydramine/cocaine | |
| 299        | 35  | C     | Ingestion | Int misuse | acetaminophen | 24 μg/mL |
|            |     |       |         |            | ethanol | 41 mg/dL |
| 300        | 38  | C     | Ingestion | Int misuse | acetaminophen | 36.5 μg/mL |
| 301        | 40's| A     | Ingestion | Int suicide | acetaminophen/ethanol | 32 μg/mL |
| 302        | 45  | C     | Ingestion | Int misuse | acetaminophen/ethanol | |
| 303        | 46  | U     | Ingestion | Int suicide | acetaminophen/ethanol | |
| 304        | 47  | A/C   | Ingestion | Int misuse | acetaminophen/ethanol | |
| 305        | 51  | U     | Ingestion | Int suicide | acetaminophen/ethanol | |
| 306        | 66  | U     | Ingestion | Int suicide | acetaminophen/ethanol | 809 μg/mL |
|            |     |       |         |            | | 107 mg/dL |

**Continued**
| Case | Age  | Substances                          | Chronicity | Route    | Reason             | Blood concentrations | Interval after exposure |
|------|------|-------------------------------------|------------|----------|--------------------|----------------------|-------------------------|
| 307  | 90 yr| acetaminophen ethanol ethanol      | C          | Ingestion| Ther err           | 61 μg/mL              |                         |
| 308  | 26 yr| acetaminophen ethylene glycol ethanol | A          | Ingestion| Int suicide        | 159 μg/mL 7.8 mg/dL 6 mg/dL |                         |
| 309  | 50 yr| acetaminophen fluoxetine           | U          | Ingestion| Int suicide        | 53 μg/mL              |                         |
| 310  | 80 yr| acetaminophen fluoxetine           | A          | Ingestion| Int suicide        | 584 μg/mL 840 ng/mL\textsuperscript{8} norfluoxetine 920 ng/mL\textsuperscript{8} |                         |
| 311  | 48 yr| acetaminophen hydrocodone temazepam\textsuperscript{A} | C          | Ingestion| Ther err           | 163.5 μg/mL           |                         |
| 312  | 19 yr| acetaminophen ibuprofen            | A          | Ingestion| Int suicide        | 1.8 μg/mL 3.3 μg/mL 2 d |                         |
| 313  | 47 yr| acetaminophen ibuprofen            | A          | Ingestion| Int suicide        | 219 μg/mL 7.5 h       |                         |
| 314  | >19 yr| acetaminophen isopropyl alcohol ethanol | C         | Ingestion| Int abuse          |                      |                         |
| 315  | 67 yr| acetaminophen loperamide famotidine | A          | Ingestion| Int suicide        |                      |                         |
| 316  | 39 yr| acetaminophen metformin            | A          | Ingestion| Int suicide        |                      |                         |
| 317  | 63 yr| acetaminophen methadone promethazine | U         | Ingestion| Unknown            | 24 μg/mL              |                         |
| 318  | 24 yr| acetaminophen methamphetamine     | A          | Ingestion| Int suicide        | 112 μg/mL 17 h        |                         |
| 319  | 77 yr| acetaminophen naproxen             | A/C        | Ingestion| Int suicide        |                      |                         |
| 320  | 35 yr| acetaminophen oxycodone (long-acting) | A/C      | Ingestion| Int abuse          | 45 μg/mL              |                         |
| 321  | 63 yr| acetaminophen temazepam paroxetine\textsuperscript{A} | A/C    | Ingestion| Int suicide        | 53.7 μg/mL            |                         |
| 322  | 52 yr| acetaminophen trazodone alprazolam\textsuperscript{A} | A        | Ingestion| Int suicide        | 516 μg/mL             |                         |
| 323 p| 70 yr| acetaminophen trazodone mirtazepine | A        | Asp/Ing | Int suicide        | 336 μg/mL             |                         |
| 324  | 18 yr| acetaminophen unk chemical         | A          | Ingestion| Int suicide        | 292 μg/mL             |                         |
| 325  | 33 yr| acetaminophen unk drug             | U          | Ingestion| Unknown            | 77.8 μg/mL            |                         |
| #  | Age  | Drug(s)                                                                 | Route | Outcome | Other Meds | Concentration(s) |
|----|------|------------------------------------------------------------------------|-------|---------|-----------|------------------|
| 326| 40 yr| acetaminophen, unk drug                                               | U     | Ingestion | Unknown   | 35 µg/mL         |
| 327| 91 yr| acetaminophen, unk drug                                               | A     | Ingestion | Int suicide | 975 µg/mL        |
| 328| 40 yr| acetaminophen, valproic acid, clonazepam                               | A     | Ingestion | Int suicide | >200 µg/mL       |
| 329| 41 yr| acetaminophen, zolpidem, acetaminophen/hydrocodone                     | A     | Ingestion | Int suicide | 147.6 µg/mL      |
| 330| 45 yr| acetaminophen, zolpidem, fentanyl                                      | A/C   | Ing/Unk  | Int suicide | 37 µg/mL         |
| 331 |40 yr| acetaminophen (long-acting), aspirin, duloxetine (long-acting), methocarbamol | C     | Ingestion | Ther err  | 121 µg/mL, 146.5 µg/mL, 45.1 mg/dL |
| 332| 65 yr| acetaminophen/aspirin, caffeine, diphenhydramine                      | A     | Ingestion | Int suicide | 390 µg/mL, caffeine >60 µg/mL, theophylline 2.5 µg/mL, 79 mg/dL |
| 333| 49 yr| acetaminophen/aspirin/caffeine, diphenhydramine                       | A     | Ingestion | Int suicide | 1 h |
|    |      |                                                                        |       |          |            | 1 h |
| 334| 64 yr| acetaminophen/codeine                                                 | A/C   | Ingestion | Int suicide | 14 µg/mL, 21.7 µg/mL, 18 h |
| 335| 47 yr| acetaminophen/codeine, amitriptyline                                   | U     | Ingestion | Int suicide | 14 µg/mL, 21.7 µg/mL, 18 h |
| 336| 81 yr| acetaminophen/codeine, glimepiride                                     | A     | Ingestion | Int suicide | 155 µg/mL, codeine 1.1 µg/mL, 6.5 h |
| 337| 21 yr| acetaminophen/diphenhydramine                                          | A     | Ingestion | Int suicide | 113 µg/mL, 12 h |
| 338| 23 yr| acetaminophen/diphenhydramine                                          | U     | Ing/Unk  | Int unk    | 12 µg/mL         |
| 339| 29 yr| acetaminophen/diphenhydramine                                          | C     | Ingestion | Unknown    | 10 µg/mL         |
| 340| 33 yr| acetaminophen/diphenhydramine                                          | C     | Ingestion | Int suicide |                 |
| 341| 34 yr| acetaminophen/diphenhydramine                                          | A     | Ingestion | Int suicide | 39.3 µg/mL, 3 d |
| 342| 38 yr| acetaminophen/diphenhydramine                                          | A     | Ingestion | Int suicide | 393 µg/mL, 1 d |
| 343| 38 yr| acetaminophen/diphenhydramine                                          | A     | Ingestion | Int suicide |                 |
| 344| 46 yr| acetaminophen/diphenhydramine                                          | A     | Ingestion | Int suicide | 193 µg/mL       |
| 345| 60 yr| acetaminophen/diphenhydramine                                          | A     | Ingestion | Int suicide | 156 µg/mL       |
| 346| 32 yr| acetaminophen/diphenhydramine, acetaminophen/oxycodone                 | A/C   | Ingestion | Int abuse  | 28.3 µg/mL      |

Continued
| Case | Age | Substances                                                                 | Chronicity | Route     | Reason         | Blood concentrations | Interval after exposure |
|------|-----|----------------------------------------------------------------------------|------------|-----------|----------------|-----------------------|-------------------------|
| 347  | 25 yr | acetaminophen/diphenhydramine aspirin acetaminophen                        | A          | Ingestion | Int suicide    | 140 µg/mL\textsuperscript{y} | 80.3 mg/dL              |
| 348  | 37 yr | acetaminophen/diphenhydramine clonazepam ziprasidone                        | A          | Ingestion | Int suicide    | 697 µg/mL\textsuperscript{y} | diphenhydramine 9.2 µg/mL\textsuperscript{s} |
| 349  | 24 yr | acetaminophen/diphenhydramine cocaine acetaminophen/propoxyphene\textsuperscript{A} | A          | Ing/Inh   | Int misuse     | 78 µg/mL\textsuperscript{y} |                         |
| 350 p| 50 yr | acetaminophen/diphenhydramine diphenhydramine ethanol                      | A          | Ingestion | Int suicide    | 357 µg/mL\textsuperscript{y} |                         |
| 351  | 39 yr | acetaminophen/diphenhydramine ethanol                                       | A          | Ingestion | Int unk        | 299 µg/mL\textsuperscript{y} |                         |
| 352  | 42 yr | acetaminophen/diphenhydramine ethanol                                       | A/C        | Ingestion | Int unk        | 70 µg/mL\textsuperscript{y} |                         |
| 353  | 29 yr | acetaminophen/diphenhydramine household cleaner (unknown)                  | C          | Ingestion | Int suicide    |                       |                         |
| 354  | 52 yr | acetaminophen/diphenhydramine paroxetine                                  | A          | Ingestion | Int suicide    | 72 µg/mL\textsuperscript{y} | diphenhydramine 3.3 µg/mL\textsuperscript{y} |
| 355  | 20 yr | acetaminophen/hydrocodone                                                  | A          | Ingestion | Int suicide    |                       |                         |
| 356  | 27 yr | acetaminophen/hydrocodone                                                  | C          | Ingestion | Ther err       | 41 µg/mL\textsuperscript{y} |                         |
| 357  | 27 yr | acetaminophen/hydrocodone                                                  | A          | Ingestion | Unint misuse   | 95 µg/mL\textsuperscript{y} |                         |
| 358  | 30 yr | acetaminophen/hydrocodone                                                  | C          | Ingestion | Int misuse     | 40 µg/mL\textsuperscript{y} |                         |
| 359  | 36 yr | acetaminophen/hydrocodone                                                  | C          | Ingestion | Int misuse     | 43 µg/mL\textsuperscript{y} |                         |
| 360 p| 36 yr | acetaminophen/hydrocodone                                                  | A/C        | Ingestion | Int misuse     |                       |                         |
| 361  | 39 yr | acetaminophen/hydrocodone                                                  | A/C        | Ingestion | Int unk        | 389 µg/mL\textsuperscript{y} |                         |
| 362  | 44 yr | acetaminophen/hydrocodone                                                  | U          | Ingestion | Int suicide    | 39 µg/mL\textsuperscript{y} |                         |
| 363  | 46 yr | acetaminophen/hydrocodone                                                  | C          | Ingestion | Int abuse      |                       |                         |
| 364  | 49 yr | acetaminophen/hydrocodone                                                  | C          | Ingestion | Int suicide    |                       |                         |
| 365  | 51 yr | acetaminophen/hydrocodone                                                  | A/C        | Ingestion | Int suicide    | 343 µg/mL\textsuperscript{y} |                         |
| 366  | 52 yr | acetaminophen/hydrocodone                                                  | A/C        | Ingestion | Int suicide    | 667 µg/mL\textsuperscript{y} |                         |
| 367  | 53 yr | acetaminophen/hydrocodone                                                  | A          | Ingestion | Int suicide    | 121 µg/mL\textsuperscript{y} |                         |
| 368  | 58 yr | acetaminophen/hydrocodone                                                  | A          | Ingestion | Int suicide    | 198 µg/mL\textsuperscript{y} |                         |
| 369  | 63 yr | acetaminophen/hydrocodone                                                  | C          | Ingestion | Unknown        | 36.8 µg/mL\textsuperscript{y} |                         |
| 370  | 70 yr | acetaminophen/hydrocodone                                                  | C          | Ingestion | Int suicide    | 109 µg/mL\textsuperscript{y} |                         |
| 371  | 70 yr | acetaminophen/hydrocodone                                                  | A          | Ingestion | Int suicide    | 189 µg/mL\textsuperscript{y} |                         |
| Case | Age | Type of Ingestion | Agent(s) | Route | Method | Agent Concentration(s) |
|------|-----|-------------------|----------|-------|--------|------------------------|
| 372  | 33 y | A Ingestion      | acetaminophen/hydrocodone | U        | Int suicide | 167 µg/mL\(\text{X}\) hydrocodone 50 ng/mL, 0.66 µg/mL\(\text{X}\) 188 µg/mL\(\text{X}\) | 117 µg/mL\(\text{X}\) | 14 µg/mL\(\text{Y}\) | 339 ng/mL\(\text{X}\) | 300 ng/mL\(\text{X}\) | 14 µg/mL\(\text{Y}\) | 15 µg/mL\(\text{X}\) | 14 µg/mL\(\text{Y}\) | 97.8 µg/mL\(\text{X}\) | 97.8 µg/mL\(\text{X}\) | 146 mg/dL 146 mg/dL 146 mg/dL 146 mg/dL | 54 mg/dL | 10 mg/dL | 75 µg/mL\(\text{X}\) | 37 ng/mL | dihydrocodone | 24 ng/mL | 10 ng/mL | 10 mg/dL | 10 mg/dL |
| Case | Age | Substances | Chronicity | Route | Reason | Blood concentrations | Interval after exposure |
|------|-----|------------|------------|-------|--------|----------------------|------------------------|
| 392  | 57 yr | acetaminophen/hydrocodone | A/C | Ingestion | Int suicide | Blood concentrations: 60 μg/mL, hydrocodone 965 ng/mL, 640 ng/mL, norfluoxetine 350 ng/mL | 60 μg/mL, hydrocodone 965 ng/mL, 640 ng/mL, norfluoxetine 350 ng/mL |
| 393  | 33 yr | acetaminophen/hydrocodone | C | Ingestion | Int suicide | Blood concentrations: 96.8 μg/mL | 96.8 μg/mL |
| 394  | 33 yr | acetaminophen/hydrocodone | A | Ingestion | Int misuse | Blood concentrations: 96.8 μg/mL | 26 h |
| 395  | 35 yr | acetaminophen/hydrocodone | U | Ingestion | Int suicide | Blood concentrations: 15 μg/mL, hydrocodone 400 ng/mL, 0.5 μg/mL, nordiazepam 550 ng/mL | 200 ng/mL, nordiazepam 550 ng/mL |
| 396  | 54 yr | acetaminophen/hydrocodone | U | Ingestion | Int suicide | Blood concentrations: 200 ng/mL, nordiazepam 550 ng/mL | 103 μg/mL |
| 397  | 48 yr | acetylaminophen/hydrocodone | A/C | Ingestion | Int suicide | Blood concentrations: 180 ng/mL, nordiazepam 550 ng/mL | 15 μg/mL, hydrocodone 400 ng/mL, 0.5 μg/mL, nordiazepam 550 ng/mL |
| 398  | 41 yr | acetaminophen/hydrocodone | C | Ingestion | Int unk | Blood concentrations: 7.5 μg/mL, oxycodone 180 ng/mL, 5 μg/mL, oxycodone 180 ng/mL | 5 μg/mL, oxycodone 180 ng/mL |
| 399  | 32 yr | acetaminophen/opioid | A | Ingestion | Int suicide | Blood concentrations: 110 μg/mL | 7.5 μg/mL |
| 400  | 15 yr | acetaminophen/oxycodeone | A | Ingestion | Int suicide | Blood concentrations: 56 μg/mL, 24.1 μg/mL, | 5 μg/mL, oxycodone 180 ng/mL |
| 401  | 34 yr | acetaminophen/oxycodeone | U | Ingestion | Int suicide | Blood concentrations: 24.1 μg/mL | 90 μg/mL, oxycodone 180 ng/mL |
| 402  | 39 yr | acetaminophen/oxycodeone | A/C | Ingestion | Int unk | Blood concentrations: 110 μg/mL | 24 h |
| 404  | 39 yr | acetaminophen/oxycodeone | A/C | Ingestion | Int suicide | Blood concentrations: 56 μg/mL, 24.1 μg/mL, | 24 h |
| 405  | 41 yr | acetaminophen/oxycodeone | A/C | Ingestion | Int suicide | Blood concentrations: 35 μg/mL, oxycodone 1,000 ng/mL, | 35 μg/mL, oxycodone 1,000 ng/mL, |
| 406  | 18 yr | acetaminophen/oxycodeone | C | Ing/Inh | Int abuse | Blood concentrations: 30 ng/mL, oxycodone 1,000 ng/mL, | 30 ng/mL, oxycodone 1,000 ng/mL, |
| 407  | 35 yr | acetaminophen/oxycodeone | A/C | Ingestion | Int suicide | Blood concentrations: 36.715 μg/mL | 36.715 μg/mL, oxycodone 1,000 ng/mL, |
| 408  | 34 yr | acetaminophen/oxycodeone | A | Ingestion | Int suicide | Blood concentrations: 36.715 μg/mL, oxycodone 1,000 ng/mL, | 36.715 μg/mL, oxycodone 1,000 ng/mL, |
409 39 yr acetaminophen/oxycodeone methadone U Ingestion Unknown 24 μg/mL¥
410 44 yr acetaminophen/propsyaxphone U Ingestion Int suicide 174 μg/mL¥
411 45 yr acetaminophen/propsyaxphone C Ingestion Int suicide 198 μg/mL¥
412 p 47 yr acetaminophen/propsyaxphone A/C Ingestion Int suicide 48 μg/mL¥
413 p 57 yr acetaminophen/propsyaxphone A Ingestion Int suicide 90 μg/mL¥
414 57 yr acetaminophen/propsyaxphone A Ingestion Int suicide 451.6 μg/mL¥
415 p 63 yr acetaminophen/propsyaxphone A/C Ingestion Int suicide 78 μg/mL¥
416 68 yr acetaminophen/propsyaxphone A/C Ingestion Int suicide 78 μg/mL¥
417 80 yr acetaminophen/propsyaxphone C Ingestion Int abuse 290 mg/dL¥
418 95 yr acetaminophen/propsyaxphone C Ingestion Int suicide 451.6 μg/mL¥
419 p 24 yr acetaminophen/propsyaxphone A/C Ingestion Int suicide propoxyphene
420 p 39 yr acetaminophen/propsyaxphone acetaminophen/hydrocodeone ethanol A
421 p 19 yr acetaminophen/propsyaxphone A Ingestion Int misuse propoxyphene
422 p 40 yr acetaminophen/propsyaxphone cocaine A/C Inh/Inh Int suicide cocaine
423 43 yr acetaminophen/propsyaxphone perphenazine diphenhydramine A Ingestion Int suicide propoxyphene
424 16 yr aspirin A Ingestion Int suicide 118 mg/dL
425 19 yr aspirin A Ingestion Int suicide 127 mg/dL 14 h
426 24 yr aspirin A Ingestion Int suicide 119 mg/dL
427 28 yr aspirin A Ingestion Int suicide 96.4 mg/dL
428 p 30 yr aspirin A Ingestion Int suicide 125 mg/dL
429 35 yr aspirin A Ingestion Int unk 90 mg/dL
430 35 yr aspirin A Ingestion Int suicide 100 mg/dL
431 40 yr aspirin C Ingestion Int suicide 90 mg/dL
432 40 yr aspirin A Ingestion Int suicide 112 mg/dL
433 45 yr aspirin C Ingestion Int misuse 112 mg/dL
434 49 yr aspirin A Ingestion Int unk 123 mg/dL
435 53 yr aspirin A Ingestion Int suicide 110 mg/dL
436 54 yr aspirin A Ingestion Int suicide 110 mg/dL
437 p 56 yr aspirin A Ingestion Int suicide 75.7 mg/dL³
438 56 yr aspirin A Ingestion Int suicide 83.2 mg/dL³
439 59 yr aspirin A Ingestion Int suicide 44 mg/dL
440 59 yr aspirin A Ingestion Int suicide 112 mg/dL
441 61 yr aspirin A Ingestion Int suicide 117 mg/dL
442 63 yr aspirin A/C Ingestion Int suicide 91 mg/dL
443 89 yr aspirin A Ingestion Int suicide 23.7 mg/dL 4.5 h
444 44 yr aspirin A Ingestion Int suicide 95.2 mg/dL
445 51 yr aspirin A/C Ingestion Int suicide 101.7 mg/dL³

Continued
| Case | Age  | Substances                                      | Chronicity | Route   | Reason        | Blood concentrations | Interval after exposure |
|------|------|------------------------------------------------|------------|---------|---------------|----------------------|------------------------|
| 446  | 36 yr| aspirin, acetaminophen, chlorpromazine          | A          | Ingestion| Int suicide   | 58.4 mg/dL           | 221.6 μg/mL            |
| 447  | >19 yr| aspirin, benzonatate, acetaminophen/hydrocodone| U          | Unknown | Unknown       |                      |                        |
| 448  | 32 yr| aspirin, bupropion (long-acting), venlafaxine (long-acting) | A/C        | Ingestion| Int suicide   | 67.3 mg/dL           |                        |
| 449  | 55 yr| aspirin, carisoprodol, naproxen                 | U          | Ingestion| Int suicide   | 99 mg/dL             |                        |
| 450  | 56 yr| aspirin, clonazepam, lisinopril                 | A/C        | Ingestion| Int suicide   | 91.6 mg/dL           |                        |
| 451  | 54 yr| aspirin, ethanol                                | U          | Ingestion| Int suicide   | 100.9 mg/dL          | 60 mg/dL               |
| 452  | 88 yr| aspirin, ethanol                                | A          | Ingestion| Int suicide   | 118 mg/dL            |                        |
| 453  | 42 yr| aspirin, quetiapine, zolpidem                   | A          | Ingestion| Int suicide   | 86 mg/dL             |                        |
| 454  | 43 yr| aspirin, sertraline, cocaine                   | U          | Ingestion| Int suicide   | 51 mg/dL             |                        |
| 455  | 43 yr| aspirin, venlafaxine (long-acting), buspirone  | A          | Ingestion| Int suicide   | 88.9 mg/dL           |                        |
| 456  | 65 yr| aspirin, verapamil (long-acting)                | A          | Ingestion| Int suicide   | 92.6 mg/dL           | 7 h                    |
| 457  | 43 yr| codeine, alprazolam, zolpidem                   | A          | Ingestion| Int suicide   | 6 μg/mL $^4$         | 200 ng/mL $^8$        |
|      |      |                                                |            |          |               | 1,400 ng/mL$^8$      |                        |
| 458  | 36 yr| codeine, hydrocodone, butalbital $^A$           | U          | Ingestion| Int unkn      | 2.3 μg/mL$^4$        | 300 ng/mL$^8$         |
|      |      |                                                |            |          |               | 13 μg/mL$^8$         |                        |
| 459  | 49 yr| colchicine                                     | C          | Parenteral| Adv rxn      |                      |                        |
| 460  | 76 yr| colchicine                                     | A/C        | Ingestion| Ther err      |                      |                        |
| 461  | 84 yr| colchicine                                     | C          | Ingestion| Ther err      |                      |                        |
| 462  | 58 yr| colchicine, carvedilol, warfarin $^A$           | A/C        | Ingestion| Int suicide   |                      |                        |
| 463 i| 26 yr| fentanyl                                        | U          | Unknown  | Unknown       |                      |                        |
| 464  | 29 yr| fentanyl                                        | A          | Parenteral| Int abuse     |                      |                        |
| 465  | 50 yr| fentanyl                                        | A          | Parenteral| Int abuse     | 33 ng/mL$^3$         | norfentanyl 1 ng/mL$^8$|
| 466  | >19 yr| fentanyl                                        | U          | Ingestion| Adv rxn       |                      |                        |
| #  | Age  | Method     | Source | Route | Substance(s)                      | Concentration(s) | Interpretation | Cause/Reason |
|----|------|------------|--------|-------|----------------------------------|------------------|---------------|--------------|
| 467 | 17 yr | A/C        | Ingestion | Int abuse | fentanyl, cocaine A/C | 14 ng/mL§, 0.03 μg/mL§ | benzoylcegonine 1 μg/mL§ | 15 ng/mL§ |
| 468 | 36 yr | A          | Ing/Inh | Int abuse | fentanyl cocaine ethanol | 15 ng/mL§, 0.11 μg/mL§ | benzoylecgonine 1 μg/mL§ | 0.27 |
| 469 | 48 yr | A/C        | Derm/Ing | Int unk | fentanyl diphenhydramine sildenafil | 7.9 ng/mL§, 6.2 ng/mL§ | norfentanyl | 13.7 ng/mL§# |
| 470 | 42 yr | U          | Ingestion | Int unk | fentanyl methylphenidate | 31 ng/mL§, 0.07 μg/mL§ | 130 ng/mL§ | 2.5 μg/mL§ |
| 471 | 49 yr | U          | Derm/Ing | Int unk | fentanyl morphine codeine A | 13.7 ng/mL§# | 130 ng/mL§ | 2.5 μg/mL§ |
| 472 | 28 yr | A/C        | Unknown | Int suicide | fentanyl oxycodone | 14.4 ng/mL§# | | 14.4 ng/mL§# |
| 473 | 16 yr | A          | Ingestion | Int abuse | fentanyl patch | | | |
| 474 | 29 yr | A          | Ingestion | Int abuse | fentanyl patch | | | |
| 475 | 31 yr | A          | Ingestion | Int unk | fentanyl patch | 5 ng/mL | | |
| 476 | 39 yr | A/C        | Ingestion | Int suicide | fentanyl patch | | | |
| 477 | 41 yr | A          | Dermal   | Int suicide | fentanyl patch | | | |
| 478 | 43 yr | A          | Ingestion | Int abuse | fentanyl patch | | | |
| 479 | 56 yr | A/C        | Unknown | Unknown | fentanyl patch acetaminophen/hydrocodone alprazolam | 8 ng/mL§ | hydrocodone 80 ng/mL§ | 30 ng/mL§ |
| 480 | 49 yr | A/C        | Unknown | Unknown | fentanyl patch bupropion cyclobenzaprine A | 16 ng/mL§# | | |
| 481 | >19 yr | A          | Ingestion | Int suicide | fentanyl patch ethanol | 43,000 ng/mL§ | hydrocodone 80 ng/mL§ | 30 ng/mL§ |
| 482 | 28 yr | A          | Ingestion | Int abuse | fentanyl patch gabapentin fluoxetine A | | | |
| 483 | 52 yr | A/C        | Derm/Ing | Unknown | fentanyl patch gabapentin fluoxetine A | | | |
| 484 | 47 yr | U          | Ing/Unk  | Unknown | hydrocodone acetaminophen | 400 ng/mL§ | | |
| 485 | 29 yr | U          | Ing/Unk  | Unknown | hydrocodone alprazolam | 200 ng/mL§ | 80 ng/mL§ | |
| 486 | Unk  | U          | Ingestion | Int suicide | hydrocodone ethanol diphenhydramine | 242 ng/mL | 59 mg/dL§ | 0.946 μg/mL§ |

Continued
## TABLE 21
(Continued)

| Case | Age | Substances | Chronicity | Route | Reason       | Blood concentrations | Interval after exposure |
|------|-----|------------|------------|-------|--------------|----------------------|-------------------------|
| 487 p| 18 yr| hydrocodone, methadone, alprazolam<sup>A</sup> | U          | Ingestion | Unknown     | 250 ng/mL<sup>§</sup> | 0.1 µg/mL<sup>§</sup>   |
|      |      |            |            |        |              | 100 ng/mL<sup>§</sup> |                         |
| 488 p| 33 yr| hydrocodone, methadone, alprazolam<sup>A</sup> | A          | Ingestion | Int unk     | 300 ng/mL<sup>§</sup> | 0.1 µg/mL<sup>§</sup>   |
|      |      |            |            |        |              | 100 ng/mL<sup>§</sup> |                         |
| 489  67 yr| hydrocodone, morphine | A/C | Ingestion/Paren | Unknown | morphine | | |                  |
| 490 p| 44 yr| hydrocodone, oxycodone, trazodone<sup>A</sup> | U          | Ingestion | Unknown     | 400 ng/mL<sup>§</sup> | 400 ng/mL<sup>§</sup>   |
|      |      |            |            |        |              | 600 ng/mL<sup>§</sup> |                         |
| 491 p| >19 yr| hydrocodone, unk muscle relaxant, diphenhydramine<sup>A</sup> | A          | Ingestion | Int suicide | | |                  |
| 492 p| 26 yr| hydromorphone, ethanol | U          | Ingestion | Int suicide | | |                  |
| 493  17 yr| ibuprofen | A      | Ingestion | Int suicide | | |                  |
| 494 p| 17 yr| ibuprofen, unk drug, promethazine<sup>A</sup> | A          | Ingestion | Int unk     | | |                  |
| 495  49 yr| ibuprofen, valproic acid | A      | Ingestion | Int suicide | 260 µg/mL | > 150 µg/mL |                  |
| 496 p| 32 yr| levorphanol | A          | Ingestion | Int abuse   | | |                  |
| 497 p| 32 yr| meperidine | A          | Parenteral | Int unk     | | |                  |
| 498  49 yr| meperidine | U      | Parenteral | Unknown     | 2.5 µg/mL<sup>§</sup> | | |                  |
| 499  55 yr| meperidine, promethazine | A      | Ingestion | Int suicide | | |                  |
| 500  5 yr| metamizol | C      | Ingestion | Adv rxn     | | |                  |
| 501 ip| 2 mo| methadone | A          | Ingestion | Malicious   | | |                  |
| 502 ip| 15 mo| methadone | A          | Ingestion | Malicious   | 0.3 µg/mL<sup>§</sup> | | |                  |
| 503 p| 6 yr| methadone | A          | Ingestion | Unint gen   | 0.07 µg/mL<sup>§</sup> | | |                  |
| 504 p| 14 yr| methadone | A          | Ingestion | Int abuse   | | |                  |
| 505 p| 16 yr| methadone | A          | Ingestion | Int suicide | 0.29 µg/mL<sup>§</sup> | EDDP 0.01 µg/mL<sup>§</sup> |
| 506 p| 17 yr| methadone | A          | Ingestion/Paren | Int abuse | | |                  |
| 507 p| 18 yr| methadone | A          | Ingestion | Int abuse   | 0.079 µg/mL | | |                  |
| 508 p| 19 yr| methadone | A          | Unknown | Int abuse   | | |                  |
| 509 p| 25 yr| methadone | A/C         | Ingestion | Int suicide | | |                  |
| 510  26 yr| methadone | A      | Ingestion | Int unk     | | |                  |
| 511 p| 38 yr| methadone | A          | Ingestion | Int unk     | | |                  |
| 512 p| 40 yr| methadone | U          | Ingestion | Unknown     | | |                  |
| 513 p| 43 yr| methadone | A          | Ingestion | Int suicide | | |                  |
| 514 p| 47 yr| methadone | U          | Unknown | Int suicide | | |                  |
| 515 p| 47 yr| methadone | A/C         | Ingestion | Int suicide | | |                  |
| 516 ip| 50 yr| methadone | A          | Ingestion | Int misuse  | | |                  |
| 517 ip| >19 yr| methadone | U          | Unknown | Int abuse   | | |                  |
| Page | Age | Drug(s)                | Route | Intention       | Result |
|------|-----|------------------------|-------|-----------------|--------|
| 518  | >19 y | methadone             | U     | Unknown         | Int abuse |
| 519  | >19 y | methadone             | A     | Ingestion       | Unknown |
| 520  | >19 y | methadone             | A/C   | Ingestion       | Int abuse |
| 521  | Unk  | methadone             | A     | Unknown         | Int abuse 0.209 μg/mL §
| 522  | 30 y | methadone acetaminophen oxycodone A | A/C | Ingestion       | Int suicide |
| 523  | 43 y | methadone acetaminophen/ hydrocodone | U | Ingestion       | Int unk 0.1 μg/mL § hydrocodone 460 ng/mL § |
| 524  | 54 y | methadone acetaminophen/ hydrocodone cocaine A | A | Ing/Unk        | Int abuse 7.5 μg/mL § |
| 525  | 30 y | methadone acetaminophen/ hydrocodone cyclobenzaprine A | U | Ingestion       | Int suicide |
| 526  | 40 y | methadone acetaminophen/ hydrocodone phenobarbital | C | Ingestion       | Int suicide 1 μg/mL § hydrocodone 100 ng/mL § 1.4 μg/mL § 50 ng/mL § |
| 527  | 27 y | methadone alprazolam   | U     | Unknown         | Int unk 0.2 μg/mL § |
| 528  | 31 y | methadone alprazolam   | U     | Ingestion       | Unknown |
| 529  | 33 y | methadone alprazolam   | U     | Unknown         | Int abuse |
| 530  | 48 y | methadone alprazolam   | A     | Ing/Unk        | Int unk |
| 531  | 32 y | methadone alprazolam clonazepam A | U | Ing/Unk         | Int unk |
| 532  | 18 y | methadone alprazolam cocaine | U | Ing/Unk         | Int abuse |
| 533  | 29 y | methadone alprazolam escitalopram | U | Ingestion       | Int unk 0.471 μg/mL § 180 ng/mL § |
| 534  | 28 y | methadone alprazolam ethanol A | C | Ingestion       | Int abuse |
| 535  | 33 y | methadone alprazolam oxycodone A | U | Ingestion       | Unknown 0.5 μg/mL § 60 ng/mL § 40 ng/mL § |
| 536  | 34 y | methadone alprazolam promethazine A | U | Ing/Inh/Paren   | Int unk 0.23 μg/mL § 40 ng/mL § |
| 537  | 49 y | methadone amitriptyline | A/C  | Ingestion       | Int suicide |

Continued
| Case  | Age  | Substances                        | Chronicity | Route       | Reason            | Blood concentrations | Interval after exposure |
|-------|------|-----------------------------------|------------|-------------|-------------------|----------------------|-------------------------|
| 538 p | 23   | methadone benzodiazepine          | A          | Ing/Unk     | Int abuse         |                      |                         |
| 539 p | 34   | methadone benzodiazepine cocaine  | A          | Ing/Unk     | Int suicide       |                      |                         |
| 540 p | 34   | methadone buprenorphine           | A          | Ingestion   | Int abuse         |                      |                         |
| 541 p | 30   | methadone buspirone aripiprazole  | A          | Ingestion   | Int abuse         | 0.424 μg/mL\(\text{§}\) 9.9 ng/mL\(\text{§}\) |                         |
| 542 p | 34   | methadone                         | A/C        | Ing/Inh     | Int abuse         | 0.37 μg/mL\(\text{§}\) EDDP 0.04 μg/mL\(\text{§}\) |                         |
| 543 p | 40   | methadone cocaine alprazolam      | A          | Ing/Unk     | Int suicide       |                      |                         |
| 544 p | 19   | methadone cocaine oxycodone       | A/C        | Ing/Unk     | Int abuse         | 0.104 μg/mL\(\text{§}\) |                         |
| 545 p | 19   | methadone promethazine            | U          | Ing/Unk     | Int abuse         | 0.6 μg/mL\(\text{§}\) |                         |
| 546 p | 28   | methadone promethazine            | U          | Ing/Inh     | Int abuse         | 0.4 μg/mL\(\text{§}\) 0.05 μg/mL\(\text{§}\) 300 ng/mL\(\text{§}\) |                         |
| 547 p | 28   | methadone cyclobenzaprine         | U          | Ingestion   | Int suicide       | 1.1 μg/mL\(\text{§}\) |                         |
| 548 p | 20   | methadone diazepam                | U          | Ingestion   | Int abuse         | 0.36 μg/mL\(\text{§}\) nordiazepam 200 ng/mL\(\text{§}\) |                         |
| 549 p | 24   | methadone diazepam                | U          | Ingestion   | Int misuse        | 0.24 μg/mL           |                         |
| 550 p | 46   | methadone diazepam                | A/C        | Ingestion   | Int suicide       | 0.47 μg/mL\(\text{§\#}\) |                         |
| 551 p | 59   | methadone diazepam                | A          | Ingestion   | Int suicide       |                      |                         |
| 552 p | 33   | methadone diazepam marijuana      | A/C        | Ing/Inh     | Int suicide       | 0.15 μg/mL EDDP 0.02 μg/mL 80 ng/mL nordiazepam 180 ng/mL |                         |
| 553 p | 30   | methadone diazepam oxycodone      | U          | Ingestion   | Int unk           | 1.1 μg/mL\(\text{§}\) 680 ng/mL\(\text{§}\#\) 80 ng/mL\(\text{§}\) |                         |
| 554 p | 53   | methadone diazepam quetiapine     | A/C        | Ingestion   | Int abuse         | 0.1 μg/mL 74 ng/mL 63 ng/mL |                         |
| 555 p | 23   | methadone                         | A          | Ingestion   | Int abuse         |                      |                         |
| Patient | Age/y | Substance(s)                                      | Route(s) | Other Factors       | Toxicity Level(s) |
|---------|-------|---------------------------------------------------|----------|---------------------|-------------------|
| 556 p   | 35 yr | ethanol, methadone, ethanol                       | A Ing/Unk| Int abuse           |                   |
| 557     | 18 yr | methadone                                       | A Ing/Inh| Int abuse           |                   |
| 558 p   | 20 yr | methadone, hydrocodone, methamphetamine          | C Ingestion| Int unk             | 0.5 μg/mL §       |
|         |       |                                                   |          |                     | 80 ng/mL §        |
| 559     | 26 yr | methadone, methadone, marijuana                  | A Ing/Inh| Int suicide         |                   |
| 560 p   | 27 yr | methadone, morphine (long-acting)                | U Unknown| Int suicide         | 0.337 μg/mL       |
| 561 p   | 31 yr | methadone, nortriptyline, alprazolam             | U Ing/Unk| Int suicide         | 0.25 μg/mL §      |
|         |       |                                                   |          |                     | 219 ng/mL §       |
| 562 p   | 45 yr | methadone, olanzapine, alprazolam                | A Ingestion| Int unk             |                   |
| 563     | 48 yr | methadone, opioid                               | A Unknown| Int abuse           |                   |
| 564     | 45 yr | methadone, oxycodone, alprazolam                | A Ing/Unk| Int suicide         |                   |
| 565 p   | 30 yr | methadone, oxycodone (long-acting), acetaminophen, oxycodone | C Ingestion| Int abuse         |                   |
| 566 p   | 44 yr | methadone, oxycodone (long-acting), alprazolam  | U Ing/Inh/Unk| Int abuse          |                   |
| 567 p   | 23 yr | methadone, tizanidine, clonazepam               | A Ingestion| Int suicide         | 0.15 μg/mL §      |
| 568 p   | 56 yr | methadone, trazodone, loperamide                | U Ingestion| Int unk             | 0.37 μg/mL §      |
|         |       |                                                   |          |                     | 100 ng/mL §       |
| 569     | 25 yr | methadone, ziprasidone                          | A/C Ingestion| Int unk             | 0.135 μg/mL       |
| 570 p   | 21 mo| morphine                                         | A Ingestion| Unknown             | > 5,000 ng/mL     |
| 571 ip  | 16 yr| morphine                                         | A Ingestion| Int abuse           |                   |
| 572 ip  | 22 yr| morphine                                         | U Unknown| Unknown             |                   |
| 573 p   | 22 yr| morphine                                         | U Unknown| Unknown             | 37 ng/mL §        |
| 574 i   | 24 yr| morphine                                         | U Unknown| Unknown             |                   |
| 575 i   | 24 yr| morphine                                         | U Ingestion| Unknown             |                   |
| 576 p   | 37 yr| morphine                                         | U Unknown| Unknown             | 100 ng/mL §       |
| 577 p   | 43 yr| morphine                                         | A Unknown| Int abuse           | 26 ng/mL §        |
| 578     | 59 yr| morphine                                         | A/C Other| Ther err            |                   |
| 579     | 88 yr| morphine                                         | A/C Ingestion| Ther err          |                   |
| 580 p   | >19 yr| morphine, amitriptyline, carbaryl               | A/C Ing/Unk| Int suicide        |                   |

Continued
| Case | Age | Substances | Chronicity | Route | Reason | Blood concentrations | Interval after exposure |
|------|-----|------------|------------|-------|--------|----------------------|-------------------------|
| 581  | 29 yr | morphine, cocaine, marijuana | U | Ing/Inh | Int unk | 40 ng/mL | 0.6 μg/mL |
| 582  | 47 yr | morphine, diazepam | A | Unknown | Unknown | 1,900 ng/mL | 0.3 μg/mL |
| 583  | >19 yr | morphine, diazepam | U | Ingestion | Unknown | 152 ng/mL | 267 ng/mL | 353 ng/mL |
| 584  | 50 yr | morphine, hydrocodone | A | Ingestion | Int suicide | | |
| 585  | >19 yr | morphine, hydromorphone, alprazolam | U | Ing/Unk | Int suicide | 2,003 ng/mL | 180 ng/mL | 22 ng/mL |
| 586  | 43 yr | morphine, methadone, alprazolam | A/C | Ingestion | Int suicide | | |
| 587  | 13 yr | morphine (long-acting) | A | Ingestion | Int abuse | | |
| 588  | 37 yr | morphine (long-acting) | A | Ingestion | Int suicide | | |
| 589  | 42 yr | morphine (long-acting) | A | Ingestion | Int unk | | |
| 590  | >19 yr | morphine (long-acting) | U | Unknown | Unknown | | |
| 591  | 53 yr | morphine (long-acting), acetaminophen/hydrocodone, diazepam | A/C | Ingestion | Int suicide | | |
| 592  | 31 yr | morphine (long-acting), alprazolam, temazepam | A/C | Ingestion | Unknown | 84 ng/mL | 53 ng/mL |
| 593  | 17 yr | morphine (long-acting), ethanol | A | Ingestion | Int unk | 590 ng/mL | 50 mg/dL |
| 594  | 19 yr | morphine (long-acting), oxycodone (long-acting), marijuana | A/C | Ing/Inh | Int abuse | | |
| 595  | 57 yr | morphine (long-acting), unk drug | A | Ingestion | Int suicide | | |
| 596  | 63 yr | naproxen, ethanol | A | Ingestion | Int suicide | 1,100 μg/mL | 260 mg/dL |
| 597  | 24 yr | opioid | A | Unknown | Int abuse | | |
| 598  | 25 yr | opioid | A | Ingestion | Int abuse | | |
| 599  | 29 yr | opioid | A | Ingestion | Int suicide | | |
| 600  | 30 yr | opioid | A | Ingestion | Int suicide | | |
| 601  | 20 yr | opioid | U | Ing/Unk | Int suicide | | |
| 602  | 30 yr | opioid, benzodiazepine | A | Ing/Inh/Unk | Int suicide | | |
| 603  | 35 yr | opioid, benzodiazepine | U | Ing/Inh | Int abuse | | |
| Patient ID | Age | Drug(s)                          | Route | Route of Entry | Intention | Serum/Plasma Level(s) |
|------------|-----|----------------------------------|-------|----------------|-----------|-----------------------|
| 604        | 39 yr | opioid, ethanol, acamprosate A  | A/C   | Ingestion     | Int suicide | 273 mg/dL             |
| 605        | 50 yr | opioid, isopropyl alcohol, hydrogen peroxide A | A | Ingestion | Int suicide |                      |
| 606        | 57 yr | opium tincture, tramadol, metoprolol A | A/C | Ingestion | Int suicide |                      |
| 607        | 3 yr  | oxycodone                        | A     | Ingestion     | Unint gen  | free oxycodone 280 ng/mL § |
| 608        | 19 yr | oxycodone                        | A     | Other         | Int abuse   | 1,500 ng/mL §        |
| 609        | 38 yr | oxycodone                        | A     | Ingestion     | Int unk     | 1,000 ng/mL §, 100 ng/mL § |
| 610        | >19 yr| oxycodone                        | U     | Ingestion     | Int abuse   | 1,500 ng/mL §        |
| 611        | 53 yr | oxycodone, alprazolam            | U     | Ingestion     | Int suicide | 581 ng/mL §, 145 ng/mL §, 199 ng/mL § |
| 612        | Unk   | oxycodone, amitriptyline, citalopram | U | Ingestion | Int unk     | 1,500 ng/mL §        |
| 613        | 28 yr | oxycodone, citalopram            | U     | Ingestion     | Unknown     | 450 ng/mL §, benzoylcegonine 0.54 μg/mL § |
| 614        | 36 yr | oxycodone, cocaine, ethanol A   | A/C   | Ingestion/Unk | Int abuse   |                      |
| 615        | 45 yr | oxycodone, cyclobenzaprine, clonazepam A | A/C | Ingestion   | Int suicide | 1,540 ng/mL §, free oxycodone 1,110 ng/mL §, oxymorphone 1,890 ng/mL § |
| 616        | 57 yr | oxycodone, cyclobenzaprine, phentermine A | U  | Ingestion     | Unknown     | 500 ng/mL §, 0.1 μg/mL § |
| 617        | 62 yr | oxycodone, diazepam, potassium chloride | U  | Ingestion     | Int unk     | 200 ng/mL §        |
| 618        | 43 yr | oxycodone, doxepin, fluoxetine A | C    | Ingestion     | Ther err    | 110 ng/mL §, 430 ng/mL §, 1,540 ng/mL § |
| 619        | 45 yr | oxycodone, ethanol, aripiprazole | U    | Ingestion     | Unknown     |                      |
| 620        | 47 yr | oxycodone, fentanyl patch       | A     | Derm/Ing     | Int suicide |                      |
| 621        | 36 yr | oxycodone, heparin              | A     | Paren/Unk     | Int abuse   |                      |
| 622        | 39 yr | oxycodone, ibuprofen            | U     | Ingestion     | Int unk     |                      |
| 623        | 22 yr | oxycodone, methadone, aripiprazole | A  | Ingestion     | Int unk     | 400 ng/mL §, 0.08 μg/mL § |
TABLE 21
(Continued)

| Case | Age  | Substances                                      | Chronicity | Route   | Reason       | Blood concentrations | Interval after exposure |
|------|------|------------------------------------------------|------------|---------|--------------|----------------------|--------------------------|
| 624 p| 51 yr| oxycodone methadone diazepam \(^A\)            | A          | Ingestion| Int suicide  | 7,000 ng/mL \(^§\)  | 1.3 \(\mu\)g/mL \(^§\)  |
|      |      |                                                |            |         |              |                      | 400 ng/mL \(^#\)        |
| 625 p| 48 yr| oxycodone trazodone                             | A          | Ingestion| Int suicide  | 3,600 ng/mL \(^§\)  |                          |
| 626 ip| 17 yr| oxycodone (long-acting)                         | A          | Ingestion| Int misuse   |                      |                          |
| 627 p| 29 yr| oxycodone (long-acting)                         | A          | Ingestion| Int suicide  |                      |                          |
| 628  | 43 yr| oxycodone (long-acting)                         | U          | Unknown | Unknown      |                      |                          |
| 629 p| 24 yr| oxycodone (long-acting) acetaminophen/          | U          | Ingestion| Int suicide  |                      |                          |
|      |      | hydrocodone alprazolam                          |            |         |              |                      |                          |
| 630 i| 21 yr| oxycodone (long-acting) alprazolam diazepam     | U          | Ingestion| Int unk      | 280 ng/mL \(^§\)    | 120 ng/mL \(^§\)        |
|      |      |                                                |            |         |              |                      | 150 ng/mL \(^§\)        |
|      |      |                                                |            |         |              |                      | nordiazepam 230 ng/mL \(^§\) |
| 631 p| 63 yr| oxycodone (long-acting) carvedilol gabapentin   | A          | Ingestion| Int suicide  |                      |                          |
| 632 ip| 47 yr| oxycodone (long-acting) diazepam                | A/C        | Ing/Paren| Int abuse    | 1,600 ng/mL          |                          |
| 633 ip| 19 yr| oxycodone (long-acting) hydrocodone amitriptyline\(^A\) | C          | Ing/Inh | Int abuse    | 400 ng/mL \(^§\)    | 50 ng/mL                 |
|      |      |                                                |            |         |              |                      | 600 ng/mL \(^§\)        |
|      |      |                                                |            |         |              |                      | nortriptyline 700 ng/mL \(^§\) |
| 634 p| 26 yr| oxycodone (long-acting) hydromorphone promethazine | A          | Ingestion| Int unk      |                      |                          |
| 635 p| >19 yr| oxycodone (long-acting) meperidine acetaminophen/hydrocodone | A/C        | Ing/Paren| Ther err    |                      |                          |
| 636 p| 46 yr| oxycodone (long-acting) methadone hydrocodone \(^A\) | U          | Ingestion| Unknown      | 300 ng/mL \(^§\)    | 0.06 \(\mu\)g/mL \(^§\) |
|      |      |                                                |            |         |              |                      | 60 ng/mL \(^3\)         |
| 637 p| 41 yr| oxycodone (long-acting) quetiapine gabapentin   | U          | Ingestion| Int unk      |                      |                          |
| 638 ip| 34 yr| propoxyphene                                    | A          | Ingestion| Int suicide  |                      |                          |
| 639  | 38 yr| propoxyphene                                    | A          | Ingestion| Int suicide  |                      |                          |
| 640  | 43 yr| propoxyphene                                    | U          | Ingestion| Int suicide  |                      |                          |
| 641 p| 44 yr| propoxyphene                                    | A          | Ingestion| Int suicide  |                      |                          |
| 642 p| 35 yr| propoxyphene acetaminophen/caffeine/            | U          | Ingestion| Unknown      |                      |                          |
|      |      | butalbital                                       |            |         |              |                      |                          |
Anesthetics

652 11 yr bupivacaine  A Oth/Paren Ther err 7.9 μg/mL

653 ip 22 yr lidocaine  A Dermal Ther err

654 p >19 yr lidocaine patch  A Dermal Unknown

655 ip 27 yr nitrous oxide  U Inhalation Int abuse

656 20 yr unk anesthetics  A Inh/Paren Adv rxn

Anticholinergic drugs

657 50 yr benztropine  A/C Ingestion Int suicide

Anticoagulants

658 88 yr eptifibatide  A Parenteral Ther err

659 82 yr heparin  C Parenteral Adv rxn

See also cases 1142 (ketamine); 823 (lidocaine).
| Case | Age | Substances                                                                 | Chronicity | Route   | Reason       | Blood concentrations | Interval after exposure |
|------|-----|----------------------------------------------------------------------------|------------|---------|--------------|----------------------|------------------------|
| 660  | 67 yr | warfarin, amlodipine, ramipril<sup>a</sup>                                | A/C        | Ingestion | Int suicide  |                      |                        |
| 661  | 60’s yr | warfarin, temazepam, eszopiclone<sup>a</sup>                               | A          | Ingestion | Int suicide  |                      |                        |

See also cases 380, 936 (clopidogrel); 621 (heparin); 462, 873, 918 (warfarin).

**Anticonvulsants**

| Case | Age | Substances                                                                 | Chronicity | Route | Reason       | Blood concentrations | Interval after exposure |
|------|-----|----------------------------------------------------------------------------|------------|-------|--------------|----------------------|------------------------|
| 662  | 30 yr | carbamazepine, acetaminophen, ropoxyphene, venlafaxine<sup>a</sup>         | U          | Ingestion | Int suicide  | 39.5 μg/mL, 120 μg/mL<sup>y</sup> |                        |
| 663  | 46 yr | carbamazepine, mirtazapine, clonazepam<sup>a</sup>                         | A          | Ingestion | Int suicide  | 7.8 μg/mL            |                        |
| 664  | 37 yr | carbamazepine, tricyclic antidepressant, citalopram<sup>a</sup>            | A/C        | Ingestion | Int suicide  | 20.9 μg/mL           |                        |
| 665  | 48 yr | lamotrigine, clonazepam                                                   | A/C        | Ingestion | Int suicide  |                      |                        |
| 666  | 59 yr | oxcarbazepine                                                              | A/C        | Ingestion | Int suicide  |                      |                        |
| 667  | 32 yr | oxcarbazepine, levetiracetam                                               | A/C        | Ingestion | Int suicide  |                      |                        |
| 668  | 30 yr | oxcarbazepine, venlafaxine, cocaine                                         | A          | Ing/Unk | Int suicide  | 34.42 μg/mL<sup>y</sup>, 86,000 ng/mL<sup>§</sup>, 0.37 μg/mL<sup>§, #</sup> |                        |
| 669  | 35 yr | topiramate, quetiapine, escitalopram<sup>a</sup>                           | A/C        | Ingestion | Int suicide  |                      |                        |
| 670  | 27 yr | valproic acid                                                              | A/C        | Ingestion | Int suicide  | 3,465 μg/mL          |                        |
| 671  | 61 yr | valproic acid, acetaminophen, enalapril                                    | A          | Ingestion | Int suicide  | 337 μg/mL, 332.8 μg/mL |                        |
| 672  | 57 yr | valproic acid, benzodiazepine, opioid                                       | U          | Ingestion | Int suicide  | 66.4 μg/mL           |                        |
| 673  | 52 yr | valproic acid, citalopram, imipramine                                      | U          | Ingestion | Adv rxn      |                      |                        |
| 674  | 32 yr | valproic acid, insulin, amphetamine<sup>a</sup>                            | A          | Ing/Paren/Unk | Int suicide  | 1,138.7 μg/mL       |                        |
| 675  | 47 yr | valproic acid, mirtazapine, trazodone<sup>a</sup>                          | A          | Ingestion | Int suicide  | 609 μg/mL           |                        |
| 676  | 18 yr | valproic acid, olanzapine                                                  | A/C        | Ingestion | Int suicide  | 1.044 μg/mL         |                        |
See also cases 384, 844 (carbamazepine); 483, 631, 637, 692, 696, 704, 750, 753, 986, 1068, 1082 (gabapentin); 82, 706, 779, 793 thru 795, 1048, 1084 (lamotrigine); 667 (levetiracetam); 692 (oxcarbazepine); 737, 770, 794, 841 (oxcarbazepine); 847, 1071, 1261 (phenytoin); 1005 (tiagabine); 768, 946 (topiramate); 120, 328, 495 (valproic acid); 947 (valproic Acid); 1044, 1063, 1073, 1154 (valproic acid).

Antidepressants

| Case | Age | Drug(s)        | Route | Outcome | Concentration | Peak Time |
|------|-----|----------------|-------|---------|---------------|-----------|
| 677 p| 33 yr | amitriptyline   | U     | Int suicide |               |           |
| 678 | 35 yr | amitriptyline   | A     | Int suicide |               |           |
| 679 p| 36 yr | amitriptyline   | A     | Int suicide |               |           |
| 680 | 54 yr | amitriptyline   | A/C   | Int suicide | 400 ng/mL     |           |
| 681 | 55 yr | amitriptyline   | A     | Int suicide |               |           |
| 682 | 63 yr | amitriptyline   | A     | Int suicide |               |           |
| 683 p| Unk  | amitriptyline   | A     | Int suicide |               |           |
| 684 | 50 yr | amitriptyline   | A     | Int suicide |               |           |

amlopidine

diphenhydramine

| Case | Age | Drug(s)        | Route | Outcome | Concentration | Peak Time |
|------|-----|----------------|-------|---------|---------------|-----------|
| 685 p| 50 yr | amitriptyline | U     | Int suicide |               |           |
| 686 | 41 yr | amitriptyline | A/C   | Int suicide |               |           |
| 687 p| 51 yr | amitriptyline | U     | Int suicide | 420 ng/mL     |           |
| 688 | 16 yr | amitriptyline | A     | Int suicide |               |           |
| 689 p| 25 yr | amitriptyline | A/C   | Int unk   |               |           |
| 690 p| 36 yr | amitriptyline | A/C   | Int suicide |               |           |
| 691 p| 59 yr | amitriptyline | A/C   | Int suicide | 3,606 ng/mL   |           |
| 692 | 24 yr | amitriptyline | A/C   | Int suicide |               |           |
| 693 p| 28 yr | amitriptyline | A/C   | Int suicide |               |           |
| 694 p| 25 yr | amitriptyline | A/C   | Int suicide | 807 ng/mL     |           |
| 695 p| 46 yr | amitriptyline | A/C   | Int suicide |               |           |
| 696 | 23 yr | amitriptyline | A/C   | Int suicide |               |           |
| 697 p| 29 yr | amitriptyline | U     | Unknown   |               |           |
| 698 | 19 yr | bupropion      | A     | Int suicide | 308 µg/mL     |           |
| 699 p| 44 yr | bupropion      | A/C   | Int suicide |               |           |

Continued
| Case | Age  | Substances                                                                 | Chronicity | Route      | Reason         | Blood concentrations | Interval after exposure |
|------|------|-----------------------------------------------------------------------------|------------|------------|----------------|----------------------|------------------------|
| 700  | 23 yr| bupropion, cocaine, ibuprofen                                               | U          | Ing/Unk    | Int abuse      |                      |                        |
| 701  | 24 yr| bupropion, ethanol                                                          | A/C        | Ingestion  | Int suicide    | 7,600 ng/mL §        | 5,640 ng/mL §          |
|      |      | hydroxybupropion, ethanol                                                   |            |            |                |                      |                        |
| 702  | 38 yr| bupropion, ethanol                                                          | U          | Asp/Ing    | Int suicide    | 1,200 ng/mL §        | 113 mg/dL §            |
| 703  | 38 yr| bupropion, ethanol                                                          | A/C        | Ingestion  | Int suicide    |                      |                        |
| 704  | 27 yr| bupropion, gabapentin, ziprasidone                                          | A/C        | Ingestion  | Int suicide    |                      |                        |
| 705  | 35 yr| bupropion, ibuprofen, activated charcoal                                    | U          | Asp/Ing    | Int suicide    | 1,900 ng/mL §        | 1,500 ng/mL §          |
|      |      | hydroxybupropion, threobupropion, morpholinobupropion, threobupropion,     |            |            |                |                      | 1,500 ng/mL §          |
|      |      | 3,600 ng/mL §                                                               |            |            |                |                      | 130 μg/mL §            |
| 706  | 41 yr| bupropion, lamotrigine, sertraline                                          | U          | Ingestion  | Int unk        |                      |                        |
| 707  | 44 yr| bupropion, loratadine                                                       | A          | Ingestion  | Int suicide    |                      |                        |
| 708  | 50 yr| bupropion, losartan, hydrochlorothiazide                                    | A/C        | Ingestion  | Int suicide    |                      |                        |
| 709  | 40 yr| bupropion, olanzapine, aripiprazole                                         | A/C        | Ingestion  | Int suicide    |                      |                        |
| 710  | 36 yr| bupropion, propranolol, trazodone                                          | A          | Ingestion  | Int suicide    |                      |                        |
| 711  | 37 yr| bupropion, risperidone, clonazepam                                         | A/C        | Ingestion  | Int abuse      |                      |                        |
| 712  | 40 yr| bupropion, trazodone, methamphetamine                                      | A          | Ingestion  | Int suicide    | 3,900 ng/mL §        | 80 ng/mL §             |
|      |      | methamphetamine                                                             |            |            |                |                      | 0.027 μg/mL §          |
| 713  | 49 yr| bupropion, valsartan, eszopiclone                                          | U          | Ingestion  | Unknown        |                      |                        |
| 714  | 18 yr| bupropion, venlafaxine                                                      | A/C        | Ingestion  | Int suicide    |                      |                        |
| 715  | 23 yr| bupropion, venlafaxine (long-acting)                                       | A          | Ingestion  | Int suicide    |                      |                        |
| Age | Gender | Drug(s)                  | Route | Method     | Outcome |
|-----|--------|--------------------------|-------|------------|---------|
| 16  |        | bupropion (long-acting)  | A     | Ingestion  | Int suicide |
| 21  |        | bupropion (long-acting)  | A/C   | Ingestion  | Int suicide |
| 21  |        | bupropion (long-acting)  | A/C   | Ingestion  | Int suicide |
| 41  |        | bupropion (long-acting)  | A     | Ingestion  | Int suicide |
| 50  |        | bupropion (long-acting)  | A     | Ingestion  | Int suicide |
| 88  |        | bupropion (long-acting)  | A/C   | Ingestion  | Int suicide |
| 31  |        | bupropion (long-acting)  | A     | Asp/Ing    | Int suicide |
| 42  |        | bupropion (long-acting)  | A/C   | Ingestion  | Int suicide |
| 27  |        | bupropion (long-acting)  | U     | Ingestion  | Int suicide |
| 17  |        | bupropion (long-acting)  | A     | Ing/Inh    | Int suicide |
| 47  |        | bupropion (long-acting)  | U     | Ingestion  | Int suicide |
| 57  |        | bupropion (long-acting)  | A/C   | Ingestion  | Int suicide |
| 34  |        | bupropion (long-acting)  | A/C   | Ingestion  | Int suicide |
| 40  |        | bupropion (long-acting)  | A     | Ingestion  | Int suicide |
| 42  |        | bupropion (long-acting)  | U     | Ingestion  | Int suicide |
| 16  |        | bupropion (long-acting)  | A     | Ingestion  | Int suicide |
| >19 |        | citalopram               | A     | Ingestion  | Int suicide |
| 29  |        | citalopram               | A     | Ingestion  | Unknown    |
| 61  |        | citalopram               | A     | Ingestion  | Int suicide |
| 65  |        | citalopram               | A/C   | Ingestion  | Int suicide |
| 38  |        | clomipram, oxcarbazepine| A/C   | Asp/Ing    | Int suicide |
| 19  |        | clomipram, ziprasidone   | A/C   | Ingestion  | Int suicide |
| 40  |        | desipramine              | A/C   | Ingestion  | Int suicide |
| 23  |        | desipramine              | A/C   | Ing/Unk    | Int suicide |
| 74  |        | desipramine, cocaine,    | A/C   | Ingestion  | Int suicide |

Continued
| Case | Age   | Substances        | Chronicity | Route     | Reason      | Blood concentrations | Interval after exposure |
|------|-------|-------------------|------------|-----------|-------------|----------------------|-------------------------|
| 742 p| 60’s yr| mirtazapine, clonazepam<sup>A</sup> | U          | Ingestion | Int suicide | > 10,000 ng/mL<sup>§</sup> | 0.06 μg/mL<sup>§</sup>     |
| 743 p| 30 yr  | doxepin, cocaine  | A/C        | Ing/Unk   | Int suicide | nordoxepin 900 ng/mL<sup>§</sup> | cocaethylene 0.08 μg/mL<sup>§</sup> |
|      |       |                   |            |           |             |                      | 100 ng/mL<sup>§</sup>     |
| 744 p| 48 yr  | mirtazapine, clonazepam<sup>A</sup>, promethazine | A          | Ingestion | Int suicide | 720 ng/mL nordoxepin 210 ng/mL |                      |
| 745  | 35 yr  | doxepin, diphenhydramine | A          | Ingestion | Int suicide | 0.11 μg/mL amphetamine 0.03 μg/mL |                      |
| 746 p| 44 yr  | doxepin, mirtazapine<sup>A</sup>, quetiapine<sup>A</sup> | A          | Ingestion | Int suicide | 2,200 ng/mL nordoxepin 1,800 ng/mL |                      |
| 747  | 38 yr  | doxepin, quetiapine<sup>A</sup>, cocaine<sup>A</sup> | A          | Ing/Unk   | Int suicide | ecgonine 0.338 μg/mL<sup>§</sup> benzoylecgonine 2.1 μg/mL<sup>§</sup> |                      |
| 748  | 56 yr  | duloxetine (long-acting), chlorpheniramine, alprazolam | C          | Ingestion | Adv rxn     | citalopram 730 ng/mL<sup>§</sup> 0.38 μg/mL<sup>§</sup>  |                      |
| 749 p| 39 yr  | escitalopram, gabapentin | U          | Ingestion | Int suicide | 0.068 μg/mL<sup>§</sup> |                      |
| 750  | 45 yr  | escitalopram, gabapentin | A/C        | Ingestion | Int suicide | 425.9 ng/mL<sup>§</sup> 213.5 ng/mL<sup>§</sup> 9.3 μg/mL<sup>¥</sup>  |                      |
| 751 i| 75 yr  | escitalopram, levothyraxone, venlafaxine<sup>A</sup> | A/C        | Ingestion | Int suicide | codeine 0.068 μg/mL<sup>§</sup> hydrocodone 295 ng/mL<sup>§</sup> |                      |
| 752 p| 55 yr  | fluoxetine, acetaminophen/codeine, gabapentin<sup>A</sup> | A          | Ingestion | Int suicide | 425.9 ng/mL<sup>§</sup> 213.5 ng/mL<sup>§</sup> 9.3 μg/mL<sup>¥</sup>  |                      |
| 753 p| 48 yr  | fluoxetine, acetaminophen/codeine, gabapentin<sup>A</sup> | A          | Ingestion | Int suicide | 0.068 μg/mL<sup>§</sup> hydrocodone 295 ng/mL<sup>§</sup> |                      |
754 p 27 yr fluoxetine cocaine opioid\textsuperscript{A} U Ing/Unk Unknown

755 38 yr fluoxetine diltiazem (long-acting) metoprolol\textsuperscript{A} A/C Ingestion Int suicide 290 µg/mL norfluoxetine 270 µg/mL 1.27 µg/mL 0.6 µg/mL 1,000 ng/mL\textsuperscript{§} norfluoxetine 1,000 ng/mL\textsuperscript{§} 14 ng/mL

756 ip 51 yr fluoxetine A/C Ingestion Int suicide 755 38 yr fluoxetine A/C Ingestion Int suicide

757 p 40 yr fluoxetine hydrocodone atenolol A/C Ingestion Int suicide 1,500 ng/mL\textsuperscript{§} norfluoxetine 1,000 ng/mL\textsuperscript{§}

758 p 27 yr imipramine hydromorphone amitriptyline A Ingestion Int suicide

759 70 yr lithium C Ingestion Ther err 2.4 mEq/L

760 42 yr lithium C Ingestion Ther err 2.4 mEq/L

761 37 yr lithium A Ingestion Adv rxn

762 p 35 yr mirtazapine acetaminophen/oxycodone alprazolam A/C Ingestion Int suicide

763 40 yr nortriptyline A Ingestion Unknown

764 53 yr nortriptyline A/C Ingestion Int suicide

765 59 yr nortriptyline A Ingestion Int suicide 1,405 ng/mL

766 36 yr nortriptyline acetaminophen/hydrocodone olanzapine\textsuperscript{A} A Ingestion Int suicide

767 p 49 yr nortriptyline amitriptyline fentanyl patch U Derm/Ing Int suicide

768 19 yr nortriptyline ethanol topiramate A Ingestion Int suicide

769 p 20 yr nortriptyline haloperidol aspirin A Ingestion Int suicide

770 52 yr nortriptyline haloperidol oxcarbazepine\textsuperscript{A} A Ingestion Int suicide

771 52 yr nortriptyline quetiapine bupropion\textsuperscript{A} C Ingestion Int suicide

772 43 yr nortriptyline venlafaxine baclofen\textsuperscript{A} U Ingestion Int suicide

773 p 28 yr nortriptyline A Ingestion Int suicide

Continued
| Case | Age | Substances | Chronicity | Route | Reason  | Blood concentrations | Interval after exposure |
|------|-----|------------|------------|-------|---------|----------------------|------------------------|
| 774  | 28 yr | venlafaxine quetiapine\(^A\) | U          | Ingestion | Int suicide | > 1,000 ng/mL       |                        |
| 775  | 56 yr | nortriptyline | U          | Ingestion | Int unk    |                      |                        |
| 776 p| 24 yr | sertraline bupropion | A          | Ingestion | Int suicide | 2,800 ng/mL\(^$\)  | 3,600 ng/mL\(^$\)     |
| 777  | 38 yr | sertraline acetaminophen/oxycodone phenobarbital/belladonna\(^A\) | A/C        | Ingestion | Int abuse   | 7.9 μg/mL\(^Y\)     | 6 h                    |
| 778  | 48 yr | sertraline amphetamine | A          | Ingestion | Int suicide |                      |                        |
| 779  | 38 yr | sertraline lamotrigine ibuprofen | A          | Ingestion | Int suicide |                      |                        |
| 780  | 47 yr | tranylcypromine paroxetine benzodiazepine | A/C        | Ingestion | Int suicide | 400 μg/mL\(^$\)     |                        |
| 781 p| 40’ s yr | trazodone | A/C        | Ingestion | Int suicide |                      |                        |
| 782 p| >19 yr | trazodone | U          | Ingestion | Unknown    |                      |                        |
| 783  | 48 yr | trazodone alprazolam unk chemical | A/C        | Ingestion | Int suicide |                      |                        |
| 784 p| 54 yr | tricyclic antidepressant | A          | Ingestion | Int suicide | 373 ng/mL           |                        |
| 785  | 34 yr | tricyclic antidepressant alprazolam escitalopram\(^A\) | A          | Ingestion | Int suicide |                      |                        |
| 786 p| 43 yr | tricyclic antidepressant cocaine opioid | U          | Ing/Unk   | Int abuse   |                      |                        |
| 787 p| 41 yr | tricyclic antidepressant ethanol | A/C        | Ingestion | Int suicide | 4,284.5 ng/mL\(^$\) |                        |
| 788 p| 49 yr | tricyclic antidepressant meperidine | U          | Ingestion | Int suicide |                      |                        |
| 789  | 18 yr | tricyclic antidepressant opioid benzodiazepine | A          | Ingestion | Int suicide |                      |                        |
| 790  | 20 yr | venlafaxine | U          | Ingestion | Int suicide |                      |                        |
| 791  | 40 yr | venlafaxine | A/C        | Ingestion | Int suicide |                      |                        |
| 792  | 30 yr | venlafaxine ethanol | A/C        | Ingestion | Unknown    | 23 mg/dL             |                        |
| 793  | 50 yr | venlafaxine lamotrigine | A/C        | Ingestion | Int suicide |                      |                        |
| 794  | 41 yr | venlafaxine lamotrigine oxcarbazepine | A/C        | Ingestion | Int suicide |                      |                        |
| 795 p| 35 yr | venlafaxine lamotrigine risperidone\(^A\) | A/C        | Ing/Inh   | Int suicide | 17,800 ng/mL\(^$\) | 11.78 μg/mL\(^$\)    |
| 796  | 28 yr | venlafaxine quetiapine | A/C        | Ingestion | Int suicide |                      |                        |
797 30's yr  venlafaxine (long-acting)  A/C  Ingestion  Int suicide  9,000 ng/mL
   venlafaxine (long-acting)  A/C  Ingestion  Int suicide  3,000 ng/mL

799 35 yr  venlafaxine (long-acting)  A/C  Asp/Ing  Int suicide  480 ng/mL§
   activated charcoal
   nortriptylineA

800 42 yr  venlafaxine (long-acting)  A/C  Ingestion  Int suicide  320 ng/mL§
   amitriptyline
   acetaminophen

801 69 yr  venlafaxine (long-acting)  A  Ingestion  Int suicide  44,000 ng/mL§
   bupropion (long-acting)

802 p 18 yr  venlafaxine (long-acting)  A  Ingestion  Int suicide  2,700 ng/mL§
   bupropion (long-acting)
   escitalopram

803 p 56 yr  venlafaxine (long-acting)  A  Ingestion  Int suicide  61,200 ng/mL§#
   citalopram

804 p 32 yr  venlafaxine (long-acting)  A  Ingestion  Unknown
   hydrocodone
   alprazolamA

See also cases 290, 335, 537, 580, 612, 633, 643, 758, 767, 800, 886, 932, 1068, 1075, 1127, 1141, 1188 (amitriptyline); 481, 724, 771, 776, 845, 987, 1027, 1030, 1063, 1084 (bupropion); 448, 688, 801, 802, 907, 1064 (bupropion (long-acting)); 612, 613, 650, 664, 673, 803, 901, 933, 989 (citalopram); 379 (clomipramine); 1035 (desipramine); 618 (doxepin); 838, 913 (duloxetine); 332, 938 (duloxetine (long-acting)); 533, 669, 690, 693, 785, 802, 959, 965, 1031 (escitalopram); 309, 310, 392, 483, 557, 618, 848, 923, 935, 1047 (fluoxetine); 1059 (fluvoxamine); 673 (imipramine); 1074, 1225 (lithium); 663, 675, 741, 746, 1042, 1070 (mirtazapine); 323 (mirtazapine); 799 (nortriptyline); 561, 931, 943, 947 (nortriptyline); 321, 354, 761, 780, 894, 1003, 1067, 1083, 1187, (paroxetine); 350, 454, 706, 738, 913, 945, 1004, 1043, 1072, 1196, 1223 (sertraline); 18, 322, 323, 490, 568, 625, 675, 710, 712, 729, 945, 1047, 1156 (trazodone); 9, 381, 664, 939, 1037 (tricyclic antidepressant); 1228 (unk antidepressant); 662, 668, 714, 751, 772, 773, 1006, 1041, 1075 (venlafaxine); 295, 448, 455, 715, 1031 (venlafaxine (long-acting)).

Antihistamines

805 p 19 yr  diphenhydramine  A  Ingestion  Int suicide
806 33 yr  diphenhydramine  A  Ingestion  Int unk
807 43 yr  diphenhydramine  A  Ingestion  Int suicide
808 p 88 yr  diphenhydramine  A  Ingestion  Int suicide
809 24 yr  diphenhydramine  C  Ingestion  Int unk
   acetaminophen
   aripiprazoleA

810 58 yr  diphenhydramine  A/C  Asp/Ing  Int suicide  70.5 μg/mL
   activated charcoal
   aripiprazoleA

811 22 yr  diphenhydramine  A  Ingestion  Int suicide
   dimenhydrinate

812 p 20 yr  diphenhydramine  U  Ingestion  Int suicide  4.6 μg/mL§
   doxylamine

813 p 49 yr  diphenhydramine  A  Ingestion  Int suicide  2 μg/mL
   ethanol

814 36 yr  diphenhydramine  A/C  Ingestion  Int suicide
   quetiapine
   lorazepamA

815 p 17 yr  doxylamine  A  Ingestion  Int suicide
   dextromethorphan

816 44 yr  hydroxyzine  A  Ingestion  Int suicide
   alprazolam

Continued
| Case | Age   | Substances                                      | Chronicity | Route     | Reason          | Blood concentrations         | Interval after exposure |
|------|-------|------------------------------------------------|------------|-----------|-----------------|------------------------------|------------------------|
| 817  | 41 yr | opioid: promethazine, acetaminophen            | U          | Ingestion | Int suicide     | 40 ng/mL, 99 μg/mL           | 2 d                    |
| 818  | 41 yr | promethazine, carisoprodol, prochlorperazineA  | A/C        | Ingestion | Int suicide     | 1,510 ng/mL                 |                        |
| 819  | 20’s yr| promethazine, prochlorperazine, dicyclomineA  | U          | Ingestion | Int suicide     |                             |                        |

See also cases 749 (chlorpheniramine); 811 (dimenhydrinate); 297, 298, 333, 350, 384, 423, 469, 486, 491, 684, 734, 744, 922, 1009, 1039, 1050, 1077, 1136 (diphenhydramine); 315 (famotidine); 839, 978 (fexofenadine); 726 (hydroxyzine); 707 (loratadine); 317, 494, 536, 545, 546, 634, 743, 996 (promethazine).

**Antimicrobials**

| Case | Age   | Substance                  | Chronicity | Route     | Reason          | Blood concentrations         | Interval after exposure |
|------|-------|----------------------------|------------|-----------|-----------------|------------------------------|------------------------|
| 820  | 39 yr | isoniazid                  | C          | Ingestion | Adv rxn         |                             |                        |
| 821  | 28 yr | isoniazid, acetaminophen   | A/C        | Ingestion | Unknown         |                             |                        |
| 822  | 90 yr | penicillin                 | A          | Parenteral | Adv rxn         |                             |                        |
| 823  | 43 yr | primaquine, benzocaine, cetylpyridinium, chloric lidocaine | C          | Ingestion | Adv rxn         |                             |                        |
| 824  | 62 yr | quinine                    | A/C        | Ingestion | Int suicide     | 2.2 μg/mL                    |                        |
| 825  | 87 yr | quinine                    | A          | Ingestion | Int suicide     |                             |                        |
| 826  | 33 yr | quinine, cyclobenzaprine, acetaminophen, hydrocodone | A          | Ingestion | Int suicide     |                             |                        |
| 827  | 14 yr | stavudine, lamivudine, zidovudineA | C          | Ingestion | Adv rxn        | 100 μg/mLY                  |                        |
| 828  | 26 yr | telithromycin              | C          | Ingestion | Adv rxn         |                             |                        |

See also cases 827 (lamivudine); 872 (quinine); 827 (zidovudine).

**Antineoplastics**

| Case | Age   | Substance                  | Chronicity | Route     | Reason          | Blood concentrations         | Interval after exposure |
|------|-------|----------------------------|------------|-----------|-----------------|------------------------------|------------------------|
| 829  | 89 yr | methotrexate               | C          | Ingestion | Ther err        |                             |                        |

**Asthma therapies**

| Case | Age   | Substance                  | Chronicity | Route     | Reason          | Blood concentrations         | Interval after exposure |
|------|-------|----------------------------|------------|-----------|-----------------|------------------------------|------------------------|
| 830  | 51 yr | theophylline               | C          | Ingestion | Adv rxn         | 34.2 μg/mL                  |                        |
| 831  | 55 yr | theophylline               | C          | Ingestion | Ther err        | 39 μg/mL                    |                        |
| 832  | 56 yr | theophylline               | A/C        | Ingestion | Int suicide     | 127 μg/mL                   |                        |
| 833  | 75 yr | theophylline               | C          | Ingestion | Ther err        | 35 μg/mL                    |                        |
| 834  | 77 yr | theophylline               | A/C        | Ingestion | Ther err        | 35 μg/mL                    |                        |

**Cardiovascular drugs**

| Case | Age   | Substance                  | Chronicity | Route     | Reason          | Blood concentrations         | Interval after exposure |
|------|-------|----------------------------|------------|-----------|-----------------|------------------------------|------------------------|
| 835  | 66 yr | amiodarone, allopurinol, torsemideA | A/C        | Ingestion | Ther err        |                             |                        |
| 836  | 100 yr| amiodarone, amlodipine, timolol | C          | Ingestion | Adv rxn        |                             |                        |
| 837  | 52 yr | amiodarone, atenolol, cocaineA | A/C        | Ingestion | Int suicide     |                             | 0.42 μg/mL 17 h        |

See also cases 749 (chlorpheniramine); 811 (dimenhydrinate); 297, 298, 333, 350, 384, 423, 469, 486, 491, 684, 734, 744, 922, 1009, 1039, 1050, 1077, 1136 (diphenhydramine); 315 (famotidine); 839, 978 (fexofenadine); 726 (hydroxyzine); 707 (loratadine); 317, 494, 536, 545, 546, 634, 743, 996 (promethazine).
| #   | Age | Drug(s)     | Source | Route | Reason   | Outcome   |
|-----|-----|-------------|--------|-------|----------|-----------|
| 838 | 98 y | amiodipine, duloxetine, levothyroxine | A/C    | Ingestion | Int | suicide |
| 839 | 42 y | amiodipine, meloxicam, fexofenadine | A/C    | Ingestion | Int | suicide |
| 840 | 66 y | amiodipine, methadone, unknown anticholinergic | A/C    | Ingestion | Int | suicide |
| 841 | 47 y | amiodipine, oxcarbazepine, metformin | A      | Ingestion | Int | suicide |
| 842 | 89 y | atenolol | C      | Ingestion | Ther | err     |
| 843 | 86 y | atenolol, amiodarone, digoxin | A/C    | Ingestion | Ther | err     |
| 844 | p 61 y | atenolol, aspirin, carbamazepine | A/C    | Ingestion | Int | suicide |
| 845 | p 51 y | atenolol, bupropion, ziprasidone | A/C    | Ingestion | Int | suicide |
| 846 | 30 y | atenolol, clonazepam | A      | Ingestion | Int | suicide |
| 847 | 84 y | atenolol, phenytoin, temazepam | A/C    | Ingestion | Int | suicide |
| 848 | p 60 y | atenolol, piroxicam, fluoxetine | U      | Ingestion | Int | suicide |
| 849 | 81 y | beta-blocker | A/C    | Ingestion | Int | suicide |
| 850 | 2 y | clonidine | A      | Asp/Ing | Unint | gen     |
| 851 | >19 y | clonidine | U      | Ing/Unk | Int | suicide |
| 852 | 44 y | clonidine, clonazepam, atenolol | A/C    | Ingestion | Int | suicide |
| 853 | p 67 y | clonidine, diazepam | A/C    | Ingestion | Int | suicide |
| 854 | 83 y | digitoxin | C      | Ingestion | Ther | err     | digoxin 5.6 ng/mL |
| 855 | p 63 y | digoxin | A/C    | Ingestion | Int | suicide | 5.6 ng/mL |
| 856 | 73 y | digoxin | A/C    | Ingestion | Int | suicide | 4 ng/mL |
| 857 | p 78 y | digoxin | C      | Ingestion | Unknown | 5.5 ng/mL |
| 858 | 78 y | digoxin | C      | Ingestion | Ther | err     | 4 ng/mL |
| 859 | 83 y | digoxin | A/C    | Ingestion | Ther | err     | 2.3 ng/mL |
| 860 | 83 y | digoxin | A/C    | Ingestion | Unknown | 4.7 ng/mL |
| 861 | 84 y | digoxin | C      | Ingestion | Ther | err     | 2.7 ng/mL |
| 862 | 85 y | digoxin | U      | Ingestion | Unknown | 3.6 ng/mL |
| 863 | 86 y | digoxin | C      | Ingestion | Ther | err     | 2.3 ng/mL |
| 864 | 86 y | digoxin | C      | Ingestion | Adv | rxn     | 3.3 ng/mL |
| 865 | 87 y | digoxin | C      | Ingestion | Ther | err     | 4.7 ng/mL |

Continued
| Case | Age  | Substances                                      | Chronicity | Route      | Reason         | Blood concentrations | Interval after exposure |
|------|------|-------------------------------------------------|------------|------------|-----------------|----------------------|------------------------|
| 866  | 89 yr| digoxin                                         | C          | Ingestion  | Int unk         | 4.8 ng/mL            | 2 d                    |
| 867  | 90 yr| digoxin                                         | C          | Ingestion  | Adv rxn         | 2.9 ng/mL            |                        |
| 868  | 91 yr| digoxin                                         | C          | Ingestion  | Adv rxn         | 2.9 ng/mL            |                        |
| 869  | 69 yr| digoxin, acetaminophen/codeine, metoprolol      | A          | Ingestion  | Int suicide     | 31.5 ng/mL           |                        |
| 870  | 82 yr| digoxin                                         | C          | Ingestion  | Ther err        | 3.2 ng/mL            |                        |
| 871  | 94 yr| digoxin                                         | C          | Ingestion  | Ther err        | 13.2 ng/mL           |                        |
| 872  | 66 yr| digoxin, atenolol, verapamil, quinine           | C          | Ingestion  | Ther err        | 2.5 ng/mL            |                        |
| 873  | 90 yr| digoxin, warfarin, temazepam                    | C          | Ingestion  | Ther err        | 6.3 ng/mL            |                        |
| 874  | 42 yr| diltiazem                                       | A          | Parenteral | Ther err        | 144 mg/dL            |                        |
| 875  | 40 yr| diltiazem, atenolol, temazepam                  | U          | Ingestion  | Unknown         |                      |                        |
| 876  | 38 yr| diltiazem, disulfiram                           | A          | Ingestion  | Int suicide     |                      |                        |
| 877  | 44 yr| diltiazem, fosinopril, ethanol                  | A/C        | Asp/Ing    | Int suicide     |                      |                        |
| 878  | 58 yr| diltiazem, metoprolol                           | A/C        | Ingestion  | Int suicide     |                      |                        |
| 879  | 82 yr| diltiazem, metoprolol (long-acting), isosorbide mononitrate | A          | Ingestion  | Int suicide     | 1 μg/mL              |                        |
| 880  | 19 yr| diltiazem (long-acting)                         | A          | Ingestion  | Int suicide     | 7.1 μg/mL            |                        |
| 881  | 59 yr| diltiazem (long-acting)                         | A          | Ingestion  | Int suicide     |                      |                        |
| 882  | 69 yr| diltiazem (long-acting)                         | U          | Ingestion  | Int suicide     |                      |                        |
| 883  | 70’s yr| diltiazem (long-acting)                      | A          | Ingestion  | Int suicide     |                      |                        |
| 884  | 79 yr| diltiazem (long-acting)                         | A          | Ingestion  | Int suicide     |                      |                        |
| 885  | 81 yr| diltiazem (long-acting)                         | A          | Ingestion  | Ther err        |                      |                        |
| 886  | 49 yr| diltiazem (long-acting), amitriptyline         | A          | Ingestion  | Int suicide     |                      |                        |
| 887  | 38 yr| diltiazem (long-acting), amlodipine/benazepril lisinopril | A          | Ingestion  | Int suicide     |                      |                        |
| 888  | 34 yr| diltiazem (long-acting), atenolol, clonidine   | C          | Ingestion  | Ther err        |                      |                        |
| 889  | 44 yr| diltiazem (long-acting), atenolol, opioid      | U          | Ingestion  | Int suicide     |                      |                        |
| 890  | 57 yr| diltiazem (long-acting), doxazosin, isorbid e dinitrate | A/C        | Ingestion  | Int suicide     |                      |                        |
| 891  | 50 yr| diltiazem (long-acting)                         | A/C        | Ingestion  | Int suicide     |                      |                        |
| Case | Age | Substance(s)                              | Route | Outcome     | Concentration |
|------|-----|------------------------------------------|-------|-------------|--------------|
| 892  | 65 yr | ethanol, diltiazem (long-acting)          | A     | Int suicide | 144 mg/dL    |
| 893  | 38 yr | ethanol, diltiazem (long-acting)         | A/C   | Int suicide | 19 mg/dL     |
| 894  | 50 yr | diltiazem (long-acting)                  | A/C   | Int suicide |              |
| 895  | 42 yr | diltiazem (long-acting)                  | A/C   | Int suicide |              |
| 896  | 61 yr | diltiazem (long-acting)                  | A/C   | Int suicide | 1 μg/mL      |
| 897 p| 83 yr | flecainide                                | A/C   | Int suicide | 21 μg/mL     |
| 898  | 29 yr | labetalol                                 | A     | Ther err    |              |
| 899  | 83 yr | metoprolol                                | A/C   | Unknown     |              |
| 900  | 91 yr | metoprolol                                | A     | Adv rxn     |              |
| 901  | 27 yr | metoprolol, citalopram, cocaine           | U     | Int suicide |              |
| 902  | 55 yr | metoprolol, diltiazem                    | U     | Int suicide |              |
| 903  | 55 yr | metoprolol, methamphetamine, cocaine     | A     | Int suicide | 1.1 μg/mL    |
| 904  | 61 yr | metoprolol (long-acting)                 | A/C   | Int suicide |              |
| 905  | 54 yr | metoprolol (long-acting)                 | A/C   | Int suicide |              |
| 906  | 48 yr | metoprolol (long-acting)                 | A     | Int suicide | 103 μg/mL    |
| 907  | 50 yr | metoprolol (long-acting), bupropion       | U     | Int suicide |              |
| 908 p| 48 yr | metoprolol (long-acting), diltiazem      | A     | Int suicide |              |
| 909  | 52 yr | metoprolol (long-acting), lisinopril      | A     | Int suicide |              |
| 910  | 95 yr | nesiritide                                | A     | Ther err    |              |
| 911  | 50 yr | nifedipine (long-acting)                 | A/C   | Int suicide |              |
| 912 p| 81 yr | nifedipine, atenolol, glibenclamide      | A/C   | Int unk     |              |
| 913  | >19 yr| nifedipine, duloxetine, sertraline       | U     | Int suicide |              |
| 914 i| 2 yr  | nifedipine (long-acting)                 | A     | Unint gen   |              |
| 915  | 64 yr | nifedipine (long-acting)                 | A/C   | Int suicide |              |
| 916 p| 45 yr | propafenone                               | A     | Ther err    | 47 μg/mL     |
| 917 p| 50's yr| propafenone                               | A     | Int suicide | 5.4 μg/mL    |
| 918  | 42 yr | propafenone, carvedilol                   | A/C   | Int suicide |              |

Continued
| Case | Age  | Substances                           | Chronicity | Route   | Reason       | Blood concentrations | Interval after exposure |
|------|------|--------------------------------------|------------|---------|--------------|----------------------|-------------------------|
| 919  | 38 yr| warfarin                             | U          | Ingestion| Int suicide  |                      |                         |
| 920  | 45 yr| propranolol                           | U          | Ingestion| Int suicide  |                      |                         |
| 921  | 48 yr| propranolol                           | A          | Ingestion| Int suicide  |                      |                         |
| 922  | 61 yr| propranolol, diphenhydramine, hydrocodone, hydrocodone | A          | Ingestion| Int suicide  | 26.4 μg/mL 37.2 μg/mL 15,500 ng/mL |                         |
| 923  | 50 yr| propranolol                           | A          | Ingestion| Int suicide  |                      |                         |
| 924  | 87 yr| sotalol                               | A          | Ingestion| Ther err     |                      |                         |
| 925  | 39 yr| verapamil                             | A/C        | Ingestion| Int suicide  | 4 μg/mL              |                         |
| 926  | 45 yr| verapamil                             | A          | Ingestion| Int suicide  | 1.6 μg/mL            |                         |
| 927  | 45 yr| verapamil                             | A/C        | Ingestion| Int unk      |                      |                         |
| 928  | 62 yr| verapamil                             | A/C        | Ingestion| Ther err     |                      |                         |
| 929  | 62 yr| verapamil                             | A/C        | Ingestion| Ther err     |                      |                         |
| 930  | 50 yr| verapamil                             | A          | Ingestion| Int suicide  |                      |                         |
| 931  | 39 yr| verapamil, alprazolam, alprazolam     | A/C        | Ingestion| Int suicide  |                      |                         |
| 932  | 44 yr| verapamil, amitriptyline              | A/C        | Ingestion| Int suicide  |                      |                         |
| 933  | 57 yr| verapamil, clonazepam, citalopram     | A/C        | Ingestion| Unknown      |                      |                         |
| 934  | 35 yr| verapamil, clonidine, metoprolol      | A/C        | Ingestion| Int suicide  |                      |                         |
| 935  | 50 yr| verapamil, cyclobenzaprine, fluoxetine, fluoxetine | A          | Ingestion| Int suicide  |                      |                         |
| 936  | 81 yr| verapamil, digoxin, clopidogrel       | A/C        | Ingestion| Int suicide  | 4.4 ng/mL            |                         |
| 937  | 89 yr| verapamil, donepezil, memantine       | A/C        | Ingestion| Int suicide  |                      |                         |
| 938  | 47 yr| verapamil, duloxetine (long-acting), cyclobenzaprine | A/C        | Ingestion| Int suicide  | 11.4 μg/mL          |                         |
| 939  | 50 yr| verapamil, ethanol, tricyclic antidepressant | A/C        | Ingestion| Int suicide  |                      |                         |
| 940  | 39 yr| verapamil, hydrochlorothiazide, ethanol | A          | Ingestion| Int suicide  | 2.6 μg/mL 3.3 μg/mL 212 mg/dL |                         |
| 941  | 53 yr| verapamil, lisinopril, lorazepam      | U          | Ingestion| Int suicide  |                      |                         |
| Case | Age  | Medication(s) | Route | Outcome | Concentrations | Notes |
|------|------|---------------|-------|---------|----------------|-------|
| 942  | 79 y | verapamil, naproxen, glucosamine | A/C | Int Suicidal | | |
| 943  | 69 y | verapamil, nortriptyline, quetiapine | A/C | Int Suicidal | | |
| 944  | 29 y | verapamil, pindolol, ethanol, sertraline, trazodone | A | Int Suicidal | | |
| 945  | 83 y | verapamil, nortriptyline, sertraline, trazodone | A/C | Int Suicidal | 1.61 μg/mL, 1.660 ng/mL, 1,110 ng/mL, 2,330 ng/mL | 1 d |
| 946  | 45 y | verapamil, topiramate | A/C | Int Suicidal | | |
| 947  | 46 y | verapamil, valproic Acid, nortriptyline | A/C | Int Suicidal | | |
| 948  | 23 y | verapamil (long-acting) | A | Int Suicidal | 0.364 μg/mL | |
| 949  | p   | 33 y | verapamil (long-acting) | A/C | Int Suicidal | | |
| 950  | 50 y | verapamil (long-acting) | A | Int Suicidal | | |
| 951  | 82 y | verapamil (long-acting) | A/C | Int Suicidal | 2.9 μg/mL | |
| 952  | 89 y | verapamil (long-acting) | A | Theraapeutic Error | | |
| 953  | 91 y | verapamil (long-acting) | A | Theraapeutic Error | | |
| 954  | 62 y | verapamil/trandolapril | A | Theraapeutic Error | | |

Cold and cough preparations

| Case | Age  | Medication(s) | Route | Outcome | Concentrations | Notes |
|------|------|---------------|-------|---------|----------------|-------|
| 955  | p   | 29 y | acetaminophen/decongestant, antihistamine, benzo diazepine | A | Int Suicidal | | |
| 956  | 13 y | acetaminophen pseudoephedrine | C | Therapeutic Error | 74.6 μg/mL | |
| 957  | p   | 8 y | chlorpheniramine, phenylephrine, methscopolamine, ethanol | A | Unknown | chlorpheniramine 0.388 μg/mL | |
| 958  | p   | 31 y | phenylephrine/hydrocodone, chlorpheniramine, ethanol | A | Int Suicidal | 68 mg/dL | |
| 959  | p   | 18 y | pseudoephedrine, acetaminophen/codeine, escitalopram | A/C | Int Suicidal | 49.4 μg/mL | |
| 960  | p   | 2 mo | pseudoephedrine, dextromethorphan, senna | U | Unknown | pseudoephedrine 3.4 μg/mL | |

See also cases 155, 287 (acetaminophen/dextromethorphan/doxylamine/pseudoephedrine); 1219 (acetaminophen/doxylamine/dextromethorphan); 447 (benzonatate); 421 (chlorpheniramine/dextromethorphan); 815 (dextromethorphan).
TABLE 21  
(Continued)

| Case | Age | Substances | Chronicity | Route | Reason | Blood concentrations | Interval after exposure |
|------|-----|------------|------------|-------|--------|----------------------|-------------------------|
| 961  | p   | 61 yr      | iopromide  | A     | Parenteral | Adv rxn             |                         |
|      |     |            |            |       |         |                      |                         |
| 962  | 58 yr| unk Chinese herbal | A      | Ingestion | Int suicide | See also cases 124 (aceite de resina); 1163 (ephedra); 942 (glucosamine); 16 (kava kava); 973 (melatonin); 16 (valerian). |
| 963  | 40 yr| iron       | A          | Ingestion | Int suicide | 16,289 μg/dL         |                         |
| 964  | 5 yr | sodium bicarbonate | A      | Ingestion | Unint misuse | See also case 617 (potassium chloride). |
| 965  | 28 yr| atropine   | A          | Ingestion | Int suicide | clozapine            | escitalopram            |
|      |     |            |            |       |         |                      |                         |
| 966  | p   | 40 yr      | anabolic steroids | U | Unknown | Int suicide | ethanol acetaminophen |
|      |     |            |            |       |         |                      |                         |
| 967  | 41 yr| dinoprostan | C          | Parenteral | Int misuse |                      |                         |
| 968  | 69 yr| glibenclamide | U       | Ingestion | Unknown  |                      |                         |
| 969  | 36 yr| glipizide (long-acting) | A      | Ingestion | Int suicide | glipizide metformin |
| 970  | 81 yr| glyburide  | C          | Ingestion | Ther err  |                      |                         |
| 971  | 29 yr| insulin    | A/C        | Parenteral | Int suicide |                      |                         |
| 972  | 35 yr| insulin    | A          | Ingestion | Int suicide |                       | clonazepam morphine     |
|      |     |            |            |       |         |                      |                         |
| 973  | p   | 25 yr      | insulin    | A     | Asp/Ing/Paren | Int suicide |                      | pine oil/isopropyl alcohol cleaner melatonin |
| 974  | 40 yr| metformin  | A/C        | Ingestion | Int suicide |                      |                         |
| 975  | 63 yr| metformin  | U          | Ingestion | Ther err  |                      |                         |
| 976  | 78 yr| metformin  | C          | Ingestion | Adv rxn   |                      |                         |
| 977  | 87 yr| metformin  | C          | Ingestion | Adv rxn   |                      |                         |
| 978  | 49 yr| metformin  | A          | Ingestion | Int suicide |                      |                       | chloridiazepoxide      |
|      |     |            |            |       |         |                      |                         | fexofenadine            |
| 979  | 74 yr| metformin  | A/C        | Ingestion | Int unk   |                      |                         | glipizide               |

See also cases 708, 940 (hydrochlorothiazide); 835 (torsemide).
| No. | Age | Substance | Route | Effect | Note |
|-----|-----|-----------|-------|--------|------|
| 980 | 65 yr | metformin sulfonylurea | A/C | Ingestion | Int suicide |
| 981 | 42 yr | metformin | C | Ingestion | Adv rxn |
| 982 | 69 yr | rosiglitazone/metformin | A | Ingestion | Unknown |

See also cases 912 (glibenclamide); 336 (glimepiride); 969, 979, 1040, 1079 (glipizide); 674 (insulin); 751, 838 (levothyroxine); 316, 841, 878, 969, 1079 (metformin); 980 (sulfonylurea).

Miscellaneous drugs

| No. | Age | Substance | Route | Effect | Note |
|-----|-----|-----------|-------|--------|------|
| 983 | 51 yr | activated charcoal/sorbitol acetaminophen risperidone | C | Asp/Ing | Ther err |
| 984 | p 5 yr | disodium EDTA | A/C | Parenteral | Adv rxn |
| 985 | 45 yr | eletriptan frovatriptan almotriptan | C | Ing/Unk | Ther err |
| 986 | 41 yr | eletriptan gabapentin metaxalone | A/C | Ingestion | Int suicide |
| 987 | 49 yr | sumatriptan | A | Ingestion | Int suicide |

See also cases 835 (allopurinol); 985 (almotriptan); 1038 (atomoxetine); 876 (disulfiram); 937 (donepezil); 25 (fomepizole); 985 (frovatriptan); 937, bupropion 1080 (memantine); 1080 (rivastigmine).

Muscle relaxants

| No. | Age | Substance | Route | Effect | Note |
|-----|-----|-----------|-------|--------|------|
| 988 | 3 yr | baclofen | U | Other | Adv rxn |
| 989 | 42 yr | baclofen citalopram lorazepam | A/C | Ingestion | Int suicide |
| 990 | 44 yr | carisoprodol | A | Ingestion | Int suicide |
| 991 | 45 yr | carisoprodol | A | Ingestion | Int suicide |
| 992 | 47 yr | carisoprodol | U | Ingestion | Int suicide |
| 993 | p 47 yr | carisoprodol acetaminophen/hydrocodone | U | Ingestion | Unknown |
| 994 | 55 yr | carisoprodol acetaminophen/hydrocodone | A/C | Ingestion | Int suicide |
| 995 | 55 yr | carisoprodol alprazolam | A | Ingestion | Int suicide |
| 996 | 33 yr | carisoprodol oxycodone promethazine | U | Ingestion | Unknown |
| 997 | 53 yr | carisoprodol acetaminophen/hydrocodone diazepam | A/C | Ingestion | Int suicide |
| 998 | 41 yr | cyclobenzaprine | A | Ingestion | Int suicide |
| 999 | >19 yr | cyclobenzaprine acetaminophen | A | Ingestion | Int suicide |
| 1000 | p 50 yr | cyclobenzaprine acetaminophen hydrocodone | A | Ingestion | Int suicide |

Continued
TABLE 21 (Continued)

| Case | Age  | Substances                                      | Chronicity | Route  | Reason   | Blood concentrations | Interval after exposure |
|------|------|-------------------------------------------------|------------|--------|----------|-----------------------|-------------------------|
| 1001 | p    | 40 yr cyclobenzaprine acetaminophen/hydrocodone | U          | Ingestion | Int suicide |                        |                         |
| 1002 | p    | 42 yr cyclobenzaprine acetaminophen/hydrocodone | A          | Ing/Inh | Int suicide |                        |                         |
| 1003 | 43 yr| cyclobenzaprine metaxaloneA                     | A          | Ing/Unk | Int suicide |                        |                         |
| 1004 | 33 yr| cyclobenzaprine sertraline                      | A          | Ingestion | Int suicide |                        |                         |
| 1005 | p    | 54 yr cyclobenzaprine tiagabine eszopicloneA     | A          | Ing/Inh | Int suicide |                        |                         |
| 1006 | 32 yr| metaxalone venlafaxine tramadolA                 | A/C        | Ingestion | Int suicide |                        |                         |
| 1007 | Unk  | methocarbamol                                    | U          | Ingestion | Int suicide |                        |                         |
| 1008 | 50 yr| methocarbamol benzodiazepine                    | U          | Ingestion | Int suicide |                        |                         |
| 1009 | p    | 32 yr orphenadrine diphenhydramine oxycodoneA   | A          | Ingestion | Int unk    | 1.5 μg/mL§             | 1 μg/mL§                |
|      |      |                                                 |            |         |           | 500 ng/mL§             |                         |
| 1010 | 12 mo| tizanidine acetaminophen/hydrocodone tramadolA  | A          | Ingestion | Unint gen |                        |                         |

See also cases 772 (baclofen); 375 thru 378, 398, 407, 408, 449, 818, 1018 (carisoprodol); 372, 382, 383, 396, 481, 525, 547, 615, 616, 826, 923, 935, 938, 1032 (cyclobenzaprine); 986, 1002, 1003 (metaxalone); 332 (methocarbamol); 567 (tizanidine); 491 (unk muscle relaxant); 1093 (unk muscle relaxer).

Sedative/hypnotics/antipsychotics

| Case | Age  | Substances                                      | Chronicity | Route  | Reason   | Blood concentrations | Interval after exposure |
|------|------|-------------------------------------------------|------------|--------|----------|-----------------------|-------------------------|
| 1011 | p    | 35 yr alprazolam                                | A/C        | Ingestion | Int suicide |                        |                         |
| 1012 | i    | 44 yr alprazolam                                | A/C        | Ingestion | Unknown   |                        |                         |
| 1013 | p    | 47 yr alprazolam                                | A/C        | Ingestion | Int suicide |                        |                         |
| 1014 | 56 yr| alprazolam                                      | A/C        | Ingestion | Int suicide |                        |                         |
| 1015 | p    | 37 yr alprazolam chloral hydrate ethanol         | A/C        | Ingestion | Int suicide |                        |                         |
| 1016 | p    | 19 yr alprazolam ethanol                         | A          | Ingestion | Int unk    | 37 mg/dL               |                         |
| 1017 | 70 yr| alprazolam ethanol carisoprodol                  | A/C        | Ingestion | Int unk    | 90 mg/dL               |                         |
| 1018 | 41 yr| alprazolam ethanol carisoprodol                  | A          | Ingestion | Int suicide |                        |                         |
| 1019 | p    | 19 yr alprazolam morphine                        | A          | Ing/Unk  | Int abuse  |                        |                         |
| 1020 | 19 yr| alprazolam morphine marijuanaA                   | U          | Ing/Inh/Unk | Int abuse  |                        |                         |
| Patient ID | Age  | Drug(s)                        | Route | Ingestion Method | Intention | Concentration |
|------------|------|--------------------------------|-------|------------------|------------|---------------|
| 1021       | 44 y | alprazolam, quetiapine         | A     | Ingestion        | Int suicide|               |
| 1022       | 26 y | barbiturate, cocaine, benzodiazepine<sup>A</sup> | U     | Ingestion/Unknown| Int suicide|               |
| 1023       | 17 y | benzodiazepine, marijuana       | U     | Ingestion/Unknown| Int suicide|               |
| 1024       | 24 y | benzodiazepine, methadone       | A     | Ingestion        | Unknown    |               |
| 1025       | 45 y | butalbital, acetaminophen       | A/C   | Asp/Ing          | Int abuse  |               |
| 1026       | 2 mo | chloral hydrate                 | A     | Ingestion        | Int unk    | 87 µg/mL      |
| 1027       | 66 y | chlorpromazine, bupropion, alprazolam | A     | Asp/Ing          | Int suicide|               |
| 1028       | 57 y | clonazepam                      | U     | Ingestion        | Unknown    |               |
| 1029       | >19 y| clonazepam                      | U     | Unknown          | Unknown    |               |
| 1030       | 45 y | clonazepam, bupropion, ethanol  | A/C   | Ingestion        | Int unk    |               |
| 1031       | 35 y | clonazepam, escitalopram, venlafaxine<sup>A</sup> | A/C   | Ingestion        | Int suicide|               |
| 1032       | 55 y | clonazepam, quetiapine          | U     | Ingestion        | Int suicide|               |
| 1033       | 67 y | clozapine                       | A     | Ingestion        | Int suicide|               |
| 1034       | 5 y  | clozapine, thioridazine, acetaminophen<sup>A</sup>, hydrocodone<sup>A</sup> | A     | Ingestion        | Unint gen  |               |
| 1035       | 39 y | diazepam, desipramine, hydrocodone<sup>A</sup> | U     | Ingestion/Parent/Unknown| Int suicide| 908 ng/mL<sup>##</sup>| 72.6 ng/mL<sup>§</sup>|
| 1036       | 44 y | diazepam, ethanol               | C     | Ingestion        | Int suicide|               |
| 1037       | 51 y | diazepam, morphine              | A     | Ingestion        | Int suicide| 880 ng/mL<sup>¶</sup>, 160 ng/mL<sup>¶</sup>|
| 1038       | 23 y | eszopiclone, atomoxetine, acetaminophen<sup>A</sup>, aspirin<sup>A</sup>, caffeine<sup>A</sup> | A     | Ingestion        | Int suicide| 166 µg/mL<sup>§</sup>, 2 h; 96 mg/dL<sup>¶</sup>, 13 h|
| 1039       | 45 y | haloperidol, benzotropine, diphenhydramine<sup>A</sup> | C     | Ingestion        | Adv rxn    |               |
| 1040       | 68 y | lorazepam, clonazepam, glipizide<sup>A</sup> | A/C   | Ingestion        | Int suicide|               |

Continued
| Case  | Age  | Substances                                                                 | Chronicity | Route   | Reason          | Blood concentrations | Interval after exposure |
|-------|------|----------------------------------------------------------------------------|------------|---------|-----------------|----------------------|-------------------------|
| 1041  | p 42 | lorazepam, clonazepam, venlafaxine                                           | A          | Ingestion | Int misuse      |                      |                         |
| 1042  | p 31 | lorazepam, mirtazapine, acetaminophen                                        | U          | Ing/Unk | Int abuse       |                      |                         |
| 1043  | 52   | loxapine, sertraline, flurazepam                                             | A/C        | Ingestion | Int suicide     |                      |                         |
| 1044  | 39   | meprobamate, valproic acid                                                   | U          | Ingestion | Int suicide     | 52.6 $\mu$g/mL      | 254.8 $\mu$g/mL         |
| 1045  | 33   | olanzapine, acetaminophen, hydrocodone                                         | A/C        | Ingestion | Int suicide     |                      |                         |
| 1046  | 63   | olanzapine, valproic acid                                                     | A/C        | Asp/Ing  | Int suicide     |                      |                         |
| 1047  | 51   | olanzapine, fluoxetine, trazodone                                              | A/C        | Ingestion | Int suicide     |                      |                         |
| 1048  | 53   | olanzapine, lamotrigine, tramadol                                              | A/C        | Ingestion | Int suicide     |                      |                         |
| 1049  | 40   | phenobarbital, acetaminophen, hydrocodone                                     | A          | Ingestion | Int suicide     | 88 $\mu$g/mL$^\S$   |                         |
| 1050  | 63   | phenobarbital, diphenhydramine, carbon monoxide                                | U          | Ing/Inh | Int suicide     | 85 $\mu$g/mL$^\S$   | 0.346 $\mu$g/mL$^\S$   |
| 1051  | 42   | propofol, acetaminophen                                                        | A          | Parenteral | Ther err       |                      |                         |
| 1052  | 15   | quetiapine                                                                  | A          | Ingestion | Int suicide     |                      |                         |
| 1053  | 26   | quetiapine                                                                  | A/C        | Ingestion | Int suicide     |                      |                         |
| 1054  | 31   | quetiapine                                                                  | A          | Ingestion | Int suicide     |                      |                         |
| 1055  | 33   | quetiapine                                                                  | A/C        | Ingestion | Int suicide     |                      |                         |
| 1056  | 39   | quetiapine                                                                  | A          | Ingestion | Int suicide     | 2,100 ng/mL$^\S$    |                         |
| 1057  | 42   | quetiapine                                                                  | A/C        | Ingestion | Int suicide     |                      |                         |
| 1058  | 53   | quetiapine                                                                  | A          | Ingestion | Int unk         |                      |                         |
| 1059  | 43   | quetiapine, acetaminophen, fluvoxamine                                        | A          | Ingestion | Int suicide     | 700 $\mu$g/mL       |                         |
| 1060  | 55   | quetiapine, acetaminophen, hydrocodone                                        | A          | Ingestion | Int suicide     |                      |                         |
| 1061  | 24   | quetiapine, acetaminophen, oxycodone                                          | A          | Ingestion | Int suicide     | 127 $\mu$g/mL$^\Y$  | 3.8 h                   |
| 1062  | 22   | quetiapine, activated charcoal                                               | A/C        | Asp/Ing  | Int suicide     |                      |                         |
| 1063  | 26   | quetiapine, bupropion, valproic acid                                         | A          | Ingestion | Int suicide     |                      |                         |
| 1064  | 34   | quetiapine                                                                  | A          | Ingestion | Int suicide     |                      |                         |
| 1065  | 45   | quetiapine                                                                  | A          | Ingestion | Int suicide     |                      |                         |
| P/N | Age | Medications | Route | Intent | Levels/Comments |
|-----|------|-------------|-------|--------|----------------|
| 1066 p | 37 yr | quetiapine, clonazepam, cocaine | A/C | Ingest/Unk | Int suicide |
| 1067 p | 50 yr | quetiapine, clonazepam, paroxetine | A | Ingestion | Int suicide |
| 1068 | 25 yr | quetiapine, gabapentin, amitriptyline | A/C | Ingestion | Int suicide |
| 1069 p | 38 yr | quetiapine, lorazepam | A | Ingestion | Int suicide |
| 1070 | 61 yr | quetiapine, mirtazapine, olanzapine | A/C | Ingestion | Int suicide |
| 1071 | 24 yr | quetiapine, phenoxytoin | A | Ingestion | Int suicide |
| 1072 | 34 yr | quetiapine, sertraline, alprazolam | A | Ingestion | Int suicide |
| 1073 p | 50 yr | quetiapine, valproic acid | U | Ingestion | Int suicide |
| 1074 i | 46 yr | quetiapine, valsartan, lithium | A/C | Ingestion | Int suicide |
| 1075 | 44 yr | quetiapine, venlafaxine, amitriptyline | A | Ingestion | Int suicide |
| 1076 | 61 yr | quetiapine, ziprasidone | U | Ingestion | Unknown |
| 1077 | 55 yr | quetiapine, ziprasidone, diphenhydramine | A | Ingestion | Int suicide |
| 1078 p | 58 yr | quetiapine, zolpidem, metoprolol | A/C | Asp/Ing | Int suicide |
| 1079 | 58 yr | risperidone, metformin, glipizide | A/C | Ingestion | Int suicide |
| 1080 p | 79 yr | risperidone, rivastigmine, memantine | C | Ingestion | Adv rxn |
| 1081 p | 42 yr | secobarbital, temazepam, gabapentin | A | Ingestion | Int suicide |
| 1082 p | 34 yr | temazepam, gabapentin, atorvastatin | U | Ingestion | Int suicide |
| 1083 | 45 yr | temazepam, paroxetine, clonazepam | A/C | Ingestion | Int suicide |
| 1084 | 38 yr | ziprasidone, bupropion, lamotrigine | A/C | Ingestion | Int suicide |
| 1085 | 37 yr | zolpidem | U | Ingestion | Int suicide |
| 1086 p | 47 yr | zolpidem, opioid | A | Ingestion | Int suicide |

Continued
| Case | Age   | Substances                  | Chronicity | Route | Reason  | Blood concentrations | Interval after exposure |
|------|-------|-----------------------------|------------|-------|---------|----------------------|-------------------------|
| 1087 | 16 yr | amphetamine                 | A          | Ingestion | Int abuse |                         |                         |
| 1088 | 40 yr | amphetamine                 | C          | Unknown | Int abuse |                         |                         |
| 1089 | 30 yr | amphetamine; cocaine; heroin| A          | Unknown | Int abuse |                         |                         |
| 1090 | 35 yr | amphetamine; cocaine; heroin| A          | Ingestion/Unknown | Int abuse |                         |                         |
| 1091 | 26 yr | amphetamine; cocaine; unknown opioid | A/C | Ingestion | Int misuse |                         |                         |
| 1092 | 40 yr | amphetamine; ethanol        | U          | Ingestion | Unknown  |                         |                         |
| 1093 | 32 yr | amphetamine; ethanol        | U          | Ingestion | Int misuse |                         |                         |
| 1094 | 54 yr | butyl nitrite; cyclohexyl nitrite; isobutyl nitrite | U | Inhalation | Int misuse |                         |                         |
| 1095 | 16 yr | cocaine                     | U          | Ingestion | Int misuse |                         |                         |
| 1096 | 17 yr | cocaine                     | A          | Ingestion | Int misuse |                         |                         |
| 1097 | 17 yr | cocaine                     | A          | Ingestion/Unknown | Int misuse |                         |                         |
| 1098 | 18 yr | cocaine                     | U          | Inhalation | Int misuse |                         |                         |
| 1099 | 22 yr | cocaine                     | A          | Vaginal  | Int misuse |                         |                         |
| 1100 | 24 yr | cocaine                     | A          | Ingestion | Int misuse | 6.4 μg/mL \(\delta\) ecgonine methylester |                         |
|      |       |                             |            |         |          | 8.4 μg/mL \(\delta\) benzoylecgonine |                         |
|      |       |                             |            |         |          | 12 μg/mL \(\delta\) benzoylecgonine |                         |
| 1101 | 24 yr | cocaine                     | A          | Unknown | Int abuse |                         |                         |
| 1102 | 24 yr | cocaine                     | A          | Ingestion | Int abuse |                         |                         |
| 1103 | 25 yr | cocaine                     | A          | Ingestion | Int misuse |                         |                         |

See also cases 604 (acamprosate); 78, 156, 322, 374, 383, 405, 406, 457, 480, 485, 487, 488, 527 thru 536, 543, 561, 562, 564, 566, 585, 586, 592, 611, 629, 630, 749, 762, 783, 785, 804, 816, 930, 931, 995, 1027, 1072, 1128 thru 1131, 1187, 1194, 1218, 1222, 1258 (alprazolam); 541, 623, 709, 810 (aripiprazole); 1146, 1189 (barbiturate); 10, 290, 538, 539, 601, 602, 672, 685, 686, 694, 780, 789, 1008, 1022, 1132 thru 1134, 1150, 1199 (benzodiazepine); 455, 541 (buspirone); 458 (butalbital); 1015 (chloral hydrate); 978 (chlordiazepoxide); 446 (chlorpromazine); 294, 295, 328, 348, 450, 531, 567, 615, 649, 663 665, 689, 711, 741, 846, 852, 933, 972, 1040, 1041, 1065 thru 1067, 1083 (clonazepam); 965 (clozapine); 395, 548 thru 554, 582, 583, 591, 617, 624, 630,632, 853, 893, 997, 1129, 1145, 1152 (diazepam); 812 (doxylamine); 661, 713, 1005 (eszopiclone); 1043 (flurazepam); 697, 769, 770, 1137 (haloperidol); 408, 814, 941, 989, 1069, 1137 (lorazepam); 1223 (methaqualone); 43 (midazolam); 562, 676, 693, 709, 766, 1070 (olanzapine); 423 (perphenazine); 526, 690 (phenobarbital); 818, 819 (prochlorperazine); 15, 453, 554, 637, 669, 686, 735, 736, 746, 747, 771, 773, 796, 814, 895, 911, 943, 1021, 1032, 1154, 1188 (quetiapine); 83, 645, 711, 795, 983 (risperidone); 311, 321, 592, 650, 661, 847, 875, 896, 981 (temazepam); 120, 1034 (thioridazine); 651, 955, 1200 (unk benzodiazepine); 895 (zaleplon); 348, 569, 669, 704, 738, 845, 1045, 1077 (ziprasidone); 232, 329, 330, 453, 457, 496, 1078 (zolpidem).
| Patient ID | Age | Drug | Route | Intake | Concentration (μg/mL) |
|------------|-----|------|-------|--------|-----------------------|
| 104        | 25  | cocaine | U     | Parenteral | Int abuse | 0.45 |
| 105        | 27  | cocaine | A     | Unknown   | Int abuse  | 11 |
| 106        | 28  | cocaine | A/C   | Inhalation | Int abuse | 9.5 |
| 107        | 30  | cocaine | A     | Unknown   | Int unk    | 1.1 |
| 108        | 30  | cocaine | U     | Unknown   | Unknown    | 1.6 |
| 109        | 31  | cocaine | A     | Unknown   | Int abuse  | > 8 |
| 110        | 32  | cocaine | A     | Ingestion | Int misuse | 0.5 |
| 111        | 32  | cocaine | U     | Unknown   | Int unk    | 4.4 |
| 112        | 32  | cocaine | A/C   | Unknown   | Int unk    | > 8 |
| 113        | 33  | cocaine | U     | Unknown   | Int abuse  | > 8 |
| 114        | 35  | cocaine | A     | Inhalation | Int abuse | 0.5 |
| 115        | 37  | cocaine | U     | Unknown   | Int unk    | 0.5 |
| 116        | 38  | cocaine | A     | Unknown   | Int abuse  | 0.5 |
| 117        | 40  | cocaine | A/C   | Ingestion | Int unk    | 0.5 |
| 118        | 40  | cocaine | A     | Unknown   | Int abuse  | 0.5 |
| 119        | 42  | cocaine | A     | Parenteral | Int abuse | 0.5 |
| 120        | 42  | cocaine | A     | Unknown   | Int abuse  | 0.8 |
| 121        | 43  | cocaine | A/C   | Inhalation | Int abuse | 0.8 |
| 122        | 44  | cocaine | A     | Parenteral | Int abuse | 0.8 |
| 123        | 45  | cocaine | A     | Unknown   | Int abuse  | 0.8 |
| 124        | 45  | cocaine | A     | Ingestion | Int abuse  | 0.8 |
| 125        | 49  | cocaine | A/C   | Inh/Inh  | Int abuse  | 0.8 |
| 126        | 50  | cocaine | Unk   | Unknown   | Int suicide | 0.712 |
| 127        | 50  | cocaine | A/C   | Derm/Ing/Unk | Int abuse | 0.68 |
| 128        | 53  | cocaine | A     | Ing/Paren | Int suicide | 24 |
| 129        | 25  | cocaine | U     | Ing/Inh/Unk | Int abuse | 0.657 |

Continued
| Case | Age  | Substances                          | Chronicity | Route      | Reason      | Blood concentrations | Interval after exposure |
|------|------|-------------------------------------|------------|------------|-------------|-----------------------|------------------------|
| 1130 | 24yr | cocaine, alprazolam, methadone      | U          | Ing/Unk    | Int suicide | benzoylecgonine       | 1.9 µg/mL§, 57 ng/mL§   |
| 1131 | 19yr | cocaine, alprazolam, oxycodone      | A          | Ing/Inh    | Int unk     | benzoylecgonine       | > 15 µg/mL§, 104 ng/mL§ |
| 1132 | 25yr | cocaine, benzdiazepine              | U          | Ing/Inh    | Int abuse   |                       |                        |
| 1133 | 27yr | cocaine, benzdiazepine              | A          | Ingestion  | Int abuse   |                       |                        |
| 1134 | 37yr | cocaine, benzdiazepine, marijuana   | U          | Unknown    | Int suicide |                       |                        |
| 1135 | 38yr | cocaine, chlorofluorocarbon         | A          | Inhalation | Int abuse   | benzoylecgonine       | 1.56 µg/mL               |
| 1136 | 30yr | cocaine, diphenhydramine            | C          | Inhalation | Int abuse   |                       | 1.1 µg/mL§, 0.1 µg/mL§, 0.5 µg/mL§ |
| 1137 | 38yr | cocaine, haloperidol, lorazepam     | A          | Ing/Paren/Unk | Unknown    |                       |                        |
| 1138 | 29yr | cocaine, heroin                     | A          | Unknown    | Int suicide |                       |                        |
| 1139 | 33yr | cocaine, heroin                     | U          | Ing/Unk    | Int abuse   |                       |                        |
| 1140 | 57yr | cocaine, heroin                     | A/C        | Parenteral | Int abuse   |                       |                        |
| 1141 | 38yr | cocaine, heroin, amitriptyline      | A/C        | Ing/Paren  | Int abuse   | benzoylecgonine       | 1.124 µg/mL§            |
| 1142 | 47yr | cocaine, ketamine                   | A          | Inhalation | Int abuse   |                       |                        |
| 1143 | 35yr | cocaine, marijuana                  | A          | Inh/Paren/Unk | Int abuse   |                       |                        |
| 1144 | 22yr | cocaine, marijuana, opioid          | A          | Ing/Inh    | Int unk     |                       |                        |
| 1145 | 42yr | cocaine, methadone, diazepam        | U          | Ing/Inh    | Int suicide | 0.09 µg/mL§, benzoylecgonine | 4.54 µg/mL§, 0.52 µg/mL§, 170 ng/mL§ |
| 1146 | 38yr | cocaine, methamphetamine, barbiturate | U          | Ing/Inh/Unk | Int abuse   |                       |                        |
| Case No. | Age | Drug(s)                                      | Concentration(s) | \( \mu g/mL \) |
|----------|-----|---------------------------------------------|------------------|----------------|
| 1147     | 25  | cocaine, methamphetamine, opioid            |                  |                |
| 1148     | 28  | cocaine, opioid                            |                  |                |
| 1149     | 65  | cocaine, opioid                            |                  |                |
| 1150     | 33  | cocaine, opioid, benzodiazepine            |                  |                |
| 1151     | Unk | cocaine, opioid, benzodiazepine            |                  |                |
| 1152     | 26  | cocaine, oxycodone, diazepam               | 0.761            |                |
|          |     |                                             | 3.85             |                |
|          |     |                                             | 431              |                |
|          |     |                                             | 63               |                |
|          |     |                                             | 78               |                |
| 1153     | 40  | cocaine, phencyclidine, morphone           |                  |                |
| 1154     | 43  | cocaine, quetiapine, valproic acid         |                  |                |
| 1155     | 27  | cocaine, toilet bowl cleaner (iodine)      |                  |                |
| 1156     | 49  | cocaine, trazodone, ethanol                |                  |                |
| 1157     | 35  | cocaine                                    |                  |                |
|          |     | unk chemical, ethanol                      |                  |                |
|          |     | unk drug                                   |                  |                |
| 1158     | 18  | cocaine, unk drug                          |                  |                |
| 1159     | 34  | cocaine, unk drug                          |                  |                |
| 1160     | 40  | cocaine, unk drug                          |                  |                |
| Case | Age  | Substances                  | Chronicity | Route     | Reason       | Blood concentrations | Interval after exposure |
|------|------|-----------------------------|------------|-----------|--------------|-----------------------|--------------------------|
| 1161 | 19 yr| cocaine (crack)             | A          | Ingestion | Int misuse   |                       |                          |
| 1162 | 43 yr| cocaine (crack)             | U          | Inhalation| Int abuse    |                       |                          |
| **1163** | **31 yr** | **ephedrine**           | A          | Ingestion | Unknown      | 1.2 μg/mL§            |                          |
| 1164 | i 41 yr| gammahydroxybutyric acid   | U          | Ingestion | Int abuse    |                       |                          |
| 1165 p| 18 yr| heroin                      | U          | Parenteral| Int abuse    |                       |                          |
| 1166 p| 22 yr| heroin                      | A/C        | Parenteral| Int abuse    |                       |                          |
| 1167 p| 23 yr| heroin                      | A          | Parenteral| Int abuse    |                       |                          |
| 1168 ip| 24 yr| heroin                      | U          | Parenteral| Int abuse    | morphine 1,040 ng/mL§ |                          |
| 1169 p| 24 yr| heroin                      | U          | Parenteral| Int abuse    |                       |                          |
| 1170 p| 24 yr| heroin                      | U          | Parenteral| Int abuse    |                       |                          |
| 1171 p| 26 yr| heroin                      | A          | Parenteral| Int abuse    |                       |                          |
| 1172 p| 28 yr| heroin                      | U          | Parenteral| Int abuse    |                       |                          |
| 1173 | 35 yr| heroin                      | A          | Parenteral| Int abuse    |                       |                          |
| 1174 p| 37 yr| heroin                      | U          | Parenteral| Int abuse    |                       |                          |
| 1175 p| 37 yr| heroin                      | A          | Parenteral| Int abuse    |                       |                          |
| 1176 ip| 39 yr| heroin                      | U          | Parent/Unk| Int abuse    |                       |                          |
| 1177 ip| 40 yr| heroin                      | U          | Parenteral| Int abuse    | morphine 370 ng/mL§   |                          |
| 1178 p| 41 yr| heroin                      | A/C        | Parenteral| Int abuse    |                       |                          |
| 1179 p| 42 yr| heroin                      | C          | Parenteral| Int abuse    |                       |                          |
| 1180 p| 42 yr| heroin                      | U          | Parenteral| Int abuse    |                       |                          |
| 1181 | 48 yr| heroin                      | A          | Inh/Unk   | Int abuse    |                       |                          |
| 1182 | 50 yr| heroin                      | A          | Inhalation| Int abuse    |                       |                          |
| 1183 p| 51 yr| heroin                      | A          | Parenteral| Int abuse    |                       |                          |
| 1184 | 64 yr| heroin                      | C          | Unknown   | Int abuse    |                       |                          |
| 1185 p| >19 yr| heroin                      | A          | Parenteral| Int abuse    |                       |                          |
| 1186 p| Unk  | heroin                      | U          | Unknown   | Int unk      | 1.646 ng/mL§          | morphine 330 ng/mL§      |
| 1187 p| 30 yr| heroin                      | A/C        | Ing/Paren | Int abuse    |                       | morphine 10 ng/mL§      |
|       |      | alprazolam                  |            |           |              |                       | monoacetylmorphine 10 ng/mL§ |
|       |      | paroxetine\(^A\)            |            |           |              |                       | 640 ng/mL§              |
|       |      | amitriptyline               |            |           |              |                       | nortriptyline 560 ng/mL§ |
|       |      | quetiapine\(^A\)           |            |           |              |                       |                          |
| 1188 | 43 yr| heroin                      | U          | Ing/Paren | Int abuse    | morphine 10 ng/mL§    |                          |
| 1189 | 26 yr| heroin barbiturate           | A          | Parenteral| Int abuse    |                       |                          |
| 1190 p| 18 yr| heroin cocaine              | A          | Unknown   | Int abuse    |                       |                          |
| 1191 | 24 yr| heroin cocaine              | A          | Unknown   | Int abuse    |                       |                          |
| 1192 ip| 38 yr| heroin cocaine              | U          | Unknown   | Int suicide  |                       |                          |
| 1193 p| 55 yr| heroin cocaine              | U          | Ing/Paren | Int suicide  |                       |                          |
| 1194 p| 37 yr| heroin cocaine alprazolam   | A/C        | Ing/Unk   | Int abuse    |                       |                          |
| Page | Age | Substance(s) | Route(s) | Initial | Drug of Abuse | Concentration(s) |
|------|-----|--------------|----------|---------|---------------|-----------------|
| 1195 | 37  | heroin, cocaine, methadone | A, Ing/Unk | Int | morphine, methadone, norsertraline | 32 ng/mL, 0.8 μg/mL, 200 ng/mL |
| 1196 | 48  | heroin, cocaine, sertraline | A, Ing/Unk | Int | morphine, codeine, norsertraline | 32 ng/mL, 0.8 μg/mL, 200 ng/mL |
| 1197 | 16  | heroin, marijuana | U, Inh/Paren/Unk | Int | morphine | 7.5 ng/mL |
| 1198 | 25  | heroin, marijuana | A | Inhalation | morphine | 7.5 ng/mL |
| 1199 | 49  | heroin, methadone, benzodiazepine | A/C, Ing/Paren | Int | morphine | 7.5 ng/mL |
| 1200 | 27  | heroin, methadone, benzodiazepine | A/C, Ing/Unk | Int | morphine | 7.5 ng/mL |
| 1201 | 17  | heroin, oxycodone | A/C, Parenteral | Int | morphine | 7.5 ng/mL |
| 1202 | 20  | heroin, unk drug | A, Asp/Ing/Unk | Int | morphine | 7.5 ng/mL |
| 1203 | 42  | mescaline | A | Ingestion | morphine | 7.5 ng/mL |
| 1204 | 17  | methamphetamine | A | Ingestion | morphine | 7.5 ng/mL |
| 1205 | 20  | methamphetamine | A | Ingestion | morphine | 7.5 ng/mL |
| 1206 | 21  | methamphetamine | A | Ingestion | morphine | 7.5 ng/mL |
| 1207 | 23  | methamphetamine | U | Unknown | morphine | 7.5 ng/mL |
| 1208 | 25  | methamphetamine | A | Unknown | morphine | 7.5 ng/mL |
| 1209 | 32  | methamphetamine | A | Inhalation | morphine | 7.5 ng/mL |
| 1210 | 34  | methamphetamine | A/C | Unknown | morphine | 7.5 ng/mL |
| 1211 | 40  | methamphetamine | A | Ingestion | morphine | 7.5 ng/mL |
| 1212 | 43  | methamphetamine | A | Ingestion | morphine | 7.5 ng/mL |
| 1213 | 45  | methamphetamine | A | Parenteral | morphine | 7.5 ng/mL |
| 1214 | 48  | methamphetamine | U | Unknown | morphine | 7.5 ng/mL |
| 1215 | 52  | methamphetamine | A | Unknown | morphine | 7.5 ng/mL |
| 1216 | >19 | methamphetamine | A | Unknown | morphine | 7.5 ng/mL |
| 1217 | >19 | methamphetamine | U | Unknown | morphine | 7.5 ng/mL |
| 1218 | 17  | methamphetamine | U | Ing/Unk | morphine | 7.5 ng/mL |
| 1219 | 28  | methamphetamine | A/C | Ingestion | morphine | 7.5 ng/mL |

Continued
| Case | Age  | Substances                                      | Chronicity | Route         | Reason    | Blood concentrations | Interval after exposure |
|------|------|------------------------------------------------|------------|---------------|-----------|----------------------|------------------------|
| 1220 | 29 yr| methamphetamine air freshener (fatty alcohol ethoxylate) | A/C        | Inh/Paren     | Int abuse |                      |                        |
| 1221 | 21 yr| methamphetamine cocaine                       | U          | Parenteral    | Int abuse |                      |                        |
| 1222 | 24 yr| methamphetamine cocaine alprazolam            | A          | Unknown       | Int unk   | 0.52 μg/mL§ amphetamine 0.04 μg/mL§ |                        |
| 1223 | 22 yr| methamphetamine ethanol methaqualone heroin    | A/C        | Ingestion     | Int abuse | 10.64 μg/mL amphetamine 0.123 μg/mL |                        |
| 1224 | 27 yr| methamphetamine lithium sertraline             | A          | Unknown       | Int abuse |                      |                        |
| 1225 | 24 yr| methamphetamine lithium sertraline             | U          | Ingestion     | Int unk   | 0.45 μg/mL§ amphetamine 0.13 μg/mL§ 1 mEq/L§ 0.26 μg/mL§ norsertraline 0.38 μg/mL§ |                        |
| 1226 | 20 yr| methamphetamine marijuana                      | A          | Inh/Unk       | Int unk   |                      |                        |
| 1227 | 33 yr| methamphetamine opioid                         | C          | Parenteral    | Int abuse |                      |                        |
| 1228 | 27 yr| methamphetamine unk analgesic unk antidepressant | U          | Ingestion     | Unknown   |                      |                        |
| 1229 | 36 yr| methamphetamine unk substance                  | U          | Unknown       | Unknown   |                      |                        |
| 1230 | 21 yr| methylenedioxymethamphetamine                   | A          | Ingestion     | Int abuse |                      |                        |
| 1231 | >19 yr| methylenedioxymethamphetamine                   | A          | Ingestion     | Int unk   |                      |                        |
| 1232 | 16 yr| methylenedioxymethamphetamine cocaine methamphetamine | A          | Ingestion     | Int unk   | 0.1 μg/mL benzoyleconine 0.075 μg/mL |                        |
| 1233 | >19 yr| unk street drug                                  | A          | Ingestion     | Int abuse |                      |                        |
| 1234 | 35 yr| unk street drug cocaine                          | U          | Inhalation    | Int abuse | 0.02 μg/mL§ cocaethylene 0.03 μg/mL§ |                        |

See also cases 674, 730, 778 (amphetamine); 9 (amphetamines); 12, 24, 43, 296, 298, 349, 422, 454, 467, 468, 524, 532, 539, 542 thru 546, 581, 601 thru 603, 614, 643, 668, 699, 700, 725, 726, 740, 743, 747, 754, 786, 837, 901, 903, 1022, 1066, 1089 thru 1091, 1190 thru 1195, 1221, 1222, 1232, 1234 (cocaine); 1094 (cyclohexyl nitrite); 1090, 1138 thru 1141, 1224 (heroin); 1094 (isobutyl nitrite); 12, 17, 552, 557, 559, 581, 594, 603, 1020, 1023, 1134, 1143, 1144, 1151, 1157, 1197, 1198, 1226 (marijuana); 1260 (mescaline); 318, 558, 651, 712, 730, 740, 745, 903, 1146, 1147, 1232 (methamphetamine); 470 (methylphenidate); 1153 (phencyclidine); 616 (phentermine).

Topical preparations:
1235 p  54 yr iodine bleach (hypochlorite) fabric softener A/C Ingestion Int unk
See also case 605 (hydrogen peroxide).

Unknown drug

| Case | Age | Drug | Route | Ingestion | Intention |
|------|-----|------|-------|-----------|-----------|
| 1236 | 84  | methyl salicylate | A | Ingestion | Unknown |

124 mg/dL

See also case 605 (hydrogen peroxide).

Unknown drug

| Case | Age | Drug      | Route | Ingestion | Intention |
|------|-----|-----------|-------|-----------|-----------|
| 1237 | 17  | unk drug  | U     | Unknown   | Unknown   |
| 1238 | 19  | unk drug  | A     | Ingestion | Int suicide |
| 1239 | 25  | unk drug  | U     | Unknown   | Unknown   |
| 1240 | 26  | unk drug  | U     | Unknown   | Unknown   |
| 1241 | 28  | unk drug  | U     | Unknown   | Int suicide |
| 1242 | 29  | unk drug  | A     | Unknown   | Unknown   |
| 1243 | 30  | unk drug  | U     | Unknown   | Int unk |
| 1244 | 31  | unk drug  | U     | Ingestion | Int suicide |
| 1245 | 33  | unk drug  | U     | Unknown   | Unknown   |
| 1246 | 34  | unk drug  | U     | Parenteral | Int suicide |
| 1247 | 35  | unk drug  | U     | Unknown   | Int unk |
| 1248 | 37  | unk drug  | U     | Unknown   | Unknown   |
| 1249 | 40  | unk drug  | U     | Ingestion | Int abuse |
| 1250 | 40  | unk drug  | U     | Unknown   | Unknown   |
| 1251 | 44  | unk drug  | A     | Unknown   | Unknown   |
| 1252 | 45  | unk drug  | A     | Ing/Inh  | Int abuse |
| 1253 | 46  | unk drug  | A     | Ingestion | Unknown   |
| 1254 | 52  | unk drug  | A     | Ingestion | Int suicide |
| 1255 | >19 | unk drug  | U     | Unknown   | Int unk |
| 1256 | 63  | unk drug  | A     | Ingestion | Int suicide |

Acetaminophen 48.8 μg/mL

1257 | 32  | unk drug  | A     | Ingestion | Int suicide |

Acetaminophen 144 μg/mL

Aspirin 15 mg/dL

See also cases 44, 47, 84, 325 thru 327, 494, 595, 1158, 1159, 1202 (unk drug); 223 (unknown drug).

Summary log of 1,261 human exposures where the medical outcome was coded as “death” or “death, indirect report.” 1,589 calls made to U.S. Poison Centers in 2005 were originally reported as fatalities; 328 cases were eventually determined to be either unrelated to the reported exposure or coded incorrectly as a death (including 16 cases recorded by one poison center which were unable to be verified).

Abbreviations: C, chronic exposure; A, acute exposure; A/C, acute on chronic; U, unknown; Ocu, ocular; Ot, otic; Inh, inhalation; Ing, ingestion; Adv rxn, adverse reaction; Env, environmental; Int, intentional; Occ, occupational; Paren, parenteral; Ther error, therapeutic error; Unint gen, unintentional general; unk, unknown.

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.

<substance>Superscript capital A = Additional substances not listed.

# = Concentration includes metabolite and parent compound.

Bolded case number = Abstract/narrative provided in Appendix.

m = Reported by medical examiner to poison center. No abstract or additional clinical or scenario data available.

The term “long-acting” is used throughout for all sustained release, extended release, delayed release, or long-acting formulations.
| Category                          | No. of exposures | Age <6 | 6–19 | >19 | Unint | Int | Other | Adv Rxn | Treated in health care facility | Outcome | None | Minor | Moderate | Major | Death |
|----------------------------------|------------------|-------|------|-----|-------|-----|-------|--------|---------------------------------|---------|------|-------|----------|-------|-------|
| Adhesives/glues                  |                  |       |      |     |       |     |       |        |                                 |         |      |       |          |       |       |
| Cyanoacrylate                    | 10,250           | 4,053 | 1,793| 4,286| 9,933 | 193 | 62    | 45     | 1,182                          | 2,079   | 356  | 2     | 0        |       |       |
| Epoxy                            | 935              | 245   | 49   | 636  | 894   | 16  | 6     | 17     | 235                           | 119     | 350  | 58    | 3        | 0     |       |
| Toluene/xylene                   | 648              | 366   | 54   | 219  | 609   | 24  | 6     | 8      | 136                           | 151     | 101  | 27    | 0        | 0     |       |
| Non-toxic                        | 1,754            | 1,208 | 412  | 124  | 1,685 | 51  | 8     | 8      | 66                            | 191     | 112  | 8     | 0        | 0     |       |
| Unknown                          | 4,314            | 2,057 | 571  | 1,643| 4,065 | 131 | 33    | 69     | 905                           | 777     | 817  | 208   | 10       | 0     |       |
| Category total                   | 17,901           | 7,929 | 2,879| 6,908| 17,186| 415 | 147   | 147    | 3,748                         | 2,420   | 3,459| 657   | 15       | 0     |       |
| Alcohols                         |                  |       |      |     |       |     |       |        |                                 |         |      |       |          |       |       |
| Ethanol: beverage                | 43,703           | 1,287 | 5,899| 35,976| 4,981 | 36,931| 369   | 720    | 36,934                       | 4,243   | 13,527| 9,529 | 1,896    | 120   |       |
| Ethanol: other                   | 10,231           | 7,488 | 934  | 1,787| 9,277 | 839  | 71    | 26     | 1,138                        | 2,496   | 992  | 244   | 42       | 6     |       |
| Higher alcohol                   | 210              | 96    | 30   | 84   | 194   | 9    | 2     | 4      | 50                            | 57      | 44   | 11    | 0        | 0     |       |
| Isopropanol                      | 7,394            | 4,129 | 679  | 2,539| 6,186 | 1,085| 63    | 18     | 1,798                       | 1,940   | 1,366| 406   | 52       | 5     |       |
| Methanol                         | 807              | 177   | 88   | 535  | 650   | 126  | 5     | 0      | 455                          | 179     | 160  | 75    | 33       | 6     |       |
| Rubbing alcohols                 |                  |       |      |     |       |     |       |        |                                 |         |      |       |          |       |       |
| Ethanol with methyl salicylate    | 7                | 5     | 0    | 2    | 7     | 0    | 0     | 0      | 2                            | 4       | 1    | 0     | 0        | 0     |       |
| Ethanol without methyl salicylate | 259             | 173   | 13   | 73   | 234   | 23   | 2     | 0      | 41                           | 94      | 26   | 3     | 1        | 1     |       |
| Isopropanol with methyl salicylate | 361          | 276   | 13   | 71   | 330   | 27   | 1     | 2      | 87                           | 129     | 59   | 10    | 0        | 0     |       |
| Isopropanol without methyl salicylate | 7,734    | 4,968 | 555  | 2,186| 6,856 | 798  | 42    | 11     | 1,404                       | 1,779   | 1,193| 223   | 31       | 1     |       |
| Unknown rubbing alcohol          | 1,451           | 859   | 120  | 451  | 1,243 | 186  | 12    | 1      | 308                          | 361     | 250  | 56    | 4        | 0     |       |
| Other                            | 466             | 349   | 29   | 87   | 442   | 18   | 0     | 5      | 52                           | 141     | 47   | 6     | 0        | 0     |       |
| Unknown                          | 549             | 98    | 95   | 343  | 222   | 288  | 14    | 10     | 319                          | 65      | 150  | 75    | 27       | 2     |       |
| Category total                   | 73,172          | 19,905| 8,455| 44,134| 30,622| 40,330| 581   | 797    | 42,048                       | 11,488  | 17,815| 10,638| 2,086     | 141   |       |
| Arts/crafts/office supplies      |                  |       |      |     |       |     |       |        |                                 |         |      |       |          |       |       |
| Artist paint, non-water color    | 3,011           | 2,127 | 391  | 476  | 2,915 | 71   | 4     | 18     | 163                          | 474     | 193  | 14    | 1        | 0     |       |
| Chalk                            | 1,617           | 1,466 | 98   | 49   | 1,587 | 29   | 0     | 1      | 37                           | 215     | 47   | 4     | 0        | 0     |       |
| Clay                             | 2,436           | 2,108 | 231  | 90   | 2,382 | 42   | 2     | 7      | 71                           | 271     | 85   | 10    | 0        | 2     |       |
| Crayon                           | 2,175           | 1,913 | 185  | 64   | 2,149 | 19   | 1     | 5      | 50                           | 237     | 50   | 3     | 0        | 0     |       |
| Glaze                            | 158             | 44    | 61   | 51   | 150   | 6    | 0     | 2      | 17                           | 25      | 24   | 2     | 0        | 0     |       |
| Category                        | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 | 2005 | 2004 | 2003 | 2002 | 2001 | 2000 |
|--------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Office supplies: miscellaneous |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Pencil                         | 2,823| 1,421| 1,117| 255  | 2,692| 76   | 49   | 2    | 119  | 265  | 234  | 10   | 0    | 0    |      |      |
| Pen/ink                        | 17,730| 11,895| 4,995| 755  | 17,041| 558  | 59   | 53   | 475  | 2,407| 486  | 33   | 0    |      |      |      |
| Typewriter correction fluid    | 2,083| 1,507| 378  | 185  | 1,964| 90   | 25   | 1    | 157  | 470  | 170  | 17   | 0    |      |      |      |
| Water color                    | 1,370| 1,162| 126  | 73   | 1,343| 23   | 3    | 0    | 11   | 192  | 33   | 0    | 0    |      |      |      |
| Other                          | 5,521| 4,342| 659  | 506  | 5,365| 128  | 13   | 12   | 276  | 796  | 243  | 31   | 2    |      |      |      |
| Unknown                        | 167  | 105  | 40   | 22   | 160  | 3    | 0    | 4    | 13   | 26   | 15   | 1    | 0    |      |      |      |
| Category total                 | 39,404| 28,242| 8,303| 2,663| 38,054| 1,049| 157  | 107  | 1,430| 5,437| 1,615| 130  | 3    | 3    |      |      |
| Automotive/aircraft/boat products |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Brake fluid                    | 1,381| 368  | 125  | 879  | 1,303| 61   | 12   | 1    | 504  | 264  | 434  | 74   | 9    | 1    |      |      |
| Ethylene glycol                | 5,469| 564  | 722  | 4,111| 4,582| 738  | 76   | 24   | 2,298| 937  | 947  | 415  | 176  | 16   |      |      |
| Glycol: other                  | 386  | 211  | 37   | 134  | 363  | 19   | 2    | 2    | 84   | 92   | 94   | 15   | 0    |      |      |      |
| Glycol and methanol            | 232  | 62   | 49   | 119  | 213  | 14   | 3    | 0    | 86   | 63   | 47   | 4    | 1    |      |      |      |
| Hydrocarbon                    | 3,065| 1,169| 373  | 1,502| 2,843| 176  | 24   | 13   | 904  | 675  | 895  | 149  | 10   | 1    |      |      |
| Methanol                       | 1,469| 284  | 220  | 948  | 1,242| 174  | 36   | 6    | 728  | 410  | 354  | 87   | 27   | 6    |      |      |
| Non-toxic                      | 23   | 9    | 4    | 10   | 23   | 0    | 0    | 0    | 13   | 3    | 3    | 11   | 2    | 0    |      |      |
| Other                          | 2,735| 918  | 404  | 1,390| 2,613| 55   | 22   | 39   | 829  | 517  | 976  | 195  | 12   | 0    |      |      |
| Unknown                        | 229  | 54   | 29   | 141  | 213  | 12   | 3    | 0    | 102  | 28   | 75   | 17   | 1    | 1    |      |      |
| Category total                 | 14,989| 3,639| 1,963| 9,234| 13,395| 1,249| 178  | 85   | 5,548| 2,989| 3,833| 958  | 236  | 26   |      |      |
| Batteries                      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Automotive battery             | 1,300| 79   | 154  | 1,052| 1,268| 14   | 3    | 10   | 478  | 112  | 409  | 121  | 7    | 0    |      |      |
| Disc batteries                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Alkaline (MnO2)                | 115  | 79   | 17   | 19   | 113  | 1    | 0    | 1    | 80   | 62   | 16   | 3    | 1    | 0    |      |      |
| Lithium                        | 143  | 61   | 16   | 63   | 129  | 11   | 2    | 1    | 78   | 56   | 21   | 6    | 3    | 0    |      |      |
| Mercuric oxide                 | 13   | 9    | 2    | 2    | 13   | 0    | 0    | 0    | 5    | 4    | 0    | 1    | 0    | 0    |      |      |
| Nickel and cadmium             | 5    | 0    | 3    | 2    | 5    | 0    | 0    | 0    | 2    | 1    | 1    | 1    | 0    |      |      |      |
| Silver oxide                   | 43   | 27   | 3    | 13   | 42   | 0    | 0    | 0    | 36   | 30   | 1    | 0    | 0    |      |      |
| Zinc-air                       | 107  | 55   | 16   | 36   | 105  | 2    | 0    | 0    | 75   | 57   | 2    | 0    | 0    |      |      |
| Other                          | 19   | 16   | 1    | 2    | 19   | 0    | 0    | 0    | 10   | 89   | 6    | 1    | 1    | 0    |      |      |
| Unknown                        | 2,848| 1,912| 664  | 251  | 2,766| 67   | 9    | 0    | 2,091| 1,318| 92   | 41   | 5    | 1    |      |      |
| Dry cell battery               | 5,595| 2,882| 1,161| 1,517| 5,275| 247  | 36   | 16   | 922  | 1,306| 983  | 157  | 6    | 0    |      |      |
| Other                          | 97   | 22   | 15   | 52   | 94   | 3    | 0    | 0    | 34   | 29   | 14   | 3    | 0    | 0    |      |      |
| Unknown                        | 156  | 37   | 31   | 87   | 143  | 4    | 4    | 4    | 28   | 22   | 35   | 7    | 1    | 0    |      |      |
| Category total                 | 10,441| 5,179| 2,083| 3,096| 9,972| 349  | 54   | 32   | 3,839| 3,003| 1,575| 341  | 23   | 1    |      |      |
| Bites and envenomations         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Aquatic                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Coelenterate                   | 733  | 73   | 371  | 277  | 730  | 1    | 1    | 1    | 120  | 5    | 229  | 54   | 0    | 0    |      |      |

Continued
| Age       | Reason | Treated in health care facility | Outcome |
|-----------|--------|----------------------------------|---------|
| No. of exposures | <6 | 6–19 | >19 | Unint | Int | Other | Adv Rxn | None | Minor | Moderate | Major | Death |
| Fish      | 1,090 | 21   | 186 | 875   | 1,080 | 2   | 0    | 6   | 414   | 12   | 339   | 142   | 1    | 0     |
| Other/unknown | 448 | 224  | 71  | 149   | 431   | 14  | 1    | 2   | 60    | 53   | 103   | 13    | 1    | 0     |
| Insects   |       |      |     |       |       |     |      |     |       |      |      |       |     |      |
| Ant/fire ant | 2,101 | 812  | 298 | 974   | 2,079 | 8   | 12   | 1   | 253   | 55   | 493   | 107   | 6    | 0     |
| Bee/wasp hornet | 10,792 | 2,051 | 2,030 | 6,623 | 10,784 | 6   | 0    | 2   | 1,263 | 89   | 3,524 | 558   | 12   | 1     |
| Caterpillar | 1,449 | 337  | 363 | 736   | 1,421 | 19  | 0    | 9   | 135   | 44   | 442   | 56    | 1    | 0     |
| Centipede/millipede | 1,909 | 312  | 331 | 1,247 | 1,897 | 6   | 0    | 9   | 146   | 82   | 677   | 52    | 0    | 0     |
| Mosquito | 462   | 118  | 110 | 226   | 459   | 1   | 0    | 1   | 73    | 10   | 93    | 20    | 0    | 0     |
| Scorpio | 14,521 | 1,243 | 2,831 | 10,390 | 14,519 | 2   | 0    | 0   | 976   | 84   | 2,388 | 399   | 20   | 0     |
| Tick     | 2,971 | 549  | 554 | 1,832 | 2,962 | 1   | 0    | 6   | 532   | 74   | 295   | 60    | 6    | 0     |
| Other    | 14,831 | 2,808 | 2,322 | 9,578 | 14,658 | 40  | 83   | 28  | 2,985 | 317  | 3,276 | 918   | 17   | 0     |
| Mammals  |       |      |     |       |       |     |      |     |       |      |      |       |     |      |
| Bat      | 573   | 75   | 127 | 335   | 563   | 2   | 8    | 0   | 350   | 126  | 74    | 5     | 0    | 0     |
| Cat     | 884   | 113  | 163 | 588   | 882   | 0   | 0    | 2   | 498   | 8    | 238   | 40    | 2    | 0     |
| Dog     | 1,793 | 348  | 666 | 739   | 1,788 | 2   | 0    | 1   | 1,281 | 21   | 470   | 137   | 1    | 0     |
| Fox     | 15    | 1    | 4   | 10    | 15    | 0   | 0    | 0   | 6     | 2    | 1     | 0     | 0    | 0     |
| Human   | 43    | 6    | 10  | 26    | 38    | 0   | 5    | 0   | 13    | 1    | 9     | 0     | 0    | 0     |
| Raccoon | 111   | 6    | 19  | 83    | 111   | 0   | 0    | 0   | 70    | 8    | 20    | 7     | 0    | 0     |
| Rodent/ lagomorph | 1,800 | 420  | 575 | 757   | 1,766 | 8   | 16   | 6   | 471   | 70   | 416   | 36    | 1    | 0     |
| Skunk   | 232   | 29   | 46  | 155   | 225   | 0   | 4    | 2   | 26    | 24   | 49    | 7     | 0    | 0     |
| Other   | 1,045 | 144  | 324 | 554   | 1,024 | 6   | 10   | 2   | 499   | 52   | 187   | 34    | 1    | 0     |
| Reptile/ other/unknown | 973 | 340  | 325 | 292   | 941   | 18  | 3    | 8   | 188   | 64   | 316   | 17    | 0    | 0     |
| Snakes  |       |      |     |       |       |     |      |     |       |      |      |       |     |      |
| Copperhead | 1,051 | 33   | 209 | 803   | 1,049 | 2   | 0    | 0   | 1,013 | 19   | 351   | 475   | 44   | 0     |
| Coral   | 58    | 1    | 13  | 44    | 58    | 0   | 0    | 0   | 55    | 8    | 21    | 13    | 6    | 0     |
| Cottonmouth | 194   | 4    | 37  | 149   | 192   | 1   | 0    | 1   | 182   | 10   | 64    | 67    | 5    | 0     |
| Crotaline: unknown | 413 | 28   | 112 | 267   | 412   | 0   | 0    | 0   | 380   | 15   | 109   | 181   | 25   | 2     |
| Rattlesnake | 1,255 | 51   | 184 | 1,013 | 1,251 | 3   | 0    | 1   | 1,175 | 32   | 300   | 581   | 96   | 4     |
| Exotic snakes |       |      |     |       |       |     |      |     |       |      |      |       |     |      |
| Poisonous | 98    | 2    | 13  | 82    | 97    | 0   | 0    | 1   | 87    | 4    | 23    | 37    | 8    | 0     |
| Nonpoisonous | 142   | 12   | 53  | 76    | 142   | 0   | 0    | 0   | 56    | 5    | 46    | 6     | 0    | 0     |
|                          | 6   | 0   | 4   | 2   | 6   | 0   | 0   | 0   | 2   | 0   | 2   | 0   | 0   | 0   |
|--------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Unknown if poisonous     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Nonpoisonous snake       | 1,552 | 133 | 583 | 828 | 1,548 | 2   | 0   | 1   | 532 | 65  | 643 | 49  | 0   | 0   |
| Unknown snake            | 1,972 | 131 | 553 | 1,265 | 1,969 | 1   | 1   | 0   | 1,562 | 66  | 833 | 363 | 31  | 0   |
| **Spiders**              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Black widow              | 2,463 | 179 | 372 | 1,898 | 2,460 | 2   | 0   | 1   | 793  | 86  | 649 | 317 | 7   | 0   |
| Brown recluse            | 2,236 | 180 | 284 | 1,749 | 2,226 | 5   | 2   | 2   | 1,016 | 31  | 493 | 505 | 14  | 0   |
| Necrotizing spider       | 285  | 47  | 44  | 191  | 284  | 1   | 0   | 0   | 74   | 10  | 81  | 33  | 1   | 0   |
| Other spider             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Tarantula                | 173  | 18  | 47  | 108  | 166  | 5   | 0   | 2   | 45   | 5   | 54  | 8   | 0   | 0   |
| **Unknown insect**       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| **or spider**            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Other/unknown bite/envenomation | 366  | 63  | 63  | 238  | 362  | 1   | 2   | 1   | 146  | 3   | 87  | 43  | 0   | 0   |
| **Category total**       | 88,844 | 12,934 | 17,471 | 57,579 | 88,365 | 171 | 152 | 103 | 20,457 | 1,767 | 20,563 | 6,289 | 321 | 7   |
| **Building and construction products** |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Caulking compound        | 2,543 | 1,735 | 126 | 665  | 2,481 | 23  | 5   | 30  | 288  | 499  | 207  | 53  | 1   | 0   |
| and putty                |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Cement, concrete         | 1,943 | 530  | 155 | 1,238 | 1,899 | 14  | 3   | 21  | 856  | 188  | 402  | 380 | 18  | 0   |
| **Insulation**           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Asbestos                 | 601  | 47   | 71  | 479  | 590  | 0   | 2   | 7   | 135  | 78   | 52   | 9   | 0   | 0   |
| Fiberglass               | 1,469 | 572  | 218 | 664  | 1,412 | 14  | 10  | 29  | 212  | 140  | 296  | 35  | 0   | 0   |
| **Urea/ formaldehyde**   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Other                    | 153  | 55   | 10  | 82   | 152  | 1   | 0   | 0   | 23   | 16   | 24   | 7   | 0   | 0   |
| Unknown                  | 79   | 42   | 3   | 33   | 78   | 0   | 0   | 1   | 12   | 12   | 8    | 2   | 0   | 0   |
| Soldering flux           | 317  | 116  | 35  | 164  | 303  | 7   | 2   | 5   | 97   | 57   | 78   | 27  | 1   | 1   |
| Other                    | 3,451 | 1,726 | 270 | 1,438 | 3,295 | 47  | 10  | 97  | 798  | 484  | 579  | 262 | 10  | 1   |
| Unknown                  | 117  | 23   | 8   | 85   | 109  | 0   | 0   | 7   | 47   | 13   | 25   | 16  | 0   | 0   |
| **Category total**       | 10,776 | 4,902 | 903 | 4,888 | 10,418 | 108 | 32  | 199 | 2,494 | 1,504 | 1,691 | 797 | 30  | 2   |
| **Chemicals**            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Acetone                  | 1,188 | 325  | 134 | 721  | 1,067 | 61  | 32  | 14  | 389  | 187  | 290  | 82  | 9   | 0   |
| **Acids**                |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Hydrochloric             | 2,971 | 151  | 648 | 2,121 | 2,828 | 62  | 27  | 40  | 1,214 | 286  | 975  | 402 | 15  | 3   |
| Hydrofluoric             | 920  | 34   | 49  | 821  | 893  | 14  | 2   | 6   | 789  | 69   | 338  | 250 | 20  | 1   |
| Other                    | 5,326 | 546  | 864 | 3,825 | 5,053 | 156 | 33  | 63  | 2,226 | 520  | 1,754 | 713 | 39  | 2   |
| Unknown                  | 393  | 30   | 67  | 294  | 367  | 9   | 8   | 6   | 192  | 27   | 129  | 57  | 3   | 1   |
| Alkali                   | 4,865 | 754  | 723 | 3,297 | 4,621 | 121 | 50  | 49  | 2,468 | 598  | 1,393 | 884 | 66  | 0   |
| Ammonia                  | 4,154 | 907  | 483 | 2,696 | 3,800 | 188 | 78  | 53  | 1,445 | 426  | 1,265 | 434 | 33  | 1   |
| **Continued**            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
TABLE 22
(Continued)

| No. of exposures | Age | Reason | Adv Rxn | Treated in health care facility | Outcome |
|------------------|-----|--------|---------|---------------------------------|---------|
|                  |     |        |         |                                 |         |
|                   |      | <6     | 6–19    | >19                             |         |
|                  |      | Unint  | Int     | Other                           |         |
|                  |      |         |         |                                 |         |
| Borate/boric acid| 2,427| 1,094  | 231     | 1,085                           |         |
| Chlorate         | 40   | 9      | 9       | 21                              |         |
| Cyanide          | 214  | 3      | 15      | 194                             |         |
| Dioxin           | 14   | 2      | 0       | 12                              |         |
| Ethylene glycol  | 751  | 69     | 98      | 582                             |         |
| Formaldehyde/formalin | 1,011 | 122 | 240 | 633 | 891 | 79 | 21 | 14 | 422 | 120 | 305 | 62 | 6 | 0 |
| Glycol: other    | 893  | 326    | 101     | 462                             |         |
| Ketone           | 648  | 179    | 40      | 423                             |         |
| Methylene chloride | 393 | 55   | 48     | 286                             |         |
| Nitrate and nitrite | 1,369 | 330 | 527 | 502 | 1,203 | 131 | 13 | 16 | 304 | 256 | 268 | 64 | 10 | 0 |
| Phenol/creosote  | 608  | 48     | 66      | 490                             |         |
| Strychnine       | 42   | 7      | 9       | 25                              |         |
| Toluene          | 730  | 158    | 94      | 470                             |         |
| Other            | 12,844 | 4,396 | 1,992   | 6,295                           |         |
| Other: unknown if toxic | 80 | 66   | 2      | 11                             |         |
| Unknown          | 4,358 | 1,050 | 611     | 2,609                           |         |
| Category total   | 46,239 | 10,661 | 7,051   | 27,875                          |         |

Cleaning substances (household)

| Ammonia cleaner | 1,882 | 569 | 184 | 1,115 | 1,763 | 94 | 8 | 14 | 429 | 285 | 486 | 127 | 3 | 0 |
| Automatic dishwasher detergents | 4,755 | 4,008 | 133 | 597 | 4,702 | 25 | 21 | 4 | 165 | 1,499 | 552 | 25 | 0 | 0 |

Bleaches

| Borate | 568 | 257 | 44 | 263 | 525 | 26 | 1 | 15 | 104 | 90 | 171 | 26 | 1 | 0 |
| Hypochlorite | 54,433 | 19,581 | 5,684 | 28,545 | 50,463 | 2,711 | 545 | 557 | 11,607 | 7,826 | 16,397 | 2,366 | 74 | 8 |
| Nonhypochlorite | 671 | 265 | 52 | 344 | 616 | 25 | 8 | 21 | 122 | 113 | 192 | 30 | 1 | 0 |
| Other/unknown | 511 | 189 | 70 | 241 | 471 | 28 | 5 | 2 | 141 | 57 | 127 | 48 | 0 | 0 |
| Carpet/upholstery cleaner | 5,397 | 3,947 | 317 | 1,100 | 5,173 | 96 | 23 | 99 | 649 | 1,237 | 967 | 90 | 3 | 0 |
| Category                      | Anionic/nonionic | Other/unknown | Anionic/nonionic | Other/unknown | Anionic/nonionic | Other/unknown | Anionic/nonionic | Other/unknown | Anionic/nonionic | Other/unknown | Anionic/nonionic | Other/unknown | Anionic/nonionic | Other/unknown | Anionic/nonionic | Other/unknown | Anionic/nonionic | Other/unknown |
|-------------------------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|
| Cleansers                     | 3,610            | 2,780         | 171              | 649           | 3,511           | 12            | 15               | 311           | 882              | 467           | 50               | 2             | 0               |
| Other/unknown                 | 2,466            | 1,364         | 203              | 873           | 2,323           | 80            | 15               | 39            | 506              | 526           | 513              | 107           | 3               | 0             |
| Disinfectants                 | 3,672            | 1,553         | 366              | 1,721         | 3,438           | 156           | 40               | 32            | 988              | 558           | 1,047            | 238           | 11              | 0             |
| Hypochlorite                  | 915              | 574           | 98               | 236           | 859             | 37            | 8                | 11            | 148              | 223           | 172              | 31            | 0               | 0             |
| Phenol                        | 4,851            | 2,652         | 409              | 1,761         | 4,371           | 356           | 45               | 58            | 1,131            | 1,306         | 1,197            | 117           | 24              | 7             |
| Pine oil                      | 6,526            | 4,161         | 684              | 1,640         | 6,191           | 213           | 46               | 66            | 783              | 1,314         | 1,402            | 134           | 5               | 0             |
| Drain cleaners                | 713              | 55            | 92               | 547           | 650             | 38            | 3                | 22            | 106              | 205           | 326              | 35            | 3               | 1             |
| Acid: hydrochloric            | 402              | 37            | 45               | 308           | 384             | 8             | 2                | 7             | 146              | 52            | 120              | 82            | 7               | 1             |
| Acid: sulfuric                | 57               | 10            | 1                | 46            | 55              | 2             | 0                | 0             | 20               | 5             | 13               | 9             | 0               | 0             |
| Drain cleaners                | 3,677            | 535           | 301              | 2,779         | 3,344           | 258           | 21               | 41            | 1,201            | 501           | 1,101            | 455           | 46              | 5             |
| Alkali                        | 790              | 138           | 63               | 571           | 732             | 43            | 5                | 5             | 240              | 108           | 201              | 73            | 4               | 0             |
| Fabric softeners/antistatic agents | 176           | 142           | 13               | 21            | 169             | 3             | 1                | 3             | 19               | 42            | 25               | 3             | 0               | 0             |
| Aerosol/spray                 | 4                | 3             | 0                | 1             | 4               | 0             | 0                | 0             | 0                | 1             | 0               | 0             | 0               | 0             |
| Dry/powder                    | 1,076            | 851           | 40               | 180           | 1,038           | 21            | 1                | 14            | 102              | 246           | 125              | 16            | 0               | 1             |
| Liquid                        | 447              | 379           | 17               | 50            | 424             | 11            | 3                | 8             | 22               | 79            | 28               | 2             | 0               | 0             |
| Solid/sheet                   | 11               | 8             | 0                | 3             | 9               | 0             | 2                | 0             | 1                | 3             | 2               | 0             | 0               | 0             |
| Glass cleaners                | 6,356            | 4,988         | 516              | 826           | 6,000           | 294           | 41               | 10            | 638              | 1,500         | 887              | 69            | 4               | 0             |
| Ammonia                       | 231              | 158           | 21               | 51            | 219             | 8             | 1                | 1             | 20               | 61            | 33               | 2             | 0               | 0             |
| Anionic nonionic              | 2,539            | 1,869         | 230              | 432           | 2,412           | 90            | 27               | 7             | 281              | 589           | 389              | 43            | 0               | 0             |
| Isopropanol                   | 1,192            | 879           | 120              | 186           | 1,111           | 62            | 13               | 4             | 157              | 256           | 165              | 19            | 0               | 0             |
| Hand dishwashing              | 5,926            | 3,854         | 457              | 1,587         | 5,641           | 127           | 72               | 80            | 485              | 788           | 1,195            | 80            | 2               | 4             |
| Anionic/nonionic              | 2,701            | 1,672         | 224              | 797           | 2,554           | 57            | 54               | 31            | 164              | 307           | 486              | 28            | 1               | 0             |
| Other/unknown                 | 61               | 33            | 5                | 23            | 58              | 2             | 0                | 1             | 7                | 14            | 11               | 1             | 0               | 0             |
| Laundry additives             | 38               | 21            | 3                | 13            | 36              | 2             | 0                | 0             | 7                | 4             | 6                | 2             | 0               | 0             |
| Bluing/brightening agent      | 67               | 40            | 4                | 23            | 64              | 2             | 0                | 1             | 17               | 13            | 12               | 3             | 0               | 0             |
| Detergent booster             | 54               | 30            | 7                | 14            | 52              | 1             | 1                | 0             | 5                | 11            | 10               | 0             | 0               | 0             |
| Enzyme/microbiological additive | 54           | 30            | 7                | 14            | 52              | 1             | 1                | 0             | 5                | 11            | 10               | 0             | 0               | 0             |

Continued
| Age    | Reason | Treated in health care facility | Outcome |
|--------|--------|---------------------------------|---------|
| No. of exposures | <6 | 6–19 | >19 | Unint | Int | Other | Adv Rxn | None | Minor | Moderate | Major | Death |
| Other/unknown | 1,409 | 1,177 | 69 | 155 | 1,361 | 20 | 8 | 20 | 114 | 329 | 216 | 21 | 3 | 0 |
| Laundry detergents | | | | | | | | | | | | | | |
| Granular | 4,463 | 3,567 | 214 | 653 | 4,331 | 81 | 16 | 33 | 545 | 910 | 1,021 | 69 | 2 | 1 |
| Liquid | 4,757 | 3,335 | 335 | 1,066 | 4,559 | 128 | 24 | 40 | 613 | 788 | 1,012 | 95 | 5 | 0 |
| Soap | 79 | 49 | 6 | 23 | 74 | 3 | 1 | 1 | 14 | 15 | 13 | 1 | 0 | 0 |
| Other/unknown | 165 | 115 | 13 | 36 | 152 | 8 | 2 | 3 | 36 | 44 | 26 | 6 | 0 | 0 |
| Laundry prewash/stain removers | | | | | | | | | | | | | | |
| Dry solvent-based | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Liquid solvent-based | 920 | 714 | 49 | 154 | 904 | 7 | 4 | 5 | 113 | 313 | 145 | 11 | 0 | 1 |
| Spray solvent-based | 399 | 349 | 12 | 37 | 392 | 0 | 3 | 3 | 75 | 90 | 95 | 21 | 0 | 0 |
| Other/unknown solvent-based | 77 | 62 | 1 | 14 | 76 | 1 | 0 | 0 | 10 | 18 | 18 | 1 | 0 | 0 |
| Dry surfactant-based | 212 | 190 | 5 | 16 | 209 | 1 | 1 | 1 | 14 | 37 | 23 | 3 | 0 | 0 |
| Liquid surfactant-based | 2,167 | 1,917 | 76 | 168 | 2,134 | 22 | 5 | 5 | 290 | 420 | 393 | 69 | 1 | 0 |
| Spray surfactant-based | 558 | 483 | 12 | 60 | 541 | 8 | 4 | 3 | 113 | 91 | 128 | 30 | 1 | 0 |
| Other/unknown surfactant-based | 109 | 79 | 3 | 26 | 104 | 1 | 0 | 4 | 11 | 16 | 23 | 2 | 1 | 0 |
| Other/unknown | 2,755 | 1,927 | 147 | 666 | 2,695 | 33 | 11 | 16 | 311 | 606 | 616 | 44 | 0 | 0 |
| Miscellaneous cleaners | | | | | | | | | | | | | | |
| Acid | 1,241 | 583 | 85 | 566 | 1,182 | 19 | 7 | 28 | 308 | 269 | 289 | 87 | 1 | 0 |
| Alkali | 8,510 | 5,210 | 606 | 2,648 | 8,148 | 217 | 60 | 73 | 1,662 | 1,754 | 1,721 | 361 | 6 | 0 |
| Anionic/nonionic | 7,420 | 5,063 | 560 | 1,765 | 7,088 | 199 | 43 | 79 | 1,125 | 1,458 | 1,366 | 176 | 10 | 1 |
| Cationic | 2,526 | 1,216 | 261 | 1,029 | 2,364 | 110 | 16 | 30 | 653 | 514 | 542 | 136 | 10 | 0 |
| Ethanol | 507 | 340 | 103 | 60 | 484 | 16 | 5 | 1 | 47 | 74 | 82 | 3 | 0 | 0 |
| Glycols | 1,047 | 577 | 163 | 278 | 997 | 25 | 11 | 10 | 166 | 223 | 205 | 30 | 1 | 0 |
| Isopropanol | 1,694 | 1,082 | 361 | 243 | 1,609 | 57 | 23 | 3 | 169 | 383 | 308 | 21 | 2 | 0 |
| Methanol | 34 | 14 | 2 | 18 | 30 | 3 | 0 | 1 | 12 | 6 | 7 | 2 | 0 | 1 |
| Phenol | 9 | 1 | 0 | 8 | 9 | 0 | 0 | 0 | 5 | 1 | 3 | 2 | 0 | 0 |
| Other/unknown | 5,014 | 2,938 | 591 | 1,446 | 4,718 | 169 | 65 | 46 | 987 | 1,121 | 1,183 | 181 | 7 | 2 |
| Category                           | Acid | Alkali | Detergent | Other/unknown |
|-----------------------------------|------|--------|-----------|---------------|
| **Oven cleaners**                 | 27   | 13     | 2         | 10            |
| **Rust removers**                 | 2,645| 568    | 288       | 1,761         |
| **Spot removers/dry cleaning agents** | 35   | 15     | 4         | 16            |
| **Toilet bowl cleaners**          | 327  | 57     | 39        | 197           |
| **Wall/floor/tile cleaners**      | 295  | 57     | 39        | 197           |

**Continued**
## TABLE 22
(Continued)

| No. of exposures | <6 | 6–19 | >19 | Unint | Int | Other | Adv Rxn | Treated in health care facility | Outcome |
|------------------|----|------|-----|-------|-----|-------|--------|----------------------------------|---------|
| Isopropanol      | 641| 242  | 39  | 165   | 600 | 22    | 8      | 9                               | 82      |
| Methanol         | 1  | 0    | 1   | 0     | 0   | 0     | 1      | 0                               | 0       |
| Other/unknown    | 1954| 1245 | 141 | 552   | 1853| 61    | 19     | 20                              | 316     |
| Wheel cleaner: HF/bifluoride | 70 | 14  | 4   | 52    | 69  | 0     | 0      | 1                               | 57      |
| Category total   | 218,316| 121,498| 18,024| 77,087| 206,639| 7,650 | 1,633 | 1,974 | 37,830 | 42,921 | 51,386 | 7,890 | 353 | 42 |
| Industrial cleaners | | | | | | | | | | | | | | |
| Acid             | 1,986| 579  | 174 | 1,217 | 1,882| 72    | 10     | 20                              | 567     |
| Alkali           | 3,495| 966  | 439 | 2,059 | 3,316| 121   | 35     | 19                              | 1,675   |
| Anionic/nonionic | 1,151| 504  | 98  | 491   | 1,078| 44    | 12     | 12                              | 272     |
| Cationic         | 648  | 159  | 98  | 387   | 598  | 33    | 7      | 6                               | 253     |
| Disinfectant     | 3,601| 376  | 377 | 2,794 | 3,356| 188   | 27     | 20                              | 1,265   |
| Other/unknown    | 1,871| 523  | 226 | 1,105 | 1,733| 75    | 29     | 30                              | 836     |
| Category total   | 12,752| 3,107| 1,412| 8,053 | 11,963| 533   | 120    | 107                            | 4,868   |
| Cosmetics/personal care products | | | | | | | | | | | | | | |
| Baby oil         | 2,605| 2,396| 69  | 133   | 2,554| 36    | 2      | 11                             | 183     |
| Bath oil/bubble bath | 4,931| 4,519| 235 | 168   | 4,861| 34    | 6      | 25                             | 179     |
| Cream/lotion/make-up | 24,704| 20,908| 1,157| 2,561 | 23,942| 280   | 40     | 431                            | 904     |
| Dental care products | | | | | | | | | | | | | | |
| Denture cleaner  | 1,512| 259  | 73  | 1,176 | 1,456| 38    | 8      | 7     | 82     | 333    | 114   | 8     | 0    | 1    |
| Toothpaste with fluoride | 22,531| 20,248| 1,073| 1,164 | 21,783| 331   | 89     | 313   | 414    | 4,660  | 1,160 | 41    | 0    | 0    |
| Toothpaste without fluoride | 1,629| 1,408| 66  | 149   | 1,564| 16    | 7      | 14    | 42     | 31     | 289   | 85    | 5    | 0    |
| Other            | 2,125| 817  | 395 | 898   | 1,819| 40    | 8      | 40    | 249    | 204    | 328   | 334   | 37    | 0    |
| Deodorant        | 21,115| 18,555| 1,329| 1,171 | 20,246| 298   | 125    | 433   | 639    | 3,121  | 1,545 | 91    | 1    | 0    |
| Depilatory       | 1,712| 424  | 336 | 944   | 1,139| 74    | 15     | 481   | 381    | 148    | 518   | 142   | 3    | 1    |
| Douché           | 124  | 91   | 8   | 23    | 115  | 1     | 0      | 7     | 8      | 37     | 8     | 1     | 0    | 0    |
| Eye product      | 1,274| 1,079| 56  | 132   | 1,236| 4     | 3      | 29    | 74     | 205    | 86    | 11    | 1    | 0    |
| Hair care products | | | | | | | | | | | | | | |
| Coloring agent   | 2,374| 862  | 256 | 1,235 | 1,995| 36    | 4      | 338   | 529    | 336    | 622   | 139   | 2    | 0    |
| Curl activator   | 53   | 40   | 6   | 7     | 53   | 0     | 0      | 0     | 13     | 16     | 11    | 3     | 0    | 0    |
| Oil              | 284  | 247  | 16  | 20    | 277  | 5     | 0      | 2     | 36     | 73     | 41    | 7     | 0    | 0    |
| Product Type                           | Quantity | Quantity | Quantity | Quantity | Quantity | Quantity | Quantity | Quantity | Quantity | Quantity |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Permanent wave solution               | 371      | 191      | 25       | 154      | 340      | 1        | 0        | 30       | 127      | 66       | 116      | 35       | 2        | 0        |
| Relaxer: sodium hydroxide             | 823      | 568      | 46       | 206      | 783      | 7        | 0        | 33       | 392      | 145      | 296      | 97       | 1        | 0        |
| Relaxer: other alkaline               | 774      | 601      | 38       | 132      | 748      | 0        | 0        | 25       | 355      | 180      | 262      | 74       | 6        | 0        |
| Relaxer: other non-alkaline           | 59       | 43       | 7        | 9        | 58       | 0        | 0        | 1        | 12       | 7        | 9        | 3        | 0        | 0        |
| Rinse/conditioner/relaxer             | 2,339    | 1,889    | 160      | 283      | 2,233    | 71       | 4        | 29       | 199      | 482      | 222      | 26       | 2        | 0        |
| Shampoo                               | 6,444    | 4,982    | 572      | 873      | 6,096    | 278      | 13       | 48       | 476      | 969      | 1,018    | 44       | 1        | 0        |
| Spray                                 | 1,994    | 1,251    | 243      | 489      | 1,670    | 295      | 12       | 14       | 395      | 412      | 376      | 60       | 12       | 1        |
| Other                                 | 3,051    | 2,143    | 274      | 615      | 2,871    | 63       | 9        | 103      | 443      | 559      | 489      | 77       | 4        | 0        |
| Lipstick/balm: with camphor           | 1,118    | 996      | 82       | 38       | 1,081    | 26       | 5        | 6        | 29       | 207      | 89       | 4        | 0        | 0        |
| Lipstick/balm: without camphor        | 4,389    | 4,087    | 172      | 118      | 4,307    | 35       | 6        | 38       | 80       | 566      | 140      | 10       | 1        | 0        |
| Mouthwash                             |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| Ethanol                               | 14,947   | 4,036    | 2,772    | 8,066    | 13,303   | 1,506    | 47       | 48       | 1,613    | 2,597    | 1,268    | 271      | 30       | 2        |
| Non-ethanol                           | 1,176    | 515      | 198      | 462      | 1,088    | 68       | 0        | 19       | 107      | 249      | 101      | 13       | 2        | 0        |
| Fluoride                              | 4,413    | 3,220    | 931      | 249      | 4,435    | 37       | 3        | 25       | 68       | 912      | 115      | 1        | 1        | 0        |
| Unknown                               | 147      | 38       | 39       | 70       | 130      | 12       | 4        | 1        | 22       | 21       | 32       | 5        | 0        | 0        |
| Nail products                         |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| Acrylic nail adhesive                 | 1,342    | 538      | 374      | 423      | 1,316    | 17       | 5        | 4        | 544      | 154      | 393      | 96       | 3        | 0        |
| Acrylic nail primer                   | 272      | 224      | 10       | 36       | 263      | 2        | 0        | 7        | 98       | 71       | 79       | 24       | 1        | 0        |
| Acrylic nail remover                  | 41       | 19       | 5        | 17       | 37       | 1        | 0        | 3        | 9        | 8        | 16       | 2        | 0        | 0        |
| Polish                                | 10,523   | 9,559    | 494      | 446      | 10,416   | 78       | 14       | 13       | 533      | 2,063    | 1,361    | 49       | 1        | 0        |
| Polish remover: acetone               | 2,444    | 1,868    | 191      | 378      | 2,356    | 69       | 9        | 8        | 273      | 728      | 412      | 22       | 1        | 0        |
| Polish remover: other                 | 1,885    | 1,398    | 200      | 283      | 1,819    | 51       | 3        | 11       | 199      | 510      | 319      | 20       | 0        | 0        |
| Polish remover: unknown               | 7,304    | 5,187    | 764      | 1,321    | 7,018    | 229      | 34       | 12       | 848      | 1,697    | 1,161    | 64       | 7        | 0        |
| Other                                 | 1,582    | 918      | 77       | 573      | 1,542    | 12       | 4        | 22       | 401      | 339      | 361      | 74       | 0        | 0        |
| Perfume/cologne/aftershave            | 16,495   | 13,725   | 1,526    | 1,196    | 15,797   | 511      | 121      | 44       | 1,296    | 3,621    | 3,468    | 141      | 11       | 1        |
| Peroxide                              | 16,651   | 6,988    | 1,494    | 8,075    | 15,828   | 421      | 60       | 323      | 1,297    | 2,532    | 2,806    | 247      | 11       | 0        |
| Powder: talc                          | 2,922    | 2,559    | 158      | 195      | 2,855    | 41       | 17       | 6        | 322      | 610      | 620      | 58       | 1        | 0        |
| No. of exposures | Age | Reason | Adv Rxn | Treated in health care facility | Outcome |
|------------------|-----|--------|---------|---------------------------------|---------|
|                  | <6  | 6–19  | >19     | Unint  | Int  | Other | Powder: without talc | None  | Minor | Moderate | Major | Death |
|                  | 2,089 | 1,931 | 69     | 83    | 2,065 | 15     | 3     | 4       | 118   | 362   | 382  | 22  | 0  | 0  |
|                  | 17,725 | 13,586 | 1,367  | 2,690 | 16,847 | 395    | 138   | 392    | 970   | 2,557 | 2,099 | 142 | 5  | 0  |
|                  | 11,642 | 10,416 | 612    | 573   | 11,389 | 38     | 19    | 192    | 413   | 1,675 | 1,600 | 69  | 2  | 0  |
| Category total  | 221,935 | 165,329 | 17,975 | 37,834 | 211,641 | 5,472  | 837   | 3,766  | 15,316 | 39,428 | 26,155 | 2,358 | 119 | 6  |
| Deodorizers      |     |       |        |       |       |       |       |       |       |       |       |     |    |    |
| Air fresheners   |     |       |        |       |       |       |       |       |       |       |       |     |    |    |
| Aerosol          | 2,972 | 2,143  | 446    | 369   | 2,826  | 107    | 23    | 13     | 297   | 566   | 657  | 45  | 2  | 1  |
| Liquid           | 4,936 | 4,261  | 312    | 348   | 4,849  | 59     | 20    | 5      | 420   | 1,142 | 934  | 35  | 1  | 1  |
| Solid            | 4,410 | 3,987  | 150    | 261   | 4,371  | 22     | 11    | 4      | 212   | 945   | 547  | 22  | 1  | 0  |
| Other/unknown    | 1,776 | 1,409  | 148    | 209   | 1,710  | 37     | 15    | 10     | 157   | 427   | 354  | 23  | 1  | 0  |
| Diaper pail      | 29   | 24     | 3      | 2     | 27    | 2      | 0     | 0      | 2     | 7     | 1    | 1   | 0  | 0  |
| Deodorizer       |     |       |        |       |       |       |       |       |       |       |       |     |    |    |
| Toilet bowl      | 676  | 588    | 30     | 55    | 661   | 6      | 8     | 1      | 93    | 204   | 46   | 4   | 0  | 0  |
| Other            | 5,461 | 4,034  | 387    | 1,019 | 5,265  | 105    | 31    | 55     | 623   | 1,254 | 951  | 99  | 3  | 1  |
| Unknown          | 79   | 51     | 5      | 22    | 75    | 2      | 0     | 1      | 15    | 12    | 16   | 1   | 0  | 0  |
| Category total   | 20,339 | 16,497 | 1,481  | 2,285 | 19,784 | 340    | 108   | 89     | 1,819 | 4,557 | 3,506 | 230 | 8  | 3  |
| Dyes             |     |       |        |       |       |       |       |       |       |       |       |     |    |    |
| Chlorate         | 0    | 0      | 0      | 0     | 0      | 0      | 0     | 0      | 0     | 0     | 0    | 0   | 0  | 0  |
| Fabric           | 404  | 289    | 45     | 54    | 394    | 4      | 2     | 4      | 21    | 93    | 19   | 2   | 0  | 0  |
| Food             | 1,153 | 970    | 110    | 64    | 1,107  | 20     | 8     | 16     | 39    | 222   | 60   | 5   | 0  | 0  |
| Leather          | 139  | 102    | 16     | 21    | 134    | 2      | 1     | 2      | 4     | 30    | 10   | 0   | 0  | 0  |
| Other            | 528  | 237    | 190    | 100   | 490    | 10     | 2     | 23     | 71    | 83    | 47   | 16  | 1  | 0  |
| Unknown          | 53   | 29     | 10     | 14    | 47     | 1      | 0     | 5      | 8     | 10    | 3    | 2   | 0  | 0  |
| Category total   | 2,277 | 1,627  | 371    | 253   | 2,172  | 37     | 13    | 50     | 143   | 438   | 139  | 25  | 1  | 0  |
| Essential oils   |     |       |        |       |       |       |       |       |       |       |       |     |    |    |
| Clove oil        | 446  | 277    | 34     | 133   | 416    | 6      | 1     | 22     | 101   | 109   | 123  | 10  | 0  | 0  |
| Cinnamon oil     | 599  | 380    | 144    | 58    | 510    | 55     | 4     | 29     | 48    | 41    | 243  | 13  | 0  | 0  |
| Eucalyptus oil   | 522  | 336    | 39     | 143   | 501    | 12     | 3     | 5      | 99    | 130   | 108  | 12  | 3  | 0  |
| Pennroyal oil    | 36   | 7      | 2      | 27    | 20     | 10     | 1     | 5      | 14    | 6     | 4    | 5   | 0  | 0  |
| Tea tree oil     | 951  | 615    | 70     | 259   | 900    | 12     | 1     | 35     | 151   | 251   | 171  | 17  | 2  | 0  |
| Other/unknown    | 4,728 | 3,807  | 278    | 619   | 4,608  | 45     | 15    | 53     | 406   | 1,162 | 813  | 53  | 1  | 0  |
| Category total   | 7,282 | 5,422  | 567    | 1,239 | 6,955  | 140    | 25    | 149    | 819   | 1,699 | 1,462 | 110 | 6  | 0  |
| Fertilizers      |     |       |        |       |       |       |       |       |       |       |       |     |    |    |
| Household plant food | 2,361 | 1,468  | 246    | 634   | 2,317  | 26     | 8     | 6      | 92    | 461   | 101  | 7   | 0  | 0  |
| Category                          | Total Count | Outdoor Fertilizer | Plant Hormone | Other | Unknown | Category Total | Fire Extinguishers | Food Products/Food Poisoning | Bacterial Food Poisoning (Documented) | Question: Spoiled Food | Question: Food/Additive | Suspected Food Poisoning | Other Adverse Reaction to Food | Category Total | Foreign Bodies/Toys/Miscellaneous |
|----------------------------------|-------------|--------------------|---------------|-------|---------|----------------|-------------------|----------------------|---------------------------------|------------------------|--------------------------|-------------------------|--------------------------|------------------|---------------------------------
| Outdoor fertilizer              | 8,461       | 4,029              | 2,661         | 416   | 932     | 3,932          | 42                | 21                   | 30                 | 233                    | 905                     | 243                      | 34                       | 0                |
| Plant hormone                   | 1,890       | 38                 | 13            | 5     | 12      | 34             | 2                 | 0                    | 1                  | 5                     | 6                       | 4                        | 0                         | 0                |
| Other                            |             | 1,183              | 221           | 466   | 1842    | 17             | 13                | 16                   | 153                | 418                    | 137                     | 20                       | 0                          | 0                |
| Unknown                          | 14,664      | 143                | 76            | 20    | 46      | 134            | 2                 | 3                    | 4                  | 25                     | 25                      | 12                       | 4                         | 0                |
| Category total                   | 58,198      | 5,305              | 875           | 1,071 | 3,303   | 4,360          | 160               | 52                   | 718                | 333                    | 71                      | 2,327                    | 168                        | 4                |
| Fire extinguishers              | Fire extinguisher | 4,000              | 300           | 1,099 | 2,583   | 3,652          | 125               | 180                  | 28                 | 877                    | 484                     | 1,012                    | 181                        | 0                |
| Food products/Food poisoning    |             |                    |               |       |         |                |                   |                      |                    |                        |                          |                          |                            |                  |
| Bacterial food poisoning (documented) |         |                    |               |       |         |                |                   |                      |                    |                        |                          |                          |                            |                  |
| Botulism                         | 242         | 56                 | 19            | 166   | 224     | 5              | 3                 | 8                   | 58                 | 43                     | 25                      | 5                        | 12                         | 2                |
| Other                            | 889         | 267                | 168           | 446   | 860     | 4              | 13                | 12                  | 94                 | 108                    | 134                     | 55                       | 0                          | 1                |
| Unknown                          | 14,664      | 2,320              | 2,413         | 9,762 | 13,840  | 30             | 164               | 599                  | 1,617              | 1,130                  | 3,313                   | 650                      | 6                         | 0                |
| Capsicum/Peppers                 | 5,305       | 875                | 1,071         | 3,303 | 4,360   | 160            | 52                | 718                  | 333                | 71                     | 2,327                   | 168                      | 4                         | 0                |
| Ichthyosarcotoxins               |             |                    |               |       |         |                |                   |                      |                    |                        |                          |                          |                            |      |
| Ciguatera                        | 177         | 8                  | 21            | 147   | 164     | 1              | 1                 | 11                   | 93                 | 3                      | 49                      | 64                       | 2                         | 0                |
| Ciguatera                        | 14          | 0                  | 1             | 12    | 13      | 0              | 0                 | 0                    | 1                  | 1                      | 1                       | 4                        | 0                         | 0                |
| Paralytic shellfish              | 981         | 62                 | 108           | 806   | 943     | 0              | 2                 | 35                   | 159                | 75                     | 443                     | 63                       | 4                         | 1                |
| Scombroid                        | 192         | 11                 | 16            | 164   | 156     | 0              | 0                 | 36                   | 65                 | 5                      | 74                      | 49                       | 0                         | 0                |
| Tetrodotoxin                     | 205         | 40                 | 71            | 90    | 200     | 3              | 0                 | 1                    | 38                 | 28                     | 31                      | 13                       | 0                         | 0                |
| Other                            | 168         | 12                 | 12            | 143   | 120     | 4              | 0                 | 44                   | 43                 | 12                     | 42                      | 13                       | 1                         | 0                |
| Monosodium glutamate             | 159         | 10                 | 16            | 131   | 57      | 1              | 1                 | 199                  | 40                 | 6                      | 39                      | 16                       | 0                         | 0                |
| Question: spoiled food           | 17,216      | 5,122              | 2,931         | 8,939 | 16,363  | 51             | 322               | 459                  | 981                | 1,798                  | 1,081                    | 188                      | 0                         | 0                |
| Question: food/additive          | 10,957      | 6,398              | 1,538         | 2,909 | 9,317   | 626            | 207               | 767                  | 1,196              | 1,358                  | 1,267                    | 269                      | 22                        | 2                |
| Suspected food poisoning         | 10,768      | 1,412              | 1,586         | 7,612 | 10,482  | 14             | 89                | 164                  | 1,173              | 352                    | 1,842                    | 566                      | 5                         | 0                |
| Other adverse reaction to food   | 2,527       | 616                | 484           | 1,375 | 1,099   | 54             | 92                | 1,258                | 625                | 147                    | 682                     | 208                      | 10                        | 0                |
| Category total                   | 64,464      | 17,209             | 10,455        | 36,005 | 58,198  | 953            | 946               | 4,212                | 6,516              | 5,137                  | 11,353                   | 2,327                    | 66                        | 6                |
| Foreign bodies/toys/miscellaneous|             |                    |               |       |         |                |                   |                      |                    |                        |                          |                          |                            |                  |
| Ash                              | 447         | 366                | 23            | 57    | 440     | 4              | 0                 | 2                    | 21                 | 64                     | 39                      | 2                        | 0                         | 0                |
| Bubble blowing solution          | 5,066       | 4,693              | 266           | 93    | 5,006   | 29             | 19                | 8                    | 157                | 634                    | 961                     | 28                       | 0                         | 0                |
| Charcoal                         | 512         | 382                | 29            | 96    | 474     | 29             | 2                 | 6                    | 57                 | 74                     | 31                      | 13                       | 2                         | 5                |
| Christmas ornament               | 798         | 660                | 43            | 91    | 795     | 1              | 0                 | 2                    | 39                 | 151                    | 50                      | 1                        | 0                         | 0                |
| Coin                             | 3,596       | 2,892              | 580           | 109   | 3,530   | 54             | 5                 | 4                    | 1,303              | 939                    | 348                     | 39                       | 3                         | 0                |
| No. of exposures | Age | Reason | Treated in health care facility | Outcome |
|------------------|-----|--------|---------------------------------|---------|
|                  | <6  | 6–19   | >19   | Unint | Int | Other | Adv Rxn | None | Minor | Moderate | Major | Death |
| Desiccant        | 45,324 | 40,638 | 2,885 | 1,505 | 44,839 | 345 | 103 | 18 | 1,385 | 6,260 | 273 | 16 | 0 | 0 |
| Feces/urine      | 6,251 | 5,091 | 318 | 799 | 6,082 | 51 | 101 | 9 | 190 | 840 | 243 | 15 | 0 | 0 |
| Glass            | 2,382 | 822 | 284 | 1,251 | 2,265 | 24 | 78 | 13 | 309 | 381 | 211 | 26 | 1 | 0 |
| Glow product     | 10,964 | 6,560 | 4,046 | 280 | 10,816 | 119 | 20 | 6 | 515 | 1,210 | 2,559 | 63 | 0 | 0 |
| Incense, punk    | 290 | 246 | 19 | 24 | 284 | 2 | 1 | 3 | 17 | 68 | 26 | 3 | 0 | 1 |
| Soil             | 2,563 | 2,193 | 155 | 208 | 2,518 | 25 | 6 | 12 | 73 | 323 | 111 | 10 | 0 | 0 |
| Thermometers     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Mercury          | 6,513 | 2,457 | 1,796 | 2,122 | 6,438 | 44 | 20 | 4 | 447 | 1,189 | 77 | 4 | 0 | 0 |
| Other            | 1,823 | 754 | 527 | 516 | 1,763 | 22 | 27 | 11 | 66 | 376 | 70 | 3 | 0 | 0 |
| Unknown          | 870 | 331 | 226 | 294 | 866 | 2 | 1 | 1 | 42 | 49 | 1 | 0 | 0 | 0 |
| Toy              | 14,171 | 9,848 | 3,877 | 392 | 13,952 | 143 | 35 | 33 | 765 | 1,770 | 1,845 | 52 | 2 | 0 |
| Other            | 20,153 | 12,989 | 3,319 | 3,650 | 19,400 | 408 | 143 | 154 | 2,147 | 3,363 | 1,170 | 181 | 10 | 0 |
| Unknown          | 720 | 500 | 103 | 112 | 667 | 25 | 22 | 3 | 88 | 148 | 35 | 8 | 0 | 0 |
| Category total   | 122,443 | 91,422 | 18,496 | 11,599 | 120,135 | 1,327 | 583 | 289 | 7,621 | 17,839 | 8,050 | 464 | 18 | 6 |
| Fumes/gases/vapors |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Carbon dioxide   | 618 | 48 | 224 | 333 | 572 | 28 | 5 | 10 | 138 | 83 | 145 | 45 | 1 | 0 |
| Carbon monoxide  | 16,449 | 2,031 | 2,552 | 10,955 | 15,841 | 464 | 20 | 64 | 7,300 | 3,139 | 4,365 | 1,374 | 176 | 66 |
| Chloramine       | 809 | 20 | 58 | 718 | 768 | 40 | 1 | 0 | 250 | 51 | 266 | 151 | 2 | 0 |
| Chlorine: acid mixed with hypochlorite | 1,310 | 48 | 120 | 1,115 | 1,242 | 66 | 0 | 2 | 446 | 109 | 564 | 247 | 4 | 0 |
| Chlorine: other  | 6,333 | 460 | 1,136 | 4,618 | 6,068 | 162 | 8 | 93 | 2,135 | 300 | 2,521 | 902 | 23 | 1 |
| Hydrogen sulfide | 1,396 | 103 | 139 | 1,102 | 1,385 | 1 | 3 | 6 | 397 | 162 | 355 | 119 | 12 | 6 |
| Methane and natural gas | 5,453 | 904 | 816 | 3,189 | 5,389 | 38 | 11 | 9 | 1,143 | 1,559 | 1,063 | 146 | 9 | 1 |
| Polymer fume fever | 10 | 1 | 1 | 8 | 10 | 0 | 0 | 0 | 0 | 4 | 2 | 0 | 0 | 0 |
| Propane/simple asphyxiant | 2,835 | 311 | 600 | 1,882 | 2,541 | 245 | 19 | 19 | 1,031 | 364 | 728 | 284 | 26 | 4 |
| Other            | 1,740 | 185 | 323 | 1,203 | 1,656 | 52 | 7 | 22 | 518 | 233 | 418 | 129 | 10 | 0 |
| Unknown          | 2,041 | 146 | 266 | 1,556 | 1,944 | 29 | 38 | 16 | 536 | 224 | 577 | 105 | 4 | 0 |
| Category total   | 38,994 | 4,257 | 6,235 | 26,679 | 37,416 | 1,125 | 112 | 241 | 13,894 | 6,228 | 11,004 | 3,502 | 267 | 78 |
| Heavy metals     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Aluminum         | 1,016 | 497 | 101 | 408 | 951 | 21 | 17 | 17 | 127 | 150 | 60 | 27 | 2 | 0 |
| Arsenic (excluding pesticide) | 969 | 142 | 71 | 738 | 616 | 28 | 178 | 10 | 524 | 142 | 83 | 64 | 9 | 0 |
| Element                        | 0  | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 |
|-------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Barium                        | 29 | 0  | 15 | 14 | 24 | 3  | 0  | 1  | 11 | 2  | 7  | 2  | 1  |
| Cadmium                       | 65 | 3  | 10 | 49 | 54 | 1  | 1  | 3  | 35 | 5  | 10 | 5  | 0  |
| Copper                        | 938| 152| 304| 460| 839| 43 | 20 | 28 | 304| 126| 283| 40 | 1  |
| Fireplace flame colors        | 38 | 31 | 2  | 5  | 38 | 0  | 0  | 2  | 7  | 2  | 1  | 0  | 0  |
| Gold                          | 3  | 2  | 0  | 1  | 2  | 0  | 0  | 1  | 0  | 1  | 1  | 0  | 0  |
| Lead                          | 3,075| 1,438| 407| 1,184| 2,888| 48 | 53 | 22 | 1,213| 700 | 189 | 92 | 7  |
| Manganese                     | 88 | 9  | 19 | 59 | 76 | 4  | 0  | 2  | 46 | 9  | 18 | 10 | 1  |
| Mercury: elemental            | 2,786| 350 | 687| 1,590| 2,509| 95 | 67 | 67 | 707 | 747 | 99  | 55 | 6  |
| Mercury: other/unknown        | 290| 51 | 28 | 206| 241| 7  | 13 | 20 | 108 | 58  | 46  | 17 | 2  |
| Metal fume fever              | 670| 14 | 55 | 598| 641| 8  | 0  | 19 | 223 | 3   | 188 | 97 | 1  |
| Selenium                      | 113| 47 | 10 | 56 | 93 | 7  | 1  | 11 | 33  | 23  | 12  | 3  | 0  |
| Thallium                      | 30 | 3  | 0  | 27 | 17 | 1  | 5  | 3  | 18  | 2   | 4   | 6  | 0  |
| Other                         | 2,594| 843 | 316| 1,399| 2,250| 176 | 28 | 125| 777 | 497 | 337 | 130| 21 |
| Unknown                       | 77 | 15 | 7  | 52 | 59 | 4  | 8  | 3  | 35  | 8   | 10  | 6  | 0  |
| Category total                | 12,781| 3,597| 2,032| 6,846| 11,298| 446 | 391| 332| 4,163| 2,480| 1,349| 555| 51 |
| Hydrocarbons                  |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Benzene                       | 166| 4  | 7  | 134| 161| 1  | 1  | 1  | 117 | 25  | 55  | 19 | 3  |
| Carbon tetrachloride          | 28 | 3  | 1  | 24 | 26 | 2  | 0  | 0  | 13  | 6   | 9   | 1  | 1  |
| Diesel fuel                   | 2,048| 268 | 280| 1,476| 1,950| 75  | 11 | 7  | 513 | 228 | 722 | 111| 2  |
| Fluorochlorocarbon/propellant | 6,896| 519 | 1,277| 5,010| 6,044| 700 | 77 | 53 | 1,819| 1,118| 1,540| 496| 26 |
| Gasoline                      | 20,410| 4,723| 3,453| 12,039| 18,931| 1,270| 104| 60 | 3,488| 2,951| 7,179| 611| 18 |
| Halogenated                   | 573| 110| 63 | 398| 525| 27 | 4  | 13 | 228 | 61  | 180 | 54 | 3  |
| hydrocarbon:other             |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Kerosene                      | 1,894| 979 | 186| 710 | 1,801| 52 | 29 | 5  | 640 | 390 | 493 | 136| 9  |
| Lamp oil                      | 2,374| 1,959| 92 | 310 | 2,337| 28 | 6  | 3  | 793 | 673 | 623 | 201| 24 |
| Lighter fluid/naphtha         | 3,389| 1,711| 329| 1,312| 3,151| 153 | 47 | 26 | 1,126| 732 | 942 | 197| 27 |
| Lubricating oil/motor oil     | 5,890| 3,633| 480| 1,753| 5,695| 126 | 50 | 6  | 1,012| 1,842| 1,018| 127| 2  |
| Mineral seal oil              | 37 | 18 | 5  | 14 | 35 | 1  | 0  | 1  | 6   | 9   | 6   | 0  | 0  |
| Mineral spirits/varsol        | 2,638| 897 | 294| 1,426| 2,430| 144 | 22 | 29 | 867 | 443 | 772 | 186| 11 |
| Toluene/xylene                | 1,431| 218 | 145| 1,047| 1,294| 100 | 14 | 14 | 696 | 184 | 483 | 134| 13 |
| Turpentine                    | 663 | 189 | 92 | 373 | 546 | 95 | 3  | 11 | 222 | 122 | 159 | 42 | 6  |
| Other                         | 4,583| 2,146| 554| 1,843| 4,315| 124 | 67 | 66 | 1,436| 970 | 1,019| 376| 26 |
| Unknown                       | 869 | 308 | 140| 412 | 777 | 73 | 5  | 9  | 326 | 176 | 233 | 77 | 5  |
| Category total                | 53,889| 17,685| 7,398| 28,281| 50,018| 2,971| 440| 304| 13,302| 9,930| 15,433| 2,768| 176| 14 |
| Information calls | No. of exposures | Age | Reason | Treated in health care facility | Outcome |
|------------------|------------------|-----|--------|---------------------------------|---------|
|                  |                  | <6 | 6–19  | >19    | Unint  | Int  | Other | Adv Rxn | None | Minor | Moderate | Major | Death |
| Administrative information | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Drug information | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Poison information | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| Medical information | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Category total | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| Lacrimators |                  |    |       |       |       |      |      |       |      |      |       |       |       |
| Capsicum defense spray | 4,377 | 730 | 1,662 | 1,872 | 3,300 | 161 | 729 | 59 | 857 | 117 | 1,950 | 266 | 2 | 0 |
| Lacrimator: CN | 1,437 | 221 | 460 | 706 | 1,006 | 65 | 283 | 21 | 277 | 30 | 602 | 72 | 1 | 0 |
| Lacrimator: CR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lacrimator: CS | 62 | 14 | 16 | 32 | 56 | 0 | 1 | 5 | 26 | 1 | 32 | 6 | 0 | 0 |
| Lacrimator: DM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other | 78 | 5 | 9 | 60 | 77 | 1 | 0 | 0 | 13 | 2 | 9 | 9 | 0 | 0 |
| Unknown | 158 | 20 | 44 | 93 | 123 | 3 | 27 | 1 | 35 | 3 | 56 | 13 | 1 | 0 |
| Category total | 6,112 | 990 | 2,191 | 2,763 | 4,562 | 230 | 1,040 | 86 | 1,208 | 153 | 2,649 | 366 | 4 | 0 |
| Matches/fireworks/explosives |                  |    |       |       |       |      |      |       |      |      |       |       |       |       |
| Explosive | 306 | 132 | 91 | 80 | 259 | 28 | 13 | 3 | 80 | 63 | 50 | 21 | 0 | 0 |
| Firework | 574 | 466 | 61 | 45 | 550 | 11 | 6 | 7 | 61 | 166 | 55 | 7 | 0 | 0 |
| Match | 862 | 775 | 43 | 42 | 841 | 16 | 3 | 1 | 27 | 217 | 17 | 1 | 0 | 0 |
| Other | 19 | 14 | 3 | 2 | 18 | 1 | 0 | 0 | 3 | 4 | 2 | 0 | 0 | 0 |
| Unknown | 13 | 9 | 1 | 3 | 12 | 0 | 1 | 0 | 3 | 3 | 1 | 0 | 0 | 0 |
| Category total | 1,774 | 1,396 | 199 | 172 | 1,680 | 56 | 23 | 11 | 174 | 453 | 125 | 29 | 0 | 0 |
| Mushrooms |                  |    |       |       |       |      |      |       |      |      |       |       |       |       |
| Coprine | 10 | 4 | 3 | 3 | 5 | 2 | 0 | 3 | 6 | 3 | 6 | 1 | 0 | 0 |
| Cyclopeptide | 40 | 7 | 5 | 28 | 27 | 9 | 1 | 2 | 33 | 7 | 6 | 7 | 3 | 4 |
| Gastrointestinal irritant | 151 | 61 | 26 | 64 | 115 | 24 | 0 | 11 | 70 | 41 | 50 | 17 | 0 | 0 |
| Hallucinogenic | 849 | 23 | 467 | 343 | 114 | 717 | 5 | 9 | 692 | 39 | 171 | 330 | 23 | 0 |
| Ibotenic acid | 36 | 4 | 9 | 21 | 17 | 18 | 0 | 1 | 31 | 5 | 10 | 14 | 1 | 0 |
| Miscellaneous, nontoxic | 192 | 77 | 26 | 87 | 158 | 5 | 0 | 29 | 55 | 36 | 42 | 7 | 0 | 0 |
| Monomethylhydrazine | 25 | 2 | 1 | 22 | 18 | 1 | 0 | 6 | 14 | 6 | 11 | 3 | 1 | 0 |
|                | 19 | 1  | 3  | 15 | 11 | 5  | 0  | 2  | 10 | 1  | 9  | 2  | 1  | 0  |
|----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Muscarine      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Orellanine     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Other potentially toxic | | | | | | | | | | | | | | |
| Unknown        | 5,806 | 3,968 | 881 | 907 | 5,045 | 662 | 12 | 72 | 2,441 | 2,780 | 659 | 252 | 16 | 2 |
| Category total | 7,146 | 4,156 | 1,421 | 1,499 | 5,524 | 1,446 | 18 | 136 | 3,362 | 2,923 | 968 | 635 | 46 | 6 |

**Paints and stripping agents**

|                | 37 | 2  | 2  | 32 | 35 | 0  | 0  | 2  | 11 | 5  | 5  | 3  | 0  | 0  |
|----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Paints Anti-algae | 54 | 11 | 6  | 36 | 50 | 2  | 0  | 1  | 15 | 6  | 12 | 4  | 0  | 0  |
| Anti-corrosion   | 3,289 | 929 | 671 | 1,664 | 3,005 | 189 | 21 | 70 | 760 | 410 | 842 | 173 | 6  | 0  |
| Oil-base         | 6,471 | 4,786 | 447 | 1,210 | 6,338 | 60 | 16 | 52 | 486 | 998 | 505 | 63 | 2  | 0  |
| Water-base       | 892 | 374 | 79  | 433 | 865 | 10 | 3  | 13 | 146 | 177 | 185 | 32 | 2  | 0  |
| Stains           | 994 | 147 | 109 | 731 | 951 | 22 | 4  | 15 | 342 | 61  | 358 | 90 | 0  | 0  |
| Stripping agents | 728 | 168 | 53  | 503 | 693 | 20 | 2  | 13 | 284 | 82  | 226 | 107 | 3  | 0  |
| Methylene chloride | 111 | 11 | 6  | 91  | 100 | 6  | 1  | 2  | 49 | 8  | 35 | 10 | 1  | 0  |
| Other            | 1,668 | 466 | 169 | 1,016 | 1,593 | 26 | 13 | 34 | 348 | 204 | 380 | 81 | 3  | 1  |
| Unknown          | 642 | 229 | 68  | 340 | 617 | 10 | 0  | 14 | 160 | 113 | 139 | 48 | 0  | 0  |
| Varnish, lacquer | 6,987 | 4,311 | 533 | 2,073 | 6,740 | 128 | 19 | 85 | 977 | 1,188 | 671 | 139 | 7  | 0  |
| Other paint/varnish/lacquer | | | | | | | | | | | | | | |
| Category total  | 21,873 | 11,434 | 2,143 | 8,129 | 20,987 | 473 | 79 | 301 | 3,578 | 3,252 | 3,358 | 750 | 24 | 1  |

**Pesticides**

|                | 160 | 36 | 9  | 112 | 147 | 11 | 1  | 1  | 1  | 52 | 38 | 22 | 17 | 1  |
|----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Fungicides (non-medicinal) | | | | | | | | | | | | | | |
| Carbamate      | 64 | 11 | 1  | 52  | 62 | 1  | 1  | 0  | 10 | 11 | 10 | 6  | 0  | 0  |
| Copper compound | 0  | 0  | 0  | 0   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| Mercurial       | 0  | 0  | 0  | 0   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| Non-mercurial  | 67 | 32 | 7  | 26  | 65 | 1  | 0  | 1  | 16 | 13 | 9  | 4  | 0  | 0  |
| Phthalimide     | 268 | 48 | 24 | 194 | 254 | 0  | 4  | 10 | 68 | 35 | 63 | 8  | 0  | 0  |
| Wood preservative | 10 | 4  | 1  | 5   | 9  | 1  | 0  | 0  | 3  | 3  | 1  | 0  | 0  | 0  |
| Other unknown   | 798 | 178 | 66 | 537 | 765 | 6  | 3  | 22 | 184 | 133 | 182 | 31 | 2  | 0  |
| Other           | 49 | 16 | 10 | 23  | 44 | 4  | 0  | 1  | 9  | 6  | 9  | 0  | 1  | 0  |
| Fumigants       | 79 | 2  | 8  | 68  | 71 | 3  | 1  | 2  | 60 | 4  | 22 | 13 | 2  | 2  |

Continued
| Metam sodium | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Methyl bromide | 5 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 4 | 0 | 1 | 1 | 0 | 0 |
| Sulfuryl fluoride | 295 | 39 | 39 | 209 | 285 | 4 | 2 | 3 | 48 | 37 | 32 | 7 | 0 | 1 |
| Other | 43 | 4 | 3 | 33 | 41 | 0 | 1 | 0 | 20 | 2 | 7 | 5 | 1 | 0 |
| Unknown | 98 | 16 | 10 | 70 | 89 | 2 | 4 | 3 | 42 | 9 | 24 | 6 | 2 | 0 |
| Herbicides (includes algicides, defoliants, insecticides) | | | | | | | | | | | | | | |
| Carbamate | 21 | 2 | 2 | 17 | 11 | 10 | 0 | 0 | 16 | 7 | 4 | 4 | 4 | 0 |
| 2,4-D or 2,4,5-T | 70 | 29 | 2 | 37 | 67 | 0 | 0 | 2 | 12 | 13 | 11 | 4 | 0 | 0 |
| Chlorophenoxy | 2,391 | 629 | 227 | 1,521 | 2,291 | 33 | 10 | 54 | 514 | 451 | 491 | 82 | 1 | 0 |
| Diquat | 297 | 47 | 28 | 218 | 282 | 8 | 1 | 6 | 80 | 69 | 71 | 12 | 1 | 1 |
| Glyphosate | 4,679 | 1,245 | 378 | 3,017 | 4,380 | 62 | 24 | 200 | 925 | 1,085 | 1,159 | 126 | 8 | 2 |
| Paraquat | 59 | 3 | 5 | 51 | 54 | 3 | 0 | 2 | 34 | 9 | 19 | 8 | 0 | 2 |
| Paraquat/diquat | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Urea | 87 | 26 | 4 | 53 | 81 | 2 | 0 | 3 | 23 | 15 | 19 | 4 | 0 | 0 |
| Other | 1,786 | 406 | 179 | 1,187 | 1,701 | 27 | 5 | 49 | 442 | 313 | 373 | 75 | 7 | 2 |
| Unknown | 418 | 114 | 62 | 232 | 391 | 9 | 10 | 7 | 96 | 40 | 81 | 12 | 0 | 0 |
| Insecticides (includes insect growth regulators) | | | | | | | | | | | | | | |
| Arsenic pesticide | 371 | 269 | 11 | 88 | 362 | 7 | 1 | 1 | 43 | 138 | 17 | 4 | 1 | 1 |
| Borate/boric acid | 4,103 | 3,364 | 158 | 565 | 4,004 | 47 | 28 | 22 | 323 | 1,068 | 150 | 30 | 3 | 0 |
| Carbamate only | 2,844 | 1,081 | 247 | 1,475 | 2,653 | 120 | 24 | 43 | 710 | 554 | 412 | 139 | 14 | 3 |
| Carbamate with other insecticide | 760 | 131 | 60 | 537 | 709 | 24 | 8 | 14 | 99 | 129 | 149 | 22 | 1 | 3 |
| Chlorinated hydrocarbon only | 771 | 275 | 94 | 395 | 682 | 26 | 3 | 51 | 283 | 185 | 125 | 41 | 1 | 0 |
| Chlorinated hydrocarbon with other insecticide | 394 | 163 | 56 | 174 | 381 | 8 | 2 | 3 | 65 | 63 | 91 | 9 | 0 | 0 |
| Insect growth regulator | 92 | 37 | 11 | 42 | 87 | 3 | 0 | 2 | 20 | 9 | 8 | 2 | 0 | 0 |
| Metaldehyde | 354 | 139 | 20 | 195 | 345 | 5 | 0 | 4 | 53 | 80 | 36 | 7 | 1 | 0 |
| Nicotine | 4 | 2 | 0 | 2 | 2 | 2 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 0 |
| Organophosphate | 5,133 | 1,416 | 479 | 3,166 | 4,787 | 190 | 30 | 104 | 1,464 | 1,066 | 1,078 | 273 | 43 | 3 |
| Organophosphate/carbamate | 137 | 40 | 14 | 82 | 130 | 4 | 0 | 3 | 29 | 25 | 15 | 7 | 1 | 0 |
| Category                              | 1   | 0   | 1   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|---------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Organophosphate/chlorinated hydrocar  | 1,075 | 247 | 88  | 733 | 1,010 | 30  | 13  | 22  | 245 | 180 | 272 | 51  | 1   | 3   |     |     |
| Organophosphate/other insecticide     | 4   | 1   | 0   | 3   | 4   | 0   | 0   | 0   | 1   | 1   | 0   | 0   | 0   | 0   |     |     |
| Organophosphate/carbamate/chlorinate | 1   | 1   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   |     |     |
| Piperonyl butoxide only               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Piperonyl butoxide/pyrethrin          | 309 | 93  | 48  | 165 | 285 | 11  | 1   | 12  | 81  | 35  | 85  | 19  | 1   | 0   |     |     |
| Pyrethrins only                       | 118 | 29  | 10  | 77  | 116 | 1   | 0   | 1   | 15  | 20  | 9   | 1   | 0   | 0   |     |     |
| Pyrethrin                             | 5,500 | 1,920 | 628 | 2,899 | 5,089 | 143 | 27  | 232 | 1,038 | 833 | 1,197 | 223 | 8   | 0   |     |     |
| Pyrethroid                            | 20,022 | 5,631 | 2,134 | 12,070 | 18,599 | 528 | 126 | 731 | 3,800 | 3,005 | 4,877 | 847 | 40  | 4   |     |     |
| Rotenone                              | 95  | 21  | 12  | 61  | 91  | 0   | 2   | 2   | 16  | 12  | 28  | 3   | 0   | 0   |     |     |
| Veterinary insecticide                | 252 | 80  | 34  | 136 | 230 | 11  | 2   | 7   | 42  | 36  | 47  | 9   | 3   | 0   |     |     |
| Other                                 | 9,107 | 4,498 | 814 | 3,681 | 8,764 | 93  | 26  | 208 | 1,004 | 1,556 | 1,083 | 147 | 11  | 1   |     |     |
| Unknown                               | 4,302 | 1,101 | 425 | 2,701 | 3,838 | 172 | 101 | 157 | 1,304 | 563  | 785  | 214 | 9   | 0   |     |     |
| Repellents                            | 371 | 124 | 52  | 194 | 347 | 4   | 12  | 8   | 47  | 40  | 86  | 8   | 0   | 0   |     |     |
| Bird, dog, deer or other mammal repe  | 9,151 | 6,210 | 1,424 | 1,460 | 8,608 | 94  | 62  | 377 | 874  | 1,490 | 2,773 | 147 | 5   | 0   |     |     |
| Insect repellent with DEET            | 1,878 | 1,476 | 189 | 205  | 1,811 | 19  | 10  | 36  | 113  | 367  | 324  | 24  | 0   | 0   |     |     |
| Insect repellent without DEET         | 97  | 42  | 18  | 30  | 85  | 3   | 0   | 8   | 12   | 14   | 32   | 2   | 0   | 0   |     |     |
| Insect repellent: unknown             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Naphthalene                           | 1,792 | 1,242 | 118 | 421  | 1,753 | 23  | 6   | 9   | 401  | 679  | 138  | 27  | 1   | 0   |     |     |
| Paradichlorobenzene                   | 156 | 92  | 7   | 55  | 150 | 1   | 1   | 4   | 25   | 29   | 18   | 2   | 0   | 0   |     |     |
| Other moth repellent                  | 11  | 9   | 0   | 2   | 10  | 0   | 0   | 1   | 3    | 8    | 0    | 0   | 0   | 0   |     |     |
| Unknown moth repellent                | 2,296 | 1,280 | 180 | 806  | 2,183 | 58  | 39  | 13  | 455  | 607  | 221  | 37  | 1   | 0   |     |     |
| Rodenticides                          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Reason | Treated in health care facility | Age | Outcome |
|--------|-------------------------------|-----|---------|
|         | None | Minor | Moderate | Major | Death |
| ANTU   | 8    | 1     | 6       | 1     | 0     | 0     |
| Anticoagulant: warfarin-type | 400 | 324 | 12 | 60 | 368 | 26 | 6 | 0 | 2 | 2 | 1 | 0 | 0 | 0 |
| Anticoagulant: long-acting, superwar | 14,740 | 13,042 | 398 | 1,221 | 14,087 | 502 | 107 | 15 | 4,430 | 4,772 | 175 | 88 | 26 | 1 |
| Barium carbonate | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bromethalin | 541 | 388 | 18 | 122 | 489 | 40 | 8 | 4 | 169 | 178 | 15 | 12 | 0 | 2 |
| Cholecalciferol | 10 | 8 | 0 | 2 | 9 | 0 | 1 | 0 | 2 | 2 | 0 | 0 | 0 | 0 |
| Cyanide | 6 | 0 | 2 | 4 | 6 | 0 | 0 | 0 | 0 | 2 | 4 | 2 | 0 | 0 |
| Monofluoroacetate | 3 | 2 | 0 | 1 | 2 | 0 | 1 | 0 | 2 | 2 | 0 | 1 | 0 | 0 |
| Strychnine | 88 | 14 | 6 | 66 | 45 | 18 | 17 | 2 | 49 | 18 | 10 | 7 | 1 | 0 |
| Vacor | 3 | 2 | 0 | 1 | 2 | 0 | 1 | 0 | 2 | 2 | 0 | 1 | 0 | 0 |
| Zinc phosphide | 101 | 36 | 4 | 58 | 89 | 8 | 0 | 3 | 39 | 24 | 11 | 8 | 0 | 0 |
| Other | 747 | 529 | 70 | 144 | 715 | 22 | 3 | 3 | 68 | 176 | 36 | 4 | 4 | 1 |
| Unknown | 1,362 | 870 | 82 | 372 | 1,125 | 138 | 86 | 2 | 640 | 363 | 81 | 31 | 17 | 0 |
| Category total | 101,745 | 49,232 | 9,032 | 42,471 | 95,623 | 2,580 | 821 | 2,482 | 20,921 | 20,877 | 17,125 | 2,904 | 225 | 33 |
| photographic products | | | | | | | | | | | | | | |
| Developer/fixing/stop bath | 379 | 30 | 159 | 186 | 367 | 3 | 1 | 7 | 126 | 33 | 136 | 20 | 0 | 0 |
| Photographic coating fluid | 3 | 1 | 0 | 2 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Other | 935 | 528 | 90 | 307 | 897 | 22 | 1 | 1 | 15 | 130 | 202 | 174 | 54 | 0 |
| Unknown | 9 | 4 | 1 | 4 | 9 | 0 | 0 | 0 | 3 | 3 | 1 | 0 | 0 | 0 |
| Category total | 1,326 | 563 | 250 | 499 | 1,276 | 25 | 2 | 22 | 260 | 238 | 311 | 75 | 0 | 0 |
| plants | | | | | | | | | | | | | | |
| Amygdalin/cyanogenic glycoside | 2,617 | 1,744 | 465 | 390 | 2,475 | 88 | 3 | 44 | 133 | 544 | 97 | 14 | 1 | 0 |
| Anticholinergic | 975 | 352 | 437 | 176 | 495 | 465 | 4 | 4 | 566 | 175 | 98 | 316 | 37 | 0 |
| Cardiac glycoside | 1,430 | 822 | 237 | 362 | 1,323 | 82 | 3 | 22 | 263 | 426 | 107 | 23 | 3 | 0 |
| Colchicine | 8 | 6 | 0 | 2 | 8 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Depressant | 315 | 191 | 44 | 78 | 252 | 43 | 1 | 15 | 49 | 65 | 28 | 13 | 1 | 0 |
| Dermatitis | 9,266 | 5,028 | 1,289 | 2,858 | 8,557 | 211 | 57 | 417 | 922 | 1,089 | 1,156 | 275 | 5 | 0 |
| Category                        | 12,311 | 9,286 | 1,298 | 1,664 | 11,663 | 345 | 27 | 264 | 925 | 2,574 | 1,018 | 164 | 5 | 0 |
|--------------------------------|--------|-------|-------|-------|--------|-----|---|-----|-----|-------|-------|-----|---|---|
| Gastrointestinal irritant      | 355    | 104   | 143   | 104   | 171    | 161| 11| 10  | 161 | 49    | 58    | 68 | 0 | 0 |
| Hallucinogenic                 | 156    | 49    | 37    | 67    | 149    | 2   | 1 | 2   | 74  | 20    | 59    | 26 | 0 | 0 |
| Nicotine                       | 11,927 | 9,426 | 1,305 | 1,107 | 11,336 | 231 | 7 | 340 | 461 | 1,551 | 589   | 90 | 6 | 0 |
| Non-toxic                      | 8,780  | 7,386 | 793   | 567   | 8,521  | 207 | 8 | 35  | 378 | 2,164 | 1,190 | 60 | 1 | 0 |
| Oxalate                        | 1,166  | 839   | 131   | 191   | 1,103  | 33  | 2 | 26  | 147 | 357   | 80    | 13 | 2 | 0 |
| Solanine                       | 143    | 43    | 22    | 77    | 116    | 16  | 1 | 6   | 45  | 36    | 21    | 10 | 0 | 0 |
| Stimulant                      | 171    | 60    | 36    | 71    | 150    | 10  | 4 | 5   | 74  | 51    | 35    | 10 | 0 | 0 |
| Toxalbumin                     | 4,870  | 3,506 | 743   | 590   | 4,561  | 169 | 6 | 128 | 487 | 1,198 | 358   | 90 | 9 | 1 |
| Other toxic                    | 14,357 | 10,568| 1,959 | 1,730 | 13,715 | 388 | 20| 217 | 1,122| 2,899 | 1,124 | 157| 6 | 1 |
| Unknown toxic or unknown if toxic |       |       |       |       |        |     |   |     |     |       |       |    |   |   |
| Category total                 | 68,847 | 49,410| 8,939 | 10,034| 64,595 | 2,451| 155| 1,535| 5,807| 13,201| 6,018 | 1,329| 76| 2 |   |
| Polishes and waxes             |        |       |       |       |        |     |   |     |     |       |       |    |   |   |
| Floor wax/polish/sealer        | 770    | 376   | 37    | 339   | 749    | 9   | 0 | 11  | 179 | 161   | 180   | 48 | 0 | 0 |
| Furniture polish               | 2,892  | 2,507 | 133   | 246   | 2,838  | 39  | 9 | 5   | 303 | 966   | 385   | 30 | 2 | 0 |
| Polish/wax: other              | 4,094  | 3,148 | 247   | 678   | 3,962  | 78  | 24| 27  | 534 | 1,167 | 569   | 103| 6 | 2 |
| Category total                 | 7,756  | 6,031 | 417   | 1,263 | 7,549  | 126 | 33| 43  | 1,016| 2,294 | 1,134 | 181| 8 | 2 |
| Radioisotopes                  |        |       |       |       |        |     |   |     |     |       |       |    |   |   |
| Radioisotope (nonmedicinal)    | 282    | 26    | 30    | 216   | 245    | 9   | 12| 8   | 91  | 39    | 21    | 17 | 0 | 0 |
| Sporting equipment             |        |       |       |       |        |     |   |     |     |       |       |    |   |   |
| Fishing bait                   | 75     | 36    | 32    | 7     | 74     | 0   | 0 | 1   | 4   | 29    | 8     | 0  | 0 | 0 |
| Fishing product: other         | 25     | 17    | 4     | 3     | 24     | 0   | 0 | 1   | 2   | 5     | 5     | 0  | 0 | 0 |
| Golf ball                      | 23     | 1     | 12    | 10    | 20     | 2   | 0 | 0   | 1    | 8     | 8     | 0  | 0 | 0 |
| Golf product: other            | 1      | 1     | 0     | 0     | 1      | 0   | 0 | 0   | 0    | 0     | 1     | 0  | 0 | 0 |
| Gun bluing                     | 32     | 15    | 1     | 16    | 29     | 2   | 0 | 1   | 11   | 11    | 3     | 3  | 0 | 0 |
| Hunting product: other         | 366    | 176   | 82    | 106   | 315    | 28  | 13| 1   | 118  | 89    | 33    | 8  | 1 | 0 |
| Other                          | 22     | 13    | 1     | 8     | 22     | 0   | 0 | 0   | 5    | 6     | 1     | 1  | 0 | 0 |
| Unknown                        | 3      | 2     | 0     | 1     | 3      | 0   | 0 | 0   | 1    | 1     | 1     | 0  | 0 | 0 |
| Category total                 | 547    | 261   | 132   | 151   | 488    | 32  | 13| 4   | 142  | 149   | 60    | 12| 1 | 0 |
| Swimming pool/aquarium         |        |       |       |       |        |     |   |     |     |       |       |    |   |   |
| Algicide                       | 2,307  | 737   | 429   | 1,116 | 2,240  | 22  | 4 | 40  | 537 | 276   | 698   | 208| 1 | 1 |
| Aquarium product               | 2,570  | 2,116 | 147   | 297   | 2,515  | 33  | 9 | 8   | 249 | 702   | 175   | 23 | 2 | 0 |
| Bromine water/shock treatment  | 138    | 51    | 20    | 66    | 119    | 0   | 1 | 18  | 32  | 21    | 47    | 13 | 0 | 0 |
| Chlorine water/shock treatment | 3,249  | 587   | 786   | 1,828 | 3,093  | 31  | 14| 108 | 903 | 219   | 1,256 | 379| 6 | 0 |   |
| No. of exposures | Age | Reason | Adv Rxn | Treated in health care facility | Outcome |
|------------------|-----|--------|---------|---------------------------------|----------|
|                  | <6  | 6–19  | >19     | Unint  | Int  | Other | None | Minor | Moderate | Major | Death |
| Pool/aquarium test kit | 318 | 219   | 39     | 58    | 312 | 2   | 1   | 1     | 47   | 84  | 45  | 8   | 1   | 0    |
| Other             | 3,178 | 761  | 695    | 1,656 | 2,858 | 49  | 28  | 237   | 765  | 446 | 1,375 | 250 | 4   | 1    |
| Category total    | 11,760 | 4,471 | 2,116  | 5,021 | 11,137 | 137 | 57  | 412   | 2,533 | 1,748 | 3,596 | 881 | 14  | 2    |
| Tobacco products  |     |       |        |       |       |     |     |       |       |       |       |     |     |      |
| Chewing tobacco   | 726 | 619   | 40    | 65   | 688 | 28  | 4   | 5     | 234  | 220 | 208 | 25  | 1   | 0    |
| Cigarette         | 5,310 | 4,805 | 120   | 372  | 5,127 | 113 | 27  | 31    | 1,006 | 1,797 | 1,034 | 84  | 4   | 0    |
| Cigar             | 93  | 73    | 11    | 9    | 88  | 1   | 1   | 3     | 16   | 40  | 17  | 3   | 0   | 0    |
| Filter tip        | 123 | 102   | 4     | 17   | 116 | 3   | 2   | 2     | 19   | 41  | 16  | 2   | 0   | 0    |
| Snuff             | 399 | 333   | 22    | 42   | 382 | 11  | 1   | 5     | 119  | 117 | 118 | 23  | 1   | 0    |
| Other             | 110 | 64    | 11    | 33   | 92  | 11  | 1   | 5     | 32   | 20  | 21  | 5   | 0   | 0    |
| Unknown           | 637 | 435   | 45    | 154  | 548 | 50  | 5   | 31    | 171  | 145 | 121 | 21  | 5   | 0    |
| Category total    | 7,398 | 6,431 | 253   | 692  | 7,041 | 217 | 41  | 82    | 1,597 | 2,380 | 1,535 | 163 | 11  | 0    |
| Weapons of mass destruction |     |       |        |       |       |     |     |       |       |       |       |     |     |      |
| Anthrax           | 25  | 1     | 0     | 22   | 15  | 0   | 10  | 0     | 11   | 4   | 1   | 1   | 0   | 0    |
| Other biological weapon | 59  | 6     | 6     | 44   | 53  | 0   | 5   | 1     | 18   | 6   | 1   | 1   | 0   | 0    |
| Nerve gas         | 5   | 0     | 0     | 5    | 4   | 0   | 1   | 0     | 2    | 0   | 0   | 2   | 0   | 0    |
| Other chemical weapon | 89  | 2     | 6     | 81   | 77  | 5   | 6   | 0     | 60   | 17  | 25  | 17  | 2   | 0    |
| Suspicious powder in envelope/package | 55  | 3     | 6     | 46   | 18  | 0   | 34  | 0     | 25   | 18  | 10  | 0   | 0   | 0    |
| Other suspicious powder | 24  | 0     | 1     | 23   | 9   | 0   | 15  | 0     | 6    | 9   | 3   | 0   | 0   | 0    |
| Other suspicious substance | 8   | 0     | 1     | 7    | 1   | 0   | 7   | 0     | 3    | 0   | 2   | 1   | 1   | 0    |
| Category total    | 265 | 12    | 20    | 228  | 177 | 5   | 78  | 1     | 125  | 54  | 42  | 22  | 3   | 0    |
| Other/unknown nondrug substances |     |       |        |       |       |     |     |       |       |       |       |     |     |      |
| Other             | 19,832 | 10,588 | 2,670 | 6,308 | 18,026 | 526 | 592 | 528   | 3,045 | 3,582 | 2,895 | 565 | 27  | 5    |
| Unknown           | 6,469 | 1,720 | 922   | 3,679 | 4,619 | 214 | 819 | 386   | 2,267 | 695  | 1,068 | 407 | 58  | 15   |
| Category total    | 26,301 | 12,308 | 3,592 | 9,987 | 22,645 | 740 | 1,411 | 914   | 5,312 | 4,277 | 3,963 | 972 | 85  | 20   |
| Total no. of non-pharmaceuticals | 1,352,831 | 693,463 | 166,206 | 480,336 | 1,241,823 | 75,494 | 11,330 | 19,863 | 250,596 | 221,438 | 238,443 | 54,635 | 4,783 | 464  |
| % of non-pharmaceuticals | 51.3% | 12.3% | 35.5% | 91.8% | 5.6% | 0.8% | 1.5% | 18.5% | 16.4% | 17.6% | 4.0% | 0.4% | 0.0% |
| % of all substances | 49% | 25.1% | 6.0% | 17.4% | 44.9% | 2.7% | 0.4% | 0.7% | 9.1% | 8.0% | 8.6% | 2.0% | 0.2% | 0.0% |
| Analgesics                                                                 | 35,500 | 8,543 | 10,565 | 16,149 | 17,489 | 17,270 | 40 | 484 | 21,761 | 9,487 | 5,221 | 2,911 | 796 | 88 |
|----------------------------------------------------------------------------|---------|-------|--------|--------|--------|--------|----|-----|--------|-------|-------|-------|-----|----|
| Acetaminophen only                                                         |         |       |        |        |        |        |    |     |        |       |       |       |     |    |
| Adult formulation                                                          | 24,891  | 22,581| 1,889  | 367    | 24,291 | 410    | 15 | 132 | 3,313  | 5,940 | 395   | 115   | 33  | 2  |
| Pediatric formulation                                                      | 7,140   | 1,698 | 1,891  | 3,457  | 2,947  | 3,922  | 2  | 97  | 4,811  | 1,635 | 1,194 | 890   | 358 | 48 |
| Unknown formulation                                                        |         |       |        |        |        |        |    |     |        |       |       |       |     |    |
| Acetaminophen in combination with:                                        |         |       |        |        |        |        |    |     |        |       |       |       |     |    |
| Aspirin with other ingredient                                              | 6,662   | 2,188 | 1,724  | 2,720  | 3,448  | 2,892  | 2  | 283 | 3,627  | 1,654 | 1,318 | 530   | 31  | 4  |
| Adult formulation                                                          | 421     | 126   | 72     | 223    | 212    | 182    | 0  | 26  | 218    | 73    | 57    | 37    | 10  | 1  |
| Pediatric formulation                                                      |         |       |        |        |        |        |    |     |        |       |       |       |     |    |
| Codeine                                                                    | 5,287   | 989   | 1,075  | 3,176  | 2,199  | 2,591  | 2  | 455 | 3,208  | 1,149 | 1,224 | 529   | 115 | 11 |
| Hydrocodone                                                                | 22,165  | 2,130 | 3,070  | 16,659 | 7,070  | 13,351 | 23 | 1,290| 14,931 | 4,226 | 5,320 | 2,832 | 808 | 100|
| Oxycodone                                                                  | 7,353   | 880   | 857    | 5,533  | 2,602  | 3,989  | 13 | 587 | 4,325  | 1,533 | 1,497 | 898   | 246 | 22 |
| Propoxyphene                                                               | 5,831   | 645   | 730    | 4,392  | 2,060  | 3,409  | 1  | 280 | 4,006  | 1,228 | 1,404 | 741   | 225 | 22 |
| Other opioid                                                               | 1,363   | 105   | 172    | 1,076  | 396    | 880    | 0  | 74  | 1,049  | 182   | 304   | 190   | 76  | 6  |
| Other drug: adult formulation                                              | 21,938  | 3,191 | 5,078  | 13,466 | 7,021  | 14,104 | 16 | 616 | 15,772 | 4,583 | 5,337 | 3,119 | 612 | 29 |
| Other drug: pediatric formulation                                          | 51      | 46    | 4      | 1      | 51     | 0      | 0  | 4   | 12     | 3     | 0     | 0     | 0   |    |
| Aspirin alone                                                              |         |       |        |        |        |        |    |     |        |       |       |       |     |    |
| Adult formulation                                                          | 6,550   | 2,119 | 1,570  | 2,826  | 3,416  | 2,922  | 0  | 174 | 3,805  | 1,837 | 1,039 | 829   | 89  | 16 |
| Pediatric formulation                                                      | 997     | 669   | 162    | 164    | 849    | 128    | 2  | 16  | 307    | 355   | 70    | 40    | 2   | 0  |
| Unknown formulation                                                        | 10,175  | 2,023 | 2,814  | 5,232  | 3,740  | 6,093  | 8  | 196 | 7,526  | 2,316 | 1,972 | 1,947 | 284 | 42 |
| Aspirin in combination with:                                               |         |       |        |        |        |        |    |     |        |       |       |       |     |    |
| Carisoprodol                                                               | 276     | 10    | 33     | 229    | 51     | 211    | 0  | 5   | 237    | 42    | 92    | 57    | 22  | 0  |
| Codeine                                                                    | 180     | 19    | 21     | 138    | 52     | 116    | 0  | 8   | 134    | 27    | 47    | 35    | 8   | 0  |
| Hydrocodone                                                                | 119     | 20    | 7      | 90     | 45     | 62     | 0  | 9   | 77     | 22    | 24    | 16    | 5   | 0  |
| Oxycodone                                                                  | 25      | 6     | 0      | 19     | 12     | 12     | 0  | 1   | 15     | 8     | 4     | 2     | 0   | 0  |
| Propoxyphene                                                               | 52      | 4     | 5      | 42     | 21     | 29     | 0  | 2   | 44     | 7     | 15    | 6     | 2   | 0  |
| Other opioid                                                               | 1,512   | 332   | 219    | 944    | 754    | 649    | 1  | 91  | 833    | 320   | 298   | 186   | 39  | 1  |
| Other drug: adult formulation                                              |         |       |        |        |        |        |    |     |        |       |       |       |     |    |
| Other drug: pediatric formulation                                          | 3       | 2     | 1      | 0      | 2      | 1      | 0  | 0   | 2      | 1     | 0     | 0     | 0   |    |

Continued
| No. of exposures | <6 | 6–19 | >19 | Age | Reason | Treated in health care facility | Outcome |
|------------------|----|------|-----|-----|--------|---------------------------------|---------|
| Nonaspirin salicylate | 929 | 502 | 116 | 307 | 732 | 145 | 0 | 47 | 306 | 245 | 122 | 64 | 5 | 1 |

**Opioids**

| Reason | Treated in health care facility | Outcome |
|--------|---------------------------------|---------|
| Int | Other | Adv Rxn | None | Minor | Moderate | Major | Death |
| Codeine | 1,280 | 444 | 255 | 567 | 821 | 346 | 2 | 97 | 476 | 233 | 214 | 87 | 19 | 3 |
| Meperidine | 419 | 36 | 37 | 342 | 154 | 182 | 0 | 74 | 270 | 54 | 83 | 83 | 16 | 5 |
| Methadone | 4,311 | 298 | 419 | 3,532 | 1,089 | 2,742 | 22 | 252 | 3,388 | 414 | 794 | 1,097 | 535 | 84 |
| Morphine | 3,351 | 296 | 309 | 2,682 | 1,306 | 1,646 | 7 | 279 | 2,201 | 522 | 643 | 522 | 227 | 42 |
| Oxycodone | 5,719 | 461 | 676 | 4,495 | 1,927 | 3,246 | 9 | 339 | 3,678 | 992 | 1,137 | 902 | 308 | 56 |
| Pentazocine | 153 | 25 | 14 | 111 | 63 | 62 | 0 | 27 | 92 | 28 | 36 | 24 | 4 | 0 |
| Propoxyphene | 378 | 32 | 37 | 303 | 117 | 216 | 2 | 31 | 273 | 60 | 86 | 60 | 24 | 11 |
| Tramadol | 4,740 | 512 | 583 | 3,610 | 1,515 | 2,712 | 4 | 409 | 3,391 | 925 | 1,198 | 812 | 196 | 13 |
| Other/unknown | 8,024 | 945 | 828 | 6,155 | 2,561 | 4,179 | 17 | 931 | 5,529 | 1,019 | 1,712 | 1,549 | 572 | 94 |

**Other nonsteroidal antiinflammatory dr**

| Reason | Treated in health care facility | Outcome |
|--------|---------------------------------|---------|
| Int | Other | Adv Rxn | None | Minor | Moderate | Major | Death |
| Colchicine | 312 | 56 | 20 | 234 | 197 | 58 | 0 | 57 | 183 | 68 | 67 | 41 | 10 | 4 |
| Cox-2 inhibitor | 2,207 | 826 | 248 | 1,116 | 1,433 | 660 | 1 | 102 | 966 | 630 | 261 | 187 | 40 | 2 |
| Ibuprofen | 71,109 | 41,628 | 13,762 | 15,363 | 51,738 | 17,817 | 41 | 1,304 | 21,377 | 17,249 | 6,366 | 2,222 | 348 | 25 |
| Ibuprofen with hydrocodone | 64 | 8 | 6 | 49 | 28 | 21 | 0 | 14 | 29 | 13 | 11 | 7 | 2 | 0 |
| Indomethacin | 708 | 153 | 74 | 471 | 338 | 272 | 1 | 91 | 358 | 148 | 126 | 61 | 17 | 0 |
| Ketoprofen | 300 | 127 | 40 | 132 | 193 | 91 | 0 | 13 | 111 | 98 | 32 | 21 | 3 | 0 |
| Naproxen | 12,480 | 2,805 | 3,191 | 6,384 | 5,945 | 5,658 | 11 | 783 | 6,284 | 3,066 | 2,139 | 800 | 118 | 15 |
| Other | 6,257 | 1,855 | 737 | 3,613 | 4,060 | 1,777 | 3 | 358 | 2,509 | 1,553 | 818 | 459 | 107 | 9 |
| Unknown | 20 | 5 | 0 | 15 | 12 | 7 | 0 | 1 | 10 | 8 | 5 | 1 | 0 | 0 |
| Phencetin | 5 | 2 | 0 | 3 | 4 | 1 | 0 | 0 | 3 | 2 | 0 | 1 | 0 | 0 |
| Phenazopyridine | 1,493 | 1,118 | 107 | 262 | 1,296 | 113 | 1 | 80 | 381 | 536 | 160 | 41 | 9 | 0 |
| Salicylamide | 15 | 8 | 2 | 5 | 12 | 2 | 0 | 1 | 3 | 7 | 2 | 0 | 0 | 0 |
| Other | 252 | 101 | 36 | 113 | 168 | 53 | 0 | 28 | 92 | 77 | 38 | 16 | 1 | 0 |
| Unknown | 225 | 26 | 72 | 123 | 53 | 150 | 0 | 17 | 173 | 29 | 54 | 20 | 5 | 1 |
| Category total | 283,242 | 100,595 | 53,528 | 126,890 | 154,490 | 115,385 | 246 | 10,161 | 142,088 | 64,613 | 42,939 | 24,988 | 6,327 | 757 |

**Anesthetics**

| Reason | Treated in health care facility | Outcome |
|--------|---------------------------------|---------|
| Int | Other | Adv Rxn | None | Minor | Moderate | Major | Death |
| Inhalation anesthetics | 173 | 19 | 47 | 107 | 93 | 52 | 1 | 26 | 72 | 15 | 24 | 30 | 5 | 1 |
| Other | 150 | 7 | 27 | 115 | 113 | 31 | 4 | 0 | 78 | 18 | 47 | 19 | 2 | 0 |
| Unknown | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |
| Ketamine and analogs | 161 | 8 | 25 | 127 | 31 | 99 | 14 | 11 | 146 | 11 | 34 | 54 | 18 | 1 |

**TABLE 22**

(Continued)
| Drug Class                        | Drugs                                                                 | Quantity | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 |
|----------------------------------|----------------------------------------------------------------------|----------|------|------|------|------|------|------|------|------|------|------|------|------|
| **Local/topical anesthetics**    |                                                                      |          |      |      |      |      |      |      |      |      |      |      |      |      |
| Dibucaine                        |                                                                      | 39       | 29   | 2    | 8    | 36   | 2    | 0    | 1    | 3    | 16   | 3    | 0    | 0    |
| Lidocaine                        |                                                                      | 1,796    | 774  | 245  | 770  | 1,532| 95   | 8    | 143  | 483  | 421  | 315  | 92   | 18   |
| Other/unknown                    |                                                                      | 6,293    | 4,365| 521  | 1,375| 5,772| 155  | 20   | 330  | 873  | 1,891| 607  | 118  | 22   |
| Other                            |                                                                      | 39       | 16   | 2    | 19   | 30   | 5    | 0    | 4    | 20   | 11   | 9    | 2    | 2    |
| Unknown                          |                                                                      | 9        | 3    | 1    | 5    | 4    | 0    | 0    | 5    | 5    | 2    | 0    | 4    | 0    |
| **Category total**               |                                                                      | 8,661    | 5,221| 870  | 2,527| 7,611| 439  | 47   | 521  | 1,681| 2,385| 1,040| 319  | 67   |
| **Anticholinergic drugs**        |                                                                      |          |      |      |      |      |      |      |      |      |      |      |      |      |
| Anticholinergic drug             |                                                                      | 7,013    | 472  | 346  | 6,133| 5,523| 1,179| 9    | 254  | 1,916| 1,210| 595  | 603  | 121  |
| **Anticoagulants**               |                                                                      |          |      |      |      |      |      |      |      |      |      |      |      |      |
| Glycoprotein II A/IIB inhibitor  |                                                                      | 10       | 1    | 0    | 8    | 7    | 0    | 0    | 3    | 8    | 2    | 0    | 1    | 2    |
| Heparin                          |                                                                      | 210      | 37   | 9    | 159  | 134  | 20   | 0    | 51   | 116  | 35   | 16   | 38   | 11   |
| Warfarin (excluding rodenticide)|                                                                      | 3,050    | 871  | 111  | 2,052| 2,425| 440  | 1    | 161  | 1,310| 779  | 202  | 297  | 87   |
| Other antiplatelet               |                                                                      | 2,104    | 493  | 45   | 1,562| 1,828| 199  | 0    | 70   | 635  | 574  | 124  | 129  | 32   |
| Other                            |                                                                      | 68       | 37   | 3    | 28   | 59   | 5    | 0    | 4    | 44   | 44   | 5    | 3    | 0    |
| Unknown                          |                                                                      | 46       | 28   | 1    | 16   | 36   | 7    | 0    | 2    | 27   | 7    | 3    | 1    | 1    |
| **Category total**               |                                                                      | 5,488    | 1,467| 169  | 3,825| 4,489| 671  | 3    | 289  | 2,140| 1,441| 350  | 469  | 133  |
| **Anticonvulsants**              |                                                                      |          |      |      |      |      |      |      |      |      |      |      |      |      |
| Carbamazepine                    |                                                                      | 4,383    | 967  | 783  | 2,605| 2,464| 1,586| 2    | 249  | 2,818| 871  | 1,072| 782  | 181  |
| Phenytoin                        |                                                                      | 3,955    | 477  | 222  | 3,227| 1,939| 1,377| 4    | 508  | 2,802| 782  | 896  | 758  | 119  |
| Primidone                        |                                                                      | 298      | 33   | 14   | 250  | 199  | 82   | 1    | 13   | 156  | 52   | 84   | 30   | 8    |
| Succinimide                      |                                                                      | 96       | 47   | 28   | 21   | 87   | 6    | 0    | 3    | 26   | 25   | 15   | 2    | 1    |
| Valproic acid                    |                                                                      | 8,705    | 866  | 1,812| 5,965| 3,574| 4,557| 8    | 419  | 6,108| 1,882| 2,024| 1,515| 404  |
| Other                            |                                                                      | 22,182   | 3,381| 4,381| 14,298|10,236|10,476|19   |1,159|14,345|4,571|5,267|3,655|1,004|
| Unknown                          |                                                                      | 18       | 7    | 2    | 7    | 9    | 8    | 0    | 0    | 11   | 4    | 1    | 1    | 0    |
| **Category total**               |                                                                      | 39,637   | 5,778| 7,242| 26,373|18,508|18,092|34   |2,351|26,266|8,187|9,359|6,743|1,717|
| **Antidepressants**              |                                                                      |          |      |      |      |      |      |      |      |      |      |      |      |      |
| Cyclic antidepressants          |                                                                      |          |      |      |      |      |      |      |      |      |      |      |      |      |
| Amitriptyline                    |                                                                      | 6,788    | 799  | 788  | 5,151| 1,992| 4,450| 8    | 198  | 5,609| 940  | 1,494| 1,866| 782  |
| Amoxapine                        |                                                                      | 20       | 3    | 1    | 16   | 9    | 11   | 0    | 0    | 15   | 3    | 2    | 9    | 1    |
| Desipramine                      |                                                                      | 159      | 23   | 10   | 124  | 68   | 77   | 0    | 10   | 114  | 24   | 31   | 31   | 11   |
| Doxepin                          |                                                                      | 1,173    | 75   | 97   | 994  | 296  | 830  | 0    | 26   | 983  | 157  | 272  | 322  | 144  |
| Imipramine                       |                                                                      | 662      | 137  | 171  | 351  | 333  | 282  | 0    | 36   | 448  | 169  | 124  | 111  | 53   |
| Maprotiline                      |                                                                      | 5        | 0    | 0    | 5    | 2    | 3    | 0    | 0    | 4    | 0    | 0    | 1    | 1    |
| Nortriptyline                    |                                                                      | 1,096    | 114  | 122  | 851  | 397  | 614  | 0    | 60   | 808  | 187  | 230  | 236  | 87   |
| Protriptyline                    |                                                                      | 19       | 3    | 1    | 15   | 6    | 11   | 0    | 1    | 18   | 3    | 9    | 2    | 2    |
| Other cyclic antidepressant      |                                                                      | 1,110    | 67   | 141  | 892  | 381  | 655  | 0    | 17   | 851  | 131  | 234  | 303  | 153  |
| No. of exposures | Age | Reason | Treated in health care facility | Outcome |
|------------------|-----|--------|---------------------------------|---------|
| Unknown cyclic antidepressant | <6 | 0 | 6 | 23 | 0 | 29 | 1 | 0 | 30 | 0 | 2 | 11 | 7 | 1 |
| Cyclic antidepressant formulated wit | 6–19 | 6 | 5 | 38 | 19 | 28 | 0 | 2 | 38 | 9 | 10 | 9 | 4 | 0 |
| Cyclic antidepressant formulated wit | >19 | 86 | 15 | 6 | 65 | 32 | 50 | 0 | 1 | 67 | 23 | 14 | 20 | 11 | 0 |
| Lithium | 39,59 | 299 | 97 | 4,318 | 1,762 | 2,797 | 11 | 804 | 4,536 | 943 | 1,323 | 1,486 | 312 | 5 |
| MAO inhibitor | 275 | 18 | 8 | 248 | 133 | 86 | 1 | 46 | 181 | 50 | 34 | 76 | 31 | 2 |
| SSRI | 48,279 | 8,584 | 10,356 | 28,962 | 19,127 | 26,682 | 25 | 1,876 | 33,166 | 12,150 | 10,579 | 6,975 | 1,607 | 118 |
| Trazadone | 12,133 | 754 | 1,825 | 9,438 | 2,752 | 8,892 | 18 | 316 | 10,004 | 2,129 | 3,967 | 2,300 | 438 | 22 |
| Other | 20,678 | 2,903 | 3,617 | 14,023 | 8,160 | 11,323 | 8 | 915 | 15,440 | 4,595 | 4,461 | 4,070 | 1,339 | 91 |
| Unknown | 71 | 4 | 14 | 50 | 12 | 56 | 0 | 1 | 59 | 13 | 12 | 13 | 6 | 1 |
| Category total | 98,193 | 13,804 | 18,073 | 65,564 | 35,481 | 56,876 | 72 | 4,309 | 72,371 | 21,526 | 22,798 | 17,841 | 4,989 | 340 |
| Antihistamines | | | | | | | | | | | | | | |
| Diphenhydramine | 29,771 | 12,928 | 5,624 | 11,029 | 18,636 | 10,129 | 28 | 793 | 12,871 | 5,900 | 5,263 | 3,382 | 461 | 35 |
| Diphenhydramine: Rx | 8 | 4 | 1 | 2 | 6 | 2 | 0 | 0 | 3 | 1 | 0 | 1 | 0 | 0 |
| Diphenhydramine: OTC | 1,503 | 513 | 237 | 745 | 742 | 730 | 0 | 26 | 869 | 278 | 294 | 220 | 19 | 2 |
| H2 receptor antagonist | 8,644 | 5,705 | 699 | 2,206 | 7,361 | 1,028 | 3 | 223 | 1,853 | 2,381 | 643 | 261 | 48 | 5 |
| Other | 35,538 | 16,616 | 7,992 | 10,760 | 26,553 | 7,652 | 16 | 1,132 | 11,713 | 8,921 | 4,437 | 2,486 | 399 | 35 |
| Category total | 75,464 | 35,766 | 14,553 | 24,742 | 53,298 | 19,541 | 47 | 2,174 | 27,309 | 17,480 | 10,638 | 6,349 | 928 | 77 |
| Antimicrobials | | | | | | | | | | | | | | |
| Antibiotics | | | | | | | | | | | | | | |
| Systemic | 40,714 | 18,354 | 6,369 | 15,702 | 30,190 | 4,704 | 23 | 5,659 | 8,879 | 7,243 | 4,074 | 1,529 | 207 | 22 |
| Topical | 7,450 | 5,521 | 500 | 1,379 | 7,206 | 65 | 6 | 166 | 277 | 1,210 | 372 | 36 | 1 | 0 |
| Unknown | 553 | 139 | 118 | 293 | 308 | 124 | 1 | 117 | 196 | 92 | 95 | 31 | 1 | 0 |
| Antifungals | | | | | | | | | | | | | | |
| Systemic | 1,649 | 767 | 213 | 653 | 1,292 | 134 | 2 | 220 | 387 | 339 | 149 | 64 | 7 | 0 |
| Topical | 8,648 | 6,579 | 373 | 1,670 | 8,331 | 93 | 9 | 204 | 548 | 1,541 | 598 | 53 | 4 | 0 |
| Unknown | 21 | 8 | 1 | 12 | 20 | 0 | 0 | 1 | 7 | 4 | 5 | 2 | 0 | 0 |
| Category | Total   | ACE inhibitor | Alpha blocker | Antidepressant | Antimicrobial | Antineoplastic | Asthma therapies | Cardiovascular drugs | Cardiovascular drugs |
|----------|---------|---------------|---------------|---------------|---------------|---------------|------------------|----------------------|----------------------|
| Anthelmintics | 68      | 414           | 1,455         | 11           | 903           | 1,455         | 27               | 990                  | 990                  |
|            | 33      | 326           | 881           | 6           | 326           | 881           | 12               | 229                  | 229                  |
|            | 3       | 62            | 137           | 2           | 62            | 137           | 12               | 133                  | 133                  |
|            | 32      | 62            | 424           | 3           | 62            | 424           | 12               | 623                  | 623                  |
|            | 68      | 395           | 1,372         | 11          | 395           | 1,372         | 23               | 683                  | 683                  |
|            | 0       | 10            | 33            | 0           | 10            | 33            | 0                | 182                  | 182                  |
|            | 0       | 6             | 33            | 5           | 6             | 33            | 0                | 43                   | 43                   |
|            | 0       | 158           | 378           | 5           | 158           | 378           | 0                | 115                  | 115                  |
|            | 0       | 78            | 153           | 3           | 78            | 153           | 0                | 20                   | 20                   |
|            | 0       | 10            | 11            | 0           | 10            | 11            | 0                | 1                    | 1                    |
|            | 0       | 11            | 11            | 1           | 11            | 11            | 0                | 1                    | 1                    |
|            | 0       | 0             | 0             | 0           | 0             | 0             | 0                | 0                    | 0                    |
| Antiparasitics | 903     | 34,296         | 23,950        | 59          | 1,455         | 8,598         | 33               | 128,210              | 128,210              |
| Antimalarial | 990     | 30,296         | 21,395        | 57          | 1,455         | 8,598         | 33               | 128,210              | 128,210              |
|            | 229     | 22,950         | 15,950        | 57          | 1,455         | 8,598         | 33               | 128,210              | 128,210              |
|            | 133     | 15,296         | 10,295        | 57          | 1,455         | 8,598         | 33               | 128,210              | 128,210              |
|            | 623     | 15,296         | 10,295        | 57          | 1,455         | 8,598         | 33               | 128,210              | 128,210              |
|            | 683     | 15,296         | 10,295        | 57          | 1,455         | 8,598         | 33               | 128,210              | 128,210              |
|            | 182     | 15,296         | 10,295        | 57          | 1,455         | 8,598         | 33               | 128,210              | 128,210              |
|            | 43      | 153           | 106           | 2           | 43            | 153           | 0                | 14                   | 14                   |
|            | 158     | 378           | 378           | 5           | 158           | 378           | 0                | 115                  | 115                  |
|            | 78      | 153           | 153           | 3           | 78            | 153           | 0                | 20                   | 20                   |
|            | 10      | 11            | 11            | 0           | 10            | 11            | 0                | 1                    | 1                    |
|            | 11      | 11            | 11            | 1           | 11            | 11            | 0                | 1                    | 1                    |
|            | 0       | 0             | 0             | 0           | 0             | 0             | 0                | 0                    | 0                    |
| Antituberculars | 1,145    | 23,571        | 15,343        | 59          | 1,145         | 23,543        | 1,143             | 12,821               | 12,821               |
| Isoniazid | 354     | 3,343         | 2,343         | 57          | 354           | 3,343         | 1,143             | 12,821               | 12,821               |
| Rifampin  | 109     | 3,343         | 2,343         | 57          | 109           | 3,343         | 1,143             | 12,821               | 12,821               |
| Other     | 29      | 3,343         | 2,343         | 57          | 29            | 3,343         | 1,143             | 12,821               | 12,821               |
| Unknown   | 2       | 0             | 0             | 0           | 2             | 0             | 0                | 0                    | 0                    |
| Antivirals | 198     | 175           | 175           | 57          | 198           | 175           | 57               | 175                  | 175                  |
| Amantadine| 322     | 175           | 175           | 57          | 322           | 175           | 57               | 175                  | 175                  |
| Anti-influenza agent: | 198     | 175           | 175           | 57          | 198           | 175           | 57               | 175                  | 175                  |
| Antiretroviral | 725     | 175           | 175           | 57          | 725           | 175           | 57               | 175                  | 175                  |
| Systemic  | 1,443   | 175           | 175           | 57          | 1,443         | 175           | 57               | 175                  | 175                  |
| Topical   | 225     | 175           | 175           | 57          | 225           | 175           | 57               | 175                  | 175                  |
| Unknown   | 217     | 175           | 175           | 57          | 217           | 175           | 57               | 175                  | 175                  |
| Other     | 78      | 175           | 175           | 57          | 78            | 175           | 57               | 175                  | 175                  |
| Unknown   | 28      | 175           | 175           | 57          | 28            | 175           | 57               | 175                  | 175                  |
| Category total | 67,296  | 34,296        | 23,950        | 59          | 67,296        | 34,296        | 23,950            | 53,405               | 53,405               |
| No. of exposures | Age | Reason | Treated in health care facility | Outcome |
|------------------|-----|--------|---------------------------------|---------|
|                  | <6  | 6–19   | >19                            |         |
| Angiotensin receptor blocker | 6,083 | 1,699 | 320 | 4,047 | 5,102 | 804 | 1 | 153 | 2,236 | 2,116 | 483 | 446 | 74 | 7 |
| Antiarrhythmic: other | 1,178 | 216 | 30 | 924 | 1,059 | 71 | 0 | 42 | 477 | 416 | 86 | 83 | 31 | 8 |
| Antihyperlipidemic | 10,591 | 4,017 | 502 | 6,030 | 8,976 | 1,116 | 3 | 454 | 2,923 | 2,869 | 671 | 531 | 148 | 19 |
| Antihypertensive | 1,869 | 553 | 466 | 842 | 1,505 | 303 | 1 | 51 | 90 | 785 | 244 | 188 | 25 | 1 |
| Beta blocker | 18,207 | 4,436 | 1,149 | 12,569 | 13,817 | 3,719 | 8 | 546 | 9,078 | 6,430 | 1,483 | 2,048 | 525 | 60 |
| Calcium | 10,500 | 2,348 | 482 | 7,632 | 8,203 | 1,886 | 11 | 340 | 5,622 | 3,642 | 882 | 1,266 | 384 | 75 |
| Cardiac glycoside | 2,828 | 550 | 95 | 2,173 | 2,097 | 247 | 2 | 408 | 1,580 | 708 | 208 | 576 | 176 | 32 |
| Clonidine | 6,101 | 1,894 | 1,845 | 2,338 | 4,149 | 1,679 | 14 | 180 | 4,079 | 1,357 | 1,272 | 1,351 | 231 | 9 |
| Hydralazine | 316 | 80 | 16 | 219 | 257 | 40 | 0 | 16 | 158 | 105 | 30 | 39 | 9 | 1 |
| Long-acting nitrate | 1,164 | 263 | 34 | 860 | 991 | 142 | 0 | 24 | 481 | 395 | 105 | 116 | 23 | 4 |
| Nitroglycerin | 1,445 | 773 | 88 | 579 | 1,155 | 243 | 4 | 37 | 556 | 588 | 114 | 88 | 18 | 1 |
| Nitroprusside | 37 | 3 | 2 | 31 | 15 | 1 | 0 | 20 | 33 | 10 | 5 | 6 | 2 | 0 |
| Vasodilator: other | 1,147 | 373 | 96 | 666 | 790 | 222 | 20 | 104 | 540 | 332 | 138 | 100 | 31 | 7 |
| Vasodilator: unknown | 7 | 4 | 0 | 3 | 6 | 1 | 0 | 0 | 4 | 4 | 0 | 0 | 1 | 0 |
| Vasopressor | 1,761 | 262 | 595 | 885 | 1,698 | 41 | 0 | 19 | 944 | 101 | 815 | 256 | 8 | 0 |
| Other | 292 | 98 | 20 | 174 | 242 | 34 | 0 | 16 | 94 | 146 | 23 | 10 | 1 | 1 |
| Unknown | 76 | 15 | 15 | 46 | 38 | 34 | 0 | 2 | 56 | 20 | 8 | 6 | 0 | 0 |
| Category total | 77,986 | 22,082 | 6,522 | 49,093 | 61,551 | 12,988 | 70 | 2,862 | 35,528 | 24,978 | 7,652 | 8,377 | 1,958 | 251 |

Cold and cough preparations

APAP/ASA with decongestant/antihistami

| Dextromethorphan | 60 | 35 | 7 | 16 | 50 | 6 | 0 | 3 | 13 | 17 | 14 | 2 | 0 | 0 |
| Other opioid | 5 | 2 | 1 | 2 | 3 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 |
| Without opioid | 24 | 9 | 6 | 8 | 15 | 8 | 0 | 1 | 8 | 8 | 2 | 2 | 0 | 0 |

APAP/ASA with decongestant/antihistami

| Dextromethorphan | 110 | 68 | 24 | 18 | 93 | 13 | 0 | 4 | 25 | 19 | 19 | 1 | 0 | 0 |
| Other opioid | 6 | 3 | 1 | 2 | 4 | 2 | 0 | 0 | 3 | 2 | 2 | 0 | 0 | 0 |
| Without opioid | 147 | 69 | 31 | 46 | 112 | 27 | 0 | 7 | 38 | 27 | 16 | 3 | 0 | 0 |
| Drug Combination                                      | Codeine | Dextromethorphan | Other opioid | Without opioid |
|-------------------------------------------------------|---------|-----------------|--------------|----------------|
| APAP with decongestant/antihistamine,                 | 4       | 2               | 1            | 1              | 1               | 1               | 0             |
| Dextromethorphan                                      | 264     | 153             | 61           | 48             | 213             | 38              | 0             |
| Other opioid                                          | 9       | 3               | 2            | 4              | 6               | 2               | 0             |
| Without opioid                                        | 202     | 87              | 68           | 39             | 123             | 75              | 0             |
| APAP with decongestant/antihistamine,                 | 46      | 30              | 6            | 10             | 38              | 6               | 0             |
| Dextromethorphan                                      | 19,305  | 8,980           | 4,576        | 5,669          | 14,120          | 4,333           | 21            |
| Other opioid                                          | 34      | 20              | 4            | 10             | 29              | 4               | 0             |
| Without opioid                                        | 7,322   | 3,815           | 1,779        | 1,694          | 5,529           | 1,471           | 6             |
| APAP                                                  | 231     | 102             | 74           | 53             | 183             | 39              | 0             |

| Drug Combination                                      | Codeine | Dextromethorphan | Other opioid | Without opioid |
|-------------------------------------------------------|---------|-----------------|--------------|----------------|
| Antihistamine/decongestant, with pheny                | 24      | 18              | 2            | 4              | 22              | 1               | 0             |
| Dextromethorphan                                      | 787     | 614             | 103          | 70             | 708             | 58              | 0             |
| Other opioid                                          | 56      | 39              | 6            | 11             | 48              | 4               | 0             |
| Without opioid                                        | 864     | 648             | 135          | 77             | 775             | 67              | 0             |
| Antihistamine/decongestant, without ph                | 1,524   | 865             | 323          | 331            | 1,297           | 158             | 2             |
| Dextromethorphan                                      | 30,439  | 22,181          | 6,068        | 2,122          | 25,485          | 4,312           | 22            |
| Other opioid                                          | 3,632   | 2,170           | 643          | 809            | 3,112           | 309             | 1             |
| Without opioid                                        | 28,810  | 18,125          | 5,171        | 5,437          | 25,170          | 2,671           | 15            |
| ASA with decongestant/antihistamine, w                 | 0       | 0               | 0            | 0              | 0               | 0               | 0             |
| Codeine                                               | 23      | 9               | 4            | 10             | 21              | 1               | 0             |
| Dextromethorphan                                      | 201     | 11             | 3            |14              | 18              | 6              | 0             |
| Other opioid                                          | 0       | 0               | 0            | 0              | 0               | 0               | 0             |
| Without opioid                                        | 39      | 10              | 15           | 14             | 23              | 13              | 0             |
| ASA with decongestant/antihistamine, w                 | 2       | 0               | 1            | 1              | 1               | 1               | 0             |
| Codeine                                               | 0       | 0               | 0            | 1              | 1               | 0               | 0             |
| Dextromethorphan                                      | 0       | 0               | 0            | 0              | 0               | 0               | 0             |
| Other opioid                                          | 1       | 0               | 0            | 0              | 1               | 0               | 0             |
| Without opioid                                        | 80      | 20              | 35           | 25             | 32              | 40              | 0             |
| ASA/                                                   | 7       | 3               | 1            | 3              | 6               | 1               | 0             |
| dextromethorphan                                      |         |                 |              |                |                 |                 |               |
| Expectorant/                                          | 2,590   | 1,012           | 472          | 1,097          | 1,930           | 463             | 1             |
| antitussive                                           |         |                 |              |                |                 |                 |               |
| Non-ASA salicylates with antihistamine                |         |                 |              |                |                 |                 |               |

Continued
| No. of exposures | Age | Reason | Treated in health care facility | Outcome |
|------------------|-----|--------|---------------------------------|---------|
|                  | <6  | 6–19  | >19                            |         |
| Dextromethorphan | 6   | 3      | 1                              | 2       |
| Other opioid     | 2   | 0      | 0                              | 2       |
| Without opioid   | 7   | 4      | 1                              | 2       |
| Non-ASA salicylates with antihistamine | | | | |
| Dextromethorphan | 8   | 7      | 1                              | 0       |
| Other opioid     | 6   | 2      | 1                              | 3       |
| Without opioid   | 13  | 6      | 3                              | 4       |
| Other             | 13,227 | 7,269  | 3,304                          | 2,621   |
| Other dextromethorphan | 277  | 119    | 14                             | 138     |
| Other phenylpropanolamine | | | | |
| Other             | 4,759 | 3,510  | 699                            | 536     |
| Unknown           | 1,104 | 361    | 411                            | 314     |
| Category total    | 116,084 | 70,398 | 24,055                         | 21,257  |
| Diagnostic agents | | | | |
| Clinitest/acetest | 1   | 0      | 0                              | 1       |
| Other             | 597  | 127    | 40                             | 417     |
| Unknown           | 20   | 4      | 3                              | 12      |
| Category total    | 618  | 131    | 43                             | 430     |
| Dietary supplements/herbs/homeopathic | | | | |
| Amino acids       | 232  | 81     | 50                             | 97      |
| Other amino acid dietary supplement | 514  | 244    | 70                             | 197     |
| Cultural medicines | | | | |
| Ayurvedic         | 16   | 4      | 2                              | 10      |
| Asian             | 110  | 53     | 8                              | 49      |
| Hispanic          | 12   | 7      | 0                              | 5       |
| Other             | 30   | 9      | 4                              | 17      |
| Botanical products | | | | |
| Blue cohosh       | 2    | 2      | 0                              | 0       |
| Ginkgo biloba     | 185  | 100    | 23                             | 61      |
| Product Type                          | Count | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|--------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Echinacea                            | 483   | 346  | 68   | 67   | 431  | 16   | 0    | 33   | 55   | 121  | 23   | 8    | 1    | 0    |      |      |
| Ginseng                              | 248   | 106  | 45   | 94   | 153  | 52   | 0    | 41   | 102  | 50   | 43   | 19   | 1    | 0    |      |      |
| Kava kava                            | 66    | 14   | 11   | 41   | 27   | 29   | 0    | 9    | 36   | 19   | 11   | 7    | 2    | 1    |      |      |
| Ma huang/ephedra (single ingredient) | 1,510 | 1,060| 278  | 308  | 367  | 248  | 1    | 73   | 411  | 189  | 116  | 102  | 7    | 1    |      |      |
| Citrus aurantium (single ingredient) | 14    | 1    | 5    | 8    | 8    | 1    | 0    | 5    | 6    | 0    | 3    | 5    | 0    | 0    |      |      |
| St. John’s wort                      | 203   | 95   | 37   | 70   | 135  | 39   | 3    | 25   | 79   | 56   | 24   | 10   | 1    | 1    |      |      |
| Valerian                             | 218   | 51   | 24   | 140  | 109  | 76   | 0    | 29   | 102  | 48   | 29   | 20   | 3    | 1    |      |      |
| Yohimbe                              | 201   | 24   | 24   | 153  | 78   | 39   | 2    | 68   | 218  | 67   | 17   | 7    | 2    | 0    |      |      |
| Multi-botanical with ma huang        | 2,118 | 711  | 470  | 913  | 1,022| 786  | 2    | 287  | 1,208| 442  | 469  | 311  | 14   | 0    |      |      |
| Multi-botanical without ma huang     | 2,735 | 1,127| 495  | 1,102| 1,538| 642  | 9    | 522  | 1,212| 547  | 541  | 302  | 17   | 0    |      |      |
| Multi-botanical with citrus aurantiu | 299   | 70   | 69   | 157  | 104  | 135  | 0    | 58   | 193  | 56   | 75   | 59   | 6    | 0    |      |      |
| Other single ingredient botanical    | 2,179 | 1,140| 202  | 819  | 1,641| 182  | 6    | 332  | 513  | 402  | 238  | 93   | 9    | 0    |      |      |
| Homeopathic                          | 7,049 | 6,332| 245  | 451  | 6,686| 178  | 1    | 178  | 564  | 1,930| 192  | 66   | 7    | 2    |      |      |
| Hormonal products                   | 99    | 39   | 18   | 42   | 58   | 18   | 1    | 21   | 41   | 25   | 6    | 15   | 1    | 0    |      |      |
| Androgen/precursor (dietary supplemen | 133   | 57   | 10   | 65   | 89   | 15   | 0    | 28   | 45   | 19   | 23   | 10   | 2    | 0    |      |      |
| Phytoestrogen                        | 62    | 38   | 7    | 17   | 49   | 3    | 0    | 10   | 13   | 11   | 4    | 2    | 0    | 0    |      |      |
| Glandular                           | 62    | 38   | 7    | 17   | 49   | 3    | 0    | 10   | 13   | 11   | 4    | 2    | 0    | 0    |      |      |
| Melatonin                            | 2,001 | 1,109| 419  | 458  | 1,488| 439  | 7    | 53   | 535  | 468  | 253  | 54   | 9    | 4    |      |      |
| Other dietary supplements            |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Blue-green algae                    | 102   | 30   | 17   | 55   | 98   | 0    | 0    | 4    | 11   | 6    | 24   | 5    | 0    | 1    |      |      |
| Glucosamine (with or without chondro)| 813   | 518  | 35   | 259  | 705  | 38   | 0    | 65   | 108  | 205  | 45   | 15   | 1    | 1    |      |      |
| Other single ingredient non-botanica | 646   | 367  | 49   | 228  | 487  | 61   | 3    | 85   | 144  | 130  | 59   | 34   | 3    | 0    |      |      |
| No. of exposures | Age | Reason | Treated in health care facility | Outcome |
|------------------|-----|--------|-------------------------------|---------|
|                  |     |        | Adv Rxn                       |         |
|                  | No. of | <6 | 6–19 | >19 | Unint | Int | Other |                      | None | Minor | Moderate | Major | Death |
| Dietary supplement/homeopathic: unknown | 23,769 | 14,137 | 2,876 | 6,619 | 17,574 | 3,515 | 41 | 2,465 | 6,705 | 5,448 | 2,621 | 1,476 | 111 | 13 |
| Diuretics | | | | | | | | | | | | | | |
| Furosemide | 3,313 | 1,118 | 185 | 2,001 | 2,791 | 405 | 0 | 92 | 1,347 | 1,002 | 348 | 300 | 68 | 3 |
| Thiazide | 4,617 | 1,427 | 350 | 2,830 | 3,589 | 845 | 3 | 149 | 1,691 | 1,291 | 415 | 392 | 66 | 11 |
| Other | 1,833 | 568 | 111 | 1,147 | 1,442 | 285 | 1 | 95 | 708 | 570 | 148 | 166 | 35 | 5 |
| Unknown | 90 | 32 | 9 | 48 | 58 | 24 | 1 | 5 | 46 | 23 | 15 | 3 | 0 | 0 |
| Electrolytes and minerals | | | | | | | | | | | | | | |
| Calcium | 16,541 | 14,759 | 728 | 1,014 | 16,111 | 271 | 15 | 128 | 757 | 3,058 | 306 | 63 | 12 | 1 |
| Chromium, trivalent | 537 | 246 | 45 | 239 | 474 | 29 | 4 | 26 | 140 | 100 | 51 | 22 | 1 | 1 |
| Colloidal silver | 78 | 29 | 10 | 39 | 49 | 8 | 0 | 21 | 25 | 8 | 11 | 3 | 0 | 0 |
| Fluoride | 3,591 | 3,133 | 294 | 158 | 3,509 | 26 | 3 | 49 | 188 | 778 | 250 | 12 | 0 | 0 |
| Geranium | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Iron | 3,638 | 1,952 | 456 | 1,207 | 2,866 | 586 | 2 | 169 | 1,276 | 982 | 436 | 177 | 27 | 3 |
| Magnesium | 1,286 | 475 | 149 | 648 | 1,024 | 148 | 13 | 94 | 273 | 241 | 179 | 48 | 4 | 2 |
| Potassium | 1,397 | 425 | 59 | 910 | 1,177 | 164 | 0 | 46 | 500 | 426 | 104 | 93 | 16 | 4 |
| Selenium | 19 | 5 | 2 | 12 | 16 | 1 | 0 | 1 | 5 | 3 | 5 | 0 | 0 |
| Sodium | 3,181 | 1,701 | 574 | 868 | 2,810 | 255 | 37 | 76 | 526 | 567 | 559 | 58 | 6 | 2 |
| Vanadium | 3 | 1 | 0 | 2 | 2 | 1 | 0 | 2 | 0 | 1 | 1 | 0 | 0 |
| Zinc | 1,110 | 634 | 118 | 349 | 977 | 49 | 1 | 81 | 98 | 200 | 112 | 14 | 1 | 0 |
| Other | 210 | 144 | 19 | 44 | 177 | 9 | 1 | 21 | 33 | 37 | 19 | 4 | 0 | 0 |
| Unknown | 423 | 225 | 49 | 147 | 293 | 66 | 0 | 61 | 138 | 99 | 64 | 15 | 3 | 0 |
| Multi-mineral dietary supplement | 64 | 20 | 10 | 34 | 55 | 2 | 0 | 7 | 15 | 8 | 11 | 5 | 0 | 0 |
| Unknown | 19 | 5 | 2 | 11 | 16 | 1 | 0 | 2 | 11 | 4 | 9 | 0 | 0 | 0 |
| Category total | 32,098 | 23,755 | 2,515 | 5,682 | 29,557 | 1,616 | 76 | 782 | 3,987 | 6,511 | 2,117 | 515 | 70 | 13 |
| Category total | 19,861 | 10,229 | 2,388 | 7,122 | 18,524 | 459 | 204 | 620 | 2,809 | 3,945 | 3,463 | 455 | 23 | 4 |
|---------------|--------|--------|-------|-------|--------|-----|-----|-----|-------|-------|-------|-----|---|---|
| Gastrointestinal preparations | | | | | | | | | | | | | | |
| Antacids | | | | | | | | | | | | | | |
| Salicylate-containing | 2,698 | 2,038 | 258 | 397 | 2,396 | 137 | 2 | 156 | 297 | 641 | 144 | 31 | 2 | 0 |
| Proton pump inhibitor | 8,333 | 3,613 | 608 | 4,080 | 6,718 | 1,175 | 7 | 383 | 2,197 | 2,084 | 714 | 431 | 107 | 11 |
| Other | 7,266 | 6,541 | 265 | 454 | 7,054 | 125 | 10 | 74 | 230 | 1,136 | 127 | 18 | 3 | 0 |
| Category total | | | | | | | | | | | | | | |
| Miscellaneous | | | | | | | | | | | | | | |
| Other | 53 | 13 | 11 | 29 | 40 | 3 | 4 | 4 | 17 | 7 | 15 | 3 | 0 | 0 |
| Unknown | 7 | 2 | 1 | 4 | 6 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| Category total | 19,861 | 10,229 | 2,388 | 7,122 | 18,524 | 459 | 204 | 620 | 2,809 | 3,945 | 3,463 | 455 | 23 | 4 |
| Other | 53 | 13 | 11 | 29 | 40 | 3 | 4 | 4 | 17 | 7 | 15 | 3 | 0 | 0 |
| Unknown | 7 | 2 | 1 | 4 | 6 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| Category total | 19,861 | 10,229 | 2,388 | 7,122 | 18,524 | 459 | 204 | 620 | 2,809 | 3,945 | 3,463 | 455 | 23 | 4 |
| Other | 53 | 13 | 11 | 29 | 40 | 3 | 4 | 4 | 17 | 7 | 15 | 3 | 0 | 0 |
| Unknown | 7 | 2 | 1 | 4 | 6 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| Category total | 19,861 | 10,229 | 2,388 | 7,122 | 18,524 | 459 | 204 | 620 | 2,809 | 3,945 | 3,463 | 455 | 23 | 4 |
| Other | 53 | 13 | 11 | 29 | 40 | 3 | 4 | 4 | 17 | 7 | 15 | 3 | 0 | 0 |
| Unknown | 7 | 2 | 1 | 4 | 6 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| Category total | 19,861 | 10,229 | 2,388 | 7,122 | 18,524 | 459 | 204 | 620 | 2,809 | 3,945 | 3,463 | 455 | 23 | 4 |
| Other | 53 | 13 | 11 | 29 | 40 | 3 | 4 | 4 | 17 | 7 | 15 | 3 | 0 | 0 |
| Unknown | 7 | 2 | 1 | 4 | 6 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| Category total | 19,861 | 10,229 | 2,388 | 7,122 | 18,524 | 459 | 204 | 620 | 2,809 | 3,945 | 3,463 | 455 | 23 | 4 |
| Other | 53 | 13 | 11 | 29 | 40 | 3 | 4 | 4 | 17 | 7 | 15 | 3 | 0 | 0 |
| Unknown | 7 | 2 | 1 | 4 | 6 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| No. of exposures | Age  | Reason | Adv Rxn | Treated in health care facility | Outcome |
|------------------|------|--------|---------|--------------------------------|---------|
| Diphenoxylate/ atropine | 441 158 49 230 | 258 145 0 28 | 310 | 138 83 62 20 2 |
| Loperamide | 1,191 711 86 390 | 947 161 1 71 | 407 | 440 111 57 11 2 |
| Non-opioid | 138 92 16 30 | 120 9 0 | 9 17 | 29 7 0 2 0 |
| Paregoric | 17 8 3 6 | 14 2 0 | 1 3 | 6 2 0 0 0 |
| Other opioid | 0 0 0 0 | 0 0 0 | 0 0 | 0 0 0 0 0 |

**Antispasmodics**

| Anticholinergic | 3,565 1,363 453 1,728 | 2,546 775 2 | 201 | 1,634 | 1,041 555 374 68 4 |
| Other | 99 35 13 51 | 56 34 1 | 5 61 | 33 13 15 4 1 |
| Laxative | 14,279 9,697 1,258 3,270 | 12,866 811 168 | 406 | 1,784 2,323 1,552 241 20 3 |
| Other | 10,920 8,428 511 1,943 | 9,858 656 4 | 367 | 1,573 2,286 549 371 58 6 |
| Unknown | 24 10 4 10 | 15 5 0 | 4 12 | 7 1 2 0 0 |
| Category total | 48,971 32,694 3,524 12,589 | 42,848 4,035 195 | 1,705 | 8,525 10,164 3,858 1,602 295 29 |

**Hormones and hormone antagonists**

| Androgen | 384 101 42 238 | 216 117 2 | 43 | 167 53 54 47 7 1 |
| Corticosteroid | 9,254 4,621 1,046 3,533 | 7,781 609 5 | 820 | 1,441 1,552 612 266 39 5 |
| Estrogen | 2,063 1,215 127 713 | 1,784 188 1 | 73 | 409 488 112 69 18 3 |
| Insulin | 3,934 172 163 3,578 | 3,188 616 14 | 102 | 1,773 1,379 244 716 93 5 |
| Oral contraceptive | 8,883 7,331 762 757 | 8,180 520 14 | 160 | 792 1,629 296 47 6 1 |

**Oral hypoglycemics**

| Biguanide | 4,680 1,093 344 3,223 | 3,540 947 1 | 161 | 2,060 1,563 418 431 102 17 |
| Sulfonylurea | 4,285 1,563 221 2,491 | 3,323 752 1 | 167 | 3,062 1,722 298 894 142 11 |
| Thiazolidinedione | 2,050 805 107 1,129 | 1,692 285 0 | 56 | 956 891 149 175 32 2 |
| Other/unknown | 506 212 28 264 | 427 55 1 | 20 | 308 237 39 60 12 1 |
| Progestin | 1,304 731 127 443 | 1,109 90 1 | 102 | 220 253 69 30 4 0 |
| Selective estrogen receptor modulator | 514 176 22 314 | 469 36 0 | 9 | 122 162 26 15 10 0 |
| Thyroid preparation | 11,149 5,300 761 5,037 | 9,872 1,038 3 | 201 | 2,506 2,503 535 428 107 11 |
| Other hormone | 820 260 214 344 | 670 79 1 | 64 | 247 234 94 44 3 3 |
| Other hormone antagonist | 609 219 53 331 | 505 72 0 | 29 | 134 150 35 17 2 0 |
| Unknown hormone or antagonist | 25 9 6 10 | 15 8 0 | 2 | 15 7 4 3 1 0 |
| Category total | 50,460 | 23,808 | 4,023 | 22,405 | 42,771 | 5,412 | 44 | 2,009 | 14,212 | 12,823 | 2,985 | 3,242 | 578 | 60 |
|----------------|--------|--------|-------|--------|--------|-------|----|-------|--------|--------|------|-------|-----|----|
| Miscellaneous drugs | | | | | | | | | | | | | | |
| Allopurinol | 575 | 230 | 23 | 321 | 487 | 60 | 0 | 24 | 188 | 180 | 37 | 41 | 4 | 1 |
| Disulfiram | 318 | 11 | 7 | 297 | 79 | 177 | 5 | 54 | 221 | 29 | 70 | 57 | 14 | 1 |
| L-dopa and related drug | 978 | 252 | 20 | 703 | 816 | 104 | 0 | 50 | 370 | 245 | 166 | 66 | 13 | 0 |
| Ergot alkaloid | 309 | 163 | 32 | 112 | 226 | 52 | 0 | 28 | 205 | 124 | 42 | 28 | 1 | 0 |
| Methysergide | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Neuromuscular blocking agent | 29 | 5 | 5 | 16 | 17 | 4 | 0 | 6 | 21 | 7 | 5 | 3 | 3 | 0 |
| Nicotine pharmaceutical | 1,024 | 437 | 91 | 493 | 727 | 109 | 3 | 178 | 279 | 262 | 175 | 51 | 1 | 0 |
| Other | 19,456 | 6,976 | 2,981 | 9,374 | 15,525 | 2,340 | 49 | 1,430 | 5,838 | 4,657 | 2,791 | 1,254 | 178 | 21 |
| Category total | 22,689 | 8,074 | 3,159 | 11,316 | 17,877 | 2,846 | 57 | 1,770 | 7,122 | 5,504 | 3,286 | 1,500 | 214 | 23 |
| Muscle relaxants | | | | | | | | | | | | | | |
| Carisoprodol (formulated alone) | 8,337 | 347 | 795 | 7,097 | 1,475 | 6,519 | 10 | 153 | 7,264 | 921 | 2,757 | 1,896 | 503 | 18 |
| Cyclobenzaprine | 7,743 | 1,455 | 984 | 5,232 | 2,685 | 4,733 | 4 | 219 | 5,847 | 1,532 | 2,081 | 1,477 | 335 | 33 |
| Methocarbamol | 1,544 | 182 | 221 | 1,127 | 596 | 850 | 0 | 66 | 1,014 | 293 | 395 | 161 | 44 | 4 |
| Other | 5,708 | 888 | 674 | 4,097 | 2,309 | 2,973 | 4 | 292 | 3,986 | 1,107 | 1,220 | 1,158 | 330 | 20 |
| Unknown | 180 | 13 | 28 | 132 | 25 | 142 | 1 | 8 | 153 | 25 | 43 | 34 | 2 | 1 |
| Category total | 23,512 | 2,885 | 2,702 | 17,685 | 7,090 | 15,217 | 19 | 738 | 18,264 | 3,878 | 6,496 | 4,726 | 1,214 | 76 |
| Narcotic antagonists | | | | | | | | | | | | | | |
| Opioid antagonist | 282 | 14 | 34 | 230 | 86 | 128 | 0 | 49 | 221 | 33 | 64 | 79 | 12 | 1 |
| Other | | | | | | | | | | | | | | |
| Category total | 19,147 | 11,763 | 4,087 | 12,569 | 9,492 | 3,664 | 158 | 3,009 | 12,857 | 3,890 | 6,491 | 4,726 | 1,214 | 76 |
| Radiopharmaceuticals | | | | | | | | | | | | | | |
| Radiopharmaceutical | 38 | 6 | 4 | 25 | 24 | 1 | 0 | 13 | 15 | 5 | 2 | 6 | 0 | 0 |
| Sedative/hypnotics/antipsychotics | | | | | | | | | | | | | | |
| Atypical antipsychotic | 40,102 | 3,453 | 8,403 | 27,950 | 11,856 | 26,062 | 50 | 1,593 | 32,159 | 6,394 | 11,269 | 9,457 | 2,310 | 103 |
| Barbiturates | | | | | | | | | | | | | | |
| Long-acting | 2,560 | 509 | 175 | 1,861 | 1,429 | 986 | 5 | 82 | 1,428 | 456 | 473 | 431 | 152 | 6 |
| Short/intermediate-acting | 349 | 11 | 45 | 290 | 125 | 205 | 1 | 11 | 274 | 41 | 94 | 78 | 33 | 3 |
| Unknown type | 77 | 3 | 7 | 65 | 9 | 62 | 1 | 1 | 74 | 5 | 21 | 23 | 1 | 0 |
| Benzodiazepine | 67,593 | 6,831 | 6,881 | 53,121 | 15,971 | 48,766 | 325 | 1,404 | 54,953 | 10,781 | 21,538 | 11,907 | 3,018 | 243 |
| Buspirone | 1,844 | 206 | 247 | 1,380 | 717 | 1,019 | 0 | 79 | 1,246 | 431 | 411 | 280 | 77 | 3 |
| Chloral hydrate | 206 | 41 | 22 | 142 | 76 | 106 | 2 | 16 | 169 | 18 | 59 | 41 | 29 | 2 |
| Ethchlorvynol | 2 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 |
| Glutethimide | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Meprobamate | 86 | 6 | 12 | 66 | 37 | 47 | 0 | 68 | 19 | 13 | 21 | 5 | 1 | 1 |

Continued
| Category                          | No. of exposures | <6 | 6–19 | >19 | Unint | Int | Other | Adv Rxn | Treated in health care facility | None | Minor | Moderate | Major | Death |
|----------------------------------|-----------------|----|------|-----|-------|-----|-------|--------|---------------------------------|------|-------|----------|-------|-------|
| Methaqualone                     | 15              | 1  | 2    | 11  | 3     | 12  | 0     | 0      | 13                             | 1    | 4     | 4        | 1     | 1     |
| Phenothiazine                    | 4,480           | 659| 543  | 3,232| 1,898 | 2,081| 10    | 403    | 3,072                          | 825  | 964   | 989      | 180   | 23    |
| Sleep aid (OTC)                  | 912             | 91 | 134  | 679  | 204   | 684  | 2     | 13     | 725                            | 142  | 224   | 214      | 31    | 1     |
| Other                            | 16,585          | 1,220| 2,361| 12,830| 4,356 | 11,293| 18    | 671    | 12,827                         | 2,282| 5,605 | 2,835     | 608   | 28    |
| Unknown                          | 276             | 14 | 32   | 221  | 31    | 218  | 14    | 10     | 258                            | 40   | 55    | 54        | 9     | 1     |
| Category total                   | 135,087         | 13,045| 18,864|101,850|36,712|91,543|428    |4,283   |107,268                        | 21,435|40,732|26,334     |6,454  |415    |
| Serums, toxoids, vaccines       | 2,426           | 619| 286  | 1,475| 1,791 | 11   | 2     | 613    | 731                            | 222  | 503   | 115       | 11    | 0     |
| Stimulants and street drugs     |                 |    |      |      |       |      |       |        |                                |      |       |           |       |       |
| Amphetamine                     | 10,921          | 3,001| 4,176| 3,666| 6,447 | 3,814| 48    | 430    | 6,406                          | 2,517| 2,004 | 1,800     | 259   | 16    |
| Amyl/butyl nitrite              | 76              | 6  | 4    | 66   | 35    | 37   | 0     | 3      | 40                            | 7    | 17    | 16        | 4     | 2     |
| Caffeine                        | 4,656           | 992| 1,691| 1,933| 1,929 | 2,246| 19    | 419    | 2,345                          | 575  | 1,175 | 723        | 22    | 0     |
| Cocaine                         | 7,077           | 110| 761  | 6,101| 519   | 6,307| 63    | 34     | 6,682                          | 757  | 1,499 | 2,214      | 701   | 124   |
| Diet aids                       |                 |    |      |      |       |      |       |        |                                |      |       |           |       |       |
| Phenylpropanolamine             | 47              | 22 | 5    | 20   | 38    | 7    | 0     | 1      | 18                            | 13   | 5     | 4         | 1     | 0     |
| Phenylpropanol and caffeine     | 12              | 5  | 2    | 5    | 8     | 2    | 0     | 2      | 4                              | 4    | 1     | 0         | 0     | 0     |
| Other: OTC                      | 231             | 107| 35   | 88   | 139   | 56   | 0     | 34     | 120                           | 55   | 34    | 31        | 2     | 0     |
| Other: Rx                        | 133             | 51 | 17   | 63   | 81    | 39   | 0     | 13     | 70                            | 50   | 16    | 16        | 3     | 0     |
| Unknown                         | 99              | 30 | 17   | 52   | 48    | 37   | 0     | 13     | 60                            | 22   | 23    | 13        | 1     | 0     |
| Ephedrine                       | 1,134           | 356| 148  | 619  | 511   | 560  | 3     | 42     | 706                           | 228  | 233   | 212       | 14    | 1     |
| GHB and analog/precursor        | 554             | 1  | 90   | 450  | 74    | 276  | 165   | 9      | 469                           | 17   | 97    | 173       | 81    | 1     |
| Hallucinogenic amphetamine      | 1,842           | 30 | 693  | 1,061| 180   | 1,498| 116   | 10     | 1,605                         | 90   | 357   | 546       | 89    | 6     |
| Heroin                          | 1,902           | 16 | 165  | 1,670| 160   | 1,640| 14    | 18     | 1,759                         | 178  | 324   | 610       | 253   | 45    |
| LSD                             | 271             | 6  | 109  | 146  | 34    | 216  | 13    | 1      | 225                           | 15   | 43    | 103       | 9     | 0     |
| Marijuana                       | 3,850           | 141| 1,591| 2,062| 426   | 3,206| 75    | 70     | 3,291                         | 370  | 1,040 | 1,120      | 208   | 30    |
| Mescaline/peyote                | 102             | 19 | 25   | 54   | 58    | 42   | 0     | 1      | 48                            | 6    | 24    | 17        | 3     | 1     |
| Methamphetamine                | 3,456           | 145| 542  | 2,683| 467   | 2,784| 69    | 39     | 3,066                         | 218  | 635   | 1,062      | 207   | 37    |
| Methylphenidate                 | 8,534           | 1,683| 5,051| 1,769| 6,157 | 2,028| 13    | 264    | 3,661                         | 2,054| 1,419 | 937       | 88    | 0     |
| Phencyclidine                   | 662             | 22 | 123  | 507  | 103   | 516  | 18    | 4      | 607                           | 43   | 150   | 225       | 60    | 2     |
| Phenylpropanolime look-alike     | 1               | 0  | 0    | 1    | 1     | 0    | 0     | 0      | 0                             | 0    | 0     | 0         | 0     | 0     |
| Other stimulant                 | 61              | 8  | 9    | 39   | 25    | 28   | 1     | 6      | 38                            | 8    | 12    | 12        | 4     | 0     |
| Category total | 45,916 | 6,761 | 15,354 | 23,231 | 17,482 | 25,548 | 641 | 1,423 | 31,465 | 7,242 | 9,166 | 9,923 | 2,020 | 267 |
|----------------|--------|--------|--------|--------|--------|--------|----|--------|--------|--------|--------|--------|--------|----|
| Topical preparations | | | | | | | | | | | | | | |
| Acne preparation | 3,400 | 2,000 | 649 | 734 | 3,154 | 60 | 4 | 180 | 241 | 633 | 403 | 33 | 1 | 0 |
| Boric acid/borate | 78 | 42 | 4 | 32 | 75 | 1 | 0 | 2 | 9 | 27 | 0 | 2 | 0 | 0 |
| Calamine | 3,413 | 2,547 | 141 | 713 | 3,376 | 20 | 1 | 186 | 147 | 570 | 152 | 7 | 0 | 0 |
| Camphor | 10,502 | 8,326 | 550 | 1,589 | 10,246 | 161 | 15 | 70 | 1,104 | 2,990 | 1,385 | 89 | 8 | 0 |
| Camphor/methyl salicylate | 2,130 | 1,882 | 72 | 174 | 2,103 | 10 | 1 | 13 | 231 | 682 | 289 | 12 | 0 | 0 |
| Diaper care/rash product | | | | | | | | | | | | | | |
| Hexachlorophene antiseptic | 54 | 25 | 4 | 25 | 51 | 2 | 0 | 1 | 11 | 9 | 10 | 0 | 0 | 0 |
| Hydrogen peroxide | 6,638 | 2,531 | 576 | 3,501 | 6,478 | 116 | 20 | 21 | 365 | 640 | 681 | 25 | 0 | 1 |
| Iodine or iodide antiseptic | 1,515 | 468 | 276 | 741 | 1,232 | 181 | 11 | 75 | 416 | 339 | 288 | 59 | 7 | 1 |
| Mercury antiseptic | 185 | 128 | 8 | 48 | 163 | 9 | 0 | 10 | 33 | 44 | 19 | 1 | 1 | 0 |
| Methyl salicylate | 9,603 | 7,500 | 602 | 1,457 | 9,388 | 73 | 31 | 101 | 776 | 2,179 | 1,639 | 71 | 1 | 1 |
| Minoxidil | 162 | 71 | 5 | 85 | 152 | 2 | 0 | 8 | 36 | 56 | 21 | 7 | 0 | 0 |
| Podophyllin | 60 | 15 | 13 | 30 | 46 | 6 | 1 | 7 | 23 | 10 | 9 | 1 | 0 | 0 |
| Silver nitrate | 311 | 69 | 132 | 104 | 287 | 7 | 2 | 13 | 45 | 36 | 52 | 14 | 0 | 0 |
| Topical steroid | 9,770 | 7,273 | 515 | 1,957 | 9,619 | 34 | 3 | 109 | 221 | 1,373 | 350 | 19 | 0 | 0 |
| Wart preparation | 1,523 | 933 | 195 | 389 | 1,423 | 28 | 8 | 61 | 212 | 328 | 245 | 55 | 2 | 0 |
| Topical steroid with antibiotic | 1,623 | 972 | 165 | 478 | 1,578 | 12 | 0 | 33 | 92 | 257 | 243 | 19 | 0 | 0 |
| Other liniment | 2,360 | 1,187 | 173 | 989 | 2,045 | 24 | 2 | 287 | 176 | 338 | 557 | 29 | 1 | 0 |
| Other topical antiseptic | 7,424 | 5,602 | 782 | 1,017 | 7,155 | 153 | 67 | 42 | 429 | 1,736 | 692 | 57 | 1 | 0 |
| Category total | 109,831 | 88,859 | 5,544 | 15,042 | 107,565 | 937 | 174 | 1,078 | 5,078 | 18,898 | 7,823 | 527 | 23 | 3 |
| Veterinary drugs | 3,275 | 1,185 | 253 | 1,816 | 3,139 | 72 | 11 | 50 | 458 | 839 | 508 | 77 | 6 | 0 |
| No. of exposures | Age          | Reason | Treated in health care facility | Outcome |
|-----------------|--------------|--------|--------------------------------|---------|
|                 | <6 | 6–19 | >19 | Unint | Int | Other | Adv Rxn | None | Minor | Moderate | Major | Death |
| **Vitamins**    |    |      |     |       |     |       |         |      |       |          |       |       |
| Multiple vitamin Tablets: adult formul |    |      |     |       |     |       |         |      |       |          |       |       |
| No iron, no fluoride | 2,700 | 1,711 | 230 | 751 | 2,312 | 237 | 2 | 137 | 446 | 631 | 169 | 59 | 8 | 0 |
| With iron, no fluoride | 7,458 | 5,228 | 530 | 1,675 | 6,755 | 542 | 4 | 148 | 1,153 | 1,970 | 359 | 86 | 5 | 0 |
| With iron carbonyl (no fluoride) | 166 | 121 | 15 | 30 | 157 | 4 | 0 | 4 | 19 | 50 | 6 | 1 | 0 | 0 |
| With iron, with fluoride | 66 | 46 | 4 | 16 | 58 | 5 | 0 | 3 | 9 | 21 | 4 | 0 | 0 | 0 |
| No iron, with fluoride | 48 | 34 | 2 | 12 | 43 | 3 | 1 | 1 | 6 | 6 | 2 | 2 | 0 | 0 |
| Multiple vitamin Tablets: pediatric formul |    |      |     |       |     |       |         |      |       |          |       |       |
| No iron, no fluoride | 14,454 | 12,120 | 2,208 | 92 | 14,138 | 284 | 6 | 15 | 432 | 2,750 | 203 | 3 | 0 | 0 |
| With iron, no fluoride | 18,308 | 16,559 | 1,604 | 126 | 18,020 | 242 | 5 | 30 | 1,391 | 4,387 | 683 | 29 | 6 | 0 |
| With iron carbonyl (no fluoride) | 51 | 44 | 5 | 2 | 48 | 2 | 0 | 1 | 7 | 13 | 2 | 1 | 0 | 0 |
| With iron, with fluoride | 113 | 105 | 7 | 0 | 113 | 0 | 0 | 0 | 7 | 16 | 4 | 1 | 0 | 0 |
| No iron, with fluoride | 1,378 | 1,299 | 68 | 7 | 1,366 | 9 | 1 | 0 | 45 | 242 | 20 | 1 | 0 | 0 |
| Multiple vitamin liquids: adult formul |    |      |     |       |     |       |         |      |       |          |       |       |
| No iron, no fluoride | 152 | 80 | 22 | 50 | 126 | 18 | 0 | 8 | 27 | 35 | 11 | 3 | 0 | 0 |
| With iron, no fluoride | 186 | 103 | 24 | 59 | 157 | 19 | 1 | 9 | 37 | 37 | 12 | 5 | 1 | 0 |
| With iron, with fluoride | 3 | 1 | 1 | 1 | 2 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| No iron, with fluoride | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Category                                | No iron, no fluoride | With iron, no fluoride | With iron, with fluoride | No iron, with fluoride | Multiple vitamins, unspecified adult formula | Multiple vitamins, unspecified pediatric formula | Other vitamins |
|----------------------------------------|----------------------|------------------------|--------------------------|------------------------|---------------------------------------------|-------------------------------------------------|---------------|
| Vitamin liquids: pediatric formula     |                      |                        |                          |                        |                                             |                                                 |               |
| No iron, no fluoride                   | 439                  | 416                    | 13                       | 7                      | 429                                         | 3                  | 0              | 7               | 19               | 64                  | 24                  | 3              | 1              | 0               |
| With iron, no fluoride                 | 706                  | 672                    | 26                       | 6                      | 693                                         | 5                  | 0              | 8               | 60               | 172                | 30                  | 1              | 0              | 0               |
| With iron, with fluoride               | 32                   | 32                     | 0                        | 0                      | 30                                          | 1                  | 0              | 1               | 2                | 1                  | 2                  | 0              | 0              | 0               |
| No iron, with fluoride                 | 443                  | 439                    | 3                        | 1                      | 443                                         | 0                  | 0              | 0               | 14               | 72                 | 5                  | 0              | 0              | 0               |
| Multiple vitamins, unspecified adult formula |                        |                        |                          |                        |                                             |                                                 |               |
| No iron, no fluoride                   | 60                   | 31                     | 6                        | 21                     | 54                                          | 5                  | 0              | 1               | 13               | 15                 | 1                  | 0              | 0              | 0               |
| With iron, no fluoride                 | 2,143                | 1,492                  | 162                      | 480                    | 1,930                                        | 169                | 1              | 41              | 386              | 593                | 121                | 36             | 6              | 0               |
| With iron, with fluoride               | 12                   | 8                      | 0                        | 4                      | 9                                            | 2                  | 0              | 1               | 4                | 2                  | 0                  | 0              | 0              | 0               |
| No iron, with fluoride                 | 8                    | 7                      | 0                        | 1                      | 7                                            | 1                  | 0              | 0               | 1                | 0                  | 1                  | 0              | 0              | 0               |
| Multiple vitamins, unspecified pediatric formula |                  |                        |                          |                        |                                             |                                                 |               |
| No iron, no fluoride                   | 234                  | 180                    | 54                       | 0                      | 220                                         | 11                 | 0              | 3               | 12               | 37                 | 4                  | 0              | 0              | 0               |
| With iron, no fluoride                 | 192                  | 169                    | 21                       | 2                      | 188                                         | 1                  | 0              | 3               | 19               | 44                 | 9                  | 0              | 0              | 0               |
| With iron, with fluoride               | 18                   | 17                     | 1                        | 0                      | 18                                          | 0                  | 0              | 0               | 2                | 9                  | 0                  | 0              | 0              | 0               |
| No iron, with fluoride                 | 49                   | 45                     | 4                        | 0                      | 49                                          | 0                  | 0              | 0               | 1                | 12                 | 2                  | 0              | 0              | 0               |
| Other vitamins                         |                       |                        |                          |                        |                                             |                                                 |               |
| Vitamin A                              | 641                  | 471                    | 51                       | 114                    | 597                                         | 23                 | 2              | 17              | 73               | 129                | 21                 | 13             | 1              | 0               |
| Niacin (B3)                            | 3,109                | 731                    | 439                      | 1,915                  | 1,584                                        | 393                | 10             | 1,114           | 627              | 202                | 971                | 117            | 12             | 0               |
| Pyridoxine (B6)                        | 391                  | 238                    | 44                       | 106                    | 303                                         | 62                 | 0              | 25              | 101              | 97                 | 23                 | 9              | 10             | 0               |
| Other B complex vitamins                | 3,343                | 2,327                  | 168                      | 837                    | 2,949                                        | 257                | 0              | 129             | 564              | 736                | 174                | 91             | 18             | 0               |
| Vitamin C                              | 2,324                | 1,727                  | 242                      | 349                    | 2,101                                        | 149                | 1              | 68              | 220              | 485                | 130                | 19             | 2              | 0               |
| Vitamin D                              | 369                  | 173                    | 21                       | 172                    | 305                                         | 15                 | 0              | 46              | 86               | 78                 | 28                 | 12             | 0              | 0               |
| Vitamin E                              | 1,292                | 984                    | 78                       | 227                    | 1,196                                        | 51                 | 2              | 41              | 151              | 324                | 56                 | 9              | 1              | 0               |
| Other                                  | 621                  | 386                    | 69                       | 163                    | 518                                         | 52                 | 1              | 47              | 154              | 145                | 51                 | 19             | 0              | 0               |
| Unknown                                | 937                  | 608                    | 118                      | 202                    | 776                                         | 126                | 1              | 29              | 233              | 278                | 58                 | 20             | 2              | 1               |
| Category total                         | 62,446               | 48,604                 | 6,240                    | 7,428                  | 57,694                                       | 2,691              | 38             | 1,938           | 6,322            | 13,654             | 3,186              | 540            | 73             | 1               |

Continued
| Unknown drug | No. of exposures | <6 | 6–19 | >19 | Unint | Int | Other | Adv Rxn | Treated in health care facility | None | Minor | Moderate | Major | Death |
|--------------|-----------------|----|------|-----|-------|-----|-------|--------|--------------------------------|------|-------|---------|-------|-------|
| Unknown drug | 1,412,834 17,418| 4,445| 3,659| 8,822| 7,647 | 6,538 | 1,092 | 905 | 12,585 | 3,123 | 2,706 | 2,369 | 726 | 72 |

| Total no. of pharmaceuticals | 1,412,834 | 587,974 | 210,110 | 605,485 | 928,741 | 412,232 | 3,753 | 55,599 | 584,615 | 302,419 | 210,495 | 129,026 | 29,171 | 2,598 |

| % of pharmaceuticals | – | 41.6% | 14.9% | 42.9% | 65.7% | 29.2% | 0.3% | 3.9% | 41.4% | 21.4% | 14.9% | 9.1% | 2.1% | 0.2% |
| % of all substances | 51% | 21.3% | 7.6% | 21.9% | 33.6% | 14.9% | 0.1% | 2.0% | 21.1% | 10.9% | 7.6% | 4.7% | 1.1% | 0.1% |
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APPENDIX A

AAPCC’s 2005 fatality verification process involved the preparation and review of abstracts on 1,589 fatalities reported to poison centers, 328 of which were eventually determined to be either unrelated to a poison exposure or coded incorrectly as a death. The review process requires the dedication and commitment of hundreds of poison center staff members; more than could possibly be listed here. The following fatality abstract authors were identified by their poison centers as having made a major contribution to this effort. These individuals are acknowledged for their commitment to toxicosurveillance through the careful verification and preparation of clinical abstracts of poisoning cases. Without the dedicated contributions of these individuals, this report would not be possible.

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A 51-year-old man was arrested for driving "under the influence" and indecent exposure and jailed. He reported that he had ingested antifreeze (ethylene glycol). The patient became short of breath and obtunded while in jail. Upon arrival in the ED, the patient was comatose and being bag ventilated. His vital signs were: heart rate, 90 beats/min; blood pressure, 70/50 mm Hg; temperature, 94.5 °F rectally. He was intubated. An initial arterial pH was 6.7. The patient received warm intravenous fluids, sodium bicarbonate, and calcium gluconate. His blood pressure rose to 105/50 mm Hg. His initial laboratory values were: glucose, 170 mg/dL; BUN, 19 mg/dL; creatinine, 2.3 mg/dL; sodium, 147 mEq/L; potassium, 6.9 mEq/L; chloride, 101 mEq/L; bicarbonate, <5 mEq/L; AST, 22 U/L; ALT, 15 U/L; and blood alcohol, undetected. He received thiamine, folate, pyridoxine, vasopressors, and was hemodialyzed. The patient's metabolic acidosis and hypotension resolved following hemodialysis; however his neurologic status never improved and life support was withdrawn.

Case 53. An 18-month-old boy ingested two button cell disc batteries that he found in the trash. He vomited for one day, but his symptoms were attributed to a respiratory illness in the family who were unaware of the battery ingestion. When he was seen in the ED for persistent symptoms, an x-ray showed one battery in the esophagus and one battery in the stomach. After a delay of several hours, the child was transferred to another hospital where both batteries were removed. The child was admitted for four days and a barium swallow done during the admission showed no perforation but an undefined esophageal deviation. On discharge the child had a fever and was sent home on an antibiotic and medication for acid reflux. On the fourth home day the child woke cyanotic. On readmission he had a high white blood cell count and was in shock. He died later that day. The death certificate listed the cause of death as aortoesophageal corrosive ulcer.

Case 54. A 55-year-old man was bitten on the hand by an Eastern diamondback rattlesnake (Crotalus adamanteus). He immediately began experiencing shortness of breath. His son described his father having trouble breathing and unable to talk. Upon presentation in the ED he was hypotensive, diaphoretic, and had ectopy on his monitor. The swelling was onto his forearm. He was given 4 vials of antivenom (Crotalidae polyclonal immune Fab), as well as amiodarone, with reported clinical improvement. Laboratory values were: PT, 17 sec; INR, 1.7; and platelet count, 109, 000 /μL. At followup, approximately 27 hours after presentation, 16 vials of antivenom had been given. Laboratory values at that time showed a PT of 20 sec with an INR of 2, and a fibrinogen level of 195 mg/dL. On the 6th hospitalized day, he showed signs of recurrent coagulopathy with the following laboratory values: platelet count, 93,000 /μL; fibrinogen, < 35 mg/dL; and PT and PTT both > 150 sec. It was unclear whether blood products or additional antivenom were given. He was transferred back to the ICU, but later that day he developed neurological deficits and subsequently became unresponsive. A head CT showed a hemorrhage. He died the following day.

Case 55. A 25-year-old man reportedly told his family that he had been bitten by a rattlesnake (Crotalus horridus horridus). He was being driven to a rural hospital when the car had a flat tire. The patient reportedly became unconscious and was taken on to the hospital by a passing motorist. By the time he got to the ED he was dead. An autopsy revealed an apparent bite mark on the back of the right hand, associated with hemorrhagic necrosis of the underlying soft tissue. A heart blood ethanol level was 290 mg/dL. It was the opinion of the pathologist that the probable cause of death was a snake bite.

Case 56. The poison center was informed about a 44-year-old man who was stung on the temple by an unknown hymenoptera. He reportedly waited several hours to seek medical attention. He was eventually declared brain dead. The medical examiner confirmed that death was due to an anaphylactic reaction to the sting.

Case 57. A 32-year-old man presented in the ED following a rattlesnake bite. He reportedly had a respiratory arrest about 10 minutes after the bite and arrived in the ED 10 minutes later. In the ED his pupils were fixed and dilated. Antivenom was administered after initial fluid resuscitative measures were taken. Oxygen saturation returned to 98% and blood pressure stabilized. He was transferred to a tertiary-care facility where his PT and PTT were slightly prolonged and his platelet count was 120,000/μL. Additional antivenom was administered. His neurologic status throughout hospitalization suggested anoxic brain injury, confirmed by head CT and EEG. The patient died on the 4th hospital day, apparently of anoxic brain injury following an anaphylactic reaction to a snakebite. Further history revealed that he had been bitten several times in the past.
Case 60. A 44-year-old man saw a 4-foot long snake (presumed Crotaline) and chased it into a wooded ravine in an attempt to catch it. His body was found two days later. Autopsy examination showed four puncture marks on the first dorsal web space of his right hand with swelling, discoloration, and cellular/tissue lysis of the surrounding muscle and tissue. Marked edema of the larynx, epiglottis, and surrounding upper airway tissues was noted as well. A blood ethanol level was 120 mg/dL.

Case 62. A 19-year-old woman with a history of depression was found slumped over a bathtub after a suspected ammonia and bleach ingestion, followed by aspiration. EMS performed cardioversion and endotracheal intubation prior to arrival in the ED. A urine drug screen was negative for drugs of abuse. The patient was supported on the ventilator and high dose vasopressors, but remained hemodynamically unstable and unresponsive. She suffered a cardiac arrest on hospital day 2 and did not respond to resuscitation attempts.

Case 63. A 23-year-old college student dropped out of class, acquired some sodium cyanide, e-mailed a suicide note to a relative, mixed the cyanide with a liquid and drank it. He was found dead three days later, shortly after the e-mail message was read. The postmortem blood cyanide level was reported as >10 μg/mL.

Case 66. A 55-year-old man ingested a white powdery substance while being arrested. He stated that it was potassium cyanide and that he was going to die. He was transported to a small rural hospital, where he presented in respiratory distress 15 minutes after ingestion. He had palpable pulses but no detectable blood pressure. He was intubated, started on vasopressors and given sodium bicarbonate. He then went into PEA and CPR was started. The hospital did not have a cyanide antidote kit in stock. They had called a flight evacuation service which arrived with a cyanide antidote kit 45 minutes post-ingestion. Aggressive supportive care and the delayed cyanide antidote were unsuccessful and the patient was declared dead.

Case 85. A 24-year-old man was found unresponsive after reportedly ingesting 6 ounces of an embalming fluid containing formaldehyde and methanol. In the ED the patient was asystolic and could not be resuscitated. Postmortem examination revealed complete tissue fixation of the upper gastrointestinal tract up to the pylorus and mesenteric areas adjacent to stomach. Postmortem methanol levels were 43 mg/dL in the blood and 36 mg/dL in vitreous fluid.

Case 87. A 58-year-old man with a past history of morbid obesity and extensive coronary artery disease presented in the ED after unintentionally ingesting a mouthful of a “truck cleaner” inappropriately stored in a drinking water bottle. Hydrofluoric acid ingestion was suspected. He presented with extensive retching and intense burning in his throat, chest, and abdomen. Initial calcium was 9.0 mg/dL. About 2 hours later he went into torsade de pointes followed by ventricular fibrillation. Calcium was then 5.2 mg/dL. Calcium and magnesium were administered and he was defibrillated. He did not respond and died approximately 4.5 hours later. Postmortem examination revealed that this combination product contained unknown concentrations of hydrofluoric, sulfuric, and phosphoric acids in a container labeled as a commercial brand of drinking water. No gross evidence of acid-related injury to the gastric mucosa was present. However, microscopic examination revealed patchy mucosal erosions and areas of hemorrhage in the stomach.

Case 88. Fifteen people became ill after coming to work at a plant that stores cylinders of methyl bromide gas. The employees were all attending a meeting when they developed vomiting, diarrhea, and eye irritation. All were seen at an ED and fourteen of the fifteen were discharged. All of the employees had methyl bromide present in blood samples taken in the ED. One adult with a history of unspecified underlying medical conditions came to work 2.5 hours before the meeting and was already feeling ill at the time the meeting started. About 30 minutes later, he became paralyzed although he remained awake and alert. On arrival in the ED, he had a seizure that was controlled with medication. He was admitted to the hospital and died about 10 hours later. Later on the day of the meeting, the canisters of methyl bromide stored at the plant were examined and three of them were found empty or partially empty. No air levels of bromine were measurable. A water cooler that pulls air into the inverted container as water is used was in the area of the meeting and was used to make coffee about an hour before the meeting, pulling room air into the inverted large bottle. The bottle was sealed and tested, and the air in the bottle was found to contain methyl bromide. The fatality was believed to have been caused by a combination of effects from the methyl bromide and the man’s underlying medical condition(s).

Case 97. An 83-year-old woman with Alzheimer’s disease ingested an estimated 8 ounces of a liquid dishwashing detergent (anionic/nonionic). She was lavaged and given intravenous fluids in the ED. The patient aspirated and, within 4–5 hours of ingestion, was intubated and transferred to the ICU for respiratory failure. The patient experienced renal failure, elevated liver enzymes, and at least one seizure. The patient continued to require ventilatory support and dopamine. She had a cardiac arrest approximately 16 hours after exposure and could not be resuscitated.

Case 98. An 85-year-old man with a medical history of “confusion” reportedly ingested 400 mL of a liquid dishwashing detergent (anionic/nonionic). The patient developed profuse watery diarrhea with hourly stools. Initial laboratory values were normal. Over the next 24 hours he reportedly had approximately 10 liters of stool. He also apparently developed a bowel obstruction with vomiting of fecal-like material. In spite of fluid replacement and supportive care the patient died about 30 hours after presentation.

Case 111. A 90-year-old woman with a history of dementia was witnessed to drink a few swallows of a cleaner containing pine oil/isopropyl alcohol cleaner, thinking it was Gatorade™.
She began vomiting. EMS was called. She became asystolic en route to the hospital. In the ED she underwent a prolonged resuscitation. Supportive care was withdrawn later that day by the family and she died.

Case 112. A 102-year-old woman with do not resuscitate orders presented to an ED smelling of a pine oil/isopropyl alcohol cleaning product, which she had reportedly ingested. She was responsive only to pain. Her vital signs were: heart rate, 84 beats/min; blood pressure, 110/54 mm Hg; respiratory rate, 24 breaths/min; oral temperature, 97.8 °F; pulse oximetry, 100% on 2L of oxygen. Her initial chest x-ray was clear. Seventeen hours after her exposure she was awake and alert with stable vital signs and scattered rhonchi on her pulmonary examination. Her respiratory status continued to decline and she died due to respiratory failure at 37 hours after her exposure.

Case 117. A 48-year-old man presented in the ED after unintentionally ingesting a wheel cleaner containing hydrofluoric acid. The wheel cleaner had been placed in a drink container. Presenting symptoms included vomiting, drooling and pharyngeal erythema. The patient was intubated, sedated and received intravenous calcium, magnesium, sodium bicarbonate, and fluids. Laboratory values approximately 2 hours post ingestion included: potassium, 3.1mEq/L; calcium, 6.3 mg/dL; magnesiu m, 1.6 mg/dL; hemoglobin, 4 g/dL (decreased from an initial value of 14.4 g/dL); pH, 7.24; and creatinine, 1.3 mg/dL. Despite supportive care, the patient developed refractory hypotension and then cardiac arrest approximately 5 hours after the ingestion. Resuscitation was unsuccessful.

Case 123. A 26-year-old woman was found in Pulseless Electrical Activity (PEA) with a bottle of holding tank sealer and deodorant, approximately half of which was gone. Unfortunately, during the course of case management, the exact identity of what the patient ingested was unclear. The bottle from which the chemical was ingested was lost within the hospital. She was treated with supportive care and 4-methylpyrazole because of the possibility that the product contained methanol. The patient remained acidic and developed a coagulopathy and bleeding diathesis. Less than 24 hours into the hospitalization, she coded and could not be resuscitated. The pathologist determined that the product the patient ingested was 10–15% methanol and 20–25% formaldehyde.

Case 124. A 27-year-old man presented in the ED with altered mental status. The patient was intubated and sedated. Initial vital signs were: blood pressure, 150/90 mm Hg; heart rate, 91 beats/min; respiratory rate, 18 breaths/min; temperature, 98.2°F; and oxygen saturation of 100% on a ventilator. Initial laboratory values were: sodium, 104 mEq/L; potassium, 2.8 mEq/L; chloride, 65 mEq/L; bicarbonate, 26 mEq/L; glucose, 111 mg/dL; AST, 150 U/L; ALT, 114 U/L; creatine kinase, 2632 U/L. EKG, chest X-ray and CT of the head were all normal. The patient was started on 3% saline. The history obtained from the patient’s sister was that he was a recent immigrant from El Salvador who was apparently healthy until three weeks prior when the patient went to see a “Curandera” for abdominal pain. He was given “Aceite de Resina” and one week later was given “Te de Medianoche.” One week later, the patient was seen by a primary care physician and was prescribed trimethoprim-sulfamethoxazole. The “Aceite de Resina” container had been disposed of but the “Te de Medianoche” container had been brought in and the active ingredients were Menta – Satureja macrostema, Polo e – Mentha pulegium, Hierva de San Juan – Hypericum perforatum 330 GRF, and Melissa – Citronella mexicana 30 GRF. The morning after the admission Mentha pulegium was identified as pennyroyal. The patient was started on N-acetylcysteine. Liver enzymes returned to normal within four days of admission. The patient remained comatose on pressors and sedation. Two weeks into his course he developed bilateral pneumothoraces requiring chest tube placement. By three weeks after admission the patient was unresponsive to any stimuli. An EEG showed minimal brain activity. Twenty-nine days after admission the patient was removed from life support and died.

Case 125. An 82-year-old man with dementia developed slurred speech and weakness. Four days prior the patient had eaten home-canned food of unknown shelf life. The following day, the patient’s speech was slurred. The patient ultimately was taken to the ED where he had minimal movement and was intubated. He was able to wiggle fingers and toes. By hospital day 1, he was only able to wiggle his toes and by the end of the night, the patient was completely paralyzed. On hospital day 4 he had a negative spinal tap and there was concern for botulism. Botulinum immune globulin was sent from the CDC and testing was started for botulism. By hospital day 6, the patient’s respiratory rate had increased. On Hospital Day 13, testing came back positive for botulism type B. The patient did receive botulinum immune globulin. The patient started to improve and then decompensated again and ultimately died.

Case 126. A 67-year-old woman was admitted to the hospital with nausea, vomiting, diarrhea and right upper quadrant pain. The patient also had jaundice and hemolysis. Blood cultures grew a heavy growth of Clostridium perfringens the day after the patient died.

Cases 127, 142, and 147. A 3-year-old girl died of carbon monoxide poisoning. A family member committed suicide by running his automobile in an attached garage, killing other family members.

Cases 129, 130, 139, and 140. A family of four, including two 8-year-old children, was found dead in a bedroom. They had been dead for several days. The father had sealed the family in the bedroom and started charcoal fires while they slept. He left a suicide note. The ambient carbon monoxide level was 71 ppm.

Case 131. An 11-year-old boy was found unresponsive and apneic in an idling automobile that was covered in ~2 feet of snow from a recent blizzard. He was last seen 3 hours earlier. He was transported to the nearest ED by EMS, but had a cardiac arrest en route. Carbon monoxide was suspected and a
Case 186. A 28-year-old train engineer presented to an ED following a train wreck where a chlorine tank car ruptured, releasing a cloud of chlorine gas into the environment. The patient inhaled the chlorine and presented to the hospital in respiratory distress. He was intubated but, despite aggressive pulmonary care, the patient’s respiratory status worsened and he died.

Case 188. A 57-year-old man with a history of chronic depression and multiple suicide attempts was found unconscious by his sister with a bag over his head attached to a helium cylinder. A book on “methods of suicide” was lying beside him. Upon EMS arrival, the patient was in full cardiopulmonary arrest. The patient responded to CPR and was admitted to the ICU. Eighteen hours after presentation the family decided to withdraw support, he was declared brain dead and became an organ donor.

Cases 189 and 190. Two men, aged 41 and 56 years, were found unconscious in an underground sewer. They were successfully resuscitated by EMS, admitted to the ICU and treated with hyperbaric oxygen. Initial carboxyhemoglobin and methemoglobin levels were both <1%. Neither patient regained consciousness and both were declared dead within 24 hours of admission. The cause of death was thought to be hydrogen sulfide.

Cases 192, 193, and 194. Three workers on a cruise ship entered a room to clean up a sewage leak. All three were later found in cardiopulmonary arrest and pronounced dead prior to hospital transport. The toxin was subsequently identified as hydrogen sulfide through environmental monitoring by a hazardous materials team. Nineteen other persons were exposed but survived.

Case 198. A 37-year-old man was found dead with a respirator mask connected to tank of chlorofluorocarbon over his face. The man worked for a HVAC company and had easy access to the chlorofluorocarbon. Death was ruled an accident by the coroner.

Case 203. A 15-month-old girl was found in the garage by the coroner. The man worked for a HVAC company and had easy access to the chlorofluorocarbon. Death was ruled an accident by the coroner.

Case 205. A 61-year-old man was brought to the hospital with burns over approximately 20% of his body. There were conflicting stories as to the cause. It was thought that he had fallen asleep in front of a kerosene stove, but after he had been in the hospital 2 days he passed some kerosene-like fluid from his rectum and it was suggested that he might have ingested kerosene and self-inflicted the burn. He had multiple complications including renal failure and pneumonia with ARDS, requiring intubation and assisted ventilation. He died one week after admission.

Case 206. A 2-year-old boy ingested an unknown amount of cigarette lighter fluid (naptha) with resultant cough. When the poison center was contacted the child was enroute to the hospital and receiving CPR. An x-ray in the ED showed complete opacification of both lungs. The child died shortly after arriving in the ED.

Case 207. A 56-year-old previously healthy man picked and ate mushrooms. Approximately 8 hours later he developed nausea, abdominal cramps, vomiting and diarrhea. Over the next several hours he became progressively worse and finally presented to the ED approximately 19 hours post ingestion. He was treated with IV fluids. Laboratory investigation at that time revealed AST 39 U/L, ALT 59 U/L, INR 0.94, BUN 22 mg/dL, and serum creatinine 1.0 mg/dL. A preliminary description of the mushrooms could not rule out Amanita species so multi-dose activated charcoal was recommended while awaiting definitive identification. By the following morning AST was 201 U/L, ALT 243 U/L and the mushroom was identified as Amanita bisporigera. N-acetylcysteine, high dose penicillin, ascorbic acid, and cimetidine were recommended as further therapies that might potentially decrease toxicity. Despite this treatment he developed fulminant hepatic failure and renal failure. He was transferred to a transplant center for possible liver transplantation. He remained encephalopathic, coagulopathic, and anuric and developed atrial fibrillation and hypotension. He died 4 days post ingestion.

Case 208. A 56-year-old Laotian man picked wild mushrooms in the forest and cooked them for himself the day prior to admission. He presented to an urgent care center with nausea, vomiting and diarrhea. He received metoclopramide and promethazine in addition to IV fluids. Laboratory measures of hepatic and renal function were normal but he was admitted to the hospital. The mushroom was identified as an Amanita bisporigera on the basis of questioning of the patient by a mycologist. On the second day his liver enzymes were mildly elevated. The patient and his family declined to be listed for an urgent liver transplant. Laboratory values on day 3 were: INR, 5; AST, 6262 U/L; ALT, 4770 U/L; ammonia, 92 μmol/L; and pH, 7.45. The patient remained awake and alert but complained of generalized abdominal pain. By hospital day 6 the patient was delirious. By day 7 the patient was comatose and was intubated. His liver enzymes began to decline but his INR and bilirubin were rising. The patient started to regain consciousness on hospital day 13 but his bilirubin continued to rise, peaking at 28.4 mg/dL on day 15. The patient was extubated and gradually became more responsive, asking for food. He was discharged from the hospital after 21 days with a follow-up visit scheduled for the toxicology clinic in about 3 weeks. He did not come to that appointment and two days later was readmitted to the hospital with the diagnosis of ongoing liver failure and sepsis. The patient died from sepsis (E. coli in...
femoral catheter and mold in sputum) about two months after his initial ingestion.

**Case 210.** A 15-year-old girl ingested approximately 5 pellets (by patient history) of aluminum phosphate in a stated suicide attempt. It is unclear how the patient obtained this product. She presented in the ED approximately 45 minutes post ingestion with confusion, bradycardia, diaphoresis, cyanosis, mydriasis, hyperreflexia, and incontinence. The patient was intubated, given activated charcoal and then lavaged. Approximately 2 hours post ingestion she became hypotensive and vasopressors were started. The patient then developed PEA, was coded and died.

**Case 211.** A 20-year-old man was traveling inside a rice-filled railcar for 6 hours. The patient developed severe respiratory distress within hours of leaving the railcar, which had been fumigated with aluminum phosphate tablets. He was awake, hypotensive, hypothermic, and acidemic upon arrival in the ED. The patient was intubated, started on vasopressors and transferred to the ICU. He developed worsening pulmonary edema and renal failure and received emergent hemodialysis. An echocardiogram revealed an ejection fraction of 10%. The patient suffered two episodes of cardiac arrest roughly 16 hours from admission, the second from which he could not be resuscitated. Autopsy revealed pulmonary congestion, but otherwise normal organs on gross inspection. The cause of death was judged to be sudden cardiac arrest due to phosphate exposure.

**Case 212.** A local newspaper reported the death of an 81-year-old woman who died one day following exposure to phosphate gas. A phosphate pesticide was apparently added to her apartment building’s water softener brine tank. Several other residents also became ill. A follow-up newspaper article reported the conviction, with a 20-year prison sentence, of the assailant who pleaded guilty to first degree manslaughter.

**Case 213.** A 20-year-old man was traveling inside a rice-filled railcar for 6 hours. The patient developed severe respiratory distress within hours of leaving the railcar, which had been fumigated with aluminum phosphate tablets. He was awake, hypotensive, hypothermic, and acidemic upon arrival in the ED. The patient was intubated, started on vasopressors and transferred to the ICU. He developed worsening pulmonary edema and renal failure and received emergent hemodialysis. An echocardiogram revealed an ejection fraction of 10%. The patient suffered two episodes of cardiac arrest roughly 16 hours from admission, the second from which he could not be resuscitated. Autopsy revealed pulmonary congestion, but otherwise normal organs on gross inspection. The cause of death was judged to be sudden cardiac arrest due to phosphate exposure.

**Case 214.** A 40-year-old man presented with complaints of blurred vision, sore throat, vomiting, abdominal pain, and lightheadedness. He reported that he had ingested half a bottle of diquat dibromide 48 hours earlier. Neither the volume nor concentration of the diquat ingested was known, as he did not bring the bottle with him. He was admitted to the ICU where pertinent laboratory values were: BUN, 68 mg/dL; creatinine, 7.9 mg/dL; white cell count, 25,000/μL; ALT, 304 U/L; and AST, 558 U/L. He had a nasopharyngeal scope done on day 1, which revealed the presence of posterior pharyngeal, uvular, and epiglottic mucosal injury. That night he developed anuria and severe agitation, which was treated with benzodiazepines and haloperidol. A head CT was normal. He was intubated on day 2 and hemodialysis was started due to his renal failure. N-acetylcysteine was administered orally. He underwent endoscopy later that day which revealed esophagitis with no ulceration. He was continued on hemodialysis. By the evening of day 2 he developed tachycardia and hypertension, with concern for possible sedative hypnotic or ethanol withdrawal. He then became bradycardic and his neurologic exam deteriorated with evidence of herniation, confirmed by head CT. The family withdrew support on day 3 and he died.

**Case 215.** A 45-year-old woman ingested 10 ounces of a glyphosate herbicide in a suicide attempt. She developed some abdominal pain, hematemesis, and diarrhea. Two days after the ingestion she informed her boyfriend and was brought to the ED, where she was found to be in acute renal failure. Initial examination revealed a blood pressure of 182/82 mm Hg, heart rate of 117 beats/min, and oxygen saturation of 97%. She was alert, had constricted pupils, and her skin appeared flushed. Initial laboratory data included: BUN, 63 mg/dL; creatinine, 7.2 mg/dL; AST, 187 U/L; ALT, 234 U/L; lactate dehydrogenase, 4022 U/L; CK, 345 U/L. Salicylate and acetaminophen levels were not detectable. She was admitted and initially treated with IV fluids. The next day her respiratory status deteriorated and a chest X-ray showed possible ARDS. She was transferred to the ICU, intubated endotracheally, and sedated. She was also noted to have a diffuse erythematous facial and neck rash. Hemodialysis was started. On the fourth hospital day she remained deeply comatose. A head CT showed extensive, diffuse injury to the brain and midbrain, and a pontine hemorrhage. She remained unresponsive and life support measures were withdrawn after 8 days.

**Case 216.** A 69-year-old man was found sitting in a car, alert and oriented. He reportedly had ingested 240 mL of glyphosate concentrate an hour earlier. He developed vomiting and respiratory distress. The patient was transported to the ED where he rapidly deteriorated with an increased respiratory rate, hypersalivation, and an altered level of consciousness. He was admitted to the ICU where he was hypertensive (210/125 mm Hg). Over the course of two hours, the patient developed hypothermic (93.5 °F), tachypnea, acidosis, anorexia, and hypotension. Treatment continued with mechanical ventilation, IV hydration with sodium bicarbonate, hemodialysis, and vasopressors to maintain his blood pressure. The patient died due to severe metabolic acidosis, acute lung injury, and pulmonary aspiration. The medical examiner classified the death as suicide by acute glyphosate poisoning.
Case 219. A 62-year-old man presented in the ED unresponsive after reportedly ingesting unknown amounts of paraquat, "some sort of organophosphate" and ethanol in a suicide attempt. In the ED he was hypertensive (320/120 mm Hg) and tachycardic (120–120 beats/min). He was intubated. Due to the history of paraquat ingestion, attempts were made to keep the SaO2 around 85–90%. His initial laboratory values showed acidosis (pH, 7.0) and hypokalemia (2.4 mEq/L). Liver function tests, as well as acetaminophen and salicylate levels, were reported to be normal. An ethanol level was 59 mg/dL. Additional history indicated that he had had blue-green emesis. A continuous infusion of sodium bicarbonate was started. After stabilization, he was transferred to another HCF. Laboratory assessment showed persistent acidosis and hypokalemia, as well as a lactate acid level of 15.1 mg/dL. Six hours later the patient was still acidotic, and was also hypotensive and tachycardic. Hemodialysis was initiated that afternoon. The family then made him a do not resuscitate and he died later that day. A paraquat level, performed on an antemortem serum specimen, was elevated at 51 μg/mL.

Case 221. A 38-year-old man was seen to drink from a cup reportedly containing aldicarb on a farm where he was employed. EMS was called, but the patient fled. He was chased for some distance across the farm before he was discovered lying unresponsive in a field. When EMS arrived he was unresponsive and they administered activated charcoal in the field. A helicopter arrived to transport him to a tertiary care facility. He had vomited and aspirated charcoal and was nasally intubated. On arrival in the ED he was vomiting and had lacrimation, miosis, diaphoresis, salivation and a GCS of three. The ED staff was suctioning 10–15 mL of charcoal-containing liquid out of his lungs every five minutes. His initial heart rate was 40 beats/min, but increased to 120 beats/min with the administration of atropine. Infusions of atropine and pralidoxime were started and the patient was admitted to the ICU. Shortly after transfer to the ICU, the patient had a seizure and lorazepam was administered. The patient was noted to be tachycardic and hypertensive at this time. Over the next several hours the patient continued to have seizure activity, requiring lorazepam. The seizure activity subsided and no further seizures were reported during the hospital course. The morning after admission the patient was febrile to 102 °F. Antibiotics were started for aspiration pneumonia. On day 2 the atropine infusion rate was reduced (2 mg/hr to 0.75 mg/hr) and the pralidoxime was stopped. On day 3 his atropine was discontinued. The patient self-extubated that day also but had to be reintubated due to respiratory depression. His temperature was 103 °F despite external cooling measures. The patient was reportedly hypertensive requiring a diltiazem infusion. Due to hyperglycemia the patient was placed on an insulin drip. It was unknown if the patient had pre-existing hypertension or diabetes. His white blood cell count was 9,000/μL with no left shift. He was having adequate urine output. That night the patient became hypotensive and required vasopressors. Over the next two days the patient showed no improvement and continued with tachycardia, fever and agitation. The patient died on hospital day 5.

Case 222. An 18-month-old girl was taken to the local ED by her parents after an apparent ingestion of an insecticide containing allethrin and piperonyl butoxide in 99% mineral spirits. In the ED she was lethargic and vomiting. Emergency interventions included intubation as well as pralidoxime and atropine because of copious secretions. During the resuscitation it became clear that the patient had developed aspiration pneumonia. The child was transferred to a tertiary care PICU where she died a short time later. The cause of death was ruled hydrocarbon aspiration, possibly enhanced by pyrethrin toxicity.

Case 225. A 44-year-old man was brought into a local ED in full cardio-pulmonary arrest. He had been spraying malathion around his yard for approximately one week prior to this event. The previous day the patient had attempted to clean up a malathion spill in his enclosed garage. He became symptomatic that day and was seen at another ED, but removed himself against medical advice from that facility. Shortly after returning home he began to complain of dyspnea, abdominal pain, excessive salivation, and blurry vision. He then arrested. In the ED he was intubated and placed on the ventilator. Atropine and pralidoxime were initiated immediately. He became hypotensive and had seizure activity. Despite aggressive medical treatments, including the use of benzodiazepines and vasopressors, his condition deteriorated and he died 3 days later.

Case 226. A 23-year-old student intentionally ingested an insecticide containing 48.6% sodium sulfur arsene. He rapidly experienced multiple episodes of emesis and then lost consciousness. Four hours later paramedics were summoned and the patient was transported to the hospital. Upon arrival in the ED the patient was tachycardic with a systolic blood pressure below 90 mm Hg. Pressors had little effect on his systolic blood pressure. He was given approximately 10 liters of fluids which raised his blood pressure. BAL in oil was given IM. An abdominal x-ray revealed an ileus. A haze of arsenic could be seen in the stomach, but no arsenic was seen in the colon. Ultrasound of the kidney showed significant changes. BUN was 28 mg/dL and creatinine was 4.2 mg/dL. He had hypocalcemia, hypomagnesemia, hyperphosphatemia and thrombocytopenia. Calcium gluconate and magnesium sulfate were given. He experienced respiratory difficulty and was intubated but quickly developed pulmonary edema. Despite aggressive treatment the patient had a cardiac arrest and died 5.5 hours after presentation in the ED. A pre-mortem serum arsenic level was 65 μg/mL. At autopsy the cause of death was ruled to be suicide with arsenic.

Case 227. A 22-year-old woman who lived on a hog farm reportedly felt well all day but felt warm in the evening. She took a bath, vomited, became incontinent of stool, seized, and became unresponsive. En route to the hospital, the patient developed asystolic cardiac arrest. After a prolonged but successful resuscitation, the patient was hypothermic (temperature
95 °F), but subsequently became hyperthermic (temperature, 104 °F). She was acidic (pH, 6.4). Reportedly, she had a chemical odor and profound diarrhea. Wheezing, bradycardia, lacrimation, hypersalivation, and fasciculations were not noted. Her pupils were fixed and dilated, and she appeared to have suffered a profound hypoxic brain injury. The patient was admitted to ICU and treated with phenytoin and supportive care. Her pseudocholinesterase level was undetectable (<0.2 U/mL). She suffered a second cardiac arrest and died approximately 20 hours after hospital presentation. A criminal investigation and autopsy were performed. Toxicology studies eventually reported showing the organophosphate terbufos.

**Case 230.** A 21-year-old man was transferred from an outside ED to an inpatient psychiatric hospital after being petitioned by his family and social worker. According to the EMS report, the patient was at home stating that he had taken rat poison. According to a signed petition, the patient had ingested a “rat poison” to “kill the rat that was in his stool.” There was no specific identification of a rodenticide and the family reported that there were none in the home. There was no family witness to the alleged ingestion. The patient’s mother had reported frequent auditory and visual hallucinations at home. He presented with a change in mental status and mild bradycardia. His coagulation profile was normal. The original urine drug screen at the time of admission to the ED was positive for barbiturates. A quantitative analysis was not performed at that time. The family was not aware of any barbiturate or other medication use by the patient. The patient became progressively catatonic with no evidence of muscle rigidity. He was treated with haloperidol 5 mg twice daily while at the inpatient psychiatric facility. His condition continued to decline and he was subsequently transferred to a tertiary care center for further evaluation 2 days after his presentation. A CT of the brain revealed marked cerebral edema. The patient was intubated and admitted to the ICU for further evaluation. Serum phenobarbital level was < 1.1 μg/ml. A comprehensive urine drug screen revealed the presence of promethazine. His coagulation profile remained normal. Laboratory studies revealed: white blood cells, 24,000 /μL; creatinine, 2.5 mg/dL; CK, 61 U/L; and a normal lumbar puncture. The patient continued to decline. Subsequent brain CT imaging revealed worsened cerebral edema and herniation. Life support was withdrawn and the patient died. At autopsy, the patient had mild brain swelling without evidence of disease or infection. Microscopic evaluation confirmed severe acute lobar pneumonia, and vacuolization of the white matter of the brain. Tissue toxicity of the brain and liver detected demethylated bromethalin. The coroner was able to interview the family and to confirm that bromethalin (eight baits) had been ingested.

**Case 231.** A 4-year-old girl was discovered to have hepatic failure and was referred for a possible liver transplant. She was diagnosed with viral hepatitis and a transplant was denied. She then developed respiratory problems and was admitted to the PICU where she received bilateral chest tubes for pleural effusions. Her younger brother was also admitted at this time with hepatic failure. It was later discovered that the grandmother had been giving them both a homemade herbal tea for fever and constipation. The family brought a sample of the plant used in the tea and it was identified by two botanists as Senecio longilobus, which contains pyrrolizidine alkaloids. A liver biopsy of the patient’s brother revealed hepatovenoocclusive disease, consistent with exposure to pyrrolizidine alkaloids. A liver biopsy was never performed on the patient due to her anticoagulated state, but her clinical picture of hepatitis and pulmonary toxicity is well documented with exposure to pyrrolizidine alkaloids. The patient stabilized for a number of weeks but eventually succumbed to irreversible pulmonary disease. The postmortem opinion was that the patient died from pyrrolizidine alkaid ingestion. It is unknown if the grandmother mistook this plant for a nontoxic one.

**Case 294.** A 21-year-old man presented in the ED after an admitted ingestion of a “bottle of aspirin, two tablets of clonazepam and alcohol” in a suicide attempt. Activated charcoal was given on presentation. On the initial toxicology screen his blood alcohol level was 48 mg/dL, salicylate, 4.2 mg/dL, and acetaminophen, 405 μg/mL. His 4-hour acetaminophen level was 1062 μg/mL. At this time his vital signs were stable. At 17 hours post-ingestion he was awake and alert. He had received and tolerated a PO loading dose and subsequent PO doses of N-acetylcysteine. An acetaminophen level was 900 μg/mL. At 22 hours post-ingestion the patient was intubated due to clinical deterioration. His condition seemed to worsen after intubation. His pH was 7.1 and a sodium bicarbonate drip was started. At 25 hours post- ingestion he suffered a cardiac arrest but was successfully resuscitated. Following the arrest there was difficulty maintaining a good perfusing pressure and he was placed on dopamine and norepinephrine. He apparently suffered further cardiac rhythm and/or blood pressure problems and required multiple resuscitation efforts. At 31 hours post-ingestion the patient developed bradycardia and a falling blood pressure despite support. He then became asystolic and could not be resuscitated.

**Case 348.** A 37-year-old woman was brought to the ED after being found unconscious by her boyfriend, who had received in the mail a suicide letter from her dated the day before. A note saying “DNR” was found pinned to the patient. Three empty bottles of acetaminophen with diphenhydramine, along with bottles of clonazepam and ziprasidone were next to her. She had vomited. In the ED she was intubated, lavaged and given activated charcoal. Vital signs were: blood pressure, 102/46 mm Hg; heart rate, 96 beats/min. A urine toxicology screen was positive for benzodiazepines and marijuana. An acetaminophen level was 155 μg/mL, with an ALT of 107 U/L and AST of 88 U/L. She was started on N-acetylcysteine. A repeat acetaminophen level, 4 hours after the first, was 426 μg/mL, and a third level, 6 hours after the second, was 390 μg/mL. The following day the ALT was 241 U/L and the AST was 138 U/L. A repeat acetaminophen level, now 18 hours after presentation,
was 697 \( \mu \)g/mL. Pupils were now fixed and dilated and the patient suffered a terminal cardiac arrest 36 hours after presentation. An autopsy was remarkable for the finding of acute centrilobular necrosis on liver pathology, and for a jugular venous blood acetaminophen level of 899 \( \mu \)g/mL and diphenhydramine level of 9.2 \( \mu \)g/mL.

**Case 365.** A 51-year-old man presented to a rural hospital with some mild drowsiness and a history of taking about 110 tablets of a pain medication containing hydrocodone (5 mg) and acetaminophen (500 mg) about 5 hours earlier. His urine drug screen was only positive for opiates and an initial acetaminophen level was 343 mcg/mL. The patient was given a loading dose of N-acetylcysteine. Liver function tests were: AST, 431 U/L; ALT, 276 U/L; total bilirubin, 2.7 mg/dL. On the morning of the next day his blood glucose was 30 mg/dL, which normalized after a snack. The following day the patient got out of bed in the early morning and, according to the nurse, probably began hemorrhaging internally. He became unresponsive, cyanotic and bradycardic. Cardioversion and resuscitation efforts failed and the patient died.

**Case 428.** A 30-year-old man was transferred from one HCF to another, with a preliminary diagnosis of pulmonary embolism. In the report from the referring HCF, the receiving physician noted that the salicylate level was 125 mg/dL. Clinically, the patient was described as having altered mental status and tachypneic. Enroute to the second HCF, the patient had a cardiac arrest and was unsuccessfully resuscitated.

**Case 434.** A 49-year-old woman was brought to an acute care hospital from a psychiatric hospital because of worsening mental status and low oxygen saturation. She had been sent to the psychiatric facility for altered mental status from an acute medical facility earlier in the day, having had a negative urine drug screen. The patient was found to have ARDS and elevated liver enzymes (ALT, 300 U/L and AST, 940 U/L), in addition to altered mental status. She was intubated and ventilated. A salicylate level of 123 mg/dL was obtained, along with an acetaminophen level of zero. The patient died 3 hours after presentation. An autopsy ascribed cause of death to respiratory failure and salicylate toxicity.

**Case 443.** An 89-year-old man reportedly ingested about 30 aspirin tablets. In the ED the patient complained of difficulty swallowing and was unable to tolerate activated charcoal. A salicylate level, approximately 2.5 hours after the ingestion, was 20 mg/dL. He refused an NG tube. His electrolytes were normal, but an x-ray suggested an esophageal obstruction. A repeat salicylate level 2 hours later was 23.7 mg/dL. Endoscopy in the ED showed an esophageal obstruction by pills. He was admitted to the ICU for eventual surgery for the obstruction. However, the patient refused all interventions after admission and made himself a do not resuscitate. He refused surgery and developed an esophageal perforation and died about 36 hours after admission.

**Case 477.** A 41-year-old woman was found dead by her family. She had 11 fentanyl patches on her skin.

**Case 498.** A 49-year-old woman died in the hospital while being treated with meperidine via a PCA pump. The patient’s postmortem meperidine level was 2.5 \( \mu \)g/mL.

**Case 500.** A 5-year-old Mexican boy was transferred to a U.S. hospital for possible bone marrow and liver transplants. He had been treated with metamizol for fever and had developed agranulocytosis (300/\( \mu \)L), thrombocytopenia (34,000/\( \mu \)L) and liver failure (bilirubin, 31 mg/dL). Initially the patient was awake and talking without distress and with stable vital signs. He deteriorated over the next 3 days becoming more agitated and progressing to fulminant liver failure and complete aplastic anemia. Hepatitis C core antigen was found to be positive but no explanation for the patient’s aplastic anemia was found on bone marrow biopsy. The transplant teams felt that the presence of both liver failure and bone marrow suppression eliminated the possibility of either a liver or bone marrow transplant. On hospital day four the patient became hypotensive and required ventilatory support for respiratory distress. He died 11 days after admission despite plasmapheresis, dialysis, and supportive care.

**Case 501.** A local newspaper reported the death of a 2-month-old girl who was found in cardiac arrest by the police. The child had a history of neonatal withdrawal syndrome from cocaine and opiates. The Medical examiner reported the presence of methadone on autopsy and declared the cause of death methadone intoxication.

**Case 502.** The local newspaper reported the death of a 15-month-old boy who reportedly ingested methadone from his sippy cup. Methadone was prescribed to the mother. He was found unresponsive and apneic 2 hours later and was pronounced dead in the ED. Analysis of peripheral blood at autopsy revealed 0.3 \( \mu \)g/mL of methadone. The manner of death was homicide and murder charges have been filed.

**Case 503.** A 6-year-old boy was brought to the ED after having been found in cardiopulmonary arrest at home. Intubation and CPR were performed enroute. It was thought that the patient may have been given clonazepam by his developmentally delayed sister. On arrival in the ED the patient was defibrillated for ventricular fibrillation and regained a sinus heart rate. His initial blood glucose was 498 mg/dL with a pH of 6.9 and base deficit of 20 mEq/L. A urine drug screen was negative and a head CT scan showed global cerebral edema. The patient was transferred to the ICU where his blood glucose was 80 mg/dL, his pupils were fixed and dilated and he was hypotensive, requiring vasopressors. A repeat head CT scan showed basal ganglia infarcts and diffuse edema. The child then developed a pulmonary hemorrhage and was hypercapnic, despite adequate ventilation. Several hours later, he became bradycardic and developed pulseless electrical activity, requiring chest compressions. Several hours after that the patient became bradycardic, developed ventricular tachycardia and could not be resuscitated. Postmortem blood showed a methadone level of 0.07 \( \mu \)g/mL. It is suspected that he accidentally took another family member’s medication.
Case 570. A 21-month-old boy became cyanotic during sleep. By-stander CPR was begun and he was transported to the ED by ambulance. There was no history of exposure to drugs. The only drug known to be in the home was metformin. He presented with lethargy, cyanosis, and miosis. He was intubated. Blood pressure and heart rate were normal. A toxicology screen was positive for opiates only. Initial arterial blood gas results showed a pH of 7.23 with a pCO2 of 53 mm Hg. He was transferred to a pediatric specialty hospital, where he developed hypotension requiring vasopressors. Administration of naloxone resulted in decerebrate posturing. Approximately 36 hours after admission he was pronounced brain dead. The initial serum morphine concentration was greater than 5,000 ng/mL.

Case 578. A 59-year-old woman with history of chronic pain had an implantable intrathecal morphine pump. During refilling of the pump the patient experienced severe hypertension and headache. She soon became hypotensive and remained hypotensive despite fluids and vasopressors. She died the next day. It is thought that the morphine was accidentally injected directly into the CSF, rather than into the pump’s reservoir. A CSF morphine level was approximately 0.4 mg/mL.

Case 607. A 3-year-old girl was found unresponsive in the morning, after having gone to bed at about midnight. The patient was visiting in her grandmother’s home. When paramedics arrived, the patient was found in respiratory arrest with a heart rate of about 130 beats/min. In the ED she was intubated. Her examination was consistent with severe anoxic brain injury. She died later that day. A toxicology screen was positive for opioids and at autopsy a free blood oxycodone level was 280 ng/mL.

Case 652. An 11-year-old boy with muscular dystrophy was undergoing bilateral Achilles tendon lengthening with capsulotomies, bilateral lengthening of the posterior tibial tendons and bilateral lengthening of the hamstrings. After lengthening of the tendons, a total of 40 cc of 0.25% plain bupivacaine was applied to control pain. An undetermined amount of time later, while still in surgery, he had a sudden drop in his blood pressure, heart rate and oxygen saturation. Hypotension responded to vasopressors. Shortly after, his blood pressure dropped again and he again became bradycardic, requiring chest compressions. An echocardiogram showed poor cardiac output. It was thought by the surgeon that he might have an undocumented cardiomyopathy secondary to his muscular dystrophy. Resuscitation was unsuccessfully continued for 2 hours, after which he was pronounced dead. No autopsy was done.

Case 653. A 22-year-old woman with a history of an adrenal disorder and hirsutism was found in a motor vehicle unresponsive and seizing. The patient had applied lidocaine cream from her toes to the waist and wrapped herself in cellophane as instructed by her physician prior to LASIK hair removal. During transport by EMS, she had a respiratory arrest. Initial examination found lidocaine cream covering her bilateral lower extremities and an elevated temperature. The patient was hospitalized but died a week later after herniating. Postmortem evaluation revealed anoxic injury to the brain. A lidocaine blood level drawn approximately 48 hours after presentation to the ED was 7.9 μg/mL.

Case 654. An adult woman was found unresponsive and in cardiac arrest with 10 lidocaine dermal patches on her skin. Resuscitation efforts were unsuccessful.

Case 666. A 59-year-old woman was admitted following an overdose of oxcarbazepine 30 minutes prior to presentation. At presentation she was lethargic without any hemodynamic abnormality. She was given activated charcoal and admitted to the ICU. She progressively deteriorated and became obtunded, requiring intubation and mechanically ventilation. There was evidence of aspiration. She developed seizures, which initially improved with phenytoin and later with lorazepam and propofol. She remained obtunded and suddenly had a cardiac arrest and could not be resuscitated.

Case 667. A 32-year-old woman presented to the emergency room following ingestion of an unknown amount of oxcarbazepine and levetiracetam. She was intubated for respiratory and CNS depression and activated charcoal and cathartic were administered. Her urine drug screen was negative, as were salicylate and acetaminophen levels. Her heart rate fluctuated from 90–110 beats/min. She was sedated with propofol, but when she “surfaced” she became combative. On follow-up, she had been extubated and was alert, oriented, and cooperative. However, on subsequent follow-up, she had had an episode in which she began gritting her teeth, pulling her clothes off, and trying to get out of bed. She was disoriented, asked her own name, and began calling out numbers. This lasted about 5–10 minutes, after which she again became alert and oriented. At the next follow-up, two days after admission, she had died.

Case 670. A 27-year-old man was found unconscious in a hotel room with 2 bottles of valproic acid. In the ICU he was comatose. Vital signs were: heart rate, 150 beats/min (in atrial fibrillation); and systolic blood pressure, 80 mm Hg. Admission laboratory values were: valproic acid level, 1,984 μg/mL; bicarbonate, 11 mmol/L; and anion gap, 14.7. He was given intensive supportive care, including pressors. He remained hypotensive despite pressors, antibiotics, and volume support. His valproic acid level peaked at 3,465 μg/mL, the day after admission. Acute renal failure and acute pancreatitis ensued. His acidosis remained intractable and the patient died 4 days after original presentation.

Case 748. A 56-year-old woman, with a remote history of Hodgkin’s disease, was admitted with a presumed toxic hepatitis. She had been started on delayed-release duloxetine for depression about 3 months earlier. Her initial dose had been 30 mg/day but this had been increased to 60 mg/day about 6 weeks before admission. Testing at admission ruled out acetaminophen, ethanol, and viral causes of hepatitis. During two weeks of hospitalization, her transaminases rose to 2,000–3,000 U/L, bilirubin to 23 mg/dL, and INR to 2.8. She was then
transferred to a tertiary care institution for possible liver transplant. However, her mental status declined rapidly at the time of transfer, requiring intubation and ventilation. She never improved and died 12 days after transfer without transplant.

Case 765. A 59-year-old woman on dialysis for renal failure was admitted to the hospital for a revascularization procedure because of a clotted fistula. She presented the admitting physician a written list of medications, and verbally confirmed that she took nortriptyline 400 mg at bedtime. This amount was ordered by the admitting physician, dispensed by the pharmacy (8 × 50 mg) and administered by the nursing staff, who questioned the patient specifically about the dose. The patient underwent clot revision surgery on hospital day 3. Nortriptyline was not reordered postoperatively. On hospital day 5 the patient fell in her hospital room and fractured her hip, which was surgically repaired the following day. Postoperatively the patient’s nortriptyline, at the initial dose (400 mg at bedtime), was reordered. On hospital day 6 the patient was noted to be drowsy and a serum nortriptyline concentration was sent, but the medication was not discontinued. On hospital day 8 the patient was transferred to the ICU for increasing agitation and “cardiac symptoms.” Her vital signs included a systolic blood pressure of 130 mm Hg with a heart rate of 102 beats/min. At that time her BUN was 70 mg/dL and her creatinine was 9.2 mg/dL. After transfer to the ICU, the nortriptyline level, sent nearly two days earlier, was reported as 1,405 ng/mL, prompting a call to the poison center. The poison center recommended obtaining an ECG and administering hypertonic sodium bicarbonate, if appropriate. Ninety minutes later, her heart rate was 150 beats/min with a QRS duration of 218 msec. There was no response to a bolus of 150 mL of 8.4% sodium bicarbonate. The patient died three hours later.

Case 769. An incarcerated 20-year-old man was brought to the prison clinic after an overdose of what he said was a “cup” of haloperidol pills, 100 tablets of unknown strength nortriptyline and 30 unknown strength aspirin tablets. The prison clinic attempted to perform lavage and give charcoal, but the patient refused. He told the clinic staff that he wanted to be sent straight to the psychiatry unit as they have turkey on Thanksgiving and the prison does not. At that time his blood pressure was 120/80 mm Hg with a heart rate of 132 beats/min. The patient was transferred to the ED where he arrived in full cardiopulmonary arrest and could not be resuscitated.

Case 820. A 39-year-old woman presented in a clinic with symptoms of generalized weakness. She had been treated at the clinic for at least three days for nausea and right upper quadrant discomfort. The patient was referred to the ED where laboratory studies showed her to be in hepatic failure. She had been treated with isoniazid for a positive tuberculin test without evidence of active tuberculosis, and this was felt to be the cause of her liver failure. A urine drug screen was negative and her acetaminophen level was less than 2.0 μg/mL. The patient was followed for five days in the ICU before being transferred to a liver transplant center with deteriorating liver function. The patient became increasingly encephalopathic with increasing intracranial pressures. She also became more coagulopathic and began to go into renal failure. A liver became available and she was transplanted, although she experienced increased intracranial pressure during the surgery. A head CT revealed brain stem herniation and she died.

Case 874. A 42-year-old woman was admitted to the ICU for a spontaneous subarachnoid hemorrhage. The time between
the incident and her discovery was uncertain. She was intubated in the ED because of hypoxia and presumed aspiration. The patient developed several episodes of supraventricular tachycardia with hypotension unresponsive to adenosine. A diltiazem infusion (125 mg/250 mL solution) was ordered to infuse at 5 mg/hour. Phenytoin had also been ordered to infuse at 180 μg/min. The nurse administered the diltiazem at the rate set for the phenytoin. The patient received approximately 100 mL of the diltiazem solution, for a total dose of 75 mg in 20 minutes, before the error was discovered. The phenytoin was not administered. The patient developed significant cardiovascular collapse resulting in asystole and death.

**Case 914.** A 2-year-old boy was found by his mother with her bottle of sustained release nifedipine (90 mg) tablets. The child was asymptomatic and by history could have ingested up to five tablets. On arrival in the ED he was given 20 g of activated charcoal and an IV was started. Vital signs were all unremarkable, as were initial laboratory values except for potassium of 2.8 mEq/L and a glucose of 253 mg/dL. He was admitted to the PICU of a tertiary care hospital. On admission his vital signs were: heart rate, 150–170 beats/min; blood pressure, 90–130/30–90 mm Hg; respiratory rate, 36–44 breaths/min; and oxygen saturation 97–100% on room air. He remained clinically stable with a resting tachycardia, normal electrolytes and hyperglycemia. The following morning his heart rate was 170 beats/min; and blood pressure, 93/41 mm Hg. His serum glucose was 201 mg/dL and his potassium had normalized to 3.4 mEq/L. That afternoon the patient suddenly developed bradycardia to the 50’s and rapidly deteriorated into ventricular fibrillation. Cardiopulmonary resuscitation was started. EKG showed asystole. Aggressive resuscitation, including pacing, was unsuccessful. He never regained any organized cardiac activity and was pronounced dead. An autopsy was performed. A liver nifedipine level was 1.1 mg/kg.

**Case 915.** A 64-year-old man, with a history of hypertension, took an unknown amount of his sustained release nifedipine in a suicide attempt. He presented in the ED complaining of dizziness with a blood pressure of 72/54 mm Hg and “sinus arrhythmias, PACs and PVCs” on EKG. He was given 1 liter of normal saline, resulting in a systolic blood pressure in the 90’s mm Hg. Two hours later, after a second liter of IV fluids, his systolic blood pressure was 90–100 mm Hg. Twelve hours later, after calcium gluconate, he was awake and alert, with a systolic blood pressure of 110 mm Hg, and a heart rate of 108 beats/min. Seven hours later his blood pressure was 105/66 mm Hg with a heart rate of 114 beats/min and unifocal PVCs on EKG. His potassium was 3.7 mmol/L, for which he received 40 mEq of potassium chloride. His BUN and creatinine were 40 mg/dL and 3.0 mg/dL, respectively. He was then transferred to a medical / psychiatric unit. It was learned on follow-up the next day that he had experienced a cardiac arrest the evening of his transfer, and could not be resuscitated.

**Case 956.** A 13-year-old girl presented with mild hepatic encephalopathy. Initial laboratory values were: AST, 10.068 U/L; ALT, 7,724 U/L; INR, 6.1; PTT, 43.9 sec; total bilirubin, 4.1 mg/dL; total CO2, 12 mEq/L; BUN, 47 mg/dL; creatinine, 4.1 mg/dL. An acetaminophen level was 74.6 μg/mL. The patient’s medical history included a remote renal transplant, for which she was medicated with mycophenolate and tacrolimus, and a recent URI for which she had been taking two different acetaminophen-containing products (acetaminophen/pseudoephedrine and acetaminophen) for the prior 5 days. She also had a history of CMV infection with periodic interval treatment, with the last episode being several months prior. It was estimated that she had been receiving 6–7 g of acetaminophen per day. The patient was begun on oral N-acetylcysteine and then switched to the IV preparation. She was placed on the national transplant list. Over the next 24 hours, the patient had progressive encephalopathy, declining renal function and output, and died before liver transplant could be accomplished.

**Case 958.** An 8-year-old girl with cerebral palsy was found dead in bed. Postmortem toxicology tests showed a blood chlorpheniramine concentration of 0.388 μg/mL and an ethanol level of 68 mg/dL. Medications available to her included an allergy syrup containing chlorpheniramine (2 mg/5 mL), phenytoin (10 mg/5 mL), and methscopolamine (0.625 mg/5 mL) and sodium valproate syrup. Further history revealed that the child had been brought home from the ED the night before, where she had been seen for a respiratory illness, and put to bed. She was found dead 7 hours later. An investigation continues.

**Case 960.** The poison center was called by the prosecutor’s office about a 2-month-old child originally thought to have suffocated, but who was found to have a pseudoephedrine level of 3.4 μg/mL in a postmortem blood sample. Further history showed that the child had supposedly received a dose of an infant decongestant/antihistamine product containing pseudoephedrine and dextromethorphan, as well as a dose of a senna containing laxative, before being put to bed. The child was found dead the next morning. The mother was taking ephedrine in order to stay awake during the day and had had 5 positive hair samples for methamphetamine. The inquest stated that the child’s death was a homicide caused by pseudoephedrine toxicity.

**Case 961.** A 61-year-old man received 140 mL of a contrast agent containing iopromide for an elective abdominal CT scan. Within 2 minutes of the IV administration, he felt hot. Within another minute, he became unresponsive and asystolic. Resuscitation attempts revealed laryngeal edema. CPR was unsuccessful.

**Case 963.** A 40-year-old woman, with a history of morbid obesity, gastric bypass and depression, ingested ferrous sulfate (iron) tablets (300 mg) in a suicide attempt. The time of ingestion was unknown. She presented in the ED with confusion, hematemesis and bloody diarrhea. She was hypotensive and
had an elevated glucose and white blood cell count. She was intubated and ventilated. Gastric lavage was attempted, but only fresh blood was recovered. She was immediately started on deferoxamine, but continued to have hematemesis and bloody diarrhea. A serum iron level was 16,289 μg/dL with a TIBC of 8,078 μg/dL, PT of >200 sec, PTT of >200 sec. and hematocrit of 24%. She continued on deferoxamine therapy and also received vitamin K, fresh frozen plasma, packed red blood cells and bicarbonate. She was started on vasopressors and large volumes of fluids for hypotension. Emergency gastrectomy was contemplated, but in view of her prior surgeries was deferred. Deferoxamine was discontinued after 18 hours when her serum iron level reached 304 μg/dL. Her renal function worsened and she died 30 hours after initial presentation.

Case 964. A 5-year-old boy was given 3 tablespoons of baking soda (sodium bicarbonate) to induce vomiting after he told his mother he had a sore throat and had a lozenge stuck in his throat. He vomited but complained of abdominal pain after the bicarbonate. He was taken to the ED where he was described as sedated. An ABG showed a pH of 7.53. Serum sodium was 168 mEq/L, and a total CO2 was 38 mmol/L. Vital signs were normal except for a mild tachycardia. Recommendations were made to give free water and/or dialyze the patient immediately. He never received dialysis and it is not clear what fluids were given. The patient was transferred to another hospital where a venous pH was 7.34 with a serum sodium of 159 mEq/L. The following day the patient was reported to be unresponsive with fixed and dilated pupils. His serum sodium was 163 mEq/L and he was thought to have diabetes insipidus and to have herniated. He was declared brain dead the following day after a flat line EEG and a cerebral blood flow study showing no flow.

Case 967. A 41-year-old man had been injecting 1 mL of dinoprostone, a veterinary prostaglandin analog, daily for three weeks, presumably as a body building agent. The patient apparently developed nausea, vomiting, and diarrhea the night before he presented. He presented in the ED with a markedly elevated CK level and fever to 108 °F. He was dialyzed, but developed tetany, seized and arrested. Attempts to resuscitate him failed.

Case 970. An 81-year-old woman presented in the ED after ingesting haloperidol, risperidone and benzotropine three hours earlier. On initial presentation, she was awake and alert with the following vital signs: blood pressure, 140/60 mm Hg; heart rate, 106 beats/min; temperature, 98 °F; and respiratory rate, 20 breaths/min. In the ED she received IV fluids, orogastric lavage, and activated charcoal with sorbitol. Her ECG was reported as normal. Serum acetaminophen concentration was 278 μg/mL. An oral loading dose of N-acetylcysteine was given before the poison center was contacted. IV N-acetylcysteine was recommended as the patient was becoming lethargic. On follow up it was learned that the patient had been given activated charcoal with sorbitol every four hours, for a total of 11 doses. She had also been given 6 doses of oral N-acetylcysteine by NG tube. The treating physician noted that her abdomen had become increasingly distended over the course of the day and she had had no bowel movements. She had been given two sodium phosphate enemas with little effect. The patient was also noted to be increasingly tachycardic and hypertensive. She was treated with 3 liters of intravenous fluids with no
resultant improvement in her heart rate. Her ECG showed a sinus tachycardia. The treating physician gave captopril and metoprolol for her blood pressure. The patient’s blood pressure transiently improved, however, she remained tachycardic. The patient’s mental and respiratory status deteriorated and she required intubation. On follow-up, the patient’s systolic blood pressure had decreased to 100 mm Hg. While suctioning the stomach, approximately 1 liter of activated charcoal was removed. An abdominal CT scan noted paralytic ileus and no perforation. Chest x-ray was read as ARDS. The patient was placed on a norepinephrine drip for a blood pressure of 90/40 mm Hg with heart rate of 136 beats/min. Despite maximal support, the patient died 3 days after presentation.

**Case 984.** A 5-year-old autistic boy went by medical crew into cardiac arrest following chelation therapy with calcium disodium EDTA in a physician office. During the procedure the mother noted that the child was limp. CPR was initiated and the child transported to the ED, where one or two IV bolus doses of calcium chloride were administered. After calcium chloride administration a blood level of calcium was 6.9 mg/dL. The child could be not resuscitated and was declared dead.

**Case 985.** A 45-year-old woman presented in the ED with abdominal pain. She was observed overnight but developed bright red blood per rectum prior to her planned discharge. She was admitted but later decompensated and was transferred to the ICU. There she had a PEA arrest and was resuscitated. She required vasopressors, antibiotics, and bicarbonate infusions for treatment. Colonoscopy demonstrated sloughing of the mucosa, consistent with ischemic colitis. Surgery was consulted. Due to her deteriorating condition, including DIC, aggressive treatment was withheld and she was given comfort measures only. She died later that day. Further review of her medical history revealed that she had juvenile rheumatoid arthritis and migraines. Her medication list included codeine, NSAIDS, and three triptan drugs (eletriptan, frovatriptan and almotriptan), all prescribed in the last 5 weeks, by three different prescribers.

**Case 987.** A 49-year-old woman with a history of depression was suspected of having ingested sumatriptan and buproprion 5 hours previously in a suicidal attempt. She was brought to the ED by her husband. In the ED she was lethargic, tachycardic, tachypneic, vomiting and had pin point pupils. Salicylate, acetaminophen and ethanol analyses were negative. Naloxone was administered without any response. She received activated charcoal and was admitted to the ICU. Five hours later she was comatose, bradycardic and had unequal pupils. She was intubated and ventilated. A head CT scan showed extensive bilateral thalamic infarctions. She developed fever, hypertension, and tachycardia. She was declared dead and became an organ donor.

**Case 988.** A 3-year-old girl with a history of severe non-ambulatory cerebral palsy arrived to the ED with a core temp of 107.6 °F, tachycardic and tachypneic. For the previous 2 weeks, the patient had suffered from an upper respiratory infection with mild fevers. Medications included lansoprazole, acetaminophen, laxatives, multi-vitamins, and baclofen by pump. Laboratory values were: sodium, 155 mEq/L; potassium, 3.9 mEq/L; and CK, 12,000 U/L. The patient died in the ED. It was felt by the ED physician and the poison center that death was most likely due to a faulty baclofen pump and baclofen withdrawal. A baclofen level was requested but never received.

**Case 1,010.** A 12-month-old girl is thought to have ingested an unknown amount of tizanidine, hydrocodone with acetaminophen, tramadol and mirtazapine, while at a babysitter’s residence. The child was reportedly a “crack baby.” When EMS arrived the child was comatose with periods of apnea. During transport the child experienced a seizure and full cardiopulmonary arrest. Resuscitation efforts by EMS and the ED staff were unsuccessful. An autopsy was done but postmortem toxicology analyses were not available to the poison center.

**Case 1,026.** A 2-month-old boy was prescribed chloral hydrate (unknown dose) for colic. The mother gave the child 4 doses over an unknown amount of time. The child fell asleep and was later found not breathing. Resuscitation efforts were unsuccessful.

**Case 1,034.** A 5-year-old boy was found unresponsive at home and transported by EMS to the ED where he was intubated. Evidence of vomitus in the airway suggested anoxic injury. He was tachycardic and showed some anticholinergic effects. Blood glucose of 32 mg/dL was corrected without effect. Naloxone was given with no response. The mother eventually thought that 3 clozapine and 1 thioridazine were missing, but acetaminophen/hydrocodone and sertraline were also present in the home. The patient had not been seen for 15–30 min before the incident. Questionable seizure activity was seen in the emergency department and treated with midazolam. He remained completely unresponsive on the ventilator. A head CT showed global anoxic injury. A urine drug screen and serum acetaminophen and salicylate levels were all negative. An EEG showed seizure activity and he was loaded with phe- nobarbitol, phenytoin and placed on a pentobarbital infusion. Dopamine and epinephrine were needed to maintain a systolic blood pressure at 100 mm Hg. On the third hospital day the pentobarbital, epinephrine and dopamine were weaned off. His neurologic status never improved and a brain flow study on day 9 showing no perfusion. An EEG on day 10 showed no activity. On day 11 he was pronounced dead.

**Case 1,052.** A 15-year-old girl presented in the ED claiming to have ingested 2 quetiapine tablets of unknown strength. Her initial heart rate was 150 beats/min, but decreased to 115 beats/ min during her ED stay. She was transferred to an inpatient psychiatry unit. No ECG was obtained. She was observed for ~6 hours. She was returned to the ED within six hours with fixed and dilated pupils and seizing. CPR was unsuccessful. The poison center was informed about the case at this time.

**Case 1,094.** A 54-year-old-man with no known past medical history was found in cardiac arrest. The patient reportedly
Gastric contents showed a cocaine level of 3,522 μg/mL. She received fluid resuscitation and cool treatment, 108 °F; blood pressure, 50/palpable mm Hg; and heart and her pupils were dilated. Initial vital signs were: temperature ephedrine level was 1.2 μg/mL. An autopsy revealed pill fragments where her vital signs were: rectal temperature, 103.1 °F; blood pressure, 50/palpable mm Hg; and heart rate, 160 beats/min. She received fluid resuscitation and cooling procedures with normalization of her temperature and blood pressure. About 12 hours after admission to the ICU, she became hypotensive, requiring multiple vasopressors, and developed DIC. She became anuric and received hemodialysis. About 12 hours after admission from intractable hypotension and DIC. An autopsy revealed pill fragments in the stomach and cerebral and pulmonary edema. A postmortem ephedrine level was 1.2 μg/mL.

Case 1,163. A 31-year-old woman presented in the ED after taking an unknown amount of ephedrine and ephedra. She had seizures en route to the hospital. In the ED she was comatose and her pupils were dilated. Initial vital signs were: temperature, 108 °F; blood pressure, 50/palpable mm Hg; and heart rate, 160 beats/min. She received fluid resuscitation and was transported to the ED, where he was pronounced dead. Postmortem toxicology showed a cocaine blood level of 16.943 μg/mL with a benzoylecgonine level of 9.338 μg/mL. THC was also present. Gastric contents showed a cocaine level of 3.522 μg/mL.

Case 1,208. A 25-year-old man with no known medical history, except recreational use of methamphetamine, was found by her father unresponsive. He called EMS after observing her for 5 hours, hoping she would awaken on her own. EMS intubated her on arrival and transported her to the ED where her vital signs were: rectal temperature, 103.1 °F; blood pressure, 98/71 mm Hg; heart rate, 178 beats/min; and respiratory rate, 12 breaths/min while maintained on a ventilator. The patient had constant twitching on the right side, and would flex the left side only with significant pain stimulus. Her pupils were 4mm and reactive or the right, and 3mm and non-reactive on the left. She received IV fluids and intravenous boluses of lorazepam for tachycardia and hyperthermia. A CT scan of the head revealed dulling of the grey-white margin in the right hemisphere. An MRI the following morning revealed occlusion of the right carotid artery resulting in wide-spread ischemic injury to the right cerebral hemisphere. The patient was declared brain-dead and withdrawn from life support 2 days after presentation.

Case 1,225. A 24-year-old man was brought to the ED following a seizure witnessed by his mother. He had been increasingly lethargic over the previous 24–48 hours. Paramedics transporting the patient told ED staff that they suspected an overdose, and that there had been access to aripiprazole, trazodone, lithium and sertraline. The patient was also a poly-drug abuser who was said to favor heroin, cocaine, methamphetamine, mushrooms and marijuana. In the ED vital signs were: temperature, 108 °F; heart rate, 150 beats/min; and blood pressure, 70/30 mm Hg. He progressively experienced more and more profound shock and died less than 2 hours after arrival. An autopsy ascribed death to “hypertrophic heart disease”, and included methamphetamine intake as a “condition contributing but not related to the immediate cause of death”. The autopsy report makes no mention of trazodone or aripiprazole, but documented drug levels (heart) of lithium, 1.0 mEq/L; methamphetamine, 0.45 μg/mL; amphetamine, 0.13 μg/mL; sertraline, 0.26 μg/mL; and norsertraline, 0.38 μg/mL. The poison center feels that the patient died of drug induced hyperthermia, possibly the serotonin syndrome.

Case 1,235. A 54-year-old woman was found at home unresponsive and in cardiac arrest by EMS. She had reportedly been drinking an iodine-containing antiseptic, bleach (hypochlorite) and fabric softener throughout the previous day for unknown reasons. She had a history of “drinking iodine for years.” CPR was begun by EMS and continued in the ED but without success.

Case 1,236. An 84-year-old woman with a history of schizophrenia, confusion, and hypertension was found by her husband agitated and smelling of wintergreen. Her husband had been using oil of wintergreen (methyl salicylate) as a rub. On arrival in the ED she was very agitated and did not respond to questions. Vital signs were: heart rate, 120 beats/ min; blood pressure, 160/70 mm Hg; respiratory rate, 40 breaths/min; temperature, 99.6 °F. Laboratory studies revealed a severe but compensated metabolic acidosis with a pH of 7.4. A salicylate level was 124 mg/dL. She was given bicarbonate, charcoal and lorazepam and sent for a CT scan. When she returned to the ED from CT scan she was unresponsive and “mouth breathing with noticable retractions.” At that time her respiratory rate was 44 breaths/min with a blood pressure of 205/116 mm Hg. She was intubated 4 hours after arriving in the ED and received a neuro-muscular blocker. Post intubation she became bradycardic. She was given atropine and became asystolic. Resuscitation efforts were unsuccessful. A postmortem salicylate level was 94 mg/dL.