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2010 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS): 28th Annual Report

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Abstract

Background: This is the 28th Annual Report of the American Association of Poison Control Centers' (AAPCC) National Poison Data System (NPDS). All US poison centers upload case data automatically with a median time interval of 19.0 [11.9, 40.6] (median [25%, 75%]) minutes, creating a near real-time national exposure and information database and surveillance system.

Methodology: We analyzed the case data tabulating specific indices from NPDS. The methodology was similar to that of previous years. Where changes were introduced, the differences are identified. Poison center cases with medical outcomes of death were evaluated by a team of 33 medical and clinical toxicologist reviewers using an ordinal scale of 1 (Undoubtedly responsible)–6 (Unknown) to determine Relative Contribution to Fatality (RCF) of the exposure to the death.

Results: In 2010, 3,952,772 closed encounters were logged by NPDS: 2,384,825, human exposures, 94,823 animal exposures, 1,466,253 information calls, 6537 human confirmed nonexposures, and 334 animal confirmed nonexposures. Total encounters showed a 7.7% decline from 2009 while health care facility calls *increased* by 2.7%. Human exposures with more serious outcomes (minor, moderate, major or death) *increased* 4.5% while those with less serious outcomes (all other medical outcome categories) decreased 5.9%. All information calls decreased 12.6% and health care facility (HCF) information calls decreased 13.6%, Drug ID calls decreased 10.9%, and human exposures decreased 3.8%. The top 5 substance classes most frequently involved in all human exposures were analgesics (11.5%), cosmetics/personal care products (7.7%), household cleaning substances (7.3%), sedatives/hypnotics/antipsychotics (6.0%), and foreign bodies/toys/miscellaneous (4.2%). Analgesic exposures as a class increased the most rapidly by 32.8% over the last decade. The top five most common exposures in children age 5 years or less were cosmetics/personal care products (13.2%), analgesics (9.4%), household cleaning substances (9.2%), foreign bodies/toys/miscellaneous (7.2%), and topical preparations (6.8%). THC homolog and designer amphetamine ("Bath Salts") exposures were identified as emerging public health threats. Drug identification requests comprised 64.3% of all information calls. NPDS documented 1730 human exposures resulting in death with 1146 human fatalities judged related with an RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory.

Conclusions: These data support the continued value of poison center expertise and need for specialized medical toxicology information to manage the more severe exposures, despite a decrease in calls involving less severe exposures. Unintentional and intentional exposures continue to be a significant cause of morbidity and mortality in the US. The near real-time, always current status of NPDS represents a national public health resource to collect and monitor US exposure cases and information calls. The continuing mission of NPDS is to provide a nationwide infrastructure for public health surveillance for all types of exposures, public health event identification, resilience response and situational awareness tracking. NPDS is a model system for the nation and global public health.

WARNING: Comparison of exposure or outcome data from previous AAPCC Annual Reports is problematic. In particular, the identification of fatalities (attribution of a death to the exposure) differed from pre-2006 Annual Reports (see Fatality Case Review—Methods). Poison center death cases are described as all cases resulting in death and those determined to be exposure-related fatalities. Likewise, Table 22 (Exposure Cases by Generic Category) since year 2006 restricts the breakdown including deaths to single-substance cases to improve precision and avoid misinterpretation.

Introduction

This is the 28th Annual Report of the American Association of Poison Control Centers' (AAPCC; http://www.aapcc.org) National Poison Data System (NPDS).[1] On 1 January 2010, sixty regional Poison Centers (PCs) serving the entire population of the 50 United States, American Samoa, District of Columbia, Federated States of Micronesia, Guam, Puerto Rico, and the US Virgin Islands submitted information and exposure case data collected during the course of providing telephonic patient tailored exposure management and poison information. On 17 December 2010, the Western New York Poison Center (Buffalo) serving Western New York ceased operations. The Ruth A. Lawrence Poison Center (Rochester) closed on 30 December 2010. The Long Island Regional Poison Control Center (Mineola) ceased operations on 31 December 2010. New York State is now served by two poison centers based in New York City and Syracuse. During this transition national coverage remained seamless.

NPDS is the data warehouse for the nation's poison centers. Poison Centers (PCs) place emphasis on exposure management, accurate data collection and coding, and the continuing need for poison related public and professional education. The PC's health care professionals are available free of charge to all, 24-hours a day, every day of the year. PCs respond to questions from the public, health care professionals, and public health agencies. The continuous staff dedication at the regional PCs is manifest as the number of exposure and information call encounters exceeds 3.9 million annually. PC encounters either involve an exposed human or animal (EXPOSURE CALL) or a request for information (INFORMATION CALL) with no exposed person or animal.

What's New in NPDS and the Annual Report

Several enhancements were made to the tables and figures for this report. Continuing goals of the writing team have been to remove inconsistencies, improve the reader's ability to clearly understand the data, and provide additional data where appropriate. Two new tables have been added to this year's report: Table 3B Population-Adjusted Exposures by Age Groups and Table 17G Substance Categories Most Frequently Involved in Pregnant Exposures (Top 25).

This year, the AAPCC Fatality Review team did not review death (indirect report) cases. Death (indirect report) cases are reports identified through other sources (news feeds, medical examiner data or other) about which no inquiry to the PC was made. In previous years, both death and death (indirect report) cases were reviewed and included in the

tables. This year, all the tables related to fatalities contain only death cases with an AAPCC Relative Contribution of Fatality (RCF) of 1, 2,or 3, except Tables 11, 12, 19A, 19B, and 21 which also contain death (indirect report) cases—see list below:

Table	Fatalities Included	RCF	Number of Deaths
4	Death only	1,2,3	1,146
5	Death only	1,2,3	1,146
8	Death only	1,2,3	1,146
9	Death only	1,2,3	1,146
11	Death and Death (indirect report)	All	1,730
12	Death and Death (indirect report)	All	1,730
17E	Death and Death (indirect report)	All	1,730
18	Death only	1,2,3	1,366
19A	Death and Death (indirect report)	All	1,730
19B	Death and Death (indirect report)	All	1,730
21	Death and Death (indirect report)	1,2,3	1,366
22	Death and Death (indirect report) - Single substance deaths only	All	764

Enhancements were added to the NPDS Fatality module to aid the fatality team in performing their review. The assignment of the Annual Report ID for the fatality cases included in Table 21 has now been automated. This will allow the cases in Table 21 to be easily identified when responding to Annual Report questions or comments.

Throughout the year the AAPCC Micromedex Joint Coding Group reviews the Generic Codes and responds to questions and requests for new generic codes. The group consists of AAPCC members and editorial and lexicon staff from Micromedex Poisindex® (Micromedex Healthcare Series [Internet database]. Greenwood Village, CO: Thomson Reuters [Healthcare] Inc.). New Product Codes and AAPCC Generic Codes were added to NPDS to address emerging products. In 2010, new generic codes were added for the following six product classes:

1. Electronic Cigarettes
2. Energy Drinks
3. Hand sanitizers
4. Opioids
5. Tetrahydrocannabinol (THC) Pharmaceuticals
6. Tetrahydrocannabinol (THC) Homologs

At the time of this report, there were 965 active and 12 obsolete generic codes. The active codes are divided into Non-Pharmaceutical (541) and Pharmaceutical (424) groups. These two groups are further divided into Major (67) and Minor (167) categories. New products associated with these classes were also added by Micromedex. Addition of these generic codes provides enhanced report granularity as reflected in Table 22. Because the new codes were added at different times during the year, the numbers in Table 22 may not accurately reflect all of the cases in these categories, and for completeness certain categories require customized data retrieval until these categories have been in place for a minimum of a full year or more (2011 forward).

The NPDS Application

In 2010, numerous enhancements were introduced in the NPDS web-based application. Many of these focused on enhancing enterprise reports and surveillance functions. One hundred sixty-nine (169) enterprise reports now return multi-year results. The Case Log reports were expanded to support any combination of 24 separate search parameters and nine (9) different result formats. NPDS Case Log reports now support a variety of outputs including case line listing, daily and monthly counts, time series charts, and US maps. Case Log Counts Reports were added that stratify the results based on user defined classifications. To simplify product selection for reports, a new product selection function was added that displays products associated with a specific AAPCC Generic Code. Finally, a new National Case Log report was added that allows Regional Poison Centers to use the power of the Case Log (Generic Code) report to execute a national case listing without geographic or case identifiers.

New surveillance functions were added to support information call and animal call volume surveillance. To aid the AAPCC Surveillance Team anomaly review, a 'Pending' Status indicator was added for all anomalies to allow users to identify anomalies that are in the process of being analyzed. In addition, a new Case Classification parameter was added to the Case Based anomalies to allow users to classify the anomaly.

To provide centers with more information on public health events, a Special Projects report was added to the NPDS enterprise reporting system. This report provides geocentric reporting of AAPCC defined products for real time event monitoring. For example, the NPDS report was utilized by regional poison centers to access national cases related to the Gulf of Mexico Oil spill in real-time.

NPDS aggregate and case detail web services operate continuously, allowing external systems or viewers to analyze NPDS data in ways not otherwise possible in the NPDS application. The aggregate web service provides total call volume, human exposure call volume, or clinical effects counts allowing an external system such as RODS (Realtime Outbreak and Disease Surveillance, University of Pittsburgh, Department of Biomedical Informatics) to create time-series or GIS displays. Unique to NPDS, the aggregate case count web service is not only accessible by external computer systems but also directly by system users to create their own time series without the need for external system software. Two state health departments utilize the case detail web service to analyze data from their PCs. Four state health departments access the aggregate count web service for data. The web services allow NPDS data to be provisioned in a federated manner where the data is always current in NPDS and can be readily accessed as needed without the need for costly cloning and warehousing.[2]

Limitations and Plans

As outlined above, the encounters (exposure reports and information questions) which comprise NPDS are collected from spontaneous, self-reported calls made to US PCs. Exposures

in NPDS comprise a portion of the total number of incidents that occurred. These reflect the limitations of this type of passive reporting system (see DISCLAIMER).

Most of the 390,000 proprietary and non-proprietary drugs, chemicals, and biological agents including food poisoning agents in the NPDS products data base are classified by their primary active ingredient into one of 965 AAPCC generic codes. Some multiple ingredient products are coded to multiple product generic codes (e.g., acetaminophen with hydrocodone). Table 22 and other tables reporting information by generic category are organized by this system. Thus our current review and reporting methods do not necessarily distinguish between the individual components of a combination product.

Nonetheless, the scope and immediacy of these data have much to offer. In particular, the 28-years history offers a unique opportunity to assess the long term (secular) trends in exposures and information calls.

There are a number of plans to improve the data system and reporting for 2010 and beyond including:

- Enhancements to NPDS real-time geographic information system (GIS) with more data display options for appropriate data analyses;
- Enhancements to case-based surveillance systems;
- Continued improvements in data quality edits;
- Implement security paradigm enhancements to support specific product access for reports and surveillance;
- Enterprise report enhancements;
- New auto-upload requirements and improved solution;
- Lexicon based analysis of the current generic code system to better meet current exposure tracking and surveillance needs;
- Review and analysis of NPDS clinical effect coding terminology.

These and other initiatives are under continuous review by the AAPCC Board, NPDS Steering Committee, and CDC.

Methods

Characterization of Participating Poison Centers and Population Served

Sixty participating centers submitted data to AAPCC through 17 December 2010, 59 participating centers submitted data to AAPCC through 30 December 2010, 58 participating centers submitted data to AAPCC through 31 December 2010, with the total center count decreasing to 57 for the remainder of 2010. Fifty-seven centers (95%) were accredited by AAPCC as of 1 July 2010. The entire population of the 50 states, American Samoa, the District of Columbia, Federated States of Micronesia, Guam, Puerto Rico, and the US Virgin Islands was served by the US PC network in 2010.[3,4]

The average number of human exposure cases managed per day by all US PCs was 6,534. Similar to other years, higher volumes were observed in the warmer months, with a mean of 6,950 cases per day in June compared with 6,305 per day in January. On average, US PCs received a call about an actual human exposure every 13.2 sec.

Call Management – Specialized Poison Exposure Emergency Providers

Most PC operations management, 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 physician medical toxicologists. At some PCs, the Managing and Medical Director positions are held by the same person.

Calls received at US PCs are managed by healthcare professionals who have received specialized training in toxicology and managing exposure emergencies. These providers include medical and clinical toxicologists, registered nurses, doctors of pharmacy, pharmacists, chemists, hazardous materials specialists, and epidemiologists. Specialists in Poison Information (SPIs) are primarily registered nurses, PharmDs, and pharmacists. They work under the supervision of a Certified Specialist in Poison Information (CSPI). SPIs must log a minimum of 2,000 calls over a 12-month period to become eligible to take the CSPI examination for certification in poison information. Poison Information Providers (PIPs) are allied healthcare professionals. They manage information-type and low acuity (non-hospital) calls and work under the supervision of a CSPI. Of note is the fact that no nursing or pharmacy school offers a toxicology curriculum designed for PC work and SPIs must be trained in programs offered by their respective PC. Centers are accredited by the AAPCC meeting strict standards and must be reaccredited every 5 years.

NPDS – Near Real-time Data Capture

Launched on 12 April 2006, NPDS is the data repository for all of the US regional PCs. In 2010, all 60 of the 60 US PCs uploaded case data automatically to NPDS through 17 December 2010. The center count decreased to 59 as of 17 December 2010, to 58 as of 30 December 2010 and to 57 as of 31 December 2010. All centers submitted data in near real-time making NPDS one of the few operational systems of its kind. PC staff record calls contemporaneously in 1 of 4 case management systems. Each center uploads case data periodically as it is entered. The time to upload data for all PCs is 19.9 [9.7, 58.7] (median [25%, 75%]) minutes creating a real-time national exposure database and surveillance system.

The web-based NPDS software facilitates detection, analysis, and reporting of NPDS surveillance anomalies. System software offers a myriad of surveillance uses allowing AAPCC, its member centers and public health agencies to utilize NPDS US exposure data. Users are able to access local and regional data for their own areas and view national aggregate data. The application allows for increased "drill-down" capability and mapping via a geographic information system (GIS). Custom surveillance definitions are available along with ad hoc reporting tools. Information in the NPDS

database is dynamic. Each year the database is locked prior to extraction of annual report data to prevent inadvertent changes and ensure consistent, reproducible reports. The 2010 database was locked on 9 October 2011 at 0930 hr EDT.

Annual Report Case Inclusion Criteria

The information in this report reflects only those cases that are not duplicates and classified by the regional PC as CLOSED. A case is closed when the PC has determined that no further follow-up/recommendations are required or no further information is available. Exposure cases are followed to obtain the most precise medical outcome possible. Depending on the case specifics, most calls are "closed" within the first hours of the initial call. Some calls regarding complex hospitalized patients or cases resulting in death may remain open for weeks or months while data continues to be collected. Follow-up calls provide a proven mechanism for monitoring the appropriateness of management recommendations, augmenting patient guidelines, and providing poison prevention education, enabling continual updates of case information as well as obtaining final/known medical outcome status to make the data collected as accurate and complete as possible.

Statistical Methods

All tables except Tables 3B and 17B were generated directly by the NPDS web-based application and can thus be reproduced by each center. The figures and statistics in Tables 3B and 17B were created using SAS JMP version 9.0.0 (SAS Institute, Cary, NC) on summary counts generated by the NPDS web-based application.

NPDS Surveillance

As previously noted, all of the active US PCs upload case data automatically to NPDS. This unique near real-time upload is the foundation of the NPDS surveillance system. This makes possible both spatial and temporal case volume and case based surveillance. NPDS software allows creation of volume and case based definitions. Definitions can be applied to national, regional, state, or ZIP code coverage areas. Geocentric definitions can also be created. This functionality is available not only to the AAPCC surveillance team, but to every regional PC. PCs also have the ability to share NPDS real-time surveillance technology with external organizations such as their state and local health departments or other regulatory agencies. Another NPDS feature is the ability to generate system alerts on adverse drug events and other products of public health interest like contaminated food or product recalls. NPDS can thus provide real-time adverse event monitoring and surveillance for resilience response and situational awareness.

Surveillance definitions can be created to monitor a variety of volume parameters, any desired substance or commercial product in the Micromedex Poisindex products database. The database contains over 390,000 entries. Surveillance definitions may be constructed using volume or case based definitions with a variety of mathematical options and historical baseline periods from 1 to 11 years. NPDS surveillance tools include the following:

- Volume Alerts Surveillance Definitions
- Total Call Volume
- Human Exposure Call Volume
- Animal Exposure Call Volume
- Information Call Volume
- Clinical Effects Volume (signs and symptoms, or laboratory abnormalities)
- Case Based Surveillance Definitions utilizing various NPDS data fields linked in Boolean expressions
  - Substance
  - Clinical Effects
  - Species
  - Medical Outcome and others

Incoming data is monitored continuously and anomalous signals generate an automated email alert to the AAPCC's surveillance team or designated regional PC or public health agency. These anomaly alerts are reviewed daily by the AAPCC surveillance team and/or the regional PC that created the surveillance definition. When reports of potential public health significance are detected, additional information is obtained via the NPDS surveillance correspondence system or phone as appropriate from reporting PCs. The regional PC then alerts their respective state or local health departments. Public health issues are brought to the attention of the Health Studies Branch, Division of Environmental Hazards and Health Effects, National Center for Environmental Health, Centers for Disease Control and Prevention (CDC). This unique near real-time tracking ability is a unique feature offered by NPDS and the regional PCs.

AAPCC Surveillance Team clinical and medical toxicologists review surveillance definitions on a regular basis to fine-tune the queries. CDC, as well as State and local health departments with NPDS access as granted by their respective regional PCs, also have the ability to create surveillance definitions for routine surveillance tasks or to respond to emerging public health events.

Fatality Case Review and Abstract Selection

NPDS fatality cases can be recorded as DEATH or DEATH (INDIRECT REPORT). Medical outcome of death is by direct report. Death (indirect reports) are deaths that the PC acquired from medical examiners or media, but did not manage nor answer any questions related specifically to that death.

Although PCs may report death as an outcome, the death may not be the direct result of the exposure. We define exposure-related fatality as a death judged by the AAPCC Fatality Review Team to be at least contributory to the exposure. The definitions used for the Relative Contribution to Fatality (RCF) classification are defined in Appendix B and the methods to select abstracts for publications is described in Appendix C. For details of the AAPCC fatality review process, see the 2008 annual report.[1]

Pediatric Fatality Case Review

A focused Pediatric Fatality Review team, comprised of 3 pediatric toxicologists, was assembled this year to evaluate cases in patients under 18 years of age. The panel reviewed the documentation of all such cases, with specific focus on the conditions behind the poisoning exposure and on finding commonality which might inform efforts at prevention. Seventy-one cases were reviewed and found to have a bimodal age distribution. Exposures causing death in children ≤ age 5 years were mostly coded as "Unintentional-General" while those in ages over 12 years were mostly "Intentional". Often the Reason Code did not capture the complexities of the case. For example, there were few mentions of details such as the involvement of law enforcement or child protective services. While there were some complete and informative reports, in many narratives the circumstances which preceded the exposure thought responsible for the death was unclear or absent. In response to these findings, the pediatric fatality review team will develop Pediatric Narrative Guidelines for the upcoming year, with specific attention to the root cause of these cases. As a result, poison centers will be requested to implement guidelines recommending the most in-depth "causality" investigation possible.

Results

In 2010, the participating PCs logged 3,952,772 total encounters including 2,384,825 closed human exposure cases (Table 1A), 94,823 animal exposures (Table 1B), 1,466,253 information calls (Table 1C), 6,537 human confirmed non-exposures, and 334 animal confirmed non-exposures. An additional 449 calls were still open at the time of database lock. The cumulative AAPCC database now contains nearly 51 million human exposure case records (Table 1A). A total of 13,357,650 information calls have been logged by NPDS since the year 2001.

Figure 1 shows the human exposures, information calls and animal exposures by day since 2001. Second order (quadratic) least squares regression for 2000–2010 has shown a statistically significant departure from linearity (declining rate of calls since mid-2007) for Human Exposure Calls. Information Calls are declining more rapidly than the quadratic regression this year, and Animal Exposure Calls have likewise been declining since mid-2005.

A hallmark of PC case management is the use of follow-up calls to monitor case progress and medical outcome. US PCs made 2,841,477 follow-up calls in 2010. Follow-up calls were done in 46.0% of human exposure cases. One follow-up call was made in 22.4% of human exposure cases, and multiple follow-up calls (range 2–666) were placed in 23.6% of cases.

Information Calls to Poison Centers

Data from 1,466,253 information calls to PCs in 2010 (Table 1C) was transmitted to NPDS, including calls in optional reporting categories such as prevention/safety/education (31,656), administrative (23,546) and caller referral (65,652).

Table 1A. AAPCC Population Served and Reported Exposures (1983–2010)

Year	No. of participating centers	Population served (in millions)	Human exposures	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
2006	61	299.4	2,403,539	8.0
2007	61	305.6	2,482,041	8.1
2008	61	308.5[b]	2,491,049	8.1
2009	60	310.9[b]	2,479,355	8.0
2010	60[a]	313.3[b]	2,384,825	7.6
Total			**50,935,385**	

[a]As of 1 July 2010 there were 60 Participating Centers.
[b]As of 1 July Mid Year US Census (50 United States, American Samoa, District of Columbia, Federated States of Micronesia, Guam, Puerto Rico, and the US Virgin Islands).[3,4]

Figure 2 shows that All Drug ID calls decreased dramatically in mid-2009, and again in late-2010 (no regression was fit to these data). Enforcement Drug ID Calls showed a declining rate of increase. The most frequent information call was for Drug ID, comprising 942,614 calls to PCs during the year. Of these, 566,543 (60.1%) were identified as drugs with known abuse potential; however, these cases were categorized based on the drug's abuse potential without knowledge of whether abuse was actually intended.

While the number of Drug Information calls decreased 9.4% from 2009 (239,943 calls) to 2010 (217,286), the Drug Information calls as a percentage of all information calls was 14.3% and 14.8%, respectively. Of these, the most common requests were in regards to therapeutic use and indications, followed by drug–drug interactions, questions about dosage and inquiries of adverse effects. Environmental inquiries comprised 1.6% of all information calls. Of these environmental inquiries, questions related to cleanup of mercury (thermometers and other) remained the most common followed by questions involving pesticides.

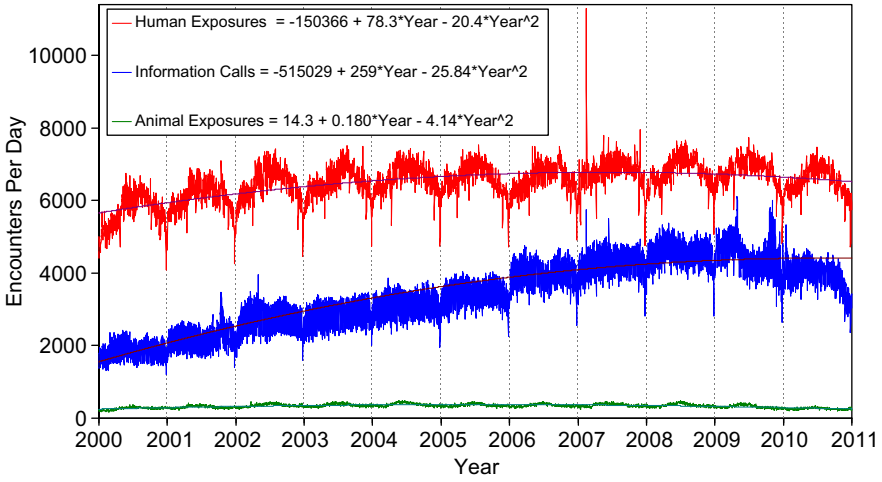


Fig. 1. Human Exposure Calls, Information Calls and Animal Exposure Calls by Day since 1 January 2000.

Black lines show least-squares second order regression – both linear and second order (quadratic) terms were statistically significant for each of the 3 regressions. (See colour version of this figure online).

Of all the information calls, poison information comprised 4.8% of the requests with inquiries involving general toxicity the most common followed by questions involving food preparation practices, plant toxicity, and safe use of household products.

Exposure Calls to Poison Centers

Figure 3 shows a graphic summary and analyses of Health Care Facility (HCF) Exposure and HCF Information calls. HCF Exposure Calls did not depart from linearity (continued to increase at a steady rate) while the rate of HCF Information Calls has been declining since early 2005. This linearly increasing use of the PCs for the more serious exposures (HCF calls) is important in the face of the declining growth of all exposure and information calls. The 2 May 2006, exposure data spike on the figure was the result of 602 children in a Midwest school reporting a noxious odor which caused anxiety, but resolved without sequelae.

Tables 22A (Nonpharmaceuticals) and 22B (Pharmaceuticals) provide summary demographic data on patient age, reason for exposure, medical outcome, and use of a health care facility for all 2,384,825 human exposure cases, presented by substance categories.

Table 1B. Non-Human Exposures by Animal Type

Animal	N	%
Dog	85,804	90.49
Cat	7,936	8.37
Horse	259	0.27
Bird	238	0.25
Rodent/lagomorph	185	0.20
Cow	70	0.07
Sheep/goat	64	0.07
Aquatic	30	0.03
Other	237	0.25
Total	**94,823**	**100.00**

Table 1C. Distribution of Information Calls

Information call type	N	% of Info. calls
Drug identification		
Public inquiry: Drug sometimes involved in abuse	462,128	31.52
Public inquiry: Drug not known to be abused	192,972	13.16
Public inquiry: Unknown abuse potential	5,416	0.37
Public inquiry: Unable to identify	86,201	5.88
HCP inquiry: Drug sometimes involved in abuse	6,819	0.47
HCP inquiry: Drug not known to be abused	12,317	0.84
HCP inquiry: Unknown abuse potential	458	0.03
HCP inquiry: Unable to identify	5,056	0.34
Law Enf. Inquiry: Drug sometimes involved in abuse	97,596	6.66
Law Enf. Inquiry: Drug not known to be abused	51,007	3.48
Law Enf. Inquiry: Unknown abuse potential	1,726	0.12
Law Enf. Inquiry: Unable to identify	14,121	0.96
Other drug ID	6,797	0.46
Subtotal	**942,614**	**64.29**
Drug information		
Adverse effects (no known exposure)	13,893	0.95
Brand/generic name clarifications	3,710	0.25
Calculations	213	0.01
Compatibility of parenteral medications	309	0.02
Compounding	617	0.04
Contraindications	1,824	0.12
Dietary supplement, herbal, and homeopathic	792	0.05
Dosage	13,506	0.92
Dosage form/formulation	2,865	0.20

(Continued)

Table 1C. *(Continued)*

Information call type	N	% of Info. calls
Drug use during breast-feeding	4,644	0.32
Drug-drug interactions	29,050	1.98
Drug-food interactions	1,659	0.11
Foreign drug	638	0.04
Generic substitution	1,108	0.08
Indications/therapeutic use	71,864	4.90
Medication administration	5,383	0.37
Medication availability	2,209	0.15
Medication disposal	4,907	0.33
Pharmacokinetics	2,615	0.18
Pharmacology	2,044	0.14
Regulatory	13,808	0.94
Stability/storage	3,446	0.24
Therapeutic drug monitoring	938	0.06
Other drug info	35,244	2.40
Subtotal	**217,286**	**14.82**
Environmental information		
Air quality	1,995	0.14
Carbon monoxide - no known patient(s)	847	0.06
Carbon monoxide alarm use	507	0.03
Chem/bioterrorism/weapons (suspected or confirmed)	22	0.00
Clarification of media reports of environmental contamination	26	0.00
Clarification of substances involved in a HAZMAT incident - no known victim(s)	104	0.01
General questions about contamination of air and/or soil	559	0.04
HAZMAT planning	150	0.01
Lead - no known patient(s)	671	0.05
Mercury thermometer cleanup	2,453	0.17
Mercury (excluding thermometers) cleanup	2,996	0.20
Notification of a HAZMAT incident - no known patient(s)	357	0.02
Pesticide application by a professional pest control operator	680	0.05
Pesticides (other)	3,017	0.21
Potential toxicity of chemicals in the environment	1,352	0.09
Radiation	70	0.00
Safe disposal of chemicals	1,740	0.12
Water purity/contamination	945	0.06
Other environmental	5,251	0.36
Subtotal	**23,742**	**1.62**
Medical information		
Dental questions	132	0.01
Diagnostic or treatment recommendations for diseases or conditions - non-toxicology	9,633	0.66
Disease prevention	742	0.05
Explanation of disease states	1,448	0.10
General first-aid	1,418	0.10
Interpretation of non-toxicology laboratory reports	185	0.01
Medical terminology questions	72	0.00
Rabies – no known patient(s)	373	0.03
Sunburn management	119	0.01
Other medical	17,502	1.19
Subtotal	**31,624**	**2.16**

(Continued)

Table 1C. *(Continued)*

Information call type	N	% of Info. calls
Occupational information		
Occupational treatment/first-aid guidelines - no known patient(s)	39	0.00
Information on chemicals in the workplace	150	0.01
MSDS interpretation	71	0.00
Occupational MSDS requests	1,359	0.09
Routine toxicity monitoring	30	0.00
Safe handling of workplace chemicals	117	0.01
Other occupational	216	0.01
Subtotal	**1,982**	**0.14**
Poison information		
Analytical toxicology	805	0.05
Carcinogenicity	94	0.01
Food poisoning - no known patient(s)	2,815	0.19
Food preparation/handling practices	7,374	0.50
General toxicity	31,765	2.17
Mutagenicity	46	0.00
Plant toxicity	4,105	0.28
Recalls of non-drug products (including food)	856	0.06
Safe use of household products	3,743	0.26
Toxicology information for legal use/litigation	213	0.01
Other poison	18,640	1.27
Subtotal	**70,456**	**4.81**
Prevention/Safety/Education		
Confirmation of poison center number	15,051	1.03
General (non-poison) injury prevention requests	677	0.05
Media requests	390	0.03
Poison prevention material requests	13,046	0.89
Poison prevention week date inquiries	59	0.00
Professional education presentation requests	407	0.03
Public education presentation requests	567	0.04
Other prevention	1,459	0.10
Subtotal	**31,656**	**2.16**
Teratogenicity information		
Teratogenicity	3,058	0.21
Subtotal	**3,058**	**0.21**
Other information		
Other	45,538	3.11
Subtotal	**45,538**	**3.11**
Substance Abuse		
Drug screen information	7,165	0.49
Effects of illicit substances – no known patient(s)	335	0.02
New trend information	386	0.03
Withdrawal from illicit substances - no known patient(s)	207	0.01
Other substance abuse	1,006	0.07
Subtotal	**9,099**	**0.62**
Administrative		
Expert witness requests	37	0.00

(Continued)

Table 1C. *(Continued)*

Information call type	N	% of Info. calls
Faculty activities	51	0.00
Funding	47	0.00
Personnel issues	462	0.03
Poison center record request	211	0.01
Product replacement/malfunction (issues intended for the manufacturer)	2,350	0.16
Scheduling of poison center rotations	143	0.01
Other administration	20,245	1.38
Subtotal	**23,546**	**1.61**
Caller Referred		
Immediate referral - animal poison center or veterinarian	16,083	1.10
Immediate referral - drug identification	15,704	1.07
Immediate referral - drug information	931	0.06
Immediate referral - health department	5,958	0.41
Immediate referral - medical advice line	1,117	0.08
Immediate referral - pediatric triage service	60	0.00
Immediate referral - pesticide hotline	319	0.02
Immediate referral - pharmacy	2,620	0.18
Immediate referral - poison center	3,550	0.24
Immediate referral - private physician	2,442	0.17
Immediate referral - psychiatric crisis line	167	0.01
Immediate referral - teratology information program	162	0.01
Other call referral	16,539	1.13
Subtotal	**65,652**	**4.48**
Total	**1,466,253**	**100.00**

Column 1: Name of the major, minor generic categories and their associated generic codes.

Column 2: *No. of Case Mentions* (all exposures) in grey shading and displays the number of times the specific generic code was reported in all human exposure cases. If a human exposure case has multiple instances of a specific generic code it is only counted once.

Column 3: *No. of Single Exposures*–this column was previously named "No. of 'Single Exposures' " and was renamed in the 2009 report for clarity. This column displays the number of human exposure cases that identified only one substance (one case, one substance).

The succeeding columns (Age, Reason, Treatment Site, and Outcome) show selected detail from these single-substance exposure cases. Death cases include both cases that have the outcome of Death or Death, (indirect report). These death cases are not limited by the relative contribution to fatality.

Tables 22A and 22B restrict the breakdown columns to single-substance cases. Prior to 2007, when multi-substance exposures were included, a relatively innocuous substance could be mentioned in a death column when, for example, the death was attributed to an antidepressant, opioid, or cyanide. This subtlety was not always appreciated by the user of this table. The restriction of the breakdowns to single-substance exposures should increase precision and reduce misrepresentation of the results in this unique by-substance table. Single substance cases reflect the majority (90%) of all exposures yet 41% of fatalities (Table 5).

Tables 22A and 22B tabulate 2,759,287 substance-exposures, of which 2,147,248 were single-substance exposures, including 1,125,336 (52.4%) nonpharmaceuticals and 1,021,909 (47.6%) pharmaceuticals. The remaining 4 exposure cases (3 single exposures cases) did not specify if the substance was pharmaceutical or nonpharmaceutical (invalid generic codes).

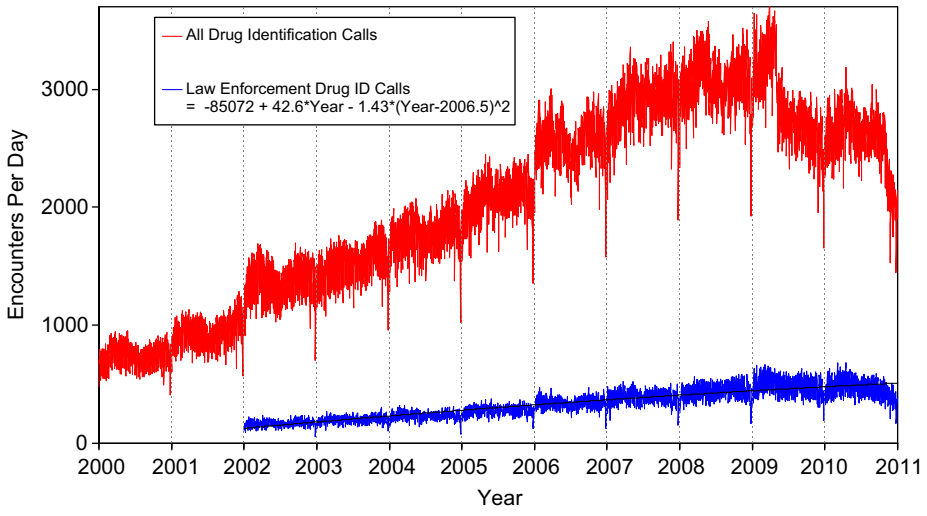


Fig. 2. All Drug Identification and Law Enforcement Drug Identification Calls by Day since 1 January 2000.

Black line shows least-squares second order regression – both linear and second order (quadratic) terms were statistically significant for the Law Enforcement Drug ID Calls. (See colour version of this figure online).

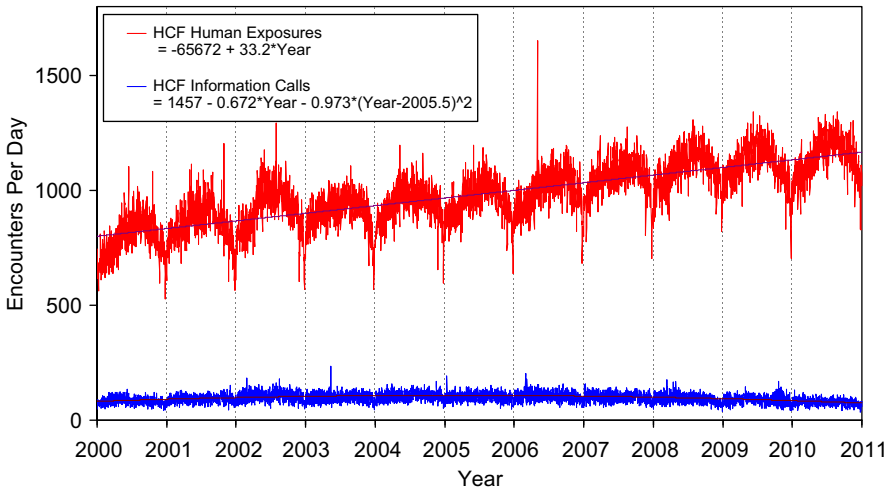


Fig. 3. Health Care Facility (HCF) Exposure Calls and HCF Information Calls by Day since 1 January 2000.

Black lines show least-squares first and second order regressions – linear regression for HCF Exposure Calls (second order term was not statistically significant) and second order regression for HCF Information Calls. All terms shown were statistically significant for each of the 2 regressions. (See colour version of this figure online).

In 17.6% of single-substance exposures that involved pharmaceutical substances, the reason for exposure was intentional, compared to only 3.5% when the exposure involved a nonpharmaceutical substance. Correspondingly, treatment in a health care facility was provided in a higher percentage of exposures that involved pharmaceutical substances (27.5%) compared with nonpharmaceutical substances (14.7%). Exposures to pharmaceuticals also had more severe outcomes. Of single-substance exposure-related fatal cases, 521 (0.05%) were pharmaceuticals compared with 242 (0.02%) nonpharmaceuticals.

Age and Gender Distributions

The age and gender distribution of human exposures is outlined in Table 3A. Children younger than 3 years of age were involved in 37.7% of exposures and children younger than 6 years accounted for approximately half of all human exposures (50.5%). A male predominance was found among cases involving children younger than 13 years, but this gender distribution was reversed in teenagers and adults, with females comprising the majority of reported exposures. Table 3B shows population-adjusted exposures for the same age groups.

Caller Site and Exposure Site

As shown in Table 2, of the 2,384,825 human exposures reported, 74.6% of calls originated from a residence (own or other) but 93.7% actually occurred at a residence (own or other). Another 17.5% of calls were made from a health care facility. Beyond residences, exposures occurred in the workplace in 1.6% of cases, schools (1.2%), health care facilities (0.3%), and restaurants or food services (0.2%).

Exposures in Pregnancy

Exposure during pregnancy occurred in 7,849 women (0.33% of all human exposures). Of those with known pregnancy duration (n = 7,193), 31.6% occurred in the first trimester, 37.5% in the second trimester, and 30.9% in the third trimester. Most (72.2%) were unintentional exposures and 20.4% were intentional exposures. Medical outcome was No effect in 16.9%, Minor effect in 20.3%, Moderate effect in 5.76%, and Major Effect in 0.542%. There was one death in a pregnant female in 2010.

Chronicity

Most human exposures, 2,136,572 (89.6%) were acute cases (single, repeated, or continuous exposure occurring over 8 hr or less) compared to 869 acute cases of 1730 fatalities (50.2%). Chronic exposures (continuous or repeated exposures occurring over >8 hr) comprised 2% (47,700) of all human exposures. Acute-on-chronic exposures (single exposure that was preceded by a continuous, repeated, or intermittent exposure occurring over a period greater than 8 hr) numbered 174,777 (7.3%).

Reason for Exposure

The reason category for most human exposures was unintentional (81.4%) with unintentional general (57.3%),

Table 2. Site of Call and Site of Exposure, Human Exposure Cases

	Site of caller		Site of exposure	
Site	N	%	N	%
Residence				
Own	1,736,145	72.80	2,172,987	91.12
Other	42,813	1.80	61,635	2.58
Workplace	28,429	1.19	37,707	1.58
Health care facility	418,412	17.54	7,381	0.31
School	10,901	0.46	29,568	1.24
Restaurant/food service	566	0.02	5,741	0.24
Public area	8,166	0.34	22,793	0.96
Other	131,067	5.50	26,020	1.09
Unknown	8,326	0.35	20,993	0.88

Table 3A. Age and Gender Distribution of Human Exposures

	Male		Female		Unknown gender		Total		Cumulative total	
Age (y)	N	% of age group total	N	% of age group total	N	% of age group total	N	% of total exposures	N	%
Children (< 20)										
< 1	61,837	51.96	56,779	47.71	401	0.34	119,017	4.99	119,017	4.99
1	196,460	51.83	182,070	48.03	539	0.14	379,069	15.90	498,086	20.89
2	209,515	52.29	190,541	47.55	629	0.16	400,685	16.80	898,771	37.69
3	96,889	54.90	79,231	44.90	358	0.20	176,478	7.40	1,075,249	45.09
4	46,270	55.91	36,300	43.86	187	0.23	82,757	3.47	1,158,006	48.56
5	26,281	56.46	20,098	43.18	167	0.36	46,546	1.95	1,204,552	50.51
Unknown ≤ 5	1,414	46.77	1,290	42.67	319	10.55	3,023	0.13	1,207,575	50.64
Child 6–12	83,114	57.95	59,525	41.50	785	0.55	143,424	6.01	1,350,999	56.65
Teen 13–19	72,506	46.43	83,122	53.23	536	0.34	156,164	6.55	1,507,163	63.20
Unknown Child	2,054	39.36	1,991	38.16	1,173	22.48	5,218	0.22	1,512,381	63.42
Subtotal	**796,340**	**52.65**	**710,947**	**47.01**	**5,094**	**0.34**	**1,512,381**	**63.42**	**1,512,381**	**63.42**
Adults (≥ 20)										
20–29	90,853	46.19	105,622	53.70	198	0.10	196,673	8.25	1,709,054	71.66
30–39	65,446	43.03	86,511	56.88	135	0.09	152,092	6.38	1,861,146	78.04
40–49	58,233	41.49	82,024	58.45	85	0.06	140,342	5.88	2,001,488	83.93
50–59	46,214	39.83	69,769	60.13	51	0.04	116,034	4.87	2,117,522	88.79
60–69	27,166	37.60	45,046	62.35	34	0.05	72,246	3.03	2,189,768	91.82
70–79	15,075	34.97	28,022	65.00	17	0.04	43,114	1.81	2,232,882	93.63
80–89	9,110	32.96	18,515	66.99	12	0.04	27,637	1.16	2,260,519	94.79
≥ 90	1,530	28.60	3,816	71.34	3	0.06	5,349	0.22	2,265,868	95.01
Unknown adult	41,761	39.59	61,333	58.14	2,401	2.28	105,495	4.42	2,371,363	99.44
Subtotal	**355,388**	**41.37**	**500,658**	**58.29**	**2,936**	**0.34**	**858,982**	**36.02**	**2,371,363**	**99.44**
Other										
Unknown age	4,718	35.05	5,954	44.23	2,790	20.73	13,462	0.56	2,384,825	100.00
Total	**1,156,446**	**48.49**	**1,217,559**	**51.05**	**10,820**	**0.45**	**2,384,825**	**100.00**	**2,384,825**	**100.00**

therapeutic error (11.3%) and unintentional misuse (5.4%) of all exposures (Table 6A).

Scenarios

Of the total 285,277 therapeutic errors, the most common scenarios for all ages included: inadvertent double-dosing (29.1%), wrong medication taken or give (14.7%), other incorrect dose (12.9%), doses given/taken too close together (9.5%), and inadvertent exposure to someone else's medication (9.0%). The types of therapeutic errors observed are different for each age group and are summarized in Table 6B.

Reason by Age

Intentional exposures accounted for 14.7% of human exposures. Suicidal intent was suspected in 9.2% of cases, intentional misuse in 2.5% and intentional abuse in 2.2%. Unintentional exposures outnumbered intentional exposures in all age groups with the exception of ages 13–19 years (Table 7). Intentional exposures were more frequently reported than unintentional exposures in patients aged 13–19 years. In contrast, of the 1,146 reported fatalities with RCF 1–3, the majority reason reported for children ≤5 years was unintentional while most fatalities in adults (≥20 years) were intentional (Table 8).

Table 3B. Population-Adjusted Exposures by Age Group

Age Group	Exposures/100k population	Number of Exposures[a]	Population[b]
Children (< 20)			
<1	2,760	119,017	4,312,097
1	8,858	379,069	4,278,394
2	9,287	400,685	4,313,444
3	4,057	176,478	4,349,133
4	1,953	82,757	4,236,333
5	1,110	46,546	4,193,338
Child 6–12	502	143,424	28,575,574
Teen 13–19	533	156,164	29,262,563
Subtotal	**1,813**	**1,512,381**	**83,520,876**
Adults (≥ 20)			
20–29	451	196,673	43,608,697
30–39	753	152,092	20,183,872
40–49	220	140,342	63,820,032
50–59	279	116,034	41,553,408
60–69	251	72,246	28,800,304
70–79	261	43,114	16,502,508
80–89	288	27,637	9,580,266
≥90	260	5,349	2,059,452
Subtotal	**380**	**858,982**	**226,108,539**
Overall Total	**761**	**2,384,825**	**313,306,729**

[a]Number of Exposures excludes UNKNOWN ages from the individual age categories, but includes them in the Subtotals and Overall Total (see Table 3A).
[b]As of 1 July Mid Year US Census (50 United States, American Samoa, District of Columbia, Federated States of Micronesia, Guam, Puerto Rico, and the US Virgin Islands).[3,4]

Table 4. Distribution of Age[a] and Gender for Fatalities[b]

Age (y)	Male	Female	Unknown	Total (%)	Cumulative total (%)
<1 year	1	2	0	3 (0.3%)	3 (0.3%)
1 year	4	5	0	9 (0.8%)	12 (1.1%)
2 years	1	5	0	6 (0.5%)	18 (1.6%)
3 years	4	2	0	6 (0.5%)	24 (2.1%)
4 years	2	3	0	5 (0.4%)	29 (2.5%)
5 years	1	2	0	3 (0.3%)	32 (2.8%)
Child 6–12 years	2	1	0	3 (0.3%)	35 (3.1%)
Teen 13–19 years	30	26	0	56 (4.9%)	91 (7.9%)
20–29 years	95	77	0	172 (15.0%)	263 (23.0%)
30–39 years	80	104	0	184 (16.1%)	447 (39.0%)
40–49 years	103	134	0	237 (20.7%)	684 (59.7%)
50–59 years	113	110	1	224 (19.6%)	908 (79.2%)
60–69 years	61	58	0	119 (10.4%)	1,027 (89.6%)
70–79 years	25	29	0	54 (4.7%)	1,081 (94.3%)
80–89 years	23	27	0	50 (4.4%)	1,131 (98.7%)
≥90 years	4	5	0	9 (0.8%)	1,140 (99.5%)
Unknown adult	1	2	0	3 (0.3%)	1,143 (99.7%)
Unknown age	2	0	1	3 (0.3%)	1,146 (100.0%)
Total	**552**	**592**	**2**	**1,146 (100.0%)**	**1,146 (100.0%)**

[a]Age includes cases with both actual and estimated ages as shown in Table 21.
[b]Includes cases with relative contribution to fatality of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory. This excludes reports with outcome of Death INDIRECT.

Route of Exposure

Ingestion was the route of exposure in 83.5% of cases (Table 9), followed in frequency by dermal (7.2%), inhalation/nasal (5.7%), and ocular routes (4.5%). For the 1,146 exposure-related fatalities, ingestion (87.5%), inhalation/nasal (7.7%), and parenteral (3.1%) were the predominant exposure routes. Each exposure case may have more than one route.

Clinical Effects

The NPDS database allows for the coding of up to 131 different clinical effects (signs, symptoms, or laboratory

Table 5. Number of Substances Involved in Human Exposure Cases

	Human exposures		Fatal exposures[a]	
No. of Substances	N	%	N	%
1	2,147,248	90.04	474	41.36
2	151,642	6.36	270	23.56
3	48,575	2.04	159	13.87
4	19,666	0.82	97	8.46
5	8,773	0.37	67	5.85
6	3,913	0.16	31	2.71
7	2,130	0.09	20	1.75
8	1,152	0.05	12	1.05
≥9	1,726	0.07	16	1.40
Total	**2,384,825**	**100.00**	**1,146**	**100.00**

[a]Includes cases with relative contribution to fatality of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory. This excludes reports with outcome of Death INDIRECT.

Table 6A. Reason for Human Exposure Cases

Reason	N	% Human exposures
Unintentional		
Unintentional - General	1,367,682	57.3
Unintentional - Therapeutic error	269,889	11.3
Unintentional - Misuse	128,923	5.4
Unintentional - Bite/sting	61,584	2.6
Unintentional - Environmental	57,384	2.4
Unintentional - Food poisoning	26,221	1.1
Unintentional - Occupational	24,546	1.0
Unintentional - Unknown	4,619	0.2
Subtotal	**1,940,848**	**81.4**
Intentional		
Intentional - Suspected suicide	219,934	9.2
Intentional - Misuse	58,568	2.5
Intentional - Abuse	51,715	2.2
Intentional - Unknown	19,837	0.8
Subtotal	**350,054**	**14.7**
Adverse Reaction		
Adverse reaction - Drug	42,201	1.8
Adverse reaction - Other	13,612	0.6
Adverse reaction - Food	5,775	0.2
Subtotal	**61,588**	**2.6**
Unknown		
Unknown reason	14,332	0.6
Subtotal	**14,332**	**0.6**
Other		
Other - Malicious	8,351	0.4
Other - Contamination/tampering	8,191	0.3
Other - Withdrawal	1,461	0.1
Subtotal	**18,003**	**0.8**
Total	**2,384,825**	**100.0**

Table 6B. Scenarios for Therapeutic Errors[a] by Age[b]

Scenario	N	≤ 5 y (Row %)	6–12 y (Row %)	13–19 y (Row %)	≥ 20 y (Row %)	Unknown child (Row %)	Unknown adult (Row %)	Unknown age (Row %)
Inadvertently took/given medication twice	83,140	20.11	12.49	5.88	55.04	0.08	6.13	0.26
Wrong medication taken/given	41,794	16.20	12.01	6.52	58.69	0.07	6.19	0.33
Other incorrect dose	36,942	31.76	11.83	6.94	44.62	0.09	4.53	0.23
Medication doses given/taken too close together	27,233	19.53	10.15	7.12	56.66	0.06	6.29	0.18
Inadvertently took/given someone else's medication	25,542	20.48	18.80	6.94	49.03	0.07	4.54	0.13
Other/unknown therapeutic error	16,361	21.26	10.70	7.26	53.85	0.20	6.19	0.54
Incorrect dosing route	16,056	8.84	4.02	3.10	72.14	0.14	11.02	0.74
Confused units of measure	10,496	56.98	17.24	4.89	18.90	0.06	1.82	0.11
Incorrect formulation or concentration given	6,135	46.36	16.45	4.74	29.54	0.10	2.62	0.20
Health professional/iatrogenic error (pharmacist/nurse/physician)	5,684	28.20	10.38	6.33	47.59	0.48	5.96	1.06
More than 1 product containing same ingredient	5,589	15.80	14.96	14.17	48.77	0.05	6.07	0.18
Dispensing cup error	5,395	62.65	18.78	4.54	13.01	0.11	0.83	0.07
Drug interaction	1,701	8.47	7.94	6.88	66.67	0.06	9.64	0.35
Incorrect formulation or concentration dispensed	1,656	43.90	15.16	4.95	31.28	0.30	4.17	0.24
10-fold dosing error	1,444	55.89	7.62	4.36	29.36	0.14	2.35	0.28
Exposure through breast milk	109	88.99	0.92	0.00	5.50	2.75	1.83	0.00

[a]All cases with a scenario category of therapeutic error regardless of reason.
[b]Of the human exposure cases reported to U.S. Poison Centers in 2010, 425,655 (17.8%) were coded to 1 or more of 54 scenarios.

abnormalities) for each case. Each clinical effect can be further defined as related, not related, or unknown if related. Clinical effects were coded in 849,516 (35.6%) cases. (17.9% had 1 effect, 9.3% had 2 effects, 4.9% had 3 effects, 2% had 4 effects, 0.8% had 5 effects, and 0.9% had >5 effects coded). Of clinical effects coded, 79.2% were deemed related to the exposure(s), 9.3% were considered not related, and 11.5% were coded as unknown if related.

The duration of effect is required for all cases that report at least one clinical effect and have a medical outcome of minor, moderate, or major effect (n = 514,203; 21.6% of exposures). Table 13 demonstrates an increasing duration of the clinical effects observed with more severe outcomes.

Case Management Site

The majority of cases reported to PCs were managed in a non-health care facility (71.3%), usually at the site of exposure, primarily the patient's own residence (Table 10). 1.8% of cases were referred to a health care facility but refused referral. Treatment in a health care facility was rendered in 25.2% of cases.

Of the 601,197 cases managed in a health care facility, 292,289 (48.6%) were treated and released, 97,650 (16.2%) were admitted for critical care (intensive care or monitored unit), and 62,346 (10.4%) were admitted to a noncritical unit.

The percentage of patients treated in a health care facility varied considerably with age. Only 11.1% of children ≤5 years or younger and only 12.7% of children between 6 and 12 years were managed in a health care facility compared to 48.6% of teenagers (13–19 years) and 40.1% of adults (age ≥ 20 years).

Medical Outcome

Table 11 displays the medical outcome of human exposure cases distributed by age. A greater number of severe medical outcomes is observed 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.

Decontamination Procedures and Specific Antidotes

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

Ipecac-induced emesis for poisoning continues to decline as shown in Tables 16A and 16B. Ipecac was administered in only 163 (0.01%) pediatric exposures in 2010. The continued decrease in ipecac syrup use over the last two decades was likely a result of ipecac use guidelines issued in 1997 by the American Academy of Clinical Toxicology, European Association of Poisons Centres, and Clinical Toxicologists and updated in 2004.[5,6] 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,

Table 7. Distribution of Reason for Exposure by Age

	≤ 5 y		6–12 y		13–19 y		≥ 20 y		Unknown child		Unknown adult		Unknown age		Total	
Reason	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %	N	%
Unintentional	1,198,972	64.55	127,612	6.87	67,487	3.63	455,897	24.54	4,577	0.25	78,768	4.24	7,535	0.41	1,940,848	81.38
Intentional	1,014	0.30	9,999	2.99	80,139	23.99	239,151	71.58	276	0.08	15,696	4.70	3,779	1.13	350,054	14.68
Adverse reaction	4,543	8.39	3,102	5.73	4,632	8.55	40,833	75.40	162	0.30	7,274	13.43	1,042	1.92	61,588	2.58
Other	2,248	14.44	1,885	12.11	2,039	13.10	9,109	58.53	149	0.96	2,291	14.72	282	1.81	18,003	0.75
Unknown	798	6.23	826	6.45	1,867	14.57	8,497	66.32	54	0.42	1,466	11.44	824	6.43	14,332	0.60
Total	**1,207,575**	**53.10**	**143,424**	**6.31**	**156,164**	**6.87**	**753,487**	**33.13**	**5,218**	**0.23**	**105,495**	**4.64**	**13,462**	**0.59**	**2,384,825**	**100.00**

but also recommended disposal of home ipecac stocks.[7] A decline was also observed since the early 1990s for reported use of activated charcoal. While not as dramatic as the decline in use of ipecac, reported use of activated charcoal decreased from 3.7% of pediatric cases in 1993 to just 1.4% in 2010.

Top Substances in Human Exposures

Table 17A presents the most common 25 substance categories, listed by frequency of human exposure. This ranking provides an indication where prevention efforts might be focused, as well as the types of exposures PCs regularly manage. It is relevant to know whether exposures to these substances are increasing or decreasing.

To better understand these relationships, we examined exposures per year over the last 11 years for the change over time for each of the 67 major generic categories via least squares linear regression. Despite an overall decrease in human exposure calls (3.8%) for this year, the calls per year increased for 42 and decreased for 25 of the 67 major categories. The change over time for the 11-yearly values was statistically significant ($p < 0.05$) for 49 of the 67 categories. Table 17B shows the 25 categories which were increasing the most rapidly. Statistical significance of the 25 regressions can be verified by noting the 95% confidence interval on the rate of increase excludes zero. Figure 7 shows the linear regressions for the top 4 increasing categories in Table 17B. Tables 17C and 17D present exposure results for children and adults, respectively, and show the differences between substance categories involved in pediatric and adult exposures.

Table 17E reports the 25 categories of substances most frequently involved in pediatric (≤5 years) fatalities in 2010.

Table 17F reports the 25 Drug ID categories most frequently identified in 2010. The most often identified drug category is miscellaneous and unknown; this category includes medications which could not be identified. Drug ID information is of value to AAPCC, public health, public safety, and regulatory agencies. Internet based resources do not allow data capture nor do they afford the caller the ability to speak with a specialist in poison information if the inquiry is more than a drug identification question. Proper resources to continue this vital public service are essential, especially since the top 10 substance categories include antibiotics as well as drugs with widespread use and abuse potential such as opioids and benzodiazepines.

Table 17G (new this year) reports the 25 substance categories most frequently reported in exposures involving pregnant patients.

Changes from Last Year

Figure 4 shows the year-to-year changes for 2009–2010 for all encounters and for several major categories.

The graphic breaks down the change in exposure calls by outcome category. Although overall exposure calls have decreased by 94,530 calls (−3.8%), there is a consistent increase in the exposures with a more serious outcome

Table 8. Distribution of Reason for Exposure and Age for Fatalities[a]

Reason	≤5 y	6–12 y	13–19 y	≥20 y	Unknown child	Unknown adult	Unknown age	Total
Unintentional								
Unintentional - General	15	0	0	24	0	0	0	39
Unintentional - Environmental	6	0	2	21	0	0	0	29
Unintentional - Occupational	0	0	2	11	0	0	0	13
Unintentional - Therapeutic error	3	0	1	22	0	0	0	26
Unintentional - Misuse	0	1	0	16	0	0	0	17
Unintentional - Bite/sting	2	0	0	3	0	0	0	5
Unintentional - Food poisoning	0	0	0	1	0	0	0	1
Unintentional - Unknown	0	0	0	4	0	0	0	4
Subtotal	**26**	**1**	**5**	**102**	**0**	**0**	**0**	**134**
Intentional								
Intentional - Suspected suicide	0	0	31	603	0	3	0	637
Intentional - Misuse	1	0	1	44	0	0	0	46
Intentional - Abuse	0	1	9	88	0	0	1	99
Intentional - Unknown	0	0	5	93	0	0	0	98
Subtotal	**1**	**1**	**46**	**828**	**0**	**3**	**1**	**880**
Other								
Other - Contamination/tampering	0	0	0	1	0	0	0	1
Other - Malicious	2	0	1	3	0	0	0	6
Other - Withdrawal	0	0	1	1	0	0	0	2
Subtotal	**2**	**0**	**2**	**5**	**0**	**0**	**0**	**9**
Adverse reaction								
Adverse reaction - Drug	1	0	0	25	0	0	0	26
Adverse reaction - Other	0	0	0	2	0	0	0	2
Subtotal	**1**	**0**	**0**	**27**	**0**	**0**	**0**	**28**
Unknown								
Unknown reason	2	1	3	87	0	0	2	95
Subtotal	**2**	**1**	**3**	**87**	**0**	**0**	**2**	**95**
Total	**32**	**3**	**56**	**1,049**	**0**	**3**	**3**	**1,146**

[a]Includes cases with relative contribution to fatality of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory. This excludes reports with outcome of Death INDIRECT.

(minor, moderate, major or death) and as a group *increased* by 22,175 encounters (4.5%).

Thus we see a consistent increase in exposure calls from HCFs and for the more severe exposures, despite a decrease in calls involving less severe exposures.

Distribution of Suicides

Table 19A shows the modest variation in the distribution of suicides and pediatric deaths over the past two decades as reported to the NPDS national database. Within the last decade, the percent of exposures determined to be suspected

Table 9. Route of Exposure for Human Exposure Cases

	Human exposures			Fatal exposures[a]		
Route	N	% of All Routes	% of All Cases	N	% of All Routes	% of All Cases
Ingestion	1,990,244	79.51	83.45	1,003	80.82	87.52
Dermal	172,318	6.88	7.23	18	1.45	1.57
Inhalation/nasal	136,799	5.47	5.74	88	7.09	7.68
Ocular	107,374	4.29	4.50	0	0.0	0
Bite/sting	61,606	2.46	2.58	5	0.40	0.44
Parenteral	16,865	0.67	0.71	35	2.82	3.05
Unknown	8,944	0.36	0.38	69	5.56	6.02
Other	3,016	0.12	0.13	4	0.32	0.35
Otic	2,519	0.10	0.11	0	0.0	0
Aspiration (with ingestion)	1,624	0.06	0.07	19	1.53	1.66
Vaginal	1,106	0.04	0.05	0	0.0	0
Rectal	736	0.03	0.03	0	0.0	0
Total Number of Routes	**2,503,151**	**100.00**	**104.96**	**1,241**	**100.00**	**108.29[b]**

[a]Includes cases with relative contribution to fatality of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory. This excludes reports with outcome of Death INDIRECT.
[b]Each exposure case may have more than one route.

Table 10. Management Site of Human Exposures

Site of management	N	%
Managed on site, nonhealth care facility	1,700,736	71.3
Managed in healthcare facility		
Treated/evaluated and released	292,289	12.3
Admitted to critical care unit	97,650	4.1
Patient lost to follow-up/left AMA	96,226	4.0
Admitted to noncritical care unit	62,346	2.6
Admitted to psychiatric facility	52,686	2.2
Subtotal (managed in HCF)	**601,197**	**25.2**
Other	29,417	1.2
Refused referral	42,497	1.8
Unknown	10,978	0.5
Total	**2,384,825**	**100.0**

suicides ranged from 45.0 to 54.3% and the percent of pediatric cases has ranged from 2.2% to 3.2%.

Plant Exposures

Table 20 provides the number of times the specific plant was reported to NPDS (N = 53,526). The 25 most commonly involved plant species and categories account for 40% of all plant exposures reported. The top 3 categories in the table are essentially synonymous for unknown plant and comprise 13.2% (7,076/53,526) of all plant exposures. For a variety of reasons it was not possible to make a precise identification in these three groups. The top most frequent plant exposures where a positive plant identification was made were (descending order): *Phytolacca americana* (L.), *Spathiphyllum* spp. Not otherwise specified (NOS), *Ilex* spp. (NOS), *Philodendron* spp. (NOS), and plants-pokeweed.

Deaths and Exposure-related Fatalities

A listing of cases (Table 21) and summary of cases (Tables 4, 5, 8, 9, 18, and 22) are provided for fatal cases for which there exists reasonable confidence that the death was a result of that exposure (exposure-related fatalities). Tables 11, 12, 17E and 19 list all deaths, irrespective of the RCF. Beginning in 2010, cases with outcome of death, indirect were not reviewed and the Relative Contribution to Fatality (RCF) was determined by the individual poison center team.

Table	Fatalities Included	RCF	Number of Deaths
4	Death only	1,2,3	1,146
5	Death only	1,2,3	1,146
8	Death only	1,2,3	1,146
9	Death only	1,2,3	1,146
11	Death and Death (indirect report)	All	1,730
12	Death and Death (indirect report)	All	1,730
17E	Death and Death (indirect report)	All	1,730
18	Death and Death (indirect report)	1,2,3	1,366
19A	Death and Death (indirect report)	All	1,730
19B	Death and Death (indirect report)	All	1,730
21	Death and Death (indirect report)	1,2,3	1,366
22	Death and Death (indirect report) - Single substance deaths only	All	764

Table 11. Medical Outcome of Human Exposure Cases by Patient Age[a]

Outcome	≤5 y		6–12 y		13–19 y		≥ 20 y		Unknown child		Unknown adult		Unknown age		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
No effect	302,659	25.06	25,660	17.89	25,014	16.02	93,311	12.38	1,018	19.51	10,418	9.88	1,199	8.9	459,279	19.26
Minor effect	95,105	7.88	22,015	15.35	40,125	25.69	179,640	23.84	519	9.95	15,444	14.64	1,930	14.3	354,778	14.88
Moderate effect	10,757	0.89	4,090	2.85	20,655	13.23	99,504	13.21	97	1.86	4,038	3.83	482	3.6	139,623	5.85
Major effect	833	0.07	177	0.12	2,069	1.32	16,385	2.17	2	0.04	267	0.25	69	0.5	19,802	0.83
Death	47	0.00	3	0.00	66	0.04	1,314	0.17	0	0.00	14	0.01	11	0.1	1,455	0.06
No follow-up, nontoxic	232,671	19.27	21,810	15.21	8,698	5.57	44,926	5.96	647	12.40	10,775	10.21	837	6.2	320,364	13.43
No follow-up, minimal toxicity	528,424	43.76	62,824	43.80	41,710	26.71	236,547	31.39	2,166	41.51	45,309	42.95	3,777	28.1	920,757	38.61
No follow-up, potentially toxic	20,916	1.73	3,494	2.44	13,706	8.78	51,417	6.82	648	12.42	14,879	14.10	4,784	35.5	109,844	4.61
Unrelated effect	16,155	1.34	3,349	2.34	4,108	2.63	30,203	4.01	121	2.32	4,341	4.11	371	2.8	58,648	2.46
Death, indirect report	8	0.00	2	0.00	13	0.01	240	0.03	0	0.00	10	0.01	2	0.0	275	0.01
Total	**1,207,575**	**100.00**	**143,424**	**100.0**	**156,164**	**100.00**	**753,487**	**100.00**	**5,218**	**100.00**	**105,495**	**100.00**	**13,462**	**100.00**	**2,384,825**	**100.00**

[a]Total number of cases where Death was an outcome (1,455 + 275) is greater than the number of fatalities (1,146) judged to be exposure-related (relative contribution to fatality of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).

Table 12. Medical Outcome by Reason for Exposure in Human Exposures[a]

	Unintentional		Intentional		Other		Adverse reaction		Unknown		Total	
Outcome	N	%	N	%	N	%	N	%	N	%	N	%
No effect	398,439	20.53	55,812	15.94	2,295	12.75	1,522	2.47	1,211	8.45	459,279	19.26
Minor effect	234,875	12.10	98,991	28.28	3,356	18.64	15,329	24.89	2,227	15.54	354,778	14.88
Moderate effect	46,532	2.40	80,998	23.14	1,265	7.03	7,914	12.85	2,914	20.33	139,623	5.85
Major effect	2,756	0.14	15,203	4.34	158	0.88	714	1.16	971	6.78	19,802	0.83
Death	172	0.01	1,023	0.29	14	0.08	62	0.10	184	1.28	1,455	0.06
No follow-up, nontoxic	313,047	16.13	4,926	1.41	1,228	6.82	891	1.45	272	1.90	320,364	13.43
No follow-up, minimal toxicity	853,887	44.00	36,708	10.49	6,547	36.37	21,727	35.28	1,888	13.17	920,757	38.61
No follow-up, potentially toxic	51,189	2.64	49,196	14.05	1,821	10.11	4,426	7.19	3,212	22.41	109,844	4.61
Unrelated effect	39,921	2.06	6,996	2.00	1,316	7.31	9,001	14.61	1,414	9.87	58,648	2.46
Death, indirect report	30	0.00	201	0.06	3	0.02	2	0.00	39	0.27	275	0.01
Total	**1,940,848**	**100.00**	**350,054**	**100.00**	**18,003**	**100.00**	**61,588**	**100.00**	**14,332**	**100.00**	**2,384,825**	**100.00**

[a]Total number of cases where Death was an outcome (1,455 + 275) is greater than the number of fatalities (1,146) judged to be exposure-related (relative contribution to fatality of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).

There were 275 death, indirect and 1,455 deaths. Of these 1,730 cases, 1,366 were judged exposure-related fatalities (RCF = 1, Undoubtedly responsible; 2, Probably responsible; or 3, Contributory). The remaining 364 cases were judged as follows: 73 as RCF = 4, Probably not responsible; 27 as 5, Clearly not responsible; and 264 as RCF = 6, Unknown.

Deaths are sorted in Table 21 according to the category, substance deemed most likely responsible for the death (Cause Rank), and then by patient age. The Cause Rank permits the PC to judge two or more substances as indistinguishable in terms of cause, e.g., two substances which appear equally likely to have caused the death could have Substance Rank of 1, 2 and Cause Rank of 1, 1. Additional agents implicated are listed below the primary agent in the order of their contribution to the fatality.

As shown in Table 5, a single substance was implicated in 90.0% of reported human exposures, and 6.4% of patients were exposed to two or more drugs or products. The exposure-related fatalities involved a single substance in 474 cases (41.4%), 2 substances in 270 cases (23.6%), 3 in 159 cases (13.9%) and 4 or more in the balance of the cases.

In Table 21, the Annual Report ID number [bracketed] indicates that the abstract for that case is included in Appendix C. The letters following the Annual Report ID number indicate: i = Death, Indirect report (occurred in 220, 16.1% of cases), p = prehospital cardiac and/or respiratory arrest (occurred in 666 of 1,366, 44.4% of cases), h = hospital records reviewed (occurred in 53, 3.9% of cases), a = autopsy report reviewed (occurred in 356, 26.1% of cases). The distribution of NPDS RCF was: 1 = Undoubtedly responsible in 559 cases (40.9%), 2 = Probably responsible in 599 cases (43.9%), 3 = Contributory in 208 cases (15.2%). The denominator for these Table 21 percentages is 1,366.

All fatalities – all ages

Table 4 presents the age and gender distribution for these 1,146 exposure-related fatalities (excluding death, indirect). The age distribution of reported fatalities is similar to that in past years with 91 (7.9%) of the fatalities in children (< 20 years old), 1,052 of 1,146 (92.1%) of fatal cases occurring in adults (age ≥ 20 years) and 3 (0.3%) of fatalities occurring in Unknown Age patients. Although children ≤5 years old were involved in the majority of exposures, the 32 fatalities comprised just 2.8% of the exposure-related fatalities. Most (71.4%) of the fatalities occurred in 20-to 59-year-old individuals.

Table 21 lists each of the 1,366 human fatalities (including death, indirect report) along with all of the substances

Table 13. Duration of Clinical Effects by Medical Outcome

	Minor effect		Moderate effect		Major effect	
Duration of effect	N	%	N	%	N	%
≤2 hours	122,045	34.40	8,186	5.86	443	2.24
>2 hours, ≤8 hours	94,233	26.56	30,472	21.82	1,242	6.27
>8 hours, ≤24 hours	64,672	18.23	46,587	33.37	4,826	24.37
>24 hours, ≤3 days	24,525	6.91	26,536	19.01	6,294	31.78
>3 days, ≤1 week	5,473	1.54	7,783	5.57	3,550	17.93
>1 week, ≤1 month	1,484	0.42	1,799	1.29	1,160	5.86
>1 month	568	0.16	465	0.33	170	0.86
Anticipated permanent	331	0.09	167	0.12	345	1.74
Unknown	41,447	11.68	17,628	12.63	1,772	8.95
Total	**354,778**	**100.00**	**139,623**	**100.00**	**19,802**	**100.00**

Table 14. Decontamination and Therapeutic Interventions

Therapy	N	%
Decontamination Only	960,389	40.3
Therapeutic Intervention Only	237,057	9.9
Decontamination and Therapeutic Intervention	405,953	17.0
Not Coded	781,426	32.8
Total	**2,384,825**	**100.0**

involved. Please note: the substance listed in column 3 of Table 21 (alternate name) was chosen to be the most specific generic name based upon analysis of the Micromedex Poisindex product name and generic code. Alternate names are maintained in the NPDS for each substance involved in a fatality. The cross-references at the end of each major category section in Table 21 list all cases that identify this substance as other than the primary substance. This Alternate name may not agree with the AAPCC generic categories used in the summary tables (including Table 22).

Table 18 lists the top 25 minor generic substance categories associated with reported fatalities and the number of single substance exposure fatalities for that category—miscellaneous sedative/hypnotics/antipsychotics, miscellaneous cardiovascular drugs, opioids, and acetaminophen combination products, lead this list followed by miscellaneous antidepressants, miscellaneous alcohols, acetaminophen alone, miscellaneous anticonvulsants, and miscellaneous

Table 15. Therapy Provided in Human Exposures by Age.

Therapy	≤5 y	6–12 y	13–19 y	≥ 20 y	Unknown child	Unknown adult	Unknown age	Total
Decontamination								
Cathartic	2,426	249	3,388	11,544	2	221	12	17,842
Charcoal, multiple doses	141	21	397	1,446	0	15	4	2,024
Charcoal, single dose	16,440	1,104	13,221	40,965	6	602	69	72,407
Dilute/irrigate/wash	592,610	59,422	35,531	202,957	1,704	34,815	2,535	929,574
Food/snack	145,624	11,454	5,911	29,105	192	4,289	183	196,758
Fresh air	6,873	5,141	4,844	41,151	600	11,456	1,042	71,107
Ipecac	163	24	55	109	0	9	0	360
Lavage	180	27	872	3,746	0	52	6	4,883
Other emetic	5,323	473	845	4,213	9	362	39	11,264
Whole bowel irrigation	115	22	331	1,484	0	18	2	1,972
Other Therapies								
2-PAM	6	1	4	66	0	0	0	77
Alkalinization	127	69	1,586	8,396	0	70	12	10,260
Amyl nitrite	0	0	2	7	0	2	0	11
Antiarrhythmic	5	1	57	555	0	3	0	621
Antibiotics	2,025	919	1,245	12,084	21	925	84	17,303
Anticonvulsants[a]	47	19	116	665	0	7	1	855
Antiemetics	917	335	3,734	9,878	0	149	12	15,025
Antihistamines	2,664	1,702	1,945	10,710	20	1,418	103	18,562
Antihypertensives	12	10	114	1,879	0	25	1	2,041
Antivenin (fab fragment)	418	257	170	1,326	2	26	6	2,205
Antivenin/antitoxin[b]	34	34	27	246	0	5	0	346
Atropine	96	17	78	1,054	0	8	1	1,254
BAL	11	1	6	20	0	0	0	38
Benzodiazepines	871	359	4,212	20,459	4	233	34	26,172
Bronchodilators	533	312	405	4,340	29	259	18	5,896
Calcium	9,571	572	242	2,062	19	62	5	12,533
Cardioversion	3	2	26	203	0	0	0	234
CPR	31	7	75	707	0	5	2	827
Deferoxamine	2	1	29	28	0	1	0	61
ECMO	7	0	2	5	0	0	0	14
EDTA	46	2	1	12	0	0	0	61
Ethanol	2	1	5	100	0	1	2	111
Extracorp. procedure (other)	1	1	2	14	0	0	0	18
Fab fragments	39	23	19	570	0	4	2	657
Fluids, IV	6,687	1,609	21,596	102,505	8	1,126	123	133,654
Flumazenil	122	22	183	1,737	0	24	5	2,093
Folate	18	1	26	929	0	6	1	981
Fomepizole	132	17	106	1,668	0	15	3	1,941
Glucagon	31	6	57	1,436	0	16	2	1,548
Glucose, > 5%	346	24	186	2,586	0	29	3	3,174
Hemodialysis	12	4	107	2,162	0	12	1	2,298
Hemoperfusion	0	0	1	22	0	0	0	23
Hydroxocobalamin	5	0	5	37	0	6	0	53

(Continued)

Table 15. *(Continued)*

Therapy	≤5 y	6–12 y	13–19 y	≥ 20 y	Unknown child	Unknown adult	Unknown age	Total
Hyperbaric oxygen	32	37	35	302	1	14	0	421
Insulin	9	7	77	1,419	0	5	0	1,517
Intubation	502	73	1,509	16,996	0	188	40	19,308
Methylene blue	11	2	7	80	0	0	0	100
NAC, IV	210	91	3,341	13,169	0	128	22	16,961
NAC, PO	118	53	1,730	6,374	0	68	19	8,362
Nalmefene	0	0	4	20	0	0	0	24
Naloxone	1,152	131	1,603	15,509	1	197	28	18,621
Neuromuscular blocker	32	8	117	963	0	6	1	1,127
Octreotide	66	2	25	237	0	1	0	331
Other	51,470	9,878	13,882	86,302	203	6,606	712	169,053
Oxygen	1,659	618	3,406	38,675	78	710	104	45,250
Pacemaker	2	0	4	168	0	0	0	174
Penicillamine	1	1	0	2	0	0	0	4
Physostigmine	3	5	87	150	0	0	0	245
Phytonadione	28	6	57	686	0	7	2	786
Pyridoxine	14	2	68	404	0	1	2	491
Sedation (other)	304	67	1,121	11,122	0	96	15	12,725
Sodium nitrite	0	0	2	32	0	1	0	35
Sodium thiosulfate	4	0	5	51	0	3	1	64
Steroids	765	409	543	4,771	15	442	38	6,983
Succimer	117	3	7	65	0	2	0	194
Transplantation	0	0	1	21	0	0	0	22
Vasopressors	88	26	268	4,699	0	35	3	5,119
Ventilator	447	70	1,322	15,300	0	165	33	17,337

[a]Excludes benzodiazepines.
[b]Excludes Fab fragments.

Table 16A. Decontamination Trends (1985–2009)

Year	Human exposures	Ipecac administered (% of all exposures)	Activated charcoal administered (% of all exposures)	Exposures involving children ≤ 5 y (% of all exposures)	Ipecac administered (% of child exposures)	Activated charcoal administered (% of child exposures)
1985	886,389	132,947 (14.999)	41,063 (4.6)	568,691 (64.2)	94,919 (16.6908)	14,718 (2.59)
1986	1,095,228	145,516 (13.286)	56,481 (5.2)	690,137 (63.0)	99,688 (14.4447)	18,191 (2.64)
1987	1,164,648	117,840 (10.118)	60,310 (5.2)	730,228 (62.7)	83,443 (11.427)	18,507 (2.53)
1988	1,364,113	114,654 (8.4050)	88,876 (6.5)	843,106 (61.8)	80,749 (9.5776)	26,118 (3.10)
1989	1,578,968	110,545 (7.0011)	101,368 (6.4)	963,924 (61.0)	79,192 (8.2156)	30,345 (3.15)
1990	1,646,946	98,986 (6.0103)	108,341 (6.6)	999,751 (60.7)	73,469 (7.3487)	31,579 (3.16)
1991	1,836,364	94,877 (5.1666)	129,092 (7.0)	1,099,179 (59.9)	73,069 (6.6476)	36,177 (3.29)
1992	1,862,796	79,493 (4.2674)	135,625 (7.3)	1,094,256 (58.7)	63,486 (5.8018)	38,937 (3.56)
1993	1,747,147	65,078 (3.7248)	127,893 (7.3)	978,560 (56.0)	50,834 (5.1948)	35,791 (3.66)
1994	1,926,992	51,356 (2.6651)	138,247 (7.2)	1,042,651 (54.1)	41,489 (3.9792)	35,670 (3.42)
1995	2,023,089	47,359 (2.3409)	155,880 (7.7)	1,070,472 (52.9)	38,372 (3.5846)	38,095 (3.56)
1996	2,155,952	39,376 (1.8264)	157,331 (7.3)	1,137,263 (52.7)	32,622 (2.8685)	37,986 (3.34)
1997	2,192,088	32,098 (1.4643)	156,213 (7.1)	1,150,931 (52.5)	26,536 (2.3056)	35,856 (3.12)
1998	2,241,082	26,653 (1.1893)	152,134 (6.8)	1,180,989 (52.7)	22,247 (1.8838)	34,302 (2.90)
1999	2,201,156	21,942 (0.9968)	145,853 (6.6)	1,154,799 (52.5)	18,326 (1.5869)	33,812 (2.93)
2000	2,168,248	18,177 (0.8383)	145,911 (6.7)	1,142,796 (52.7)	15,239 (1.3335)	31,554 (2.76)
2001	2,267,979	16,058 (0.7080)	149,442 (6.6)	1,169,478 (51.6)	13,389 (1.1449)	30,367 (2.60)
2002	2,380,028	13,555 (0.5695)	149,527 (6.3)	1,227,381 (51.6)	11,163 (0.9095)	30,340 (2.47)
2003	2,395,582	9,284 (0.3875)	140,412 (5.9)	1,245,584 (52.0)	7,310 (0.5869)	28,888 (2.32)
2004	2,438,643	4,701 (0.1928)	135,969 (5.6)	1,250,536 (51.3)	3,366 (0.2692)	28,335 (2.27)
2005	2,424,180	3,027 (0.1249)	123,263 (5.1)	1,233,695 (50.9)	1,999 (0.1620)	26,338 (2.13)
2006	2,403,539	2,176 (0.0905)	111,351 (4.6)	1,223,815 (50.9)	1,337 (0.1092)	23,843 (1.95)
2007	2,482,041	1,740 (0.0701)	106,010 (4.3)	1,271,595 (51.2)	1,052 (0.0827)	22,829 (1.80)
2008	2,491,049	1,205 (0.0484)	97,297 (3.9)	1,292,754 (51.9)	641 (0.0496)	21,286 (1.65)
2009	2,479,355	658 (0.0265)	84,805 (3.4)	1,290,784 (52.1)	330 (0.0256)	19,168 (1.48)
2010	2,384,825	360 (0.0200)	74,431 (3.1)	1,207,575 (50.6)	163 (0.0100)	16,581 (1.37)

Table 16B. Decontamination Trends: Total Human and Pediatric Exposures ≤5 Years (2010)[a].

Therapy	Human exposures N	Human exposures %	Exposures children ≤5 y N	Exposures children ≤5 y %
Activated charcoal administered	74,431	3.12	16,581	1.37
Cathartic	17,842	0.75	2,426	0.20
Ipecac administered	360	0.02	163	0.01
Lavage	4,883	0.20	180	0.01
Other Emetic	11,264	0.47	5,323	0.44
Whole Bowel Irrigation	1,972	0.08	115	0.01
Total	**110,752**	**4.64**	**24,788**	**2.05**

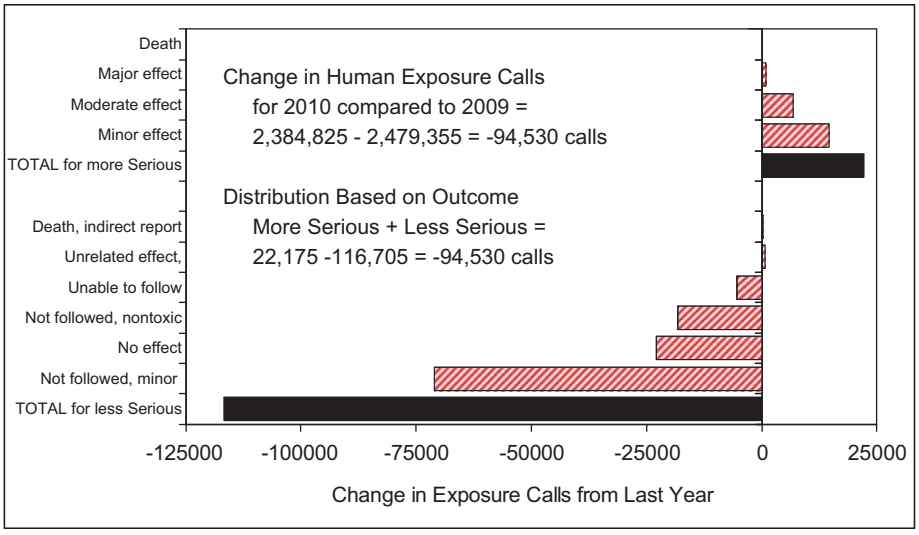
[a]Human exposures = 2,384,825; Pediatric exposures = 1,207,575.

stimulants and street drugs. Note that Table 18 is sorted by all substances to which a patient was exposed (i.e., a patient exposed to an opioid may have also been exposed to 1 or more other products) and shows single substance exposures in the right hand column.

The first ranked substance (Table 21) was a pharmaceutical in 1,104 (80.8%) of the 1,366 fatalities. These 1,104 first ranked pharmaceuticals included:

526 analgesics (92 acetaminophen, 89 acetaminophen/hydrocodone, 67 methadone, 53 oxycodone, 36 salicylate, 27 morphine, 20 acetaminophen/oxycodone, 17 fentanyl, 16 acetaminophen/diphenhydramine, 16 acetaminophen/propoxyphene, 14 tramadol, 12

Encounter Type	2009	2010	Increase	%Increase	% of Total
All Encounters	4,280,391	3,952,772	(327,619)	-7.7%	100%
Human Exposure Calls	2,479,355	2,384,825	(94,530)	-3.8%	29%
Information Calls	1,677,403	1,466,253	(211,150)	-12.6%	64%
All Drug Identification Calls	1,057,632	942,614	(115,018)	-10.9%	35%
Animal Exposure Calls	116,408	94,823	(21,585)	-18.5%	7%
Law Enforcement Drug ID Calls	180,036	171,247	(8,789)	-4.9%	3%
HCF Information Calls	33,558	29,009	(4,549)	-13.6%	1%
HCF Exposure Calls	407,446	418,412	10,966	2.7%	-3%



Outcome	2009	2010	Increase	% Increase	% of Total
Human Exposure Calls	2,479,355	2,384,825	(94,530)	-3.8%	100%
Death	1,452	1,455	3	0.2%	0.0%
Major effect	18,994	19,802	808	4.3%	0.9%
Moderate effect	132,816	139,623	6,807	5.1%	7.2%
Minor effect	340,221	354,778	14,557	4.3%	15.4%
Total for More Serious Exposures			22,175	4.5%	23.5%
No effect	482,202	459,279	(22,923)	-4.8%	-24.2%
Not followed, nontoxic	338,635	320,364	(18,271)	-5.4%	-19.3%
Not followed, minor	991,851	920,757	a(71,094)a	-7.2%	-75.2%
Unable to follow	115,244	109,844	(5,400)	-4.7%	-5.7%
Unrelated effect	57,848	58,648	800	1.4%	0.8%
Death, indirect report	92	275	183	198.9%	0.2%
Total for Less Serious Exposures		(116,705)		-5.9%	-123.5%

Fig. 4. Change in Encounters from 2009 to 2010 with Graphical Breakdown of Exposure Calls.

The figure shows how the decrease of 94,530 in Human Exposure Calls divides among the 10 Medical Outcomes. The More Serious Exposures (Minor, Moderate, Major and Death) all increased and their combined increase was 22,175 calls (23.5% of the 94,530 total decrease). The Less Serious Exposures (the other 6 outcome groups) decreased by 116,705 (−123.5% of the 94,530 total decrease). (See colour version of this figure online).

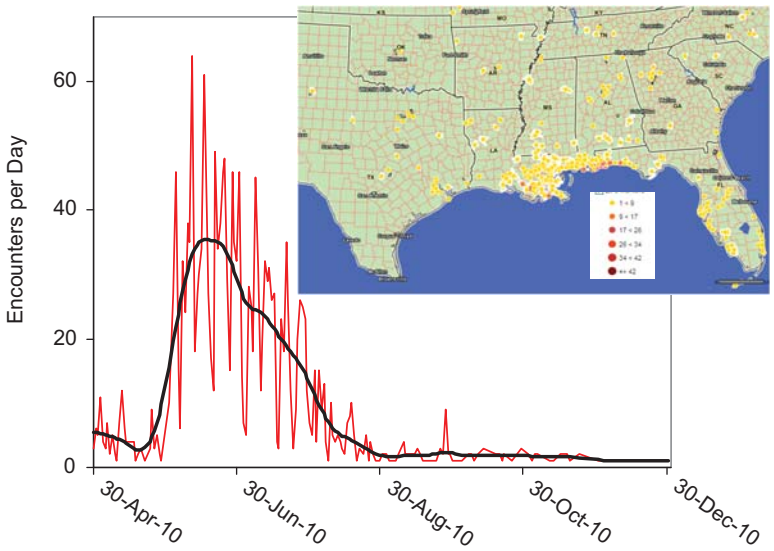
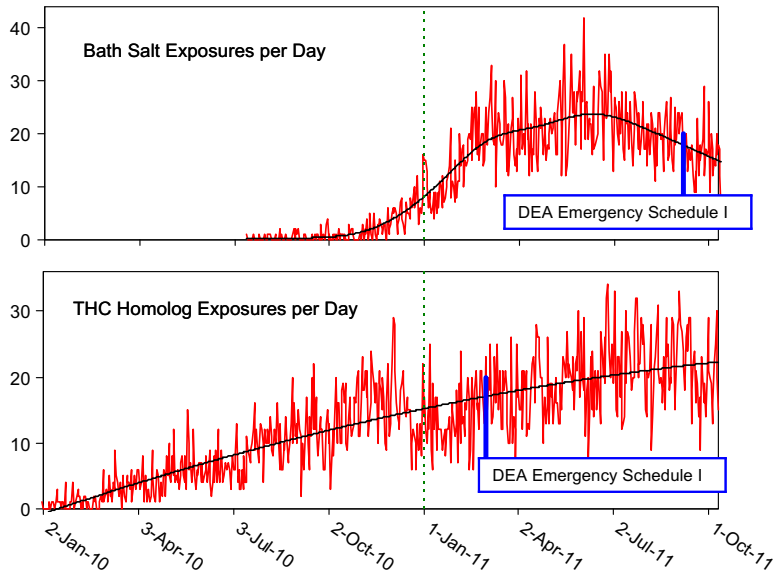


Fig. 5. Gulf Oil Spill Encounters per Day.

Black line for Gulf Oil Spill Encounters (human and animal exposure and information calls) shows a spline smoothing fit (lambda v 0.0000117, rsquare v 0.710). Map shows number of calls per day. (See colour version of this figure online).



	THC Homologs	Bath Salts
Chemicals	JWH-018, JWH-073, JWH-200, CP-47,497, cannabicyclohexanol	mephedrone , 3,4 methylenedioxypyrovalerone (MDPV), methylone
Products	herbal incense, spice, K2, Blaze, Red X Dawn	bath salts, plant food, Ivory Wave, Purple Wave, Vanilla Sky, Bliss
Local Action	banned in 16 states	banned in 33states
Clinical Effects	convulsions, anxiety attacks, tachycardia, hypertension, vomiting, disorientation	impaired perception, reduced motor control, disorientation, extreme paranoia, violent episodes
DEA Emergency Scheduled	1-Mar-2011	7-Sep-2011
First NPDS Exposure Report	3-Oct-2009	24-Feb-2010
Number of Exposures	8,264	5,624
Number of information calls	895	1,087
Total Encounters	9,159	8,479

Fig. 6. Emerging Trends: Bath Salts and THC Homologs Exposures.

Black line for Bath Salt Exposures shows a spline smoothing fit (lambda = 0.01, rsquare = 0.829).

Black line for THC Homolog Exposures shows s show least-squares second order regressions: THC Exposures = −26,223 + 13.0*Year -3.83* (Year-2011)^2 (rsquare = 0.708). All 3 terms in this regression were statistically significant ($p < 0.05$). (See colour version of this figure online).

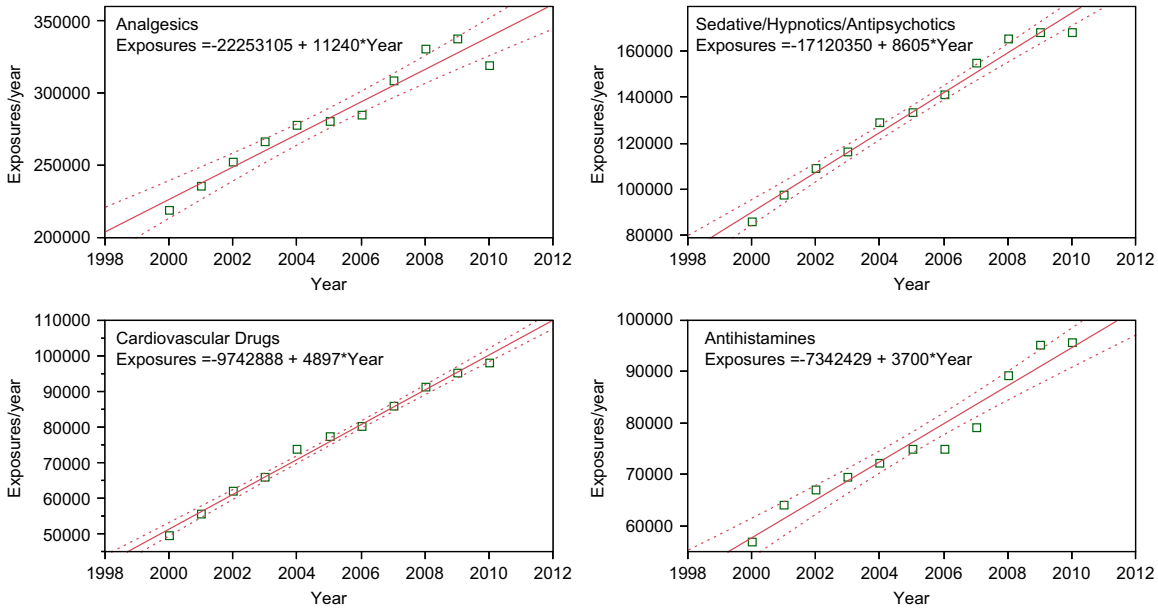


Fig. 7. Human Exposure Calls By Year 2000–2010 – Top 4 Categories.

Solid lines show least-squares linear regressions for the Human Exposure Calls per year for that category (□). Broken lines show 95% confidence interval on the regression. (See colour version of this figure online).

fentanyl (transdermal), 11 colchicine, 11 opioid, 7 propoxyphene)

128 cardiovascular drugs (24 amlodipine, 17 cardiac glycoside, 13 verapamil, 7 atenolol, 7 beta blocker, 7 diltiazem, 7 diltiazem (extended release), 7 metoprolol)

112 antidepressants (29 amitriptyline, 12 doxepin, 9 citalopram, 9 venlafaxine, 8 trazodone, 7 tricyclic antidepressant, 6 bupropion, 6 bupropion (extended release), 5 venlafaxine (extended release))

106 sedative/hypnotic/antipsychotics (31 quetiapine, 16 alprazolam, 8 clonazepam, 7 diazepam, 6 lorazepam), 86 stimulants/street drugs (28 methamphetamine, 20 heroin, 20 cocaine, 10 methylenedioxymethamphetamine (MDMA))

Table 17A. Substance Categories Most Frequently Involved in Human Exposures (Top 25)

Substance (Major Generic Category)	All substances	%[a]	Single substance exposures	%[b]
Analgesics	319,622	11.48	208,222	9.70
Cosmetics/Personal Care Products	215,387	7.73	208,321	9.70
Cleaning Substances (Household)	202,056	7.26	180,493	8.41
Sedative/Hypnotics/Antipsychotics	168,030	6.03	66,897	3.12
Foreign Bodies/Toys/Miscellaneous	116,659	4.19	113,877	5.30
Topical Preparations	110,033	3.95	107,874	5.02
Antidepressants	103,041	3.70	43,675	2.03
Cardiovascular Drugs	98,386	3.53	48,460	2.26
Antihistamines	95,880	3.44	69,291	3.23
Pesticides	91,940	3.30	86,419	4.02
Alcohols	85,205	3.06	39,404	1.84
Cold and Cough Preparations	77,899	2.80	57,793	2.69
Vitamins	71,545	2.57	62,743	2.92
Bites and Envenomations	67,692	2.43	66,944	3.12
Antimicrobials	66,021	2.37	55,139	2.57
Hormones and Hormone Antagonists	58,890	2.11	40,410	1.88
Plants	53,526	1.92	50,759	2.36
Gastrointestinal Preparations	53,388	1.92	42,797	1.99
Stimulants and Street Drugs	51,641	1.85	30,654	1.43
Anticonvulsants	48,005	1.72	21,064	0.98
Hydrocarbons	42,663	1.53	40,402	1.88
Chemicals	39,908	1.43	34,393	1.60
Arts/Crafts/Office Supplies	33,502	1.20	32,493	1.51
Fumes/Gases/Vapors	32,797	1.18	30,468	1.42
Electrolytes and Minerals	32,505	1.17	27,172	1.27

[a]Percentages are based on the total number of substances reported in all exposures (N = 2,784,907).
[b]Percentages are based on the total number of single substance exposures (N = 2,147,248).

Table 17B. Substance Categories with the Greatest Rate of Exposure Increase (Top 25)

Substance (Major Generic Category)	Increase in exposures per year[a] Mean	95% CI[a]	All substances in 2010
Analgesics	11,240	[9034, 13446]	319,622
Sedative/Hypnotics/Antipsychotics	8,605	[7682, 9529]	168,030
Cardiovascular Drugs	4,897	[4579, 5216]	98,386
Antihistamines	3,700	[3055, 4346]	95,880
Alcohols	2,831	[2217, 3445]	85,205
Vitamins	2,337	[2005, 2668]	71,545
Gastrointestinal Preparations	2,256	[1706, 2807]	53,388
Hormones and Hormone Antagonists	1,948	[1633, 2264]	58,890
Anticonvulsants	1,898	[1557, 2240]	48,005
Topical Preparations	1,849	[611, 3088]	110,033
Other/Unknown Nondrug Substances	1,823	[1264, 2383]	32,102
Cosmetics/Personal Care Products	1,654	[56, 3252]	215,387
Cleaning Substances (Household)	1,560	[−295, 3415]	202,056
Antidepressants	1,475	[453, 2496]	103,041
Muscle Relaxants	1,241	[1074, 1407]	28,489
Miscellaneous Drugs	1,228	[781, 1676]	24,558
Anticholinergic Drugs	1,137	[852, 1422]	11,436
Foreign Bodies/Toys/Miscellaneous	1,093	[−142, 2329]	116,659
Antimicrobials	971	[533, 1409]	66,021
Dietary Supplements/Herbals/Homeopathic	900	[448, 1351]	32,052
Unknown Drug	784	[662, 905]	20,471
Deodorizers	684	[424, 944]	25,619
Essential Oils	646	[578, 715]	10,720
Eye/Ear/Nose/Throat Preparations	599	[471, 727]	21,172
Asthma Therapies	585	[22, 1149]	21,123

[a]Increase and confidence intervals are based on least squares linear regression of the number of calls per year for 2000–2010.

Table 17C. Substance Categories Most Frequently Involved in Pediatric (≤ 5 years) Exposures (Top 25)[a]

Substance (Major Generic Category)	All substances	%[b]	Single substance exposures	%[c]
Cosmetics/Personal Care Products	165,719	13.18	162,208	13.83
Analgesics	117,586	9.35	106,743	9.10
Cleaning Substances (Household)	116,203	9.24	111,817	9.53
Foreign Bodies/Toys/Miscellaneous	86,426	6.88	84,580	7.21
Topical Preparations	85,384	6.79	84,129	7.17
Vitamins	52,254	4.16	47,758	4.07
Antihistamines	47,674	3.79	42,690	3.64
Pesticides	40,418	3.22	39,333	3.35
Cold and Cough Preparations	38,410	3.06	34,865	2.97
Gastrointestinal Preparations	35,680	2.84	32,749	2.79
Plants	35,674	2.84	34,363	2.93
Antimicrobials	34,769	2.77	32,729	2.79
Cardiovascular Drugs	26,253	2.09	17,246	1.47
Arts/Crafts/Office Supplies	24,600	1.96	23,982	2.04
Hormones and Hormone Antagonists	24,593	1.96	19,013	1.62
Electrolytes and Minerals	22,891	1.82	20,854	1.78
Dietary Supplements/Herbals/Homeopathic	22,017	1.75	20,240	1.73
Alcohols	21,860	1.74	21,512	1.83
Deodorizers	21,799	1.73	21,571	1.84
Sedative/Hypnotics/Antipsychotics	15,746	1.25	12,314	1.05
Other/Unknown Nondrug Substances	14,258	1.13	13,790	1.18
Hydrocarbons	13,503	1.07	13,094	1.12
Asthma Therapies	13,436	1.07	12,279	1.05
Antidepressants	13,433	1.07	9,829	0.84
Information Calls	11,963	0.95	11,383	0.97

[a]Includes all children with actual or estimated ages ≤5 years old. Results do not include "Unknown Child" or "Unknown Age".
[b]Percentages are based on the total number of substances reported in pediatric exposures (N = 1,257,025).
[c]Percentages are based on the total number of single substance pediatric exposures (N = 1,173,168).

Table 17D. Substance Categories Most Frequently Involved in Adult (≥ 20 years) Exposures (Top 25)[a]

Substance (Major Generic Category)	All substances	%[b]	Single substance exposures	%[c]
Analgesics	149,532	12.96	69,333	10.01
Sedative/Hypnotics/ Antipsychotics	128,982	11.18	42,540	6.14
Antidepressants	71,367	6.19	24,389	3.52
Cleaning Substances (Household)	69,376	6.01	54,666	7.89
Cardiovascular Drugs	63,229	5.48	25,556	3.69
Alcohols	54,128	4.69	12,829	1.85
Bites and Envenomations	44,580	3.86	44,133	6.37
Pesticides	42,737	3.70	38,861	5.61
Anticonvulsants	33,720	2.92	12,391	1.79
Cosmetics/Personal Care Products	33,009	2.86	30,516	4.41
Antihistamines	29,962	2.60	14,557	2.10
Hormones and Hormone Antagonists	29,317	2.54	17,780	2.57
Stimulants and Street Drugs	25,559	2.22	12,065	1.74
Chemicals	23,504	2.04	19,552	2.82
Hydrocarbons	23,001	1.99	21,512	3.11
Fumes/Gases/Vapors	22,977	1.99	21,190	3.06
Antimicrobials	22,905	1.99	16,212	2.34
Muscle Relaxants	22,242	1.93	7,970	1.15
Cold and Cough Preparations	20,121	1.74	10,591	1.53
Topical Preparations	18,324	1.59	17,663	2.55
Food Products/Food Poisoning	17,228	1.49	16,728	2.42
Gastrointestinal Preparations	13,942	1.21	7,381	1.07
Information Calls	13,076	1.13	12,027	1.74
Miscellaneous Drugs	13,057	1.13	6,821	0.98
Other/Unknown Nondrug Substances	12,644	1.10	11,070	1.60

[a]Includes all adults with actual or estimated ages ≥20 years old. Results also include "Unknown Adult" but do not include "Unknown Age".
[b]Percentages are based on the total number of substances reported in adult exposures (N = 1,153,827).
[c]Percentages are based on the total number of single substance adult exposures (N = 692,666).

Table 17E. Substance Categories Most Frequently Involved in Pediatric (≤5 years) Deaths[a]

Substance (Major Generic Category)	All substances	%[b]	Single substance exposures	%[c]
Analgesics	11	15.71	7	14.89
Antihistamines	6	8.57	3	6.38
Sedative/Hypnotics/ Antipsychotics	6	8.57	3	6.38
Fumes/Gases/Vapors	5	7.14	5	10.64
Chemicals	4	5.71	2	4.26
Cold and Cough Preparations	4	5.71	2	4.26
Food Products/Food Poisoning	4	5.71	4	8.51
Pesticides	4	5.71	2	4.26
Alcohols	3	4.29	1	2.13
Cardiovascular Drugs	3	4.29	3	6.38
Hydrocarbons	3	4.29	3	6.38
Unknown Drug	3	4.29	2	4.26
Automotive/Aircraft/ Boat Products	2	2.86	1	2.13
Batteries	2	2.86	2	4.26
Bites and Envenomations	2	2.86	2	4.26
Other/Unknown Nondrug Substances	2	2.86	1	2.13
Cleaning Substances (Household)	1	1.43	1	2.13
Dietary Supplements/ Herbals/ Homeopathic	1	1.43	1	2.13
Electrolytes and Minerals	1	1.43	1	2.13
Foreign Bodies/Toys/ Miscellaneous	1	1.43	0	0.00
Hormones and Hormone Antagonists	1	1.43	1	2.13
Information Calls	1	1.43	0	0.00
Total	**70**	**100.00**	**47**	**100.00**

[a]Includes all children with actual or estimated ages ≤5 years old. Results do not include "Unknown Child" or "Unknown Age". Includes death and death, indirect regardless of Relative Contribution to Fatality.
[b]Percentages are based on the total number of substances reported in pediatric fatalities (N = 70).
[c]Percentages are based on the total number of single substance pediatric fatalities (N = 47).

The exposure was acute in 706 (51.7%), A/C = acute on chronic in 266 (19.5%), C = chronic exposure in 86 (6.3%) and U = unknown in 308 (22.6%).

A total of 1,639 tissue concentrations for 1 or more related analytes were reported in 692 cases. Most of these (1,537) are listed in Table 21, while all tissue concentrations are available to the member centers through the NPDS Enterprise Reports. These 125 analytes included: 231 acetaminophen, 153 ethanol, 76 hydrocodone, 67 oxycodone, 60 alprazolam, 60 methadone, 54 salicylate, 33 diphenhydramine, 28 morphine.

Route of exposure was: Ingestion only in 1057 cases (77.4%), inhalation/nasal only in 89 cases (6.5%), parenteral in 23 cases (1.7%). Most other routes were combination routes or unknown.

The Intentional exposure reason was: Suspected suicide in 673 cases (49.3%), Abuse in 230 cases (16.8%), and Misuse in 49 cases (3.6%). Unintentional exposure reason was: Environmental in 36 cases (2.6%), Therapeutic error in 29 cases (2.1%), and Misuse in 21 cases 1.5%), and Occupational in 15 (1.1%). Adverse drug reaction was the reason in 27 (2.0%).

Pediatric fatalities – age ≤5 years

Although children younger than 6 years were involved in the majority of exposures, they comprised 55 of 1,730 (3.2%) of fatalities. These numbers are similar to those reported since 1985 (Table 19A). The percentage fatalities in children ≤5 years related to total pediatric

Table 17F. Substance Categories Most Frequently Identified in Drug Identification Calls (Top 25)

Substance (Major Generic Category)	All substances	%[a]
Analgesics	506,838	35.05
Sedative/Hypnotics/Antipsychotics	180,009	12.45
Information Calls	139,789	9.67
Unknown Drug	77,584	5.37
Muscle Relaxants	69,595	4.81
Antidepressants	63,202	4.37
Cardiovascular Drugs	57,682	3.99
Antihistamines	50,922	3.52
Antimicrobials	48,779	3.37
Stimulants and Street Drugs	31,795	2.20
Anticonvulsants	28,709	1.99
Hormones and Hormone Antagonists	26,667	1.84
Gastrointestinal Preparations	25,151	1.74
Cold and Cough Preparations	14,326	0.99
Diuretics	14,201	0.98
Miscellaneous Drugs	13,757	0.95
Pesticides	9,939	0.69
Foreign Bodies/Toys/ Miscellaneous	7,074	0.49
Other/Unknown Nondrug Substances	6,324	0.44
Plants	5,945	0.41
Cleaning Substances (Household)	5,603	0.39
Electrolytes and Minerals	4,303	0.30
Chemicals	4,191	0.29
Vitamins	4,186	0.29
Bites and Envenomations	4,107	0.28

[a]Percentages are based on the total number of substances reported in all drug identification calls (N = 1,446,038).

Table 17G. Substance Categories Most Frequently Involved in Pregnant Exposures[a] (Top 25)

Substance (Major Generic Category)	All substances	%[b]	Single substance exposures	%[c]
Analgesics	1,121	12.42	685	9.75
Cleaning Substances (Household)	796	8.82	593	8.44
Pesticides	629	6.97	576	8.20
Bites and Envenomations	523	5.79	521	7.41
Fumes/Gases/Vapors	506	5.61	471	6.70
Sedative/Hypnotics/ Antipsychotics	434	4.81	198	2.82
Vitamins	372	4.12	305	4.34
Antihistamines	303	3.36	186	2.65
Foreign Bodies/Toys/ Miscellaneous	278	3.08	260	3.70
Antidepressants	262	2.90	131	1.86
Information Calls	249	2.76	233	3.32
Cosmetics/Personal Care Products	247	2.74	227	3.23
Antimicrobials	219	2.43	158	2.25
Chemicals	194	2.15	169	2.40
Hydrocarbons	192	2.13	178	2.53
Cold and Cough Preparations	180	1.99	107	1.52
Food Products/Food Poisoning	149	1.65	146	2.08
Cardiovascular Drugs	144	1.60	97	1.38
Hormones and Hormone Antagonists	142	1.57	120	1.71
Alcohols	136	1.51	57	0.81
Electrolytes and Minerals	136	1.51	116	1.65
Gastrointestinal Preparations	132	1.46	105	1.49
Stimulants and Street Drugs	130	1.44	84	1.20
Other/Unknown Nondrug Substances	122	1.35	104	1.48
Paints and Stripping Agents	121	1.34	111	1.58

[a]Includes all patient classified as pregnant and all female patients with a 'duration of pregnancy' greater than 0.
[b]Percentages are based on the total number of substances reported in pregnant exposures (N = 9,027).
[c]Percentages are based on the total number of single substance pregnant exposures (N = 7,028).

exposures was 32/1,207,575 = 0.00265%. By comparison, 1,052/858,982 = 0.122% of all adult exposures involved a fatality. Of these 32 pediatric fatalities, 18 (81.3%) were reported as unintentional and 2 (6.3%) were coded as resulting from malicious intent (Table 8).

The 37 fatalities in children ≤5 years old in Table 21 (includes death, indirect reports, and RCF 1–3) included 16 pharmaceuticals and 21 nonpharmaceuticals. The first ranked substances associated with these fatalities included: carbon monoxide in 3 cases, aluminum phosphide, hydrofluoric acid, lamp oil, smoke, diphenhydramine, flecainide in 2 cases each, and 22 other substances (1 each).

Pediatric fatalities – ages 6–12 years

In the age range 6–12 years, there were 3 reported fatalities, 1 of which was unintentional misuse, 1 was intentional abuse, and 1 unknown reason (Table 8). The 4 fatalities listed in Table 21 (includes death, indirect reports, and RCF 1–3) included: 2 fluorinated hydrocarbons, 1 carbon monoxide, and 1 oxycodone.

Adolescent fatalities – ages 13–19 years

In the age range 13–19 years, there were 56 reported fatalities including 46 intentional and 4 unintentional (Table 8). The 67 fatalities listed in Table 21 (includes death, indirect reports, and RCF 1–3) included 53 pharmaceuticals and 14 nonpharmaceuticals. The first ranked pharmaceuticals associated with these fatalities included: acetaminophen/hydrocodone, methylenedioxymethamphetamine (MDMA), oxycodone, and salicylate (3 cases each); acetaminophen, acetaminophen/diphenhydramine, clonazepam, colchicine, diphenhydramine, methadone, morphine (2 cases each); and the balance 1 substance each. The first ranked nonpharmaceuticals associated with these fatalities included: ethanol in 3 cases, cyanide, and ethylene glycol (2 cases each); and the balance 1 substance each.

Pregnancy and Fatalities

A total of 25 deaths of pregnant women have been reported from the years 2000 through 2010. The majority (21 of 25)

Table 18. Categories Associated with Largest Number of Fatalities (Top 25)[a]

Substance (Minor Generic Category)	All substances	%[b]	Single substance exposures	%[c]
Miscellaneous Sedative/ Hypnotics/ Antipsychotics	445	15.82	29	3.80
Miscellaneous Cardiovascular Drugs	265	9.42	53	6.94
Opioids	265	9.42	59	7.72
Acetaminophen Combinations	240	8.53	65	8.51
Miscellaneous Antidepressants	212	7.54	16	2.09
Miscellaneous Alcohols	171	6.08	38	4.97
Acetaminophen Alone	130	4.62	60	7.85
Miscellaneous Anticonvulsants	121	4.30	11	1.44
Miscellaneous Stimulants and Street Drugs	117	4.16	45	5.89
Cyclic Antidepressants	88	3.13	21	2.75
Miscellaneous Muscle Relaxants	78	2.77	6	0.79
Miscellaneous Antihistamines	66	2.35	12	1.57
Acetylsalicylic Acid Alone	62	2.20	21	2.75
Nonsteroidal Antiinflammatory Drugs	58	2.06	5	0.65
Miscellaneous Fumes/ Gases/Vapors	50	1.78	52	6.81
Miscellaneous Unknown Drug	41	1.46	57	7.46
Miscellaneous Chemicals	34	1.21	29	3.80
Oral Hypoglycemic	28	1.00	6	0.79
Miscellaneous Hormones and Hormone Antagonists	23	0.82	8	1.05
Other Miscellaneous Drugs	18	0.64	4	0.52
Miscellaneous Hydrocarbons	17	0.60	16	2.09
Acids	16	0.57	11	1.44
Miscellaneous Anticoagulants	13	0.46	3	0.39
Antacids	12	0.43	0	0.00
Automotive Products	12	0.43	10	1.31

[a]Numbers represent total exposures associated with 1,366 fatalities (with relative contribution to fatality of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory); each fatality may have had exposure to more than one substance.
[b]Percentages are based on the total number of substances reported in fatal exposures (N = 2,813).
[c]Percentages are based on the total number of single substance fatal exposures (N = 764).

were intentional exposures (misuse, abuse, or suspected suicide). There was 1 death in a pregnant women reported to NPDS in 2010. A 25 year-old female at 27 weeks gestation presented to the maternity ward with fetal demise. The patient was acidotic and in fulminate hepatic failure following an intentional ingestion of acetaminophen and aspirin. She expired on the afternoon of hospital day 3. The fatality was judged undoubtedly responsible to the acetaminophen and salicylate.

Table 19A. Comparisons of Death Data (1985–2010)[a]

	Total fatalities		Suicides		Pediatric deaths[b]	
Year	N	% of cases	N	% of deaths	N	% of deaths
1985	328	0.036	174	(53.0)	20	(6.1)
1986	406	0.037	223	(54.9)	15	(3.7)
1987	398	0.034	227	(57.0)	22	(5.5)
1988	544	0.040	296	(54.4)	30	(5.5)
1989	590	0.037	323	(54.7)	24	(4.1)
1990	553	0.032	320	(57.9)	21	(3.8)
1991	764	0.042	408	(53.4)	44	(5.8)
1992	705	0.038	395	(56.0)	29	(4.1)
1993	626	0.036	338	(54.0)	27	(4.3)
1994	766	0.040	410	(53.5)	26	(3.4)
1995	724	0.036	405	(55.9)	20	(2.8)
1996	726	0.034	358	(49.3)	29	(4.0)
1997	786	0.036	418	(53.2)	25	(3.2)
1998	775	0.035	421	(54.3)	16	(2.1)
1999	873	0.040	472	(54.1)	24	(2.7)
2000	921	0.042	477	(51.8)	20	(2.2)
2001	1,085	0.048	553	(51.0)	27	(2.5)
2002	1,170	0.049	635	(54.3)	27	(2.3)
2003	1,109	0.046	592	(53.4)	35	(3.2)
2004	1,190	0.049	642	(53.9)	27	(2.3)
2005	1,438	0.059	674	(46.9)	32	(2.2)
2006	1,515	0.063	705	(46.5)	39	(2.6)
2007	1,597	0.064	737	(46.1)	47	(2.9)
2008	1,756	0.070	797	(45.4)	39	(2.2)
2009	1,544	0.062	779	(50.5)	37	(2.4)
2010	1,730	0.072	779	(45.0)	55	(3.2)

[a]Human exposures with medical outcome of death or death, indirect regardless of Relative Contribution to Fatality.
[b]Includes all children with actual or estimated ages ≤ 5 years old. Results do not include "Unknown Child" or "Unknown Age". Includes death and death, indirect regardless of Relative Contribution to Fatality.

AAPCC Surveillance Results

A key component of the NPDS surveillance system is the variety of monitoring tools available to the NPDS user community. In addition to AAPCC national surveillance definitions, 38 regional PCs utilize NPDS as part of their surveillance programs. Five state health departments plus CDC run surveillance definitions in NPDS. Since Surveillance Anomaly 1, generated at 2:00 pm EDT on 17 September 2006, over 177,000 anomalies have been detected. More than 600 were confirmed as being of public health significance with regional PCs working collaboratively with their local and state health departments and in some instances CDC on the public health issues identified.

At the time of this report, 375 surveillance definitions run continuously, monitoring case and clinical effects volume and a variety of case based definitions from food poisoning to nerve agents. These definitions represent the surveillance work by many regional PCs, state health departments, the AAPCC, and the Health Studies Branch, Division of Environmental Hazards and Health Effects, National Center for Environmental Health, Centers for Disease Control, and Prevention (CDC).

In 2010, the NPDS surveillance application module underwent incremental improvements. Information call

Table 19B. Comparisons of Direct and Indirect Death Data (2000–2010)[a]

	All deaths			Suicides					Pediatric deaths				
Year	Total	Direct	Indirect	Total	% of deaths	Direct	% of direct	Indirect	Total	% of deaths	Direct	% of direct	Indirect
2000	864	845	19	448	51.85	443	52.43	5	18	2.08	18	2.13	0
2001	1066	952	114	542	50.84	503	52.84	39	26	2.44	24	2.52	2
2002	850	739	111	455	53.53	436	59.00	19	24	2.82	15	2.03	9
2003	867	826	41	464	53.52	454	54.96	10	29	3.34	22	2.66	7
2004	955	898	57	516	54.03	501	55.79	15	25	2.62	21	2.34	4
2005	1423	1332	91	666	46.80	656	49.25	10	32	2.25	26	1.95	6
2006	1515	1415	100	705	46.53	687	48.55	18	39	2.57	32	2.26	7
2007	1597	1502	95	737	46.15	712	47.40	25	47	2.94	41	2.73	6
2008	1756	1535	221	797	45.39	750	48.86	47	39	2.22	32	2.08	7
2009	1544	1452	92	779	50.45	748	51.52	31	37	2.40	31	2.13	6
2010	1730	1455	275	779	45.03	732	50.31	47	55	3.18	47	3.23	8

[a]Human exposures with medical outcome of death or death, indirect regardless of Relative Contribution to Fatality.

surveillance tools were enhanced with the activation of animal exposure call surveillance for volume definitions. Analysis process improvements included the addition of anomaly status tracking and case based time series reports.

Automated surveillance continues to remain controversial as a viable methodology to detect the index case of a public health event. Uniform evaluation algorithms are not available to determine the optimal methodologies.[8] Less controversial is the benefit to situational awareness that NPDS can provide. Typical NPDS surveillance data detects a response to an event rather than event prediction. This aids in situational awareness and resilience during and after a public health event.

2010 Gulf of Mexico Oil Spill

On Tuesday, 20 April 2010, an explosion aboard the Deepwater Horizon drilling rig working on a well one mile below the surface of the Gulf of Mexico created the largest unintentional oil spill in history. The human, animal, and environmental impact spanned thousands of miles across the Gulf Coast and the coastal states of Alabama, Florida, Louisiana, Texas, and Mississippi. US Poison Centers began receiving calls related to the spill. In order to better track these calls to aid state and CDC public health response, the AAPCC Rapid Coding Team in concert with Micromedex Poisindex staff activated a Gulf Oil Spill surveillance code. Product codes were also initiated for the two dispersants used (Corexit EC

Table 20. Frequency of Plant Exposures (Top 25)[a]

	Botanical name or Category	AAPCC Generic Code Name	N
1	Plants-general-unknown	Unknown Toxic Types or Unknown if Toxic	2,761
2	Botanical terms	Unknown Toxic Types or Unknown if Toxic	2,201
3	Unknown Botanical Name	Unknown Toxic Types or Unknown if Toxic	2,114
4	*Phytolacca americana* (L.)	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	1,933
5	*Spathiphyllum* spp.	Oxalates	1,550
6	*Ilex* spp. (not otherwise specified)	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	877
7	*Philodendron* spp.	Oxalates	852
8	Plants-pokeweed	Other Toxic Types	823
9	*Euphorbia pulcherrima* (Willd.)	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	750
10	*Toxicodendron radicans* (L.)	Skin Irritants (Excluding Oxalate Containing Plants)	690
11	Plants-cardiac glycosides	Cardiac Glycosides (Excluding Drugs)	637
12	Cherry (*Prunus* spp.)	Amygdalin and/or Cyanogenic Glycosides	556
13	Plants-cyanogenic glycosides	Amygdalin and/or Cyanogenic Glycosides	537
14	*Zantedeschia aethiopica*	Oxalates	497
15	*Malus species*	Amygdalin and/or Cyanogenic Glycosides	495
16	Berry (not otherwise specified)	Unknown Toxic Types or Unknown if Toxic	495
17	*Caladium* spp.	Oxalates	461
18	Mold (not otherwise specified)	Unknown Toxic Types or Unknown if Toxic	451
19	*Narcissus* pseudonarcissus (L.)	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	424
20	*Taraxacum officinale*	Non-Toxic	409
21	*Epipremnum areum*	Oxalates	409
22	*Solanum dulcamara*	Solanine	406
23	*Nandina domestica* (Thumb)	Unknown Toxic Types or Unknown if Toxic	384
24	*Schlumbergera bridgesii*	Non-Toxic	384
25	Plants-oxalates	Oxalates	375

[a]Number of substances related to a human exposure with a Major Generic Category of Plant. Unknown Botanical Name represents substances with a Major Generic Category of Plant and a NULL substance code. Total = 53, 526.

9500A and EC 9527A, Nalco Company, Naperville, IL). As the disaster progressed, another product code was implemented for Contaminated Seafood so seafood questions could be tabulated. This code allowed the tracking of these calls in NPDS. US poison centers received 1932 calls (1222 exposure calls and 710 information calls). Figure 5 shows the distribution of calls received as of 1 July 2010 over space and time.

This data demonstrates how the public utilizes PCs in times of crisis. This unique system can be supported and enhanced to serve as a national public health hotline providing information and management beyond traditional poison exposure calls. PCs represent the only 24/7 system that is always open in the US and requires no membership or preregistration where the public can speak to a health care professional at no charge. This data demonstrates how the public utilizes PCs in times of crisis. This unique system can be supported and enhanced to serve as a national public health hotline providing information and management beyond traditional poison exposure calls.

THC Homologs and Bath Salts

In 2009 US poison centers began receiving an increased number of calls about THC homologs and Bath Salts. Several PCs worked with their state governments to ban sales of these products. On 1 March 2011, the US Drug Enforcement Administration used its emergency scheduling authority to place 5 THC homologs into controlled substances Schedule I.[9] Likewise on 7 September 2011, the DEA placed 3 synthetic stimulants into Schedule I.[10] This action makes possessing and selling these chemicals or the products that contain them illegal in the US for at least one year while the DEA and the Department of Health and Human Services decide whether these chemicals should be permanently controlled.

Figure 6 shows these emerging trends for each substance along with the time of the DEA action. The continuation of the graphics through October 2011 illustrates the real-time nature of NPDS.

Discussion

The exposure cases and information requests reported by PCs in 2010 do not reflect the full extent of PC efforts which also include poison prevention activities and public and health care professional education programs.

NPDS exposure data may be considered as providing "numerator data", in the absence of a true denominator, that is, we do not know the number of actual exposures that occur in the population. NPDS data covers only those exposures which are reported to PCs.

NPDS regression analyses indicate that all reported analgesic exposures including opioids and sedatives are increasing year after year. This trend is shown in Table 17B and Figure 7. NPDS data mirrors CDC data that demonstrates similar findings.[11] Thus NPDS provides a real-time view of these public health issues without the need for data source extrapolations.

One of the limitations of NPDS data has been the perceived lack of fatality case volume compared to other reporting sources. Although NPDS fatality volumes are less than those reported by CDC for prior years, the immediacy of NPDS data offers a current window not readily available with other US surveillance systems.

Overall, NPDS encounter volume is larger than similar reporting systems for pharmaceutical exposures, adverse events, or food borne cases. Perceived limitations in NPDS volume are due in part to the fact that electronic surveillance systems seldom follow a federated approach with common output streams. This is particularly apparent with the various electronic medical record systems available. It is important to build a federated approach similar to the one modeled by NPDS to allow data sharing, for example, between hospital emergency departments and other medical record systems including medical examiner offices nationwide. Enhancements to NPDS can promote interoperability between NPDS and electronic medical records systems to better trend poison-related morbidity and mortality in the US and internationally.

Summary

Unintentional and intentional exposures continue to be a significant cause of morbidity and mortality in the US. The near real-time, always current status of NPDS represents a national public health resource to collect and monitor US exposure cases and information calls.

Changes in encounters in 2010 compared to 2009 shown in Figure 4 include:

- Total encounters (all exposure and information calls) decreased by 7.7%;
- All information calls decreased 12.6%, Drug ID calls decreased 10.9%, and human exposures decreased 3.8%;
- Health care facility (HCF) information calls decreased 13.6% while HCF exposures *increased* 2.7%;
- Human exposures with less serious outcomes decreased 5.9% while those with more serious outcomes (minor, moderate, major, or death) *increased* 4.5%;

These data support the continued value of poison center expertise and need for specialized medical toxicology information to manage the more severe exposures, despite a decrease in calls involving less severe exposures.

The continuing mission of NPDS is to provide a nationwide infrastructure for public health surveillance for all types of exposures, public health event identification, resilience response, and situational awareness tracking. NPDS is a model system for the nation and global public health.

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Appendix Materials are available online

Table 21
Table 22 A and B
Appendices

Disclaimer

The American Association of Poison Control Centers (AAPCC; http://www.aapcc.org) maintains the national database of information logged by the country's regional Poison Centers (PCs) serving all 50 United States, Puerto Rico, and the District of Columbia. 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, etc.), 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 PCs and data referenced from the AAPCC should not be construed to represent the complete incidence of national exposures to any substance(s).

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
Non-Pharmaceutical Exposures										
Alcohols										
1pa	4 y M				U	Unk	Oth-M	3		
		ethanol	1	1					ethanol	0.015 g/dL In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	0.016 mcg/mL In Blood (unspecified) @ Autopsy
		isopropanol	3	3					isopropanol	3.5 mg/dL In Blood (unspecified) @ Autopsy
		isopropanol	3	3					acetone	4.2 mg/dL In Blood (unspecified) @ Autopsy
		chlorpheniramine	4	4					chlorpheniramine	0.11 mcg/mL In Blood (unspecified) @ Autopsy
		diphenhydramine	5	5					diphenhydramine	0.66 mcg/mL In Blood (unspecified) @ Autopsy
		dextromethorphan	6	6					dextromethorphan	0.012 mcg/mL In Blood (unspecified) @ Autopsy
2p	16 y M				A	Ingst+ Unk	Int-A	1		
		ethanol*	3	1						
		fentanyl (transdermal)*	1	1						
		dextromethorphan*	2	2						
		marijuana*	4	2						
3pi	16 y F				U	Ingst+ Inhal	Unk	2		
		ethanol	1	1						
		marijuana	2	2						
		cyclobenzaprine	3	3						
4i	17 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
5ph	21 y M				A/C	Ingst	Int-U	2		
		ethanol*	3	1						
		morphine*	1	1						
		benzodiazepine*	2	2						
		clonazepam*	4	2						
		marijuana	5	5						
6	21 y F				C	Ingst	Int-S	1		
		methanol	1	1						
		ibuprofen	2	2						
7pa	22 y M				C	Ingst	Int-A	1		
		ethanol	1	1						
		alprazolam	2	2						
		acetaminophen/hydrocodone	3	3						
		drug, unknown	4	4						
8pa	22 y M				A	Ingst+ Unk	Int-S	1		
		drug, unknown*	4	1						
		ethanol*	1	1					ethanol	0.1 g/dL In Blood (unspecified) @ Unknown
		ethanol*	1	1					ethanol	118 mg/dL In Blood (unspecified) @ Unknown
		oxycodone	2	2					oxymorphone (total)	0.1 mg/L In Blood (unspecified) @ Unknown
		oxycodone	2	2					oxycodone (free)	0.12 mg/L In Blood (unspecified) @ Unknown
		benzodiazepine	3	3						
9pai	23 y M				U	Ingst	Int-A	2		
		ethanol	1	1					ethanol	0.22% (wt/Vol) In Whole Blood @ Autopsy
		ethanol	1	1					ethanol	0.3% (wt/Vol) In Vitreous @ Autopsy
		meperidine	2	2						
10a	31 y F				A	Ingst	Int-S	2		
		ethanol	2	1					ethanol	0.044 g/dL In Blood (unspecified) @ Unknown
		ethanol	2	1					ethanol	58 mg/dL In Blood (unspecified) @ Unknown
		butalbital*	3	3					butalbital	0.104 mg/L In Blood (unspecified) @ Unknown
		nondrug, unknown*	4	3						
		temazepam	1	4					temazepam	2.247 mg/L In Blood (unspecified) @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
11	32 y F				C	Ingst	Int-M	3		
		ethanol	2	1						
		acetaminophen	1	2						
12	32 y F				U	Ingst	Unk	2		
		methanol	1	1					methanol	13 mg/dL In Blood (unspecified) @ 18 d (pe)
13pa	34 y M				A/C	Ingst	Int-S	1		
		ethanol	1	1					ethanol	0.15% (wt/wt) In Blood (unspecified) @ Unknown
		quetiapine	3	2					quetiapine	0.65 mg/L In Blood (unspecified) @ Unknown
		lithium	4	3					lithium	1.5 mmol/L In Blood (unspecified) @ Unknown
		citalopram	2	4					citalopram	0.54 mg/L In Blood (unspecified) @ Unknown
14a	39 y M				A	Ingst	Int-S	1		
		methanol	1	1						
15p	39 y M				A	Ingst	Int-S	2		
		ethanol	1	1						
		zolpidem	2	2						
		trazodone	3	3						
16pai	39 y M				U	Ingst	Int-S	2		
		ethanol	1	1					ethanol	0.55% (wt/Vol) In Vitreous @ Autopsy
		ethanol	1	1					ethanol	0.72% (wt/Vol) In Whole Blood @ Autopsy
		diphenhydramine	2	2						
		chlorpheniramine	3	3						
		cyclobenzaprine	4	4						
17	40 y F				U	Ingst+ Unk	Int-A	2		
		isopropanol	1	1						
		mouthwash (ethanol)	2	2						
		heroin	3	3						
18	40 y M				A	Ingst	Int-S	2		
		ethanol	1	1						
		benzodiazepine	2	2						
19pai	40 y M				A	Ingst	Int-A	3		
		isopropanol	1	1					acetone	100% (wt/Vol) In Whole Blood @ Autopsy
		isopropanol	1	1					acetone	105% (wt/Vol) In Vitreous @ Autopsy
		isopropanol	1	1					isopropanol	191% (wt/Vol) In Whole Blood @ Autopsy
		isopropanol	1	1					isopropanol	199% (wt/Vol) In Vitreous @ Autopsy
		ethanol	2	2						
20	41 y M				A	Ingst	Int-S	2		
		ethanol	1	1					ethanol	436 mg/dL In Blood (unspecified) @ Unknown
21a	42 y F				A	Ingst	Oth-M	1		
		methanol	1	1					methanol	154 mg/dL In Serum @ Unknown
22a	44 y M				A	Ingst	Unk	1		
		methanol	1	1					methanol	79 mg/dL In Serum @ Unknown
23p	44 y F				A	Ingst	Unk	2		
		methanol	1	1						
		ethanol	2	2						
24pai	44 y M				A/C	Ingst	Int-A	3		
		ethanol	1	1					ethanol	0.34% (wt/Vol) In Whole Blood @ Autopsy
		ethanol	1	1					ethanol	0.4% (wt/Vol) In Vitreous @ Autopsy
25	45 y F				A	Ingst	Int-U	3		
		ethanol	1	1						
26	45 y F				A	Ingst	Unt-G	1		
		methanol	1	1						
27h	45 y M				U	Ingst	Int-U	3		
		ethanol	1	1						
28	46 y M				A	Ingst	Int-A	1		
		methanol	1	1					methanol	378 mg/dL In Blood (unspecified) @ 1 d (pe)

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
29pa	46 y F				A	Ingst	Int-S	2		
		ethanol	2	1					ethanol	76 mg/dL In Blood (unspecified) @ Unknown
		ethanol	2	1					ethanol	85 mg/dL In Blood (unspecified) @ Unknown
		diazepam	3	2						
		acetaminophen	1	3					acetaminophen	20 mcg/mL In Blood (unspecified) @ Unknown
		diphenhydramine	4	4					diphenhydramine	1200 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	5	5					fluoxetine	61 ng/mL In Blood (unspecified) @ Autopsy
30a	47 y M				A	Ingst	Int-S	1		
		antifreeze (ethylene glycol)*	1	1					ethylene glycol	130 mg/dL In Other @ Unknown
		methanol*	2	1						
31a	48 y M				A	Ingst	Unk	1		
		methanol	1	1					methanol	13 mg/dL In Serum @ Unknown
32a	48 y F				U	Ingst	Unk	1		
		methanol	1	1					methanol	102 mg/dL In Serum @ 4 h (pe)
33pai	48 y F				A	Ingst	Int-A	2		
		ethanol	1	1					ethanol	0.38% (wt/Vol) In Vitreous @ Autopsy
		ethanol	1	1					ethanol	0.38% (wt/Vol) In Whole Blood @ Autopsy
34	49 y M				A/C	Ingst	Int-A	3		
		ethanol	1	1						
		isopropanol	2	2						
35	49 y M				U	Ingst	Int-U	2		
		methanol	1	1						
36a	50 y M				U	Ingst	Int-S	1		
		methanol	1	1					methanol	163 mg/dL In Blood (unspecified) @ Unknown
		methanol	1	1					methanol	26 mg/dL In Blood (unspecified) @ Unknown
37	50 y M				A	Ingst	Int-S	3		
		ethanol	1	1						
38	50 y M				C	Ingst+ Inhal	Int-A	1		
		methanol	1	1					methanol	75 mg/dL In Blood (unspecified) @ 1 d (pe)
		acetaminophen/ hydrocodone	2	3					acetaminophen	68 mcg/mL In Blood (unspecified) @ Unknown
39pai	50 y F				U	Ingst	Int-A	3		
		ethanol	1	1					ethanol	0.32% (wt/Vol) In Whole Blood @ Autopsy
		ethanol	1	1					ethanol	0.37% (wt/Vol) In Vitreous @ Autopsy
		alprazolam	2	2					alprazolam	106 ng/mL In Whole Blood @ Autopsy
40i	51 y M				A/C	Ingst	Int-S	2		
		ethanol	1	1					ethanol	320 mg/dL In Serum @ 1 h (pe)
41h	51 y F				A/C	Ingst	Int-S	2		
		ethanol	1	1					ethanol	259 mg/dL In Blood (unspecified) @ Unknown
		bupropion (extended release)	2	2						
		propranolol	3	3						
		cyclobenzaprine	4	4						
		lorazepam	5	5						
		hydrochlorothiazide	6	6						
		paroxetine	7	7						
		ondansetron	8	8						
		simvastatin	9	9						
42	51 y M				A	Ingst	Int-A	2		
		ethanol	1	1					ethanol	200 mg/dL In Blood (unspecified) @ Unknown
		alcohol, unknown	2	2						
43	51 y M				A	Ingst	Int-U	3		
		ethanol	1	1					ethanol	190 mg/dL In Blood (unspecified) @ 1 h (pe)
44	52 y F				U	Ingst	Unk	1		
		methanol	1	1						
45	52 y F				A/C	Ingst	Int-A	3		
		isopropanol	1	1						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
46pa	52 y M				A	Ingst	Int-S	1		
		ethanol*	1	1						
		oxycodone (extended release)*	2	1					oxycodone	502 ng/mL In Whole Blood @ Autopsy
47pa	57 y M				U	Inhal	Int-A	1		
		butanol*	1	1						
		heavy metal fumes*	2	1						
48a	58 y F				C	Ingst	Int-A	3		
		ethanol	1	1						
		phenobarbital	2	2					phenobarbital	8.6 mg/L In Blood (unspecified) @ Unknown
		cyclobenzaprine	3	3					cyclobenzaprine	0.03 mg/L In Blood (unspecified) @ Unknown
49	59 y F				A/C	Ingst	Oth-W	2		
		ethanol	1	1						
50a	60 y M				A/C	Ingst	Int-U	3		
		ethanol	1	1					ethanol	114 mg/dL In Serum @ Unknown
		ethanol	1	1					ethanol	30 mg/dL In Blood (unspecified) @ Autopsy
		isopropanol	2	2					acetone	14 mg/dL In Blood (unspecified) @ Autopsy
		isopropanol	2	2					isopropanol	8 mg/dL In Blood (unspecified) @ Autopsy
51p	62 y F				A	Ingst	Unk	3		
		ethanol	1	1					ethanol	38 mg/dL In Serum @ 0 h (pe)
		acetaminophen	2	2						
52	62 y M				A/C	Ingst	Int-A	2		
		ethanol	1	1					ethanol	100 mg/dL In Serum @ Unknown
53pai	62 y F				U	Ingst	Int-A	1		
		ethanol	1	1					ethanol	0.33% (wt/Vol) In Whole Blood @ Autopsy
		ethanol	1	1					ethanol	0.41% (wt/Vol) In Vitreous @ Autopsy
54pa	64 y M				C	Ingst	Unk	1		
		ethanol	1	1					ethanol	0.14% (wt/Vol) In Blood (unspecified) @ Autopsy
		acetaminophen/ codeine	2	2					codeine	1.6 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen/ codeine	2	2					acetaminophen	57 mg/L In Blood (unspecified) @ Autopsy
55pai	65 y F				U	Ingst	Int-A	3		
		ethanol	1	1					ethanol	0.39% (wt/Vol) In Whole Blood @ Autopsy
		ethanol	1	1					ethanol	0.45% (wt/Vol) In Vitreous @ Autopsy
		paroxetine	2	2						
56pai	72 y F				U	Ingst	Int-A	2		
		ethanol	1	1					ethanol	0.35% (wt/Vol) In Whole Blood @ Autopsy
		ethanol	1	1					ethanol	0.39% (wt/Vol) In Vitreous @ Autopsy
57	78 y F				U	Ingst	Int-A	2		
		ethanol	1	1						
58	7 m M				A	Oth	Unt-T	1		
		isopropanol	1	1						

See also case 88, 100, 155, 174, 187, 188, 194, 217, 246, 261, 290, 296, 301, 306, 313, 321, 323, 325, 331, 351, 359, 366, 369, 370, 373, 375, 390, 391, 397, 410, 423, 435, 448, 454, 461, 467, 480, 486, 492, 512, 518, 528, 535, 549, 553, 556, 558, 564, 568, 570, 572, 575, 578, 582, 588, 589, 592, 596, 599, 601, 616, 617, 619, 625, 629, 630, 631, 640, 655, 656, 673, 680, 681, 692, 706, 707, 719, 731, 761, 771, 805, 807, 813, 815, 816, 832, 833, 837, 839, 854, 857, 869, 890, 893, 898, 909, 911, 913, 918, 931, 936, 951, 952, 960, 977, 988, 989, 992, 998, 1001, 1004, 1005, 1006, 1007, 1019, 1020, 1027, 1030, 1057, 1101, 1109, 1114, 1141, 1156, 1170, 1177, 1178, 1181, 1187, 1189, 1197, 1203, 1209, 1214, 1216, 1218, 1221, 1224, 1228, 1229, 1237, 1272, 1276, 1288, 1300, 1309, 1310, 1311, 1313, 1338, 1340, 1345, 1346, 1347, 1350

Automotive/Aircraft/Boat Products

59	16 y M				A	Ingst	Int-S	1		
		antifreeze (ethylene glycol)	1	1						
60	18 y M				A	Ingst	Int-S	2		
		antifreeze (ethylene glycol)	1	1						
		amino acids/ caffeine/vitamins	2	2						
61a	31 y M				U	Ingst	Int-S	1		
		antifreeze (ethylene glycol)	1	1					ethylene glycol	203 mg/dL In Blood (unspecified) @ Unknown

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
62a	36 y F				A	Ingst	Oth-M	1		
		methanol	1	1					methanol	140 mg/dL In Blood (unspecified) @ Unknown
63	43 y M				A	Ingst	Int-S	1		
		antifreeze (ethylene glycol)	1	1					ethylene glycol	57 mg/dL In Blood (unspecified) @ 14 h (pe)
64a	44 y F				A	Ingst	Int-A	1		
		methanol	1	1					methanol	510 mg/dL In Blood (unspecified) @ Autopsy
65	45 y M				U	Ingst	Int-U	1		
		methanol	1	1					methanol	180 mg/dL In Blood (unspecified) @ 6 h (pe)
66a	49 y M				A	Ingst	Int-S	1		
		antifreeze (ethylene glycol)	1	1					ethylene glycol	1282 mg/dL In Serum @ 30 m (pe)
		antifreeze (ethylene glycol)	1	1					ethylene glycol	554 mg/dL In Serum @ 18 h (pe)
		antifreeze (ethylene glycol)	1	1					ethylene glycol	770 mg/dL In Serum @ 12 h (pe)
67	55 y M				A	Ingst	Int-S	1		
		antifreeze (ethylene glycol)	1	1						
68a	13 m M				U	Ingst	Unt-G	1		
		antifreeze (ethylene glycol)	1	1						
See also case 77, 129, 179, 1213										
Batteries										
69	2 y F				A	Ingst	Unt-G	1		
		disc battery, lithium	1	1						
70a	47 y F				A	Ingst	Int-S	2		
		battery	1	1						
		morphine (extended release)	2	2						
		hydromorphone	3	3						
		drug, unknown	4	4						
71ai	13 m M				A	Ingst	Unt-G	1		
		disc battery	1	1						
Bites and Envenomations										
72	82 y M				A	B-S	Unt-B	3		
		hymenoptera sting	1	1						
73	84 y M				A	B-S	Unt-B	3		
		hymenoptera sting	1	1						
74a	23 m F				A	B-S	Unt-B	1		
		envenomation, crotalid	1	1						
75	5 d F				A	B-S	Unt-B	1		
		bite (canine)	1	1						
See also case 1259										
Chemicals										
76p	3 y M				A	Ingst	Unt-G	1		
		hydrofluoric acid	1	1						
77a	4 y F				A	Ingst	Unt-G	1		
		hydrofluoric acid	1	1						
		automotive-aircraft-boat product	3	3						
78p	17 y M				A	Inhal+ Derm	Unt-O	1		
		hydrocarbons	1	1						
79	19 y F				A	Inhal	Unt-E	1		
		cyanide	2	1						
		carbon monoxide	1	2						
		smoke	3	3						
80p	19 y M				A	Ingst	Int-S	1		
		cyanide	1	1					cyanide	11300 ng/mL In Whole Blood @ 5 h (pe)
81pa	22 y M				A	Inhal	Int-A	2		
		chemical, unknown	1	1						
82	24 y M				A	Ingst	Int-U	1		
		antifreeze (ethylene glycol)	1	1						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
83p	24 y M				A	Inhal	Int-S	2		
		sulfur	1	1						
		toilet bowl cleaner (acid)	2	2						
84pa	33 y F				A	Ingst	Int-M	1		
		cyanide	1	1					cyanide	15 mg/L In Blood (unspecified) @ Unknown
		venlafaxine	2	2						
		lorazepam	3	3						
85	35 y M				A/C	Ingst	Int-S	2		
		antifreeze (ethylene glycol)	1	1						
86pai	35 y M				U	Ingst	Int-S	1		
		antifreeze (ethylene glycol)	1	1					ethylene glycol	6100 mcg/mL In Whole Blood @ Autopsy
87i	42 y M				A	Ingst	Int-S	2		
		hydrochloric acid	1	1						
88	42 y M				A	Ingst	Int-S	2		
		antifreeze (ethylene glycol)	1	1						
		ethanol	2	2					ethanol	54 mg/dL In Blood (unspecified) @ Unknown
89p	47 y F				A	Ingst	Int-S	2		
		antifreeze (ethylene glycol)	1	1						
90	49 y M				A	Ingst	Int-S	2		
		hydrochloric acid	1	1						
91	50 y M				A	Ingst	Int-S	1		
		antifreeze (ethylene glycol)	1	1						
92pa	50 y F				A	Unk	Unk	2		
		cyanide	1	1						
93a	51 y F				U	Ingst	Int-S	1		
		antifreeze (ethylene glycol)	4	1					ethylene glycol	1073 mg/L In Serum @ Unknown
		antifreeze (ethylene glycol)	4	1					ethylene glycol	200 mg/L In Serum @ Autopsy
		zolpidem	1	2					zolpidem	0.11 mg/L In Serum @ Unknown
		acetaminophen/ hydrocodone*	3	3					hydrocodone	0.01 mg/L In Serum @ Unknown
		clonazepam*	2	3						
		tramadol	5	5					tramadol	3.9 mg/L In Serum @ Unknown
		propoxyphene	6	6					propoxyphene	0.11 mg/L In Serum @ Unknown
94	51 y F				A	Ingst	Int-U	1		
		antifreeze (ethylene glycol)	1	1					ethylene glycol	125 mg/dL In Serum @ 1 h (pe)
		antifreeze (ethylene glycol)	1	1					ethylene glycol	34 mg/dL In Serum @ 2 d (pe)
		antifreeze (ethylene glycol)	1	1					ethylene glycol	75 mg/dL In Serum @ 1 d (pe)
95	53 y M				A	Ingst	Int-U	2		
		antifreeze (ethylene glycol)	1	1						
96	55 y F				A	Ingst	Int-S	1		
		hydrochloric acid	1	1						
97a	57 y M				A	Unk	Int-S	1		
		antifreeze (ethylene glycol)	1	1						
98pa	59 y M				A	Ingst	Int-S	1		
		cyanide	1	1					citralopram	0.061 mg/L In Blood (unspecified) @ Unknown
		cyanide	1	1					cyanide	13.3 mg/L In Blood (unspecified) @ Autopsy
		cyanide	1	1					cyanide	4.7 mg/L In Blood (unspecified) @ 30 m (pe)
99	59 y M				A	Ingst	Int-S	1		
		hydrochloric acid	1	1						
100a	60 y F				A	Ingst	Int-S	1		
		hydrochloric acid	1	1					hydromorphone	14.1 ng/mL In Blood (unspecified) @ Autopsy
		hydrochloric acid	1	1					diazepam	211 ng/mL In Blood (unspecified) @ Autopsy
		hydrochloric acid	1	1					lorazepam	267 ng/mL In Blood (unspecified) @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		hydrochloric acid	1	1					morphine	78.7 ng/mL In Blood (unspecified) @ Autopsy
		hydrochloric acid	1	1					nordiazepam	847 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.03% In Urine (quantitative only) @ Autopsy
		ethanol	2	2					ethanol	24 mg/dL In Blood (unspecified) @ Unknown
101	61 y M				A	Ingst	Int-S	2		
		hydrochloric acid	1	1						
102	61 y M				A	Ingst	Int-S	1		
		antifreeze (ethylene glycol)	1	1						
103	62 y M				A	Ingst	Int-S	1		
		hydrochloric acid	1	1						
104a	63 y M				A	Ingst+ Unk	Int-S	1		
		antifreeze (ethylene glycol)	1	1					ethylene glycol	474 mg/dL In Plasma @ 0 h (pe)
105p	63 y M				A	Ingst	Unt-M	1		
		hydrochloric acid	1	1						
106	64 y F				A	Ingst	Int-S	1		
		potassium hydroxide	1	1						
107pa	65 y M				A	Inhal+ Derm	Unt-O	3		
		drain cleaner (alkali)	1	1						
108	65 y F				A	Ingst	Int-S	1		
		ethylene glycol	1	1					ethylene glycol	643 mg/dL In Blood (unspecified) @ Unknown
109p	66 y M				A	Ingst	Int-S	1		
		cyanide	1	1						
110p	66 y F				U	Unk	Unt-G	2		
		hydrochloric acid	1	1						
111p	68 y F				A	Unk	Unk	1		
		antifreeze (ethylene glycol)	2	1					ethylene glycol	29 mg/dL In Blood (unspecified) @ 1 d (pe)
		substance (non-drug), unknown	1	2						
112h	69 y M				A	Ingst	Int-S	1		
		sulfuric acid	1	1						
113pa	76 y M				A	Ingst	Int-S	1		
		cyanide	1	1					cyanide	3.9 mg/L In Blood (unspecified) @ Autopsy
114a	76 y M				A	Ingst	Int-S	1		
		antifreeze (ethylene glycol)	1	1					ethylene glycol	100 mg/dL In Serum @ Unknown
		brodifacoum	2	2						
115	89 y M				A	Ingst	Unt-M	2		
		chemical, unknown	1	1						
116a	89 y M				A	Ingst	Unk	1		
		antifreeze (ethylene glycol)	1	1					ethylene glycol	420 mg/dL In Blood (unspecified) @ Unknown
117	40+ y M				A	Ingst	Int-S	1		
		drain cleaner (acid)	1	1						
118	50+ y M				A	Inhal+ Derm	Unt-G	3		
		cyanide	1	1						
See also case 30, 119, 153, 172, 199, 387, 780, 1108, 1231, 1298										
Cleaning Substances (Household)										
119p	21 y F				A	Inhal	Int-S	1		
		THC homolog	1	1						
		sulfur	2	2						
120a	25 y F				A	Ingst	Int-S	1		
		toilet bowl cleaner (acid)	1	1						
121	28 y M				A	Ingst+ Aspir	Int-S	1		
		drain opener (sulfuric acid)	1	1						
122a	32 y M				A	Ingst	Int-S	1		
		hypochlorite	1	1						
123	36 y F				A	Ingst	Int-S	1		

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		drain cleaner (alkali)	1	1						
124	40 y F				A	Ingst	Int-U	1		
		drain cleaner (alkali)	1	1						
125a	44 y F				A	Ingst	Int-S	1		
		toilet bowl cleaner (acid)	1	1						
126a	46 y M				A	Ingst+ Aspir	Int-S	1		
		drain cleaner (alkali)	1	1						
127	51 y M				A	Ingst	Int-S	2		
		drain cleaner (alkali)	1	1						
128	53 y F				A	Ingst	Unt-G	3		
		laundry detergent, liquid	1	1						
129a	54 y M				A	Ingst	Int-S	1		
		cleaner (acid)	1	1						
		ethylene glycol/ diethylene glycol	2	2						
		hydrochloric acid	3	3						
		xylene	4	4						
		hydrocarbons	5	5						
		cleaner (anionic/ nonionic)	6	6						
		acetone/toluene/propellants	7	7						
130	56 y M				U	Ingst	Int-S	1		
		hypochlorite	1	1						
131	60 y M				A	Ingst+ Aspir	Int-S	1		
		drain cleaner (acid)	1	1						
132	61 y F				A	Ingst	Int-S	1		
		drain cleaner	1	1						
133	65 y F				A	Ingst	Int-S	1		
		THC homolog	1	1						
134	73 y F				A	Ingst	Int-S	1		
		toilet bowl cleaner (acid)	1	1						
135	75 y M				A	Ingst	Unt-G	2		
		cleaner (ammonia)	1	1						
136	87 y F				A	Ingst+ Aspir	Unt-U	2		
		laundry deternent, liquid	1	1						
137	88 y F				A	Ingst	Unt-G	2		
		drain cleaner (alkali)	1	1						
138p	89 y M				A	Ingst	Unk	2		
		disinfectants (pine oil)	1	1						
See also case 83, 210, 1111, 1252										
Cosmetics/Personal Care Products										
139	82 y F				U	Ingst+ Aspir	Int-M	1		
		hydrogen peroxide	1	1						
See also case 17, 281										
Deodorizers										
140	84 y F				A	Ingst	Unt-G	2		
		air freshener (liquid)	1	1						
Essential Oils										
141	91 y M				A	Ingst+ Aspir	Unt-M	1		
		eucalyptus oil	1	1						
Food Products/Food Poisoning										
142	54 y M				A	Ingst	Unt-F	2		
		tetrodotoxin	1	1						
143i	77 y M				A	Ingst	Unt-F	1		
		botulism	1	1						
144	88 y F				A/C	Unk	Unt-G	2		
		botulism	1	1						
		azacitidine	2	2						
Fumes/Gases/Vapors										
145pa	3 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
146p	3 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	56% In Blood (unspecified) @ Unknown
147p	5 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
148pi	9 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
149p	16 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
150p	18 y M				A	Inhal	Int-A	1		
		propane	1	1						
151pi	18 y M				C	Inhal	Unt-M	1		
		carbon monoxide	1	1						
152pai	18 y M				A	Inhal	Oth-M	1		
		carbon monoxide	1	1					carboxyhemoglobin	77% In Blood (unspecified) @ Autopsy
153p	19 y M				A	Inhal	Unt-O	1		
		hydrogen sulfide	1	1						
		hydrochloric acid	2	2						
154pi	20 y M				C	Inhal	Unt-M	1		
		carbon monoxide	1	1						
155pai	21 y M				A	Inhal	Int-S	1		
		hydrogen sulfide	1	1						
		ethanol	2	2						
156pi	21 y M				C	Inhal	Unt-M	1		
		carbon monoxide	1	1						
157pa	26 y M				A	Inhal	Unt-O	2		
		nitrogen oxides	1	1						
158p	27 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
159p	27 y M				A	Inhal	Unt-O	2		
		methane	1	1						
160p	29 y M				A	Inhal	Unt-E	2		
		hydrogen sulfide	1	1						
161p	30 y M				A	Inhal	Unt-O	1		
		nitrogen gas	1	1						
162pi	30 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
163pai	33 y F				A	Inhal	Int-S	1		
		carbon monoxide	1	1					carboxyhemoglobin	84% In Blood (unspecified) @ Autopsy
164pa	34 y F				A	Inhal	Unt-E	2		
		fume-gas-vapor, unknown	1	1						
165	35 y M				A	Inhal	Unt-M	1		
		carbon monoxide	1	1						
166p	35 y M				A	Inhal	Unt-O	1		
		hydrogen sulfide	1	1						
167pa	35 y M				A	Inhal	Unt-E	2		
		fume-gas-vapor, unknown	1	1						
168pa	35 y M				A	Inhal	Unt-E	2		
		smoke	1	1						
169a	38 y F				A	Inhal	Unt-G	1		
		carbon monoxide	1	1					carboxyhemoglobin	36.4% In Blood (unspecified) @ Autopsy
170pai	38 y M				A	Inhal	Unt-M	1		
		chlorine gas	1	1						
171pi	39 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
172p	40 y M				A	Inhal	Unt-O	1		
		hydrogen sulfide	1	1						
		hydrochloric acid	2	2						
173	41 y M				A	Inhal	Unt-M	1		
		chlorine gas	1	1						
174pa	42 y M				A	Ingst+ Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	16.5% In Serum @ Autopsy
		ethanol	2	3					ethanol	54 mg/dL In Serum @ Autopsy
175p	43 y M				U	Ingst	Int-S	1		
		carbon monoxide	1	1						
		brodifacoum	2	2						
176i	44 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
177	45 y M				A	Inhal	Int-S	2		
		carbon monoxide	1	1						
178pai	46 y F				A	Inhal	Int-S	1		
		carbon monoxide	1	1					carboxyhemoglobin	77% In Blood (unspecified) @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
179pai	49 y M				A	Ingst+ Inhal	Int-S	2		
		carbon monoxide	1	1					carboxyhemoglobin	12% In Unknown @ Autopsy
		methanol	2	2						
180pa	50 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	37% In Whole Blood @ Autopsy
181pa	52 y M				A	Inhal	Unt-E	1		
		smoke	1	1						
182pi	53 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
183p	54 y M				A	Inhal	Unt-O	1		
		hydrogen sulfide	1	1						
184i	54 y M				C	Inhal	Unt-E	2		
		carbon monoxide	1	1						
185ai	57 y M				U	Inhal	Unt-O	3		
		chlorine gas	1	1						
186ha	59 y F				A	Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	33% In Blood (unspecified) @ Unknown
187	60 y M				A	Ingst+ Inhal	Int-S	2		
		drug, unknown*	1	1						
		natural gas*	2	1						
		oxygen	3	2						
		ethanol	4	3						
188pai	60 y F				A	Inhal	Int-S	1		
		carbon monoxide	1	1					carboxyhemoglobin	63% In Whole Blood @ Autopsy
		ethanol	2	2					ethanol	0.04% (wt/Vol) In Whole Blood @ Autopsy
189pa	60 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
190p	62 y M				A	Inhal	Unt-E	3		
		smoke	1	1					carboxyhemoglobin	31.2% In Blood (unspecified) @ 1 h (pe)
191ph	63 y M				A	Inhal	Unt-G	1		
		smoke	1	1						
192pa	64 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	45.9% In Blood (unspecified) @ Unknown
193pa	64 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	41% In Blood (unspecified) @ Autopsy
194pai	64 y M				U	Ingst+ Inhal	Int-S	1		
		carbon monoxide	1	1					carboxyhemoglobin	53% In Whole Blood @ Unknown
		ethanol	2	2					ethanol	0.24% (wt/Vol) In Whole Blood @ Unknown
195p	65 y M				A	Inhal	Unt-O	1		
		hydrogen sulfide	1	1						
196p	65 y F				A	Inhal	Unt-E	2		
		smoke	1	1						
197pa	67 y M				A	Inhal	Unt-E	1		
		smoke	1	1						
198	71 y M				U	Inhal	Int-U	2		
		natural gas	1	1						
199p	71 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		cyanide	2	2						
200a	72 y F				A	Inhal+ Derm	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	35% In Blood (unspecified) @ Autopsy
201p	74 y F				A	Inhal	Unt-G	1		
		carbon monoxide	1	1						
		fume-gas-vapor, unknown	2	2						
202	75 y M				A	Inhal	Unt-E	3		
		carbon monoxide	1	1					carboxyhemoglobin	13% In Blood (unspecified) @ Unknown
		carbon monoxide	1	1					carboxyhemoglobin	40% In Blood (unspecified) @ Unknown
203pai	82 y M				U	Inhal	Int-S	1		
		carbon monoxide	1	1					carboxyhemoglobin	81% In Whole Blood @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		diazepam	2	2						
		carbamazepine	3	3						
		laxative (stimulant)	4	4					sertraline	0.21 mcg/mL In Whole Blood @ Autopsy
204	92 y F				C	Inhal	Unt-E	1		
		carbon monoxide	1	1						
205pi	15 m F				A	Inhal	Unt-E	1		
		smoke	1	1						
206	18 m F				A	Inhal	Unt-E	3		
		smoke	1	1						
207p	50+ y M				A	Inhal	Int-S	1		
		carbon monoxide	1	1						
208p	80+ y F				U	Inhal	Unt-E	2		
		carbon monoxide	1	1						
209p	Unknown adult (>=20 yrs) M				A	Inhal	Int-S	1		
		hydrogen sulfide	1	1						
210i	Unknown adult (>=20 yrs) M				A	Inhal	Int-S	1		
		hydrogen sulfide	2	1						
		toilet bowl cleaner (alkali)	1	2						
See also case 79										
Heavy Metals										
211a	44 y M				A	Ingst	Int-S	1		
		arsenic	1	1						
See also case 47, 778, 1131										
Hydrocarbons										
212	3 y F				A	Ingst+ Aspir	Unt-G	1		
		lamp oil	1	1						
213	3 y M				A	Ingst+ Aspir	Unt-G	1		
		lamp oil	1	1						
214p	12 y M				A	Inhal	Int-A	1		
		fluorinated hydrocarbons	1	1						
215p	12 y F				A	Inhal	Unk	1		
		fluorinated hydrocarbons	1	1						
216pai	21 y M				A	Inhal	Int-A	2		
		toluene-xylene	1	1						
		alprazolam	2	2						
		diazepam	3	3						
217pai	21 y F				U	Inhal	Int-A	2		
		diflunisal	1	1						
		ethanol	2	2					ethanol	0.11% (wt/Vol) In Whole Blood @ Autopsy
218p	23 y M				A	Inhal	Int-A	2		
		fluorochlorocarbon/ propellant	1	1						
219	25 y M				U	Inhal	Int-A	2		
		tetrafluoroethane	1	1						
220	27 y M				A	Inhal	Int-A	2		
		fluorinated hydrocarbons	1	1						
221pa	28 y M				A	Inhal	Int-A	1		
		fluorochlorocarbon/ propellant	1	1						
222	31 y F				A	Inhal	Int-A	1		
		freon	1	1						
223a	42 y M				A	Inhal+ Derm	Int-S	1		
		gasoline	1	1						
224p	45 y F				A	Inhal	Int-A	2		
		fluorochlorocarbon/ propellant	1	1						
225	45 y M				A	Ingst	Int-S	1		
		mineral spirits	1	1						
226pa	50 y F				U	Inhal	Int-A	1		
		fluorochlorocarbon/ propellant	1	1					1,1-difluoroethane	32 mcg/mL In Blood (unspecified) @ Autopsy
227	94 y F				A	Ingst	Unt-G	1		
		hydrocarbon (pine oil)	1	1						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
228pa	18 m F				A	Ingst	Unt-G	1		
		mineral spirits	1	1						
229pi	40+ y M				A	Inhal	Unt-O	2		
		toluene	1	1						
		xylene	2	2						
See also case 38, 237, 811										
Industrial Cleaners										
230ha	31 y M				A	Derm	Unt-O	3		
		cleaner (alkali)	1	1						
See also case 129										
Information Calls										
231pa	4 y M				A	Unk	Unk	2		
		water	1	1						
		coin (quarter)	2	2						
Mushrooms										
232	68 y F				A/C	Ingst	Int-M	2		
		Amanita pantherina	1	1						
		Russula fragilis	2	2						
		Gymnopilus spectabilis	3	3						
Other/Unknown Nondrug Substances										
233a	21 y M				A	Inhal	Int-A	3		
		THC homolog	1	1						
		guaifenesin	2	2						
234p	35 y F				A	Ingst	Int-S	3		
		substance (non-drug), unknown	1	1						
235	50 y M				U	Ingst+ Unk	Unk	2		
		substance (non-drug), unknown	1	1						
		acetaminophen	2	2					acetaminophen	273 mcg/mL In Serum @ Unknown
236a	55 y F				A	Ingst	Unt-M	2		
		disinfectant (alkyldimethyl-benzyl ammonium chloride/nonionic)	1	1						
See also case 10, 111, 935										
Paints and Stripping Agents										
237pa	31 y M				A	Inhal	Unt-E	2		
		methylene chloride	1	1						
		hydrocarbons	2	2						
See also case 129										
Pesticides										
238a	4 y F				A	Inhal	Unt-E	1		
		aluminum phosphide	1	1						
239p	17 y M				A	Ingst	Int-S	2		
		paraquat	1	1						
240	41 y M				A	Ingst	Int-S	2		
		carbamate	1	1						
241a	46 y M				A	Ingst	Unt-M	1		
		chlorfenapyr	1	1						
242pa	47 y M				U	Ingst	Int-S	2		
		methomyl	1	1						
243	49 y M				A	Ingst+ Unk	Int-S	3		
		glyphosate	1	1						
		marijuana	2	2						
244	50 y M				A	Ingst	Unt-M	1		
		paraquat	1	1						
245	50 y M				A	Ingst	Int-S	1		
		aldicarb	1	1						
246	52 y M				A	Ingst	Int-S	2		
		organophosphate	1	1						
		ethanol	2	2						
247	55 y M				A	Ingst	Int-S	2		
		fungicide (non-medicinal)	1	1						
248a	56 y M				A	Ingst	Unt-M	3		
		chlorpyrifos	1	1						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
249	59 y F				A	Ingst	Int-S	1		
		glyphosate	1	1						
250p	61 y F				A	Ingst	Int-S	1		
		diazinon	1	1						
251p	64 y M				A	Ingst	Int-S	1		
		organophosphate	1	1						
252a	65 y M				A	Ingst	Int-S	2		
		ropinirole	1	1						
		oxcabazepine	2	2						
		lorazepam	3	3						
253	70 y M				A	Ingst	Int-S	3		
		carbamate	1	1						
254	72 y M				A	Ingst	Int-S	1		
		paraquat	1	1						
255a	88 y M				A	Ingst	Unt-M	2		
		malathion	1	1						
256	92 y M				A	Inhal	Unt-M	3		
		pyrethroids	1	1						
257a	15 m F				A	Inhal	Unt-E	1		
		aluminum phosphide	1	1						
258	2 d F				A	Oth	Oth-M	1		
		brodifacoum*	2	1						
		rodenticide (antocoagulant)*	1	1						
259p	50+ y U				A	Ingst	Int-S	1		
		strychnine	1	1						
See also case 114, 175, 1031										
Plants										
260pai	30 y U				A	Ingst	Int-M	1		
		Brugmansia suaveolens (Datura suaveolens)	1	1						
261h	55 y F				A	Ingst	Unt-M	2		
		Allium sativum	1	1						
		ethanol	2	2						
Weapons of Mass Destruction										
262	58 y M				A	Inhal+ Derm	Unt-O	1		
		phosgene	1	1						
Pharmaceutical Exposures										
Analgesics										
263pi	2 y M				A	Ingst	Unk	2		
		oxycodone	1	1						
264pa	2 y M				A	Ingst	Unt-G	1		
		methadone	1	1					eddp (2-ethylidene-1-,5-dimethyl-3-,3-diphenyl pyrrolidine)	33.5 ng/mL In Blood (unspecified) @ Autopsy
		methadone	1	1					methadone	514 ng/mL In Blood (unspecified) @ Autopsy
265pa	2 y F				A	Ingst	Unt-G	2		
		acetaminophen/hydrocodone	1	1						
		clonazepam	2	2						
		buprenorphine (sublingual)	3	3						
266	4 y F				A	Ingst	Unt-G	1		
		morphine	1	1						
		acetaminophen/oxycodone	2	2						
		alprazolam	3	3						
267pa	5 y M				A	Unk	AR-D	1		
		fentanyl	1	1						
268pa	7 y M				A	Ingst	Unt-M	1		
		oxycodone	1	1						
269pai	13 y M				U	Ingst	Int-A	1		
		oxycodone	1	1					oxycodone (total)	1956 ng/mL In Serum @ Autopsy
		oxycodone	1	1					oxycodone (total)	5000 ng/mL In Urine (quantitative only) @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
270pa	14 y M				A/C	Ingst	Unk	3		
		codeine	1	1					codeine	10000 ng/mL In Urine (quantitative only) @ Autopsy
		codeine	1	1					morphine	11.8 ng/mL In Blood (unspecified) @ Autopsy
		codeine	1	1					codeine	117 ng/mL In Blood (unspecified) @ Autopsy
		codeine	1	1					morphine	5069 ng/mL In Urine (quantitative only) @ Autopsy
		codeine	1	1					hydrocodone	57 ng/mL In Urine (quantitative only) @ Autopsy
		laxative (stimulant)	2	2					sertraline	274 ng/mL In Blood (unspecified) @ Autopsy
		laxative (stimulant)	2	2					norsertraline	526 ng/mL In Blood (unspecified) @ Autopsy
		quetiapine	3	3					quetiapine	190 ng/mL In Blood (unspecified) @ Autopsy
		aripiprazole	4	4					aripiprazole	190 ng/mL In Blood (unspecified) @ Autopsy
		valproic acid	5	5					valproic acid	19.6 mcg/mL In Blood (unspecified) @ Autopsy
		lisdexamfetamine	6	6					amphetamine	93 ng/mL In Blood (unspecified) @ Autopsy
		diphenhydramine	7	7					diphenhydramine	138 ng/mL In Blood (unspecified) @ Autopsy
		penicillin	8	8						
		meloxicam	9	9						
		clonidine	10	10						
271	14 y F				A	Ingst	Int-U	3		
		acetaminophen	1	1						
272ph	15 y M				A	Ingst	Int-U	1		
		morphine	1	1						
273pa	15 y M				A	Ingst	Int-A	2		
		oxycodone	1	1					oxycodone (total)	0.14 mcg/mL In Blood (unspecified) @ Unknown
274p	16 y F				A	Ingst	Int-S	2		
		morphine	1	1						
		lisdexamfetamine	2	2						
		laxative (stimulant)	3	3						
275pai	16 y M				U	Ingst	Int-A	2		
		acetaminophen/hydrocodone	1	1					hydrocodone	0.23 mcg/mL In Whole Blood @ Autopsy
		alprazolam	2	2						
		chlorpheniramine	3	3						
		dextromethorphan	4	4						
276pai	16 y M				U	Ingst	Int-A	1		
		acetaminophen/hydrocodone	1	1					hydrocodone	0.11 mcg/mL In Whole Blood @ Autopsy
277pai	17 y M				U	Unk	Unk	1		
		methadone	1	1					alpha-oh-alprazolam	0 mcg/mL In Whole Blood @ Autopsy
		methadone	1	1					alprazolam	0 Other (see abst) In Urine (quantitative only) @ Autopsy
		methadone	1	1					methadone	0.12 mcg/mL In Whole Blood @ Autopsy
		methadone	1	1					alprazolam	0.175 mcg/mL In Whole Blood @ Autopsy
		methadone	1	1					methadone	1.1 Other (see abst) In Liver @ Autopsy
		methadone	1	1					meprobamate	3.5 mcg/mL In Whole Blood @ Autopsy
278a	17 y M				A	Ingst	Int-S	1		
		acetaminophen*	2	1						
		acetaminophen/diphenhydramine*	1	1						
279ai	17 y M				A	Ingst	Int-S	2		
		colchicine	1	1						
		atenolol	2	2						
		amlodipine	3	3						
280a	17 y F				U	Ingst	Int-U	1		
		acetaminophen/diphenhydramine	1	1						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
281a	17 y F				A/C	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.46 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					acetaminophen	160 mcg/mL In Blood (unspecified) @ 6 h (pe)
		mouthwash (ethanol)	2	2						
		ibuprofen	3	3						
		naproxen	4	4						
		citalopram	5	5						
		magnesium	6	6						
		methylphenidate	7	7						
		dextromethorphan	8	8						
		pseudoephedrine	9	9						
		fluoxetine	10	10						
		guaifenesin	11	11						
		loperamide	12	12						
		phenol	13	13						
		haloperidol	14	14						
		hyoscyamine	15	15						
		rosuvastatin	16	16						
		montelukast	17	17						
		laxative, unknown	18	18						
282a	18 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	85.5 mg/dL In Serum @ 6 h (pe)
		salicylate	1	1					salicylate	98.2 mg/dL In Serum @ Autopsy
		loratadine	2	2						
283ph	18 y M				A/C	Ingst	Int-S	2		
		acetaminophen/ propoxyphene	1	1					acetaminophen	120 mcg/mL In Blood (unspecified) @ Unknown
		trazodone	2	2						
284	18 y M				A	Ingst	Int-A	1		
		colchicine	1	1						
285pi	18 y M				A	Ingst	Int-A	1		
		methadone	1	1						
286	18 y M				A	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1						
		acetaminophen/ dextromethorphan/ doxylamine/ pseudoephedrine	2	2						
		heroin	3	3						
287	19 y F				A	Ingst	Int-S	1		
		acetaminophen/butal-bital/caffeine	1	1						
		propoxyphene	2	2						
288pa	19 y M				U	Ingst	Int-S	1		
		oxycodone	1	1					oxycodone	364 ng/mL In Blood (unspecified) @ Autopsy
		morphine	2	2					morphine	84.2 ng/mL In Whole Blood @ Autopsy
		alprazolam	3	3					alprazolam	23.6 ng/mL In Blood (unspecified) @ Autopsy
289a	19 y F				A	Ingst	Int-S	1		
		ibuprofen	1	1					ibuprofen	410 mcg/mL In Blood (unspecified) @ 4 d (pe)
		salicylate	2	2					salicylate	29 mg/dL In Blood (unspecified) @ 4 h (pe)
		acetaminophen/ hydrocodone	3	3					acetaminophen	10.3 mcg/mL In Blood (unspecified) @ 4 h (pe)
		acetaminophen/ hydrocodone	3	3					hydrocodone	1576 ng/mL In Urine (quantitative only) @ 4 h (pe)
		acetaminophen/ hydrocodone	3	3					hydromorphone	298 ng/mL In Urine (quantitative only) @ 4 h (pe)
290p	19 y F				A	Ingst	Int-M	2		
		acetaminophen/ opioid	1	1						
		ethanol	2	2						
291p	19 y F				A	Unk	Int-S	3		
		salicylate	1	1					salicylate	25 mg/dL In Blood (unspecified) @ 8 h (pe)
		aripiprazole	2	2						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
292p	19 y F				A	Ingst	Int-S	1		
		salicylate	3	1					salicylate	47 mg/dL In Blood (unspecified) @ Unknown
		atenolol	2	2						
		amlodipine	1	3						
		diazepam	6	4						
		hydroxyzine	4	5						
		diphenhydramine	5	6						
		acetaminophen/hydrocodone	7	7						
		hydrochlorothiazide/triamterene	8	8						
293pa	20 y F				A	Inhal+ Unk	Int-A	1		
		fentanyl (transdermal)	1	1					fentanyl	4.5 mcg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					cocaine	1.3 mg/L In Blood (unspecified) @ Autopsy
		diazepam	3	3						
294pa	20 y F				A	Ingst	Int-U	1		
		morphine	1	1					morphine (total)	10000 ng/mL In Urine (quantitative only) @ Autopsy
		morphine	1	1					morphine (total)	502 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	2	2					nordiazepam	229 ng/mL In Urine (quantitative only) @ Autopsy
		diazepam	2	2					diazepam	64.7 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	2	2					nordiazepam	71.2 ng/mL In Blood (unspecified) @ Autopsy
		venlafaxine	3	3					norvenlafaxine	364 ng/mL In Blood (unspecified) @ Autopsy
		benzodiazepine	4	4					temazepam	364 ng/mL In Urine (quantitative only) @ Autopsy
		benzodiazepine	4	4					7-aminoclonazepam	45 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	5	5						
295	20 y M				A	Ingst	Int-S	1		
		colchicine	1	1						
296	20 y F				A/C	Ingst	Int-S	1		
		acetaminophen/hydrocodone	1	1					acetaminophen	25 mcg/mL In Serum @ Unknown
		ethanol	2	2					ethanol	260 mg/dL In Blood (unspecified) @ Unknown
297p	20 y F				A/C	Ingst	Int-S	2		
		tramadol	1	1					tramadol	3600 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	2	2					alprazolam	38 ng/mL In Blood (unspecified) @ Unknown
298p	20 y M				A/C	Ingst	Int-U	2		
		oxycodone	1	1						
299p	20 y M				A	Ingst	Unk	2		
		methadone	1	1						
		benzodiazepine	2	2						
300a	21 y F				A	Ingst	Int-S	1		
		tramadol	1	1					tramadol	2.8 mg/L In Blood (unspecified) @ Autopsy
		cyclobenzaprine	2	2						
		ibuprofen	3	3						
		amoxicillin	4	4						
301pai	21 y M				U	Ingst+ Unk	Int-A	1		
		oxycodone	1	1					oxycodone	0.98 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					cocaine	0.1 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					cocaethylene	0.18 mg/L In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	0.13% In Blood (unspecified) @ Autopsy
		citalopram	4	4					citalopram	0.15 mg/L In Blood (unspecified) @ Autopsy
302p	21 y M				A	Ingst	Int-A	2		
		oxymorphone (extended release)	1	1						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
303pai	21 y M				A	Ingst	Int-A	2		
		fentanyl	1	1					fentanyl	6.5 ng/mL In Whole Blood @ Autopsy
		alprazolam	2	2					alprazolam	70 ng/mL In Whole Blood @ Autopsy
		amphetamine	3	3					amphetamine	0.07 mcg/mL In Whole Blood @ Autopsy
304a	22 y F				C	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
305	22 y M				A	Ingst	Unk	2		
		methadone	1	1						
		benzodiazepine	2	2						
306pa	22 y F				A	Ingst	Int-A	1		
		methadone	1	1					methadone	350 ng/mL In Blood (unspecified) @ Autopsy
		methadone	1	1					eddp (2-ethylidene-1, 5-dimethyl-3, 3-diphenyl pyrrolidine)	69 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2						
307	22 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	400 mcg/mL In Blood (unspecified) @ Unknown
308	22 y M				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	29.3 mcg/mL In Serum @ Unknown
309	22 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	110 mg/dL In Serum @ 15 m (pe)
310pa	22 y F				A	Unk	Int-U	1		
		methadone	1	1					methadone	0.5 mg/L In Serum @ Autopsy
311pai	22 y M				U	Ingst	Int-A	2		
		oxycodone	1	1					oxycodone	0.21 mcg/mL In Whole Blood @ Autopsy
		acetaminophen/hydrocodone	2	2					hydrocodone	0.11 mcg/mL In Whole Blood @ Autopsy
312a	23 y F				A	Ingst	Int-M	1		
		acetaminophen/hydrocodone	1	1						
		acetaminophen	2	2					acetaminophen	76 mcg/mL In Blood (unspecified) @ Unknown
313pai	23 y F				U	Ingst	Int-A	1		
		acetaminophen/hydrocodone	1	1					hydrocodone	0.14 mcg/mL In Whole Blood @ Autopsy
		alprazolam	2	2					alprazolam	46 ng/mL In Whole Blood @ Autopsy
		methylene-dioxymethamphetamine (MDMA)	3	3					mdma (3,4-methylene dioxymetham-phetamine)	0.15 mcg/mL In Whole Blood @ Autopsy
		ethanol	4	4					ethanol	0.11% (wt/Vol) In Whole Blood @ Autopsy
		ethanol	4	4					ethanol	0.14% (wt/Vol) In Vitreous @ Autopsy
314p	23 y F				A/C	Ingst	Int-S	2		
		oxycodone	1	1						
		trazodone	2	2						
		alprazolam	3	3						
		gabapentin	4	4						
315	23 y F				A	Ingst	Int-M	2		
		acetaminophen/hydrocodone	1	1					acetaminophen	16 mcg/mL In Serum @ Unknown
		acetaminophen/hydrocodone	1	1					acetaminophen	25.6 mcg/mL In Serum @ Unknown
316	23 y M				A	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen	67.3 mcg/mL In Blood (unspecified) @ Unknown
317pi	24 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1						
		opioid	2	2						
		benzodiazepine	3	3						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
318	24 y F				U	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	58.4 mcg/mL In Blood (unspecified) @ 3 d (pe)
		salicylate	2	2					salicylate	0.6 mg/dL In Blood (unspecified) @ Unknown
		cocaine	3	3						
319	24 y F				U	Ingst	Int-S	2		
		acetaminophen	1	1						
320pai	24 y M				U	Ingst	Int-A	3		
		methadone	1	1					methadone	1.7 mcg/mL In Whole Blood @ Autopsy
321pai	24 y M				U	Ingst	Int-A	2		
		methadone	1	1					methadone	0.13 mcg/mL In Whole Blood @ Autopsy
		diphenhydramine	2	2					diphenhydramine	0.71 mcg/mL In Whole Blood @ Autopsy
		ethanol	3	3					ethanol	0.07% (wt/Vol) In Whole Blood @ Autopsy
		ethanol	3	3					ethanol	0.09% (wt/Vol) In Vitreous @ Autopsy
322pai	24 y M				A	Ingst+ Unk	Int-A	2		
		morphine	1	1					morphine	0.15 mcg/mL In Whole Blood @ Autopsy
		oxycodone	2	2						
		acetaminophen/ hydrocodone	3	3						
		fluoxetine	4	4						
323pai	24 y M				A	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.17 mcg/mL In Whole Blood @ Autopsy
		ethanol	2	2					ethanol	0.19% (wt/Vol) In Vitreous @ Autopsy
		ethanol	2	2					ethanol	0.22% (wt/Vol) In Blood (unspecified) @ Autopsy
		mirtazapine	3	3						
		citalopram	4	4						
324p	25 y F				A	Ingst	Unk	2		
		methadone	1	1						
		carbamazepine	2	2						
325i	25 y F				C	Ingst+ Inhal	Int-S	1		
		acetaminophen/ diphenhydramine	1	1						
		ethanol	2	2						
		morphine	3	3						
		cocaine	4	4						
		diazepam	5	5						
		opiod/salicylate	6	6						
326a	25 y F				U	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	22 mcg/mL In Serum @ Unknown
		acetaminophen/ hydrocodone	1	1					hydrocodone	26 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	2	2						
		acetaminophen	3	3						
		alprazolam	4	4						
		lorazepam	5	5						
		hydromorphone	6	6						
		skeletal muscle relaxant	7	7						
327	25 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	108.1 mg/dL In Serum @ 0 h (pe)
328pai	25 y F				A	Ingst	Int-M	1		
		methadone	1	1						
		citalopram	2	2						
329p	25 y F				A	Ingst	Unk	2		
		methadone	1	1						
		opioid	2	2						
		benzodiazepine	3	3						
330	25 y F-Pregnant				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	14 mcg/mL In Blood (unspecified) @ 11 h (pe)
		acetaminophen	1	1					acetaminophen	43 mcg/mL In Blood (unspecified) @ Unknown

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminophen	1	1					acetaminophen	8 mcg/mL In Blood (unspecified) @ 2 d (pe)
		salicylate	2	2					salicylate	40 mcg/mL In Blood (unspecified) @ Unknown
		salicylate	2	2					salicylate	43 mcg/mL In Blood (unspecified) @ 2 d (pe)
		salicylate	2	2					salicylate	90 mcg/mL In Blood (unspecified) @ 9 h (pe)
		acetaminophen/ oxycodone	3	3						
331pa	25 y M				A	Ingst	Int-U	2		
		methadone	1	1					methadone	0.2 mg/L In Whole Blood @ Autopsy
		ethanol	2	2						
332	25 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	102 mg/dL In Serum @ Unknown
		ibuprofen	2	2						
333a	25 y M				A	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1					acetaminophen	692 mcg/mL In Plasma @ 0 h (pe)
334	26 y M				A	Ingst	Int-S	2		
		acetaminophen/ diphenhydramine	1	1						
335p	26 y F				U	Ingst	Int-U	2		
		tramadol	1	1						
		acetaminophen/ hydrocodone	3	2						
		tricyclic antidepressant	2	4						
336	26 y F				U	Ingst	Int-U	1		
		acetaminophen*	1	1						
		drug, unknown*	2	1						
337	26 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	148 mcg/mL In Plasma @ Unknown
338pa	26 y M				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	100 mcg/mL In Serum @ Unknown
		acetaminophen	1	1					acetaminophen	72 mcg/mL In Serum @ Unknown
		acetaminophen	1	1					acetaminophen	751 mg/L In Gastric (stomach content) @ Autopsy
		oxycodone	2	2						
		benzodiazepine	3	3					alprazolam	0.01 mg/L In Serum @ Autopsy
		acetaminophen/ hydrocodone	4	4					hydrocodone	0.02 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	4	4					hydrocodone	4 mg/L In Gastric (stomach content) @ Autopsy
		carisoprodol	5	5					carisoprodol	16 mg/L In Blood (unspecified) @ Autopsy
		carisoprodol	5	5					carisoprodol	17500 mg/L In Gastric (stomach content) @ Autopsy
339pai	26 y M				U	Ingst	Int-A	2		
		methadone	1	1					methadone	0.4 mcg/L In Whole Blood @ Autopsy
340pha	27 y M				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					hydrocodone	543 ng/mL In Urine (quantitative only) @ 1 h (pe)
		acetaminophen/ hydrocodone	1	1					acetaminophen	97 mcg/mL In Serum @ 1 h (pe)
		cyclobenzaprine	2	2					cyclobenzaprine	0.28 mg/L In Blood (unspecified) @ 1 h (pe)
		cyclobenzaprine	2	2					cyclobenzaprine	136 mg/kg In Gastric (stomach content) @ Autopsy
		cyclobenzaprine	2	2					cyclobenzaprine	2.4 mg/kg In Liver @ Autopsy
		lamotrigine	3	3						
341pai	27 y F				U	Ingst	Int-A	3		
		oxycodone	1	1					oxycodone	1260 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	1	1					oxymorphone	20.1 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	2	2						
		diazepam	5	5					diazepam	66 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	5	5					nordiazepam	96.2 ng/mL In Blood (unspecified) @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
342p	27 y M				A	Ingst	Int-A	3		
		methadone	1	1						
		alprazolam	2	2						
343p	27 y F				A	Ingst	Int-S	2		
		acetaminophen/ diphenhydramine	1	1						
344a	27 y M				A	Ingst	Int-S	1		
		salicylate	1	1						
345	27 y F				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	15 mcg/mL In Blood (unspecified) @ Unknown
		methadone	2	2						
		benzodiazepine	3	3						
346a	27 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	80 mg/dL In Plasma @ Unknown
347p	27 y M				U	Ingst+ Aspir	Unk	2		
		methadone	1	1						
		acetaminophen/ oxycodone	2	2						
		carisoprodol	3	3						
		alprazolam	4	4						
348	27 y F				A	Ingst	Int-S	1		
		acetaminophen/ oxycodone	2	1					acetaminophen	76 mcg/mL In Blood (unspecified) @ Unknown
		phenobarbital	1	2					phenobarbital	50.6 mg/L In Blood (unspecified) @ Unknown
349	27 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	81 mg/dL In Serum @ 5 h (pe)
		acetaminophen	2	2					acetaminophen	32 mcg/mL In Serum @ 5 h (pe)
		acetaminophen/ diphenhydramine	3	3						
350p	27 y M				A	Ingst	Int-S	2		
		tramadol	1	1						
		methamphetamine	2	2						
		cocaine	3	3						
351	27 y F				C	Ingst	Int-M	3		
		acetaminophen	1	1					acetaminophen	42 mg/L In Plasma @ Unknown
		ibuprofen	2	2						
		ethanol	3	3						
352p	27 y F				U	Ingst	Int-S	2		
		fentanyl	1	1						
		alprazolam	2	2						
		acetaminophen/ hydrocodone	3	3						
353pai	27 y F				A	Ingst+ Par	Int-A	1		
		morphine	1	1					morphine (free)	0.17 mcg/mL In Vitreous @ Autopsy
		morphine	1	1					morphine (free)	0.48 mcg/mL In Blood (unspecified) @ Autopsy
		diphenhydramine	2	2						
		citalopram	3	3						
354pa	28 y M				U	Unk	Int-A	2		
		drug, unknown*	2	1						
		methadone*	1	1					methadone metabolite	320 ng/mL In Urine (quantitative only) @ Autopsy
		methadone*	1	1					morphine (free)	40 ng/mL In Bile @ Autopsy
		methadone*	1	1					methadone	510 ng/mL In Blood (unspecified) @ Autopsy
		methadone*	1	1					methadone metabolite	55 ng/mL In Blood (unspecified) @ Autopsy
		methadone*	1	1					methadone	6800 ng/mL In Bile @ Autopsy
		methadone*	1	1					methadone	720 ng/mL In Urine (quantitative only) @ Autopsy
		methadone*	1	1					methadone metabolite	9400 ng/mL In Bile @ Autopsy
355a	28 y F				U	Unk	Unk	2		
		fentanyl (transdermal)	1	1					norfentanyl	3.6 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl (transdermal)	1	1					fentanyl	5 ng/mL In Blood (unspecified) @ Autopsy
		mirtazapine	2	2						
356a	28 y F				C	Ingst	Int-M	2		
		acetaminophen	1	1						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
357	28 y M				C	Ingst	Int-A	3		
		acetaminophen/ hydrocodone	1	1						
		oxymorphone (extended release)	2	2						
		ketamine	3	3						
		clonidine	4	4						
		gabapentin	5	5						
358pi	28 y M				U	Inhal+ Unk	Int-A	1		
		oxycodone	1	1						
		THC homolog	2	2						
359a	28 y M				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
		trazodone	2	2					trazodone	4.05 mg/L In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	20 mg/dL In Vitreous @ Autopsy
		clonazepam	4	4					clonazepam	53 ng/mL In Blood (unspecified) @ Autopsy
360a	28 y F				U	Ingst	Int-A	1		
		methadone	1	1					methadone	0.46 mcg/mL In Whole Blood @ Autopsy
		methadone	1	1					methadone	1.9 Other (see abst) In Liver @ Autopsy
		acetaminophen/ hydrocodone	2	2					hydrocodone	0.18 mcg/mL In Whole Blood @ Autopsy
361	28 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	29 mcg/mL In Blood (unspecified) @ 29 h (pe)
		acetaminophen	1	1					acetaminophen	33 mcg/mL In Blood (unspecified) @ 48 h (pe)
		acetaminophen	1	1					acetaminophen	58 mcg/mL In Blood (unspecified) @ 39 h (pe)
		acetaminophen	1	1					acetaminophen	63 mcg/mL In Blood (unspecified) @ 34 h (pe)
		acetaminophen	1	1					acetaminophen	99 mcg/mL In Blood (unspecified) @ 23.5 h (pe)
362	28 y F				A/C	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	87 mcg/mL In Serum @ Unknown
		acetaminophen/ hydrocodone	2	2					acetaminophen	16 mcg/mL In Serum @ Unknown
		acetaminophen/ hydrocodone	2	2					acetaminophen	34 mcg/mL In Serum @ Unknown
363pa	28 y F				U	Par	Int-A	1		
		opioid	1	1						
		amphetamine	2	2						
364a	28 y F				A	Ingst	Int-A	3		
		methadone	1	1					methadone	0.4 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	0.1 mg/L In Blood (unspecified) @ Autopsy
365	28 y F				A	Ingst	Int-S	1		
		acetaminophen	2	1					acetaminophen	52 mcg/mL In Serum @ Unknown
		salicylate	1	2					salicylate	5 mg/dL In Serum @ Unknown
366pai	28 y M				U	Ingst	Int-A	1		
		propoxyphene	1	1					norpropoxyphene	2 mcg/mL In Whole Blood @ Autopsy
		propoxyphene	1	1					propoxyphene	2.6 mcg/mL In Whole Blood @ Autopsy
		ethanol	2	2					ethanol	0.09% (wt/Vol) In Whole Blood @ Autopsy
		ethanol	2	2					ethanol	0.13% (wt/Vol) In Vitreous @ Autopsy
367pai	28 y F				A	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.16 mcg/mL In Whole Blood @ Autopsy
		alprazolam	2	2					alprazolam	114 ng/mL In Whole Blood @ Autopsy
		amitriptyline	3	3						
368pai	28 y M				A	Ingst	Int-A	2		
		methadone	1	1					methadone	0.18 Other (see abst) In Liver @ Autopsy
		methadone	1	1					methadone	0.46 mcg/mL In Whole Blood @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminophen/ hydrocodone	2	2					hydrocodone	0.18 mcg/mL In Whole Blood @ Autopsy
		diazepam	3	3						
369pai	28 y M				U	Ingst+ Unk	Int-A	2		
		morphine	1	1					morphine (free)	0.16 mcg/mL In Whole Blood @ Autopsy
		tramadol	2	2					tramadol	0.5 mcg/mL In Whole Blood @ Autopsy
		ethanol	3	3					ethanol	0.2% (wt/Vol) In Whole Blood @ Autopsy
		ethanol	3	3					ethanol	0.27% (wt/Vol) In Vitreous @ Autopsy
		diazepam	4	4						
		chlordiazepoxide	5	5						
370pai	28 y M				U	Ingst	Int-A	2		
		propoxyphene	1	1					norpropoxyphene	2 mcg/mL In Whole Blood @ Autopsy
		propoxyphene	1	1					propoxyphene	2.6 mcg/mL In Whole Blood @ Autopsy
		ethanol	2	2					ethanol	0.09% (wt/Vol) In Whole Blood @ Autopsy
		ethanol	2	2					ethanol	0.13% (wt/Vol) In Vitreous @ Autopsy
371p	28 y F				A	Ingst	Int-U	2		
		acetaminophen	1	1						
372pai	28 y F				A	Ingst	Int-A	2		
		methadone	1	1					methadone	0.25 mcg/mL In Whole Blood @ Autopsy
		alprazolam	2	2					alprazolam	75 ng/mL In Whole Blood @ Autopsy
373pa	29 y M				U	Ingst	Int-U	1		
		oxymorphone (extended release)	1	1					oxymorphone	0.044 mg/L In Blood (unspecified) @ Autopsy
		oxymorphone (extended release)	1	1					oxymorphone	0.069 mg/L In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	110 mg/dL In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	3	3						
374pai	29 y M				U	Ingst	Int-A	2		
		methadone	1	1					methadone	0.3 mcg/mL In Whole Blood @ Autopsy
		codeine	2	2					codeine	0.26 mcg/mL In Whole Blood @ Autopsy
		acetaminophen/ hydrocodone	3	3						
		alprazolam	4	4					alprazolam	64 ng/mL In Whole Blood @ Autopsy
375pa	29 y M				A	Ingst+ Par	Unk	1		
		morphine	1	1					morphine	167 ng/mL In Plasma @ Unknown
		ethanol	2	2					ethanol	240 mg/dL In Serum @ Unknown
376pa	29 y M				A/C	Ingst	Int-A	1		
		methadone	1	1					methadone	0.1 mg/L In Blood (unspecified) @ Autopsy
		alprazolam*	3	2						
		cocaine*	2	2						
377pai	29 y M				A	Ingst	Int-A	2		
		oxycodone	1	1					oxycodone	0.25 mcg/mL In Whole Blood @ Autopsy
		oxycodone	1	1					oxymorphone	39 ng/mL In Whole Blood @ Autopsy
378	30 y F				A/C	Ingst	Int-M	1		
		acetaminophen/ diphenhydramine	1	1					acetaminophen	140 mcg/mL In Serum @ 9.65 h (pe)
		acetaminophen/ diphenhydramine	1	1					acetaminophen	185.5 mcg/mL In Serum @ 6 h (pe)
		acetaminophen/ diphenhydramine	1	1					acetaminophen	25 mcg/mL In Serum @ 54 h (pe)
		acetaminophen/ diphenhydramine	1	1					acetaminophen	36 mcg/mL In Serum @ 43.67 h (pe)
		acetaminophen/ diphenhydramine	1	1					acetaminophen	52 mcg/mL In Serum @ 30 h (pe)
		acetaminophen/ diphenhydramine	1	1					acetaminophen	97 mcg/mL In Serum @ 17.83 h (pe)

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
379pa	30 y M				A	Par	Int-S	2		
		codeine*	1	1					morphine	1.7 Other (see abst) In Liver @ Autopsy
		insulin*	2	1						
380pa	30 y F				U	Ingst	Unk	1		
		oxycodone	1	1					oxycodone	0.61 mcg/mL In Blood (unspecified) @ Autopsy
		diphenhydramine	2	2					diphenhydramine	0.47 mcg/mL In Blood (unspecified) @ Autopsy
		temazepam	3	3						
		mirtazapine	4	4						
		gabapentin	5	5						
381	30 y F				A/C	Ingst	Int-S	2		
		acetaminophen	1	1						
		acetaminophen/ diphenhydramine	2	2						
		carisoprodol	3	3						
382pai	30 y F				U	Ingst	Int-A	2		
		fentanyl (transdermal)	1	1					fentanyl	7.1 ng/mL In Whole Blood @ Unknown
		diazepam	2	2					nordiazepam	1.4 mcg/mL In Whole Blood @ Unknown
		diazepam	2	2					diazepam	1.7 mcg/mL In Whole Blood @ Unknown
383p	30 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	41.9 mcg/mL In Serum @ Unknown
		salicylate	2	2					salicylate	10 mg/dL In Serum @ Unknown
384pai	30 y F				A	Ingst	Int-A	2		
		methadone	1	1					methadone	0.65 mcg/mL In Whole Blood @ Autopsy
		alprazolam	2	2					alprazolam	41 ng/mL In Whole Blood @ Autopsy
385pai	30 y F				U	Ingst+ Unk	Int-A	2		
		fentanyl	1	1					fentanyl	7.1 ng/mL In Whole Blood @ Unknown
		diazepam	2	2					nordiazepam	1.4 mcg/mL In Whole Blood @ Unknown
		diazepam	2	2					diazepam	1.7 mcg/mL In Whole Blood @ Unknown
386pai	30 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.09 mcg/mL In Whole Blood @ Autopsy
		tramadol	2	2					tramadol	1.1 mcg/mL In Whole Blood @ Autopsy
		cyclobenzaprine	3	3						
387	30 y F				A/C	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1						
388	30 y M				A	Ingst	Int-U	2		
		buprenorphine/ naloxone (sublingual)	1	1						
		benzodiazepine	2	2						
389ai	30 y F				U	Unk	Unk	1		
		oxycodone	1	1					oxycodone	0.58 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	1	1					oxycodone	0.7 mg/L In Blood (unspecified) @ Autopsy
		antihistamine	2	2					diphenhydramine	0.72 mg/L In Blood (unspecified) @ Autopsy
		antihistamine	2	2					diphenhydramine	1.1 mg/L In Blood (unspecified) @ Autopsy
		antihistamine	2	2					diphenhydramine	4.3 mg/kg In Liver @ Autopsy
390pai	30 y M				A	Ingst	Int-S	3		
		morphine	1	1					morphine (free)	1.7 Other (see abst) In Liver @ Autopsy
		ethanol	2	2					ethanol	0.03% (wt/Vol) In Urine (quantitative only) @ Autopsy
		ethanol	2	2					ethanol	0.1% (wt/Vol) In Whole Blood @ Autopsy
		dextromethorphan	3	3					dextromethorphan	74 Other (see abst) In Liver @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
391pa	31 y F				A	Ingst	Unk	2		
		methadone	1	1					methadone	0.13 mg/L In Blood (unspecified) @ Autopsy
		methadone	1	1					methadone	0.25 mg/L In Blood (unspecified) @ Unknown
		alprazolam	3	2					alprazolam	0.073 mg/L In Blood (unspecified) @ Unknown
		trazodone	2	3						
		cyclobenzaprine	4	4					cyclobenzaprine	0.05 mg/L In Blood (unspecified) @ Autopsy
		ethanol	5	5					ethanol	9 mg/dL In Blood (unspecified) @ Unknown
392pa	31 y M				A	Ingst+ Aspir	Int-U	1		
		fentanyl	1	1						
393	31 y M				A	Ingst	Int-S	1		
		salicylate	1	1						
		doxylamine	2	2						
		famotidine	3	3						
		diphenhydramine	4	4						
394p	31 y F				A	Ingst+ Unk	Int-S	3		
		methadone	1	1						
		alprazolam	2	2						
		opioid	3	3						
395p	31 y F				A/C	Ingst	Int-U	2		
		benzodiazepine	1	8						
		alprazolam	2	9						
396pai	31 y M				A	Ingst	Int-S	2		
		propoxyphene	1	1					norpropoxyphene	5.3 Other (see abst) In Liver @ Autopsy
		propranolol	2	2					propranolol	1.4 mcg/mL In Whole Blood @ Autopsy
		alprazolam	3	3					alprazolam	111 ng/mL In Whole Blood @ Autopsy
		skeletal muscle relaxant	4	4					carisoprodol	19 mcg/mL In Whole Blood @ Autopsy
		skeletal muscle relaxant	4	4					meprobamate	5.9 mcg/mL In Whole Blood @ Autopsy
		lamotrigine	5	5						
397p	32 y F				A/C	Ingst	Int-A	2		
		methadone	1	1						
		ethanol	2	2						
398pa	32 y M				C	Ingst	Unk	2		
		oxycodone	1	1					oxycodone	171 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	44.2 ng/mL In Blood (unspecified) @ Autopsy
399p	32 y M				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		carisoprodol	2	2						
400pa	32 y M				U	Ingst	Int-U	1		
		fentanyl (transdermal)	1	1						
		oxycodone	2	2						
		cyclobenzaprine	3	3						
		fluphenazine	4	4						
401pai	32 y F				A/C	Ingst	Int-U	3		
		oxycodone	1	1					oxycodone	0.38 mcg/mL In Whole Blood @ Autopsy
		hydrocodone	2	2					hydrocodone	0.12 mcg/mL In Whole Blood @ Autopsy
		venlafaxine	3	3					venlafaxine	1.4 mcg/mL In Whole Blood @ Autopsy
		amitriptyline	4	4					nortriptyline	0.37 mcg/mL In Whole Blood @ Autopsy
402p	32 y M				U	Ingst+ Derm	Int-U	1		
		acetaminophen/ hydrocodone	2	1						
		fentanyl (transdermal)	1	2					norfentanyl	1.6 ng/mL In Blood (unspecified) @ 10 m (pe)
		fentanyl (transdermal)	1	2					fentanyl	2.3 ng/mL In Blood (unspecified) @ 15 m (pe)
		diazepam	3	3					nordiazepam	190 ng/mL In Blood (unspecified) @ 10 m (pe)

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		diazepam	3	3					diazepam	430 ng/mL In Blood (unspecified) @ 10 m (pe)
		carisoprodol	4	4						
403pai	32 y M				U	Ingst	Int-A	2		
		methadone	1	1					methadone	1 mcg/mL In Whole Blood @ Autopsy
		alprazolam	2	2						
404pai	32 y F				A	Ingst	Int-U	2		
		oxycodone	1	1					oxycodone	0.38 mcg/mL In Whole Blood @ Autopsy
		acetaminophen/ hydrocodone	2	2					hydrocodone	0.12 mcg/mL In Whole Blood @ Autopsy
		amitriptyline	3	3					nortriptyline	0.37 mcg/mL In Whole Blood @ Autopsy
		venlafaxine	4	4					venlafaxine	1.4 mcg/mL In Whole Blood @ Autopsy
405ai	32 y M				U	Ingst	Int-A	2		
		oxycodone	1	1					oxycodone	0.37 mcg/mL In Whole Blood @ Unknown
		alprazolam	2	2					alprazolam	149 mcg/mL In Whole Blood @ Unknown
406pai	32 y F				U	Ingst	Int-A	2		
		oxycodone	1	1					oxycodone	0.24 mcg/mL In Whole Blood @ Autopsy
		skeletal muscle relaxant	2	2					meprobamate	11.1 mcg/mL In Whole Blood @ Autopsy
		skeletal muscle relaxant	2	2					carisoprodol	11.5 mcg/mL In Whole Blood @ Autopsy
		diphenhydramine	3	3						
		valproic acid	4	4						
407pai	32 y M				U	Ingst	Unk	2		
		acetaminophen/ oxycodone*	1	1					oxycodone	255 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam*	3	1					alprazolam	52.3 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl*	2	1					fentanyl	5 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	4	2					7-aminoclonaze-pam	49.5 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	4	2					clonazepam	6.4 ng/mL In Blood (unspecified) @ Autopsy
		carisoprodol	5	3						
		marijuana	6	4					thc (tetrahydrocan-nabinol)	6.2 ng/mL In Blood (unspecified) @ Autopsy
408pa	32 y F				A	Ingst	Unt-U	2		
		morphine	1	1					morphine	1.1 mg/L In Blood (unspecified) @ Autopsy
409	33 y F				U	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	435 mcg/mL In Blood (unspecified) @ Unknown
		fluoxetine	2	2						
		ibuprofen	3	3						
410	33 y F				U	Ingst	Int-U	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	11.1 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	77 mg/dL In Blood (unspecified) @ Unknown
411a	33 y F				A	Ingst	Int-S	1		
		acetaminophen*	2	1					acetaminophen	75 mcg/mL In Serum @ Unknown
		acetaminophen*	2	1					acetaminophen	82.4 mg/mL In Blood (unspecified) @ Unknown
		diphenhydramine*	1	1						
		lorazepam	3	2					lorazepam	755 ng/mL In Blood (unspecified) @ Autopsy
		codeine	4	3					codeine	540 ng/mL In Blood (unspecified) @ Autopsy
		mirtazapine	5	5						
412pa	33 y F				A	Ingst	Int-U	3		
		methadone	1	1					methadone	110 ng/mL In Whole Blood @ Unknown
		paroxetine	2	2					paroxetine	190 ng/mL In Whole Blood @ Unknown
		alprazolam	3	3					alprazolam	16 ng/mL In Whole Blood @ Unknown

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
413pa	33 y M				U	Unk	Unk	2		
		buprenorphine	1	1						
		cocaine	2	2						
414	33 y F				A/C	Ingst	Int-S	2		
		acetaminophen	4	1					acetaminophen	0 mcg/mL In Blood (unspecified) @ Unknown
		quetiapine	2	2						
		lithium	1	3					lithium	2.4 mEq/L In Blood (unspecified) @ Unknown
		lamotrigine	5	4						
		topiramate	6	5						
		paroxetine	7	6						
		loratadine	8	7						
		diphenhydramine	3	8						
		acetaminophe/ dextromethorphan/ decongestant	9	9						
415pai	33 y M				U	Derm	Int-A	3		
		fentanyl (transdermal)	1	1					fentanyl	19.6 ng/mL In Whole Blood @ Autopsy
416a	33 y F				A/C	Ingst	Int-U	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	55.7 mcg/mL In Blood (unspecified) @ Unknown
417p	33 y M				A	Ingst	Unt-G	2		
		acetaminophen/ oxycodone	1	1					acetaminophen	17 mcg/mL In Blood (unspecified) @ Unknown
418pai	33 y M				U	Derm	Int-A	2		
		fentanyl	1	1					fentanyl	19.6 ng/mL In Whole Blood @ Autopsy
419	33 y F				A/C	Ingst	Unk	2		
		acetaminophen/ opioid	1	1					acetaminophen	52 mcg/mL In Blood (unspecified) @ Unknown
420pai	33 y M				A	Ingst+ Unk	Int-A	2		
		morphine	1	1					morphine (free)	0.21 mcg/mL In Whole Blood @ Autopsy
		trazodone	2	2						
		citalopram	3	3						
		diphenhydramine	4	4						
421p	34 y M				U	Ingst	Int-U	2		
		buprenorphine/ naloxone (sublingual)	1	1						
		alprazolam	2	2						
		marijuana	3	3						
422p	34 y F				A	Derm	Int-U	2		
		fentanyl (transdermal)	1	1						
423h	34 y F				A	Ingst	Int-U	1		
		acetaminophen	1	1					acetaminophen	110 mcg/mL In Serum @ Unknown
		acetaminophen	1	1					acetaminophen	127 mcg/mL In Serum @ Unknown
		quetiapine	2	2						
		ethanol	3	3					ethanol	161 mg/dL In Blood (unspecified) @ Unknown
424	34 y M				A	Ingst	Int-S	1		
		salicylate	1	1						
425	34 y F				A	Ingst	Int-S	2		
		acetaminophen/ propoxyphene	1	1					acetaminophen	44 mcg/mL In Blood (unspecified) @ 16 h (pe)
		acetaminophen/ propoxyphene	1	1					acetaminophen	552 mcg/mL In Blood (unspecified) @ 1 h (pe)
426pa	34 y F				U	Ingst+ Derm+ Par	Unk	2		
		oxycodone	1	1					oxycodone	0.53 mcg/mL In Blood (unspecified) @ Autopsy
		carisoprodol	2	2					meprobamate	12 mcg/mL In Blood (unspecified) @ Autopsy
		carisoprodol	2	2					carisoprodol	4.9 mcg/mL In Blood (unspecified) @ Autopsy
		fentanyl (transdermal)	3	3						
		lidocaine	4	4						
		buprenorphine/ naloxone (sublingual)	5	5						
		alprazolam	7	7						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
427pa	34 y M				U	Ingst+ Inhal	Int-U	2		
		opioid	1	1						
		cocaine	2	2						
428p	34 y F				U	Ingst+ Unk	Int-U	2		
		fentanyl	1	1						
429	34 y F				A	Ingst	Int-S	2		
		acetaminophen/ oxycodone	1	1					acetaminophen	16 mcg/mL In Serum @ Unknown
		carisoprodol	2	2						
430a	34 y M				U	Ingst	Int-S	1		
		salicylate	1	1					salicylate	110 mg/dL In Serum @ Unknown
		salicylate	1	1					salicylate	66 mg/dL In Blood (unspecified) @ Autopsy
431pai	34 y M				U	Ingst	Unk	1		
		buprenorphine/ naloxone (sublingual)	1	1						
		amitriptyline	2	2					amitriptyline	100 ng/mL In Blood (unspecified) @ Autopsy
		amitriptyline	2	2					nortriptyline	59 ng/mL In Blood (unspecified) @ Autopsy
		morphine	3	3					morphine (free)	200 ng/mL In Blood (unspecified) @ Autopsy
432pai	34 y F				U	Ingst	Int-A	2		
		methadone	1	1					methadone	0.13 mcg/mL In Whole Blood @ Autopsy
		alprazolam	2	2					alprazolam	34 ng/mL In Whole Blood @ Autopsy
		butalbital	3	3						
433p	34 y F				A/C	Ingst+ Unk	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	57.5 mcg/mL In Blood (unspecified) @ Unknown
		eszopiclone	2	2						
		carisoprodol	3	3						
434	35 y M				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	30.4 mcg/mL In Unknown @ Unknown
435pa	35 y M				U	Ingst+ Aspir+ Unk	Int-S	1		
		oxycodone	1	1					oxycodone	2862 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	1	1					oxycodone	353 ng/mL In Urine (quantitative only) @ Autopsy
		oxycodone	1	1					oxycodone	4371 ng/mL In Blood (unspecified) @ Autopsy
		hydrocodone	2	2					hydrocodone	102 ng/mL In Urine (quantitative only) @ Autopsy
		hydrocodone	2	2					hydrocodone	1362 ng/mL In Blood (unspecified) @ Autopsy
		hydrocodone	2	2					hydrocodone	962 ng/mL In Blood (unspecified) @ Autopsy
		diphenhydramine	3	3					diphenhydramine	14567 ng/mL In Blood (unspecified) @ Autopsy
		propoxyphene	4	4					propoxyphene	391 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	5	5					nordiazepam	234 ng/mL In Urine (quantitative only) @ Autopsy
		diazepam	5	5					nordiazepam	5176 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	5	5					nordiazepam	7477 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen	6	6					acetaminophen	98.6 mcg/mL In Blood (unspecified) @ Autopsy
		ethanol	7	7					ethanol	0.023% In Urine (quantitative only) @ Autopsy
		ethanol	7	7					ethanol	0.033% In Vitreous @ Autopsy
		chloazepate	8	8						
436	35 y F				A/C	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen	148 mcg/mL In Blood (unspecified) @ Unknown
437pa	35 y F				A	Ingst	Int-M	1		
		methadone	1	1						
		cyclobenzaprine	2	2						
		alprazolam	3	3						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
438	35 y M				C	Ingst	Int-S	1		
		opioid	1	1						
439	35 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
440pai	35 y F				U	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.37 mcg/mL In Whole Blood @ Autopsy
		antihistamine	2	2					diphenhydramine	1.3 mcg/mL In Whole Blood @ Autopsy
		propoxyphene	3	3					propoxyphene	1 mcg/mL In Whole Blood @ Autopsy
		propoxyphene	3	3					norpropoxyphene	2.5 mcg/mL In Whole Blood @ Autopsy
		citalopram	4	4					citalopram	1.6 mcg/mL In Whole Blood @ Autopsy
		zolpidem	5	5					zolpidem	0.34 mcg/mL In Whole Blood @ Autopsy
441	35 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1						
442pa	36 y F				U	Ingst+ Unk	Unk	2		
		acetaminophen	1	1					acetaminophen	42.3 ng/mL In Blood (unspecified) @ Unknown
		salicylate	2	2						
		opioid	3	4						
		benzodiazepine	4	5						
443	36 y F				U	Ingst	Int-A	3		
		acetaminophen/ diphenhydramine	1	1						
		acetaminophen	2	2					acetaminophen	197 mcg/mL In Serum @ Unknown
		acetaminophen	2	2					acetaminophen	225 mcg/mL In Serum @ Unknown
		acetaminophen	2	2					acetaminophen	351 mcg/mL In Serum @ Unknown
		ibuprofen	3	3						
444p	36 y M				U	Ingst	Int-S	1		
		acetaminophen/ propoxyphene	1	1						
445a	36 y F				U	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen	20.9 mcg/mL In Blood (unspecified) @ Unknown
446pai	36 y M				A	Ingst	Int-A	2		
		methadone	1	1					methadone	0.18 mcg/mL In Whole Blood @ Autopsy
447pai	36 y F				U	Ingst	Int-A	2		
		propoxyphene	1	1					propoxyphene	1.6 mcg/mL In Whole Blood @ Autopsy
		propoxyphene	1	1					norpropoxyphene	2.7 mcg/mL In Whole Blood @ Autopsy
		tramadol	2	2						
		diazepam	3	3						
448pai	36 y M				A	Ingst+ Unk	Int-A	2		
		morphine	1	1					morphine (free)	0.55 mcg/mL In Whole Blood @ Autopsy
		diphenhydramine	4	2					diphenhydramine	0.71 mcg/mL In Whole Blood @ Autopsy
		ethanol	5	3					ethanol	0.07% (wt/Vol) In Whole Blood @ Autopsy
		alprazolam	3	4					alprazolam	38 ng/mL In Whole Blood @ Autopsy
		acetaminophen/ hydrocodone	2	5					hydrocodone	0.05 mcg/mL In Whole Blood @ Autopsy
449	37 y F				A	Ingst	Int-S	3		
		acetaminophen/ propoxyphene	1	1					acetaminophen	181 mcg/mL In Blood (unspecified) @ Unknown
450pa	37 y F				A	Ingst	Int-U	2		
		acetaminophen/ hydrocodone	1	1						
		clonazepam	2	2						
451	37 y F				U	Ingst	Unk	1		
		acetaminophen	1	1						
452pa	37 y F				A/C	Ingst	Int-S	1		
		opioid	1	1						
		paroxetine	2	2						
		trazodone	3	3						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
453	37 y M				A/C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen	131 mcg/mL In Blood (unspecified) @ 24 h (pe)
454pa	37 y F				A	Ingst	Int-S	1		
		morphine	1	1					morphine (free)	112 ng/mL In Serum @ Autopsy
		cyclobenzaprine*	2	2					cyclobenzaprine	11 mcg/L In Plasma @ Autopsy
		ethanol*	3	2					ethanol	109 mg/dL In Plasma @ 2 h (pe)
455p	37 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		clonazepam	2	2						
456p	37 y M				U	Ingst	Int-S	2		
		buprenorphine/naloxone (sublingual)	1	1						
		lamotrigine	3	2						
		venlafaxine	2	3						
457pa	37 y F				A/C	Ingst+ Derm	Int-U	1		
		fentanyl	1	1					fentanyl	0.6 mcg/L In Blood (unspecified) @ 2 d (pe)
		fentanyl	1	1					norfentanyl	0.8 mcg/L In Blood (unspecified) @ 2 d (pe)
		acetaminophen/hydrocodone	2	2					hydrocodone	0.014 mg/L In Blood (unspecified) @ 1 d (pe)
		gabapentin	3	3						
458	37 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
		drug, unknown	2	2						
459	37 y M				U	Unk	Int-S	3		
		acetaminophen*	1	1					acetaminophen	73 mcg/mL In Serum @ Unknown
		drug, unknown*	2	1						
460pai	37 y F				U	Ingst	Int-A	2		
		acetaminophen/hydrocodone	1	1					hydrocodone	0.16 mcg/mL In Whole Blood @ Autopsy
		alprazolam	2	2					alprazolam	51 ng/mL In Whole Blood @ Autopsy
		skeletal muscle relaxant	3	3					meprobamate	20.1 mcg/mL In Whole Blood @ Autopsy
		diltiazem	4	4						
		quetiapine	5	5						
461pa	37 y F				A	Ingst	Int-S	2		
		acetaminophen/oxycodone	1	1						
		acetaminophen/hydrocodone	2	2						
		fluoxetine	3	3						
		ethanol	4	4						
462	37 y M				A/C	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen	92 mcg/mL In Serum @ 16 h (pe)
		acetaminophen/hydrocodone	2	2						
463pai	37 y M				A	Ingst+ Derm	Int-A	2		
		fentanyl	1	1					fentanyl	10.4 ng/mL In Whole Blood @ Unknown
		acetaminophen/hydrocodone	2	2					hydrocodone	0.07 mcg/mL In Whole Blood @ Unknown
464pha	38 y F				A	Ingst	Int-S	1		
		oxycodone	1	1					oxycodone (free)	0.22 mg/L In Blood (unspecified) @ Autopsy
		lorazepam	2	2					lorazepam	47 mcg/mL In Blood (unspecified) @ Autopsy
		temazepam	3	3					temazepam	111 ng/mL In Blood (unspecified) @ Autopsy
465	38 y F				U	Unk	Unk	2		
		oxycodone	1	1						
466pa	38 y M				C	Ingst	Int-A	1		
		methadone	1	1					methadone	200 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	3	2					alprazolam	73.2 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	2	3					oxycodone	64.2 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen	4	4					acetaminophen	4 mcg/mL In Blood (unspecified) @ Autopsy
		citalopram	5	5					citalopram	970 ng/mL In Blood (unspecified) @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
467a	38 y F				U	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen	57.5 mcg/mL In Serum @ Unknown
		acetaminophen/ hydrocodone	2	2						
		ethanol	3	3						
468a	38 y F				A	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1					acetaminophen	107 mcg/mL In Serum @ 48 h (pe)
469pa	38 y F				A/C	Unk	Unk	1		
		oxycodone	1	1					morphine (total)	19 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	1	1					oxycodone (free)	2500 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	2	2					diazepam	140 ng/mL In Blood (unspecified) @ Autopsy
470p	38 y M				A	Ingst+ Derm	Int-A	2		
		fentanyl (transdermal)	1	1						
		propoxyphene	2	2						
471pa	38 y M				A/C	Ingst	Int-U	2		
		acetaminophen/ hydrocodone	1	1					hydrocodone	274 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	1	1					acetaminophen	30.3 mcg/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	1	1					dihydrocodeine	40 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	1	1					hydromorphone	6 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	1	1					trazodone	822 ng/mL In Blood (unspecified) @ Autopsy
		trazodone	2	2						
472pai	38 y F				A	Ingst	Int-U	3		
		methadone	1	1					methadone	0.61 mcg/mL In Whole Blood @ Autopsy
		venlafaxine	2	2					venlafaxine	1.8 mcg/mL In Whole Blood @ Autopsy
		amitriptyline	3	3						
		diazepam	4	4						
		fluoxetine	5	5						
473pai	38 y M				A	Ingst	Int-U	2		
		oxycodone	1	1					oxycodone	1.9 mcg/mL In Whole Blood @ Autopsy
		laxative (stimulant)	2	2						
		olanzapine	3	3						
474	38 y F				A	Ingst	Int-S	2		
		acetaminophen/ butalbital/caffeine	1	1						
475	38 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	19 mcg/mL In Serum @ Unknown
		valproic acid	2	2					valproic acid	20 mcg/mL In Serum @ Unknown
476	38 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	99.3 mg/dL In Blood (unspecified) @ 1 m (pe)
		acetaminophen/ diphenhydramine	2	2					acetaminophen	35 mcg/dL In Blood (unspecified) @ 1 m (pe)
477p	39 y M				A/C	Ingst	Unk	1		
		morphine	1	1					morphine	0.03 mg/L In Blood (unspecified) @ Autopsy
		dextromethorphan*	2	2					dextromethorphan	0.48 mg/L In Blood (unspecified) @ Autopsy
		methadone*	3	2					methadone	0.32 mg/L In Blood (unspecified) @ Autopsy
		diazepam	4	3					temazepam	0.01 mg/L In Blood (unspecified) @ Autopsy
		diazepam	4	3					nordiazepam	0.12 mg/L In Blood (unspecified) @ Autopsy
		diazepam	4	3					diazepam	0.15 mg/L In Blood (unspecified) @ Autopsy
478h	39 y F				A	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen	35 mcg/mL In Serum @ Unknown
		acetaminophen	1	1					acetaminophen	66 mcg/mL In Serum @ Unknown

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
479a	39 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	176 mcg/mL In Blood (unspecified) @ Unknown
480pa	39 y F				U	Ingst	Unk	2		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.23 mcg/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.18 g/dL In Vitreous @ Autopsy
		cyclobenzaprine	3	3					cyclobenzaprine	0.92 mcg/mL In Blood (unspecified) @ Autopsy
		diazepam	4	4						
481p	39 y F				A	Ingst	Int-S	1		
		acetaminophen/ propoxyphene	3	1						
		acetaminophen	2	2					acetaminophen	205 mcg/mL In Serum @ Unknown
		quetiapine	1	3						
		alprazolam	4	4						
482pa	39 y F				U	Ingst	Unk	1		
		hydrocodone*	1	1					hydrocodone	0.23 mg/L In Blood (unspecified) @ Unknown
		quetiapine*	3	1						
		alprazolam	2	2					alprazolam	0.051 mg/L In Blood (unspecified) @ Unknown
483a	39 y F				U	Ingst	Int-S	1		
		salicylate	1	1					salicylate	104.8 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	909 mg/L In Blood (unspecified) @ Autopsy
484a	39 y F				A	Ingst	Int-S	3		
		acetaminophen/ diphenhydramine	1	1					diphenhydramine	1 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen/ diphenhydramine	2	2						
		quetiapine	3	3					quetiapine	210 ng/mL In Blood (unspecified) @ Autopsy
485	39 y F				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
486a	39 y F				A/C	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1					acetaminophen	12.8 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen/ diphenhydramine	1	1					acetaminophen	19.7 mcg/mL In Blood (unspecified) @ Unknown
		venlafaxine	2	2						
		alprazolam	3	3						
		ethanol	4	4						
487pai	39 y M				A	Unk	Int-A	2		
		oxycodone	1	1					oxycodone	0.24 mcg/L In Whole Blood @ Autopsy
488pa	40 y F				A/C	Ingst	Int-S	2		
		quetiapine*	6	1					quetiapine	7000 ng/mL In Blood (unspecified) @ Autopsy
		salicylate*	1	1					salicylate	350 mcg/mL In Blood (unspecified) @ Autopsy
		citalopram*	7	2					citalopram	1200 ng/mL In Blood (unspecified) @ Autopsy
		midazolam*	2	2					midazolam	5.3 ng/mL In Blood (unspecified) @ Autopsy
		diphenhydramine	3	3					diphenhydramine	460 ng/mL In Blood (unspecified) @ Autopsy
		carbamazepine	4	4					carbamazepine	1 mcg/mL In Blood (unspecified) @ Autopsy
		venlafaxine	5	5					venlafaxine	560 ng/mL In Blood (unspecified) @ Autopsy
489a	40 y F				U	Ingst+ Aspir	Int-S	1		
		acetaminophen/ hydrocodone*	1	1					hydrocodone	0.15 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone*	1	1					acetaminophen	14.7 mg/L In Blood (unspecified) @ Unknown
		carisoprodol*	2	1					carisoprodol (n-isopropyl meprobamate)	0.03 mg/L In Blood (unspecified) @ Unknown
		carisoprodol*	2	1					carisoprodol (n-isopropyl meprobamate)	16.8 mg/L In Blood (unspecified) @ Unknown

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		ibuprofen	3	3					ibuprofen	3.2 mg/L In Blood (unspecified) @ Unknown
		hydromorphone	4	4					hydromorphone	0.05 mg/L In Blood (unspecified) @ Unknown
490p	40 y F				A/C	Ingst	Int-A	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	105.6 mcg/mL In Serum @ Unknown
491	40 y F				U	Ingst	Int-M	3		
		acetaminophen/ oxycodone	1	1					acetaminophen	29 mcg/mL In Plasma @ 4 d (pe)
492pha	40 y M				A	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1					acetaminophen	37 mcg/mL In Serum @ Unknown
		alprazolam	2	2						
		ethanol	3	3						
493	40 y F				A	Ingst	Int-S	3		
		acetaminophen	1	1						
494	40 y M				A	Unk	Unk	3		
		opioid	1	1						
		salicylate	2	2					salicylate	6.9 mg/dL In Serum @ Unknown
495ha	40 y F				A	Ingst	Int-S	1		
		acetaminophen/ oxycodone	1	1					acetaminophen	23.6 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ oxycodone	1	1					acetaminophen	28.3 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ oxycodone	1	1					acetaminophen	32.9 mg/L In Blood (unspecified) @ Autopsy
		salicylate	2	2					salicylate	11.2 mg/dL In Blood (unspecified) @ Unknown
		salicylate	2	2					salicylate	453.7 mg/L In Blood (unspecified) @ Autopsy
		salicylate	2	2					salicylate	46 mg/dL In Blood (unspecified) @ Unknown
		oxymorphone (extended release)	3	3					oxymorphone	0.25 mg/L In Urine (quantitative only) @ Autopsy
		oxymorphone (extended release)	3	3					oxycodone	0.33 mg/L In Blood (unspecified) @ Autopsy
		oxymorphone (extended release)	3	3					oxymorphone	0.63 mg/L In Blood (unspecified) @ Autopsy
		doxylamine	4	4						
		pregabalin	5	5						
496pa	40 y M				U	Ingst+ Unk	Int-U	1		
		oxycodone	1	1					oxycodone	135 ng/mL In Whole Blood @ Autopsy
		clonazepam	2	2					7-aminoclonaze-pam	8.1 ng/mL In Blood (unspecified) @ Autopsy
497	40 y F				A	Ingst	Int-U	3		
		methadone	1	1						
498pai	40 y F				U	Ingst	Int-A	3		
		oxycodone	1	1					oxycodone	0.61 mcg/mL In Whole Blood @ Autopsy
		oxycodone	1	1					oxymorphone	16 ng/mL In Whole Blood @ Autopsy
499i	40 y M				C	Ingst	Int-M	3		
		acetaminophen/ oxycodone	1	1						
		acetaminophen/ hydrocodone	2	2						
500hi	41 y F				A/C	Ingst	Int-S	1		
		acetaminophen/ oxycodone	1	1						
		acetaminophen/ hydrocodone	2	2						
		tricyclic antidepressant	3	3						
		benzodiazepine	4	4						
501pa	41 y F				U	Ingst+ Derm	Unk	1		
		fentanyl (transdermal)*	3	1					fentanyl	0.001 mg/L In Blood (unspecified) @ Autopsy
		oxycodone*	1	1					oxycodone	0.49 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	0.081 mg/L In Blood (unspecified) @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminophen/ oxycodone	4	4						
		diazepam	5	5					diazepam	0.092 mg/L In Blood (unspecified) @ Autopsy
		diazepam	5	5						nordiazepam 0.43 mg/L In Blood (unspecified) @ Autopsy
502p	41 y M				A/C	Unk	Int-U	2		
		opioid	1	1						
		heroin	2	2						
503	41 y F				A	Ingst	Unt-T	1		
		colchicine	1	1						
		cocaine	2	2						
504pa	41 y F				A	Ingst+ Unk	Int-S	2		
		methadone	1	1					methadone	0.12 mg/L In Whole Blood @ Unknown
		alprazolam	2	2					alprazolam	0.015 mg/L In Whole Blood @ Unknown
505	41 y M				U	Ingst+ Unk	Int-S	2		
		opioid	1	1						
		acetaminophen	2	2					acetaminophen	112 mcg/mL In Unknown @ Unknown
		acetaminophen	2	2					acetaminophen	120 mcg/mL In Unknown @ Unknown
		acetaminophen	2	2						48.6 mcg/mL In Unknown @ 1 d (pe)
506pa	41 y F				A	Ingst	Int-S	2		
		tramadol	1	1					tramadol	2500 ng/mL In Blood (unspecified) @ Autopsy
507	41 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
508pa	41 y F				A	Ingst	Int-S	1		
		carisoprodol*	3	1						
		fentanyl*	1	1						
		clonazepam	2	2						
509pai	41 y M				A	Ingst	Int-A	2		
		oxycodone	1	1					oxycodone	1.9 mcg/mL In Whole Blood @ Autopsy
		citalopram	2	2						
510pai	41 y F				U	Ingst	Int-A	2		
		tramadol	1	1					tramadol	3.6 mcg/mL In Whole Blood @ Autopsy
		cyclobenzaprine	2	2					cyclobenzaprine	0.26 mcg/mL In Whole Blood @ Autopsy
511a	42 y M				A	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1					acetaminophen	123 mcg/mL In Blood (unspecified) @ Unknown
512	42 y F				A/C	Ingst	Int-S	2		
		oxycodone	1	1						
		clonazepam	2	2						
		ethanol	3	3						
513	42 y F				U	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen	10.2 mcg/mL In Serum @ Unknown
514pa	42 y M				A	Ingst	Int-U	2		
		opioid	1	1						
515h	42 y F				U	Ingst+ Aspir	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	500.9 mcg/mL In Blood (unspecified) @ Unknown
516	42 y F				A	Unk	Unt-G	2		
		acetaminophen	1	1					acetaminophen	45 mcg/mL In Blood (unspecified) @ 1 h (pe)
517	42 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	10 mcg/mL In Serum @ 1 d (pe)
518p	42 y M				A	Ingst	Int-S	1		
		acetaminophen/ propoxyphene	2	1						
		acetaminophen/ diphenhydramine	1	2					acetaminophen	23 mcg/mL In Serum @ Unknown
		ethanol	3	3					ethanol	79 mg/dL In Blood (unspecified) @ 1 h (pe)
519pai	42 y F				U	Ingst	Unk	2		
		methadone	1	1					methadone	0.21 mcg/mL In Whole Blood @ Unknown

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
520pai	42 y M				A	Ingst	Int-A	3		
		oxycodone	1	1					oxycodone	1.1 mcg/mL In Whole Blood @ Autopsy
		oxycodone	1	1					oxymorphone	40 ng/mL In Whole Blood @ Autopsy
		promethazine	2	2						
		citalopram	3	3						
521ha	43 y M				A	Ingst	Int-S	1		
		morphine (extended release)	1	1						
		diazepam	2	2						
522pai	43 y M				A	Ingst+ Derm	Int-A	2		
		fentanyl (transdermal)	1	1					fentanyl	12.4 ng/mL In Whole Blood @ Autopsy
		alprazolam	2	2					alprazolam	91.3 ng/mL In Whole Blood @ Autopsy
		oxycodone	3	3					oxycodone	0.32 mcg/mL In Whole Blood @ Autopsy
523pa	43 y F				A	Ingst	Unk	1		
		methadone	1	1					methadone	1000 ng/mL In Blood (unspecified) @ 30 m (pe)
		tramadol	2	2					eddp (2-ethylidene-1,5-dimethyl-3,3-diphenyl pyrrolidine)	0 Other (see abst) In Blood (unspecified) @ 30 m (pe)"
		tramadol	2	2					tramadol	200 ng/mL In Blood (unspecified) @ 30 m (pe)
		diazepam	3	3					diazepam	120 ng/mL In Blood (unspecified) @ 30 m (pe)
		diazepam	3	3					nordiazepam	260 ng/mL In Blood (unspecified) @ 30 m (pe)
524p	43 y F				A	Ingst	Int-S	1		
		acetaminophen/ propoxyphene	1	1					acetaminophen	390 mcg/mL In Blood (unspecified) @ Unknown
525a	43 y M				A/C	Ingst	Int-M	2		
		colchicine	1	1						
526p	43 y F				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
		paroxetine	3	3						
		aripiprazole	4	4						
		zolpidem	5	5						
		eszopiclone	6	6						
		bupropion (extended release)	7	7						
527a	43 y F				A/C	Ingst	Int-U	2		
		acetaminophen/ oxycodone	1	1					oxymorphone	0.033 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ oxycodone	1	1					oxycodone	0.16 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ oxycodone	1	1					acetaminophen	98 mcg/mL In Blood (unspecified) @ Unknown
528	43 y M				U	Ingst	Int-U	3		
		acetaminophen	1	1					acetaminophen	60 mcg/mL In Serum @ Unknown
		ethanol	2	2					ethanol	72 mg/dL In Blood (unspecified) @ Unknown
529	43 y F				U	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen	20 mcg/mL In Blood (unspecified) @ Unknown
530pa	43 y M				A	Ingst	Int-S	1		
		morphine	1	1					morphine	0.77 mg/L In Blood (unspecified) @ Unknown
		diltiazem	2	2					diltiazem	3.3 mg/L In Blood (unspecified) @ Unknown
531a	43 y F				A	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1					acetaminophen	229 mcg/mL In Serum @ Unknown
		acetaminophen/ dextromethorphan	2	2						
532a	44 y M				U	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
533a	44 y F				A/C	Ingst	Int-S	2		
		salicylate	1	1					hydrocodone	0.02 mg/L In Blood (unspecified) @ Unknown
		salicylate	1	1					ecgonine methyl ester	0.07 mg/L In Blood (unspecified) @ Unknown
		salicylate	1	1					benzoylecognine	0.33 mg/L In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	100 mg/dL In Blood (unspecified) @ Unknown
		valproic acid	2	2						
		gabapentin	3	3						
		alendronate	4	4						
		cocaine	5	5					benzoylecognine	0.33 mg/L In Blood (unspecified) @ Unknown
		cocaine	5	5					ecgonine methyl ester	0.7 mg/L In Blood (unspecified) @ Unknown
		hydrocodone	6	6					hydrocodone	0.2 mg/L In Blood (unspecified) @ Unknown
534a	44 y M				A	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1						
535	44 y M				A	Ingst+ Unk	Int-S	2		
		acetaminophen	2	1					acetaminophen	90 mcg/mL In Unknown @ Unknown
		salicylate	1	2					salicylate	11 mg/dL In Unknown @ Unknown
		methamphetamine	4	3						
		diphenhydramine	3	4						
		ethanol	5	5					ethanol	345 mg/dL In Unknown @ Unknown
536h	44 y F				A	Ingst+ Inhal	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	35 mcg/mL In Serum @ Unknown
		oxycodone (extended release)	2	2						
		acetaminophen/ butalbital/caffeine	3	3						
		clonidine	4	4						
		lithium	5	5						
537	44 y M				A/C	Ingst	Int-M	2		
		acetaminophen/ hydrocodone	1	1						
538	44 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	405 mcg/mL In Serum @ Unknown
		acetaminophen	1	1					acetaminophen	686 mcg/mL In Serum @ Unknown
539pai	44 y M				U	Ingst	Int-A	2		
		oxycodone	1	1					oxycodone	0.22 mcg/mL In Whole Blood @ Autopsy
		mirtazapine	2	2					mirtazapine	0.15 mcg/mL In Whole Blood @ Autopsy
		trazodone	3	3					trazodone	0.92 mcg/mL In Whole Blood @ Autopsy
		hydroxyzine	4	4						
540	44 y M				A	Ingst	Int-S	1		
		salicylate	1	1						
		tricyclic antidepressant	2	2						
		acetaminophen	3	3						
541pai	44 y M				U	Ingst	Int-A	2		
		oxycodone	1	1					oxycodone	0.22 mcg/mL In Whole Blood @ Autopsy
		mirtazapine*	3	2					mirtazapine	0.15 mcg/mL In Whole Blood @ Autopsy
		trazodone*	2	2					trazodone	0.92 mcg/mL In Whole Blood @ Autopsy
		hydroxyzine	4	4						
		paroxetine	5	5						
542pai	44 y M				A	Ingst	Int-A	2		
		methadone	1	1					methadone	0.09 mcg/mL In Whole Blood @ Autopsy
		propoxyphene	2	2					propoxyphene	0.5 mcg/mL In Whole Blood @ Autopsy
		propoxyphene	2	2					norpropoxyphene	1.2 mcg/mL In Whole Blood @ Autopsy
		diazepam	3	3						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
543pa	45 y F				U	Ingst	Unk	2		
		morphine	1	1					morphine	54 ng/mL In Blood (unspecified) @ Autopsy
		amitriptyline	2	2					amitriptyline	109 ng/mL In Blood (unspecified) @ Autopsy
		amitriptyline	2	2					nortriptyline	130 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	3	3					alprazolam	68.9 ng/mL In Blood (unspecified) @ Autopsy
		cetirizine	4	4						
544p	45 y M				C	Ingst	Int-A	3		
		oxycodone (extended release)	1	1						
545	45 y M				A/C	Ingst	Int-M	3		
		acetaminophen	1	1					acetaminophen	69 mcg/mL In Serum @ Unknown
546a	45 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	61.1 mg/dL In Blood (unspecified) @ Autopsy
		salicylate	1	1					salicylate	92.9 mg/dL In Serum @ Unknown
547p	45 y F				A/C	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	103 mcg/mL In Blood (unspecified) @ 1 h (pe)
548p	45 y F				A	Ingst+ Derm	Int-S	1		
		oxycodone (extended release)	1	1						
		opioid	2	2						
549	45 y F				A	Ingst	Unt-G	1		
		acetaminophen	1	1					acetaminophen	136.6 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	83 mg/dL In Blood (unspecified) @ Unknown
		lorazepam	3	3						
		alprazolam	4	4						
550a	45 y F				A	Ingst	Int-S	2		
		fentanyl	1	1					fentanyl	6.5 ng/mL In Whole Blood @ Autopsy
		alprazolam	2	2					alprazolam	473 ng/mL In Whole Blood @ Autopsy
		acetaminophen/ hydrocodone	3	3					hydromorphone	176 ng/mL In Whole Blood @ Autopsy
		acetaminophen/ hydrocodone	3	3					hydrocodone	3 mcg/mL In Whole Blood @ Autopsy
		acetaminophen	4	4					acetaminophen	962 mcg/mL In Whole Blood @ Autopsy
551a	45 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	77.6 mcg/mL In Serum @ 2 d (pe)
552a	45 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	121 mg/dL In Serum @ 5.5 h (pe)
553pai	45 y M				U	Ingst	Int-A	2		
		oxycodone	3	1					oxycodone	1.3 Other (see abst) In Liver @ Autopsy
		oxycodone	3	1					oxymorphone	56 Other (see abst) In Liver @ Autopsy
		ethanol*	1	2					ethanol	0.09% (wt/Vol) In Vitreous @ Autopsy
		ethanol*	1	2					ethanol	0.17% (wt/Vol) In Whole Blood @ Autopsy
		paroxetine*	2	2					paroxetine	20.8 Other (see abst) In Liver @ Autopsy
554pai	45 y F				U	Ingst	Int-A	2		
		propoxyphene	1	1					propoxyphene	0.75 mcg/mL In Whole Blood @ Autopsy
		propoxyphene	1	1					norpropoxyphene	2.2 mcg/mL In Whole Blood @ Autopsy
		alprazolam	2	2					alprazolam	86 ng/mL In Whole Blood @ Autopsy
		diphenhydramine	3	3					diphenhydramine	1.2 mg/mL In Whole Blood @ Autopsy
		fluoxetine	4	4						
555p	45 y F				C	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
556	46 y F				A/C	Ingst	Int-M	3		
		acetaminophen	1	1						
		ethanol	2	2						
557	46 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen	134 mcg/mL In Plasma @ Unknown
558ha	46 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	29 mg/L In Blood (unspecified) @ Unknown
		salicylate	2	2						
		ethanol	3	3						
559p	46 y M				A/C	Ingst	Int-U	2		
		opioid	1	1						
		benzodiazepine	2	2						
560p	46 y M				A	Par	Int-S	1		
		oxycodone (extended release)	1	1						
561ha	46 y M				U	Unk	Unk	3		
		salicylate	1	1					salicylate	17.8 mg/dL In Serum @ Unknown
		opioid	2	2						
		cocaine	3	3						
562pa	46 y M				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					dihydrocodeine/ hydrocodol (free)	100 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	1	1					acetaminophen	43 mcg/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	1	1					hydrocodone (free)	440 ng/mL In Blood (unspecified) @ Autopsy
		methadone	2	2						
563	46 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen	9 mcg/mL In Blood (unspecified) @ Unknown
564pa	46 y F				A	Ingst	Int-A	1		
		acetaminophen/ hydrocodone*	2	1					hydrocodone	467 ng/mL In Urine (quantitative only) @ Autopsy
		acetaminophen/ hydrocodone*	2	1					hydrocodone	69.2 ng/mL In Blood (unspecified) @ Autopsy
		methadone*	1	1					methadone	1440 ng/mL In Urine (quantitative only) @ Autopsy
		methadone*	1	1					methadone	300 ng/mL In Blood (unspecified) @ Autopsy
		carisoprodol	3	2						
		alprazolam	4	3					7-aminoclonaze-pam	10.8 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	4	3					7-aminoclonaze-pam	133 ng/mL In Urine (quantitative only) @ Autopsy
		alprazolam	4	3					alpha-oh-alpra-zolam	192 ng/mL In Urine (quantitative only) @ Autopsy
		alprazolam	4	3					alprazolam	198 ng/mL In Urine (quantitative only) @ Autopsy
		alprazolam	4	3					alprazolam	25.7 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	5	4						
		ethanol	6	5						
565	46 y F				A	Ingst	Int-U	2		
		acetaminophen	1	1					acetaminophen	52.5 mcg/mL In Blood (unspecified) @ Unknown
566pai	46 y F				U	Ingst	Int-A	2		
		oxycodone	1	1					oxycodone	0.21 mcg/mL In Whole Blood @ Autopsy
		alprazolam	2	2					alprazolam	70 ng/mL In Whole Blood @ Autopsy
		clonazepam	3	3					clonazepam	33 ng/mL In Whole Blood @ Autopsy
		quetiapine	4	4						
567	46 y M				A/C	Ingst	Unk	3		
		acetaminophen/ hydrocodone	1	1						
568	47 y F				A	Ingst	Int-S	1		
		salicylate	1	1						
		ethanol	3	2						
		ibuprofen	2	3						
569a	47 y M				C	Ingst	Int-M	2		
		acetaminophen	1	1						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
570	47 y M				A/C	Ingst	Unt-M	1		
		acetaminophen	1	1					acetaminophen	13 mcg/mL In Serum @ 48 h (pe)
		ethanol	2	2						
		acetaminophen/ propoxyphene	3	3						
571p	47 y F				A	Ingst	Int-U	2		
		caffeine/ salicylamide/ salicylate	1	1						
572pai	47 y M				A	Ingst	Int-U	2		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.32 mcg/mL In Whole Blood @ Autopsy
		oxycodone	2	2					oxycodone	0.56 mcg/mL In Whole Blood @ Autopsy
		oxycodone	2	2					oxymorphone	212 ng/mL In Whole Blood @ Autopsy
		ethanol	3	3					ethanol	0.02% (wt/Vol) In Whole Blood @ Autopsy
		quetiapine	4	4						
573pai	47 y M				A	Ingst	Int-A	2		
		methadone	1	1					methadone	0.54 mcg/mL In Whole Blood @ Autopsy
574	47 y M				U	Ingst+ Unk	Int-A	2		
		fentanyl (transdermal)	1	1						
		acetaminophen/ hydrocodone	2	2					acetaminophen	2 mcg/mL In Serum @ 1 h (pe)
		amitriptyline	3	3						
		methamphetamine	4	4						
		clonazepam	5	5						
575pa	47 y M				A	Ingst	Int-S	1		
		acetaminophen/ propoxyphene	1	1					acetaminophen	184 mcg/mL In Serum @ Unknown
		ethanol	2	2						ethanol 0.23 g/dL In Serum @ Unknown
576pai	47 y M				U	Ingst	Int-A	2		
		methadone	1	1					methadone	0.77 mcg/mL In Whole Blood @ Autopsy
		alprazolam	2	2					alprazolam	115 ng/mL In Whole Blood @ Autopsy
		hydrocodone	3	3						
577pai	47 y F				U	Ingst	Int-A	2		
		methadone	1	1					methadone	0.2 mcg/mL In Whole Blood @ Autopsy
		alprazolam	2	2					alprazolam	186 ng/mL In Whole Blood @ Autopsy
578pai	47 y M				A	Ingst	Int-A	2		
		oxycodone	1	1					oxycodone	0.8 mcg/mL In Whole Blood @ Autopsy
		diazepam	2	2						
		ethanol	3	3					ethanol	0.22% (wt/Vol) In Whole Blood @ Autopsy
		ethanol	3	3					ethanol	0.27% (wt/Vol) In Vitreous @ Autopsy
579	47 y F				C	Ingst	Int-M	2		
		acetaminophen/ oxycodone	1	1						
		acetaminophen/ hydrocodone	2	2						
580pa	48 y M				A	Ingst	Int-S	2		
		salicylate	1	1					salicylate	301 mcg/mL In Blood (unspecified) @ Autopsy
		salicylate	1	1					salicylate	82 mg/dL In Plasma @ Unknown
581	48 y M				A/C	Ingst	Int-M	3		
		tramadol	1	1						
		hydrocodone/ ibuprofen	2	2						
582pai	48 y M				U	Ingst	Int-A	1		
		oxycodone	1	1					oxycodone	0.33 mcg/mL In Whole Blood @ Autopsy
		ethanol	2	2					ethanol	0.12% (wt/Vol) In Whole Blood @ Autopsy
		ethanol	2	2					ethanol	0.17% (wt/Vol) In Vitreous @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
583a	48 y F				U	Ingst+ Unk	Int-S	2		
		acetaminophen*	2	1					acetaminophen	218.3 mcg/mL In Plasma @ 8 h (pe)
		acetaminophen*	2	1					acetaminophen	264 mcg/mL In Plasma @ 0 h (pe)
		opioid*	1	1					fentanyl	100 ng/mL In Blood (unspecified) @ Autopsy
		opioid*	1	1					norfentanyl	6.7 ng/mL In Blood (unspecified) @ Autopsy
584	48 y M				A	Ingst	Int-S	2		
		salicylate	1	1					salicylate	86.2 mg/dL In Blood (unspecified) @ 1 h (pe)
585	48 y F				U	Ingst	Unk	2		
		acetaminophen/ oxycodone	1	1					acetaminophen	45 mcg/mL In Blood (unspecified) @ Unknown
586	48 y F				A/C	Ingst	Int-U	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	13 mcg/mL In Serum @ Unknown
		carisoprodol	2	2						
		zolpidem	3	3						
		ondansetron	4	4						
		gabapentin	5	5						
587p	48 y F				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
588a	48 y M				A/C	Ingst	Int-S	1		
		colchicine	1	1						
		ethanol	2	2					ethanol	0.08% In Blood (unspecified) @ Unknown
589pai	48 y F				U	Ingst	Int-A	2		
		oxycodone	1	1					oxycodone	0.23 mcg/mL In Whole Blood @ Autopsy
		diphenhydramine	2	2					diphenhydramine	1.7 mcg/mL In Whole Blood @ Autopsy
		tapentadol	3	3						
		citalopram	4	4					citalopram	1.1 mcg/mL In Whole Blood @ Autopsy
		hydrocodone	5	5						
		ethanol	6	6					ethanol	0.02% (wt/Vol) In Whole Blood @ Autopsy
590	48 y M				A/C	Ingst	Unk	3		
		buprenorphine/ naloxone (sublingual)	1	1						
		escitalopram	2	2						
		acetaminophen/ hydrocodone	3	3						
591pai	48 y M				A	Ingst	Unk	3		
		oxycodone	1	1					oxycodone	0.19 mcg/mL In Whole Blood @ Autopsy
		alprazolam	2	2					alprazolam	94 ng/mL In Whole Blood @ Autopsy
		diazepam	3	3						
592pai	49 y F				A	Ingst	Unk	1		
		oxycodone	1	1					mirtazapine	0.05 mg/L In Serum @ Autopsy
		oxycodone	1	1					methadone	0.16 mcg/mL In Serum @ Autopsy
		oxycodone	1	1					pregabalin	1.7 mg/L In Serum @ Autopsy
		oxycodone	1	1					oxycodone	46 mcg/mL In Serum @ Autopsy
		oxycodone	1	1					topiramate	8 mg/L In Serum @ Autopsy
		ethanol	2	2					ethanol	0.07% (wt/Vol) In Serum @ Autopsy
		ethanol	2	2					ethanol	0.08% (wt/Vol) In Vitreous @ Autopsy
593pa	49 y M				U	Ingst	Unk	2		
		acetaminophen*	3	1					acetaminophen	0 Other (see abst) In Unknown @ Unknown
		methadone*	1	1					methadone	0.22 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	0.03 mg/L In Blood (unspecified) @ Autopsy
594	49 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	123 mg/dL In Blood (unspecified) @ Unknown
		lamotrigine	2	2						
		gabapentin	3	3						
		zolpidem	4	4						
		alprazolam	5	5						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
595p	49 y M				A/C	Ingst	Int-S	2		
		methadone	1	1						
		acetaminophen/ hydrocodone	2	2						
		diazepam	3	3						
596	49 y F				U	Ingst	Int-S	2		
		acetaminophen/ propoxyphene	1	1					acetaminophen	159 mcg/mL In Serum @ Unknown
		ethanol	2	2						
597p	49 y F				U	Ingst	Int-U	2		
		methadone	1	1						
		clonazepam	2	2						
		acetaminophen/ hydrocodone	3	3						
598pa	49 y F				C	Ingst	Int-U	3		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.26 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					acetaminophen	1.6 mg/L In Blood (unspecified) @ Unknown
		phenytoin	2	2						
		alprazolam	3	3						
		topiramate	4	4						
599pai	49 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.23 mcg/mL In Whole Blood @ Autopsy
		carisoprodol	2	2					carisoprodol	10.1 mcg/mL In Whole Blood @ Autopsy
		carisoprodol	2	2					meprobamate	13.9 mcg/mL In Whole Blood @ Autopsy
		ethanol	3	3					ethanol	0.02% (wt/Vol) In Whole Blood @ Autopsy
600pai	49 y F				A	Ingst+ Par	Int-A	3		
		oxycodone	1	1					oxycodone	0.33 mcg/mL In Whole Blood @ Autopsy
		butalbital	2	3						
		diphenhydramine	3	4					diphenhydramine	1.7 mcg/mL In Whole Blood @ Autopsy
		citalopram	4	5						
601pai	49 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.23 mcg/mL In Whole Blood @ Autopsy
		skeletal muscle relaxant	2	2					carisoprodol	10.1 mcg/mL In Whole Blood @ Autopsy
		skeletal muscle relaxant	2	2					meprobamate	13.9 mcg/mL In Whole Blood @ Autopsy
		ethanol	3	3					ethanol	0.02% (wt/Vol) In Whole Blood @ Autopsy
602	49 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	126 mg/dL In Blood (unspecified) @ Unknown
603	49 y F				U	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen	6 mcg/mL In Blood (unspecified) @ 5 d (pe)
		acetaminophen	1	1					acetaminophen	9 mcg/mL In Blood (unspecified) @ 4 d (pe)
604	50 y M				U	Ingst	Int-S	1		
		methadone	1	1						
605pai	50 y M				A	Derm	Unk	3		
		opioid	1	1					fentanyl	7.1 ng/mL In Whole Blood @ Autopsy
		valproic acid	2	2					valproic acid	22 mcg/mL In Whole Blood @ Autopsy
606pa	50 y F				A/C	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	192.8 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen	1	1					acetaminophen	212 mg/L In Plasma @ 0 h (pe)
		alprazolam	2	2						
		eszopiclone	3	3						
		ibuprofen	4	4					ibuprofen	26 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	5	5					oxycodone	0.02 mg/L In Blood (unspecified) @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		oxycodone	5	5					oxycodone	0.03 mg/L In Vitreous @ Autopsy
		morphine	6	6					morphine	0.02 mg/L In Vitreous @ Autopsy
		morphine	6	6					morphine	0.12 mg/L In Blood (unspecified) @ Autopsy
		fluoxetine	7	7					fluoxetine	0.44 mg/L In Blood (unspecified) @ Autopsy
		fluoxetine	7	7					norfluoxetine	0.89 mg/L In Blood (unspecified) @ Autopsy
		naproxen	8	8						
607pai	50 y M				U	Ingst	Int-A	3		
		oxycodone	1	1						
		acetaminophen/ hydrocodone	2	2						
		methamphetamine	3	3						
		carisoprodol	4	4						
608pa	50 y M				U	Ingst	Unk	2		
		tramadol	1	1					tramadol	1613 ng/mL In Unknown @ Autopsy
609a	50 y M				A	Ingst	Int-S	3		
		tramadol	1	1						
		clonazepam	2	2						
		tricyclic antidepressant	3	3						
610a	50 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1						
		citalopram*	2	2					citalopram	0.29 mcg/mL In Serum @ Autopsy
		citalopram*	2	2					citalopram	8.4 Other (see abst) In Liver @ Autopsy
		drug, unknown*	3	2						
611a	50 y M				A	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen	179.1 mcg/mL In Whole Blood @ Unknown
		etodolac	2	2						
		hydrocodone	3	3					hydrocodone	1 mcg/mL In Whole Blood @ Unknown
		cyclobenzaprine	4	4						
612	50 y M				A/C	Ingst	Int-S	1		
		colchicine	1	1						
		alprazolam	2	2						
613pai	50 y M				A	Unk	Int-A	2		
		morphine	1	1					morphine (free)	0.37 mcg/mL In Vitreous @ Autopsy
		morphine	1	1					morphine (free)	1.7 mcg/mL In Whole Blood @ Autopsy
614pai	50 y M				A	Ingst	Int-A	2		
		tramadol	2	1					tramadol	4.4 mcg/mL In Whole Blood @ Autopsy
		acetaminophen/ hydrocodone	1	2					hydrocodone	0.06 mcg/mL In Whole Blood @ Autopsy
		alprazolam	3	3						
		diazepam	4	4						
615pai	50 y M				A	Ingst	Int-A	2		
		methadone	1	1					methadone	0.5 mcg/mL In Whole Blood @ Autopsy
616pa	51 y F				U	Ingst	Int-M	1		
		fentanyl (transdermal)	1	1					fentanyl	7.3 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	206 mg/dL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	248 mg/dL In Urine (quantitative only) @ Autopsy
617pa	51 y M				A	Ingst	Int-S	1		
		oxycodone	2	1					oxymorphone	32 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	2	1					oxycodone (free)	50000 ng/mL In Blood (unspecified) @ Autopsy
		venlafaxine	3	2					o-desmethylvenla-faxine	1900 ng/mL In Blood (unspecified) @ Autopsy
		venlafaxine	3	2					venlafaxine	46000 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	4	3					diazepam	11000 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	4	3					nordiazepam	39 ng/mL In Blood (unspecified) @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		ethanol	1	4					ethanol	193 mg/dL In Blood (unspecified) @ Autopsy
		allopurinol	5	5						
		diflunisal	6	6						
618	51 y M				A	Ingst	Int-S	3		
		acetaminophen/ propoxyphene	1	1						
		baclofen	2	2						
		trazodone	3	3						
		sertraline	4	4						
619	51 y F				A	Ingst	Int-U	2		
		acetaminophen	1	1					acetaminophen	5.6 mcg/mL In Serum @ 24 h (pe)
		ethanol	2	2						
620a	51 y M				A	Ingst	Int-A	2		
		methadone	1	1					methadone	0.27 mg/L In Blood (unspecified) @ Unknown
		alprazolam	2	2					alprazolam	0.57 mg/L In Blood (unspecified) @ Unknown
		diphenhydramine	3	3					diphenhydramine	2.664 mg/L In Blood (unspecified) @ Unknown
621a	51 y F				A	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.16 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ propoxyphene	2	2					propoxyphene	0.2 mcg/mL In Whole Blood @ Autopsy
		acetaminophen/ propoxyphene	2	2					norpropoxyphene	0.79 mcg/mL In Whole Blood @ Autopsy
622pa	51 y F				A	Ingst	Int-S	1		
		morphine	1	1						
		hydromorphone	2	2						
		fluoxetine	3	3						
		alprazolam	4	4						
		promethazine	5	5						
623	51 y F				A	Ingst	Unk	2		
		acetaminophen	1	1						
		tramadol	2	2						
		acetaminophen/ hydrocodone	3	3						
624p	51 y M				A/C	Ingst	Int-A	2		
		fentanyl	1	1						
625a	51 y F				C	Ingst	Int-M	2		
		acetaminophen	1	1						
		acetaminophen/ dextromethorphan	2	2						
		ethanol	3	3						
		cocaine	4	4						
626pai	51 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.86 mcg/mL In Whole Blood @ Autopsy
		diazepam	2	2						
		lorazepam	3	3						
627pai	51 y F				U	Ingst	Int-A	2		
		propoxyphene	1	1					propoxyphene	0.2 mcg/mL In Whole Blood @ Unknown
		propoxyphene	1	1					propoxyphene	0.26 mcg/mL In Whole Blood @ Autopsy
		propoxyphene	1	1					norpropoxyphene	0.76 mcg/mL In Whole Blood @ Unknown
		propoxyphene	1	1					norpropoxyphene	0.79 mcg/mL In Whole Blood @ Autopsy
		hydrocodone	2	2					hydrocodone	0.16 mcg/mL In Whole Blood @ Unknown
628	51 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
629pai	51 y M				A	Ingst+ Unk	Int-A	1		
		morphine	1	1					morphine (free)	0.09 mcg/mL In Whole Blood @ Autopsy
		ethanol	2	2					ethanol	0.34% (wt/Vol) In Whole Blood @ Autopsy
		ethanol	2	2					ethanol	0.39% (wt/Vol) In Vitreous @ Autopsy
		lamotrigine	3	3						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
630pa	52 y F				A/C	Ingst	Int-S	1		
		amitriptyline*	1	1						
		cyclobenzaprine*	3	1						
		morphine (extended release)*	2	1						
		propranolol	4	4						
		metoclopramide	5	5						
		gabapentin	6	6						
		gemfibrozil	7	7						
		ethanol	8	8					ethanol	20 mg/dL In Whole Blood @ Autopsy
		amphetamine	9	9						
631h	52 y F				C	Ingst	Int-U	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	35.2 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	1	1					acetaminophen	37.5 mg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	300 mg/dL In Blood (unspecified) @ Unknown
632	52 y F				U	Ingst	Int-S	1		
		acetaminophen/ propoxyphene	1	1						
633	52 y F				A	Ingst	Int-S	1		
		acetaminophen/ oxycodone	1	1						
634	52 y M				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	106 mcg/mL In Blood (unspecified) @ Unknown
635pa	52 y M				A	Ingst	Unk	2		
		oxycodone	1	1					oxycodone	376 ng/mL In Blood (unspecified) @ Autopsy
		lorazepam	2	2					7-aminoclonaze-pam	22.4 ng/mL In Blood (unspecified) @ Autopsy
636a	52 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	58.9 mcg/mL In Plasma @ 6 h (pe)
		ibuprofen	2	2						
637	52 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1						
638	52 y F				A	Ingst	Int-S	1		
		acetaminophen/ opioid	1	1					acetaminophen	125 mcg/mL In Serum @ Unknown
639	52 y M				U	Ingst	Int-S	1		
		acetaminophen	1	1						
640	52 y F				U	Ingst	Unk	2		
		acetaminophen	1	1						
		higher alcohols	2	2						
641a	52 y F				A	Ingst	Int-S	3		
		methadone	1	1					methadone	0.77 mg/L In Blood (unspecified) @ Unknown
		propoxyphene	2	2					propoxyphene	0.64 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	3	3					alprazolam	0.17 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	4	4						
		trazodone	5	5						
642pai	52 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.25 mcg/mL In Whole Blood @ Autopsy
		alprazolam	2	2						
		skeletal muscle relaxant	3	3						
643	52 y F				A	Ingst	Int-S	2		
		hydromorphone	1	1						
		amitriptyline	2	2						
644	52 y M				A/C	Ingst	Unt-T	2		
		colchicine	1	1						
645	53 y F				A/C	Ingst	Int-U	2		
		acetaminophen	1	1						
		acetaminophen/ hydrocodone	2	2						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
646	53 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	58 mcg/mL In Plasma @ Unknown
		carisoprodol	2	2						
647	53 y F				C	Ingst	Int-A	3		
		acetaminophen/ hydrocodone	1	1					acetaminophen	148 mcg/mL In Blood (unspecified) @ 4.5 h (pe)
		acetaminophen/ hydrocodone	1	1					acetaminophen	188 mcg/mL In Blood (unspecified) @ Unknown
648a	53 y M				U	Par+ Unk	Int-M	1		
		oxycodone	1	1					oxycodone	309 ng/mL In Blood (unspecified) @ Unknown
		oxycodone	1	1					oxycodone	327 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	1082 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	1288 ng/mL In Blood (unspecified) @ Unknown
649	53 y F				A/C	Ingst+ Derm	Int-S	1		
		fentanyl (transdermal)	1	1						
		acetaminophen/ oxycodone	2	2					acetaminophen	0 mcg/mL In Serum @ Unknown
		acetaminophen/ hydrocodone	3	3					acetaminophen	0 mcg/mL In Serum @ Unknown
		alprazolam	4	4						
		zolpidem	5	5						
		carisoprodol	6	6						
		levothyroxine	7	7						
		tolterodine	8	8						
650	53 y F				C	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1					acetaminophen	82 mcg/mL In Serum @ Unknown
651pai	53 y F				U	Ingst+ Unk	Int-A	2		
		fentanyl	1	1					fentanyl	19.5 ng/mL In Whole Blood @ Autopsy
		citalopram	2	2						
652pai	53 y M				U	Ingst	Int-U	2		
		oxycodone	1	1					oxycodone	0.54 mcg/mL In Whole Blood @ Autopsy
		propoxyphene	2	2					propoxyphene	0.36 mcg/mL In Whole Blood @ Autopsy
		propoxyphene	2	2					norpropoxyphene	0.48 mcg/mL In Whole Blood @ Autopsy
		fluoxetine	3	3						
		metoprolol	4	4						
653	54 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1						
654	54 y M				A	Ingst	Int-A	2		
		oxycodone	1	1						
655	54 y F				A/C	Ingst	Int-S	1		
		methadone	1	1						
		ethanol	2	2						
656p	54 y M				A	Ingst	Int-S	1		
		oxycodone	1	1						
		ethanol	2	2						
657	54 y M				C	Ingst	Int-M	3		
		acetaminophen	1	1					acetaminophen	5 mcg/mL In Blood (unspecified) @ 8 h (pe)
658a	54 y M				A/C	Ingst	Int-S	1		
		acetaminophen/ propoxyphene	1	1					norpropoxyphene	1.3 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ propoxyphene	1	1					propoxyphene	2 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ propoxyphene	1	1					acetaminophen	735 mcg/mL In Serum @ Unknown
		lorazepam	2	2						
659p	54 y M				A	Unk	Int-U	2		
		methadone	1	1						
		diazepam	2	2						
660a	54 y F				A	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1					acetaminophen	260 mcg/mL In Blood (unspecified) @ 3 h (pe)
		melatonin	2	2						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
661	54 y F				A/C	Unk	Unk	2		
		acetaminophen/ butalbital/caffeine	1	1						
		opioid	2	2						
		tricyclic antidepressant	3	3						
662ai	54 y M				A/C	Ingst	Int-S	3		
		acetaminophen/ oxycodone	1	1						
663p	54 y M				A/C	Ingst	Int-S	2		
		methadone	1	1						
		nadolol	2	2						
		oxycodone	5	3						
		acetaminophen/ oxycodone	4	4						
		ibuprofen	3	5						
664pai	54 y M				A	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.2 mcg/mL In Whole Blood @ Autopsy
		diazepam	2	2					nordiazepam	0.49 mcg/mL In Whole Blood @ Autopsy
		diazepam	2	2					diazepam	1.1 mcg/mL In Whole Blood @ Autopsy
		laxative (stimulant)	3	3					sertraline	1.2 mcg/mL In Whole Blood @ Autopsy
665p	54 y M				U	Unk	Int-U	2		
		oxymorphone (extended release)	1	1						
		methadone	2	2						
		alprazolam	3	3						
666pai	54 y F				U	Ingst+ Unk	Unk	2		
		oxycodone	1	1					oxycodone	0.19 mcg/mL In Whole Blood @ Unknown
		methamphetamine	2	2					amphetamine	1.2 mcg/mL In Whole Blood @ Unknown
		diphenhydramine	3	3						
667pai	54 y F				U	Ingst	Int-A	2		
		oxycodone	1	1					oxycodone	0.96 mcg/mL In Whole Blood @ Autopsy
		citalopram	2	2					citalopram	2 mcg/mL In Whole Blood @ Autopsy
		diazepam	3	3						
		bupropion	4	4						
		cyclobenzaprine	5	5						
		doxylamine	6	6						
668	54 y M				A/C	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	57 mcg/mL In Unknown @ Unknown
		cyclobenzaprine	2	2						
		ropinirole	3	3						
669p	54 y F				A/C	Ingst	Int-S	2		
		fentanyl	6	1						
		clonazepam	2	2						
		acetaminophen/ hydrocodone	7	3						
		acetaminophen/ oxycodone	4	4						
		quetiapine	5	5						
		pregabalin	3	6						
		duloxetine	1	7						
670pai	54 y M				A	Ingst	Int-A	1		
		methadone	1	1					methadone	0.62 mcg/mL In Whole Blood @ Autopsy
		desipramine	2	2					desipramine	9.6 mcg/mL In Whole Blood @ Autopsy
671p	54 y M				A/C	Ingst	Int-U	2		
		methadone	1	1						
		alprazolam	2	2						
		cyclobenzaprine	3	3						
		sulindac	4	4						
		duloxetine	5	5						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
672	55 y M				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	300 mcg/mL In Blood (unspecified) @ 2 d (pe)
		acetaminophen	1	1					acetaminophen	683 mcg/mL In Blood (unspecified) @ 1 d (pe)
		acetaminophen	1	1					acetaminophen	852 mcg/mL In Blood (unspecified) @ Unknown
		trazodone	2	2					trazodone	0 mcg/mL In Blood (unspecified) @ Unknown
673	55 y M				C	Ingst+ Aspir	Unk	2		
		acetaminophen	1	1					acetaminophen	15 mcg/mL In Serum @ Unknown
		ethanol	2	2						
674	55 y F				C	Ingst	Int-S	3		
		hydromorphone	1	1						
		lorazepam	2	2						
		trazodone	3	3						
675a	55 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen	34 mcg/mL In Serum @ Unknown
		acetaminophen/ hydrocodone	2	2						
		acetaminophen/ codeine	3	3						
676	55 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ caffeine/salicylate	1	1						
		gabapentin	2	2						
		fluoxetine	3	3						
677a	55 y F				A	Ingst	Int-U	2		
		morphine	1	1					morphine (free)	36 mcg/L In Serum @ Unknown
		cocaine	2	2						
		cyclobenzaprine	3	3						
		alprazolam	4	4						
		oxycodone	5	5						
		hydrocodone	6	6						
		gabapentin	7	7						
		lisinopril	8	8						
		montelukast	9	9						
		naproxen	10	10						
		cimetidine	11	11						
		ezetimibe/simvastatin	12	12						
		pravastatin	13	13						
678ai	55 y M				U	Ingst	Int-A	2		
		tramadol	1	1					tramadol	2.3 mcg/mL In Blood (unspecified) @ Unknown
		doxepin	2	2					nordoxepin	0.75 mcg/mL In Blood (unspecified) @ Unknown
		doxepin	2	2					doxepin	3.1 mcg/mL In Blood (unspecified) @ Unknown
679pai	55 y M				U	Ingst	Int-A	2		
		oxycodone	1	1					oxycodone	0.38 mcg/mL In Whole Blood @ Autopsy
		alprazolam	2	2					alprazolam	173 ng/mL In Whole Blood @ Autopsy
		diazepam	3	3						
680pai	55 y M				U	Ingst	Int-A	2		
		morphine	1	1					morphine (free)	2.1 mcg/mL In Whole Blood @ Autopsy
		acetaminophen/ hydrocodone	2	2					hydrocodone	0.17 mcg/mL In Whole Blood @ Autopsy
		ethanol	3	3					ethanol	0.07% (wt/Vol) In Whole Blood @ Autopsy
		ethanol	3	3					ethanol	0.1% (wt/Vol) In Vitreous @ Autopsy
		skeletal muscle relaxant	4	4					meprobamate	5.8 mcg/mL In Whole Blood @ Autopsy
		skeletal muscle relaxant	4	4					carisoprodol	7.3 mcg/mL In Whole Blood @ Autopsy
		phenobarbital	5	5						
		amitriptyline	6	6						
681pai	55 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.12 mcg/mL In Whole Blood @ Autopsy
		ethanol	2	2					ethanol	0.02% (wt/Vol) In Vitreous @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		ethanol	2	2					ethanol	0.14% (wt/Vol) In Whole Blood @ Autopsy
		skeletal muscle relaxant	3	3					carisoprodol	2 mcg/mL In Whole Blood @ Autopsy
		skeletal muscle relaxant	3	3					meprobamate	6.5 mcg/mL In Whole Blood @ Autopsy
		morphine	4	4					morphine (free)	0.13 mcg/mL In Whole Blood @ Autopsy
682pai	55 y M				U	Ingst	Int-A	2		
		oxycodone	1	1					oxycodone	1.1 mcg/mL In Whole Blood @ Autopsy
		oxycodone	1	1					oxymorphone	69 ng/mL In Whole Blood @ Autopsy
		skeletal muscle relaxant	2	2					meprobamate	35.2 mcg/mL In Whole Blood @ Autopsy
		skeletal muscle relaxant	2	2					carisoprodol	9.7 mcg/mL In Whole Blood @ Autopsy
		diazepam	3	3						
683pa	55 y M				U	Unk	Int-U	2		
		hydrocodone	1	1					hydromorphone	7 ng/mL In Blood (unspecified) @ Autopsy
		hydrocodone	1	1					hydrocodone	729 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	125 ng/mL In Blood (unspecified) @ Autopsy
684pai	55 y F				A	Ingst+ Unk	Int-S	1		
		morphine	1	1					morphine (free)	0.07 mcg/mL In Whole Blood @ Autopsy
		acetaminophen/ hydrocodone	2	2					hydrocodone	0.12 mcg/mL In Whole Blood @ Autopsy
		fluoxetine	3	3					norfluoxetine	0.74 mcg/mL In Whole Blood @ Autopsy
		fluoxetine	3	3					fluoxetine	1.2 mcg/mL In Whole Blood @ Autopsy
		quetiapine	4	4						
685	56 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen	97 mcg/mL In Serum @ Unknown
686pa	56 y F				U	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	2	1					acetaminophen	105.2 mcg/mL In Serum @ Unknown
		acetaminophen/ hydrocodone	2	1					hydrocodone	124 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/ propoxyphene	3	2					norpropoxyphene	490 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/ diphenhydramine	1	3					diphenhydramine	774 ng/mL In Blood (unspecified) @ Unknown
		carisoprodol/ salicylate	4	4						
687pa	56 y F				C	Ingst	Unk	1		
		caffeine/salicylate	1	1					salicylate	30 mg/dL In Serum @ Unknown
688	56 y F				A/C	Ingst	Int-S	1		
		acetaminophen/ propoxyphene	1	1						
		alprazolam	2	2						
689a	56 y F				A/C	Ingst	Int-S	1		
		salicylate	1	1					salicylate	880 mcg/mL In Blood (unspecified) @ Autopsy
		buprenorphine*	2	2					buprenorphine	46 ng/mL In Blood (unspecified) @ Autopsy
		zolpidem*	3	2						
		lamotrigine	4	3					lamotrigine	3 mcg/mL In Blood (unspecified) @ Autopsy
		naproxen	5	4						
690pa	56 y F				A/C	Ingst	Int-S	3		
		acetaminophen/ oxycodone	1	1						
691a	56 y F				A	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1						
692pai	56 y M				A	Ingst+ Unk	Int-A	2		
		methadone	1	1					methadone	0.22 mcg/mL In Whole Blood @ Autopsy
		oxycodone	2	2					oxycodone	0.45 mcg/L In Whole Blood @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		ketamine	3	3						
		diazepam	4	4						
		amitriptyline	5	5						
		citalopram	6	6						
		memantine	7	7						
		ethanol	8	8						
693pa	57 y F				A/C	Ingst	Int-A	2		
		methadone	1	1					methadone	0.693 mg/L In Blood (unspecified) @ Unknown
694pa	57 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
695	57 y M				U	Ingst	Int-S	1		
		salicylate	1	1						
		ibuprofen	2	2						
		naproxen	3	3						
696p	57 y F				U	Ingst	Int-S	2		
		codeine	1	1						
		acetaminophen/ hydrocodone	2	2						
		acetaminophen/ diphenhydramine	5	4						
		lorazepam	4	5						
		alprazolam	6	6						
697pa	57 y F				U	Ingst	Unk	1		
		methadone	1	1						
		hydrocodone	2	2					hydrocodone	0.113 mg/dL In Blood (unspecified) @ Autopsy
698a	57 y F				A/C	Ingst	Unt-G	1		
		acetaminophen/ oxycodone*	3	1					oxycodone	0.57 mg/L In Blood (unspecified) @ Autopsy
		amitriptyline*	1	1					amitriptyline	13.1 mg/L In Blood (unspecified) @ Autopsy
		benzodiazepine	2	2					alprazolam	12 ng/mL In Blood (unspecified) @ Autopsy
699p	57 y M				A	Ingst	Int-U	2		
		acetaminophen/ hydrocodone	1	1						
		carisoprodol	2	2						
700ai	57 y F				U	Ingst	Int-A	2		
		methadone	1	1					methadone	0.79 mcg/mL In Whole Blood @ Autopsy
		acetaminophen/ hydrocodone	2	2					hydrocodone	0.16 mcg/mL In Whole Blood @ Autopsy
		quetiapine	3	3						
		fluoxetine	4	4						
701pai	57 y F				A	Ingst	Int-A	2		
		morphine	1	1					morphine (free)	0.52 mcg/mL In Whole Blood @ Autopsy
		oxycodone	2	2					oxycodone	0.21 mcg/mL In Whole Blood @ Autopsy
		oxycodone	2	2					oxymorphone	21 ng/mL In Whole Blood @ Autopsy
		diazepam	3	3						
702pai	57 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.49 mcg/mL In Whole Blood @ Autopsy
		skeletal muscle relaxant	2	2					carisoprodol	2.9 mcg/mL In Whole Blood @ Autopsy
		skeletal muscle relaxant	2	2					meprobamate	5.5 mcg/mL In Whole Blood @ Autopsy
		pseudoephedrine	3	3						
		amitriptyline	4	4						
		laxative (stimulant)	5	5						
703pai	57 y M				U	Ingst	Int-A	2		
		methadone	1	1					methadone	0.74 mcg/mL In Whole Blood @ Autopsy
		alprazolam	2	2					alprazolam	217 ng/mL In Whole Blood @ Autopsy
704pai	57 y F				U	Derm	Int-A	2		
		fentanyl	1	1					fentanyl	9.4 mcg/mL In Whole Blood @ Autopsy
		lamotrigine	2	2						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
705pa	57 y M				U	Ingst	Unk	2		
		fentanyl	1	1					fentanyl	14.9 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	2	2					nordiazepam	501 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	2	2					diltiazem	516 ng/mL In Blood (unspecified) @ Autopsy
		hydrocodone	3	3						
706pa	58 y M				U	Ingst	Int-S	1		
		acetaminophen/ oxycodone	1	1					oxymorphone	0.042 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ oxycodone	1	1					oxycodone	0.291 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	2	2					hydrocodone	0.047 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	2	2					acetaminophen	108 mg/L In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	118 mg/dL In Blood (unspecified) @ Unknown
707	58 y M				C	Ingst+ Aspir	Int-S	1		
		acetaminophen	1	1					acetaminophen	13 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	48% (wt/Vol) In Blood (unspecified) @ Unknown
708ph	58 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	2	1						
		colchicine	1	2						
		hydrochlorothia-zide/ lisinopril	3	3						
		simvastatin	4	4						
709p	58 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ oxycodone	1	1						
		prednisone	2	2						
		alprazolam	3	3						
710pa	58 y F				A/C	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					hydrocodone	1 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					acetaminophen	281.2 mcg/mL In Blood (unspecified) @ 11 h (pe)
		acetaminophen/ hydrocodone	1	1					acetaminophen	290.9 mcg/mL In Blood (unspecified) @ Unknown
		zolpidem	2	2					zolpidem	1.8 mg/L In Blood (unspecified) @ Unknown
		fluoxetine	3	3					norfluoxetine	0.79 mg/L In Blood (unspecified) @ Autopsy
		fluoxetine	3	3					fluoxetine	1.3 mg/L In Blood (unspecified) @ Autopsy
		doxylamine	4	4					doxylamine	0.16 mg/L In Blood (unspecified) @ Autopsy
		dextromethorphan	5	5					dextromethorphan	0.17 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	6	6					alprazolam	0.13 mg/L In Blood (unspecified) @ Autopsy
711p	58 y F				A	Ingst	Int-S	2		
		morphine	1	1						
		metoprolol	2	2						
		benzodiazepine	3	3						
712	58 y M				A/C	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1					acetaminophen	117 mcg/mL In Serum @ Unknown
		acetaminophen/ hydrocodone	1	1					acetaminophen	97 mcg/mL In Serum @ Unknown
		fentanyl (transdermal)	2	2						
713	58 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	216 mcg/mL In Serum @ Unknown
		duloxetine	2	2						
714p	58 y M				A/C	Ingst	Int-U	2		
		propoxyphene	1	1						
		cocaine	2	2						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
715pa	59 y F				A/C	Ingst	Int-S	1		
		methadone	1	1						
716pi	59 y F				A/C	Ingst	Int-S	1		
		acetaminophen	3	1						
		clozapine	2	2						
		lithium	1	3						
		lorazepam	4	4						
		omeprazole	5	5						
717a	59 y F				C	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen	60 mcg/mL In Serum @ Unknown
		diphenhydramine	2	2					diphenhydramine	558 ng/mL In Blood (unspecified) @ Autopsy
		droperidol/fentanyl	3	3					fentanyl	11.9 ng/mL In Blood (unspecified) @ Autopsy
		prochlorperazine	4	4					promethazine	68 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	5	5					hydrocodone	95 ng/mL In Urine (quantitative only) @ Autopsy
		methadone	6	6					methadone	362 ng/mL In Urine (quantitative only) @ Autopsy
718	59 y F				U	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	9 mcg/mL In Blood (unspecified) @ Unknown
		carbamazepine	2	2					carbamazepine	28.8 mcg/mL In Blood (unspecified) @ Unknown
		atenolol	3	3						
		enalapril	4	4						
		hydroxychloroquine	5	5						
		buspirone	6	6						
		alprazolam	7	7						
		prednisone	8	8						
		omeprazole	9	9						
719p	60 y F				U	Ingst	Int-S	1		
		methadone	1	1						
		duloxetine	2	2						
		zolpidem (extended release)	3	3						
		ethanol	5	4					ethanol	34 mg/dL In Serum @ 0 h (pe)
		pantoprazole	4	5						
720h	60 y M				A	Ingst	Int-S	3		
		morphine (extended release)	2	1						
		acetaminophen	1	2					acetaminophen	5.1 ng/mL In Serum @ Unknown
721a	60 y M				U	Ingst	Int-S	1		
		salicylate	1	1					salicylate	124 mg/dL In Serum @ 1 h (pe)
722	60 y F				A/C	Ingst+ Par	Int-S	1		
		tramadol	1	1						
		insulin	2	2						
		muscle relaxant, unknown	3	3						
723	60 y F				U	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen	17.1 mcg/mL In Blood (unspecified) @ Unknown
724	60 y M				A	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1						
		acetaminophen	2	2					acetaminophen	30.8 mg/mL In Blood (unspecified) @ Unknown
725pai	60 y M				A	Unk	Int-A	2		
		fentanyl	1	1					fentanyl	13.5 ng/mL In Whole Blood @ Autopsy
		diazepam	2	2						
726	61 y F				A/C	Ingst	Unt-T	3		
		acetaminophen/ butalbital/caffeine	1	1					acetaminophen	43 mcg/mL In Blood (unspecified) @ Unknown
727	61 y M				A/C	Ingst	Int-S	2		
		acetaminophen/ propoxyphene	1	1						
728	61 y F				U	Ingst	Int-M	2		
		acetaminophen/ hydrocodone	1	1						
		amphetamine	2	2						
		benzodiazepine	3	3						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
729a	61 y M				U	Ingst	Int-S	1		
		salicylate	1	1					salicylate	340 mcg/mL In Serum @ Autopsy
		salicylate	1	1					salicylate	85 mg/dL In Serum @ 1 h (pe)
730	61 y M				A	Ingst	Int-S	2		
		methadone	1	1						
		diazepam	2	2						
		naproxen	3	3						
731	61 y F				A/C	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
		ethanol	2	2						
732	61 y M				A	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1					acetaminophen	0 mcg/mL In Serum @ Unknown
		atenolol	2	2						
		oxycodone (extended release)	3	3						
733	61 y F				U	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen	91 mg/dL In Blood (unspecified) @ Unknown
734	62 y F				A	Ingst+ Inhal	Int-S	1		
		salicylate	1	1					salicylate	125 mg/dL In Serum @ 1 h (pe)
		cocaine	2	2						
735a	62 y F				U	Ingst	Int-S	2		
		acetaminophen/ hydrocodone*	2	1					acetaminophen	45.3 mcg/mL In Blood (unspecified) @ Unknown
		diltiazem (extended release)*	1	1						
736p	62 y F				C	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		acetaminophen	2	2					acetaminophen	121 mcg/mL In Serum @ Unknown
737	62 y M				A/C	Ingst	Int-S	2		
		colchicine	1	1						
		venlafaxine (extended release)	2	2						
		carvedilol	3	3						
		naltrexone	4	4						
738	62 y M				C	Ingst	Int-U	3		
		acetaminophen/ hydrocodone	1	1					acetaminophen	48 mcg/mL In Blood (unspecified) @ Unknown
739	63 y F				A	Ingst	Int-S	2		
		meperidine	1	1						
		promethazine	2	2						
		zolpidem	3	3						
740	63 y F				A	Ingst	Int-U	3		
		acetaminophen/ diphenhydramine	1	1						
741p	63 y M				A/C	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	42 mcg/mL In Blood (unspecified) @ 4 d (pe)
		morphine (extended release)	2	2						
		diazepam	3	3						
742	63 y M				A/C	Ingst	Int-U	3		
		morphine	1	1						
743pai	63 y F				U	Ingst+ Derm	Unk	2		
		fentanyl	1	1					fentanyl	140 ng/mL In Whole Blood @ Autopsy
		doxepin	2	2					nordoxepin	0.87 mcg/mL In Whole Blood @ Autopsy
		doxepin	2	2					doxepin	1.1 mcg/mL In Whole Blood @ Autopsy
		fluoxetine	3	3						
		diazepam	4	4						
744	63 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	128 mcg/mL In Serum @ Unknown
745	63 y F				A	Ingst	Unt-T	3		
		acetaminophen	1	1					acetaminophen	15.4 mcg/mL In Blood (unspecified) @ Unknown

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
746a	64 y F				A/C	Ingst	Int-M	1		
		acetaminophen/ hydrocodone	1	1					alprazolam	0.05 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					hydrocodone (free)	0.08 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					acetaminophen	160.7 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					acetaminophen	412.6 mcg/mL In Blood (unspecified) @ Unknown
747a	64 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	155 mg/dL In Blood (unspecified) @ 4 h (pe)
748a	65 y M				U	Ingst	Int-U	3		
		methadone	1	1						
		diazepam	2	2						
749	65 y F				C	Ingst	Unt-T	2		
		acetaminophen/ oxycodone	1	1					acetaminophen	57 mcg/mL In Serum @ Unknown
		acetaminophen	2	2						
750	65 y M				C	Ingst	Int-U	3		
		acetaminophen	1	1					acetaminophen	32.9 mcg/mL In Blood (unspecified) @ Unknown
		salicylate	2	2					salicylate	15.9 mg/dL In Serum @ Unknown
751p	65 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	199 mcg/mL In Serum @ Unknown
		metformin	2	2						
752pai	65 y M				U	Ingst	Int-A	2		
		methadone	1	1					methadone	0.35 mcg/mL In Whole Blood @ Autopsy
		cyclobenzaprine	2	2					cyclobenzaprine	0.1 mcg/mL In Whole Blood @ Autopsy
		diazepam	3	3						
753	65 y M				A	Ingst	Int-S	1		
		methadone	1	1						
		acetaminophen/ opioid	2	2						
		carisoprodol	3	3						
		benzodiazepine	4	4						
754	66 y M				A/C	Ingst	Int-M	1		
		acetaminophen	1	1						
755	66 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen	50 mcg/mL In Blood (unspecified) @ Unknown
756a	66 y M				C	Ingst	Int-M	1		
		acetaminophen	1	1						
757	66 y F				A/C	Ingst	Int-S	3		
		methadone	1	1						
758pai	66 y F				U	Ingst	Int-S	2		
		tramadol	1	1						
		propoxyphene	2	2						
		alprazolam	3	3						
		doxepin	4	4						
		chlorpheniramine	5	5						
759a	67 y M				A/C	Ingst	Int-S	3		
		salicylate	1	1						
760	67 y F				C	Ingst	Unt-M	3		
		acetaminophen	1	1					acetaminophen	148 mcg/mL In Unknown @ Unknown
		magnesium oxide/zinc	2	2						
761	67 y M				C	Ingst	Int-M	1		
		acetaminophen	1	1						
		ethanol	2	2						
		acetaminophen/ oxycodone	3	3						
		drug, unknown	4	4						
762pi	67 y F				U	Ingst	Unk	1		
		acetaminophen	1	1						
		glipizide	2	2						
		quinine	3	3						
763	67 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	62 mg/dL In Serum @ 3 h (pe)
		salicylate	1	1					salicylate	82 mg/dL In Serum @ 8 h (pe)
		salicylate	1	1					salicylate	99 mg/dL In Serum @ 5.5 h (pe)

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
764	69 y M				C	Ingst	Int-U	2		
		acetaminophen	1	1					acetaminophen	26 mcg/mL In Blood (unspecified) @ 1 d (pe)
		acetaminophen/ hydrocodone	2	2						
765p	69 y F				A	Ingst	Int-A	3		
		methadone	1	1						
766	69 y M				C	Ingst	Unt-M	3		
		caffeine/salicylamide/salicylate	1	1						
767i	70 y F				C	Ingst	Unt-T	1		
		acetaminophen/ propoxyphene	1	1						
768	71 y F				A	Ingst	Unt-G	1		
		caffeine/salicylate	1	1						
		salicylate	2	2						
769	71 y F				U	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
		pregabalin	2	2						
770a	71 y M				A	Ingst	Int-S	1		
		colchicine	1	1						
771p	71 y M				A/C	Ingst	Int-S	2		
		acetaminophen/ tramadol	1	1						
		acetaminophen/ oxycodone	2	2					acetaminophen	45 mcg/mL In Blood (unspecified) @ 8 h (pe)
		acetaminophen/ hydrocodone	3	3						
		cyclobenzaprine	4	4						
		ethanol	5	5					ethanol	280 mg/dL In Blood (unspecified) @ 8 h (pe)
772	71 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		quetiapine	2	2						
773a	72 y F				U	Ingst+ Unk	Int-S	2		
		acetaminophen	1	1						
		drug, unknown	2	2						
774	72 y F				C	Ingst	Unt-T	2		
		salicylate	1	1					salicylate	60 mg/dL In Blood (unspecified) @ Unknown
775	73 y M				C	Ingst	Int-M	1		
		salicylate	1	1					salicylate	37.1 mg/dL In Blood (unspecified) @ Unknown
		ibuprofen	2	2						
776	74 y F				A	Ingst	Int-S	2		
		acetaminophen/ codeine	1	1					acetaminophen	432 mcg/mL In Serum @ Unknown
777a	75 y M				A/C	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
		skeletal muscle relaxant	2	2						
778p	77 y M				A	Ingst	Int-S	3		
		oxycodone	1	1						
		potassium chloride	2	2						
		acetaminophen	3	3					carbamazepine	12.6 mg/L In Serum @ 30 h (pe)
		acetaminophen	3	3					carbamazepine	22 mg/L In Serum @ Unknown
		acetaminophen	3	3					acetaminophen	77 mcg/mL In Serum @ Unknown
		carbamazepine	4	4						
779	79 y F				A/C	Ingst	Int-U	3		
		acetaminophen/ oxycodone	1	1					acetaminophen	15.3 mcg/mL In Serum @ Unknown
		alprazolam	2	2						
		theophylline	3	3						
		warfarin	4	4						
780pa	79 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1						
781p	79 y M				A	Ingst	Unk	3		
		morphine	2	1						
		lorazepam	1	2						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
782a	80 y M				A/C	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1					acetaminophen	46 mcg/mL In Serum @ 12 h (pe)
783	80 y M				A	Ingst	Int-S	2		
		tramadol	1	1						
784a	84 y F				A	Ingst	Oth-M	1		
		morphine	1	1					morphine	50000 ng/mL In Urine (quantitative only) @ Unknown
785	84 y F				C	Ingst	Unk	2		
		acetaminophen/ codeine	1	1					acetaminophen	44.1 mcg/mL In Blood (unspecified) @ Unknown
786	85 y M				A	Ingst	AR-D	3		
		methadone	1	1						
		acetaminophen/ oxycodone	2	2						
787a	86 y M				A/C	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.011 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.024 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					acetaminophen	378 mcg/mL In Blood (unspecified) @ Unknown
788	86 y F				A	Ingst	Unt-T	1		
		colchicine	1	1						
789a	86 y M				A	Ingst	Int-S	2		
		salicylate	1	1						
790a	86 y F				A/C	Ingst	Int-S	1		
		salicylate	3	1						
		venlafaxine	2	2					venlafaxine	19000 mcg/mL In Blood (unspecified) @ Autopsy
		venlafaxine	2	2					o-desmethylvenla-faxine	7408 mcg/mL In Blood (unspecified) @ Autopsy
		nateglinide	4	3						
		insulin	1	4						
791p	87 y M				A	Ingst	Int-S	2		
		acetaminophen/ propoxyphene	1	1					acetaminophen	60 mcg/mL In Blood (unspecified) @ 1 h (pe)
		diazepam	2	2						
792pa	15 m F				A	Ingst	Unt-G	2		
		opioid	1	1						
793	Unknown adult (>=20 yrs) F				U	Ingst	Int-S	1		
		acetaminophen	1	1						
See also case 2, 5, 6, 7, 8, 9, 11, 29, 38, 46, 51, 54, 70, 93, 235, 794, 796, 797, 799, 802, 812, 813, 824, 827, 831, 832, 836, 839, 840, 843, 849, 856, 857, 860, 862, 863, 867, 868, 870, 876, 880, 882, 884, 888, 891, 895, 896, 902, 912, 913, 916, 918, 919, 922, 923, 924, 927, 930, 955, 957, 958, 964, 975, 977, 980, 981, 983, 985, 987, 988, 989, 993, 995, 1001, 1004, 1006, 1007, 1013, 1020, 1022, 1023, 1026, 1028, 1031, 1032, 1042, 1054, 1057, 1060, 1061, 1067, 1073, 1079, 1090, 1100, 1102, 1109, 1126, 1130, 1136, 1137, 1138, 1139, 1140, 1141, 1145, 1147, 1150, 1151, 1153, 1154, 1157, 1158, 1163, 1164, 1165, 1172, 1173, 1174, 1182, 1183, 1184, 1192, 1193, 1197, 1198, 1200, 1201, 1204, 1208, 1210, 1220, 1221, 1222, 1226, 1232, 1233, 1235, 1237, 1238, 1239, 1247, 1255, 1258, 1260, 1261, 1266, 1267, 1268, 1282, 1284, 1285, 1288, 1292, 1294, 1295, 1297, 1302, 1309, 1313, 1316, 1317, 1322, 1323, 1334, 1338, 1342, 1343, 1352										
Anesthetics										
794	49 y M				C	Ingst+ Derm	Unk	2		
		lidocaine	1	1						
		fentanyl (transdermal)	2	2						
		oxycodone	3	3						
795pi	Unknown adult (>=20 yrs) M				A	Inhal	Int-S	1		
		isoflurane	1	1						
See also case 357, 426, 692										
Anticoagulants										
796	23 y M				A	Ingst	Int-S	2		
		verapamil*	2	1						
		warfarin*	1	1						
		skeletal muscle relaxant	3	3						
		ibuprofen	4	4						
		benztropine	5	5						
		bupropion	6	6						
		fexofenadine	7	7						
		metoprolol	8	8						
		clindamycin	9	9						
		haloperidol	10	10						
		cephalexin	11	11						
		antihyperlipidemic	12	12						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
797	46 y M				A	Ingst	AR-D	3		
		clopidogrel	1	1						
		salicylate	2	2						
798	82 y M				A	Par	AR-D	2		
		thrombolytics	1	1						
See also case 779, 941, 978, 1015, 1029, 1032, 1081, 1082, 1111, 1158										
Anticonvulsants										
799p	20 y M				A	Ingst	Int-S	2		
		levetiracetam	1	1						
		acetaminophen/ hydrocodone	2	2						
		valproic acid	3	3						
800p	21 y F				A/C	Ingst	Int-U	2		
		gabapentin	1	1						
801pa	25 y F				A/C	Ingst	Int-S	2		
		alprazolam*	2	1					alprazolam	89 ng/mL In Blood (unspecified) @ Autopsy
		carbamazepine*	1	1					carbamazepine	38 mcg/mL In Blood (unspecified) @ Autopsy
		escitalopram	3	3					escitalopram	1200 ng/mL In Blood (unspecified) @ Autopsy
		lamotrigine	4	4					lamotrigine	9.3 mcg/mL In Blood (unspecified) @ Autopsy
802p	27 y M				A	Ingst	Int-S	2		
		carbamazepine	1	1					carbamazepine	24.3 mcg/mL In Serum @ 3 d (pe)
		carbamazepine	1	1					carbamazepine	31.8 mcg/mL In Serum @ 2 d (pe)
		carbamazepine	1	1					carbamazepine	37 mcg/mL In Serum @ 2 d (pe)
		carbamazepine	1	1					carbamazepine	48 mcg/mL In Serum @ Unknown
		carbamazepine	1	1					carbamazepine	62 mcg/mL In Serum @ Unknown
		carbamazepine	1	1					carbamazepine	8.3 mcg/mL In Serum @ 3 d (pe)
		methocarbamol	2	2						
		oxycodone	3	3						
803pa	28 y F				A/C	Ingst	Int-S	1		
		valproic acid (extended release)	1	1					valproic acid	1000 mcg/mL In Serum @ Unknown
		valproic acid (extended release)	1	1					valproic acid	1072 mcg/mL In Serum @ Unknown
		valproic acid (extended release)	1	1					valproic acid	1073.1 mcg/mL In Serum @ Unknown
		valproic acid (extended release)	1	1					valproic acid	987.1 mcg/mL In Serum @ Unknown
		ziprasidone	2	2						
804a	28 y M				A/C	Ingst	Int-S	3		
		phenytoin	1	1					phenytoin	52.1 mcg/mL In Serum @ Unknown
805p	29 y M				A	Ingst	Int-S	2		
		gabapentin	1	1						
		clonazepam	2	2						
		ethanol	3	3					ethanol	240 mg/dL In Blood (unspecified) @ Unknown
806pa	33 y F				U	Ingst	Int-S	2		
		lamotrigine	1	1						
		drug, unknown	2	2						
807	34 y F				A/C	Ingst	Int-S	2		
		valproic acid (extended release)	1	1					valproic acid	225 mcg/mL In Serum @ 0.5 d (pe)
		valproic acid (extended release)	1	1					valproic acid	25.3 mcg/mL In Serum @ 4 d (pe)
		valproic acid (extended release)	1	1					valproic acid	43.5 mcg/mL In Serum @ 24 h (pe)
		valproic acid (extended release)	1	1					valproic acid	57.8 mcg/mL In Serum @ 3 d (pe)
		valproic acid (extended release)	1	1					valproic acid	94.9 mcg/mL In Serum @ Unknown
		ethanol	2	2						
		activated charcoal	3	3						
808p	35 y F				A	Ingst	Int-S	1		
		lamotrigine	1	1						
		propranolol	2	2						
		paroxetine	3	3						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
809a	37 y M				A	Ingst	Int-S	1		
		valproic acid	1	1					valproic acid	1286 mcg/mL In Blood (unspecified) @ 2 h (pe)
		valproic acid	1	1					valproic acid	1399 mcg/mL In Blood (unspecified) @ 6 h (pe)
		valproic acid	1	1					valproic acid	1548 mcg/mL In Blood (unspecified) @ 2 d (pe)
		valproic acid	1	1					valproic acid	414 mg/L In Serum @ Unknown
		valproic acid	1	1					valproic acid	532 mcg/mL In Blood (unspecified) @ 3 d (pe)
		methamphetamine	2	2					methamphetamine	0.11 mg/L In Serum @ Unknown
810	38 y F				A	Ingst	Int-S	3		
		anticonvulsant	1	1						
		drug, unknown	2	2						
811	40 y F				U	Ingst+ Derm	Int-S	3		
		lamotrigine	1	1						
		diazepam	2	2						
		duloxetine	3	3						
		gasoline	4	4						
812pa	43 y F				A/C	Ingst	Unk	3		
		oxcabazepine	1	1					oxcarbazepine	21.1 mcg/mL In Blood (unspecified) @ Autopsy
		clonazepam	2	2					clonazepam	10.9 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	2	2					7-aminoclonazepam	188 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	2	2					7-aminoclonazepam	2500 ng/mL In Urine (quantitative only) @ Autopsy
		acetaminophen/ hydrocodone	3	3					hydromorphone	1094 ng/mL In Urine (quantitative only) @ Autopsy
		acetaminophen/ hydrocodone	3	3					hydrocodone	20.1 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	3	3					hydrocodone	3321 ng/mL In Urine (quantitative only) @ Autopsy
		duloxetine	4	4					duloxetine	98.4 ng/mL In Blood (unspecified) @ Autopsy
		trazodone	5	5					trazodone	1 mcg/mL In Blood (unspecified) @ Autopsy
		quetiapine	6	6					quetiapine	523 ng/mL In Blood (unspecified) @ Autopsy
813p	44 y F				C	Ingst	Int-A	2		
		gabapentin	1	1						
		acetaminophen/ hydrocodone	2	2						
		quetiapine	3	3						
		fluoxetine	4	4						
		ethanol	5	5						
814	45 y F				U	Ingst	AR-D	3		
		valproic acid	1	1						
815pa	49 y F				U	Ingst	Int-S	1		
		lamotrigine*	1	1					lamotrigine	32 mg/L In Blood (unspecified) @ Unknown
		quetiapine (extended release)*	2	1						
		ethanol	5	2					ethanol	256 mg/dL In Blood (unspecified) @ Unknown
		clonazepam	3	3					clonazepam	19 mcg/L In Blood (unspecified) @ Unknown
		venlafaxine	4	4					venlafaxine	14 mg/L In Blood (unspecified) @ Unknown
816	49 y F				A/C	Ingst+ Unk	Int-S	2		
		valproic acid	1	1					valproic acid	1088 mcg/mL In Unknown @ 10 h (pe)
		valproic acid	1	1					valproic acid	223 mcg/mL In Unknown @ 53 h (pe)
		valproic acid	1	1					valproic acid	225 mcg/mL In Unknown @ 30 h (pe)
		valproic acid	1	1					valproic acid	300 mcg/mL In Unknown @ Unknown
		valproic acid	1	1					valproic acid	869 mcg/mL In Unknown @ 18 h (pe)
		diazepam	2	2						
		zolpidem	3	3						
		ethanol	4	4					ethanol	64 mg/dL In Serum @ Unknown
		methamphetamine	5	5						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
817p	50 y F				U	Ingst	Int-S	2		
		oxcabazepine	1	1						
		bupropion (extended release)	2	2						
		lorazepam	3	3						
		escitalopram	4	4						
		zolpidem	5	5						
		quetiapine (extended release)	6	6						
818	50 y M				A/C	Ingst	Int-S	1		
		oxcabazepine	1	1						
		bupropion (extended release)	2	2						
		diltiazem (extended release)	3	3						
819a	52 y M				C	Ingst	AR-D	3		
		levetiracetam	1	1					levetiracetam	21 mg/L In Blood (unspecified) @ Unknown
		levetiracetam	1	1					levetiracetam	2500 mg/L In Urine (quantitative only) @ Autopsy
		levetiracetam	1	1					levetiracetam	94 mg/L In Blood (unspecified) @ Autopsy
		phenytoin	2	2						
		barbiturate	3	3						
820	55 y F				A	Ingst	Int-S	1		
		valproic acid	1	1						
		ziprasidone	2	2						
		benztropine	3	3						
		cyclobenzaprine	4	4						
821a	57 y F				A/C	Ingst	Int-S	2		
		carbamazepine	1	1					carbamazepine	16.7 mcg/mL In Serum @ Unknown
		carbamazepine	1	1					carbamazepine	32.2 mcg/mL In Serum @ Unknown
		carbamazepine	1	1					carbamazepine	9.6 mcg/mL In Whole Blood @ Autopsy
		thorazine	2	2					chlorpromazine	0.27 mcg/mL In Whole Blood @ Autopsy
822	57 y M				A/C	Ingst	Unt-T	3		
		phenytoin	1	1					phenytoin	38.2 mg/L In Serum @ 8 h (pe)
		phenytoin	1	1					phenytoin	57 mg/L In Serum @ 4 h (pe)
823	57 y M				A/C	Ingst	Int-S	3		
		phenytoin	1	1					phenytoin	36 mcg/mL In Serum @ Unknown
		topiramate	2	2						
824a	58 y F				A	Ingst	Int-S	2		
		carbamazepine	1	1						
		acetaminophen/ hydrocodone	2	2						
		hydromorphone	3	3						
		antihistamine	4	4						
825	60 y M				A/C	Ingst	Int-S	2		
		oxcabazepine	1	1						
		clonazepam	2	2						
		bupropion	3	3						
826	60 y M				A	Ingst	Int-S	3		
		carbamazepine	1	1						
		levetiracetam	2	2						
827	66 y M				A	Ingst	Int-S	2		
		valproic acid	2	1					valproic acid	364 mg/L In Blood (unspecified) @ Unknown
		losartan	3	2						
		naproxen	4	3						
		citalopram	1	4						
828a	66 y M				U	Ingst	Unk	3		
		phenytoin	1	1					phenytoin	40 mcg/mL In Blood (unspecified) @ Unknown
829	84 y F				A/C	Ingst	Int-S	2		
		carbamazepine	1	1					carbamazepine	35 mcg/mL In Blood (unspecified) @ Unknown
		carbamazepine	1	1					carbamazepine	39 mcg/mL In Blood (unspecified) @ Unknown
		carbamazepine	1	1					carbamazepine	48 mcg/mL In Blood (unspecified) @ Unknown

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
830	86 y F				A/C	Ingst	Unt-T	2		
		levetiracetam	1	1						
See also case 203, 252, 270, 314, 324, 340, 357, 380, 395, 396, 406, 414, 456, 457, 475, 488, 495, 496, 533, 586, 594, 598, 605, 629, 630, 669, 676, 677, 689, 704, 718, 769, 778, 849, 850, 854, 855, 856, 879, 880, 891, 894, 895, 904, 910, 931, 937, 953, 966, 974, 976, 980, 993, 994, 1002, 1015, 1028, 1030, 1037, 1043, 1059, 1068, 1097, 1109, 1126, 1131, 1142, 1158, 1161, 1167, 1174, 1178, 1190, 1206, 1210, 1215, 1219, 1235, 1267, 1296, 1347										
Antidepressants										
831pa	16 y F				A	Ingst	Int-S	1		
		tricyclic antidepressant	1	1					nortriptyline	1 Other (see abst) In Serum @ Autopsy
		tricyclic antidepressant	1	1					amitriptyline	6000 ng/mL In Serum @ Autopsy
		acetaminophen/ codeine	2	2					morphine	0.13 mcg/mL In Serum @ Autopsy
		acetaminophen/ codeine	2	2					oxycodone	0.22 mcg/mL In Serum @ Autopsy
		acetaminophen/ codeine	2	2					oxymorphone	0.37 mcg/mL In Urine (quantitative only) @ Autopsy
		acetaminophen/ codeine	2	2					oxycodone	0.4 mcg/mL In Urine (quantitative only) @ Autopsy
		acetaminophen/ codeine	2	2					hydrocodone	0.8 mcg/mL In Urine (quantitative only) @ Autopsy
		acetaminophen/ codeine	2	2					acetaminophen	110 mcg/mL In Serum @ 30 m (pe)
		acetaminophen/ codeine	2	2					acetaminophen	122 mcg/mL In Serum @ Autopsy
		acetaminophen/ codeine	2	2					acetaminophen	181 mcg/mL In Urine (quantitative only) @ Autopsy
		acetaminophen/ codeine	2	2					morphine	2.5 mcg/mL In Urine (quantitative only) @ Autopsy
		acetaminophen/ codeine	2	2					codeine	3.3 mcg/mL In Serum @ Autopsy
		metoprolol	3	3						
		phenazopyridine	4	4						
		ciprofloxacin	5	5						
832p	19 y M				A	Ingst	Int-U	2		
		desvenlafaxine	1	1						
		olanzapine	2	2						
		ethanol	3	3					ethanol	9.2 mg/dL In Blood (unspecified) @ 30 h (pe)
		acetaminophen	4	4					acetaminophen	10 mcg/mL In Blood (unspecified) @ Unknown
833a	19 y F				A/C	Ingst	Int-S	1		
		citalopram	1	1					citralopram	6600 ng/mL In Serum @ 1 h (pe)
		ethanol	2	2					ethanol	0.16 g/dL In Serum @ 1 h (pe)
834pa	19 y F				U	Ingst	Int-S	1		
		venlafaxine	1	1					venlafaxine	25000 ng/mL In Blood (unspecified) @ Unknown
		venlafaxine	1	1					norvenlafaxine	3825 ng/mL In Blood (unspecified) @ Unknown
		temazepam	2	2					temazepam	507 ng/mL In Blood (unspecified) @ Unknown
		olanzapine	3	3					olanzapine	49.2 ng/mL In Blood (unspecified) @ Unknown
835pa	19 y F				U	Ingst	Int-S	1		
		venlafaxine (extended release)	1	1					venlafaxine	45000 ng/mL In Blood (unspecified) @ Autopsy
		bupropion*	3	2						
		diphenhydramine*	2	2					diphenhydramine	4400 ng/mL In Blood (unspecified) @ Autopsy
		minocycline	4	3						
836pa	19 y F				A	Ingst	Int-S	1		
		amitriptyline	1	1					nortriptyline	2200 ng/mL In Serum @ Autopsy
		amitriptyline	1	1					amitriptyline	690 ng/mL In Serum @ Autopsy
		cyclobenzaprine	2	2					cyclobenzaprine	45 ng/mL In Serum @ Autopsy
		alprazolam	3	3						
		naproxen	4	4					naproxen	6 mcg/mL In Serum @ Autopsy
837a	20 y M				A/C	Ingst	Int-S	3		
		venlafaxine (extended release)	1	1					o-desmethylvenla-faxine	12000 ng/mL In Blood (unspecified) @ Autopsy
		venlafaxine (extended release)	1	1					venlafaxine	20000 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2						
		aripiprazole	3	3						
		atomoxetine	4	4						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
838	20 y M				A	Ingst	Int-S	1		
		bupropion (extended release)	1	1						
839a	21 y M				A	Ingst	Int-S	1		
		paroxetine	1	1					paroxetine	140 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	2	2					acetaminophen	19 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	2	2					dihydrocodeine/ hydrocodol (free)	33 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	2	2					hydrocodone (free)	410 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	3	3						
840pa	21 y M				A	Ingst+ Par	Unk	3		
		amitriptyline	1	1					nortriptyline	0.35 mcg/mL In Blood (unspecified) @ Autopsy
		amitriptyline	1	1					amitriptyline	0.77 mcg/mL In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	0.075 mcg/mL In Blood (unspecified) @ Autopsy
		morphine	3	3					morphine	12 mcg/mL In Urine (quantitative only) @ Autopsy
		diazepam	4	4						
841a	21 y M				A	Ingst	Int-S	2		
		lithium	1	1						
		risperidone	2	2						
		methylphenidate	3	3						
		alprazolam	4	4						
842p	22 y F				A	Ingst	Int-S	1		
		amitriptyline	1	1						
843pa	23 y F				A	Ingst	Int-S	2		
		mirtazapine	1	1						
		acetaminophen/ hydrocodone	2	2						
844pa	24 y F				A	Ingst	Int-S	2		
		trazodone	1	1						
		escitalopram	2	2						
		bupropion (extended release)	3	3						
		clonazepam	4	4						
		lorazepam	5	5						
845a	24 y M				A	Ingst	Int-S	1		
		nortriptyline	1	1						
		diphenoxylate/ atropine	2	2						
		paroxetine	3	3						
		thorazine	4	4						
		metronidazole	5	5						
		citalopram	6	6						
		antacid	7	7						
846a	24 y F				A	Ingst	Int-U	1		
		benzodiazepine*	2	1						
		tricyclic antidepressant*	1	1					desipramine	1.15 mg/L In Blood (unspecified) @ Autopsy
847a	26 y M				A	Ingst	Int-S	1		
		bupropion	1	1						
848ph	26 y M				U	Ingst	Int-U	2		
		trazodone	1	1						
849p	26 y F				U	Ingst	Int-S	1		
		amitriptyline	6	1						
		propranolol	1	2						
		mirtazapine	2	3						
		ziprasidone	3	4						
		lamotrigine	4	5						
		naproxen	5	6						
850	26 y M				A	Ingst	Int-M	1		
		citalopram*	1	1						
		drug, unknown*	2	1						
		anticonvulsant (pyrrolidinone)	4	2						
		dihydroergocornine/ dihydroergocristine	3	3						
		caffeine	5	4						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
851	26 y M				A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
852p	27 y F				A	Ingst	Int-S	2		
		citalopram	1	1						
		aripiprazole	2	2						
853p	27 y F				A	Ingst	Int-S	1		
		citalopram	1	1						
854a	28 y M				A/C	Ingst	Int-S	1		
		bupropion	1	1					bupropion	20000 ng/mL In Gastric (stomach content) @ Autopsy
		bupropion	1	1					bupropion	2929 ng/mL In Blood (unspecified) @ Autopsy
		bupropion	1	1					hydroxybupropion	4358 ng/mL In Blood (unspecified) @ Autopsy
		bupropion	1	1					hydroxybupropion	69640 ng/mL In Gastric (stomach content) @ Autopsy
		ethanol	3	2					ethanol	100 mg/dL In Plasma @ 4 h (pe)
		gabapentin	2	3						
		diphenhydramine	4	4						
855	29 y F				A	Ingst	Int-U	1		
		venlafaxine	1	1						
		buspirone	2	2						
		gabapentin	3	3						
		heroin	4	4						
		cocaine	5	5						
856	29 y F				A	Ingst	Int-S	2		
		desvenlafaxine	1	1						
		quetiapine	2	2						
		acetaminophen/ hydrocodone	3	3					acetaminophen	32 mcg/mL In Serum @ Unknown
		alprazolam	4	4						
		valproic acid	5	5					valproic acid	53 mcg/mL In Serum @ Unknown
857p	29 y F				A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
		ethanol	2	2					ethanol	110 mg/dL In Serum @ 30 m (pe)
		acetaminophen	3	3					acetaminophen	3.9 mcg/mL In Serum @ 30 m (pe)
858a	30 y M				U	Ingst	Int-S	1		
		amoxapine*	1	1						
		propranolol*	2	1						
		fluoxetine	3	2						
		diazepam	4	3						
		alprazolam	5	4						
		fexofenadine	6	5						
859a	30 y F				A/C	Ingst	Int-S	2		
		venlafaxine	1	1					venlafaxine	96.54 mg/L In Blood (unspecified) @ Unknown
		trazodone	2	2						
860p	31 y M				A	Ingst	Int-S	2		
		trazodone	2	1						
		methadone	1	2						
		hydroxyzine	4	3						
		alprazolam	3	4						
861a	31 y M				A	Ingst	Int-S	1		
		bupropion (extended release)	1	1						
862a	31 y F				A	Ingst	Int-S	2		
		trazodone	1	1					trazodone	14.8 mcg/mL In Blood (unspecified) @ Unknown
		methamphetamine	2	2					methamphetamine	0.12 mcg/mL In Serum @ Unknown
		bupropion	3	3						
		duloxetine	4	4						
		cyclobenzaprine	5	5						
		alprazolam	6	6						
		acetaminophen	7	7					acetaminophen	22 mcg/mL In Blood (unspecified) @ Unknown
863pha	33 y F				A/C	Ingst	Int-S	2		
		diltiazem*	1	1					diltiazem	1100 ng/mL In Blood (unspecified) @ Autopsy
		lithium*	4	1						
		tramadol	2	4					tramadol	560 ng/mL In Blood (unspecified) @ Autopsy
		tramadol	2	4					o-demethyl tramadol	920 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	3	6					7-aminoclonazepam	230 ng/mL In Blood (unspecified) @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
864	33 y M				A	Ingst	Int-S	3		
		amitriptyline	1	1						
		fluoxetine	2	2						
		trazodone	3	3						
		mirtazapine	4	4						
865a	33 y F				A/C	Ingst	Int-S	2		
		venlafaxine	1	1					venlafaxine	73 mg/L In Blood (unspecified) @ Unknown
		aripiprazole	2	2					aripiprazole	310 ng/mL In Blood (unspecified) @ Unknown
866	34 y M				A	Ingst	Int-S	2		
		doxepin	1	1						
867	35 y F				A/C	Ingst	Int-S	2		
		bupropion (extended release)	1	1						
		tramadol	2	2						
		alprazolam	3	3						
868pai	36 y F				U	Ingst	Unk	2		
		amitriptyline	1	1					nortriptyline	0.51 mcg/mL In Whole Blood @ Autopsy
		amitriptyline	1	1					amitriptyline	0.63 mcg/mL In Whole Blood @ Autopsy
		propoxyphene	2	2					propoxyphene	1.3 mcg/mL In Whole Blood @ Autopsy
		propoxyphene	2	2					norpropoxyphene	2.7 mcg/mL In Whole Blood @ Autopsy
		alprazolam	3	3						
		laxative (stimulant)	4	4						
869a	38 y M				A	Ingst	Int-S	1		
		imipramine	1	1						
		ethanol	2	2					ethanol	100 mg/dL In Vitreous @ Autopsy
		ethanol	2	2					ethanol	200 mg/dL In Blood (unspecified) @ Autopsy
		amlodipine	5	3						
		atenolol	4	4						
		lisinopril	3	5						
870pai	38 y F				U	Ingst	Int-S	1		
		fluoxetine	2	1						
		lorazepam	1	2						
		fluoxetine	3	3					norfluoxetine	110 ng/mL In Blood (unspecified) @ Autopsy
		naproxen	4	4						
		cetirizine	5	5						
		methadone	6	6					methadone	570 ng/mL In Blood (unspecified) @ Autopsy
		citalopram	7	7					norfluoxetine	110 ng/mL In Blood (unspecified) @ Autopsy
		citalopram	7	7					citalopram	650 ng/mL In Blood (unspecified) @ Autopsy
871	39 y M				A/C	Ingst	Int-S	2		
		doxepin	1	1						
872pa	39 y M				U	Ingst	Int-S	1		
		imipramine	1	1						
		zolpidem (extended release)	2	2						
873pai	39 y F				U	Ingst	Int-A	3		
		trazodone	1	1					trazodone	2 mcg/mL In Whole Blood @ Autopsy
		trazodone	1	1					trazodone	5.2 mcg/mL In Whole Blood @ Autopsy
		cyclobenzaprine	2	2					cyclobenzaprine	0.28 mcg/mL In Whole Blood @ Autopsy
		citalopram	3	3					citalopram	2.2 mcg/mL In Whole Blood @ Autopsy
		citalopram	3	3					citalopram	2.6 mcg/mL In Whole Blood @ Autopsy
		hydroxyzine	4	4						
874p	39 y F				A/C	Ingst	Int-S	2		
		bupropion (extended release)	1	1						
		trazodone	2	2						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
875ha	40 y F				A	Ingst	Int-S	1		
		doxepin	1	1					zolpidem	340 ng/mL In Blood (unspecified) @ Autopsy
		doxepin	1	1					cyclobenzaprine	55 ng/mL In Blood (unspecified) @ Autopsy
		doxepin	1	1					doxepin	6632 ng/mL In Blood (unspecified) @ Autopsy
		doxepin	1	1					nordoxepin	726 ng/mL In Blood (unspecified) @ Autopsy
		zolpidem	2	2						
876p	40 y M				U	Ingst	Int-S	2		
		bupropion	1	1						
		citalopram	2	2						
		ibuprofen	3	3						
877pa	40 y F				A/C	Ingst	Int-S	1		
		bupropion	1	1						
		hydroxyzine	2	2						
		disulfiram	3	3						
		sumatriptan	4	4						
		lorazepam	5	5						
878	40 y F				A/C	Ingst	Int-S	2		
		citalopram	1	1						
879	40 y F				A/C	Ingst	Int-S	1		
		bupropion (extended release)	1	1						
		clonazepam	2	2						
		quetiapine	3	3						
		clozapine	4	4						
		gabapentin	5	5						
		amphetamine/ dextroamphetamine	6	6						
		omeprazole	7	7						
		desvenlafaxine	8	8						
		clonidine	9	9						
		cyclobenzaprine	10	10						
880pa	41 y F				A	Ingst	Int-S	2		
		amitriptyline	1	1					amitriptyline	250 ng/mL In Serum @ 10 m (pe)
		amitriptyline	1	1					nortriptyline	518 ng/mL In Serum @ 10 m (pe)
		methadone	2	2					methadone	54 ng/mL In Serum @ 10 m (pe)
		alprazolam	3	3					alprazolam	29.4 ng/mL In Serum @ 10 m (pe)
		venlafaxine	4	4					norvenlafaxine	385 ng/mL In Serum @ 10 m (pe)
		gabapentin	5	5					gabapentin	3.1 mcg/mL In Serum @ 10 m (pe)
881	41 y M				A	Ingst	Int-S	2		
		nortriptyline	1	1						
882	41 y F				A	Ingst	Unk	2		
		paroxetine	1	1						
		colesevelam	2	2						
		pseudoephedrine	3	3						
		propranolol	4	4						
		loperamide	5	5						
		vitamins-multiple	6	6						
		naproxen	7	7						
883	42 y F				A/C	Ingst	Int-S	2		
		venlafaxine (extended release)	1	1						
884	42 y M				A	Ingst	Int-S	3		
		bupropion	1	1						
		fluvoxamine	2	2						
		naproxen	3	3						
885	43 y F				A	Ingst	Int-S	2		
		amitriptyline	1	1						
886p	43 y F				A/C	Ingst	Int-S	2		
		venlafaxine	1	1						
		fluoxetine	2	2						
		clozapine	3	3						
		clonazepam	4	4						
887	43 y M				A	Ingst	Int-S	1		
		venlafaxine (extended release)	1	1						
888pa	43 y M				A/C	Ingst+ Oth	Int-S	2		
		imipramine	1	1					desipramine	2.9 mg/L In Blood (unspecified) @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		imipramine	1	1					imipramine	3.8 mg/L In Blood (unspecified) @ Autopsy
		quetiapine	2	2					quetiapine	26 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	3	3						
		methadone	4	4						
		benzodiazepine	5	5						
889	44 y F				A/C	Ingst	Int-S	1		
		trazodone	1	1						
		lorazepam	2	2						
890pa	45 y F				A/C	Ingst	Int-U	1		
		venlafaxine	1	1					venlafaxine	150 mcg/mL In Whole Blood @ Autopsy
		venlafaxine	1	1					o-desmethylvenlafaxine	3600 ng/mL In Whole Blood @ Autopsy
		clonazepam	2	2					7-aminoclonazepam	140 ng/mL In Whole Blood @ Autopsy
		clonazepam	2	2					clonazepam	2.2 ng/mL In Whole Blood @ Autopsy
		alprazolam	3	3					alprazolam	21 ng/mL In Whole Blood @ Autopsy
		ethanol	4	4					ethanol	64 mg/dL In Whole Blood @ Autopsy
891	45 y F				U	Ingst	Unk	2		
		diphenhydramine*	1	1						
		fluoxetine*	2	1						
		pramipexole	4	2						
		topiramate	10	3						
		lamotrigine	3	4						
		pregabalin	5	5						
		clonazepam	6	6						
		acetaminophen/ propoxyphene	7	7						
		acetaminophen/ hydrocodone	8	8						
		acetaminophen/ diphenhydramine	9	9						
892p	45 y M				A/C	Ingst	Int-S	2		
		tricyclic antidepressant	1	1						
		lorazepam	2	2						
		zolpidem	3	3						
893p	46 y F				A/C	Ingst	Int-S	2		
		escitalopram	1	1						
		lorazepam	2	2						
		ethanol	3	3					ethanol	0.03 mg/dL In Serum @ 1 h (pe)
894	47 y F				A	Ingst	Int-S	2		
		venlafaxine	1	1						
		lamotrigine	2	2						
895	48 y M				A/C	Ingst	Int-U	1		
		tricyclic antidepressant	1	1					amitriptyline	1360 ng/mL In Serum @ Unknown
		bupropion	2	2						
		acetaminophen/ hydrocodone	3	3						
		gabapentin	4	4						
		methylprednisolone	5	5						
		tiotropiumtiotropium	6	6						
896	49 y F				U	Ingst	Int-S	1		
		amitriptyline	1	1						
		escitalopram	3	3						
		cyclobenzaprine	4	4						
		salicylate	5	5						
		laxative, stimulant	6	6						
897p	49 y F				A	Ingst	Int-S	2		
		tricyclic antidepressant	1	1						
898pa	49 y F				U	Ingst	Int-S	2		
		doxepin	1	1					doxepin	177 mg/kg In Liver @ Autopsy
		doxepin	1	1					desmethyldoxepin	42 mg/kg In Liver @ Autopsy
		ethanol	2	2					ethanol	0.154 g/dL In Blood (unspecified) @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
899	49 y F				U	Ingst	Int-S	1		
		doxepin	1	1					doxepin	1133 ng/mL In Serum @ 1 d (pe)
		doxepin	1	1					nordoxepin	514 ng/mL In Serum @ 1 d (pe)
900a	49 y F				A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
901	50 y M				A	Ingst	Int-S	2		
		venlafaxine (extended release)	1	1						
902ai	50 y F				A	Ingst	Int-S	2		
		amitriptyline	1	1					amitriptyline	0.17 mcg/mL In Urine (quantitative only) @ Unknown
		tramadol	2	2					tramadol	0.69 mcg/mL In Whole Blood @ Unknown
		naproxen	3	3					naproxen	79 mcg/mL In Whole Blood @ Unknown
		citalopram	4	4					citalopram	0.13 mcg/mL In Whole Blood @ Unknown
903pa	51 y F				A	Ingst	Int-S	1		
		desipramine	1	1					desipramine	6600 ng/mL In Blood (unspecified) @ Autopsy
		bupropion	2	2					hydroxybupropion	380 ng/mL In Blood (unspecified) @ Autopsy
		venlafaxine	3	3					venlafaxine	710 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	4	4					clonazepam	21 ng/mL In Blood (unspecified) @ Autopsy
904pa	51 y F				A	Ingst	Int-S	1		
		doxepin	1	1					doxepin	3100 ng/mL In Blood (unspecified) @ Unknown
		doxepin	1	1					desmethyldoxepin	540 ng/mL In Blood (unspecified) @ Unknown
		carbamazepine	2	2					carbamazepine	143 mcg/mL In Blood (unspecified) @ Unknown
		zolpidem	3	3					zolpidem	1200 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	4	4					clonazepam	63 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	4	4					7-aminoclonazepam	69 ng/mL In Blood (unspecified) @ Unknown
905a	51 y F				A	Ingst+ Inhal	Int-S	1		
		bupropion (extended release)	1	1					bupropion	0.77 mg/L In Blood (unspecified) @ Unknown
		cocaine	2	2					cocaine	0.11 mg/L In Blood (unspecified) @ Unknown
		cocaine	2	2					benzoylecognine	4.79 mg/L In Blood (unspecified) @ Unknown
		benzodiazepine	3	3					diazepam	0.21 mg/L In Blood (unspecified) @ Unknown
		benzodiazepine	3	3					nordiazepam	0.29 mg/L In Blood (unspecified) @ Unknown
906p	51 y M				U	Ingst	Int-S	1		
		doxepin	1	1						
907a	52 y M				A	Ingst	Int-S	1		
		venlafaxine	1	1					venlafaxine	28 mg/L In Whole Blood @ 0 h (pe)
		paroxetine	2	2						
908	52 y F				U	Ingst	Int-S	1		
		nortriptyline	1	1						
909p	52 y F				A/C	Ingst	Int-S	2		
		citalopram	1	1						
		ethanol	2	2						
910p	53 y F				A	Ingst	Int-S	3		
		doxepin	1	1						
		lithium	2	2						
		alprazolam	3	3						
		duloxetine	4	4						
		topiramate	5	5						
		citalopram	6	6						
911ha	55 y F				A	Ingst	Int-U	3		
		amitriptyline	1	1					amitriptyline	1300 ng/mL In Serum @ 15 m (pe)
		lorazepam	2	2					lorazepam	0.24 mcg/mL In Serum @ 15 m (pe)
		zolpidem	3	3					zolpidem	0.52 mcg/mL In Serum @ 15 m (pe)
		ethanol	4	4					ethanol	0.069% (wt/Vol) In Serum @ 15 m (pe)
		venlafaxine	5	5					norvenlafaxine	0.11 mcg/mL In Serum @ 15 m (pe)

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
912pai	55 y M				U	Ingst	Int-A	2		
		doxepin	1	1					doxepin	3.1 mcg/mL In Whole Blood @ Unknown
		tramadol	2	2					tramadol	2.3 mcg/mL In Whole Blood @ Unknown
913pai	55 y F				U	Ingst	Int-A	2		
		amitriptyline	1	1					nortriptyline	0.18 mcg/mL In Whole Blood @ Autopsy
		amitriptyline	1	1					amitriptyline	0.67 mcg/mL In Whole Blood @ Autopsy
		acetaminophen/ hydrocodone	2	2					hydrocodone	0.16 mcg/mL In Whole Blood @ Autopsy
		alprazolam	3	3					alprazolam	104 ng/mL In Whole Blood @ Autopsy
		ethanol	4	4					ethanol	0.05% (wt/Vol) In Whole Blood @ Autopsy
914	56 y M				A	Ingst	Int-S	3		
		bupropion	3	1						
		benztropine	4	2						
		clozapine	1	3						
		sertraline	2	4						
		ezetimibe	5	5						
915	56 y M				A/C	Ingst	Int-S	2		
		lithium	1	1					lithium	1.8 mEq/L In Blood (unspecified) @ 23 h (pe)
		lithium	1	1					lithium	1.8 mEq/L In Blood (unspecified) @ 28 h (pe)
		lithium	1	1					lithium	10 mEq/L In Blood (unspecified) @ 60 m (pe)
		lithium	1	1					lithium	4.2 mEq/L In Blood (unspecified) @ 18 h (pe)
		escitalopram	2	2						
916	56 y F				A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
		acetaminophen/ hydrocodone	2	2						
		cyclobenzaprine	3	3						
917	57 y M				A	Ingst	Int-S	3		
		nortriptyline	1	1						
918pa	57 y M				C	Ingst	Int-S	1		
		amitriptyline	1	1					amitriptyline	3494 ng/mL In Blood (unspecified) @ Autopsy
		amitriptyline	1	1					nortriptyline	444 ng/mL In Blood (unspecified) @ Autopsy
		amitriptyline	2	2						
		ethanol	3	3					ethanol	0.147 g/dL In Blood (unspecified) @ Autopsy
		hydrocodone	4	4						
		citalopram	5	5						
919a	58 y F				A/C	Ingst+ Derm	Int-S	2		
		tricyclic antidepressant	1	1						
		phencyclidine	2	2						
		acetaminophen/ propoxyphene	3	3						
		promethazine	4	4						
		fentanyl (transdermal)	5	5						
		zolpidem	7	7						
		salicylate	8	8						
920	58 y M				A/C	Ingst	Int-S	1		
		amitriptyline	1	1						
921	58 y M				U	Ingst	Int-S	2		
		citalopram	1	1						
		diazepam	2	2						
		buspirone	3	3						
		aripiprazole	4	4						
		bupropion	5	5						
		bisoprolol/hydro-chlorothiazide	6	6						
922p	59 y F				A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
		opioid	2	2						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
923	59 y F				U	Ingst	Int-S	2		
		tricyclic antidepressant	1	1						
		opioid	2	2						
924p	59 y F				U	Ingst+ Unk	Unk	2		
		tricyclic antidepressant	1	1						
		opioid	2	2						
925pai	59 y M				A	Ingst	Unk	2		
		doxepin	1	1					doxepin	7.2 mcg/mL In Whole Blood @ Autopsy
926	60 y F				U	Ingst	Int-S	2		
		amitriptyline	1	1						
		clonidine	2	2						
927p	61 y M				U	Ingst	Int-S	3		
		doxepin	1	1						
		acetaminophen/ hydrocodone	2	2						
		meclizine	3	3						
		alprazolam	4	4						
928pai	61 y M				U	Ingst	Int-U	2		
		amitriptyline	1	1					nortriptyline	2.3 mcg/mL In Whole Blood @ Autopsy
		amitriptyline	1	1					amitriptyline	5.8 mcg/mL In Whole Blood @ Autopsy
		fluoxetine	2	2						
929pai	61 y M				A	Ingst	Int-A	2		
		citalopram	1	1					citalopram	20.3 Other (see abst) In Liver @ Autopsy
930a	61 y F				A/C	Ingst	Int-S	1		
		trazodone	3	1						
		acetaminophen/ hydrocodone	2	2					acetaminophen	209 mcg/mL In Serum @ Unknown
		amlodipine/ benazepril	1	3						
		lorazepam	4	4						
931	62 y F				A/C	Ingst	Int-S	2		
		trazodone	1	1						
		topiramate	2	2						
		drug, unknown	3	3						
		ethanol	4	4						
932a	62 y M				A	Ingst	Int-S	1		
		amitriptyline	1	1					nortriptyline	0.019 mg/L In Blood (unspecified) @ 1 h (pe)
		amitriptyline	1	1					amitriptyline	0.102 mg/L In Blood (unspecified) @ 1 h (pe)
933pai	62 y F				U	Ingst	Unk	2		
		imipramine	1	1					imipramine	5.8 mcg/mL In Whole Blood @ Autopsy
		diphenhydramine	2	2					diphenhydramine	1.4 mcg/mL In Whole Blood @ Autopsy
		laxative (stimulant)	3	3						
		bupropion	4	4						
		trazodone	5	5						
		temazepam	6	6						
		skeletal muscle relaxant	7	7						
934p	63 y F				A	Ingst	Int-S	3		
		lithium	1	1					lithium	3.36 mEq/L In Serum @ Unknown
		sertraline	2	2						
		clonazepam	3	3						
935a	66 y M				A	Ingst	Int-S	2		
		amitriptyline	1	1					nortriptyline	0.33 mg/L In Serum @ 1 h (pe)
		amitriptyline	1	1					amitriptyline	1.97 mg/L In Serum @ 1 h (pe)
		carvedilol	2	2						
		metformin	3	3						
		pioglitazone	4	4						
		nondrug, unknown	5	5						
936pai	68 y F				U	Ingst	Int-A	2		
		amitriptyline	1	1					amitriptyline	11.7 mcg/mL In Whole Blood @ Autopsy
		amitriptyline	1	1					nortriptyline	3.3 mcg/mL In Whole Blood @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		fluoxetine	2	2						
		diazepam	3	3						
		ethanol	4	4					ethanol	0.02% (wt/Vol) In Whole Blood @ Autopsy
937	70 y M				A	Ingst	Int-S	2		
		venlafaxine	1	1						
		gabapentin	2	2						
938	72 y M				A	Ingst	Unt-G	1		
		amitriptyline	1	1						
939	75 y M				A/C	Ingst	Unt-T	3		
		lithium	1	1					lithium	1.76 mEq/L In Blood (unspecified) @ 2 d (pe)
		lithium	1	1					lithium	2.37 mEq/L In Blood (unspecified) @ 1 d (pe)
940pai	76 y M				U	Ingst	Int-S	2		
		doxepin	1	1					nordoxepin	0.22 mcg/mL In Whole Blood @ Autopsy
		doxepin	1	1					doxepin	1.9 mcg/mL In Whole Blood @ Autopsy
		trazodone	2	2						
941	79 y M				A	Ingst	Int-S	2		
		amitriptyline	1	1						
		warfarin	2	2						
942	81 y M				C	Ingst	AR-D	3		
		citalopram	1	1						
943a	92 y M				A	Ingst	Int-S	3		
		amitriptyline	1	1						
		nadolol	2	2						
		trazodone	3	3						
944	95 y F				A/C	Ingst	Int-S	1		
		amitriptyline	1	1					amitriptyline	1596 ng/mL In Unknown @ Unknown
See also case 13, 15, 29, 41, 55, 84, 203, 270, 274, 281, 283, 294, 301, 314, 322, 323, 328, 335, 344, 353, 355, 359, 367, 380, 391, 395, 401, 404, 409, 411, 412, 414, 420, 431, 440, 452, 456, 461, 466, 471, 472, 473, 486, 488, 500, 509, 520, 526, 536, 539, 540, 541, 543, 553, 554, 574, 589, 590, 600, 606, 609, 610, 617, 618, 622, 630, 641, 643, 651, 652, 661, 664, 667, 669, 670, 671, 672, 674, 676, 678, 680, 684, 692, 698, 700, 702, 710, 713, 716, 719, 737, 743, 758, 790, 796, 801, 808, 811, 812, 813, 815, 817, 818, 825, 827, 959, 967, 971, 976, 977, 980, 987, 993, 994, 1001, 1002, 1013, 1016, 1017, 1019, 1023, 1025, 1030, 1037, 1053, 1054, 1056, 1058, 1061, 1067, 1068, 1073, 1076, 1109, 1117, 1123, 1126, 1131, 1144, 1149, 1151, 1152, 1157, 1161, 1165, 1167, 1181, 1183, 1186, 1190, 1192, 1195, 1196, 1197, 1199, 1205, 1206, 1207, 1209, 1212, 1213, 1215, 1219, 1225, 1235, 1236, 1250, 1270, 1292, 1309, 1317, 1333, 1340, 1342, 1354										
Antihistamines										
945pa	2 y F				A	Ingst	Int-M	1		
		diphenhydramine	1	1					diphenhydramine	0.71 mcg/mL In Whole Blood @ Autopsy
946pa	13 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	17000 ng/mL In Blood (unspecified) @ Autopsy
		antifungal drug, unknown	2	2						
947	17 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	2000 ng/mL In Serum @ Unknown
		theophylline	2	2						
		caffeine	3	3						
948p	22 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
949	27 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1						
950pa	29 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
951pa	31 y M				A	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	20000 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.07% (wt/Vol) In Blood (unspecified) @ Autopsy
952pai	33 y F				U	Ingst	Int-A	2		
		doxylamine	1	1					doxylamine	0.19 mcg/mL In Whole Blood @ Autopsy
		ethanol	2	2					ethanol	0.1% (wt/Vol) In Whole Blood @ Autopsy
		ethanol	2	2					ethanol	0.13% (wt/Vol) In Vitreous @ Autopsy
		dextromethorphan	3	3						
953p	36 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
		quetiapine	2	2						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		valproic acid	3	3						
		topiramate	4	4						
		clonazepam	5	5						
		risperidone	6	6						
954a	40 y M				A	Ingst	Int-U	1		
		diphenhydramine	1	1					diphenhydramine	5.9 mg/L In Blood (unspecified) @ Autopsy
955pai	41 y M				A	Ingst	Int-S	2		
		diphenhydramine	1	1					diphenhydramine	5.4 mcg/mL In Whole Blood @ Autopsy
		doxylamine	2	2					doxylamine	0.27 mcg/mL In Whole Blood @ Autopsy
		codeine	3	3					codeine	0.26 mcg/mL In Whole Blood @ Autopsy
956p	41 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
957a	49 y M				A	Ingst	Int-S	3		
		diphenhydramine	1	1						
		ibuprofen	2	2						
958	52 y M				A	Ingst	Int-S	1		
		diphenhydramine	2	1						
		salicylate	1	2						
		acetaminophen/ dextromethorphan	3	3						
959pai	62 y F				U	Ingst	Int-U	2		
		diphenhydramine	1	1					diphenhydramine	1.4 mcg/mL In Blood (unspecified) @ Autopsy
		imipramine	2	2						
		laxative (stimulant)	3	3						
		bupropion	4	4						
		trazodone	5	5						
		skeletal muscle relaxant	6	6						
960	67 y M				A	Ingst	Int-S	3		
		promethazine	1	1						
		ethanol	2	2						
		antacid (proton pump inhibitor)	3	3						
961pa	84 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	2.5 mg/L In Whole Blood @ Unknown
962pa	16 m M				A	Ingst	Unt-G	1		
		diphenhydramine	1	1					diphenhydramine	16.1 mg/L In Blood (unspecified) @ 20 m (pe)
		diphenhydramine	1	1					diphenhydramine	39 mg/L In Whole Blood @ Autopsy
963	30+ y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
See also case 1, 16, 29, 270, 275, 282, 292, 321, 353, 380, 393, 395, 406, 411, 414, 420, 435, 448, 488, 520, 535, 539, 541, 543, 554, 589, 600, 620, 622, 666, 677, 717, 739, 758, 796, 835, 854, 858, 860, 870, 873, 877, 891, 919, 927, 933, 988, 1001, 1030, 1037, 1042, 1054, 1068, 1126, 1143, 1157, 1195, 1199, 1209, 1220, 1232, 1250, 1315, 1317										
Antimicrobials										
964ha	38 y F				A	Ingst	Int-S	2		
		quetiapine*	2	1						
		quinine*	1	1					quinine	49 mcg/mL In Serum @ Autopsy
		acetaminophen/ diphenhydramine	3	2					acetaminophen	29 mcg/mL In Blood (unspecified) @ 2 h (pe)
		acetaminophen/ diphenhydramine	3	2					hydromorphone	33 ng/mL In Serum @ Autopsy
		carprofen	4	3						
965a	57 y F				A	Inhal	AR-D	2		
		levamisole	1	1						
		cocaine	2	2					benzoylecognine	0.26 mg/L In Blood (unspecified) @ 1 h (pe)
966a	61 y F				A/C	Ingst	Int-S	1		
		hydroxychloroquine	2	1						
		phenytoin	1	2					phenytoin	21 mg/L In Blood (unspecified) @ Autopsy
		phenytoin	1	2					phenytoin	38.1 mg/L In Serum @ Unknown
967h	67 y F				A/C	Ingst	Unt-T	3		
		linezolid	1	1						
		drug, unknown	2	2						
		fluoxetine	3	3						
		duloxetine	4	4						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
968pi	82 y F				A	Ingst	AR-D	1		
		chloroquine	1	1						
See also case 270, 300, 718, 762, 796, 831, 835, 845, 946, 976, 1018, 1037, 1069, 1079, 1131, 1142, 1158										
Antineoplastics										
969	19 y F				C	Ingst	Unk	3		
		methotrexate	1	1						
		prednisone	2	2						
970a	75 y M				C	Ingst	Unt-T	1		
		methotrexate	1	1						
See also case 144, 1037, 1069										
Asthma Therapies										
971h	55 y M				A/C	Ingst	Int-S	2		
		theophylline	1	1					theophylline	13 mcg/mL In Serum @ Autopsy
		laxative (stimulant)	2	2					sertraline	359 ng/mL In Serum @ Autopsy
		metformin	3	3					metformin	47 mg/mL In Serum @ Autopsy
		venlafaxine (extended release)	4	4					venlafaxine	96 ng/mL In Serum @ Autopsy
See also case 281, 677, 779, 947, 1126, 1210										
Cardiovascular Drugs										
972ph	2 y F				A	Par	Unt-T	1		
		cholestyramine	1	1						
973p	16 y F				A	Ingst	Int-S	1		
		flecainide	1	1					flecainide	13.28 mcg/mL In Blood (unspecified) @ Autopsy
		cyclobenzaprine	2	2					cyclobenzaprine	206 ng/mL In Blood (unspecified) @ Autopsy
974a	18 y F				A	Ingst	Int-S	1		
		diltiazem (extended release)	1	1					diltiazem	36000 ng/mL In Blood (unspecified) @ Autopsy
		metformin	2	2					metformin	23 mcg/mL In Blood (unspecified) @ Unknown
		pregabalin	3	3					pregabalin	2.9 mcg/mL In Blood (unspecified) @ Unknown
		esomeprazole	4	4					pregabalin	2.9 mcg/mL In Blood (unspecified) @ Unknown
		esomeprazole	4	4					metformin	23 mcg/mL In Blood (unspecified) @ Unknown
		esomeprazole	4	4					diltiazem	36000 ng/mL In Blood (unspecified) @ Autopsy
975	18 y F				A	Ingst	Int-S	2		
		beta blocker	1	1						
		tramadol	2	2						
976pa	19 y M				A/C	Ingst	Int-S	1		
		propranolol	1	1						
		lithium*	3	2						
		trazodone*	2	2						
		neurontin	5	3						
		fluvoxamine*	4	4						
		valacyclovir*	6	4						
977	20 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		amitriptyline	3	2						
		salicylate	2	3						
		venlafaxine	4	4						
		ethanol	5	5						
978	23 y M				A/C	Ingst	AR-D	2		
		cardiac glycoside	1	1					digoxin	4.4 ng/mL In Serum @ 1 h (pe)
		warfarin	2	2						
979p	23 y M				A	Ingst	Int-S	1		
		propafenone	1	1						
980	26 y F				A/C	Ingst	Int-S	3		
		verapamil (extended release)	1	1						
		nisoldipine	2	2						
		gabapentin	3	3						
		tricyclic antidepressant	4	4						
		acetaminophen/ butalbital/caffeine	5	5						
		clonazepam	6	6						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
981p	27 y M				A	Ingst	Int-S	1		
		atenolol	2	1						
		amlodipine	3	2						
		morphine (extended release)	4	3						
		alprazolam	5	4						
		acetaminophen/ hydrocodone	1	5						
982	27 y F				C	Ingst	AR-D	3		
		cardiac glycoside	1	1						
983	29 y F				A	Ingst	Int-S	3		
		angiotensin-converting enzyme inhibitor	1	1						
		metformin	2	2						
		acetaminophen	3	3						
984i	30 y M				A	Ingst	Int-S	3		
		amlodipine	1	1						
985pai	31 y M				U	Ingst	Int-S	1		
		propranolol	1	1					propranolol	1.4 mcg/mL In Whole Blood @ Autopsy
		propoxyphene	2	2					norpropoxyphene	5.3 mg/kg In Liver @ Autopsy
		skeletal muscle relaxant	3	3					carisoprodol	19 mcg/mL In Whole Blood @ Autopsy
		skeletal muscle relaxant	3	3					meprobamate	5.9 mcg/mL In Whole Blood @ Autopsy
		alprazolam	4	4					alprazolam	111 ng/mL In Whole Blood @ Autopsy
986a	31 y F				A/C	Ingst	Int-S	1		
		diltiazem	1	1					diltiazem	4500 ng/mL In Serum @ Autopsy
		amiodarone	2	2						
		metoprolol	3	3					metoprolol	162 ng/mL In Serum @ Autopsy
		lisinopril	4	4						
987	31 y F				A	Ingst	Int-S	2		
		calcium antagonist	1	1						
		acetaminophen/ opioid	2	2						
		metoprolol (extended release)	3	3						
		metformin	4	4						
		escitalopram	5	5						
		esomeprazole	6	6						
988p	33 y F				A	Ingst	Int-S	2		
		clonidine	1	1						
		promethazine	2	2						
		alprazolam	3	3						
		lorazepam	4	4						
		codeine	5	5						
		ethanol	6	6					ethanol	216 mg/dL In Blood (unspecified) @ Unknown
989a	36 y M				U	Ingst+ Unk	Int-S	2		
		propranolol	1	1					propranolol	840 ng/mL In Blood (unspecified) @ Unknown
		cocaine	2	2					ecgonine methyl ester	0.2 mg/L In Blood (unspecified) @ Unknown
		cocaine	2	2					benzoylecognine	0.878 mg/L In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	195 mg/dL In Blood (unspecified) @ Unknown
		amlodipine	4	4						
		acetaminophen	5	5						
990	37 y M				A	Ingst	Int-S	2		
		atenolol	2	1						
		lisinopril	1	2						
		diazepam	3	3						
991	38 y M				A/C	Ingst	Int-S	1		
		verapamil	1	1						
992a	38 y F				A	Ingst	Int-S	1		
		verapamil	1	1					verapamil	0.8 mg/L In Plasma @ Unknown
		lorazepam	2	2					lorazepam	0.04 mg/L In Plasma @ Unknown
		ethanol	3	3					ethanol	0.02% (wt/Vol) In Plasma @ Unknown

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
993	38 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		acetaminophen	2	2						
		citalopram	3	3						
		carbamazepine	4	4						
		valproic acid	5	5						
994	41 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		metoprolol	2	2						
		valproic acid	3	3						
		ziprasidone	4	4						
		paroxetine	5	5						
995p	41 y M				A	Ingst+ Unk	Int-S	1		
		clonidine	1	1						
		benzodiazepine	2	2						
		methadone	3	3						
996p	41 y F				A	Ingst	Int-S	2		
		verapamil	1	1						
		alprazolam	2	2						
997p	42 y F				A	Ingst	Int-S	2		
		amlodipine	1	1						
		ropinirole	2	2						
998	42 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		clonazepam	2	2						
		ethanol	3	3						
999	44 y F				A	Ingst	Int-S	3		
		clonidine	1	1						
1000	44 y F				A	Ingst	Int-S	1		
		amlodipine	1	1						
		metoprolol (extended release)	2	2						
1001	44 y F				A/C	Ingst	Int-S	2		
		amlodipine	6	1						
		propranolol	1	2						
		bupropion	7	3						
		quetiapine*	8	4						
		risperidone*	3	4						
		acetaminophen/ opioid	5	5						
		diphenhydramine	2	6						
		ethanol	4	7						
1002	45 y M				U	Ingst	Int-S	2		
		atorvistatin/ amlodipine	1	1						
		valproic acid	2	2						
		duloxetine	3	3						
		lisinopril	4	4						
		quetiapine	5	5						
		diazepam	6	6						
		esomeprazole	7	7						
1003	46 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1						
		clonidine	2	2						
1004a	46 y F				A	Ingst	Int-S	1		
		digoxin	1	1					digoxin	44 ng/mL In Serum @ 1 h (pe)
		acetaminophen/ codeine	2	2					acetaminophen	140 mcg/mL In Serum @ 1 h (pe)
		ethanol	3	3					ethanol	180 mg/dL In Serum @ 1 h (pe)
1005	46 y F				A	Ingst	Int-S	1		
		verapamil	1	1						
		ethanol	2	2						
1006pa	46 y M				A/C	Ingst	Int-S	1		
		atenolol	1	1					atenolol	3900 mg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	2	2					acetaminophen	169 mcg/mL In Serum @ 1 h (pe)
		clonazepam	3	3						
		ethanol	4	4					ethanol	80 mg/dL In Serum @ 1 h (pe)
1007	47 y F				A	Ingst	Int-S	1		
		nadolol	1	1						
		quinapril	2	2						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		sildenafil	3	3						
		ethanol	4	4						
		acetaminophen	5	5					acetaminophen	100 mcg/mL In Serum @ Unknown
1008	47 y M				A	Ingst	Int-S	2		
		calcium antagonist	1	1						
		doxazosin	2	2						
		angiotensin-converting enzyme inhibitor	3	3						
		metformin	5	5						
		antihyperlipidemic	6	6						
1009	48 y M				A/C	Ingst	Int-S	2		
		diltiazem (extended release)	1	1						
		metoprolol	2	2						
1010	48 y M				A	Ingst	Int-S	2		
		metoprolol (extended release)	1	1						
		amlodipine/valsartan	2	2						
		metformin	3	3						
1011	48 y M				U	Ingst	Int-S	1		
		amlodipine	1	1						
		metformin/sitagliptin	2	2						
1012p	48 y F				A	Ingst	Int-S	2		
		diltiazem (extended release)	1	1						
		eszopiclone	2	2						
1013p	48 y F				U	Ingst	Int-S	1		
		diltiazem (extended release)	1	1					dihydrocodone (free)	5300 ng/mL In Blood (unspecified) @ Autopsy
		naproxen	2	2						
		bupropion	3	3						
		meclizine	4	4						
1014	49 y M				A	Ingst	Int-S	2		
		calcium antagonist	1	1						
1015a	49 y F				A	Ingst	Int-S	3		
		diltiazem	1	1						
		valproic acid	2	2						
		warfarin	3	3						
		gabapentin	4	4						
		lisinopril	5	5						
		hydrochlorothiazide	6	6						
1016a	50 y F				A/C	Ingst+ Inhal	Int-S	1		
		beta blocker	1	1						
		bupropion (extended release)	2	2						
		cocaine*	3	4						
		fenofibrate*	4	4						
1017a	51 y F				A/C	Ingst	Int-S	1		
		beta blocker	1	1						
		bupropion (extended release)	2	2					hydroxybupropion	250 ng/mL In Blood (unspecified) @ Unknown
		bupropion (extended release)	2	2					bupropion	78 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	3	3					clonazepam	61 ng/mL In Blood (unspecified) @ Unknown
		levothyroxine	4	4						
1018	51 y M				A/C	Ingst	Int-S	1		
		verapamil	1	1						
		prednisone	2	2						
		azithromycin	3	3						
1019	51 y M				U	Ingst	Int-S	2		
		diltiazem	1	1						
		citalopram	2	2						
		clonazepam	3	3						
		quetiapine	4	4						
		ethanol	5	5					ethanol	193 mg/dL In Serum @ Unknown
1020	51 y M				A	Ingst	Int-S	1		
		beta blocker	1	1						
		oxycodone (extended release)	2	2						
		ethanol	3	3						
		alprazolam	4	4						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1021	51 y F				U	Ingst	Int-S	1		
		amlodipine	1	1						
		atenolol/ chlorthalidone	2	2						
1022	52 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		lotensin	2	2						
		tramadol	3	3						
		progestins	4	4						
1023p	52 y F				A/C	Ingst	Int-S	1		
		beta blocker	1	1						
		propoxyphene	2	2						
		acetaminophen	3	3					acetaminophen	247.7 mcg/mL In Serum @ 1 h (pe)
		acetaminophen	3	3					acetaminophen	3.7 mcg/mL In Serum @ 3 d (pe)
		escitalopram	4	4						
1024	52 y M				A/C	Ingst	Int-S	1		
		diltiazem	1	1						
		drug, unknown	2	2						
1025h	53 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		bisoprolol	2	2						
		bupropion	3	3						
		venlafaxine (extended release)	4	4						
		hydrochlorothiazide	6	6						
		atorvastatin	7	7						
1026p	53 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		beta blocker	2	2						
		lovastatin	3	3						
		acetaminophen/ propoxyphene	4	4						
		modafinil	5	5						
1027	54 y F				A	Ingst	Int-S	2		
		metoprolol	1	1						
		ethanol	2	2						
1028	55 y M				A/C	Ingst	Int-S	1		
		beta blocker	1	1						
		gabapentin	2	2						
		methadone	3	3						
1029h	56 y M				A/C	Ingst	Int-S	2		
		ranolazine	4	1						
		carvedilol	1	2						
		clopidogrel	2	3						
		lisinopril	3	4						
1030ph	56 y F				A/C	Ingst	Int-S	1		
		atenolol	1	1						
		escitalopram	2	2						
		citalopram	3	3						
		lamotrigine	4	4						
		venlafaxine	5	5						
		hydroxyzine	6	6						
		ethanol	7	7						
1031	56 y M				A	Ingst+ Aspir	Int-S	1		
		propranolol	1	1						
		opioid	2	2						
		benzodiazepine	3	3						
		rodenticide, unknown	4	4						
1032	56 y M				A	Ingst	Int-S	1		
		metoprolol	1	1						
		ranolazine	2	2						
		nitroglycerin	3	3						
		clopidogrel	4	4						
		salicylate	5	5						
1033	56 y M				A/C	Ingst	Int-S	1		
		diltiazem (extended release)	1	1						
		potassium chloride	2	2						
1034	56 y M				A/C	Ingst	Int-S	2		
		verapamil	1	1						
		drug, unknown	2	2						
1035	56 y M				A	Ingst	Int-S	2		
		amlodipine	1	1						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		angiotensin-converting enzyme inhibitor	2	2						
		clonidine	3	3						
1036pa	56 y M				A/C	Ingst	Int-S	2		
		verapamil	1	1						
		alprazolam	2	2						
		eszopiclone	3	3						
		hydrochlorothiazide/ olmesartan	4	4						
		clonidine	5	5						
1037	57 y F				U	Ingst	Int-S	2		
		diltiazem	1	1						
		antimalarials (chloroquine type)	2	2						
		venlafaxine	3	3						
		methotrexate	4	4						
		clonazepam	5	5						
		baclofen	6	6						
		fluoxetine	7	7						
		diphenhydramine	8	8						
		gabapentin	9	9						
1038	57 y M				A	Ingst	Int-S	1		
		verapamil	1	1						
		lisinopril	2	2						
1039a	57 y M				A	Ingst	Int-S	1		
		cocaine*	1	1					cocaine	0.05 mg/L In Blood (unspecified) @ Autopsy
		cocaine*	1	1					benzoylecognine	1.8 mg/L In Vitreous @ Autopsy
		cocaine*	1	1					benzoylecognine	2 mg/L In Blood (unspecified) @ Autopsy
		lisinopril*	3	1						
		phencyclidine	2	2						
1040p	57 y F				A	Ingst	Int-S	2		
		verapamil	1	1						
1041	57 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		carvedilol	2	2						
		hydrochlorothiazide/ olmesartan	3	3						
1042p	58 y F				A	Ingst	Int-S	3		
		cardiac glycoside	1	1						
		calcium antagonist	2	2						
		levothyroxine	3	3						
		diphenhydramine	4	4						
		carprofen	5	5						
		benzodiazepine	6	6						
		antihyperlipidemic	7	7						
1043	58 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		atenolol	2	2						
		phenytoin	3	3					phenytoin	29.9 mcg/mL In Blood (unspecified) @ Unknown
1044p	58 y M				A	Ingst	Unt-T	3		
		verapamil (extended release)	1	1						
		digoxin	2	2						
		carvedilol	3	3						
1045	59 y M				A	Ingst	Unt-G	1		
		atenolol	1	1						
		clonazepam	2	2						
1046	59 y F				A/C	Ingst	Unt-T	3		
		metoprolol	1	1						
1047	59 y M				A/C	Ingst	AR-D	3		
		digoxin	1	1					digoxin	3.3 ng/mL In Blood (unspecified) @ 9 h (pe)
		digoxin	1	1					digoxin	3.5 ng/mL In Blood (unspecified) @ Unknown
1048	60 y M				A	Ingst	Int-S	2		
		amlodipine	1	1						
1049a	60 y F				A	Ingst	Int-S	1		
		amlodipine/ olmesartan	1	1					verapamil	2.3 mg/L In Blood (unspecified) @ Autopsy
		amlodipine/ olmesartan	1	1					amlodipine	970 ng/mL In Blood (unspecified) @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1050	60 y M				A	Ingst	Int-S	2		
		verapamil	1	1						
1051	60 y M				A	Ingst	Int-S	2		
		verapamil (extended release)	1	1						
		lisinopril	2	2						
1052	61 y M				A	Ingst	Int-S	2		
		atenolol	1	1						
		metoprolol (extended release)	2	2						
		diltiazem (extended release)	3	3						
1053	62 y M				A/C	Ingst	Int-S	1		
		carvedilol	1	1						
		diltiazem (extended release)	2	2						
		lisinopril	3	3						
		escitalopram	4	4						
		diazepam	5	5						
1054	64 y M				A/C	Ingst	Int-S	2		
		metoprolol	1	1						
		nitroglycerin	2	2						
		venlafaxine	3	3						
		salicylate	4	4						
		ranitidine	5	5						
1055	65 y M				A/C	Ingst	Int-S	1		
		propafenone (extended release)	1	1						
1056a	65 y M				A	Ingst	Int-S	2		
		amlodipine	2	1						
		atenolol	1	2					atenolol	1900 ng/mL In Serum @ Unknown
		lisinopril	3	3						
		atorvastatin	4	4						
		paroxetine	5	5						
1057	65 y F				A/C	Ingst	Int-S	2		
		propafenone (extended release)	1	1					propafenone	245 ng/mL In Blood (unspecified) @ Autopsy
		propranolol	2	2						
		ibuprofen	3	3					ibuprofen	100 mcg/mL In Blood (unspecified) @ Unknown
		omeprazole	6	4						
		chlordiazepoxide*	5	5					chlordiazepoxide	383 ng/mL In Blood (unspecified) @ Unknown
		chlordiazepoxide*	5	5					demoxepam	575 ng/mL In Blood (unspecified) @ Unknown
		ethanol*	4	5					ethanol	0.15% (wt/Vol) In Blood (unspecified) @ Unknown
1058p	67 y F				A/C	Ingst	Unk	2		
		metoprolol	1	1						
		escitalopram	2	2						
		amphetamine/dextro-amphetamine	3	3						
		clozapine	4	4						
		memantine	6	5						
		solifenacin	5	6						
		simvastatin	7	7						
1059	68 y F				A	Ingst	Int-S	2		
		amlodipine	1	1						
		losartan	2	2						
		diazepam	3	3						
		carbamazepine	4	4					carbamazepine	18.4 mg/L In Plasma @ Unknown
1060p	68 y M				A/C	Ingst	Int-S	2		
		verapamil	1	1						
		benzodiazepine	2	2						
		alprazolam	3	3						
		acetaminophen/ hydrocodone	4	4						
1061p	68 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		lorazepam	3	2						
		eszopiclone	4	3						
		acetaminophen	2	4					acetaminophen	124 mcg/mL In Blood (unspecified) @ Unknown
		paroxetine	5	5						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1062	70 y M				A/C	Ingst	Int-S	1		
		sotalol	1	1						
1063	70 y F				C	Ingst	AR-D	2		
		cardiac glycoside	1	1					digoxin	4.7 ng/mL In Serum @ Unknown
1064	70 y M				A/C	Ingst	Int-S	2		
		propafenone	1	1						
1065pa	71 y M				A/C	Ingst	AR-D	3		
		lisinopril	1	1						
1066	72 y F				A	Ingst	AR-O	1		
		atenolol	1	1						
		amlodipine	2	2						
1067a	72 y F				A	Ingst	Int-S	2		
		amlodipine	1	1						
		venlafaxine	3	2						
		salicylate	2	3						
1068	73 y F				U	Ingst	Int-U	1		
		metoprolol	1	1						
		gabapentin	2	2						
		sertraline	3	3						
		hydroxyzine	4	4						
		phenytoin	5	5					phenytoin	13 mcg/mL In Serum @ Unknown
		omeprazole	6	6						
		antihyperlipidemic	7	7						
1069pa	73 y F				U	Ingst	Unt-T	3		
		diltiazem (extended release)	1	1						
		atenolol	3	2						
		methotrexate	4	3						
		hydroxychloroquine	2	4						
		lotensin	5	5						
1070p	73 y F				C	Ingst	Unt-T	3		
		cardiac glycoside	1	1					digoxin	3.2 ng/mL In Serum @ Unknown
1071	73 y M				A/C	Ingst	Unt-U	3		
		diltiazem	1	1						
1072	76 y F				C	Ingst	Unk	3		
		cardiac glycoside	1	1						
1073	77 y F				A/C	Ingst	Int-S	3		
		carvedilol	1	1						
		nitroglycerin	2	2						
		citalopram	3	3						
		oxybutynin	4	4						
		alprazolam	5	5						
		alendronate	6	6						
		salicylate	7	7						
1074	78 y F				C	Ingst	Int-S	1		
		nifedipine (extended release)	1	1						
		hydrochlorothiazide/ irbesartan	2	2						
1075	79 y F				C	Ingst	AR-D	3		
		cardiac glycoside	1	1						
1076	80 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		carvedilol	2	2						
		amitriptyline	3	3						
		lisinopril	4	4						
		trazodone	5	5						
1077a	80 y F				A/C	Ingst	AR-D	1		
		cardiac glycoside	1	1					digoxin	33.1 mcg/mL In Serum @ Autopsy
		cardiac glycoside	1	1					digoxin	7.5 ng/mL In Serum @ Unknown
1078h	80 y F				C	Ingst	AR-D	2		
		cardiac glycoside	1	1						
1079a	81 y M				A/C	Ingst	Int-S	1		
		verapamil (extended release)	1	1					verapamil	190 ng/mL In Blood (unspecified) @ Autopsy
		hydralazine	2	2						
		acetaminophen/ hydrocodone	3	3						
		diazepam	4	4					diazepam	0.14 mg/L In Blood (unspecified) @ Autopsy
		terazosin	5	5						
		quinine	6	6						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1080a	82 y F				C	Ingst	AR-D	3		
		cardiac glycoside	1	1					digoxin	11.1 ng/mL In Blood (unspecified) @ Unknown
1081	82 y F				A/C	Ingst	Int-S	1		
		diltiazem (extended release)	1	1						
		chlorpromazine	2	2						
		metformin/ sitagliptin	3	3						
		clopidogrel	4	4						
1082	83 y F				A/C	Ingst	Unt-T	3		
		cardiac glycoside	1	1						
		warfarin	2	2						
1083	83 y M				C	Ingst	Unk	3		
		cardiac glycoside	1	1					digoxin	2.6 ng/mL In Blood (unspecified) @ Unknown
1084	84 y M				U	Ingst	Unk	1		
		calcium antagonist	1	1						
		zolpidem	2	2						
1085	84 y F				C	Ingst	AR-D	3		
		digoxin	1	1					digoxin	4.7 mcg/mL In Serum @ Unknown
1086	85 y F				A/C	Ingst	Unt-T	2		
		nifedipine	1	1						
1087	86 y F				C	Ingst	AR-D	3		
		cardiac glycoside	1	1						
1088	86 y F				A/C	Ingst	Unt-T	3		
		cardiac glycoside	1	1					digoxin	4.3 ng/mL In Blood (unspecified) @ 6 h (pe)
1089	87 y F				C	Ingst	AR-D	3		
		cardiac glycoside	1	1					digoxin	3.7 ng/mL In Blood (unspecified) @ Unknown
1090	87 y F				A	Ingst	Int-S	2		
		metoprolol (extended release)	1	1						
		colchicine	2	2						
		alprazolam	4	3						
		acetaminophen/ propoxyphene	3	4						
		zolpidem	5	5						
		hydralazine	6	6						
		nitroglycerin	7	7						
		levothyroxine	8	8						
1091	89 y M				A	Ingst	Int-S	2		
		amlodipine	1	1						
1092	90 y F				C	Ingst	Unt-T	3		
		metoprolol	1	1						
		timolol	2	2						
1093	93 y M				A	Ingst	Unt-G	3		
		cardiac glycoside	1	1						
1094	95 y F				A/C	Ingst	Unk	2		
		cardiac glycoside	1	1					digoxin	2.9 ng/mL In Blood (unspecified) @ Unknown
		beta blocker	2	2						
1095pa	18 m M				A/C	Ingst	Unt-G	1		
		flecainide	1	1					flecainide	104 Other (see abst) In Liver @ Autopsy
		flecainide	1	1					flecainide	54 mcg/mL In Blood (unspecified) @ Autopsy
1096p	19 m M				A/C	Ingst	Unt-T	1		
		flecainide	1	1						
1097i	Unknown adult (>=20 yrs) M				A	Ingst	Int-S	2		
		amlodipine	1	1						
		gabapentin	2	2						
1098p	Unknown adult (>=20 yrs) F				U	Ingst	Int-S	1		
		beta blocker	1	1						
See also case 41, 270, 279, 281, 292, 357, 396, 460, 530, 536, 630, 652, 663, 677, 708, 711, 718, 732, 735, 737, 796, 808, 818, 827, 831, 849, 858, 863, 869, 879, 882, 914, 921, 926, 930, 935, 943, 1110, 1111, 1117, 1122, 1126, 1129, 1130, 1142, 1143, 1157, 1158, 1189, 1197, 1209, 1237, 1248, 1274, 1277										
Cold and Cough Preparations										
1099pai	5 y M				U	Ingst	Oth-M	2		
		chlorpheniramine/ hydrocodone	1	1						
1100	19 y F				C	Ingst	Unt-T	2		

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminophen/ dextromethorphan	1	1						
		acetaminophen	2	2						
1101pa	21 y F				A	Ingst	Int-A	1		
		dextromethorphan/ guaifenesin	1	1					dextromethorphan	1200 ng/mL In Serum @ Autopsy
		ethanol	2	2					ethanol	264 mcg/dL In Serum @ Autopsy
1102	24 y M				A	Ingst	Int-M	2		
		acetaminophen/ dextromethorphan	1	1						
		morphine	2	2						
1103	25 y F				A	Ingst	Int-S	2		
		dextromethorphan	1	1						
1104	78 y F				U	Ingst	Unk	3		
		chlorpheniramine/ hydrocodone	1	1						
See also case 1, 2, 233, 275, 281, 286, 389, 390, 414, 440, 477, 531, 625, 667, 702, 710, 824, 882, 952, 955, 958, 1013, 1109										
Dietary Supplements/Herbals/Homeopathic										
1105	50 y M				C	Ingst	AR-O	3		
		dietary supplement	1	1						
1106	85 y M				A	Ingst	AR-D	2		
		laetrile	1	1						
See also case 60, 660										
Electrolytes and Minerals										
1107a	5 y F				U	Ingst	Unk	3		
		sodium chloride	1	1						
1108a	30 y M				A	Ingst+ Inhal	Unt-O	2		
		selenium	1	1					selenium	11000 mcg/L In Blood (unspecified) @ Autopsy
		citric acid	2	2						
1109	39 y F				A	Ingst	Int-S	1		
		iron	1	1					iron	13106 mcg/dL In Serum @ Unknown
		acetaminophen/ hydrocodone	2	2						acetaminophen 130 mcg/mL In Serum @ Unknown
		chlorzoxazone	3	3						
		benzonatate	4	4						
		fluoxetine	5	5						
		ethanol	6	6					ethanol	62 mg/dL In Serum @ Unknown
		gabapentin	7	7						
		omeprazole	8	8						
		tramadol	9	9						
		vitamin D	10	10						
1110ai	46 y F				A/C	Ingst	Int-S	1		
		magnesium sulfate	2	1						
		simvastatin	3	2						
		paliperidone	1	3						
1111	74 y F				C	Ingst	Int-S	1		
		potassium chloride	1	1						
		carvedilol	2	2						
		risperidone	3	3						
		temazepam	4	4						
		lisinopril	5	5						
		bumetanide	6	6						
		clopidogrel	7	7						
		levothyroxine	8	8						
		simvastatin	9	9						
		hypochlorite	10	10						
See also case 281, 760, 1033, 1126, 1168										
Hormones and Hormone Antagonists										
1112ai	24 y M				A	Par	Int-S	1		
		insulin	1	1						
1113	24 y F				U	Ingst	Int-S	1		
		metformin	1	1						
1114	27 y F				A	Ingst	Int-S	2		
		metformin	1	1						
		alprazolam	2	2						
		benztropine	3	3						
		risperidone	4	4						
		ethanol	5	5					ethanol	266 mg/dL In Blood (unspecified) @ Unknown
1115	28 y F				A	Ingst+ Par	Int-S	1		

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		insulin glulisine	1	1						
		quetiapine	2	2						
1116ph	35 y F				U	Ingst	Unk	1		
		insulin	1	1						
1117a	36 y M				A	Ingst	Int-S	1		
		metformin	1	1					metformin	100 mcg/mL In Blood (unspecified) @ 1 h (pe)
		lisinopril	2	2						
		fluoxetine	3	3						
1118	39 y M				A	Ingst	Int-S	1		
		metformin	1	1					metformin	66 mcg/mL In Blood (unspecified) @ 24 h (pe)
1119a	45 y F				U	Par	Unk	3		
		insulin	1	1						
1120pha	53 y M				A	Ingst	Int-S	1		
		metformin	1	1					metformin	150 mg/L In Blood (unspecified) @ Unknown
1121	54 y M				C	Ingst	AR-D	3		
		metformin	1	1						
1122	54 y M				A/C	Ingst	Int-S	1		
		metformin	1	1						
		metformin/ sitagliptin	2	2						
		lisinopril	3	3						
		glipizide	4	4						
1123	59 y M				A/C	Ingst	Int-S	1		
		metformin	1	1						
		risperidone	2	2						
		trazodone	4	3						
		citalopram	3	4						
1124p	59 y F				A	Ingst+ Par	Int-S	3		
		insulin	1	1						
		drug, unknown	2	2						
		zolpidem	3	3						
1125p	62 y F				A	Par	Int-S	2		
		insulin	1	1						
		drug, unknown	2	2						
1126	62 y F				U	Unk	Unk	3		
		metformin	6	1						
		amlodipine	1	2						
		metoprolol (extended release)	2	3						
		clonidine	3	4						
		insulin	4	5						
		salicylate	5	6						
		iron	7	7						
		gabapentin	8	8						
		angiotensin-converting enzyme inhibitor	9	9						
		citalopram	10	10						
		metolazone	11	11						
		furosemide	12	12						
		omeprazole	13	13						
		famotidine	14	14						
		lovastatin	15	15						
		albuterol/ ipatropium	16	16						
		fluticasone/ salmeterol	17	17						
		docusate	18	18						
1127a	62 y F				A	Ingst	Int-S	2		
		metformin*	2	1						
		phenothiazine*	1	1					thiothixene	819 ng/mL In Serum @ 7 h (pe)
1128h	63 y M				C	Par	Unt-T	3		
		insulin	1	1						
1129	75 y F				C	Ingst	AR-D	2		
		metformin	1	1						
		glipizide	2	2						
		atenolol	3	3						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1130ha	86 y F				A/C	Ingst	Int-S	2		
		metformin	1	1						
		acetaminophen	2	2					acetaminophen	530 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen	2	2					acetaminophen	910 mg/kg In Gastric (stomach content) @ Autopsy
		amlodipine	3	3						
		atenolol	4	4						
		hydrochlorothiazide/ valsartan	5	5						
See also case 379, 649, 709, 718, 722, 751, 762, 790, 895, 935, 969, 971, 974, 983, 987, 1008, 1010, 1011, 1017, 1018, 1022, 1042, 1081, 1090, 1111, 1142, 1210										
Miscellaneous Drugs										
1131	32 y M				A	Ingst	Int-S	2		
		ropinirole	2	1						
		alprazolam	3	2						
		hydroxychloroquine	1	3						
		duloxetine	4	4						
		zolpidem	5	5						
		gabapentin	6	6						
		potassium chloride	7	7						
		lorazepam	8	8						
1132	45 y M				A	Ingst	Int-S	1		
		dalfampridine	1	1						
1133	47 y F				A	Par	AR-D	3		
		succinylcholine	1	1						
1134a	57 y M				A	Par	Unt-T	1		
		epinephrine	1	1						
See also case 41, 533, 586, 617, 668, 692, 837, 850, 877, 891, 997, 1026, 1058, 1073, 1366										
Muscle Relaxants										
1135	19 y M				A	Par	Oth-W	1		
		baclofen	1	1						
1136a	27 y F				A/C	Ingst+ Unk	Int-S	1		
		carisoprodol	1	1					meprobamate	36 mcg/mL In Serum @ 2.5 h (pe)
		carisoprodol	1	1					carisoprodol	4.4 mcg/mL In Serum @ 2.5 h (pe)
		acetaminophen	2	2					acetaminophen	24.5 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	2	2					acetaminophen	43 mcg/mL In Blood (unspecified) @ Unknown
1137	33 y F				A	Ingst	Int-S	2		
		carisoprodol	2	1						
		acetaminophen	1	2					acetaminophen	19.2 mcg/mL In Serum @ Unknown
1138a	33 y M				A	Ingst	Int-S	2		
		carisoprodol	1	1						
		acetaminophen/ hydrocodone	2	2						
		methadone	3	3						
		cocaine	4	4						
1139p	35 y F				A	Ingst	Int-S	2		
		carisoprodol	1	1						
		zolpidem	2	2						
		acetaminophen/ hydrocodone	3	3						
1140a	36 y F				U	Ingst	Int-S	1		
		carisoprodol	2	1					carisoprodol	10 mcg/mL In Blood (unspecified) @ Unknown
		carisoprodol	2	1					meprobamate	64 mcg/mL In Blood (unspecified) @ Unknown
		oxycodone	3	2						
		acetaminophen	1	3					acetaminophen	32.4 mcg/mL In Blood (unspecified) @ Unknown
		cocaine	4	4						
1141pa	37 y F				U	Ingst	Int-U	1		
		carisoprodol	1	1					meprobamate	10 mcg/mL In Blood (unspecified) @ Unknown
		carisoprodol	1	1					carisoprodol	5.7 mcg/mL In Blood (unspecified) @ Unknown
		alprazolam	2	2					alprazolam	51 ng/mL In Blood (unspecified) @ Unknown
		ethanol	3	3						
		acetaminophen/ hydrocodone	4	4					acetaminophen	6.6 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	4	4					hydrocodone	(free) 72 ng/mL In Blood (unspecified) @ Unknown

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1142p	37 y F				A/C	Ingst	Int-S	1		
		cyclobenzaprine	1	1						
		lamotrigine	2	2						
		clozapine	3	3						
		atenolol	4	4						
		carbamazepine	5	5						
		glibenclamide	6	6						
		clindamycin	7	7						
1143p	38 y M				U	Ingst	Int-S	3		
		carisoprodol	1	1						
		clonazepam	2	2						
		promethazine	3	3						
		clonidine	4	4						
1144a	39 y M				A	Ingst	Int-S	1		
		cyclobenzaprine	2	1						
		clonazepam	1	3						
		scopolamine	4	4						
		mirtazapine	3	5						
1145	41 y M				A	Ingst	Int-S	2		
		carisoprodol	1	1						
		acetaminophen/ hydrocodone	2	2						
1146p	43 y F				A	Ingst	Int-S	3		
		carisoprodol	1	1						
1147	43 y M				A/C	Ingst	Int-S	1		
		baclofen	1	1						
		acetaminophen	2	2					acetaminophen	214 mcg/mL In Serum @ Unknown
1148a	45 y F				A/C	Ingst	Int-S	2		
		benzodiazepine*	1	1					clonazepam	65 ng/mL In Blood (unspecified) @ Unknown
		tizanidine*	4	1						
		carisoprodol	5	2						
		barbiturate*	3	3					phenobarbital	0.54 mcg/mL In Blood (unspecified) @ Unknown
		metoclopramide*	6	3						
		laxative	7	4						
		butalbital	2	6					butalbital	3.3 mcg/mL In Blood (unspecified) @ Unknown
1149pa	46 y F				A/C	Ingst+ Unk	Int-S	1		
		cocaine*	1	1					cocaine	0 mg/mL In Serum @ Autopsy
		cocaine*	1	1					benzoylecognine	2.44 mg/mL In Serum @ Autopsy
		skeletal muscle relaxant*	3	1						
		quetiapine	2	2					quetiapine	16 ng/mL In Serum @ Autopsy
		duloxetine	4	4						
1150	48 y F				C	Ingst	Unt-G	2		
		carisoprodol	1	1						
		alprazolam	2	2						
		acetaminophen/ hydrocodone	3	3						
1151p	49 y F				C	Ingst	Int-S	1		
		baclofen	1	1						
		tramadol	2	2						
		amitriptyline	3	3						
1152	56 y F				U	Ingst	Int-U	2		
		muscle relaxant, unknown	3	1						
		paroxetine	2	2						
		alprazolam	1	3						
1153p	59 y F				A	Ingst	Int-S	2		
		carisoprodol	1	1						
		tramadol	2	2						
		clonazepam	3	3						
1154	60 y F				A	Ingst	Int-S	2		
		carisoprodol	1	1						
		acetaminophen	2	2					acetaminophen	25 mcg/mL In Blood (unspecified) @ Unknown
1155a	61 y F				A	Ingst	Int-S	3		
		baclofen	1	1						
1156a	63 y F				A/C	Ingst	Int-S	1		
		tizanidine	1	1					tizanidine	440 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.184 g/dL In Blood (unspecified) @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1157	71 y F				A/C	Ingst	Int-S	2		
		baclofen	1	1						
		diphenhydramine	2	2						
		nabumetone	3	3						
		lisinopril	4	4						
		citalopram	5	5						
		ibuprofen	6	6						
1158	82 y M				A/C	Ingst	Int-S	1		
		cyclobenzaprine	1	1						
		amlodipine	2	2						
		methadone	3	3						
		pregabalin	4	4						
		acetaminophen/ hydrocodone	5	5					acetaminophen	23 mcg/mL In Blood (unspecified) @ Unknown
		warfarin	6	6						
		hydroxychloroquine	7	7						
See also case 3, 16, 41, 48, 300, 326, 338, 340, 347, 381, 386, 391, 396, 399, 400, 402, 406, 407, 426, 429, 433, 437, 454, 460, 480, 489, 508, 510, 564, 586, 599, 601, 607, 611, 618, 630, 642, 646, 649, 667, 668, 671, 677, 680, 681, 682, 699, 702, 722, 752, 753, 771, 777, 796, 802, 820, 836, 862, 873, 879, 896, 916, 933, 959, 973, 985, 1037, 1109, 1184, 1206, 1208, 1226, 1247, 1307										
Sedative/Hypnotics/Antipsychotics										
1159a	2 y F				A	Ingst	Unt-G	1		
		haloperidol	1	1						
1160pai	4 y F				U	Ingst+ Aspir	Unk	2		
		chlorpromazine	1	1					chlorpromazine	0.65 mcg/mL In Whole Blood @ Autopsy
		chlorpromazine	1	1					chlorpromazine	5.2 Other (see abst) In Liver @ Autopsy
1161pa	13 y F				A	Ingst	Oth-M	1		
		olanzapine*	1	1					olanzapine	0.46 mg/L In Whole Blood @ Autopsy
		zolpidem*	5	1					zolpidem	58 ng/mL In Whole Blood @ Autopsy
		lorazepam	2	2						
		oxcabazepine*	6	3						
		quetiapine*	3	3						
		fluoxetine*	7	4						
		temazepam*	4	4						
		trazodone	8	7					trazodone	3.3 mg/L In Whole Blood @ Autopsy
1162p	17 y M				A	Par	Unk	3		
		fluphenazine	1	1						
1163	17 y M				A	Ingst	Int-U	1		
		zolpidem	1	1						
		clonazepam	2	2						
		acetaminophen/ oxycodone	3	3					morphine	1.77 mg/L In Blood (unspecified) @ Autopsy
1164	18 y M				A	Ingst	Int-S	3		
		clonazepam	1	1						
		acetaminophen/ oxycodone	2	2						
1165p	19 y M				U	Ingst	Int-S	2		
		quetiapine	2	1						
		paroxetine	1	2						
		ibuprofen	3	3						
1166p	19 y M				A	Ingst	Int-S	2		
		clonazepam	1	1						
1167ha	21 y M				A	Ingst	Int-S	1		
		antipsychotic (atypical)	1	1					quetiapine	9900 ng/mL In Blood (unspecified) @ Autopsy
		antidepressant (SSRI)	2	2					citralopram	1600 ng/mL In Blood (unspecified) @ Autopsy
		antipsychotic (atypical)	3	3						
		anticonvulsant	4	4					10-hydroxycarba-zepine	63 mcg/mL In Blood (unspecified) @ Autopsy
1168a	21 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
		ziprasidone	2	2						
		iron	3	3						
1169p	21 y M				A	Ingst	Int-S	3		
		lorazepam	1	1						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1170pa	23 y M				A	Ingst	Int-S	1		
		quetiapine	1	1					quetiapine	19.73 mg/L In Serum @ Autopsy
		temazepam	2	2					temazepam	84 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	3	4					ethanol	10 mg/dL In Vitreous @ Autopsy
		ethanol	3	4					ethanol	30 mg/dL In Whole Blood @ Autopsy
1171hai	24 y M				A/C	Ingst	Int-S	2		
		chlorpromazine	1	1						
1172pa	25 y M				U	Ingst	Int-S	2		
		zolpidem	4	1						
		ketorolac	5	2						
		acetaminophen	3	3					acetaminophen	116.9 mg/L In Urine (quantitative only) @ Autopsy
		acetaminophen	3	3					acetaminophen	39 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	3	3					acetaminophen	59 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	2	4					oxycodone	0.41 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	2	4					oxycodone	0.9 mg/L In Urine (quantitative only) @ Autopsy
		oxymorphone	1	5						
1173pa	25 y F				A	Ingst	Int-S	3		
		alprazolam	1	1					alprazolam	47 ng/mL In Blood (unspecified) @ Autopsy
		analgesic, unknown	2	2						
1174	26 y F				A	Ingst	Int-S	2		
		quetiapine	3	1						
		lorazepam	2	2						
		lamotrigine	1	3						
		zolpidem	4	4						
		naproxen	5	5						
1175pa	26 y M				U	Ingst+ Unk	Int-A	2		
		alprazolam*	1	1					alprazolam	10 ng/mL In Blood (unspecified) @ Unknown
		drug, unknown*	2	1						
1176	27 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
1177p	27 y F				A	Ingst	Int-S	2		
		clonazepam	1	1						
		ethanol	2	2					ethanol	102 mg/dL In Blood (unspecified) @ Unknown
1178	28 y M				U	Ingst	Int-S	2		
		olanzapine	2	1						
		carbamazepine	3	2					carbamazepine	12 mcg/mL In Serum @ 1 h (pe)
		ethanol	1	3						
		buspirone	4	4						
1179p	29 y M				A	Ingst	Int-U	2		
		alprazolam	1	1						
1180	30 y F				A	Par	AR-D	2		
		haloperidol	1	1						
1181a	30 y M				A	Ingst	Int-S	1		
		quetiapine	1	1					quetiapine	3200 ng/mL In Blood (unspecified) @ Autopsy
		citalopram*	2	2					citalopram	650 ng/mL In Blood (unspecified) @ Autopsy
		ethanol*	3	2					ethanol	134 mg/dL In Blood (unspecified) @ Autopsy
		ethanol*	3	2					ethanol	171 mg/dL In Blood (unspecified) @ Unknown
		cocaine	4	3					benzoylecognine	146.65 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	5	4						
1182p	30 y F				U	Ingst	Int-S	2		
		alprazolam	3	1						
		acetaminophen/ hydrocodone	2	2						
		acetaminophen/ oxycodone	1	3						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1183p	31 y M				A/C	Ingst	Unk	2		
		diazepam	1	1						
		lorazepam	2	2						
		acetaminophen/ hydrocodone	3	3						
		citalopram	4	4						
1184p	31 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		clonazepam	2	2						
		acetaminophen/ codeine	3	3						
		cyclobenzaprine	4	4						
		temazepam	5	5						
1185pha	33 y M				A	Ingst	Int-S	1		
		clonazepam	1	1					benzoylecognine	251 mcg/L In Serum @ Autopsy
		clonazepam	1	1					clonazepam	30 mcg/L In Serum @ Autopsy
		clonazepam	1	1					7-aminoclonaze-pam	39 mcg/L In Serum @ Autopsy
1186p	33 y M				A	Ingst	Int-S	2		
		quetiapine	1	1						
		barbiturates (extended release)	2	2						
		benzodiazepine	3	3						
		laxative (stimulant)	4	4						
		trazodone	5	5						
1187p	34 y M				A/C	Ingst	Int-M	2		
		alprazolam	1	1						
		ethanol	2	2						
1188	34 y M				A/C	Ingst	Int-U	1		
		chloral hydrate	1	1						
1189a	35 y M				A	Ingst	Int-S	2		
		quetiapine	1	1						
		amlodipine	2	2						
		ethanol	3	3						
1190	35 y F				U	Ingst	Unt-U	2		
		quetiapine	1	1						
		escitalopram	2	2						
		gabapentin	3	3						
1191p	35 y F				U	Ingst	Int-S	2		
		quetiapine	1	1						
1192pa	35 y F				A/C	Ingst	Int-U	1		
		lorazepam	3	1						
		antidepressant, unknown*	2	2						
		zolpidem*	4	2						
		clonazepam	5	3						
		oxycodone (extended release)	1	4						
1193	36 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
		acetaminophen/ hydrocodone	2	2						
1194p	36 y F				A	Ingst	Int-S	3		
		diazepam	1	1					ethanol	12 mg/dL In Serum @ 10 m (pe)
		diazepam	1	1					salicylate	9 mg/dL In Serum @ 10 m (pe)
1195pa	37 y F				A	Ingst	Int-S	1		
		diazepam	1	1					diazepam	289 ng/mL In Blood (unspecified) @ Unknown
		diazepam	1	1					nordiazepam	450 ng/mL In Blood (unspecified) @ Unknown
		fluoxetine	2	2					fluoxetine	2.3 mg/L In Serum @ Autopsy
		paroxetine	3	3					paroxetine	0.25 mg/L In Serum @ Autopsy
		diphenhydramine	4	4						
1196p	37 y F				A	Unk	Int-S	2		
		risperidone	1	1						
		citalopram	2	2						
		trazodone	3	3						
1197pa	38 y F				A	Ingst	Int-S	1		
		diazepam	1	1					diazepam	1488 Other (see abst) In Liver @ Autopsy
		codeine	2	2					morphine	277 Other (see abst) In Liver @ Autopsy
		codeine	2	2					codeine	918 Other (see abst) In Liver @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		methadone	3	3					methadone	605 Other (see abst) In Liver @ Autopsy
		propoxyphene	4	4					norpropoxyphene	1679 Other (see abst) In Liver @ Autopsy
		hydrocodone	5	5					hydrocodone	25.5 Other (see abst) In Liver @ Autopsy
		laxative (stimulant)	6	6						
		lisinopril	7	7						
		ethanol	8	8					ethanol	0.6 Other (see abst) In Liver @ Autopsy
1198p	39 y M				A	Ingst	Int-A	2		
		diazepam	1	1						
		acetaminophen/ oxycodone	2	2					acetaminophen	39.5 mcg/mL In Blood (unspecified) @ Unknown
1199	39 y F				U	Unk	Int-S	2		
		lorazepam	1	1						
		ziprasidone	3	2						
		hydroxyzine	4	3						
		venlafaxine	2	4						
1200	40 y F				A	Ingst	Int-S	1		
		quetiapine	1	1						
		zolpidem	2	2						
		acetaminophen/ hydrocodone	3	3						
1201p	40 y M				A	Ingst	Int-S	2		
		quetiapine	1	1						
		acetaminophen	2	2					acetaminophen	162 mcg/mL In Blood (unspecified) @ Unknown
1202p	40 y F				A/C	Ingst	Int-S	2		
		alprazolam	1	1						
		lorazepam	2	2						
		zolpidem	3	3						
1203p	42 y M				A	Ingst	Unk	3		
		quetiapine	1	1						
		ethanol	2	2					ethanol	110 mg/dL In Blood (unspecified) @ Unknown
1204	42 y F				A	Ingst	Int-S	2		
		clonazepam	1	1						
		acetaminophen/ hydrocodone	2	2						
1205a	42 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1					quetiapine	8400 ng/mL In Blood (unspecified) @ Unknown
		citalopram	2	2					citalopram	12 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	3	3					alprazolam	31 ng/mL In Blood (unspecified) @ Unknown
1206a	43 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
		diazepam	5	2						
		carisoprodol	2	3						
		metaxalone	3	4						
		citalopram	6	5						
		pregabalin	4	6						
1207	43 y M				A/C	Ingst+ Inhal	Unt-G	2		
		quetiapine (extended release)	1	1						
		fluoxetine	2	2						
		marijuana	3	3						
1208p	44 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		cyclobenzaprine	2	2						
		diazepam	3	3						
		acetaminophen/ hydrocodone	4	4						
1209	44 y F				A/C	Ingst	Int-S	3		
		quetiapine	3	1						
		promethazine	4	2						
		citalopram	5	3						
		lotensin	6	4						
		clonazepam	2	5						
		ethanol	1	6					ethanol	210 mg/dL In Blood (unspecified) @ Unknown

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1210	45 y F				A/C	Ingst	Int-S	3		
		phenobarbital	1	1						
		diazepam	2	2						
		topiramate	3	3						
		gabapentin	4	4						
		temazepam	5	5						
		clonazepam	6	6						
		naproxen	7	7						
		montelukast	8	8						
		spironolactone	9	9						
		progestins	10	10						
1211a	45 y F				A	Ingst	Int-U	1		
		alprazolam	1	1						
		zolpidem	2	2						
		methamphetamine	3	3					methamphetamine	0.13 mcg/mL In Blood (unspecified) @ Autopsy
1212a	46 y F				A/C	Ingst	Int-S	3		
		clonazepam	1	1						
		trazodone	2	2						
1213pa	46 y M				A/C	Ingst	Int-S	3		
		alprazolam	1	1						
		risperidone	2	2						
		lithium	3	3						
		antifreeze (ethylene glycol)	4	4						
1214p	46 y F				A	Ingst	Int-A	3		
		benzodiazepine	1	1						
		ethanol	2	2						
1215a	46 y F				A/C	Ingst	Int-S	1		
		quetiapine	2	1						
		paroxetine	3	2						
		gabapentin	4	3						
		amitriptyline	1	4						
1216p	46 y F				A	Ingst	Int-S	1		
		phenobarbital	1	1					phenobarbital	48 mcg/mL In Blood (unspecified) @ Unknown
		phenobarbital	1	1					phenobarbital	52.2 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	317 mg/dL In Blood (unspecified) @ Unknown
1217p	46 y M				A	Ingst	Unt-G	2		
		quetiapine	1	1						
1218a	46 y M				A/C	Ingst	Int-S	2		
		alprazolam	1	1						
		cocaine	2	2						
		ethanol	3	3						
1219a	47 y M				U	Ingst	Int-S	2		
		flurazepam	1	1						
		trazodone	2	2					trazodone	3.9 mcg/mL In Serum @ 2 h (pe)
		mirtazapine	3	3						
		chloral hydrate	4	4						
		buspirone	5	5						
		gabapentin	6	6						
		zolpidem	7	7						
		venlafaxine	8	8						
1220p	47 y F				A	Ingst	Int-S	2		
		phenothiazine	1	1						
		acetaminophen	2	2						
		ibuprofen	3	3						
		hydroxyzine	4	4						
1221p	48 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
		alprazolam	2	2						
		cocaine	3	3						
		ethanol	4	4					ethanol	0.095% (wt/Vol) In Serum @ 15 m (pe)
		opioid	5	5						
		benzodiazepine	6	6						
1222	48 y M				A	Ingst	Oth-C	3		
		quetiapine	1	1					quetiapine	14000 ng/mL In Serum @ Unknown
		quetiapine	1	1					quetiapine	32000 ng/mL In Whole Blood @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminophen/ hydrocodone	2	2					acetaminophen	15.4 mg/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	2	2					hydrocodone	297 ng/mL In Serum @ Unknown
		acetaminophen/ hydrocodone	2	2					hydrocodone	925 ng/mL In Blood (unspecified) @ Autopsy
1223a	48 y M				A	Ingst	Int-S	2		
		quetiapine	1	1						
		temazepam	2	2						
		lorazepam	3	3						
		alprazolam	4	4						
1224p	48 y M				A/C	Ingst	Int-M	1		
		clonazepam	1	1						
		ethanol	2	2						
1225a	49 y M				A/C	Ingst	Int-U	1		
		aripiprazole	1	1					aripiprazole	730 ng/mL In Blood (unspecified) @ Autopsy
		bupropion (extended release)	2	2					bupropion	0.91 mcg/mL In Blood (unspecified) @ Autopsy
		bupropion (extended release)	2	2					hydroxybupropion	3.9 mcg/mL In Blood (unspecified) @ Autopsy
		cocaine	3	3					benzoylecognine	0 Other (see abst) In Blood (unspecified) @ Autopsy
1226p	49 y F				A	Ingst	Int-A	3		
		alprazolam	1	1						
		carisoprodol	2	2						
		tramadol	3	3						
		cocaine	4	4						
		marijuana	5	5						
		opioid	6	6						
		acetaminophen	7	7					acetaminophen	3.4 mcg/mL In Serum @ Unknown
		salicylate	8	8					salicylate	4.6 mg/dL In Serum @ Unknown
1227p	50 y M				C	Ingst	Int-S	2		
		risperidone	1	1						
1228p	50 y F				A/C	Ingst	Int-S	2		
		risperidone	1	1						
		quetiapine	2	2						
		ethanol	3	3						
1229p	51 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
		ethanol	2	2						
1230	51 y M				A	Ingst	Int-S	2		
		quetiapine	1	1						
		alprazolam	2	2						
1231	51 y F				A	Ingst	Int-S	2		
		clozapine	1	1						
		carbon black	2	2						
1232pa	51 y M				A/C	Ingst	Int-S	1		
		lorazepam	1	1					lorazepam	0.06 mg/L In Blood (unspecified) @ Unknown
		oxycodone (extended release)	2	2					oxymorphone	0.33 mg/L In Blood (unspecified) @ Unknown
		oxycodone (extended release)	2	2					oxycodone	0.7 mg/L In Blood (unspecified) @ Unknown
		antihistamine*	3	3					diphenhydramine	0.03 mg/L In Blood (unspecified) @ Unknown
		clonazepam*	4	3					clonazepam	0.03 mg/L In Blood (unspecified) @ Unknown
1233a	51 y F				A/C	Ingst+ Aspir	Int-U	2		
		aripiprazole	1	1						
		ibuprofen	2	2						
		methadone	3	3						
1234	52 y F				A/C	Ingst	Int-S	2		
		quetiapine (extended release)	1	1						
		marijuana	2	2						
1235p	52 y F				A	Ingst	Int-S	1		
		zolpidem	1	1						
		olanzapine	2	2					olanzapine	0.18 mg/L In Blood (unspecified) @ Autopsy
		oxcabazepine	3	3						
		fluoxetine	4	4						
		sertraline	5	5						
		clonazepam	6	6						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		trazodone	7	7					trazodone	0.25 mg/L In Blood (unspecified) @ Autopsy
		morphine	8	8					morphine	0.13 mg/L In Blood (unspecified) @ Autopsy
		temazepam	9	9					temazepam	0.08 mg/L In Blood (unspecified) @ Autopsy
		lorazepam	10	10					lorazepam	0.01 mg/L In Blood (unspecified) @ Autopsy
1236a	54 y F				U	Ingst	Int-S	1		
		olanzapine	1	1					olanzapine	1.2 mcg/mL In Whole Blood @ Autopsy
		fluoxetine	2	2					norfluoxetine	0.25 mcg/mL In Whole Blood @ Autopsy
		fluoxetine	2	2					fluoxetine	0.35 mcg/mL In Whole Blood @ Autopsy
1237a	55 y F				A/C	Ingst	Int-S	3		
		lorazepam	1	1					benzodiazepines	100 ng/mL In Urine (quantitative only) @ Unknown
		lorazepam	1	1					lorazepam	500 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	2	2					acetaminophen	370 mcg/mL In Urine (quantitative only) @ Unknown
		acetaminophen/ hydrocodone	2	2					propoxyphene	50 ng/mL In Urine (quantitative only) @ Unknown
		acetaminophen/ hydrocodone	2	2					acetaminophen	51.1 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	2	2					hydrocodone (free)	61 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	2	2					acetaminophen	72.3 mcg/mL In Blood (unspecified) @ Unknown
		simvastatin	3	3						
		ethanol	4	4					ethanol	12% In Blood (unspecified) @ Unknown
		ethanol	4	4					ethanol	32 mg/dL In Urine (quantitative only) @ Unknown
1238p	56 y M				A/C	Ingst	Int-S	2		
		diazepam	1	1						
		opioid	2	2						
1239pa	56 y F				A/C	Ingst	Int-S	2		
		chlorpromazine*	1	1					chlorpromazine	18 mcg/mL In Serum @ Autopsy
		clonazepam*	2	1					propoxyphene	0.18 mcg/mL In Serum @ Autopsy
		propoxyphene	3	3						
1240pai	56 y F				U	Ingst	Int-A	2		
		butalbital	1	1					butalbital	22.7 mcg/mL In Whole Blood @ Autopsy
1241pha	57 y M				A/C	Ingst	Int-S	1		
		quetiapine	1	1					quetiapine	33800 ng/mL In Whole Blood @ Autopsy
1242pai	59 y M				A	Ingst	Int-S	2		
		alprazolam	1	1					alprazolam	2.2 mcg/mL In Whole Blood @ Autopsy
		alprazolam	1	1					alprazolam	7.9 Other (see abst) In Liver @ Autopsy
1243	60 y F				U	Ingst	Int-S	3		
		quetiapine	1	1						
		clonazepam	2	2						
1244a	60 y F				U	Ingst	Int-S	2		
		quetiapine (extended release)	1	1						
1245	61 y F				A	Ingst	Int-S	2		
		clonazepam	1	1						
1246p	63 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
1247	64 y F				A	Ingst	Int-A	3		
		alprazolam	1	1						
		oxycodone	2	2						
		skeletal muscle relaxant	3	3						
1248a	71 y F				A/C	Ingst	Int-S	1		
		zolpidem	1	1					zolpidem	1800 ng/mL In Plasma @ Unknown
		metoprolol	2	2						
		diltiazem (extended release)	3	3					diltiazem	160 ng/mL In Plasma @ Unknown

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1249	72 y F				A/C	Ingst	Int-S	3		
		alprazolam	1	1						
1250	77 y M				U	Ingst	Int-S	3		
		temazepam	2	1						
		hydroxyzine	3	2						
		escitalopram	1	3						
1251	78 y M				A/C	Ingst	Unk	3		
		lorazepam	1	1						
1252	79 y F				A/C	Ingst	Int-S	2		
		alprazolam	1	1						
		hypochlorite	2	2						
1253a	83 y F				A	Ingst	Int-S	2		
		phenobarbital	1	1						
1254	85 y F				A/C	Ingst+ Aspir	Int-S	2		
		temazepam	1	1						
		activated charcoal	2	2						
1255	86 y M				A	Ingst	Int-S	3		
		chlordiazepoxide	1	1						
		acetaminophen	2	2					acetaminophen	134 mcg/mL In Blood (unspecified) @ 30 h (pe)
1256a	Unknown age M				U	Ingst	Unk	2		
		phenobarbital	1	1					phenobarbital	180 mcg/mL In Blood (unspecified) @ Autopsy
1257pa	Unknown age U				U	Unk	Unk	3		
		alprazolam*	1	1						
		methylphenidate*	2	1						
1258pi	Unknown age F				A/C	Ingst+ Derm	Unt-T	2		
		diazepam	1	1						
		oxazepam	2	2						
		temazepam	3	3						
		fentanyl	4	4						
		hydrocodone	5	5						

See also case 1, 5, 7, 8, 10, 13, 15, 18, 29, 39, 41, 48, 84, 93, 203, 216, 252, 265, 266, 270, 275, 281, 288, 291, 292, 293, 294, 297, 299, 303, 305, 313, 314, 317, 325, 326, 329, 338, 341, 342, 345, 347, 348, 352, 359, 367, 368, 369, 372, 374, 376, 380, 382, 384, 385, 388, 391, 393, 394, 395, 396, 398, 400, 402, 403, 405, 407, 411, 412, 414, 421, 423, 426, 432, 433, 435, 437, 440, 442, 447, 448, 450, 455, 460, 464, 466, 469, 472, 473, 477, 480, 481, 482, 484, 486, 488, 492, 495, 496, 500, 501, 504, 508, 512, 521, 522, 523, 526, 542, 543, 549, 550, 554, 559, 564, 566, 572, 574, 576, 577, 578, 586, 591, 593, 594, 595, 597, 598, 600, 606, 609, 612, 614, 617, 620, 622, 626, 628, 635, 641, 642, 649, 658, 659, 664, 665, 667, 669, 671, 674, 677, 679, 680, 682, 683, 684, 688, 689, 692, 696, 698, 700, 701, 703, 705, 709, 710, 711, 716, 717, 718, 719, 725, 728, 730, 739, 741, 743, 748, 752, 753, 758, 772, 779, 781, 791, 796, 801, 803, 805, 811, 812, 813, 815, 816, 817, 819, 820, 821, 825, 832, 834, 836, 837, 840, 841, 844, 845, 846, 849, 852, 855, 856, 858, 860, 862, 863, 865, 867, 868, 870, 872, 875, 877, 879, 880, 886, 888, 889, 890, 891, 892, 893, 903, 904, 905, 910, 911, 913, 914, 919, 921, 927, 930, 933, 934, 936, 953, 964, 980, 981, 985, 988, 990, 992, 994, 995, 996, 998, 1001, 1002, 1006, 1012, 1017, 1019, 1020, 1031, 1036, 1037, 1042, 1045, 1053, 1057, 1058, 1059, 1060, 1061, 1073, 1079, 1081, 1084, 1090, 1110, 1111, 1114, 1115, 1123, 1124, 1127, 1131, 1139, 1141, 1142, 1143, 1144, 1148, 1149, 1150, 1152, 1153, 1261, 1266, 1268, 1273, 1277, 1282, 1286, 1287, 1296, 1297, 1299, 1301, 1307, 1309, 1313, 1322, 1323, 1334, 1338, 1342, 1347

Serums, Toxoids, Vaccines

1259a	37 y M				A	B-S	Unt-B	1		
		antivenin, Latrodectus	1	1						
		Latrodectus mactans bite	2	2						

Stimulants and Street Drugs

1260pa	16 y F				U	Ingst+ Par	Int-A	1		
		methamphetamine	1	1						
		oxycodone	2	2						
1261	17 y M				A	Ingst+ Inhal	Int-S	2		
		marijuana	2	1						
		salicylate	1	2					salicylate	46.6 mg/dL In Serum @ 4 h (pe)
		salicylate	1	2					salicylate	62 mg/dL In Serum @ Unknown
		quetiapine	3	3						
1262h	18 y M				U	Ingst	Int-A	2		
		methylene-dioxymethamphet-amine (MDMA)	1	1						
1263	18 y M				A	Ingst	Int-A	1		
		methylene-dioxymethamphet-amine (MDMA)	1	1						
1264	18 y M				A	Ingst	Int-A	1		
		methylene-dioxymethamphet-amine (MDMA)	1	1						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1265pa	19 y M				U	Unk	Int-A	1		
		heroin	1	1					morphine	0.087 mg/L In Serum @ Autopsy
		heroin	1	1					codeine	0.1 mg/L In Urine (quantitative only) @ Autopsy
		heroin	1	1					morphine	2 mg/L In Urine (quantitative only) @ Autopsy
1266pai	19 y F				U	Ingst+ Inhal	Int-A	2		
		cocaine	2	1					benzoylecognine	0.36 mcg/mL In Serum @ Unknown
		acetaminophen/ hydrocodone	1	2					hydrocodone	0.06 mcg/mL In Serum @ Unknown
		alprazolam	3	3						
		lorazepam	4	4						
1267p	20 y F				U	Ingst+ Unk	Int-U	2		
		heroin	1	1						
		acetaminophen/ hydrocodone	2	2						
		pregabalin	3	3						
1268ha	20 y M				A	Par	Int-A	2		
		heroin	1	1					morphine	0.08 mg/L In Serum @ Autopsy
		oxycodone	2	2					oxycodone	0.14 mg/L In Blood (unspecified) @ Autopsy
		lorazepam	3	3					lorazepam	35 ng/mL In Blood (unspecified) @ Autopsy
1269p	20 y M				A	Par	Int-A	1		
		heroin	1	1						
1270	20 y F				A	Ingst+ Oth	Int-S	2		
		heroin	1	1						
		bupropion	2	2						
		escitalopram	3	3						
1271h	20 y M				U	Ingst	Int-U	2		
		methamphetamine	1	1						
1272pa	20 y F				A	Ingst+ Unk	Int-A	1		
		heroin	1	1						
		ethanol	2	2					ethanol	0.097 g/dL In Blood (unspecified) @ 1 h (pe)
1273	21 y F				U	Ingst+ Par	Int-U	2		
		heroin	1	1						
		benzodiazepine	2	2						
1274	22 y M				A	Ingst+ Inhal+ Par	Int-A	1		
		methamphetamine	1	1						
		metoprolol	2	2						
1275a	22 y M				A	Ingst	Int-A	1		
		methylene-dioxymethamphet-amine (MDMA)	1	1						
1276	22 y M				A	Ingst	Int-A	1		
		methylene-dioxymethamphet-amine (MDMA)	1	1						
		ethanol	2	2						
1277p	23 y M				A/C	Ingst+ Par	Int-A	1		
		heroin	1	1						
		clonidine	2	2						
		clonazepam	3	3						
1278p	23 y M				A/C	Par	Int-U	1		
		heroin	1	1						
1279p	23 y M				A/C	Unk	Int-A	1		
		heroin	1	1						
1280a	23 y F				U	Ingst	Int-A	1		
		methylene-dioxymethamphet-amine (MDMA)	1	1					mdma (3,4-methylene-dioxymethamphet-amine)	0.22 mg/L In Blood (unspecified) @ Unknown
1281a	24 y F				A	Ingst	Int-U	1		
		cocaine	1	1					benzoylecognine	1.1 mg/L In Whole Blood @ Unknown
1282ai	24 y M				A	Ingst	Int-A	2		
		methamphetamine	1	1						
		morphine	2	2					morphine (free)	0.04 mcg/mL In Whole Blood @ Autopsy
		acetaminophen/ hydrocodone	3	3						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		diazepam	4	4						
		alprazolam	5	5						
1283	25 y M				A	Ingst	Int-A	2		
		methylenedioxymethamphetamine (MDMA)	1	1						
1284pa	25 y M				U	Unk	Int-U	3		
		methamphetamine	1	1					methamphetamine	323 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	1	1					amphetamine	96 ng/mL In Blood (unspecified) @ Unknown
		oxycodone	2	2					oxycodone	40.3 ng/mL In Blood (unspecified) @ Unknown
		oxycodone	2	2					oxymorphone	558 ng/mL In Blood (unspecified) @ Unknown
1285pi	25 y F				U	Par+ Unk	Int-U	2		
		heroin	1	1						
		oxycodone (extended release)	2	2						
		buprenorphine/naloxone (sublingual)	3	3						
1286p	25 y M				A	Ingst	Unk	2		
		methylenedioxymethamphetamine (MDMA)	1	1						
		clonazepam	2	2						
1287pa	26 y M				A	Ingst	Int-A	1		
		heroin	1	1					morphine	10000 ng/mL In Urine (quantitative only) @ Autopsy
		heroin	1	1					6-monoacetylmorphine	3.9 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					morphine (total)	35.5 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					codeine	641 ng/mL In Urine (quantitative only) @ Autopsy
		heroin	1	1					6-monoacetylmorphine	854 ng/mL In Urine (quantitative only) @ Autopsy
		alprazolam*	2	3					alprazolam	31.1 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam*	2	3					alprazolam	315 ng/mL In Urine (quantitative only) @ Autopsy
		alprazolam*	2	3					alpha-oh-alprazolam	757 ng/mL In Urine (quantitative only) @ Autopsy
		THC homolog*	3	3						
1288pai	26 y M				U	Ingst+ Unk	Int-A	1		
		heroin	1	1					morphine (free)	0.06 mcg/mL In Whole Blood @ Autopsy
		oxycodone	2	2					oxycodone	0.5 mcg/mL In Whole Blood @ Autopsy
		ethanol	3	3						
		codeine	4	4						
1289p	27 y F				A/C	Par	Int-A	1		
		heroin	1	1						
1290	27 y M				A	Ingst	Int-M	2		
		drug, unknown	1	1						
1291a	27 y F				A	Inhal	Int-A	1		
		cocaine	1	1					cocaine	0.09 mg/L In Blood (unspecified) @ Autopsy
		cocaine	1	1					benzoylecognine	2.7 mg/L In Blood (unspecified) @ Autopsy
1292pai	27 y M				U	Unk	Int-U	2		
		methamphetamine	1	1					methamphetamine	0.41 mcg/mL In Whole Blood @ 1.5 h (pe)
		morphine	2	2					morphine (free)	0.15 mcg/mL In Whole Blood @ 1.5 h (pe)
		citalopram	3	3					citalopram	0.33 mcg/mL In Whole Blood @ 1.5 h (pe)
1293p	28 y F				A	Ingst	Int-A	1		
		methylenedioxymethamphetamine (MDMA)	1	1						
		lysergic acid diethylamide (LSD)	2	2						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1294pai	28 y F				U	Ingst+ Unk	Int-A	3		
		methamphetamine	1	1					methamphetamine	0.06 mcg/mL In Whole Blood @ Autopsy
		tramadol	2	2					tramadol	1.3 mcg/mL In Whole Blood @ Autopsy
1295pa	29 y M				U	Ingst+ Inhal+ Par	Int-A	1		
		cocaine	1	1					benzoylecognine	1000 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	2	2					methamphetamine	780 ng/mL In Blood (unspecified) @ Unknown
		opioid	3	3					oxycodone (free)	160 ng/mL In Blood (unspecified) @ Unknown
		hydrocodone	4	4					hydrocodone (free)	48 ng/mL In Whole Blood @ Unknown
		amphetamine	5	5					amphetamine	21 ng/mL In Blood (unspecified) @ Unknown
		methylene-dioxymethamphet-amine (MDMA)	6	6					mdma (3,4-methylene-dioxymethamphet-amine)	200 ng/mL In Blood (unspecified) @ Unknown
		methylene-dioxymethamphet-amine (MDMA)	7	7						
1296pha	29 y M				U	Par	Int-A	1		
		heroin	1	1					morphine	153 mcg/L In Vitreous @ Autopsy
		heroin	1	1					6-monoacetylmor-phine	19 mcg/L In Serum @ Autopsy
		heroin	1	1					morphine	342 mcg/L In Serum @ Autopsy
		heroin	1	1					6-monoacetylmor-phine	52 mcg/L In Vitreous @ Autopsy
		clonazepam	2	2					7-aminoclonaze-pam	22 mcg/mL In Serum @ Autopsy
		clonazepam	2	2					clonazepam	6.5 mcg/mL In Serum @ Autopsy
		pregabalin	3	3					codeine	28 mcg/L In Vitreous @ Autopsy
		pregabalin	3	3					midazolam	67 mcg/L In Serum @ Autopsy
1297pha	29 y M				A	Ingst	Int-U	2		
		cocaine	1	1					benzoylecognine	0.523 mg/L In Blood (unspecified) @ Unknown
		methadone	2	2					methadone	0.04 mg/L In Blood (unspecified) @ Unknown
		benzodiazepine	3	3					alpha-oh-alpra-zolam	291 ng/mL In Urine (quantitative only) @ Unknown
1298	29 y M				U	Ingst	Unk	1		
		methamphetamine	1	1						
		chemical, unknown	2	2						
1299p	29 y F				C	Ingst+ Inhal+ Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		benzodiazepine	3	3						
1300pai	29 y M				U	Ingst	Int-A	2		
		heroin	1	1					morphine (free)	0.09 mcg/mL In Whole Blood @ Autopsy
		ethanol	2	2					ethanol	0.18% (wt/Vol) In Serum @ Unknown
1301pa	30 y F				A/C	Ingst	Int-A	1		
		methylphenidate	1	1						
		diazepam	2	2					diazepam	88 ng/mL In Blood (unspecified) @ 1 h (pe)
1302	31 y M				U	Unk	Unk	1		
		cocaine	1	1						
		amphetamine/dextro-amphetamine	2	2						
		opioid	3	3						
1303a	31 y F				A	Ingst	Int-A	1		
		methylene-dioxymethamphet-amine (MDMA)	1	1						
1304pai	31 y M				U	Unk	Int-A	2		
		methamphetamine	1	1					methamphetamine	2.6 mcg/mL In Whole Blood @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1305p	32 y M				A	Ingst	Int-M	1		
		methamphetamine	1	1						
1306a	32 y M				A	Ingst	Unk	3		
		methamphetamine	1	1						
1307	33 y M				A	Ingst	Unt-G	2		
		amphetamine	1	1						
		carisoprodol	2	2						
		temazepam	3	3						
		heroin	4	4						
		benzodiazepine	5	5						
1308	34 y M				U	Unk	Unk	2		
		cocaine	1	1						
1309pai	35 y F				A	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1					amphetamine	0.07 mcg/mL In Whole Blood @ Autopsy
		methamphetamine	1	1					methamphetamine	0.21 mcg/mL In Whole Blood @ Autopsy
		acetaminophen/ hydrocodone	2	2					hydrocodone	0.11 mcg/mL In Whole Blood @ Autopsy
		ethanol	3	3					ethanol	0.07% (wt/Vol) In Whole Blood @ Autopsy
		ethanol	3	3					ethanol	0.1% (wt/Vol) In Vitreous @ Autopsy
		diazepam	4	4						
		trazodone	5	5						
1310ai	36 y M				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1					methamphetamine	0.19 mcg/mL In Serum @ 2 d (pe)
		ethanol	2	2						
1311p	36 y M				A	Ingst+ Inhal	Int-A	2		
		cocaine	1	1						
		ethanol	2	2						
1312	38 y M				A	Ingst	Unt-M	1		
		cocaine	1	1						
1313pa	38 y M				A/C	Ingst+ Inhal	Int-S	1		
		cocaine	1	1					benzoylecognine	1643 ng/mL In Blood (unspecified) @ Unknown
		tramadol	2	2					tramadol	1.1 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	3	3					hydrocodone	29 ng/mL In Blood (unspecified) @ Unknown
		diazepam	4	4					diazepam	0.23 mg/L In Blood (unspecified) @ Unknown
		diazepam	4	4					nordiazepam	0.28 mg/L In Blood (unspecified) @ Unknown
		ethanol	5	5						
		morphine	6	6					morphine (free)	95 ng/mL In Blood (unspecified) @ Unknown
1314ph	39 y M				A	Unk	Int-A	1		
		methamphetamine	1	1						
1315pai	39 y F				A	Unk	Int-A	2		
		methamphetamine	1	1					methamphetamine	2.1 mcg/mL In Whole Blood @ Unknown
		diphenhydramine	2	2						
1316pai	40 y F				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1					methamphetamine	0.14 mcg/mL In Whole Blood @ Autopsy
		methadone	2	2					methadone	0.38 mcg/mL In Whole Blood @ Autopsy
		tramadol	3	3					tramadol	1.2 mcg/mL In Whole Blood @ Autopsy
1317pa	41 y F				U	Ingst+ Par	Unk	2		
		heroin	1	1					morphine	0.64 mg/L In Blood (unspecified) @ Autopsy
		sertraline	2	2						
		tramadol	3	3					tramadol	0.14 mg/L In Blood (unspecified) @ Autopsy
		diphenhydramine	4	4					diphenhydramine	0.17 mg/L In Blood (unspecified) @ Autopsy
1318pai	41 y F				A	Unk	Int-A	2		
		methamphetamine	1	1					methamphetamine	0.61 mcg/mL In Whole Blood @ Autopsy
1319ai	42 y M				U	Ingst	Int-S	3		
		amphetamine	1	1						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1320pai	42 y M				U	Ingst	Int-A	3		
		methamphetamine	1	1						
1321	43 y M				A	Ingst	Int-A	2		
		methamphetamine	1	1						
1322ai	43 y M				U	Ingst	Int-A	2		
		methamphetamine	1	1					methamphetamine	0.1 mcg/mL In Whole Blood @ Autopsy
		acetaminophen/ hydrocodone	2	2					hydrocodone	0.05 mcg/mL In Whole Blood @ Autopsy
		diazepam	3	3						
		quetiapine	4	4						
1323pai	43 y M				U	Unk	Int-A	2		
		methamphetamine	1	1					methamphetamine	0.1 mcg/mL In Whole Blood @ Autopsy
		hydrocodone	2	2					hydrocodone	0.05 mcg/mL In Whole Blood @ Autopsy
		diazepam	3	3						
		quetiapine	4	4						
1324ai	44 y M				C	Unk	Int-A	3		
		amphetamine	1	1						
1325pa	44 y F				A/C	Par	Int-A	1		
		cocaine	1	1					benzoylecognine	830 ng/mL In Blood (unspecified) @ Autopsy
1326pai	45 y F				U	Unk	Int-A	2		
		cocaine	1	1					cocaine	0.21 mcg/mL In Whole Blood @ Autopsy
1327pa	46 y F				A	Inhal	Int-A	2		
		cocaine	1	1					cocaine	0.07 mg/L In Blood (unspecified) @ Autopsy
		cocaine	1	1					cocaethylene	0.1 mg/L In Blood (unspecified) @ Autopsy
		cocaine	1	1					benzoylecognine	1.18 mg/L In Blood (unspecified) @ Autopsy
1328p	46 y F				U	Inhal	Int-A	3		
		cocaine	1	1						
1329ai	47 y M				U	Unk	Int-A	2		
		methamphetamine	1	1					amphetamine	0.07 mcg/mL In Whole Blood @ Autopsy
		methamphetamine	1	1					methamphetamine	0.4 mcg/mL In Whole Blood @ Autopsy
1330ph	48 y M				A/C	Par	Int-A	1		
		heroin	1	1						
1331pai	48 y F				A	Unk	Int-A	3		
		cocaine	1	1					benzoylecognine	0.07 mcg/mL In Blood (unspecified) @ Unknown
1332pai	50 y F				U	Inhal+ Derm	Int-A	2		
		benzylpiperazine	1	1					n-benzylpiperazine	0.64 mcg/mL In Whole Blood @ Autopsy
		benzylpiperazine	1	1					n-benzylpiperazine	1.7 Other (see abst) In Liver @ Autopsy
1333pai	50 y M				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1					methamphetamine	0.15 mcg/mL In Whole Blood @ Autopsy
		trazodone	2	2						
1334pai	50 y M				U	Unk	Int-A	2		
		methamphetamine	1	1					methamphetamine	0.12 mcg/mL In Whole Blood @ Autopsy
		morphine	2	2					morphine (free)	0.1 mcg/mL In Whole Blood @ Autopsy
		oxycodone	3	4						
		alprazolam	4	5						
		diazepam	5	6						
1335pai	50 y F				U	Unk	Int-A	2		
		n-benzylpiperazine (BZP)	1	1						
1336ai	51 y F				U	Unk	Int-A	2		
		methamphetamine	1	1					methamphetamine	1.7 mcg/mL In Whole Blood @ Autopsy
1337pai	51 y F				U	Unk	Int-A	2		
		methamphetamine	1	1					methamphetamine	0.17 mcg/mL In Whole Blood @ Autopsy

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1338a	56 y F				A/C	Unk	Int-A	2		
		cocaine	1	1						
		acetaminophen/ hydrocodone	2	2						
		alprazolam	3	3						
		oxybutynin	4	4						
		ethanol	5	5					ethanol	46 mg/dL In Serum @ Unknown
1339pai	57 y M				U	Unk	Int-A	2		
		methamphetamine	1	1					methamphetamine	0.33 mcg/mL In Whole Blood @ Autopsy
1340p	58 y M				U	Ingst	Int-S	3		
		cocaine	1	1						
		ethanol	2	2					ethanol	87 mg/dL In Serum @ Unknown
		laxative (stimulant)	3	3						
1341	60 y M				A/C	Unk	Int-U	2		
		cocaine	1	1						
		drug, unknown	2	2						
1342pai	66 y M				A	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1					methamphetamine	0.22 mcg/mL In Whole Blood @ Autopsy
		acetaminophen/ hydrocodone	2	2					hydrocodone	0.19 mcg/mL In Vitreous @ Autopsy
		acetaminophen/ hydrocodone	2	2					hydrocodone	0.34 mcg/mL In Whole Blood @ Autopsy
		oxymorphone	3	3					oxymorphone	188 ng/mL In Vitreous @ Autopsy
		diazepam	4	4						
		mirtazapine	5	5						
		trazodone	6	6						
1343pa	Unknown age M				U	Unk	Int-A	2		
		heroin	1	1					morphine	10000 ng/mL In Urine (quantitative only) @ Autopsy
		heroin	1	1					eddp (2-ethylidene-1,5-dimethyl-3,3-diphenyl pyrrolidine)	25 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					morphine	32 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					codeine	556 ng/mL In Urine (quantitative only) @ Autopsy
		heroin	1	1					methadone	5920 ng/mL In Urine (quantitative only) @ Autopsy
		heroin	1	1					6-monoacetylmorphine	617 ng/mL In Urine (quantitative only) @ Autopsy
		heroin	1	1					methadone	91 ng/mL In Blood (unspecified) @ Autopsy
		methadone	2	2						
		morphine	3	3						
		codeine	4	4						
See also case 2, 3, 5, 17, 243, 270, 274, 281, 286, 293, 294, 301, 303, 313, 318, 325, 350, 358, 363, 364, 376, 407, 413, 421, 427, 502, 503, 533, 535, 561, 574, 607, 625, 630, 648, 666, 677, 714, 728, 734, 809, 816, 841, 850, 855, 862, 879, 905, 919, 947, 965, 989, 1016, 1039, 1058, 1138, 1140, 1149, 1181, 1207, 1211, 1218, 1221, 1225, 1226, 1234, 1257, 1351, 1358										
Unknown Drug										
1344a	3 y F				A	Ingst	Unt-G	2		
		drug, unknown	1	1						
1345pha	21 y F				A	Unk	Int-U	3		
		drug, unknown	1	1					hydrocodone	0.11 mcg/mL In Serum @ 41 m (pe)
		drug, unknown	1	1					dihydrocodeine/ hydrocodol (free)	0.22 mcg/mL In Urine (quantitative only) @ 1 h (pe)
		drug, unknown	1	1					hydrocodone	1.8 mcg/mL In Urine (quantitative only) @ 48 m (pe)
		drug, unknown	1	1					fentanyl	39 ng/mL In Urine (quantitative only) @ 48 m (pe)
		ethanol	2	2					ethanol	22 mg/dL In Urine (quantitative only) @ 41 m (pe)
		ethanol	2	2					ethanol	30 mg/dL In Serum @ 41 m (pe)
1346pa	21 y M				A	Ingst	Int-A	1		
		drug, unknown	1	1						
		ethanol	2	2						
1347pa	22 y M				A	Unk	Unk	2		
		drug, unknown	1	1						
		benzodiazepine	2	2						
		anticonvulsant	3	3						
		ethanol	4	4						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1348pai	24 y M				U	Unk	Unk	1		
		drug, unknown	1	1					oxymorphone (total)	0.05 mcg/mL In Serum @ Autopsy
		drug, unknown	1	1					alprazolam	0.094 mcg/mL In Serum @ Autopsy
		drug, unknown	1	1					methadone	0.1 mcg/mL In Serum @ Autopsy
		drug, unknown	1	1					6-monoacetylmorphine	0.18 mcg/mL In Urine (quantitative only) @ Autopsy
		drug, unknown	1	1					codeine	0.4 mcg/mL In Urine (quantitative only) @ Autopsy
		drug, unknown	1	1					methadone metabolite	0.53 mcg/mL In Urine (quantitative only) @ Autopsy
		drug, unknown	1	1					oxymorphone (total)	0.62 mcg/mL In Urine (quantitative only) @ Autopsy
		drug, unknown	1	1					oxycodone (total)	0.63 mcg/mL In Serum @ Autopsy
		drug, unknown	1	1					methadone	1 mcg/mL In Urine (quantitative only) @ Autopsy
		drug, unknown	1	1					oxycodone	2.9 mcg/mL In Urine (quantitative only) @ Autopsy
1349p	26 y M				A	Ingst	Int-S	2		
		drug, unknown	1	1						
1350p	28 y M				U	Ingst+ Aspir	Int-A	3		
		drug, unknown	1	1						
		ethanol	2	2					ethanol	200 mg/dL In Blood (unspecified) @ Unknown
1351pi	29 y F				A	Ingst+ Inhal	Unk	2		
		drug, unknown	1	1						
		THC homolog	2	2						
1352	32 y F				C	Ingst	Int-M	2		
		drug, unknown	1	1						
		opioid	2	2						
1353pi	39 y F				A	Inhal	Int-A	1		
		drug, unknown	1	1						
1354	41 y M				U	Ingst	Int-S	2		
		drug, unknown	1	1						
		tricyclic antidepressant	2	2						
1355p	42 y F				A/C	Ingst	Int-S	2		
		drug, unknown	1	1						
1356	45 y F				A/C	Ingst	Int-S	2		
		drug, unknown	1	1						
1357p	50 y M				A	Ingst	Int-S	1		
		drug, unknown	1	1						
1358	50 y M				A	Ingst	Int-U	1		
		drug, unknown	2	1						
		cocaine	1	2						
1359	52 y M				A/C	Ingst	Int-A	2		
		drug, unknown	1	1						
1360	54 y M				U	Ingst	Int-U	3		
		drug, unknown	1	1						
1361pa	62 y M				U	Unk	Unk	2		
		drug, unknown	1	1						
1362	65 y M				A	Inhal	AR-D	2		
		sevoflurane	1	1						
1363	88 y M				A	Ingst	Unk	2		
		drug, unknown	1	1						
1364p	40+ y M				A	Par	Int-A	1		
		drug, unknown	1	1						
See also case 7, 8, 41, 70, 187, 336, 354, 458, 459, 610, 761, 773, 806, 810, 850, 931, 967, 1024, 1034, 1124, 1125, 1175, 1341										
Veterinary Drugs										
1365p	15 y F				A	Ingst	Int-S	2		
		pentobarbital/ phenytoin	1	1						

(Continued)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
Vitamins										
1366i	48 y M				C	Par	Unt-T	3		
		nicotnamide adenine dinucleotide (TPN)	1	1						
		amino acid (dietary)	2	2						
See also case 882, 1109										

Listing of 1,146 + 220 fatalities classified as Relative Contribution to Fatality category = 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).

Annual Report ID: Bracketed [case number] = Narrative provided for this case in Appendix C **i** = Indirect case; identified through other sources (news feeds, medical examiner data, or other) about which no inquiry to the PC was made, **p** = prehospital cardiac and/or respiratory arrest, **h** = hospital records reviewed, **a** = autopsy report reviewed.

Age Gender: y = years, **m** = months, **d** = days, **F** = female, **M** = male, **F-Pregnant** = pregnant, **U** = unknown.

Chronicity: C = chronic exposure, **A** = acute exposure, **A/C** = acute on chronic, **U** = unknown.

Route: Aspir = Aspiration (with ingestion), **B-S** = Bite/sting, **Derm** = Dermal, **Ingst** = Ingestion, **Inhal** = Inhalation/nasal, **Oc** = Ocular, **Ot** = Otic, **Oth** = Other, **Par** = Parenteral, **Rec** = Rectal, **Unk** = Unknown, **Vag** = Vaginal.

Reason: AR-D = Adverse reaction – Drug, **AR-F** = AR – Food, **AR-O** = AR – Other, **Int-A** = Intentional – Abuse, **Int-M** = Int – Misuse, **Int-S** = Int – Suspected Suicide, **Int-U** = Int – Unknown, **Oth-C** = Other – Contamination/tampering, **Oth-M** = Oth – Malicious, **Oth-W** = Oth – Withdrawal, **Unk** = Unknown reason, **Unt-B** = Unintentional – Bite/sting, **Unt-E** = Unt – Environmental, **Unt-F** = Unt - Food poisoning, **Unt-G** = Unt – General, **Unt-M** = Unt – Misuse, **Unt-O** = Unt – Occupational, **Unt-T** = Unt - Therapeutic error, **Unt-U** = Unt – Unknown.

RCF (Relative Contribution to Fatality): 1 = Undoubtedly responsible, 2 = Probably responsible, 3 = Contributory. Provided by the RPC for Indirect cases and the AAPCC Fatality Review Team for the direct (non-Indirect cases).

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Nonpharmaceuticals																			
Adhesives/Glues																			
Miscellaneous Adhesives/Glues																			
Cyanoacrylates (Superglues, etc)	7,561	7,501	3,355	622	560	2,306	25	576	57	7,164	244	34	48	1,670	980	1,434	219	4	0
Epoxy	624	565	214	9	19	251	2	67	3	543	13	2	7	152	102	101	38	1	0
Non-Toxic Adhesives/Glues (White Glue, Paper Glue, etc)	1,554	1,459	976	301	67	83	5	24	3	1,364	64	22	5	58	193	68	5	1	0
Toluene/Xylene (Adhesives Only)	425	413	205	20	16	130	0	39	3	389	13	1	9	82	103	81	6	3	0
Unknown Types of Adhesive, Glue, Cement or Paste	3,779	3,635	1,862	240	194	1,055	14	247	23	3,400	104	51	71	672	773	605	116	5	0
Category Total:	**13,943**	**13,573**	**6,612**	**1,192**	**856**	**3,825**	**46**	**953**	**89**	**12,860**	**438**	**110**	**140**	**2,634**	**2,151**	**2,289**	**384**	**14**	**0**
Alcohols																			
Miscellaneous Alcohols																			
Ethanol (Beverages)	51,549	9,307	1,475	161	1,698	5,049	14	736	174	2,381	6,223	289	251	3,749	894	1,498	1,099	225	21
Ethanol (Non-Beverage, Non-Rubbing)	17,060	15,847	11,989	1,238	558	1,726	25	285	26	14,746	807	235	28	1,063	3,986	1,296	135	14	2
Higher Alcohols (Butanol, Amyl Alcohol, Propanols, etc)	139	114	60	3	4	39	2	5	1	110	4	0	0	21	28	19	4	0	0
Isopropanol (Excluding Rubbing Alcohols and Cleaning Agents)	6,056	5,408	2,950	202	206	1,761	5	260	24	4,575	723	55	23	1,146	1,287	919	277	37	3
Methanol (Excluding Automotive Products and Cleaning Agents)	719	575	129	15	48	332	1	47	3	470	65	12	2	288	142	104	46	9	12
Other Types of Alcohol	410	385	281	12	10	71	1	9	1	371	10	2	2	35	112	33	6	2	0
Unknown Types of Alcohol	460	186	49	3	25	87	2	19	1	100	75	3	6	65	27	30	19	9	0
Rubbing Alcohols																			
Rubbing Alcohols: Ethanol with Methyl Salicylate	5	5	4	0	0	1	0	0	0	5	0	0	0	0	1	3	0	0	0
Rubbing Alcohols: Ethanol without Methyl Salicylate	243	230	155	11	5	55	0	4	0	217	11	2	0	15	82	36	1	0	0
Rubbing Alcohols: Isopropanol with Methyl Salicylate	296	285	201	6	12	59	1	6	0	263	22	0	0	63	123	48	5	2	0
Rubbing Alcohols: Isopropanol without Methyl Salicylate	7,514	6,995	4,191	233	287	1,952	11	295	26	6,086	819	53	9	1,233	1,658	1,057	240	27	0
Rubbing Alcohols: Unknown	75	67	28	4	4	29	0	2	0	52	14	1	0	23	23	15	8	0	0
Category Total:	**84,526**	**39,404**	**21,512**	**1,888**	**2,857**	**11,161**	**62**	**1,668**	**256**	**29,376**	**8,773**	**652**	**321**	**7,701**	**8,363**	**5,058**	**1,840**	**325**	**38**
Arts/Crafts/Office Supplies																			
Miscellaneous Arts/Crafts/Office Supplies																			
Artist Paints (Non-Water Color)	2,942	2,835	2,091	214	127	332	11	54	6	2,742	65	4	22	88	443	119	14	0	0
Artist Paints (Water Color)	1,031	1,009	868	68	22	41	5	3	2	989	14	2	4	18	133	24	2	0	0
Chalks	1,526	1,492	1,377	71	23	15	2	4	0	1,472	18	1	0	41	221	49	5	0	0
Clays	2,236	2,209	1,842	169	75	100	4	16	3	2,153	32	6	14	72	249	74	5	0	0
Crayons	2,220	2,166	1,876	139	68	62	7	9	5	2,135	27	1	1	32	246	50	2	0	0
Glazes	128	122	42	28	15	24	0	11	2	106	13	1	2	15	16	11	2	0	0
Office Supplies: Miscellaneous	137	127	64	8	10	36	0	7	2	118	6	1	1	18	29	13	1	0	0
Other Types of Arts/Crafts/Writing Products	5,857	5,546	4,077	527	231	549	29	122	11	5,375	122	32	12	237	813	239	24	1	1
Pencils	2,035	1,998	992	716	128	108	14	37	3	1,864	77	42	3	85	209	165	11	1	0
Pens or Inks	13,950	13,638	9,732	2,133	1,081	487	67	118	20	13,042	464	44	76	327	1,838	347	23	0	0
Typewriter Correction Fluids	1,282	1,257	954	123	74	88	2	13	3	1,201	48	3	1	107	302	106	8	0	0

(Continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Unknown Types of Arts/Crafts/ Writing Products	94	94	67	14	2	8	0	2	1	88	5	0	1	7	21	5	0	0	0
Category Total:	**33,438**	**32,493**	**23,982**	**4,210**	**1,856**	**1,850**	**141**	**396**	**58**	**31,285**	**891**	**137**	**137**	**1,047**	**4,520**	**1,202**	**97**	**2**	**1**
Automotive/Aircraft/Boat Products																			
Automotive Products																			
Automotive Products: Brake Fluids	1,107	1,036	343	25	44	530	0	90	4	975	50	7	0	387	256	266	67	9	0
Automotive Products: Ethylene Glycol (Including Antifreeze)	6,222	5,725	528	145	479	3,827	44	629	73	4,749	800	95	9	2,165	1,056	926	452	151	7
Automotive Products: Glycol and Methanol Mixtures	190	179	50	10	15	88	1	14	1	158	16	4	0	54	44	35	4	0	0
Automotive Products: Hydro-carbons (Transmission Fluids, Power Steering Fluids, etc)	2,607	2,448	1,003	99	142	1,001	3	177	23	2,294	112	19	15	742	569	632	133	10	0
Automotive Products: Methanol (Dry Gas, Windshield Washing Solutions, etc)	1,254	1,177	212	36	92	698	3	125	11	1,035	115	13	12	472	284	296	64	12	3
Automotive Products: Other Glycols	213	203	85	9	9	78	7	14	1	181	11	6	2	44	53	26	5	0	0
Miscellaneous Automotive/Aircraft/Boat Products																			
Automotive/Aircraft/Boat Products: Non-Toxic	12	12	6	1	1	3	0	1	0	12	0	0	0	1	1	3	0	0	0
Automotive/Aircraft/Boat Products: Other	1,913	1,830	711	114	98	747	4	135	21	1,741	40	13	29	526	366	608	113	6	0
Automotive/Aircraft/Boat Products: Unknown	200	181	49	9	11	87	0	23	2	167	4	4	4	85	33	56	16	0	0
Category Total:	13,718	12,791	2,987	448	891	7,059	62	1,208	136	11,312	1,148	161	71	4,476	2,662	2,848	854	188	10
Batteries																			
Disc Batteries																			
Disc Batteries: Alkaline (MNO2)	259	256	174	40	12	23	0	6	1	240	11	1	3	175	161	19	6	0	0
Disc Batteries: Lithium	169	123	56	21	12	32	0	1	1	92	18	0	12	107	49	10	31	7	1
Disc Batteries: Mercuric Oxide	4	4	1	0	0	3	0	0	0	4	0	0	0	3	3	1	0	0	0
Disc Batteries: Nickel Cadmium	2	2	1	0	0	1	0	0	0	2	0	0	0	0	1	0	0	0	0
Disc Batteries: Other	3	3	1	1	0	1	0	0	0	1	1	1	0	1	0	1	0	0	0
Disc Batteries: Silver Oxide	37	36	20	3	0	13	0	0	0	36	0	0	0	22	26	2	0	1	0
Disc Batteries: Unknown	3,121	3,076	2,141	494	70	320	11	35	5	2,986	68	9	5	2,288	1,519	175	53	5	1
Disc Batteries: Zinc-Air	77	69	28	1	1	39	0	0	0	68	1	0	0	39	47	5	0	0	0
Miscellaneous Batteries																			
Automotive/Aircraft/Boat Batteries	710	698	48	14	43	490	1	99	3	683	9	3	2	221	64	215	67	2	0
Other Types of Battery	150	141	60	12	11	43	1	14	0	131	8	2	0	22	31	21	6	0	0
Penlight/Flashlight/Dry Cell Batteries	5,240	5,143	2,979	582	352	946	10	255	19	4,746	327	32	16	887	1,379	618	110	0	0
Unknown Types of Battery	58	57	22	4	2	22	1	5	1	51	5	1	0	11	13	14	3	0	0
Category Total:	9,830	9,608	5,531	1,172	503	1,933	24	415	30	9,040	448	49	38	3,776	3,293	1,081	276	15	2
Bites and Envenomations																			
Aquatic																			
Fish Stings	863	856	24	42	91	606	2	74	17	853	1	0	2	303	6	247	116	5	0
Jellyfish and Other Coelenterate Stings	567	559	74	150	97	188	7	37	6	555	2	1	1	127	5	166	37	3	0

(Continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Other or Unknown Marine Animal Bites and/or Envenomations	370	359	199	20	22	97	1	16	4	328	16	7	7	61	36	36	15	1	0
Exotic Snakes																			
Exotic Snake: Unknown If Poisonous	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0
Exotic Snakes: Non-Poisonous	64	64	3	7	13	36	1	3	1	64	0	0	0	32	1	28	2	0	0
Exotic Snakes: Poisonous	40	38	2	1	3	27	0	4	1	37	1	0	0	32	0	6	14	6	0
Insects																			
Ant or Fire Ant Bites	1,236	1,184	397	107	58	508	3	101	10	1,157	4	19	4	122	37	323	71	0	0
Bee, Wasp, or Hornet Stings	6,888	6,768	1,364	726	402	3,572	19	622	63	6,761	2	2	2	701	72	2,362	376	17	2
Caterpillars	1,249	1,242	353	189	123	460	5	97	15	1,210	21	5	6	140	44	392	61	2	0
Centipede or Millipede Bites	1,149	1,146	172	83	101	662	3	119	6	1,137	6	1	2	122	40	349	36	0	0
Mosquito Bites	187	178	52	16	12	73	0	22	3	177	0	0	1	19	4	39	4	0	0
Other Insect Bites and/or Stings	9,430	9,242	2,047	649	631	4,503	24	1,304	84	9,029	22	148	25	1,385	292	2,010	540	13	0
Scorpion Stings	16,786	16,761	1,743	1,696	1,482	10,422	6	1,337	75	16,751	5	1	2	1,809	116	9,518	1,062	30	0
Tick Bites	1,521	1,493	366	164	63	695	11	181	13	1,491	0	0	0	297	54	242	30	1	0
Mammals																			
Bat Bites	663	654	85	64	56	309	7	93	40	649	0	0	1	335	135	77	3	0	0
Cat Bites	814	804	65	71	65	468	3	115	17	803	0	0	0	485	11	228	33	2	0
Dog Bites	2,292	2,285	367	451	238	986	15	206	22	2,284	0	1	0	1,704	33	763	147	5	1
Fox Bites	26	26	0	2	2	18	0	3	1	26	0	0	0	21	0	7	0	0	0
Human Bites	42	42	5	2	2	21	1	8	3	34	1	7	0	22	1	11	2	0	0
Other Mammal Bites	929	920	119	120	69	470	10	99	33	887	7	10	3	516	61	199	26	1	0
Raccoon Bites	146	144	10	10	14	90	1	16	3	143	1	0	0	112	13	41	8	2	0
Rodent or Lagomorph Bites (Squirrels, Rats, Mice, Gerbils, Hamsters, Rabbits, etc)	1,397	1,377	269	255	126	498	38	156	35	1,330	9	27	8	409	72	359	21	1	0
Skunk Bites	12	12	0	2	0	8	0	1	1	12	0	0	0	5	1	5	0	0	0
Miscellaneous Bites and Envenomations																			
Other or Unknown Animal Bites	356	349	52	42	31	168	2	47	7	337	5	1	1	129	12	90	38	0	0
Other or Unknown Reptile Bites	550	545	192	144	24	154	1	25	5	516	12	5	10	88	36	149	16	0	0
Unknown Types of Insect or Spider Bite and/or Envenomation	3,345	3,307	465	236	305	2,001	17	261	22	3,286	5	11	2	512	31	1,168	131	4	0
Miscellaneous Snake Bites and Envenomations																			
Unknown or Known Non-Poisonous Snake Bites	1,256	1,248	82	202	172	685	2	95	10	1,240	3	1	2	496	58	572	48	0	0
Unknown Types of Snake Envenomation	1,562	1,544	98	176	198	966	1	79	26	1,536	0	7	0	1,142	41	648	385	21	0
Snakes																			
Copperhead Envenomations	1,366	1,356	74	146	137	944	1	50	4	1,347	7	0	2	1,260	18	388	745	48	0
Coral Envenomations	75	73	1	5	9	55	0	3	0	71	1	0	1	66	5	29	19	4	0
Cottonmouth Envenomations	259	256	5	20	21	199	0	7	4	252	2	0	0	225	4	100	89	5	0
Rattlesnake Envenomations	1,192	1,158	50	65	80	908	1	49	5	1,145	7	2	3	1,071	25	297	562	79	1
Unknown Crotalid Envenomations	648	640	45	80	64	436	0	12	3	632	2	1	3	593	6	178	348	26	0
Spiders																			
Black Widow Spider Bites and/or Envenomations	2,168	2,156	189	105	162	1,514	1	177	8	2,145	4	2	2	892	61	630	359	13	0
Brown Recluse Spider Bites and/or Envenomations	1,495	1,476	130	68	123	929	2	204	20	1,472	0	0	0	562	26	330	268	14	0

(Continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Other Necrotizing Spider Bites and/or Envenomations	213	209	26	23	10	126	1	20	3	208	0	0	0	46	5	54	22	0	0
Other Spider Bites and/or Envenomations	6,433	6,388	706	427	542	3,962	11	676	64	6,356	7	9	5	1,181	94	1,460	396	5	1
Tarantula Bites and/or Envenomations	85	84	8	11	14	40	1	9	1	77	2	1	4	23	2	27	6	0	0
Category Total:	**67,675**	**66,944**	**9,839**	**6,577**	**5,562**	**37,805**	**198**	**6,328**	**635**	**66,339**	**155**	**269**	**99**	**17,046**	**1,458**	**23,528**	**6,036**	**308**	**5**
Building and Construction Products																			
Insulation																			
Asbestos	363	317	43	18	16	171	1	64	4	309	2	1	3	67	37	23	5	0	0
Fiberglass	752	701	294	60	41	239	4	56	7	673	10	6	12	80	73	160	21	1	0
Other Types of Insulation	126	122	41	10	4	55	0	12	0	119	1	1	0	18	7	20	2	0	0
Unknown Types of Insulation	458	423	263	28	9	82	0	39	2	410	4	4	4	46	75	57	4	0	0
Urea or Formaldehyde Insulations	9	9	7	0	0	2	0	0	0	9	0	0	0	1	1	0	0	0	0
Miscellaneous Building and Construction Products																			
Caulking Compounds and Construction Putties	2,737	2,670	1,968	89	57	429	6	105	16	2,598	38	8	25	225	576	178	30	0	0
Cement or Concrete (Excluding Glues)	1,197	1,127	329	24	44	605	0	119	6	1,074	21	6	22	462	134	239	219	4	0
Other Types of Building or Construction Products	2,559	2,394	1,366	103	67	680	6	154	18	2,323	37	7	23	396	402	329	108	6	0
Soldering Flux	208	195	65	6	13	91	0	17	3	189	2	0	3	66	34	48	22	0	0
Unknown Types of Building or Construction Products	113	108	25	4	7	50	0	21	1	105	2	1	0	35	22	28	7	1	0
Category Total:	**8,522**	**8,066**	**4,401**	**342**	**258**	**2,404**	**17**	**587**	**57**	**7,809**	**117**	**34**	**92**	**1,396**	**1,361**	**1,082**	**418**	**12**	**0**
Chemicals																			
Acids																			
Hydrochloric Acid	2,130	1,772	115	64	233	1,173	0	167	20	1,668	48	22	27	718	149	632	203	12	8
Hydrofluoric Acid	646	568	32	3	31	436	2	56	8	548	8	3	5	442	42	219	141	12	1
Other Types of Acid	5,005	4,419	613	275	369	2,539	16	557	50	4,215	86	40	50	1,640	441	1,400	562	23	2
Unknown Types of Acid	185	143	17	3	11	90	0	19	3	125	4	9	2	66	9	40	27	1	0
Miscellaneous Chemicals																			
Acetone (Excluding Nail Polish Removers)	1,161	1,004	364	44	65	429	2	88	12	915	47	13	14	271	185	232	39	0	0
Alkalis (Excluding Cleaning Agents, Bleaches, Batteries, and Detergents)	3,699	3,244	592	121	305	1,851	8	332	35	3,063	74	47	42	1,616	298	989	607	44	2
Ammonia (Excluding Cleaning Agents)	3,291	2,464	648	136	157	1,200	46	258	19	2,298	101	27	23	885	315	731	245	12	0
Borates or Boric Acid (Excluding Topicals and Pesticides)	2,851	2,620	1,308	132	93	884	7	179	17	2,443	96	40	35	380	573	271	29	1	0
Chlorates (Excluding Matches and Fireworks)	46	35	6	9	12	8	0	0	0	34	1	0	0	7	7	5	2	0	0
Cyanides (Excluding Rodenticides)	225	145	1	0	3	104	0	31	6	103	18	10	3	89	26	30	11	7	8
Dioxins	10	9	1	0	1	7	0	0	0	6	1	1	0	4	2	2	2	1	0
Ethylene Glycol (Excluding Automotive, Aircraft, or Boat Products)	892	723	47	9	38	458	2	62	107	459	210	10	2	505	100	71	93	105	13

(Continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Formaldehyde or Formalin	784	691	86	38	109	357	4	86	11	616	37	6	27	267	93	205	49	2	0
Ketones	391	324	101	6	9	170	1	36	1	314	4	1	4	146	57	116	29	1	0
Methylene Chloride (Excluding Paint Strippers)	196	169	26	7	13	94	1	27	1	161	4	0	2	74	26	46	17	0	0
Nitrates and Nitrites (Excluding Medications and Substances of Abuse)	1,190	1,104	374	245	111	297	4	67	6	946	127	21	8	227	227	152	50	6	1
Other Chemicals	11,115	9,729	3,815	768	576	3,584	37	837	112	8,894	321	156	320	2,120	1,604	1,735	484	31	2
Other Chemicals-Unknown If Toxic	48	48	44	2	1	1	0	0	0	48	0	0	0	0	5	0	1	0	0
Other Glycols (Excluding Automotive, Aircraft, or Boat Products)	893	710	321	65	25	215	0	43	41	581	18	71	38	214	189	139	32	7	0
Phenol or Creosotes (Excluding Disinfectants)	350	301	18	3	21	215	1	41	2	292	5	1	3	126	21	109	45	3	0
Strychnine (Excluding Rodenticides)	38	28	8	3	0	15	0	2	0	18	4	3	2	15	7	2	2	1	0
Toluene Diisocyanate	556	526	144	28	22	248	3	77	4	497	12	1	12	126	67	113	29	2	0
Unknown Chemicals	3,881	3,617	861	227	252	1,711	21	501	44	2,838	150	342	155	1,208	418	785	247	27	3
Category Total:	**39,583**	**34,393**	**9,542**	**2,188**	**2,457**	**16,086**	**155**	**3,466**	**499**	**31,082**	**1,376**	**824**	**774**	**11,146**	**4,861**	**8,024**	**2,946**	**298**	**40**
Cleaning Substances (Household)																			
Automatic Dishwasher Detergents																			
Automatic Dishwasher Detergents: Granules	3,041	2,997	2,454	44	39	373	6	77	4	2,954	14	24	4	119	720	344	21	1	0
Automatic Dishwasher Detergents: Liquids	2,821	2,769	2,321	45	40	313	3	44	3	2,731	21	12	5	134	712	334	27	1	0
Automatic Dishwasher Detergents: Tablets	1,552	1,538	1,439	11	12	58	3	14	1	1,532	2	4	0	45	397	189	1	0	0
Automatic Dishwasher Rinse Agents	805	784	687	9	6	70	1	10	1	779	3	2	0	74	161	136	5	0	0
Other or Unknown Types of Automatic Dishwasher Detergent	7,496	7,452	6,941	49	51	308	7	87	9	7,405	16	26	4	238	1,795	1,028	24	1	1
Bleaches																			
Bleaches: Borates	224	193	98	4	7	63	0	18	3	178	9	1	5	32	35	46	7	0	0
Bleaches: Hypochlorite (Liquid and Dry)	36,933	31,922	13,969	1,173	1,813	12,666	54	2,002	245	29,670	1,456	416	269	6,427	5,018	8,420	987	22	3
Bleaches: Non-Hypochlorite	447	379	191	10	21	130	0	23	4	354	16	3	5	71	72	99	10	0	0
Bleaches: Other or Unknown (Household)	379	308	128	10	18	126	1	23	2	279	16	9	0	75	42	88	12	0	0
Cleansers																			
Anionic or Nonionic Cleansers	1,935	1,768	1,400	34	28	249	3	46	8	1,718	32	8	7	165	475	192	11	1	0
Other or Unknown Types of Household Cleanser	2,264	1,994	1,268	65	69	479	5	96	12	1,885	68	22	11	371	485	317	65	1	0
Disinfectants																			
Disinfectants: Hypochlorite (Non-Bleach Products)	15,998	13,250	5,024	563	837	5,471	54	1,173	128	12,124	619	259	188	2,949	1,840	3,236	510	9	0
Disinfectants: Other or Unknown	6,897	6,503	4,200	382	249	1,322	28	291	31	6,154	189	70	69	559	1,382	1,130	88	4	0
Disinfectants: Phenol	1,305	1,265	836	110	65	202	3	46	3	1,189	46	23	7	133	335	172	30	1	0
Disinfectants: Pine Oil	3,586	3,250	1,958	127	119	911	2	110	23	3,029	138	39	20	564	907	671	52	3	1

(Continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Drain Cleaners																			
Drain Cleaners: Acids	46	36	7	1	0	22	0	6	0	33	2	0	0	14	4	9	4	0	0
Drain Cleaners: Alkalis	3,221	2,703	425	71	94	1,754	0	325	34	2,452	171	23	45	815	332	693	281	47	6
Drain Cleaners: Hydrochloric Acid	209	87	10	4	6	54	0	10	3	78	5	0	3	22	14	44	7	2	0
Drain Cleaners: Other or Unknown	794	614	103	13	36	356	3	88	15	537	42	11	15	162	71	132	42	8	1
Drain Cleaners: Sulfuric Acid	376	293	17	7	16	212	0	40	1	274	15	1	3	124	17	93	58	2	1
Fabric Softeners/Antistatic Agents																			
Fabric Softener/Antistatic Agent: Other or Unknown	18	16	11	1	2	2	0	0	0	15	1	0	0	2	5	2	1	0	0
Fabric Softeners/Antistatic Agents: Aerosol or Spray	153	147	128	5	3	10	0	1	0	142	0	4	1	3	44	15	1	0	0
Fabric Softeners/Antistatic Agents: Dry or Powder	8	8	5	0	0	2	0	1	0	8	0	0	0	1	1	1	0	0	0
Fabric Softeners/Antistatic Agents: Liquid	905	848	687	11	8	115	6	20	1	822	16	1	7	67	194	98	3	1	0
Fabric Softeners/Antistatic Agents: Solid or Sheet	537	519	426	24	11	46	2	7	3	509	5	3	2	19	105	24	4	0	0
Glass Cleaners																			
Glass Cleaners: Ammonia Containing	3,504	3,139	2,569	100	102	307	7	47	7	2,999	107	26	4	232	732	377	24	1	1
Glass Cleaners: Anionics or Nonionics	142	129	108	6	6	7	0	2	0	121	6	1	0	7	36	13	0	0	0
Glass Cleaners: Isopropanol	2,436	2,211	1,725	69	79	285	2	49	2	2,109	76	12	6	178	511	246	15	0	0
Glass Cleaners: Other or Unknown Types of Household	1,664	1,529	1,171	69	53	188	2	42	4	1,461	48	9	10	148	345	157	18	0	0
Hand Dishwashing																			
Anionic or Nonionic Hand Dishwashing Detergents	5,295	4,832	3,135	206	110	1,191	8	171	11	4,632	82	74	41	308	625	809	41	0	0
Other or Unknown Types of Household Hand Dishwashing Detergent	2,359	2,112	1,299	81	56	568	3	95	10	2,019	28	51	12	126	275	301	12	0	0
Laundry Additives																			
Enzyme and/or Microbiological Laundry Additives	82	76	46	0	1	22	1	6	0	74	0	0	2	12	15	15	2	0	0
Laundry Bluing and/or Brightening Agents (without Detergent)	36	26	14	0	0	12	0	0	0	25	1	0	0	5	11	2	1	0	0
Laundry Detergent Boosters	126	117	61	1	2	34	2	8	9	100	1	0	16	17	22	41	2	0	0
Other or Unknown Laundry Additives or Miscellaneous Products	2,355	2,240	1,828	104	52	219	4	32	1	2,157	43	30	5	186	481	289	22	2	0
Water Softeners	44	41	24	4	2	7	0	4	0	40	1	0	0	2	8	6	0	0	0
Laundry Detergents																			
Laundry Detergents: Granules	3,966	3,784	3,022	92	100	447	9	107	7	3,651	63	40	23	457	687	776	52	2	0
Laundry Detergents: Liquids	4,723	4,497	3,285	100	128	841	2	133	8	4,351	97	27	18	537	758	899	76	2	2
Laundry Detergents: Other or Unknown Types of Household Laundry Detergent and/or Fabric Cleaner	341	325	265	4	4	39	0	12	1	313	6	1	5	29	70	45	5	0	0
Laundry Detergents: Soaps	88	79	50	2	6	14	0	6	1	74	2	0	3	7	12	15	1	0	0

(Continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Laundry Prewash/Stain Removers																			
Laundry Prewash/Stain Removers: Aerosol or Spray Solvent Based	335	318	280	1	3	29	1	4	0	311	2	2	3	44	69	62	14	0	0
Laundry Prewash/Stain Removers: Aerosol or Spray Surfactant Based	186	175	150	2	2	20	0	1	0	173	1	0	1	23	42	37	2	0	0
Laundry Prewash/Stain Removers: Dry Solvent Based	5	5	4	0	0	1	0	0	0	5	0	0	0	1	2	1	0	0	0
Laundry Prewash/Stain Removers: Dry Surfactant Based	110	107	94	0	1	10	0	2	0	105	2	0	0	6	27	10	2	0	0
Laundry Prewash/Stain Removers: Liquid Solvent Based	1,005	970	771	27	13	124	0	35	0	953	10	2	4	156	323	139	13	1	0
Laundry Prewash/Stain Removers: Liquid Surfactant Based	2,049	1,974	1,731	37	22	138	8	27	11	1,926	12	9	26	222	387	332	42	0	0
Laundry Prewash/Stain Removers: Other or Unknown	2,551	2,442	1,951	79	35	321	2	53	1	2,385	20	18	17	241	496	505	26	1	0
Laundry Prewash/Stain Removers: Other or Unknown Solvent Based	85	82	68	3	1	7	0	2	1	81	0	0	1	12	17	12	1	0	0
Laundry Prewash/Stain Removers: Other or Unknown Surfactant Based	94	92	81	1	0	7	1	2	0	91	1	0	0	3	13	4	1	0	0
Miscellaneous Cleaners																			
Miscellaneous Cleaning Agents: Acids	1,694	1,481	854	44	48	439	2	85	9	1,411	35	20	13	292	326	302	55	3	0
Miscellaneous Cleaning Agents: Alkalis	8,054	7,148	4,642	175	254	1,746	11	300	20	6,813	181	75	65	1,309	1,604	1,230	199	8	1
Miscellaneous Cleaning Agents: Anionics or Nonionics	6,277	5,687	3,995	172	166	1,109	10	215	20	5,455	134	41	50	682	1,180	836	91	2	1
Miscellaneous Cleaning Agents: Cationics	2,290	2,139	1,174	88	108	651	1	106	11	1,980	113	20	23	420	454	404	81	5	0
Miscellaneous Cleaning Agents: Ethanol (Excluding Automotive Products)	782	742	571	31	22	99	1	18	0	716	14	2	8	58	153	89	6	0	0
Miscellaneous Cleaning Agents: Glycols (Excluding Automotive Products)	717	659	425	42	23	136	3	27	3	628	24	3	4	91	152	118	17	0	0
Miscellaneous Cleaning Agents: Isopropanol (Excluding Automotive Products and Glass)	2,309	2,117	1,426	219	108	302	9	47	6	2,021	60	21	10	185	475	297	19	0	0
Miscellaneous Cleaning Agents: Methanol (Excluding Automotive Products)	46	42	25	2	0	11	0	4	0	37	2	0	2	17	12	9	0	2	0
Miscellaneous Cleaning Agents: Other or Unknown Household Cleaning Agents	4,416	3,965	2,401	266	183	896	17	175	27	3,707	136	64	38	707	850	811	113	2	0
Miscellaneous Cleaning Agents: Phenol (Excluding Disinfectants)	7	6	4	1	0	0	0	1	0	5	0	0	1	4	3	1	0	0	0

(Continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Miscellaneous Cleaning Substances (Household)																			
Ammonia Cleaners (All Purpose)	1,202	881	314	50	44	396	4	70	3	818	36	14	8	191	149	205	42	2	0
Carpet, Upholstery, Leather, or Vinyl Cleaners	4,607	4,329	3,263	118	88	725	8	119	8	4,197	59	20	47	540	891	732	68	3	0
Hydrofluoric Acid or Bifluoride Wheel Cleaners	54	53	12	1	7	30	0	3	0	52	1	0	0	36	8	18	8	1	0
Starches, Fabric Finishes, or Sizing	339	323	267	12	9	23	2	10	0	317	4	1	1	14	73	26	2	0	0
Oven Cleaners																			
Oven Cleaners: Acids	4	4	1	0	3	0	0	0	0	4	0	0	0	1	3	0	0	0	0
Oven Cleaners: Alkalis	2,159	2,082	432	92	159	1,108	13	266	12	1,959	38	49	32	797	225	583	285	9	0
Oven Cleaners: Detergent Types	20	19	3	0	3	11	0	2	0	19	0	0	0	3	1	6	1	0	0
Oven Cleaners: Other or Unknown	420	392	91	13	28	209	0	49	2	369	6	14	3	138	64	101	33	1	0
Rust Removers																			
Rust Removers: Acids Other Than Hydrofluoric Acid Types	570	486	169	13	10	256	1	34	3	471	11	2	2	101	116	140	19	0	0
Rust Removers: Alkalis	4	4	1	0	0	3	0	0	0	4	0	0	0	0	1	1	1	0	0
Rust Removers: Hydrofluoric Acid	322	311	61	0	8	217	0	21	4	288	7	0	15	132	86	131	40	0	0
Rust Removers: Other or Unknown	196	173	33	5	8	109	0	15	3	158	2	2	11	39	22	41	19	0	0
Spot Removers/Dry Cleaning Agents																			
Spot Removers/Dry Cleaning Agents: Anionics or Nonionics	163	151	127	1	3	18	0	2	0	148	1	0	2	13	32	23	2	0	0
Spot Removers/Dry Cleaning Agents: Glycols	213	200	133	9	6	40	0	11	1	193	1	2	4	32	45	44	7	0	0
Spot Removers/Dry Cleaning Agents: Isopropanol	61	60	49	2	2	6	0	1	0	58	0	1	1	3	21	16	0	0	0
Spot Removers/Dry Cleaning Agents: Other Halogenated Hydrocarbon Containing Products	20	18	4	1	3	9	0	1	0	17	1	0	0	4	3	3	2	0	0
Spot Removers/Dry Cleaning Agents: Other Hydrocarbon and/or Non-Halogenated Containing	452	414	220	19	13	124	0	33	5	389	11	4	10	98	104	104	18	3	0
Spot Removers/Dry Cleaning Agents: Other or Unknown	109	103	70	1	2	27	0	3	0	100	1	0	2	16	21	18	2	0	0
Spot Removers/Dry Cleaning Agents: Perchloroethylene	14	14	10	0	0	4	0	0	0	13	0	0	1	1	3	1	1	0	0
Toilet Bowl Cleaners																			
Toilet Bowl Cleaners: Acids	5,198	3,387	1,272	118	187	1,534	4	235	37	3,172	150	10	42	666	724	1,158	175	11	3
Toilet Bowl Cleaners: Alkalis	3,085	2,727	1,861	57	72	576	4	147	10	2,663	44	6	8	379	785	514	50	5	0
Toilet Bowl Cleaners: Other or Unknown	4,530	4,286	3,731	71	48	333	11	72	20	4,221	42	6	12	353	1,148	327	40	2	0
Wall/Floor/Tile Cleaners																			
Wall/Floor/Tile/All-Purpose Cleaning Agents: Acids	2,239	1,928	1,256	57	55	452	2	102	4	1,852	49	10	17	283	530	376	47	2	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Alkalis	7,776	6,952	4,712	204	198	1,513	14	279	32	6,657	180	47	63	1,106	1,646	1,372	205	8	0

(Continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Wall/Floor/Tile/All-Purpose Cleaning Agents: Anionics or Nonionics	9,449	8,534	5,686	276	252	1,974	20	302	24	8,128	272	87	35	1,419	1,938	1,353	131	5	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Cationics	2,385	2,035	1,259	99	83	476	6	101	11	1,898	93	25	15	298	381	397	34	3	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Ethanol	746	708	584	12	19	72	0	14	7	686	13	1	8	47	196	93	7	1	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Glycols	1,297	1,168	900	29	28	170	3	28	10	1,131	25	3	7	103	289	147	14	2	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Isopropanol	463	426	326	12	8	71	0	9	0	404	6	6	9	36	118	65	3	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Methanol	2	2	0	0	1	1	0	0	0	2	0	0	0	0	1	0	0	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Other or Unknown	1,528	1,392	988	26	40	290	1	43	4	1,325	40	14	10	231	318	243	32	1	0
Category Total:	**201,750**	**180,493**	**111,817**	**6,099**	**6,627**	**46,318**	**380**	**8,348**	**904**	**171,493**	**5,303**	**1,833**	**1,446**	**26,989**	**36,278**	**34,941**	**4,492**	**194**	**21**
Cosmetics/Personal Care Products																			
Dental Care Products																			
False Teeth Cleaning Agents	1,871	1,841	301	27	31	1,345	2	125	10	1,774	34	5	23	91	347	162	9	0	0
Other Dental Care Products (Excluding Fluoride Supplements)	4,318	4,223	2,078	409	238	1,263	8	215	12	3,914	83	9	208	306	640	373	41	1	0
Toothpastes (with Fluoride)	22,987	22,446	20,039	612	366	1,173	19	219	18	21,864	237	53	277	376	4,516	1,166	45	0	0
Toothpastes (without Fluoride)	2,148	2,060	1,822	43	36	131	2	22	4	1,992	13	3	52	28	374	91	10	0	0
Hair Care Products																			
Curl Activators	53	53	43	0	1	5	0	3	1	49	1	0	2	14	15	7	2	0	0
Hair Coloring Agents (Excluding Peroxides)	2,376	2,313	954	62	156	936	1	191	13	1,925	29	3	348	439	347	517	133	2	0
Hair Oils	344	335	287	9	5	31	0	3	0	328	3	1	3	47	73	43	8	0	0
Hair Relaxers (with Other Alkalines)	574	568	415	10	17	116	0	8	2	550	5	0	13	275	122	184	76	2	0
Hair Relaxers (with Other Non-Alkalines)	88	88	68	2	0	17	0	1	0	84	0	0	4	26	26	17	6	0	0
Hair Relaxers (with Sodium Hydroxide)	764	754	540	15	26	148	1	23	1	725	7	0	22	350	153	222	83	0	0
Hair Rinses, Conditioners, Relaxers	2,259	2,138	1,780	94	49	178	1	32	4	2,072	31	4	27	171	460	223	26	0	0
Hair Sprays	1,795	1,617	1,119	60	112	280	1	41	4	1,412	179	13	11	270	353	260	45	1	1
Other Hair Care Products (Excluding Peroxides)	3,127	2,978	2,151	70	110	515	10	105	17	2,794	36	6	137	379	562	425	81	2	0
Permanent Wave Solutions	302	296	181	4	14	82	0	15	0	279	2	1	14	112	55	85	24	0	0
Shampoos	6,321	6,006	4,680	266	181	739	12	111	17	5,731	165	20	84	423	833	1,002	72	2	0
Hand Sanitizers																			
Hand Sanitizers: Ethanol Based	3,767	3,705	2,932	307	112	299	6	48	1	3,476	159	67	2	231	987	313	23	2	0
Hand Sanitizers: Isopropanol Based	33	32	25	2	1	4	0	0	0	30	1	1	0	2	13	2	0	1	0
Hand Sanitizers: Non-Alcohol Based	330	328	243	34	12	27	1	9	2	316	6	4	0	11	49	28	0	0	0
Hand Sanitizers: Unknown	77	75	48	9	4	8	1	5	0	68	4	3	0	7	13	10	0	0	0

(Continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Miscellaneous Cosmetics/Personal Care Products																			
Baby Oils	2,012	1,972	1,801	28	28	94	2	15	4	1,941	13	4	9	181	524	172	12	2	0
Bath Oils and/or Bubble Baths	3,066	2,979	2,716	102	24	116	7	14	0	2,932	26	2	17	130	512	269	11	0	0
Creams, Lotions, and Make-Up	27,623	26,577	22,687	645	472	2,331	45	349	48	25,663	258	56	581	877	4,180	1,326	105	1	1
Deodorants	23,287	23,026	21,005	466	551	801	38	154	11	22,482	279	65	186	596	3,605	1,407	60	3	0
Depilatories	995	976	288	45	98	451	2	88	4	661	51	6	256	229	116	250	91	1	0
Douches	173	171	140	0	1	26	0	4	0	161	5	1	4	9	50	15	2	0	0
Eye Products	1,559	1,462	1,235	16	32	145	2	24	8	1,399	6	2	54	75	262	101	19	2	0
Lipsticks and Lip Balms (with Camphor)	967	933	853	25	15	30	1	8	1	912	12	1	8	26	170	56	3	0	0
Lipsticks and Lip Balms (without Camphor)	3,980	3,824	3,397	109	57	190	13	30	28	3,581	37	3	199	77	512	258	23	1	0
Perfumes, Colognes, and Aftershaves	12,559	12,234	10,302	578	396	808	18	114	18	11,758	339	91	17	916	2,718	2,328	90	5	0
Peroxides	9,316	8,961	3,450	386	432	3,917	13	712	51	8,404	220	56	267	878	1,157	1,546	167	7	1
Powders Made of Material Other Than Talc	1,779	1,736	1,588	34	18	71	10	15	0	1,701	17	8	4	112	315	308	11	0	0
Powders Made of Talc	2,354	2,280	1,947	78	54	157	3	37	4	2,215	44	10	9	263	473	468	38	0	0
Soaps (Bar, Hand or Complexion)	17,338	16,608	12,503	880	497	2,277	30	380	41	15,824	350	143	270	817	2,433	2,000	109	1	0
Suntan and/or Sunscreen Products	12,846	12,646	11,447	468	142	478	26	73	12	12,419	39	16	162	478	1,804	1,568	63	0	0
Mouthwashes																			
Mouthwashes: Ethanol Containing	8,883	8,246	2,803	684	617	3,547	9	555	31	7,075	1,080	27	38	1,039	1,456	762	208	20	1
Mouthwashes: Fluoride Containing	6,225	6,141	4,345	1,131	143	451	8	60	3	6,039	67	5	24	84	1,130	168	7	1	0
Mouthwashes: Non Ethanol Containing	1,104	1,065	514	130	49	317	1	52	2	1,003	46	0	14	60	195	49	4	1	0
Mouthwashes: Unknown	196	180	78	19	11	57	0	15	0	167	8	1	3	15	26	13	5	0	0
Nail Products																			
Acrylic Nail Adhesives	1,396	1,382	601	265	124	331	1	53	7	1,342	22	11	4	482	174	362	77	2	0
Acrylic Nail Primers	270	263	222	4	6	23	0	8	0	259	2	0	2	98	63	70	17	1	0
Acrylic Nail Removers	30	30	13	3	1	12	0	1	0	28	2	0	0	11	8	9	3	0	0
Miscellaneous Nail Products	1,123	1,098	743	30	32	232	1	59	1	1,073	12	0	13	193	240	214	25	1	0
Nail Polish Removers (Acetone Containing)	2,493	2,444	1,877	75	97	346	5	38	6	2,371	49	18	3	254	676	350	14	0	0
Nail Polishes	10,356	10,133	9,243	295	144	347	23	66	15	10,013	75	24	15	553	1,915	1,115	39	1	0
Other Nail Polish Removers	1,228	1,196	920	52	45	159	0	17	3	1,151	30	7	7	125	310	184	15	1	0
Unknown Nail Polish Removers	8,169	7,902	5,784	334	372	1,184	13	204	11	7,614	204	65	13	857	1,851	1,124	58	2	0
Category Total:	**214,861**	**208,321**	**162,208**	**8,917**	**5,929**	**26,195**	**336**	**4,321**	**415**	**199,571**	**4,288**	**815**	**3,406**	**12,993**	**36,813**	**21,622**	**1,960**	**66**	**4**
Deodorizers																			
Air Freshener																			
Air Fresheners: Aerosols	2,557	2,491	1,822	212	119	275	5	53	5	2,347	88	39	16	257	437	503	44	0	0
Air Fresheners: Liquids	10,802	10,702	9,692	295	109	481	15	99	11	10,561	62	56	14	866	2,530	1,774	88	0	1
Air Fresheners: Solids	5,029	4,995	4,540	107	58	244	4	37	5	4,938	45	4	4	302	1,104	449	28	1	0
Air Fresheners: Unknown Form	2,222	2,179	1,874	82	38	152	3	27	3	2,104	50	14	10	225	542	312	16	0	0
Miscellaneous Deodorizers																			
Diaper Pail Deodorizers (Excluding Moth Repellants)	12	12	12	0	0	0	0	0	0	12	0	0	0	0	2	1	0	0	0
Other Types of Deodorizer (Not For Personal Use)	4,467	4,293	3,207	135	83	714	9	135	10	4,164	66	24	37	456	995	633	53	2	0
Toilet Bowl Deodorizers	449	435	385	8	3	28	1	9	1	432	3	0	0	56	142	41	2	0	0
Unknown Types of Deodorizer (Not for Personal Use)	68	65	39	6	1	14	0	5	0	62	1	2	0	8	14	8	3	0	0
Category Total:	**25,606**	**25,172**	**21,571**	**845**	**411**	**1,908**	**37**	**365**	**35**	**24,620**	**315**	**139**	**81**	**2,170**	**5,766**	**3,721**	**234**	**3**	**1**

(Continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Dyes																			
Miscellaneous Dyes																			
Dyes: Fabrics	398	394	262	37	18	56	4	17	0	372	9	1	12	19	81	26	2	0	0
Dyes: Foods (Including Easter Egg)	1,107	1,063	886	89	26	42	7	11	2	1,025	24	6	8	23	186	40	8	0	0
Dyes: Leathers	61	60	54	0	1	3	0	1	1	57	1	0	1	2	24	2	0	0	0
Dyes: Other	463	427	154	72	108	70	1	17	5	384	21	4	18	53	101	31	7	1	0
Dyes: Unknown	60	55	35	7	1	10	0	2	0	49	0	1	4	7	11	6	1	0	0
Category Total:	**2,089**	**1,999**	**1,391**	**205**	**154**	**181**	**12**	**48**	**8**	**1,887**	**55**	**12**	**43**	**104**	**403**	**105**	**18**	**1**	**0**
Essential Oils																			
Miscellaneous Essential Oil																			
Cinnamon Oil	542	494	297	45	61	69	2	19	1	386	76	4	27	62	47	180	12	0	0
Clove Oil	485	455	276	12	8	121	0	34	4	410	14	1	30	99	93	136	16	0	0
Eucalyptus Oil	506	471	281	20	6	148	1	15	0	442	18	0	11	110	137	88	13	3	1
Miscellaneous Essential Oils	7,918	7,741	6,414	206	100	818	16	170	17	7,520	77	24	111	643	1,928	1,362	73	3	0
Pennyroyal Oil	17	15	2	0	2	8	0	3	0	9	4	1	1	3	0	4	0	0	0
Tea Tree Oil	1,235	1,157	761	38	28	270	2	53	5	1,063	42	4	45	167	325	165	17	1	0
Category Total:	**10,703**	**10,333**	**8,031**	**321**	**205**	**1,434**	**21**	**294**	**27**	**9,830**	**231**	**34**	**225**	**1,084**	**2,530**	**1,935**	**131**	**7**	**1**
Fertilizers																			
Miscellaneous Fertilizers																			
Household Plant Foods (Generally for Indoor Plants)	1,943	1,864	1,100	155	71	445	2	88	3	1,807	30	18	6	60	353	64	1	0	0
Other Types of Fertilizer	1,617	1,450	913	119	38	310	3	61	6	1,381	30	19	17	108	288	122	10	0	0
Outdoor Fertilizers	2,619	2,506	1,663	161	74	482	27	88	11	2,440	31	19	14	141	535	141	20	2	0
Plant Hormones	37	30	16	0	4	7	0	3	0	27	0	3	0	4	9	2	1	0	0
Unknown Types of Fertilizer	101	96	53	14	3	21	0	5	0	88	4	0	3	18	12	15	3	0	0
Category Total:	**6,317**	**5,946**	**3,745**	**449**	**190**	**1,265**	**32**	**245**	**20**	**5,743**	**95**	**59**	**40**	**331**	**1,197**	**344**	**35**	**2**	**0**
Fire Extinguishers																			
Miscellaneous Fire Extinguisher																			
Miscellaneous Fire Extinguishers	2,882	2,812	300	347	425	1,261	83	317	79	2,486	114	164	31	681	404	801	133	4	0
Category Total:	**2,882**	**2,812**	**300**	**347**	**425**	**1,261**	**83**	**317**	**79**	**2,486**	**114**	**164**	**31**	**681**	**404**	**801**	**133**	**4**	**0**
Food Products/Food Poisoning																			
Bacterial Food Poisoning (Documented)																			
Botulism	138	129	13	6	4	87	1	17	1	108	4	6	9	26	24	4	4	6	1
Other Types of Bacterial Food Poisoning (Salmonella, Shigella, Vibrio, Staphylococcus, Streptococcus, etc)	625	605	171	53	38	276	1	61	5	569	0	12	24	83	54	71	55	3	0
Unknown Types of Bacterial Food Poisoning	8,144	8,002	1,149	587	519	4,635	30	1,008	74	7,433	10	129	412	836	524	1,548	417	4	0
Ichthyosarcotoxins																			
Ciguatera Poisoning	182	178	2	2	9	118	5	35	7	157	0	0	19	87	2	37	58	5	0
Clupeotoxic Fish Poisoning	10	10	0	0	2	5	0	3	0	7	0	0	3	1	0	2	0	0	0
Other Types of Seafood Poisoning	177	147	10	6	7	101	0	12	11	113	0	2	32	31	10	29	22	1	6
Paralytic Shellfish Poisoning	142	133	3	13	7	97	0	10	3	110	0	2	21	37	5	21	18	1	0
Scombroid Fish Poisoning	151	139	8	6	5	97	0	17	6	96	0	1	42	32	8	42	20	0	0
Tetrodon Poisoning	146	144	18	28	17	59	2	17	3	129	9	1	4	36	15	24	11	1	1
Miscellaneous Food Products/Food Poisoning																			
Capsicum Peppers (Exclude Non-Food)	4,788	4,682	817	393	494	2,289	16	628	45	3,687	154	41	795	285	53	1,955	150	0	0

(Continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Monosodium Glutamate (MSG)	86	78	10	2	3	47	0	16	0	32	1	0	45	11	4	20	6	0	0
Other Adverse Reactions to Food	2,243	2,088	572	138	157	935	10	253	23	772	32	115	1,153	409	112	482	158	4	1
Unknown Types of Suspected Food Poisoning	8,344	8,179	991	569	554	5,023	44	882	116	7,745	12	149	263	861	263	1,560	475	9	0
Category Total:	**25,176**	**24,514**	**3,764**	**1,803**	**1,816**	**13,769**	**109**	**2,959**	**294**	**20,958**	**222**	**458**	**2,822**	**2,735**	**1,074**	**5,795**	**1,394**	**34**	**9**
Foreign Bodies/Toys/Miscellaneous																			
Miscellaneous Foreign Bodies/Toys/Miscellaneous																			
Ashes	400	366	304	11	2	33	3	12	1	362	1	2	0	10	46	35	0	0	0
Bubble Blowing Solutions	4,056	4,010	3,736	150	28	72	9	15	0	3,971	23	11	4	124	551	626	25	0	0
Charcoals	511	457	377	8	14	42	0	14	2	437	8	2	10	25	95	25	3	0	0
Christmas ornaments	484	479	405	25	5	35	0	9	0	476	3	0	0	39	86	28	1	0	0
Coins	3,916	3,813	3,119	514	53	97	11	12	7	3,726	64	9	1	1,272	1,060	396	41	2	0
Desiccants	33,705	33,535	29,949	1,540	412	1,087	144	346	57	33,205	231	79	8	1,194	4,583	238	12	0	0
Feces/Urine	6,000	5,366	4,398	172	107	507	21	151	10	5,185	34	115	17	190	747	127	17	1	0
Glass	5,440	5,347	1,388	431	306	2,141	59	939	83	5,190	40	74	37	372	881	259	28	1	0
Glow Products	22,912	22,881	16,055	5,354	834	378	83	145	32	22,519	309	22	20	850	2,686	4,159	61	2	0
Incense (Punk)	427	403	279	10	34	68	1	5	6	332	68	1	2	88	71	59	28	0	0
Other Types of Foreign Body, Toy, or Miscellaneous Substance	23,949	22,875	15,248	2,702	970	2,967	61	805	122	21,895	505	232	179	2,074	4,007	1,104	132	4	0
Soil	2,034	1,781	1,424	117	18	182	3	30	7	1,743	27	1	10	71	275	103	12	1	0
Toys	7,921	7,833	6,037	1,310	218	192	15	54	7	7,576	90	153	6	451	1,168	438	21	1	0
Unknown Types of Foreign Body, Toy, or Miscellaneous Substance	779	767	551	96	40	59	2	18	1	724	13	21	4	77	130	50	7	0	0
Thermometers																			
Thermometers: Mercury	2,338	2,322	679	494	183	604	22	322	18	2,263	41	6	7	157	574	39	1	0	0
Thermometers: Other	1,312	1,291	517	253	61	284	9	150	17	1,252	24	10	4	70	289	45	3	0	0
Thermometers: Unknown	353	351	114	58	21	114	1	42	1	341	2	7	0	15	33	1	0	0	0
Category Total:	**116,537**	**113,877**	**84,580**	**13,245**	**3,306**	**8,862**	**444**	**3,069**	**371**	**111,197**	**1,483**	**745**	**309**	**7,079**	**17,282**	**7,732**	**392**	**12**	**0**
Fumes/Gases/Vapors																			
Miscellaneous Fumes/Gases/Vapors																			
Carbon Dioxide	368	323	28	58	65	125	0	39	8	294	19	0	7	62	54	57	25	0	0
Carbon Monoxide	13,472	12,404	1,576	1,173	802	6,352	191	2,075	235	11,983	271	25	53	5,080	3,119	3,096	1,056	166	37
Chloramine Gas	777	737	27	23	33	568	0	76	10	714	22	1	0	187	78	236	97	1	0
Chlorine Gas	4,459	4,258	300	386	332	2,672	32	486	50	4,034	143	22	51	1,313	249	1,690	627	12	2
Chlorine Gas (When Household Acid is Mixed with Hypochlorite)	1,353	1,316	48	91	75	944	5	141	12	1,274	42	0	0	325	119	527	215	2	1
Hydrogen Sulfide (Sewer Gas)	1,169	1,054	59	43	51	486	7	386	22	1,037	5	1	4	307	321	237	77	12	5
Methane and Natural Gas	5,330	4,996	885	892	254	2,049	26	849	41	4,944	20	6	22	754	1,847	802	133	1	1
Other Types of Fume, Gas or Vapor	1,341	1,215	111	52	74	687	21	256	14	1,103	50	22	37	344	196	285	116	4	1
Polymer Fume Fever	7	7	0	1	0	6	0	0	0	7	0	0	0	2	3	3	0	0	0
Simple Asphyxiants	2,626	2,408	289	283	224	1,236	26	318	32	2,119	236	13	26	765	363	527	222	15	3
Unknown Types of Fume, Gas or Vapor	1,812	1,750	115	62	52	913	21	526	61	1,660	18	36	17	354	202	384	126	5	2
Category Total:	**32,714**	**30,468**	**3,438**	**3,064**	**1,962**	**16,038**	**329**	**5,152**	**485**	**29,169**	**826**	**126**	**217**	**9,493**	**6,551**	**7,844**	**2,694**	**218**	**52**

(Continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Heavy Metals																			
Miscellaneous Heavy Metals																			
Aluminum	1,066	983	495	61	41	254	6	75	51	929	17	18	12	78	182	42	16	4	0
Arsenic (Excluding Pesticides)	1,019	927	204	40	28	539	6	99	11	603	13	130	13	482	131	53	45	6	3
Barium, Soluble Salts	29	16	2	1	8	3	0	2	0	11	1	0	4	5	2	1	1	1	0
Cadmium	197	162	41	31	6	66	1	16	1	92	0	62	6	46	20	6	10	0	0
Copper	735	601	83	59	146	242	2	64	5	533	24	11	17	163	87	164	33	3	0
Fireplace Flame Colors	32	32	14	4	1	6	5	2	0	24	0	0	8	1	7	7	0	0	0
Gold	5	5	2	1	1	1	0	0	0	4	1	0	0	0	0	0	0	0	0
Lead	2,390	2,234	1,120	198	104	613	22	158	19	2,068	44	42	16	895	570	137	55	4	0
Manganese	69	34	5	1	5	19	0	3	1	24	0	1	5	19	1	6	7	0	0
Mercury (Other)	105	99	19	2	6	48	0	22	2	75	2	10	7	28	21	8	1	1	0
Mercury, Elemental (Excluding Thermometer)	1,700	1,622	159	193	261	697	5	269	38	1,357	113	52	52	376	442	36	20	0	0
Metal Fume Fever	564	512	33	26	51	358	1	41	2	448	33	8	22	160	22	155	60	2	0
Other Types of Heavy Metal	2,648	1,843	755	121	106	697	3	146	15	1,567	97	41	121	376	322	174	60	9	0
Selenium	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Thallium	17	12	0	0	0	8	0	4	0	6	0	1	5	10	0	1	2	0	0
Unknown Types of Heavy Metal	61	58	6	4	6	30	0	11	1	39	5	5	3	21	3	7	8	0	1
Category Total:	**10,638**	**9,141**	**2,938**	**742**	**770**	**3,582**	**51**	**912**	**146**	**7,781**	**350**	**381**	**291**	**2,660**	**1,810**	**797**	**318**	**30**	**4**
Hydrocarbons																			
Miscellaneous Hydrocarbons																			
Benzene	146	124	25	5	1	58	0	33	2	117	3	0	3	91	67	18	9	1	0
Carbon Tetrachloride	34	31	2	1	0	24	0	4	0	31	0	0	0	11	5	8	5	1	0
Diesel Fuels	997	941	166	26	49	553	2	123	22	863	50	15	6	239	156	303	43	1	0
Freon and Other Propellants	7,288	6,971	709	469	1,022	3,787	25	882	77	5,400	1,367	111	60	2,262	1,155	1,658	638	61	9
Gasolines	15,123	14,697	3,051	877	1,463	7,865	26	1,318	97	13,555	988	73	45	2,467	2,034	4,964	412	14	1
Kerosenes	1,204	1,144	534	58	48	398	8	91	7	1,079	43	19	1	363	212	300	83	12	0
Lamp Oils	1,875	1,849	1,350	59	52	339	3	44	2	1,797	26	19	3	585	489	450	177	12	2
Lighter Fluids and/or Naphtha	2,710	2,564	1,401	78	167	723	12	164	19	2,379	87	62	25	830	453	697	163	11	0
Lubricating Oils and/or Motor Oils	4,365	4,070	2,535	161	143	978	3	235	15	3,933	63	56	10	690	1,230	687	65	5	0
Mineral Seal Oil	29	29	19	0	2	8	0	0	0	28	0	1	0	5	9	4	1	0	0
Mineral Spirits	1,871	1,705	587	70	103	780	6	147	12	1,557	101	21	16	576	306	480	111	9	2
Other Types of Halogenated Hydrocarbon	304	268	48	8	14	170	0	26	2	241	18	6	3	104	33	87	26	1	0
Other Types of Hydrocarbon	4,687	4,358	2,245	158	204	1,439	10	277	25	4,105	155	54	37	1,064	1,035	975	192	17	1
Toluene and/or Xylene (Excluding Adhesives)	844	728	106	17	31	435	0	127	12	668	39	4	12	305	73	229	60	8	0
Turpentine	403	362	111	8	25	187	0	29	2	309	45	3	4	111	66	88	26	0	0
Unknown Types of Hydrocarbon	724	561	205	20	55	211	8	57	5	485	59	7	9	180	130	126	55	2	1
Category Total:	**42,604**	**40,402**	**13,094**	**2,015**	**3,379**	**17,955**	**103**	**3,557**	**299**	**36,547**	**3,044**	**451**	**234**	**9,883**	**7,453**	**11,074**	**2,066**	**155**	**16**
Industrial Cleaners																			
Miscellaneous Industrial Cleaners																			
Industrial Cleaner: Disinfectants	2,767	2,603	279	94	173	1,709	4	327	17	2,401	157	28	14	794	258	817	273	7	0
Industrial Cleaner: Other or Unknown	1,417	1,295	362	45	103	654	6	114	11	1,181	57	38	15	507	182	384	123	5	0
Industrial Cleaners: Acids	1,398	1,221	345	21	53	655	2	127	18	1,140	40	18	18	369	203	341	94	5	0
Industrial Cleaners: Alkalis	2,547	2,357	664	60	169	1,249	6	192	17	2,203	78	38	31	1,146	256	789	344	28	1

(Continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Industrial Cleaners: Anionics or Nonionics	687	612	303	22	36	214	0	31	6	578	20	5	5	131	107	119	22	2	0
Industrial Cleaners: Cationics	820	781	123	44	83	428	1	100	2	671	55	29	18	312	98	262	53	3	0
Category Total:	**9,636**	**8,869**	**2,076**	**286**	**617**	**4,909**	**19**	**891**	**71**	**8,174**	**407**	**156**	**101**	**3,259**	**1,104**	**2,712**	**909**	**50**	**1**
Information Calls																			
Food Information Calls																			
Information Calls About Food Products, Additives or Supplements	12,296	10,905	6,702	763	537	2,276	46	498	83	9,094	476	444	852	902	1,447	1,141	175	10	0
Information Calls About Possibly Spoiled Foods	17,379	16,921	4,680	1,667	1,080	7,551	91	1,699	153	15,690	47	462	674	879	2,019	1,216	208	4	0
Miscellaneous Information Calls																			
Medical Information	3	3	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0
Poison Information	2	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Category Total:	**29,680**	**27,830**	**11,383**	**2,430**	**1,617**	**9,830**	**137**	**2,197**	**236**	**24,787**	**523**	**906**	**1,526**	**1,781**	**3,466**	**2,357**	**383**	**14**	**0**
Lacrimators																			
Miscellaneous Lacrimators																			
Lacrimators: Capsicum Defense Sprays	3,783	3,748	735	664	572	1,274	40	363	100	2,889	151	538	57	649	143	1,735	179	1	0
Lacrimators: CN (Chloroacetophenone)	1,012	993	167	98	161	363	9	105	90	701	51	186	9	176	32	479	49	0	0
Lacrimators: CS (O-Chlorobenzylidene Malonitrile)	41	36	4	2	4	8	0	18	0	27	4	3	1	23	2	10	18	0	0
Lacrimators: Other	68	43	1	0	3	29	0	7	3	36	1	0	5	16	2	10	8	0	0
Lacrimators: Unknown	224	205	40	22	39	76	0	27	1	145	7	37	4	50	8	88	14	0	0
Category Total:	**5,128**	**5,025**	**947**	**786**	**779**	**1,750**	**49**	**520**	**194**	**3,798**	**214**	**764**	**76**	**914**	**187**	**2,322**	**268**	**1**	**0**
Matches/Fireworks/Explosives																			
Miscellaneous Matches/Fireworks/Explosives																			
Explosives	213	205	111	24	14	41	1	13	1	186	10	7	1	44	50	25	6	2	0
Fireworks	798	790	675	59	18	30	1	5	2	766	19	4	0	80	259	64	10	0	0
Matches	683	674	609	12	9	29	0	13	2	658	11	3	0	22	146	21	1	0	0
Other Types of Match, Firework, or Explosive	62	60	34	10	6	9	0	1	0	55	3	1	1	11	12	23	3	0	0
Unknown Types of Match, Firework, or Explosive	1	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
Category Total:	**1,757**	**1,730**	**1,430**	**105**	**47**	**109**	**2**	**32**	**5**	**1,666**	**43**	**15**	**2**	**157**	**468**	**133**	**20**	**2**	**0**
Mushrooms																			
Miscellaneous Mushrooms																			
Group 1 Mushrooms: Cyclopeptides	51	49	8	1	1	38	0	1	0	26	16	0	6	31	5	9	9	6	0
Group 1A Mushrooms: Orellanine	9	8	1	2	1	3	0	1	0	6	2	0	0	5	2	1	0	0	0
Group 2 Mushrooms: Muscimol (Ibotenic Acid)	48	42	5	0	8	28	0	1	0	18	24	0	0	35	3	8	20	2	0
Group 3 Mushrooms: Monomethylhydrazine (MMH)	17	17	3	2	2	9	0	1	0	15	0	0	2	4	8	2	1	0	0
Group 4 Mushrooms: Muscarine and Histamine	27	22	1	0	0	21	0	0	0	18	4	0	0	12	1	14	2	0	0
Group 5 Mushrooms: Coprine	11	6	5	0	0	1	0	0	0	5	1	0	0	3	3	0	0	0	0
Group 6 Mushrooms: Hallucinogenics (Psilocybin and Psilocin)	643	478	26	4	208	202	1	31	6	74	394	2	6	344	23	92	193	6	0

(Continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Group 7 Mushrooms: Gastrointestinal Irritants	197	180	45	23	8	93	2	8	1	132	31	0	17	99	35	90	25	1	0
Mushrooms: Miscellaneous, Non-Toxic	131	108	53	8	7	35	0	5	0	92	4	0	12	21	31	17	3	0	0
Mushrooms: Other Potentially Toxic	164	158	62	13	6	73	1	2	1	119	10	0	24	45	31	36	9	1	0
Mushrooms: Unknown	4,977	4,844	3,180	403	313	811	11	102	24	4,176	526	13	106	1,559	2,168	612	216	7	1
Category Total:	**6,275**	**5,912**	**3,389**	**456**	**554**	**1,314**	**15**	**152**	**32**	**4,681**	**1,012**	**15**	**173**	**2,158**	**2,310**	**881**	**478**	**23**	**1**
Other/Unknown Nondrug Substances																			
Miscellaneous Other/Unknown Nondrug Substances																			
Other Non-Drug Substances	26,101	24,112	12,249	2,103	1,401	6,445	129	1,459	326	20,723	1,621	681	845	4,365	4,521	4,080	1,081	62	7
Unknown Substances Unlikely to be Drug Products	5,828	5,525	1,541	374	290	2,405	35	761	119	3,682	243	885	285	1,694	522	776	288	51	6
Category Total:	**31,929**	**29,637**	**13,790**	**2,477**	**1,691**	**8,850**	**164**	**2,220**	**445**	**24,405**	**1,864**	**1,566**	**1,130**	**6,059**	**5,043**	**4,856**	**1,369**	**113**	**13**
Paints and Stripping Agents																			
Miscellaneous Paints and Stripping Agents																			
Other Types of Paint, Varnish or Lacquer	409	381	157	34	19	127	2	35	7	362	9	0	8	65	69	63	18	0	0
Unknown Types of Paint, Varnish or Lacquer	6,324	5,980	4,072	277	194	1,098	36	286	17	5,777	98	24	74	654	1,018	502	101	6	0
Varnishes and Lacquers	1,103	1,021	317	37	48	475	7	126	11	981	19	7	14	189	140	252	41	2	0
Paints																			
Anti-Algae Paints	18	16	0	0	3	10	0	3	0	15	1	0	0	5	3	3	0	0	0
Anti-Corrosion Paints	39	35	3	1	5	25	0	0	1	33	0	0	2	9	3	8	5	0	0
Oil-Base Paints	2,175	2,014	551	271	182	815	8	180	7	1,829	117	9	50	394	260	489	86	6	0
Water Base Paints (Acrylic, Latex, etc)	3,445	3,378	2,623	154	78	425	7	85	6	3,318	28	6	26	216	621	200	28	0	0
Wood stains	615	584	269	16	18	222	0	55	4	563	4	6	11	75	101	92	19	1	0
Stripping Agents																			
Methylene Chloride Stripping Agents	375	354	50	8	29	215	2	47	3	335	9	1	8	117	32	129	31	1	0
Other Types of Stripping Agent	547	511	97	14	30	306	2	60	2	484	14	4	7	202	43	149	76	2	0
Unknown Types of Stripping Agent	80	71	9	2	2	53	0	5	0	68	1	0	2	30	5	27	7	0	0
Category Total:	**15,130**	**14,345**	**8,148**	**814**	**608**	**3,771**	**64**	**882**	**58**	**13,765**	**300**	**57**	**202**	**1,956**	**2,295**	**1,914**	**412**	**18**	**0**
Pesticides																			
Fumigants																			
Aluminum Phosphide	64	50	6	0	4	33	0	6	1	48	1	0	1	33	0	18	6	0	2
Methyl Bromide	3	3	0	0	0	1	0	2	0	3	0	0	0	2	1	0	0	0	0
Other Fumigants	23	23	4	0	0	15	0	4	0	21	0	0	2	7	3	5	0	0	0
Sulfuryl Fluoride	208	181	28	14	7	99	0	30	3	166	3	4	7	34	19	15	2	1	0
Unknown Fumigants	96	93	10	5	3	65	0	9	1	88	0	2	3	15	7	17	7	0	0
Fungicides (Non-medicinal)																			
Carbamate Fungicides	155	122	29	7	4	62	0	19	1	117	1	1	3	42	22	28	13	0	0
Copper Compound Fungicides	68	62	9	1	0	44	0	8	0	56	3	0	3	11	7	13	3	0	0
Mercurial Fungicides	3	3	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0
Other Types of Non-Medicinal Fungicide	631	525	133	17	17	305	2	46	5	496	12	3	13	99	105	112	17	0	1

(Continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Phthalimide Fungicides	59	30	15	3	1	10	0	1	0	26	4	0	0	2	8	3	1	0	0
Unknown Types of Non-Medicinal Fungicide	22	15	6	0	0	8	0	1	0	15	0	0	0	2	0	3	1	0	0
Wood Preservatives	172	161	25	11	5	95	1	22	2	149	4	0	8	30	21	22	5	1	0
Herbicides (Including Algaecides, Defoliants, Desiccants, Plant Growth Regulators)																			
2,4-D or 2,4,5-T	20	18	6	1	1	8	0	2	0	18	0	0	0	4	6	1	0	0	0
Carbamate Herbicides (Excluding Metam Sodium)	19	16	2	0	3	11	0	0	0	13	0	0	2	7	3	3	1	2	0
Chlorophenoxy Herbicides	2,321	2,073	525	107	62	1,166	2	197	14	1,932	50	18	64	362	403	436	63	1	0
Diquat	200	177	36	6	4	114	0	17	0	171	2	1	3	35	30	28	6	0	0
Glyphosate	4,238	3,963	1,030	165	118	2,284	6	332	28	3,711	75	16	146	621	854	1,065	81	9	2
Other Types of Herbicide	1,352	1,083	265	42	29	610	8	122	7	1,031	12	4	31	216	210	206	47	4	0
Paraquat	76	63	3	1	7	45	0	7	0	56	6	1	0	46	13	17	9	2	3
Triazine Herbicides	296	252	75	12	9	134	0	21	1	231	2	3	14	51	34	44	5	0	0
Unknown Types of Herbicide	443	374	88	28	12	197	1	46	2	340	10	13	7	93	68	69	12	1	0
Urea Herbicides	66	53	22	0	1	24	0	6	0	50	0	0	3	8	10	11	0	0	0
Insecticides (Including Insect Growth Regulators, Molluscicides, Nematicides)																			
Carbamate Insecticides Alone	2,118	1,966	746	107	63	871	4	160	15	1,818	79	19	39	401	423	279	83	13	4
Carbamate Insecticides in Combination with Other Insecticides	307	288	58	12	20	156	2	37	3	264	11	9	3	44	38	64	10	0	0
Chlorinated Hydrocarbon Insecticides Alone	302	256	87	13	9	111	1	33	2	234	10	3	8	67	53	41	12	3	0
Chlorinated Hydrocarbon Insecticides in Combination with Other Insecticides	288	274	95	17	6	134	2	18	2	263	4	0	5	49	27	79	12	1	0
Insect Growth Regulators	175	106	55	7	2	33	0	8	1	102	1	0	3	15	29	14	1	0	0
Metaldehyde	153	148	52	0	2	78	0	14	2	145	0	1	2	12	26	13	1	0	0
Nicotine (Excluding Tobacco Products)	20	17	4	3	0	9	0	1	0	16	1	0	0	1	1	3	1	0	0
Organophosphate Insecticides Alone	2,909	2,652	722	171	107	1,331	10	249	62	2,445	103	21	71	652	578	530	109	20	4
Organophosphate Insecticides in Combination with Carbamate Insecticides	83	73	29	6	2	24	0	12	0	68	2	0	2	11	18	18	2	0	0
Organophosphate Insecticides in Combination with Non-Carbamate Insecticides	812	771	129	41	47	471	3	74	6	723	25	6	17	137	109	185	30	0	0
Organophosphate/Carbamate/Chlorinated Hydrocarbon (Fixed-Combo)	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Other Types of Insecticide	9,590	9,135	4,504	392	222	3,298	32	602	85	8,743	112	40	221	803	1,830	1,168	114	4	1
Piperonyl Butoxide & Pyrethrins (without Carbamate or O.P.)	173	158	66	21	6	51	0	12	2	147	3	0	8	24	19	37	8	0	0
Pyrethrins	5,568	5,211	1,754	428	202	2,277	19	483	48	4,754	153	24	267	781	785	1,125	178	6	0
Pyrethrins Only (Alone)	5	5	0	0	1	3	0	1	0	5	0	0	0	0	1	0	0	0	0
Pyrethroids	24,063	22,856	5,897	1,223	1,013	12,469	46	1,991	217	21,157	633	180	829	3,612	3,531	5,735	773	12	2
Rotenone	73	71	24	3	3	40	0	1	0	69	0	0	2	10	16	14	2	0	0
Unknown Types of Insecticide	4,381	4,028	1,022	223	165	1,966	17	569	66	3,626	106	105	151	1,066	495	770	181	9	1
Veterinary Insecticide/Pesticide Product (For Pets-Flea Collars, Etc.)	69	69	21	5	3	31	1	7	1	65	1	0	3	8	8	7	0	0	0

(Continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Miscellaneous Pesticides																			
Arsenic Pesticides	70	67	43	2	0	19	0	3	0	66	1	0	0	4	16	2	0	0	0
Borates and/or Boric Acid Pesticides (Excluding Other Uses)	5,065	5,000	4,270	92	62	466	7	87	16	4,924	37	17	20	338	1,281	142	16	0	0
Metam Sodium	2	2	0	0	0	1	0	0	1	2	0	0	0	1	0	0	0	0	0
Repellents																			
Animal Repellents	370	359	122	33	19	155	0	29	1	336	10	8	4	42	44	94	12	0	0
Insect Repellants (Exclude Lacrimators)	16	15	6	1	1	6	0	0	1	15	0	0	0	1	1	2	0	0	0
Insect Repellents with DEET	5,345	5,253	3,194	685	251	934	10	165	14	4,850	68	44	280	486	801	1,564	97	4	0
Insect Repellents without DEET	1,453	1,407	971	143	41	209	1	40	2	1,327	22	7	50	102	274	276	17	0	0
Naphthalene Moth Repellants (Excluding Deodorizing Products)	1,474	1,438	1,004	53	23	273	2	72	11	1,375	31	17	12	266	480	90	20	0	0
Other Types of Moth Repellant	2	2	2	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0
Paradichlorobenzene Moth Repellants (Excluding Deodorizing Products)	110	105	51	6	4	38	0	5	1	103	1	0	1	9	18	7	3	0	0
Unknown Types of Moth Repellant	2,277	2,239	1,122	92	42	657	32	274	20	2,113	84	12	24	340	570	218	29	2	0
Rodenticides																			
ANTU (1-naphthalenylthiourea)	5	5	0	1	4	0	0	0	0	3	0	0	2	0	0	0	0	0	0
Bromethalin Rodenticides	578	554	407	13	10	87	5	21	11	514	21	15	2	185	174	11	2	1	0
Cholecalciferol Rodenticides	13	13	5	2	0	6	0	0	0	12	0	1	0	2	6	1	0	0	0
Long-Acting Anticoagulant Rodenticides	10,488	10,227	8,966	198	90	765	17	160	31	9,796	331	78	7	2,774	3,151	124	46	17	0
Other Types of Rodenticide	619	602	440	34	16	84	2	19	7	572	19	3	7	56	154	17	6	6	0
Sodium Monofluoroacetate	2	2	1	0	0	1	0	0	0	1	1	0	0	2	0	0	1	0	0
Strychnine Rodenticides	70	57	14	1	2	32	0	6	2	30	13	10	1	30	17	8	0	2	1
Unknown Types of Rodenticide	1,397	1,291	895	38	32	233	14	60	19	1,119	96	54	6	516	370	43	11	6	0
Warfarin Type Anticoagulant Rodenticides	280	269	210	6	5	31	4	11	2	250	12	5	1	73	91	4	2	2	0
Zinc Phosphide Rodenticides	101	87	28	1	1	40	0	15	2	81	5	1	0	27	24	12	2	0	0
Category Total:	**91,362**	**86,419**	**39,333**	**4,493**	**2,763**	**32,724**	**251**	**6,137**	**718**	**80,877**	**2,181**	**746**	**2,358**	**14,667**	**17,284**	**14,813**	**2,060**	**129**	**21**
Photographic Products																			
Miscellaneous Photographic Products																			
Developers, Fixing Baths, Stop Baths	169	148	15	5	60	52	2	13	1	143	0	0	5	40	26	41	5	0	0
Other Types of Photographic Product	254	238	143	12	19	54	0	10	0	231	3	1	3	25	33	44	6	0	0
Photographic Coating Fluids	4	4	2	0	0	2	0	0	0	4	0	0	0	0	2	2	0	0	0
Unknown Types of Photographic Product	7	6	2	0	1	2	0	1	0	6	0	0	0	3	0	2	2	0	0
Category Total:	**434**	**396**	**162**	**17**	**80**	**110**	**2**	**24**	**1**	**384**	**3**	**1**	**8**	**68**	**61**	**89**	**13**	**0**	**0**
Plants																			
Miscellaneous Plants																			
Plants: Amygdalin and/or Cyanogenic Glycosides	2,910	2,833	1,744	398	93	473	11	109	5	2,653	93	11	71	169	619	139	15	1	0

(Continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Plants: Anticholinergics	834	754	337	42	196	152	1	18	8	476	262	1	8	328	165	71	153	25	2
Plants: Cardiac Glycosides (Excluding Drugs)	1,414	1,373	739	185	42	326	5	73	3	1,247	94	2	27	220	344	122	32	0	0
Plants: Colchicine	19	19	10	6	1	2	0	0	0	18	1	0	0	4	9	4	1	0	0
Plants: Depressants	198	172	113	11	13	31	0	3	1	138	24	1	7	23	35	13	3	2	0
Plants: Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	8,573	8,237	5,896	743	195	1,150	26	208	19	7,772	281	13	159	718	1,687	749	120	5	0
Plants: Hallucinogenics (Code as Street Drug Unless Plant Part Involved)	469	395	120	19	118	123	1	12	2	184	188	4	17	165	66	53	77	3	0
Plants: Nicotine (Excluding Tobacco Products)	212	195	97	26	11	52	0	9	0	181	12	0	1	67	56	52	16	2	0
Plants: Non-Toxic	7,561	7,090	5,194	774	158	734	28	177	25	6,533	161	10	379	368	916	457	78	5	0
Plants: Other Toxic Types	4,939	4,677	3,250	569	165	527	18	127	21	4,277	252	11	129	504	1,129	343	95	9	0
Plants: Oxalates	6,071	5,984	4,792	512	137	435	5	92	11	5,695	228	11	44	307	1,242	983	51	0	0
Plants: Skin Irritants (Excluding Oxalate Containing Plants)	6,014	5,611	2,794	530	282	1,560	28	383	34	5,118	158	29	291	593	682	701	188	4	0
Plants: Solanine	1,428	1,392	901	149	31	234	6	63	8	1,308	27	12	43	130	372	73	10	0	0
Plants: Stimulants	181	164	39	26	13	71	0	15	0	114	36	2	7	57	29	30	16	0	0
Plants: Toxalbumins	177	167	79	12	15	48	0	12	1	139	22	4	1	57	40	25	5	0	0
Plants: Unknown Toxic Types or Unknown if Toxic	12,295	11,696	8,258	1,414	320	1,312	40	305	47	10,941	477	31	226	1,072	2,634	952	148	5	0
Category Total:	**53,295**	**50,759**	**34,363**	**5,416**	**1,790**	**7,230**	**169**	**1,606**	**185**	**46,794**	**2,316**	**142**	**1,410**	**4,782**	**10,025**	**4,767**	**1,008**	**61**	**2**
Polishes and Waxes																			
Miscellaneous Polishes and Waxes																			
Floor Waxes, Polishes, or Sealers	537	511	302	17	15	138	0	37	2	474	12	21	3	85	140	93	12	0	0
Furniture Polishes	2,145	2,090	1,786	54	34	176	4	31	5	2,027	38	17	7	201	654	253	27	3	0
Miscellaneous Polishes and Waxes (Excluding Mineral Seal Oils)	2,824	2,730	2,124	69	65	384	4	77	7	2,637	44	22	21	326	707	340	45	2	0
Category Total:	5,506	5,331	4,212	140	114	698	8	145	14	5,138	94	60	31	612	1,501	686	84	5	0
Radiation																			
Miscellaneous Radiation																			
Nonpharmaceutical Radiation: Type Unknown	267	247	17	16	11	138	0	54	11	197	11	16	17	78	39	20	9	0	0
Category Total:	267	247	17	16	11	138	0	54	11	197	11	16	17	78	39	20	9	0	0
Sporting Equipment																			
Miscellaneous Sporting Equipment																			
Fishing Baits	60	56	49	2	2	2	0	1	0	53	3	0	0	1	14	3	0	0	0
Fishing Products, Miscellaneous	18	16	8	3	0	4	0	0	1	14	1	0	1	2	2	0	1	0	0
Golf Balls (Including Liquid Center of Golf Balls)	2	2	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0
Gun Bluing Compounds	34	31	15	0	0	10	0	5	1	29	1	1	0	17	9	6	4	0	0
Hunting Products, Miscellaneous	343	330	199	26	15	65	0	21	4	282	12	24	5	100	97	37	8	0	0
Other Types of Sporting Equipment	17	16	12	0	1	2	0	1	0	16	0	0	0	0	5	4	0	0	0

(Continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Unknown Types of Sporting Equipment	3	3	1	0	0	2	0	0	0	3	0	0	0	0	1	0	0	0	0
Category Total:	**477**	**454**	**285**	**31**	**19**	**85**	**0**	**28**	**6**	**398**	**18**	**25**	**6**	**120**	**128**	**50**	**13**	**0**	**0**
Swimming Pool/Aquarium																			
Miscellaneous Swimming Pool/Aquarium																			
Algicides	2,025	1,940	572	240	99	872	13	125	19	1,859	41	7	32	369	209	609	178	3	0
Aquarium Products, Miscellaneous	1,574	1,483	1,176	61	33	169	1	39	4	1,436	23	18	5	129	415	117	8	0	0
Bromine Shock Treatments	123	117	53	8	6	42	0	8	0	113	2	0	2	18	23	34	4	0	0
Chlorine Shock Treatments	3,434	3,298	573	491	251	1,717	20	229	17	3,158	65	18	52	910	186	1,369	423	7	0
Other Types of Swimming Pool or Aquarium Product	1,674	1,564	427	210	108	721	3	88	7	1,479	29	2	46	340	203	519	124	2	0
Swimming Pool and Aquarium Test Kits	234	201	156	3	7	31	0	3	1	198	2	1	0	28	49	23	4	0	0
Category Total:	**9,064**	**8,603**	**2,957**	**1,013**	**504**	**3,552**	**37**	**492**	**48**	**8,243**	**162**	**46**	**137**	**1,794**	**1,085**	**2,671**	**741**	**12**	**0**
Tobacco/Nicotine Products																			
Miscellaneous Tobacco Products																			
Chewing Tobacco	883	868	745	18	30	57	4	10	4	827	26	3	6	227	244	279	17	0	0
Cigarettes	5,955	5,774	5,363	46	69	237	11	43	5	5,639	75	25	28	972	2,006	1,088	73	1	0
Cigars	96	88	67	2	4	12	1	2	0	75	3	0	10	16	34	17	2	0	0
Filter Tips Only (i.e. Butts)	142	136	125	2	2	5	0	2	0	135	1	0	0	20	54	19	2	0	0
Other Types of Tobacco Product	84	76	39	2	3	26	0	6	0	61	7	0	7	19	10	18	6	0	0
Snuff	473	455	361	6	24	53	0	11	0	431	13	2	7	129	126	138	11	2	0
Unknown Types of Tobacco Product	1,125	1,074	728	18	44	219	1	56	8	934	64	7	63	280	285	233	42	2	0
Nicotine Containing (Excluding Tobacco Products)																			
Electronic Cigarettes: Device and/or Cartridge Containing Nicotine	29	28	5	0	4	19	0	0	0	20	2	0	6	10	4	11	1	0	0
Electronic Cigarettes: Nicotine Liquid	1	1	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0
Category Total:	**8,788**	**8,500**	**7,434**	**94**	**180**	**628**	**17**	**130**	**17**	**8,123**	**191**	**37**	**127**	**1,674**	**2,764**	**1,803**	**154**	**5**	**0**
Waterproofers/Sealants																			
Miscellaneous Waterproofers/Sealants																			
Waterproofers/sealants: aerosols	260	247	116	19	28	70	0	14	0	220	22	0	5	71	51	61	13	4	0
Waterproofers/sealants: liquids	114	110	54	6	3	44	0	3	0	100	4	1	5	25	25	25	10	1	0
Waterproofers/sealants: solids	3	3	2	0	0	1	0	0	0	2	1	0	0	0	0	1	0	0	0
Waterproofers/sealants: unknown form	43	42	16	0	2	22	0	2	0	40	0	0	1	7	6	5	5	0	0
Category Total:	**420**	**402**	**188**	**25**	**33**	**137**	**0**	**19**	**0**	**362**	**27**	**1**	**11**	**103**	**82**	**92**	**28**	**5**	**0**
Weapons of Mass Destruction																			
Miscellaneous Weapons of Mass Destruction																			
Anthrax	7	7	0	0	0	6	0	1	0	4	0	2	0	2	4	0	0	0	0
Other Biological Weapons	17	16	0	0	1	13	0	2	0	15	0	0	1	8	2	2	0	0	0
Other Chemical Weapons	109	84	3	4	2	61	0	10	4	76	3	0	2	42	11	20	8	1	1
Other Suspicious Powders	6	6	0	0	0	2	0	4	0	3	0	3	0	3	2	0	2	0	0

(Continued)

Table 22A. Demographic profile of SINGLE SUBSTANCE Nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Other Suspicious Substances (Non-Powder)	4	4	0	0	1	1	0	2	0	2	0	1	0	2	0	1	1	0	0
Suspicious Powders in Envelope or Package	10	10	1	1	0	6	0	2	0	1	0	8	0	0	7	0	0	0	0
Category Total:	**153**	**127**	**4**	**5**	**4**	**89**	**0**	**21**	**4**	**101**	**3**	**14**	**3**	**57**	**26**	**23**	**11**	**1**	**1**
Nonpharmaceuticals Total:	**1,232,413**	**1,125,336**	**631,401**	**74,673**	**51,825**	**296,815**	**3,576**	**60,158**	**6,888**	**1,052,278**	**39,041**	**12,020**	**18,135**	**165,663**	**194,098**	**182,012**	**34,678**	**2,327**	**243**

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Pharmaceuticals																			
Analgesics																			
Acetaminophen Alone																			
Acetaminophen Alone, Adult	37,054	24,464	7,139	1,091	4,807	10,176	20	1,056	175	13,061	10,359	314	472	12,578	6,528	2,683	1,528	466	45
Acetaminophen Alone, Pediatric	29,837	27,533	25,544	1,619	136	155	49	17	13	26,707	236	378	180	3,765	6,493	278	53	9	2
Acetaminophen Alone, Unknown if Adult or Pediatric	6,416	3,816	1,277	158	631	1,563	1	135	51	2,011	1,662	4	37	2,178	1,059	420	329	132	13
Acetaminophen Combinations																			
Acetaminophen in Combination with Other Drugs, Adult Formulations	19,262	11,318	2,616	277	2,140	5,742	9	431	103	4,336	6,585	29	264	7,042	2,567	2,433	1,569	200	12
Acetaminophen in Combination with Other Drugs, Pediatric Formulations	269	238	210	24	3	1	0	0	0	233	1	1	1	43	74	24	1	0	0
Acetaminophen with Codeine	4,307	2,260	681	146	334	965	3	119	12	1,233	747	1	254	1,030	539	444	133	13	2
Acetaminophen with Diphenhydramine	9	5	0	0	1	3	0	1	0	1	4	0	0	4	0	1	2	0	1
Acetaminophen with Hydrocodone	27,839	12,250	2,241	345	1,385	7,384	10	745	140	5,494	5,766	43	741	6,229	2,829	2,227	948	177	30
Acetaminophen with Other Narcotics or Narcotic Analogs	813	368	57	11	39	238	0	20	3	151	179	2	28	218	74	76	55	13	3
Acetaminophen with Oxycodone	10,164	4,606	936	128	390	2,793	7	301	51	2,109	1,971	34	400	2,331	1,034	882	387	90	10
Acetaminophen with Propoxyphene	3,810	1,698	295	31	165	1,093	2	100	12	788	800	4	81	952	384	341	194	42	7
Acetylsalicylic Acid Alone																			
Acetylsalicylic Acid Alone, Adult Formulations	7,318	4,142	1,765	183	696	1,385	1	85	27	2,353	1,650	11	90	2,095	1,157	473	578	50	2
Acetylsalicylic Acid Alone, Pediatric Formulations	840	529	392	50	24	52	0	11	0	462	40	19	6	115	170	14	10	1	0
Acetylsalicylic Acid Alone, Unknown if Adult or Pediatric Formulations	9,764	5,081	1,671	177	954	2,065	5	167	42	2,380	2,468	3	124	3,030	1,109	808	896	111	19
Acetylsalicylic Acid Combinations																			
Acetylsalicylic Acid in Combination with Other Drugs, Adult Formulations	1,565	960	333	50	75	448	1	47	6	603	278	1	62	391	201	139	110	18	3
Acetylsalicylic Acid in Combination with Other Drugs, Pediatric Formulations	1	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Acetylsalicylic Acid with Carisoprodol	34	13	1	0	1	8	0	2	1	4	7	1	1	6	1	6	1	0	0
Acetylsalicylic Acid with Codeine	82	50	9	2	7	31	0	1	0	18	30	0	1	30	8	12	6	3	0
Acetylsalicylic Acid with Other Narcotics or Narcotic Analogs	37	11	2	0	2	6	0	0	1	3	6	0	2	5	3	2	1	0	0
Acetylsalicylic Acid with Oxycodone	42	20	3	0	1	15	0	1	0	11	8	0	1	5	4	4	0	0	0
Acetylsalicylic Acid with Propoxyphene	9	6	2	0	0	3	0	1	0	5	1	0	0	1	1	0	1	0	0
Miscellaneous Analgesics																			
Non-Aspirin Salicylates (Excluding Topicals and/or Gastrointestinal Drugs)	415	328	216	12	25	63	0	12	0	271	40	0	15	86	105	26	15	1	0
Other Analgesics	410	323	164	6	17	117	1	18	0	274	17	0	31	46	66	61	12	1	0
Phenacetin	1	1	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0
Phenazopyridine	1,308	1,095	832	21	40	169	0	30	3	979	41	2	68	211	380	105	30	5	0
Salicylamide	4	2	0	1	0	1	0	0	0	2	0	0	0	0	0	2	0	0	0
Unknown Analgesics	197	84	24	2	19	32	0	7	0	39	40	0	5	43	17	16	7	0	0
Nonsteroidal Antiinflammatory Drugs																			
Colchicine	410	254	49	13	5	173	1	11	2	197	30	0	27	137	48	52	33	10	5
Cyclooxygenase-2 Inhibitors	1,104	596	257	22	18	260	2	36	1	523	41	0	32	95	159	23	7	1	0
Ibuprofen	82,573	65,699	47,164	3,125	5,516	8,653	73	978	190	55,358	9,169	284	730	11,240	15,422	3,134	707	46	0
Ibuprofen with Diphenhydramine	6	6	4	2	0	0	0	0	0	5	1	0	0	2	2	0	0	0	0
Ibuprofen with Hydrocodone	155	98	33	12	10	37	1	4	1	58	30	0	5	39	25	10	4	1	0
Indomethacin	551	331	98	19	18	174	0	22	0	234	63	0	34	95	74	42	8	0	0
Ketoprofen	101	59	31	4	7	16	0	1	0	48	8	0	3	8	22	3	1	0	0
Naproxen	12,477	7,550	2,634	255	1,302	2,952	2	349	56	4,809	2,243	5	455	2,367	1,914	859	160	7	0
Other Types of Nonsteroidal Antiinflammatory Drug	6,693	3,974	1,739	186	226	1,553	7	237	26	3,257	503	6	191	796	1,056	362	62	9	0
Unknown Types of Nonsteroidal Antiinflammatory Drug	10	6	1	0	2	1	0	1	1	2	2	0	1	4	0	2	1	0	0
Opioids																			
Buprenorphine	771	514	293	4	30	147	5	27	8	340	121	16	31	381	70	168	86	7	0
Butorphanol	21	16	4	0	0	7	0	5	0	10	3	0	2	7	4	5	1	0	0
Codeine	1,993	1,501	738	200	106	402	0	51	4	1,270	152	1	70	296	409	155	31	1	0
Fentanyl	300	167	11	3	11	125	0	13	4	36	104	4	19	116	12	25	50	18	2
Hydrocodone Alone or in Combination (Excluding Combination Products with Acetaminophen, Acetylsalicylic Acid or Ibuprofen)	316	193	40	15	24	98	0	13	3	116	59	1	15	64	26	47	14	0	0

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Hydromorphone	4	3	0	0	0	3	0	0	0	1	1	0	1	1	0	2	0	0	0
Levorphanol	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
Meperidine	270	140	18	10	16	84	0	10	2	66	59	1	13	79	30	25	19	3	0
Methadone	4,866	2,115	284	30	170	1,439	3	152	37	730	1,095	67	128	1,482	255	340	477	205	22
Morphine	4,102	2,108	338	41	118	1,374	3	193	41	1,065	788	39	168	1,188	355	380	293	94	7
Nalbuphine	2	2	0	0	0	2	0	0	0	0	0	0	2	2	0	1	1	0	0
Other or Unknown Narcotics	9,001	5,032	1,561	111	306	2,574	16	392	72	2,549	1,789	138	466	3,151	734	1,188	820	247	13
Oxycodone Alone or in Combination (Excluding Combination Products with Acetaminophen or Acetylsalicylic Acid)	9,157	4,278	696	121	372	2,597	8	412	72	2,102	1,746	67	262	2,160	700	804	478	112	12
Oxymorphone	169	89	11	2	12	55	0	8	1	29	51	3	5	62	13	11	19	10	0
Pentazocine	79	47	3	4	5	28	0	6	1	21	15	1	9	25	6	8	8	0	0
Propoxyphene	257	99	16	0	7	67	0	8	1	42	45	1	9	54	14	15	13	4	0
Remifentanil	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tapentadol	67	40	1	0	0	37	0	2	0	15	19	1	4	21	6	8	6	1	0
Tramadol	11,225	5,817	1,122	167	656	3,500	3	323	46	2,450	2,867	36	386	3,551	1,282	1,223	909	181	3
Other Acetaminophen and Acetylsalicylic Acid Combinations																			
Acetaminophen and Acetylsalicylic Acid with Other Ingredients	8,711	6,071	3,092	102	1,028	1,679	3	135	32	4,023	1,825	2	200	2,422	1,664	884	328	16	0
Acetaminophen and Acetylsalicylic Acid without Other Ingredients	335	214	93	8	22	81	0	10	0	143	56	1	12	73	39	17	21	6	0
Category Total:	**317,535**	**208,222**	**106,743**	**8,790**	**21,879**	**62,627**	**236**	**6,706**	**1,241**	**143,029**	**55,822**	**1,521**	**6,144**	**72,353**	**49,146**	**21,270**	**11,423**	**2,311**	**213**
Anesthetics																			
Inhalation Anesthetics																			
Nitrous Oxide	159	127	14	21	24	52	0	13	3	55	50	1	19	62	10	29	22	0	0
Other Types of Inhalation Anesthetic	125	100	10	0	13	60	0	15	2	67	21	5	3	59	19	27	6	1	1
Local and/or Topical Anesthetics																			
Dibucaine	21	20	13	0	0	5	0	2	0	20	0	0	0	1	12	0	0	0	0
Lidocaine	1,589	1,398	586	114	94	510	5	77	12	1,172	81	7	127	320	347	172	68	14	1
Other or Unknown Local and/or Topical Anesthetic	5,575	5,313	3,775	222	163	953	6	176	18	4,901	149	14	236	730	1,708	584	90	11	0
Miscellaneous Anesthetics																			
Ketamine and Analogs	154	74	7	3	9	46	0	7	2	21	47	2	4	60	7	15	28	4	0
Other Types of Anesthetic	37	30	10	4	2	10	0	4	0	23	2	0	5	11	4	4	3	1	0
Unknown Types of Anesthetic	5	3	0	0	0	3	0	0	0	2	1	0	0	1	0	0	0	0	0
Category Total:	7,665	7,065	4,415	364	305	1,639	11	294	37	6,261	351	29	394	1,244	2,107	831	217	31	2
Anticholinergic Drugs																			
Miscellaneous Anticholinergic Drugs																			
Anticholinergic Drugs (Excluding Cough and Cold Preparations, and Plants)	11,413	9,148	390	76	115	7,348	10	1,147	62	8,686	300	5	134	724	1,409	251	174	21	1

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Category Total:	11,413	9,148	390	76	115	7,348	10	1,147	62	8,686	300	5	134	724	1,409	251	174	21	1
Anticoagulants																			
Miscellaneous Anticoagulants																			
Glycoprotein IIIa/IIb Inhibitors	10	9	0	0	0	5	0	2	2	5	0	0	4	8	2	0	3	0	0
Heparins	301	239	27	6	2	172	1	29	2	173	14	0	48	105	44	31	27	2	2
Other Antiplatelets	2,887	1,075	314	21	7	620	0	108	5	1,003	36	0	32	158	228	23	13	0	0
Other Types of Anticoagulant	42	35	11	2	0	20	0	1	1	28	0	0	6	20	7	2	2	3	1
Unknown Types of Anticoagulant	27	20	12	1	2	4	0	0	1	15	4	0	0	7	6	0	0	1	0
Warfarin (Excluding Rodenticides)	4,295	2,590	1,054	32	35	1,302	7	144	16	2,240	246	10	79	824	596	67	140	21	0
Category Total:	**7,562**	**3,968**	**1,418**	**62**	**46**	**2,123**	**8**	**284**	**27**	**3,464**	**300**	**10**	**169**	**1,122**	**883**	**123**	**185**	**27**	**3**
Anticonvulsants																			
Miscellaneous Anticonvulsants																			
Carbamazepine	4,282	2,248	458	101	213	1,374	1	91	10	1,147	811	2	214	1,489	349	622	471	67	1
Other Types of Anticonvulsant (Excluding Barbiturates)	29,698	13,230	3,675	899	1,567	6,325	10	674	80	8,407	4,004	28	677	5,956	3,366	2,526	1,080	133	5
Phenytoin	3,441	2,145	202	25	61	1,749	1	91	16	962	569	1	496	1,596	329	553	519	39	3
Primidone	285	131	17	1	4	99	0	8	2	96	26	0	8	53	20	36	12	1	0
Succinimides	112	91	53	20	5	12	1	0	0	81	5	0	5	18	25	14	2	0	0
Unknown Types of Anticonvulsant (Excluding Barbiturates)	21	8	1	1	2	2	0	1	1	4	2	0	0	4	0	2	0	0	0
Valproic Acid	8,226	3,211	530	232	454	1,822	2	143	28	1,584	1,213	1	327	1,886	821	636	425	50	2
Category Total:	46,065	21,064	4,936	1,279	2,306	11,383	15	1,008	137	12,281	6,630	32	1,727	11,002	4,910	4,389	2,509	290	11
Antidepressants																			
Cyclic Antidepressants																			
Amitriptyline	6,104	2,684	466	87	323	1,687	2	103	16	1,025	1,519	3	81	1,962	475	581	685	217	9
Amoxapine	29	9	0	0	0	8	0	1	0	2	5	0	2	7	1	3	2	1	0
Cyclic Antidepressants Formulated with a Benzodiazepine	22	10	2	0	3	5	0	0	0	3	7	0	0	8	2	1	5	2	0
Cyclic Antidepressants Formulated with a Phenothiazine	61	20	4	1	2	12	0	1	0	8	12	0	0	11	5	5	7	0	0
Desipramine	78	29	3	1	0	25	0	0	0	19	6	0	4	14	4	7	7	1	0
Doxepin	1,190	476	50	23	45	336	0	16	6	167	284	1	16	350	69	122	114	36	5
Imipramine	502	226	61	30	24	101	0	9	1	139	73	1	12	131	60	39	37	12	0
Maprotiline	3	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	0
Nortriptyline	1,076	433	76	15	40	275	0	25	2	210	187	2	32	258	88	61	71	24	3
Other Types of Cyclic Antidepressant	3,525	1,530	459	47	145	796	2	67	14	929	475	6	91	787	388	246	195	55	4
Protriptyline	16	5	0	1	2	2	0	0	0	2	1	0	2	2	1	2	0	0	0
Unknown Types of Cyclic Antidepressant	13	6	1	1	2	2	0	0	0	1	4	0	0	6	1	0	3	1	0
Miscellaneous Antidepressants																			
Lithium	6,370	3,244	184	98	351	2,450	2	125	34	928	1,179	6	949	2,608	545	647	1,021	133	1

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Monoamine Oxidase Inhibitors	228	110	12	1	3	80	0	14	0	63	28	2	17	48	21	13	20	5	0
Other Types of Antidepressant	21,765	9,460	2,290	350	1,148	5,098	8	502	64	5,563	3,383	29	397	5,155	2,522	1,585	1,298	255	6
Selective Serotonin Reuptake Inhibitors	45,095	19,568	5,643	1,090	4,030	7,824	19	813	149	10,655	8,033	54	717	9,756	6,105	3,197	1,382	97	6
Trazodone	15,264	5,835	575	195	1,008	3,725	0	271	61	1,766	3,868	10	120	4,225	1,286	1,840	815	39	3
Unknown Types of Antidepressant	89	29	3	0	9	11	1	4	1	5	21	1	2	17	2	3	2	0	0
Category Total:	**101,430**	**43,675**	**9,829**	**1,940**	**7,135**	**22,438**	**34**	**1,951**	**348**	**21,485**	**19,086**	**115**	**2,442**	**25,346**	**11,575**	**8,352**	**5,665**	**878**	**37**
Antihistamines																			
Miscellaneous Antihistamines																			
Cimetidine and Other Histamine-2 Blockers	9,155	7,050	5,713	229	158	806	2	131	11	6,720	229	1	88	624	1,791	224	30	0	1
Diphenhydramine Alone (Over the Counter)	6,723	5,618	4,347	343	209	638	3	65	13	4,917	601	12	68	1,414	1,477	758	238	15	1
Diphenhydramine Alone (Prescription)	17	12	9	2	0	1	0	0	0	11	1	0	0	1	2	1	0	0	0
Diphenhydramine Alone (Unknown if Over the Counter or Prescription)	32,288	22,943	12,792	1,516	2,317	5,685	18	510	105	16,460	5,865	46	447	8,043	5,155	3,346	2,186	206	10
Other Antihistamines Alone (Excluding Cough and Cold Preparations)	46,508	33,668	19,829	4,561	2,462	5,984	29	737	66	29,773	3,233	39	527	5,846	8,790	2,386	824	42	0
Category Total:	**94,691**	**69,291**	**42,690**	**6,651**	**5,146**	**13,114**	**52**	**1,443**	**195**	**57,881**	**9,929**	**98**	**1,130**	**15,928**	**17,215**	**6,715**	**3,278**	**263**	**12**
Antimicrobials																			
Anthelmintics																			
Diethylcarbamazine	71	69	23	3	1	36	0	6	0	69	0	0	0	2	10	1	0	0	0
Other Types of Anthelmintic	1,762	1,635	986	77	43	440	3	79	7	1,557	33	8	35	155	424	104	19	1	0
Piperazine	317	306	245	9	4	38	2	6	2	292	7	4	2	41	97	16	1	0	0
Unknown Types of Anthelmintic	5	5	2	0	0	2	0	1	0	5	0	0	0	0	2	0	0	0	0
Antibiotics																			
Systemic Antibiotic Preparations (Oral, Intravenous, Intramuscular)	37,645	31,074	16,833	2,698	1,546	8,376	68	1,405	148	26,387	1,213	15	3,378	3,747	5,414	2,245	485	27	0
Topical Antibiotic Preparations (Dermal, Otic, Ophthalmic, Nasal)	7,396	7,060	5,142	310	160	1,143	17	263	25	6,847	62	5	144	193	1,231	295	23	0	0
Unknown Types of Antibiotic Preparation	416	310	149	29	19	86	0	25	2	231	18	2	59	38	29	31	7	0	0
Antifungals																			
Systemic Antifungal Preparations (Oral, Intravenous, Intramuscular)	1,609	1,319	745	81	36	375	3	76	3	1,195	28	2	92	170	301	90	21	1	0
Topical Antifungal Preparations (Dermal, Otic, Ophthalmic, Nasal)	9,886	9,508	7,185	240	122	1,604	21	315	21	9,233	53	12	200	646	1,708	582	62	2	0

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Unknown Types of Antifungal Preparation	15	14	6	0	0	6	0	2	0	14	0	0	0	2	1	3	1	0	0
Antiparasitics																			
Antimalarials	815	515	144	38	53	247	1	29	3	414	35	2	60	201	141	63	40	2	1
Metronidazole	1,352	832	304	25	42	378	1	76	6	658	49	1	124	125	132	88	18	2	0
Other Types of Antiparasitic	32	27	14	2	0	9	0	2	0	25	2	0	0	6	9	3	0	0	0
Antituberculars																			
Isoniazid	274	178	40	8	53	69	0	5	3	89	56	0	27	121	38	12	28	38	0
Other Types of Antitubercular	20	8	1	0	0	5	0	2	0	6	0	0	2	0	0	0	1	0	0
Rifampin	91	55	22	4	8	19	0	2	0	42	4	0	9	19	11	9	4	0	0
Antivirals																			
Amantadine	195	78	19	5	7	40	0	7	0	51	12	1	14	38	19	6	8	3	0
Antiretrovirals	614	355	100	4	16	191	2	40	2	277	63	0	14	116	91	30	18	0	1
Other Anti-Influenza Agents	255	229	130	44	13	32	0	10	0	209	4	2	13	33	55	17	3	0	0
Systemic Antiviral Preparations (Oral, Intravenous, Intramuscular)	1,245	947	362	37	51	420	1	71	5	815	68	1	59	158	222	61	23	3	0
Topical Antiviral Preparations (Dermal, Otic, Ophthalmic, Nasal)	197	191	82	19	6	64	2	14	4	184	0	0	6	12	30	15	2	0	0
Unknown Types of Antiviral Preparations	424	293	116	11	13	133	0	20	0	241	24	0	27	50	62	19	4	0	0
Miscellaneous Antimicrobials																			
Other Types of Antimicrobial	125	118	73	3	5	32	0	5	0	106	3	1	8	20	37	10	2	0	0
Unknown Types of Antimicrobial	18	13	6	0	1	4	0	2	0	11	0	0	2	2	1	3	0	0	0
Category Total: Antineoplastics	**64,779**	**55,139**	**32,729**	**3,647**	**2,199**	**13,749**	**121**	**2,463**	**231**	**48,958**	**1,734**	**56**	**4,275**	**5,895**	**10,065**	**3,703**	**770**	**79**	**2**
Miscellaneous Antineoplastics																			
Antineoplastic Drugs	1,789	1,357	322	32	38	813	2	128	22	1,175	36	0	138	446	334	134	58	18	4
Category Total: Asthma Therapies	**1,789**	**1,357**	**322**	**32**	**38**	**813**	**2**	**128**	**22**	**1,175**	**36**	**0**	**138**	**446**	**334**	**134**	**58**	**18**	**4**
Miscellaneous Asthma Therapies																			
Albuterol	6,547	5,908	4,569	577	209	452	8	90	3	5,449	269	18	158	736	1,455	546	226	5	0
Aminophylline or Theophylline	331	213	20	4	14	165	0	8	2	136	33	0	37	118	39	18	54	13	1
Leukotriene Antagonist or Inhibitor	9,935	8,296	6,549	1,188	160	326	11	57	5	8,102	154	6	29	719	1,971	128	3	0	0
Non-Selective Beta Agonists	1,390	1,359	366	381	92	471	0	46	3	1,299	42	3	11	402	102	608	173	1	0
Other Asthma Therapeutic Agents	300	215	67	18	5	111	2	10	2	170	15	1	26	92	70	15	23	4	3
Terbutaline and Other Beta-2 Agonists	2,532	2,233	705	296	78	985	3	155	11	2,056	81	2	91	236	442	138	81	2	0
Unknown Asthma Therapeutic Agents	10	6	3	1	1	1	0	0	0	3	2	0	1	2	1	0	0	0	0
Category Total:	**21,045**	**18,230**	**12,279**	**2,465**	**559**	**2,511**	**24**	**366**	**26**	**17,215**	**596**	**30**	**353**	**2,305**	**4,080**	**1,453**	**560**	**25**	**4**

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Cardiovascular Drugs																			
Miscellaneous Cardiovascular Drugs																			
Alpha Blockers	2,448	1,060	227	26	40	697	0	66	4	876	126	0	54	330	308	92	75	4	0
Angiotensin Converting Enzyme Inhibitors	17,345	8,118	3,667	393	231	3,468	6	329	24	7,234	695	2	171	2,266	3,007	298	219	8	2
Angiotensin Receptor Blockers	6,319	3,181	878	86	68	1,932	1	208	8	2,968	149	0	62	668	1,088	129	77	1	0
Antiarrhythmics	1,563	940	146	9	10	705	0	70	0	868	39	1	29	305	325	50	54	9	5
Antihyperlipidemics	13,023	5,854	2,698	203	123	2,460	5	349	16	5,494	169	6	173	535	1,104	123	36	2	1
Antihypertensives (Excluding Diuretics)	3,613	2,091	759	573	174	521	1	60	3	1,798	190	1	89	946	730	278	246	8	1
Beta Blockers (Including All Propranolol Cases)	23,091	10,360	3,318	372	360	5,786	9	484	31	8,833	1,283	7	186	4,141	4,131	469	772	70	5
Calcium Antagonists	11,194	4,945	1,369	126	126	3,077	4	221	22	4,297	502	3	117	2,300	2,053	301	416	65	13
Cardiac Glycosides	2,453	1,518	222	15	11	1,232	0	37	1	835	74	0	546	1,085	256	114	541	124	25
Clonidine	7,833	4,381	1,777	1,014	413	1,085	6	69	17	3,341	909	18	79	2,912	928	915	1,167	138	1
Hydralazine	688	298	93	8	14	165	0	15	3	265	26	0	6	115	117	32	31	2	0
Long-Acting Nitrates	924	308	87	6	3	191	0	19	2	284	15	0	8	72	104	25	16	1	0
Nitroglycerin	1,557	1,163	790	21	21	287	2	36	6	1,027	102	5	18	389	530	81	24	1	0
Nitroprusside	25	23	4	0	0	18	0	1	0	3	0	0	20	21	5	1	5	1	0
Other Types of Cardiovascular Drug	592	281	103	8	3	149	0	17	1	259	10	0	11	46	74	6	11	0	0
Other Types of Vasodilator	1,258	899	306	23	43	426	1	83	17	643	108	12	123	290	220	100	57	5	0
Unknown Types of Cardiovascular Drug	70	28	10	1	0	13	0	3	1	14	14	0	0	15	10	0	2	0	0
Unknown Types of Vasodilator	18	9	4	1	0	3	0	1	0	9	0	0	0	2	8	1	0	0	0
Vasopressors	3,322	3,003	788	678	244	1,099	9	174	11	2,895	76	3	27	1,005	259	1,212	334	2	0
Category Total:	**97,336**	**48,460**	**17,246**	**3,563**	**1,884**	**23,314**	**44**	**2,242**	**167**	**41,943**	**4,487**	**58**	**1,719**	**17,443**	**15,257**	**4,227**	4,083	441	53
Cold and Cough Preparations																			
Acetaminophen and Acetylsalicylic Acid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine																			
Acetaminophen and Acetylsalicylic Acid with Decongestant and/or Antihistamine Combinations without Phenylpropanolamine or Opioids	58	38	25	7	2	3	0	1	0	28	7	0	3	9	7	5	0	0	0
Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	109	84	55	6	8	14	0	1	0	69	15	0	0	17	18	10	5	0	0
Acetaminophen, Acetylsalicylic Acid, and Opioid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	10	4	1	0	2	1	0	0	0	2	2	0	0	1	0	1	1	0	0

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Acetaminophen and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine																			
Acetaminophen and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	134	91	58	3	9	20	0	1	0	69	17	0	4	27	31	9	3	0	0
Acetaminophen, Phenylpropanolamine, and Codeine Combinations with Decongestant and/or Antihistamine	6	4	3	0	0	1	0	0	0	4	0	0	0	0	1	0	0	0	0
Acetaminophen, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	335	259	206	15	17	19	0	2	0	233	23	0	3	45	72	27	5	0	0
Acetaminophen, Phenylpropanolamine, and Other Opioid Combinations with Decongestant and/or Antihistamine	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acetaminophen Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine																			
Acetaminophen and Codeine Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	27	17	11	3	0	3	0	0	0	14	3	0	0	3	1	2	1	0	0
Acetaminophen and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	14,501	9,129	5,474	651	1,051	1,708	16	186	43	7,107	1,652	28	285	2,473	2,315	1,098	317	12	1
Acetaminophen and Other Opioid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	47	33	23	1	2	7	0	0	0	28	5	0	0	11	7	3	2	0	0
Acetaminophen with Decongestant and/or Antihistamine Combinations without Phenylpropanolamine or Opioids	4,557	3,126	1,807	196	477	542	24	72	8	2,369	609	5	128	861	718	353	200	11	0

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Acetaminophen, Acetylsalicylic Acid, and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine																			
Acetaminophen, Acetylsalicylic Acid, and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	22	18	12	2	1	3	0	0	0	16	2	0	0	2	6	1	1	0	0
Acetaminophen, Acetylsalicylic Acid, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	95	80	57	10	4	5	0	4	0	73	6	0	1	15	17	8	1	0	0
Acetaminophen, Acetylsalicylic Acid, Phenylpropanolamine, and Opioid Combinations with Decongestant and/or Antihistamine	8	5	3	0	0	1	0	1	0	4	1	0	0	1	2	2	0	0	0
Acetylsalicylic Acid and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine																			
Acetylsalicylic Acid and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	31	26	14	2	2	8	0	0	0	23	2	0	1	3	6	3	1	0	0
Acetylsalicylic Acid, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	10	7	4	2	0	1	0	0	0	6	1	0	0	2	2	2	0	0	0
Acetylsalicylic Acid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine																			
Acetylsalicylic Acid and Codeine Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	2	2	0	0	0	2	0	0	0	0	2	0	0	1	1	0	0	0	0
Acetylsalicylic Acid and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	51	39	24	3	2	9	0	1	0	30	7	0	2	6	7	8	1	0	0
Acetylsalicylic Acid and Other Opioid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	2	2	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Acetylsalicylic Acid with Decongestant and/or Antihistamine Combinations without Phenylpropanolamine or Opioids	89	51	26	3	9	11	0	2	0	38	11	0	1	19	14	3	5	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine																			
Antihistamine and/or Decongestant with Phenylpropanolamine and Codeine	15	12	3	0	0	5	0	3	1	10	1	0	1	1	2	3	0	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine and Dextromethorphan	539	455	314	56	34	44	0	7	0	391	55	0	9	120	150	55	32	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine and Other Opioid	25	19	12	3	0	4	0	0	0	17	0	0	1	4	9	1	3	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine without Opioid	382	301	236	35	14	13	0	2	1	274	21	0	5	78	95	23	9	1	0
Antihistamine and/or Decongestant without Phenylpropanolamine																			
Antihistamine and/or Decongestant with Codeine without Phenylpropanolamine	1,370	1,103	529	165	95	282	1	27	4	934	124	1	28	243	295	165	32	6	0
Antihistamine and/or Decongestant with Dextromethorphan without Phenylpropanolamine	13,547	11,267	6,926	1,002	2,006	1,219	12	83	19	8,428	2,635	5	170	3,625	2,639	1,626	1,194	42	1
Antihistamine and/or Decongestant with Other Opioid without Phenylpropanolamine	1,062	878	323	116	62	336	0	37	4	708	116	1	43	241	201	181	45	1	3
Antihistamine and/or Decongestant without Phenylpropanolamine and Opioid	17,900	13,951	9,748	1,225	738	1,980	3	227	30	12,888	723	7	300	2,301	3,964	1,257	271	11	2
Miscellaneous Cold and Cough Preparations																			
Acetaminophen in Combination with Dextromethorphan (Without Decongestants or Antihistamines)	391	316	258	33	7	15	0	3	0	299	13	0	4	59	98	24	5	0	0
Acetylsalicylic Acid in Combination with Dextromethorphan	4	3	2	0	1	0	0	0	0	2	1	0	0	1	2	1	0	0	0

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Expectorants or Antitussives (Without Narcotics or Narcotic Analogs)	3,252	2,297	1,175	156	169	655	2	126	14	2,012	187	0	87	395	500	151	44	2	1
Non-Acetylsalicylic Acid Salicylates in Combination with Dextromethorphan	11	6	3	0	0	2	0	1	0	5	1	0	0	1	1	0	1	0	0
Other Dextromethorphan Preparations	14,037	11,059	5,334	1,457	1,828	2,179	7	216	38	8,343	2,397	15	255	3,023	2,140	1,601	848	22	2
Other Phenylpropanolamine Preparations (Excluding Street Drugs and Diet Aids)	246	211	85	5	0	106	0	13	2	209	2	0	0	8	56	9	0	0	0
Other Types of Cough and Cold Preparation (Excluding Phenylpropanolamine, Dextromethorphan, Acetaminophen, and Acetylsalicylic Acid)	2,585	2,200	1,799	112	81	183	1	23	1	2,081	80	3	34	259	610	132	33	1	0
Unknown Types of Cough and Cold Preparation	1,245	687	308	39	161	152	5	15	7	378	265	1	24	379	132	127	80	2	0
Non-Acetylsalicylic Acid Salicylates and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine																			
Non-Acetylsalicylic Acid Salicylates and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	1	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Non-Acetylsalicylic Acid Salicylates, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	6	3	2	0	0	1	0	0	0	3	0	0	0	1	2	0	0	0	0
Non-Acetylsalicylic Acid Salicylates with Decongestant and/or Antihistamine without Phenylpropanolamine																			
Non-Acetylsalicylic Acid Salicylates and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	6	4	3	1	0	0	0	0	0	4	0	0	0	0	2	1	0	0	0
Non-Acetylsalicylic Acid Salicylates and Opioid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Non-Acetylsalicylic Acid Salicylates with Decongestant and/or Antihistamine without Phenylpropanolamine and Opioid	4	4	2	2	0	0	0	0	0	4	0	0	0	0	1	0	0	0	0
Category Total:	**76,724**	**57,793**	**34,865**	**5,312**	**6,782**	**9,537**	**71**	**1,054**	**172**	**47,106**	**8,986**	**66**	**1,390**	**14,235**	**14,124**	**6,892**	**3,140**	**111**	**10**
Diagnostic Agents																			
Miscellaneous Diagnostic Agents																			
Diagnostic Tablets for Glucose or Ketones	2	2	1	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0
Other Types of Diagnostic Agent	483	439	109	24	12	222	3	65	4	370	3	0	64	170	70	75	25	2	0
Unknown Types of Diagnostic Agent	12	6	1	0	0	3	0	2	0	5	0	0	1	0	0	1	0	0	0
Category Total:	**497**	**447**	**111**	**24**	**12**	**226**	**3**	**67**	**4**	**377**	**3**	**0**	**65**	**170**	**70**	**76**	**25**	**2**	**0**
Dietary Supplements/ Herbals/Homeopathic																			
Amino Acids																			
Creatine	220	170	83	6	39	41	0	1	0	110	16	1	42	64	32	26	9	2	0
Other Amino Acid Dietary Supplements	543	398	216	19	33	112	2	15	1	299	37	3	55	82	79	37	14	0	0
Botanical Products																			
Blue Cohosh	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Citrus Aurantium (Single Ingredient)	10	8	4	0	0	4	0	0	0	5	0	0	3	0	3	1	0	0	0
Echinacea	297	235	186	21	3	18	1	4	2	219	4	0	12	16	49	9	1	1	0
Ginkgo Biloba	120	74	46	1	3	23	0	0	1	60	4	2	7	9	16	6	2	0	0
Ginseng	118	76	40	6	4	23	0	3	0	54	7	0	15	15	13	8	7	0	0
Kava Kava	42	21	4	0	0	16	0	1	0	8	6	0	7	11	4	4	4	0	0
Ma Huang/Ephedra (Single Ingredient)	63	37	14	1	7	14	0	0	1	16	13	0	8	20	8	11	4	0	0
Multi-Botanicals with Citrus Aurantium	124	103	57	2	9	33	0	2	0	71	20	0	12	40	28	11	10	0	0
Multi-Botanicals with Ma Huang	285	202	97	12	31	53	0	9	0	123	48	1	27	78	46	34	26	1	0
Multi-Botanicals without Ma Huang or Citrus Aurantium	2,417	1,942	1,036	72	173	598	0	61	2	1,319	296	3	313	531	377	279	143	5	0
Other Single Ingredient Botanicals	2,212	1,708	1,015	71	50	464	4	94	10	1,414	102	9	170	222	314	155	35	4	1
St. John's Wort	231	140	77	4	12	44	0	3	0	99	29	0	12	23	33	17	3	0	0
Valerian	274	148	47	5	7	81	0	7	1	75	44	1	23	58	28	25	9	0	0
Yohimbe	209	170	47	2	12	95	0	13	1	74	30	0	65	93	33	31	41	0	0
Cultural Medicines																			
Asian Medicines	125	101	42	4	5	40	0	9	1	70	11	0	17	36	22	20	2	1	0
Ayurvedic Medicines	13	9	2	0	1	5	0	1	0	6	1	2	0	5	4	1	2	0	0
Hispanic Medicines	11	8	4	0	0	4	0	0	0	4	0	0	4	3	1	2	1	0	0
Other Cultural Medicines	58	38	18	1	4	11	1	3	0	21	11	0	5	20	11	7	7	0	0

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Energy Products																			
Energy Drinks: Caffeine Containing (From Any Source Including Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc)	183	139	59	21	23	30	0	6	0	87	31	1	19	26	25	24	8	0	0
Energy Drinks: Caffeine Only (Without Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc)	242	169	74	14	35	40	0	5	1	102	45	1	21	34	31	31	17	2	0
Energy Drinks: Ethanol and Caffeine Containing (From Any Source Including Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc)	137	76	5	2	32	36	0	1	0	12	55	1	7	55	2	29	20	3	0
Energy Drinks: Ethanol and Caffeine Only (Without Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc)	4	2	0	0	0	2	0	0	0	0	1	1	0	1	0	0	0	0	0
Energy Drinks: No Caffeine (From Any Source)	6	5	3	0	1	1	0	0	0	3	0	0	1	1	0	1	0	0	0
Energy Drinks: Unknown	115	69	21	7	18	20	1	2	0	34	17	1	17	29	11	19	9	0	0
Energy Products: Other	46	34	9	0	5	19	0	1	0	15	10	0	9	13	4	10	6	0	0
Hormonal Products																			
Androgen or Androgen Precursor Dietary Supplements	147	101	69	2	5	23	0	2	0	79	8	0	14	24	28	11	3	1	0
Glandular Dietary Supplements	63	50	38	0	3	6	0	3	0	47	0	0	3	6	9	4	0	0	0
Melatonin	6,409	5,105	3,626	642	365	395	2	61	14	4,356	650	8	71	749	1,207	521	16	0	0
Phytoestrogen Dietary Supplements	71	43	24	0	3	14	0	2	0	33	5	0	5	10	10	6	1	0	0
Miscellaneous Dietary Supplements/Herbals/Homeopathic																			
Homeopathic Agents	12,181	11,627	10,875	179	78	415	19	55	6	11,248	117	46	205	630	2,576	286	52	2	1
Unknown Dietary Supplements or Homeopathic Agents	2,581	2,167	1,411	120	118	454	7	49	8	1,711	167	11	267	496	443	190	128	11	2
Other Dietary Supplements																			
Blue-Green Algae	179	167	57	22	9	53	0	23	3	155	1	4	7	32	21	40	7	0	0
Glucosamine (with or without Chondroitin)	668	413	295	17	5	84	1	11	0	385	5	2	21	19	77	12	1	0	0
Other Single Ingredient Non-Botanical Dietary Supplements	1,415	865	638	55	18	127	0	24	3	767	29	0	67	83	156	39	8	0	0
Category Total:	**31,820**	**26,621**	**20,240**	**1,308**	**1,111**	**3,398**	**38**	**471**	**55**	**23,082**	**1,820**	**98**	**1,531**	**3,534**	**5,701**	**1,907**	**596**	**33**	**4**

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Diuretics																			
Miscellaneous Diuretics																			
Furosemide	3,451	1,237	594	44	26	520	1	52	0	1,132	73	1	24	306	315	132	54	2	0
Other Types of Diuretic	2,054	935	401	41	49	400	3	35	6	800	82	0	52	228	261	57	39	2	0
Thiazide	4,912	1,960	902	123	68	780	0	86	1	1,740	185	1	31	435	531	99	39	3	0
Unknown Types of Diuretic	274	116	64	3	3	42	1	3	0	103	9	0	4	28	30	3	1	1	0
Category Total:	**10,691**	**4,248**	**1,961**	**211**	**146**	**1,742**	**5**	**176**	**7**	**3,775**	**349**	**2**	**111**	**997**	**1,137**	**291**	**133**	**8**	**0**
Electrolytes and Minerals																			
Miscellaneous Electrolytes and Minerals																			
Calcium and Calcium Salts	15,894	14,245	13,070	470	161	445	19	65	15	14,002	159	9	71	356	2,351	209	31	0	0
Chromium, Trivalent	337	293	128	14	9	103	6	32	1	272	8	0	11	51	62	17	4	0	0
Colloidal Silver	87	75	34	4	4	25	0	8	0	51	7	3	11	30	13	13	2	0	0
Fluoride (Excluding Vitamins, Hydrofluoric Acid & Mouthwashes)	2,627	2,486	2,105	228	24	111	2	12	4	2,380	27	1	75	104	511	158	5	0	0
Iron and Iron Salts (Excluding Vitamins with Iron)	5,148	3,931	2,273	116	277	1,074	8	158	25	3,285	418	7	203	1,084	1,069	390	107	8	1
Magnesium and Magnesium Salts	1,083	865	368	40	34	383	2	36	2	693	84	7	80	127	147	104	19	0	0
Multi-Mineral and Multi-Herbal Dietary Supplement	878	691	432	19	60	159	2	15	4	514	100	1	74	245	191	106	45	1	0
Multi-Mineral Dietary Supplements	236	172	128	7	1	30	0	6	0	150	8	1	13	22	35	12	2	0	0
Other Types of Electrolyte or Mineral	57	54	16	3	1	26	0	7	1	45	2	0	7	12	9	10	2	1	0
Potassium and Potassium Salts	1,647	687	268	22	17	313	0	64	3	580	74	2	25	144	166	27	24	1	0
Selenium and Selenium Salts	123	96	27	0	2	59	0	7	1	82	7	1	4	30	13	17	8	0	0
Sodium and Sodium Salts	3,287	2,725	1,540	298	138	601	8	127	13	2,369	249	34	60	360	557	377	56	1	2
Unknown Types of Electrolyte or Mineral	14	13	5	0	0	8	0	0	0	13	0	0	0	5	3	3	3	0	0
Vanadium and Vanadium Salts	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Zinc and Zinc Salts	1,011	838	459	35	41	252	1	44	6	712	38	4	79	92	113	97	13	2	0
Category Total:	**32,430**	**27,172**	**20,854**	**1,256**	**769**	**3,589**	**48**	**581**	**75**	**25,149**	**1,181**	**70**	**713**	**2,662**	**5,240**	**1,540**	**321**	**14**	**3**
Eye/Ear/Nose/Throat Preparations																			
Miscellaneous Eye/Ear/Nose/Throat Preparations																			
Topical Steroids For Eye/Nose/Throat	2,333	1,882	1,133	271	38	368	5	63	4	1,779	31	6	63	65	331	159	12	0	0
Nasal Preparations																			
Other Nasal Decongestants or Sympathomimetics (Excluding Tetrahydrazoline)	2,313	2,190	962	108	140	809	1	159	11	1,981	50	4	151	253	575	249	28	3	0
Other Types of Nasal Preparation	624	595	387	15	11	150	0	29	3	569	11	1	13	29	92	69	8	0	0

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Tetrahydrozoline, Nasal Preparations	24	23	15	1	1	3	0	3	0	21	0	2	0	7	12	3	0	0	0
Unknown Types of Nasal Preparation	6	4	0	1	0	2	0	1	0	4	0	0	0	1	1	1	0	0	0
Ophthalmic Preparations																			
Contact Lens Products	3,726	3,620	1,878	65	219	1,218	3	229	8	3,535	39	20	25	615	391	710	152	1	0
Glaucoma Medications	337	292	98	9	4	157	2	20	2	265	7	2	18	55	78	22	13	1	0
Other Ophthalmic Sympathomimetics	1,316	1,264	735	47	102	283	3	83	11	1,035	79	101	43	284	458	80	25	2	0
Other Types of Ophthalmic Preparation	1,960	1,864	1,064	89	69	524	5	103	10	1,718	40	34	70	188	340	123	33	2	0
Tetrahydrozoline, Ophthalmic Preparations	1,746	1,689	1,169	44	103	301	6	58	8	1,463	73	125	18	406	753	112	36	2	0
Unknown Types of Ophthalmic Preparation	59	54	15	1	8	18	0	12	0	37	4	9	4	14	9	5	3	0	0
Otic Preparations																			
Combination Products	2,197	2,165	1,083	187	84	697	3	99	12	2,137	8	0	20	173	432	539	35	2	0
Other Types of Otic Preparation	2,191	2,152	936	110	79	852	5	162	8	2,124	6	0	21	233	252	573	41	0	0
Unknown Types of Otic Preparation	65	63	19	3	4	29	0	8	0	61	0	0	2	10	5	24	3	0	0
Throat Preparations																			
Other Types of Throat Preparation	495	457	202	50	51	128	0	25	1	416	32	0	8	50	128	33	5	0	0
Throat Lozenges with Local Anesthetics	347	325	174	42	25	61	1	21	1	296	21	1	7	16	90	13	2	0	0
Throat Lozenges without Local Anesthetics	1,369	1,264	1,083	65	30	69	0	15	2	1,219	30	0	14	46	261	42	3	0	0
Unknown Types of Throat Preparation	6	6	2	0	0	1	1	2	0	3	1	0	2	1	0	2	0	0	0
Category Total:	**21,114**	**19,909**	**10,955**	**1,108**	**968**	**5,670**	**35**	**1,092**	**81**	**18,663**	**432**	**305**	**479**	**2,446**	**4,208**	**2,759**	**399**	**13**	**0**
Gastrointestinal Preparations																			
Antacids																			
Antacids: Other Types	8,169	7,748	7,105	253	46	278	10	48	8	7,595	79	24	47	155	1,199	110	9	0	0
Antacids: Proton Pump Inhibitors	10,743	6,159	3,662	226	155	1,827	6	272	11	5,744	212	11	179	470	1,414	197	21	0	0
Antacids: Salicylate-Containing	2,734	2,433	1,998	151	38	212	0	31	3	2,244	99	1	82	228	624	84	12	0	0
Antidiarrheals																			
Antidiarrheals: Diphenoxylate and Atropine Containing	351	198	89	9	9	82	1	7	1	153	27	0	15	110	67	36	17	0	0
Antidiarrheals: Loperamide	1,413	1,102	711	41	27	284	1	35	3	940	87	1	66	280	403	97	18	4	0
Antidiarrheals: Non-Narcotic Containing (Excluding Salicyl Containing)	28	19	12	1	2	4	0	0	0	16	2	1	0	3	3	1	1	0	0
Antidiarrheals: Paregoric Containing	12	9	6	0	1	2	0	0	0	8	1	0	0	5	5	1	0	0	0

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Antispasmodics																			
Antispasmodics: Anti-cholinergic Containing	3,128	1,663	829	118	102	537	2	67	8	1,361	197	1	94	533	531	199	94	2	0
Antispasmodics: Other Types	35	20	5	0	2	10	0	3	0	13	5	0	2	8	3	4	2	0	0
Miscellaneous Gastrointestinal Preparations																			
Laxatives	16,540	14,799	10,975	629	413	2,331	22	391	38	13,754	530	95	401	1,266	2,296	1,472	159	4	0
Other Types of Gastrointestinal Preparation	9,809	8,632	7,343	205	99	816	15	144	10	8,204	162	6	246	538	1,513	218	92	6	0
Unknown Types of Gastrointestinal Preparation	21	15	14	0	1	0	0	0	0	15	0	0	0	1	2	1	0	0	0
Category Total:	**52,983**	**42,797**	**32,749**	**1,633**	**895**	**6,383**	**57**	**998**	**82**	**40,047**	**1,401**	**140**	**1,132**	**3,597**	**8,060**	**2,420**	**425**	**16**	**0**
Hormones and Hormone Antagonists																			
Miscellaneous Hormones and Hormone Antagonists																			
Androgens	425	343	102	11	21	164	1	41	3	243	50	2	45	88	52	48	16	6	0
Corticosteroids	10,482	8,606	4,489	697	278	2,664	16	425	37	7,977	135	8	467	553	1,289	352	54	0	0
Estrogens	1,877	1,194	699	35	62	324	3	62	9	999	46	3	144	144	236	112	14	0	2
Insulin	6,080	5,297	141	66	92	4,468	4	494	32	4,822	385	7	66	1,901	2,176	286	768	34	6
oral Contraceptives	7,911	6,668	5,280	215	438	561	15	137	22	6,124	436	7	93	457	1,130	177	14	0	0
Other Hormone Antagonists	544	424	145	24	13	221	1	20	0	396	15	1	12	44	77	11	1	0	0
Other Hormones	907	711	230	95	41	287	1	54	3	617	30	6	55	178	198	65	16	0	0
Progestins	1,716	1,461	843	45	102	404	3	50	14	1,214	42	0	204	200	253	110	22	4	0
Selective Estrogen Receptor Modulators	374	204	78	3	11	94	0	18	0	198	4	0	1	28	56	4	1	0	0
Thyroid Preparations (Including Synthetics and Extracts)	13,452	9,382	4,888	457	229	3,337	8	438	25	9,036	246	5	85	1,145	1,889	144	40	1	0
Unknown Hormones or Hormone Antagonists	27	18	9	1	3	5	0	0	0	12	3	0	3	5	3	1	3	0	0
Oral Hypoglycemic																			
Oral Hypoglycemics: Biguanides	7,503	3,464	821	96	233	2,071	1	227	15	2,884	459	7	97	834	980	233	112	32	6
Oral Hypoglycemics: Other or Unknown	1,235	518	204	13	17	253	0	30	1	471	30	0	13	213	221	29	51	2	0
Oral Hypoglycemics: Sulfonylureas	3,998	1,712	898	35	44	666	2	58	9	1,453	163	2	71	1,222	712	50	401	44	0
Oral Hypoglycemics: Thiazolidinediones	1,101	408	186	10	5	189	0	18	0	361	28	1	17	132	169	16	11	1	0
Category Total:	**57,632**	**40,410**	**19,013**	**1,803**	**1,589**	**15,708**	**55**	**2,072**	**170**	**36,807**	**2,072**	**49**	**1,373**	**7,144**	**9,441**	**1,638**	**1,524**	**124**	**14**
Miscellaneous Drugs																			
Other Miscellaneous Drugs																			
Allopurinol	764	298	162	6	7	107	0	14	2	275	15	0	8	49	87	6	2	3	0
Disulfiram	257	75	16	1	0	49	0	8	1	45	14	1	15	23	15	11	7	0	0
Ergot Alkaloids	186	138	74	2	6	50	1	4	1	104	14	0	20	78	48	22	14	2	0
Levo-Dopa and Related Drugs	1,051	559	166	10	5	339	1	35	3	504	32	0	16	147	146	79	26	1	0

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Neuromuscular Blocking Agents (Succinylcholine, Curare, etc)	27	18	2	0	0	14	0	1	1	13	1	0	4	13	4	4	2	1	1
Nicotine Pharmaceuticals	1,326	1,231	678	115	49	329	1	53	6	1,008	75	6	133	347	396	234	51	0	0
Other Types of Miscellaneous Prescription or Over the Counter Drug	20,080	13,680	6,103	949	712	5,113	15	705	83	11,816	817	34	953	3,123	3,384	1,685	545	35	3
Category Total:	**23,691**	**15,999**	**7,201**	**1,083**	**779**	**6,001**	**18**	**820**	**97**	**13,765**	**968**	**41**	**1,149**	**3,780**	**4,080**	**2,041**	**647**	**42**	**4**
Muscle Relaxants																			
Miscellaneous Muscle Relaxants																			
Carisoprodol (Formulated Alone)	8,612	3,424	238	24	242	2,684	3	185	48	679	2,594	10	59	2,747	422	1,154	764	120	2
Cyclobenzaprine	10,529	4,607	1,596	220	395	2,180	2	182	32	2,614	1,854	7	85	2,684	1,227	1,033	603	72	0
Methocarbamol	1,501	707	150	23	67	411	1	44	11	375	301	1	23	371	188	158	43	3	0
Other Types of Skeletal Muscle Relaxant	7,504	3,385	726	88	274	2,090	4	173	30	1,589	1,572	23	136	2,140	627	735	691	146	4
Unknown Types of Muscle Relaxant	193	42	12	1	7	15	0	6	1	17	24	0	0	27	6	10	3	1	0
Category Total:	**28,339**	**12,165**	**2,722**	**356**	**985**	**7,380**	**10**	**590**	**122**	**5,274**	**6,345**	**41**	**303**	**7,969**	**2,470**	**3,090**	**2,104**	**342**	**6**
Narcotic Antagonists																			
Miscellaneous Narcotic Antagonists																			
Miscellaneous Narcotic Antagonist	403	191	15	5	13	130	0	23	5	71	53	17	46	115	20	33	55	1	0
Category Total:	**403**	**191**	**15**	**5**	**13**	**130**	**0**	**23**	**5**	**71**	**53**	**17**	**46**	**115**	**20**	**33**	**55**	**1**	**0**
Radiopharmaceuticals																			
Miscellaneous Radiopharmaceutical																			
Specific Pharmaceutical Radionuclides	34	28	7	0	1	13	0	6	1	19	0	0	9	16	4	5	5	0	0
Category Total:	**34**	**28**	**7**	**0**	**1**	**13**	**0**	**6**	**1**	**19**	**0**	**0**	**9**	**16**	**4**	**5**	**5**	**0**	**0**
Sedative/Hypnotics/Antipsychotics																			
Barbiturates																			
Long Acting Barbiturates	2,187	1,314	323	36	45	845	0	58	7	950	296	6	43	509	296	194	126	36	3
Short or Intermediate Acting Barbiturates	218	94	12	0	9	66	0	7	0	57	34	0	2	55	21	19	15	8	1
Unknown Types of Barbiturate	38	12	0	0	4	5	0	1	2	1	8	1	0	11	1	2	2	0	0
Miscellaneous Sedative/Hypnotics/Antipsychotics																			
Atypical Antipsychotics	42,814	18,331	3,005	1,228	3,435	9,734	17	756	156	7,480	9,668	55	875	13,015	3,484	5,091	3,652	438	9
Benzodiazepines	81,427	31,255	6,769	808	3,105	18,280	19	1,847	427	11,488	18,453	338	479	21,023	6,220	9,823	3,295	337	11
Buspirone	2,845	920	178	45	97	530	4	54	12	427	430	2	47	490	269	191	65	7	0
Chloral Hydrate	144	80	13	7	7	48	0	3	2	33	37	1	6	60	6	26	20	3	2
Ethchlorvynol	3	2	0	0	1	1	0	0	0	0	1	0	1	1	0	2	0	0	0
Glutethimide	3	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
Meprobamate	44	24	5	0	4	15	0	0	0	10	12	1	0	17	7	7	3	1	0
Methaqualone	11	7	0	0	2	5	0	0	0	2	3	2	0	6	0	2	3	1	0
Other Types of Sedative/Hypnotic/Anti-Anxiety or Anti-Psychotic Drug	24,975	11,938	1,562	659	1,318	7,545	7	714	133	4,794	6,582	32	338	7,351	1,847	3,990	1,329	104	1

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Phenothiazines	4,829	1,999	284	66	205	1,313	1	110	20	840	890	12	232	1,353	392	419	471	35	6
Sleep Aids, Over the Counter Only (Excluding Diphenhydramine)	1,392	818	158	14	116	496	1	24	9	251	551	0	8	548	169	152	173	19	0
Unknown Types of Sedative/Hypnotic/Anti-Anxiety or Anti-Psychotic Drug	266	102	5	1	10	65	0	17	4	10	80	1	6	77	12	16	18	0	0
Category Total:	**161,196**	**66,897**	**12,314**	**2,864**	**8,358**	**38,949**	**49**	**3,591**	**772**	**26,343**	**37,045**	**451**	**2,038**	**44,516**	**12,724**	**19,934**	**9,172**	**989**	**33**
Serums, Toxoids, Vaccines																			
Miscellaneous Serums, Toxoids, Vaccines																			
Miscellaneous Serums, Toxoids and Vaccines	2,353	2,131	425	167	149	1,061	18	276	35	1,544	10	2	562	586	191	383	86	1	0
Category Total:	**2,353**	**2,131**	**425**	**167**	**149**	**1,061**	**18**	**276**	**35**	**1,544**	**10**	**2**	**562**	**586**	**191**	**383**	**86**	**1**	**0**
Stimulants and Street Drugs																			
Cannabinoids and Analogs																			
Marijuana	5,250	1,966	190	37	799	815	2	94	29	366	1,444	63	60	1,413	139	526	528	26	0
Tetrahydrocannabinol (THC) Homologs	1,206	987	3	7	456	473	0	35	13	67	909	2	7	839	30	333	395	22	1
Tetrahydrocannabinol (THC) Pharmaceuticals	16	10	2	1	4	3	0	0	0	4	5	0	1	8	0	1	4	0	0
Diet Aids																			
Diet Aids: Phenylpropanolamine and Caffeine Combinations	24	22	9	0	4	9	0	0	0	12	5	0	5	7	3	5	5	0	0
Diet Aids: Phenylpropanolamine Only	18	16	10	1	0	5	0	0	0	16	0	0	0	2	3	1	0	0	0
Other Types of Diet Aid, Over the Counter Only	242	201	116	3	15	58	0	6	3	135	28	0	36	85	50	27	23	0	0
Other Types of Diet Aid, Prescription Only	100	76	37	0	4	28	0	4	3	51	15	1	7	43	19	15	5	0	0
Unknown Types of Diet Aid	111	81	40	7	9	20	1	2	2	53	15	0	11	39	20	8	9	2	1
Miscellaneous Stimulants and Street Drugs																			
Amphetamines and Related Compounds	14,614	9,834	3,591	1,827	1,796	2,316	9	230	65	6,902	2,363	63	405	4,757	2,632	1,648	1,374	75	2
Amyl or Butyl Nitrites (Street Drugs)	98	73	2	1	3	51	0	13	3	27	44	0	1	44	5	16	11	6	0
Caffeine	4,429	3,328	1,284	163	620	1,074	1	159	27	1,908	931	29	424	1,020	533	637	379	8	0
Cocaine	5,130	1,582	62	6	124	1,222	1	135	32	162	1,329	50	15	1,331	234	248	426	90	10
Ephedrine	245	191	105	5	12	56	0	11	2	147	33	1	10	43	41	14	19	1	0
gamma-Hydroxybutyric Acid including Analogs or Precursors	546	342	13	1	25	274	0	23	6	61	201	54	11	272	21	55	129	48	0
Hallucinogenic Amphetamines	2,054	1,222	28	12	523	557	2	75	25	117	1,020	53	14	956	82	230	335	54	8
Heroin	2,365	1,171	18	1	125	896	1	90	40	69	1,015	47	13	1,028	139	181	317	138	8
Lysergic acid diethylamide (LSD)	301	174	1	0	76	81	0	11	5	15	146	7	3	139	6	38	61	7	0

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Mescaline/Peyote	77	66	15	2	8	33	0	6	2	41	24	0	1	29	1	20	6	4	0
Methamphetamines	3,012	1,738	188	73	140	1,053	8	227	49	536	1,066	60	32	1,361	257	270	400	105	14
Methylphenidate	9,315	6,503	1,530	2,478	1,330	1,040	6	103	16	5,105	1,155	17	186	2,103	1,557	897	624	13	1
Other Hallucinogens	83	61	0	0	24	37	0	0	0	1	56	2	1	50	3	13	21	4	1
Other Stimulants (Excluding Amphetamines)	244	152	19	4	25	89	0	12	3	81	54	0	16	69	15	20	33	2	0
Other Street Drugs	363	301	3	2	53	226	2	14	1	16	279	2	2	247	12	88	125	8	0
Phenylcyclohexylpiperidine (PCP)	747	350	16	2	48	250	0	25	9	72	250	8	1	291	23	70	123	27	0
Unknown Hallucinogens	20	16	0	0	5	9	0	1	1	0	14	1	1	15	0	5	6	0	0
Unknown Stimulants or Street Drugs	264	191	3	3	68	99	0	15	3	17	143	14	9	147	14	43	70	5	1
Category Total:	**50,874**	**30,654**	**7,285**	**4,636**	**6,296**	**10,774**	**33**	**1,291**	**339**	**15,981**	**12,544**	**474**	**1,272**	**16,338**	**5,839**	**5,409**	**5,428**	**645**	**47**
Topical Preparations																			
Miscellaneous Topical Preparations																			
Acne Preparations	3,437	3,314	1,948	165	432	629	4	118	18	3,081	70	3	159	238	613	392	33	0	0
Boric Acid or Borates (As Antiseptics, Excluding Insecticides)	89	87	38	2	4	39	0	3	1	84	1	0	2	11	18	9	1	0	0
Calamine (Including All Caladryl Type Products)	3,188	3,098	2,344	75	30	555	8	77	9	3,065	19	3	6	146	504	159	6	0	0
Camphor	10,814	10,621	8,733	246	239	1,185	14	186	18	10,376	152	13	74	1,080	3,015	1,222	82	16	0
Camphor and Methyl Salicylate Combinations	1,881	1,861	1,623	55	18	141	2	21	1	1,823	12	1	25	194	615	235	7	1	0
Diaper Care and Rash Products	43,625	43,119	41,353	374	248	879	78	168	19	43,036	38	6	35	629	6,208	857	25	1	0
Hexachlorophene Containing Antiseptics	15	14	5	0	2	5	0	2	0	13	0	0	1	1	4	2	0	0	0
Hydrogen Peroxide 3%	12,554	12,270	4,796	535	541	5,452	21	889	36	11,926	227	45	51	643	1,553	1,739	52	4	0
Iodine or Iodide Containing Antiseptics	1,122	998	317	69	84	439	2	85	2	837	95	8	49	207	215	171	34	2	0
Mercury Containing Antiseptics	82	77	45	3	2	23	0	4	0	71	2	1	2	15	25	3	2	0	0
Methyl Salicylate	8,925	8,828	6,807	351	225	1,169	17	237	22	8,575	68	22	152	724	1,997	1,409	48	2	0
Minoxidil, Topical	164	155	66	9	0	66	0	13	1	146	5	0	4	33	38	22	5	0	0
Other Types of Rubefacient or Liniment (Excluding Camphor and Methyl Salicylate)	3,424	3,334	2,230	83	81	783	2	139	16	3,026	19	4	284	213	567	603	40	1	0
Other Types of Topical Antiseptic	6,280	6,154	4,569	475	257	705	9	133	6	5,800	224	93	32	394	1,541	583	38	2	0
Podophyllin	52	48	11	3	3	26	0	5	0	30	3	0	15	13	11	5	6	0	0
Silver Nitrate	123	103	15	1	38	31	2	15	1	80	7	1	14	26	12	27	7	0	0
Topical Steroids (Including Otic, Ophthalmic, and Dermal Preparations)	11,291	10,991	7,561	570	174	2,215	11	428	32	10,808	56	5	116	218	1,627	343	21	1	0

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Topical Steroids in Combination with Antibiotics (Including Otic, Ophthalmic, and Dermal Preparations)	1,291	1,258	638	85	41	392	3	97	2	1,230	3	1	24	83	183	221	16	0	0
Wart Preparations and Other Keratolytics	1,561	1,544	1,030	135	58	246	5	63	7	1,460	20	4	59	226	314	248	50	1	0
Category Total:	109,918	107,874	84,129	3,236	2,477	14,980	178	2,683	191	105,467	1,021	210	1,104	5,094	19,060	8,250	473	31	0
Unknown Drug																			
Miscellaneous Unknown Drug																			
Miscellaneous Unknown Drugs	20,370	15,154	5,235	721	1,859	5,748	99	1,078	414	7,574	4,391	821	935	9,243	2,800	2,077	2,124	646	57
Category Total:	**20,370**	**15,154**	**5,235**	**721**	**1,859**	**5,748**	**99**	**1,078**	**414**	**7,574**	**4,391**	**821**	**935**	**9,243**	**2,800**	**2,077**	**2,124**	**646**	**57**
Veterinary Drugs																			
Miscellaneous Veterinary Drugs																			
Miscellaneous Veterinary Drugs without Human Equivalent	3,239	3,057	929	86	86	1,642	8	279	27	2,915	31	11	97	356	708	506	67	3	1
Category Total:	**3,239**	**3,057**	**929**	**86**	**86**	**1,642**	**8**	**279**	**27**	**2,915**	**31**	**11**	**97**	**356**	**708**	**506**	**67**	**3**	**1**
Vitamins																			
Miscellaneous Vitamins																			
Other Types of Vitamin	828	624	452	41	22	91	0	16	2	562	26	3	32	80	138	32	5	1	0
Unknown Types of Vitamin	738	555	402	62	27	45	3	12	4	507	24	0	18	42	117	25	2	1	0
Multiple Vitamin Liquids: Adult Formulations																			
Multiple Vitamin Liquids: Adult Formulations with Fluoride (No Iron)	5	5	4	0	1	0	0	0	0	5	0	0	0	0	0	1	0	0	0
Multiple Vitamin Liquids: Adult Formulations with Iron (No Fluoride)	172	136	81	4	7	39	0	5	0	121	10	0	5	19	27	9	2	0	0
Multiple Vitamin Liquids: Adult Formulations with Iron and Fluoride	3	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
Multiple Vitamin Liquids: Adult Formulations without Iron or Fluoride	274	194	119	16	11	43	0	5	0	156	25	0	13	24	32	19	10	0	0
Multiple Vitamin Liquids: Pediatric Formulations																			
Multiple Vitamin Liquids: Pediatric Formulations with Fluoride (No Iron)	300	280	277	2	1	0	0	0	0	278	1	1	0	7	59	6	0	0	0
Multiple Vitamin Liquids: Pediatric Formulations with Iron (No Fluoride)	577	536	516	11	5	3	1	0	0	518	7	0	10	32	126	21	3	0	0

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Multiple Vitamin Liquids: Pediatric Formulations with Iron and Fluoride	69	66	64	1	1	0	0	0	0	65	0	0	1	2	20	2	0	0	0
Multiple Vitamin Liquids: Pediatric Formulations without Iron or Fluoride	504	470	434	29	4	1	1	0	1	459	6	0	5	17	70	18	1	0	0
Multiple Vitamin Tablets: Adult Formulations																			
Multiple Vitamin Tablets: Adult Formulations with Fluoride (No Iron)	43	32	28	3	0	1	0	0	0	31	0	0	1	2	5	0	1	0	0
Multiple Vitamin Tablets: Adult Formulations with Iron (No Fluoride)	6,912	5,666	4,254	107	203	962	3	126	11	5,327	230	1	100	550	1,427	222	23	3	0
Multiple Vitamin Tablets: Adult Formulations with Iron and Fluoride	43	35	26	1	3	5	0	0	0	33	2	0	0	3	6	1	0	0	0
Multiple Vitamin Tablets: Adult Formulations with Iron Carbonyl (No Fluoride)	87	75	59	6	2	8	0	0	0	70	4	0	1	10	19	3	2	0	0
Multiple Vitamin Tablets: Adult Formulations without Iron or Fluoride	4,037	3,029	2,100	216	129	495	10	71	8	2,718	175	3	127	291	689	143	23	1	0
Multiple Vitamin Tablets: Pediatric Formulations																			
Multiple Vitamin Tablets: Pediatric Formulations with Fluoride (No Iron)	713	668	623	39	2	1	2	0	1	660	8	0	0	22	149	12	1	0	0
Multiple Vitamin Tablets: Pediatric Formulations with Iron (No Fluoride)	8,945	8,526	7,600	745	99	63	11	5	3	8,336	158	4	21	597	2,053	367	14	0	0
Multiple Vitamin Tablets: Pediatric Formulations with Iron and Fluoride	60	55	50	3	1	0	0	1	0	52	2	0	1	5	14	1	0	0	0
Multiple Vitamin Tablets: Pediatric Formulations with Iron Carbonyl (No Fluoride)	28	26	23	1	2	0	0	0	0	26	0	0	0	10	12	2	0	0	0
Multiple Vitamin Tablets: Pediatric Formulations without Iron or Fluoride	27,479	26,782	21,117	4,768	541	223	91	30	12	25,718	1,014	10	13	873	4,947	477	9	0	0
Multiple Vitamins, Unspecified Adult Formulations																			
Multiple Vitamins, Unspecified Adult Formulations with Iron (No Fluoride)	1,842	1,294	941	47	43	215	1	44	3	1,208	56	2	26	140	274	50	3	1	0

(Continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6–12	13–19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Multiple Vitamins, Unspecified Adult Formulations with Iron and Fluoride	2	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Multiple Vitamins, Unspecified Adult Formulations without Iron or Fluoride	103	86	61	8	3	12	0	2	0	79	3	0	4	5	13	2	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations																			
Multiple Vitamins, Unspecified Pediatric Formulations with Fluoride (No Iron)	44	43	41	1	0	1	0	0	0	43	0	0	0	3	10	0	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations with Iron (No Fluoride)	91	86	73	12	1	0	0	0	0	84	2	0	0	9	21	3	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations with Iron and Fluoride	9	8	7	1	0	0	0	0	0	7	1	0	0	1	1	0	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations without Iron or Fluoride	795	773	649	109	9	4	2	0	0	745	24	0	2	22	153	6	0	0	0
Other Vitamins																			
Other B Complex Vitamins	4,846	3,567	3,003	78	47	349	7	74	9	3,409	68	0	87	207	723	63	2	0	0
Vitamin A	533	435	306	17	9	89	0	12	2	397	17	0	18	39	69	14	6	1	0
Vitamin B3 (Niacin)	2,923	2,400	678	29	253	1,260	4	167	9	1,122	380	6	882	477	140	703	126	5	0
Vitamin B6 (Pyridoxine)	394	232	167	8	8	43	0	6	0	205	14	0	13	29	50	8	3	0	0
Vitamin C	2,035	1,484	1,193	92	46	114	3	32	4	1,365	79	3	36	75	253	78	7	0	0
Vitamin D	4,836	3,877	1,876	185	68	1,514	7	215	12	3,644	76	0	148	405	711	142	27	2	0
Vitamin E	982	696	533	35	7	100	3	18	0	651	27	0	17	28	132	28	1	0	0
Category Total:	**71,252**	**62,743**	**47,758**	**6,677**	**1,556**	**5,681**	**149**	**841**	**81**	**58,603**	**2,439**	**33**	**1,581**	**4,026**	**12,461**	**2,458**	**271**	**15**	**0**
Pharmaceuticals Total:	**1,526,870**	**1,021,909**	**541,765**	**61,355**	**76,443**	**299,671**	**1,431**	**36,021**	**5,223**	**794,940**	**180,362**	**4,785**	**34,515**	**280,632**	**225,319**	**113,157**	**55,917**	**7,420**	**521**
Invalid\Missing																			
Invalid\Missing	4	3	2	0	0	0	0	1	0	2	1	0	0	1	1	0	0	0	0
Category Total:	**4**	**3**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**
Invalid\Missing Total:	**4**	**3**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**
GRAND TOTAL (Nonpharmacueticals + Pharmaceuticals):	**2,759,287**	**2,147,248**	**1,173,168**	**136,028**	**128,268**	**596,486**	**5,007**	**96,180**	**12,111**	**1,847,220**	**219,404**	**16,805**	**52,650**	**446,296**	**419,418**	**295,169**	**90,595**	**9,747**	**764**

Four exposure cases (3 single exposure cases) did not include a valid pharmaceutical or nonpharmaceutical product code (invalid generic codes).

Appendix A – Acknowledgments

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NPDS Toxicology Quote of the Day

For the toxicology trivia aficionado, NPDS added the Toxicology Quote of the Day to the NPDS home page. We are indebted to John H. Trestrail III, BS Pharm, FAACT, DABAT for this historical and folkloric data.

Poison Centers (PCs)

We gratefully acknowledge the extensive contributions of each participating PC and the assistance of the many health care providers who provided comprehensive data to the PCs for inclusion in this database. We especially acknowledge the dedicated efforts of the Specialists in Poison Information (SPIs) who meticulously coded 3,952,772 calls made to US PCs in 2010.

As in previous years, the initial review of reported fatalities and development of the abstracts and case data for NPDS was the responsibility of the staff at the 60 participating PCs. Many individuals at each center participated in the fatality case reviews. These toxicology professionals and their centers are:

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Fatality Review Team

The Lead and Peer review of the 2010 fatalities was carried out by the 33 individuals listed here. The authors and the AAPCC wish to express our appreciation for their volunteerism, dedication, hard work and good will in completing this task in a limited time.

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**These reviewers further volunteered to read the top ranked 200 abstracts and judged to publish or omit.*

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AAPCC Surveillance Team

NPDS surveillance anomalies are analyzed daily by a team of 10 medical and clinical toxicologists working across the country in a distributed system. These dedicated professionals interface with the Health Studies Branch, Division of Environmental Hazards and Health Effects, National Center for Environmental Health, Centers for Disease Control and Prevention (CDC) and the PCs on a regular basis to identify anomalies of public health significance and improve NPDS surveillance systems:

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Regional Poison Center (PC) Fatality Awards

Each year the AAPCC and the Fatality Review team recognized several regional PCs for their extra effort in their preparation of fatality reports and prompt responses to reviewer queries during the review process. The awards were presented at the September 2011, North American Congress of Clinical Toxicology meeting in Washington, DC

First Center to Complete all Cases, West Virginia Poison Center, all 16 reports closed 16-Dec-2010
Highest Percentage with Autopsy Reports, Oklahoma Poison Control Center, 100% of 10 cases
Honorable mention: Northern New England Poison Center (Portland), 83% of 24 cases
Largest Number Autopsy Reports, 31 autopsies of 43 fatalities, Kentucky Regional Poison Center (Louisville)
Highest Overall Quality of Reports, Western New York Poison Center (Buffalo), 10.4 of possible 13 for their 11 fatalities

Honorable mention: Florida Poison Information Center (Tampa), 9.72 of possible 13 for their 36 fatalities Carolinas Poison Center, 8.96 of possible 13 for their 54 fatalities

Most Abstracts Published in 2009 Annual report, a 3-way tie
California Poison Control System (Sacramento)
California Poison Control System (San Francisco)
Florida Poison Information Center (Tampa)

Outstanding Case Preparation, California Poison Control System, Fresno/Madera Division West Virginia Poison Center

Most Helpful Regional Poison Center Staff, a tie Rocky Mountain Poison & Drug Center, Carol Hesse Utah Poison Control Center, Martin Caravati

Appendix B – Data Definitions

Reason for Exposure

NPDS classifies all calls as either EXPOSURE (concern about an exposure to a substance) or INFORMATION (no exposed human or animal). A call may provide information about one or more exposed person or animal (receptors).

Specialists in Poison Information (SPIs) coded the reasons for exposure reported by callers to PCs according to the following definitions:

Unintentional general: All unintentional exposures not otherwise defined below.

Environmental: Any passive, non-occupational 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.

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.

Medical Outcome

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 (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.

Not followed, judged as nontoxic exposure: No follow-up calls were made to determine the outcome of the exposure because the substance implicated was nontoxic, the amount implicated was insignificant, or the route of exposure was unlikely to result in a clinical effect.

Not followed, minimal clinical effects possible: No follow-up calls were made to determine the patient's outcome because the exposure was likely to result in only minimal toxicity of a trivial nature. (The patient was expected to experience no more than a minor effect.).

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

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

Death, indirect report: Death, indirect report are deaths that the poison center acquired from medical examiner or media, but did not manage nor answer any questions about the death.

Relative Contribution to Fatality (RCF)

The definitions used for the Relative Contribution to Fatality (RCF) classification were as follows:

1. **Undoubtedly responsible:** In the opinion of the CRT the Clinical Case Evidence establishes beyond a reasonable doubt that the SUBSTANCES actually caused the death.
2. **Probably responsible:** In the opinion of the CRT the Clinical Case Evidence suggests that the SUBSTANCES caused the death, but some reasonable doubt remained.
3. **Contributory:** In the opinion of the CRT the Clinical Case Evidence establishes that the SUBSTANCES contributed to the death, but did not solely cause the death. That is, the SUBSTANCES alone would not have caused the death, but combined with other factors, were partially responsible for the death.
4. **Probably not responsible:** In the opinion of the CRT the Clinical Case Evidence establishes to a reasonable probability, but not conclusively, that the SUBSTANCES associated with the death did not cause the death
5. **Clearly not responsible:** In the opinion of the CRT the Clinical Case Evidence establishes beyond a reasonable doubt that the SUBSTANCES did not cause this death.
6. **Unknown:** In the opinion of the CRT the Clinical Case Evidence is insufficient to impute or refute a causative relationship for the SUBSTANCES in this death.

Appendix C – Abstracts of Selected Cases

Selection of Abstracts for Publication

The abstracts included in Appendix C were selected for publication in a three-stage process consisting of qualifying, ranking and reading. Qualifying was based on the RCF – only RCF = 1-Undoubtedly Responsible, 2-Probably Responsible or 3-Contributory were eligible for publication. Fatalities by Indirect report were excluded beginning with the 2008 annual report. Ranking was based on the number of substances (1/N) and weighted case score. The case weighting factors were the averages chosen based on review team recommendations in 2006. Each case score was multiplied by the respective factors to obtain a weighted publication score: Hospital records *4.4 + Postmortem *7.6 + Blood levels *6.9 + Quality/Completeness *6.4 + Novelty/Educational value *6.0. Scores were normalized (z-score) within each reviewer before the final weighting: 33% for 1/N and 67% for weighted case scores.

The top ranked abstracts (200 + ties) were each read by 6 individual reviewers (See Appendix A) and the 2 managers (Cantilena and Spyker). Each reader judged each abstract as "publish" or "omit" and all abstracts receiving 5 or more of 8 publish votes were selected, further edited and cross-reviewed by the 2 managers.

Abstracts

A structured format for abstracts was required in the PC preparation of the abstracts and was used in the abstracts presented. Abbreviations, units and normal ranges omitted from the abstracts are given at the end of this appendix.

Case 14. Acute methanol ingestion: undoubtedly responsible.

Scenario/Substances: 39 y/o male ingested an unknown amount of windshield washing fluid that contained methanol. The patient walked into the ED with the sole complaint of abdominal pain. The ingestion at this time was unknown.

Past Medical History: Spanish speaking, unable to obtain any specific medical history.

Physical Exam: Awake and alert. BP 120/61, HR 107, RR 30, T normal, O_2 sat 98% on FIO_2 of 50%.

Laboratory Data: ABG-pH 6.77/pCO_2 28.8/pO_2 445

Na 134	Cl 100	BUN 22	Glu 174
K 3.9	HCO_3 7	Cr 1.0	

Osmolar gap of 124, anion gap of 27. Lactate level was normal. Urine was negative for crystals. ECG QRS 110 ms, QTc 444 ms; Chest x-ray was normal. Head and abdominal CT scans were normal. Ethanol was negative. The following day the patient had a BUN of 14 mg/dL, Cr 0.98, K, and Na 141.

Clinical Course: The patient developed chest pain, became obtunded and required intubation within 2 hr after ED presentation. Metabolic acidosis, seizures, and posturing followed and he was given propofol, sodium bicarbonate, levetiracetam, phenobarbital, and alprazolam. Toxic alcohol was suspected and fomepizole was started while labs were obtained. Pt was also placed on hemodialysis, then CVVHD. Day 2 he showed no signs of improvement and became hypotensive (BP 70) requiring pressors. Methanol level 12 hr post ingestion was 98 mg/dL. Day 3 the patient was declared brain dead, comfort measures were instituted and he expired that day.

Autopsy Findings: The cause of death is methanol intoxication. Methanol level was 191 mg/dL which was obtained through hospital sample of blood.

Case 21. Acute methanol ingestion: undoubtedly responsible.

Scenario/Substances: A 42 y/o female ingested homemade moonshine at a party. About 12 hr after she left the party, she became ill with nausea and vomiting. Her condition worsened throughout the following day and she developed blindness that evening and she was taken to the ED.

Physical Exam: Heart rate 92, BP 100/49, she was comatose, pupils fixed and dilated, lungs clear.

Laboratory Data: ABG-pH 6.93/pCO_2 29/pO_2 159, HCO_3 5.1, CK 202, acetaminophen, ethanol, salicylate and

Na 139	Cl 101	BUN	Glu 273
K 4.2	HCO_3 10	Cr 1.8	

ethylene glycol not detected, methanol 154 mg/dL.

Clinical Course: In the ED naloxone was given without response, she was intubated and given IV bicarbonate to treat the metabolic acidosis. The patient was then transferred to the ICU at a tertiary care hospital. Head CT: unremarkable, EKG: QT 521 ms, QRS of 108 ms. She became progressively tachycardic and hypotensive and was started on IV fluid resuscitation and vasopressors. Hemodialysis and fomepizole were initiated for presumed ethylene glycol toxicity. She remained comatose with unreactive pupils. Based on a neurology consult, nuclear brain scan and EEG she was pronounced brain dead.
Autopsy Findings: Methanol detected in small amounts at autopsy. No methanol detected in the moonshine and no other people at the party became ill. Source of methanol remains unclear.

Case 62. Acute methanol ingestion: undoubtedly responsible.
Scenario/Substances: 36 y/o female found unresponsive by friend, brought to the ED 4 days after ingestion of automotive antifreeze containing methanol. At the time of the exposure, at a different ED, she gave a history of being assaulted by 1 or more men who forced her to drink the product. She was brought to the ED by friends and had several episodes of vomiting, was observed and released.
Past Medical History: Fibromyalgia, Wolff-Parkinson-White syndrome s/p ablation, prior suicide attempt with pills 20 years prior. No current mental health issues.
Physical Exam: Unresponsive female. BP 153/36, HR 76, RR 16, T 34°C. Pupils fixed and dilated.
Laboratory Data: pH 6.82/pO_2 468; O_2 sat 99 on a ventilator at 100% O_2

Na 142	Cl 107	BUN 9	Glu 224
K 3.7	$HCO_3 < 5$	Cr 2.1.6	

Ca 9.0, lactate 12.5, serum osmolality 378 mOsm/kg, INR 1.6. UDS negative; acetaminophen, ethanol and salicylate not detected. Phenytoin 10 mcg/mL, methanol 116 mg/dL (toxic alcohols not tested during original ED evaluation 4 days prior).
Clinical Course: The patient was intubated, ventilated, and treated with IV HCO_3, fomepizole and hemodialysis. Hypotension (BP 40s) was treated with pressors; EEG showed no brain activity. Cr peaked at 2.0. Day 2 showed labile BP and T; Day 3 low Hgb and platelets were treated with transfusion of RBCs and platelets and CK increased to 5496 with troponin 0.73; On Day 4 CK 3670 with CKMB 26.1 and troponin 0.36; AST and ALT were 178 and 60 respectively; MRI showed diffuse cerebral and cerebellar swelling with evidence of ischemic injury and transtentorial herniation and compression of the brain stem. After ice water and apnea testing, she was declared brain dead and her organs were harvested for transplantation.
Autopsy Findings: Cause of death: Acute methanol toxicity, hypertrophic cardiomyopathy and atherosclerotic coronary artery disease. Death was listed as accidental but a homicide investigation was initiated. Pathological diagnosis include: Acute methanol toxicity, hypoxic encephalopathy, acute respiratory and renal failure, hypertrophic cardiomyopathy, atherosclerotic coronary artery disease, obesity, Wolff–Parkinson–White syndrome, bilateral pulmonary congestion and edema, liver steatosis and ovarian cyst. Toxicology results (hospital blood): methanol 140 mg/dL, second measurement (unknown time) methanol 45 mg/dL.

Case 66. Acute ethylene glycol ingestion: undoubtedly responsible.
Scenario/Substances: 49 y/o male ingested a gallon of antifreeze in a suicide attempt. EMS transported him to the ED.
Laboratory Data: In the ED: methanol 0, ABG-pH 7.05/pCO_2 26/pO_2 313, BE 24,

Na 150	Cl 110	BUN 13	Glu 100
K 4.7	HCO_3 5	Cr 1.4	

Time (hours after arrival)	Ethylene glycol (mg/dL)	Osmolar gap
0.5	1282	235
12	770	157
18	554	122

Clinical Course: He was intubated and sedated, gastric lavaged returned 1200 ml of fluid with the appearance of antifreeze. Fomepizole and CVVHD were initiated. Bicarb bolus given in ER. HR 73, BP 133/71, normal sinus rhythm on the monitor. He was able to follow commands. On Day 2, he became unresponsive. Head CT showed bilateral subarachnoid hemorrhaging. Family decided to institute comfort measures and he expired on Day 4.
Autopsy Findings: Many polarizable crystals were present in the kidneys consistent with calcium oxalate. Cause of death: ethylene glycol intoxication; manner of death: suicide.

Case 72. Acute hymenoptera stings: contributory.
Scenario/Substances: 82 y/o male stung ~90 times during an encounter with a swarm of bees.
Past Medical History: COPD, right sided heart disease.
Laboratory Data: ABG-pH 7.25/pCO_2 61.2/pO_2 235/HCO_3 25.2/BE 2.3, FIO_2 100%. WBC 21.9, Platelets 94,

Na 123	Cl	BUN 30	Glu 141
K	HCO_3	Cr 1.57	

PT 17.3, FSP > 20, Ca 7.1, AST 273, ALT 508, lactate 2.6, CK 481, CKMB 7.7, troponin 1.74.
Clinical Course: In the ED he was initially intubated treated with albuterol, steroids, and antihistamines. He stabilized, was extubated and admitted to the medicine floor. At ~24 hr after envenomation he developed respiratory distress and evidence of an acute cardiac event based on ECG and enzymes. He was re-intubated, and transferred to a tertiary care facility. There he required norepinephrine and neosynephrine for hypotension, developed acute renal injury. He was treated

with heparin for bilateral pulmonary emboli. Developed a fever, received antibiotics for suspected pneumonia, bicarb for acidosis, and insulin for hyperglycemia. Was weaned off pressors but showed no improvement in neurologic status. He had a cardiac arrest and died on Day 6.
Autopsy Findings: Not done.

Case 74. Acute crotalid envenomation: undoubtedly responsible.
Scenario/Substances: 23-month-old female screamed while playing on a slide near her family's vacation home; she was found crying with blood on her ankle with a small rattlesnake nearby. EMS was notified. She began vomiting, became somnolent, and had a generalized tonic-clonic seizure. She was given O_2 via non rebreather mask, and IV fluids enroute.
Physical Exam: BP 106/85, HR 224, RR 46, O_2 sat 100% on NRB. The patient was vomiting blood and had generalized petechiae. There were 4 puncture marks anterior to her medial left ankle with mild ecchymosis and little to no swelling.
Laboratory Data: ABG-pH 7.09/pCO_2 31/pO_2 116 after intubation. WBC 33, Hct 22, platelets 10 with hemolysis on peripheral smear. INR 19, PTT $>$ 300 sec, fibrinogen $<$ 70 mcg/mL; D-dimer $>$ 22 mcg/mL, FDP 320 mcg/mL. Initial C×R revealed right main bronchus intubation. Repeat C×R revealed appropriate positioning with pronounced pulmonary edema.
Clinical Course: Two-hour post bite the patient arrived at the ED, was promptly intubated after premedication with atropine, etomidate, and rocuronium and received 6 vials of crotalidae polyvalent immune Fab. The patient was transferred to ICU and at 3 hr became hypotensive and was resuscitated with CPR, epinephrine, Ca gluconate, and HCO_3, and maintained on pressors. She received a total of 4 units PRBC, 5 units FFP, 2 units platelets, 10 units cryoprecipitate and 1 dose of factor VII. Poison control was consulted 4.5 hr after exposure and recommended additional crotaline Fab. Prior to repeat Fab administration the patient became pulseless, and could not be resuscitated. She expired less than 5 hr after the bite.
Autopsy Findings: Postmortem findings included: 4 fang marks anterior to the left medial malleolus; cutaneous and serous petechiae; and acute hemorrhagic pancreatitis and gastritis. The cause of death was listed as hemorrhagic diathesis due to snake bites.

Case 80. Acute cyanide ingestion: undoubtedly responsible.
Scenario/Substances: 19 y/o male walked out of his bedroom holding a bag of white powder and informed his family they should call an ambulance and then collapsed. EMS found him hypertensive, tachycardic, and agitated. While en route to the ED he was intubated, then became bradycardic without a pulse. He was successfully treated with atropine with return of pulse.
Past Medical History: Depression and suicide ideation since age nine; No prescribed medications.
Physical Exam: Unresponsive, comatose male; BP 60, HR 100, afebrile.
Laboratory Data: ABG-pH 6.99, Glu 300, UDS positive for cannabinoids. Follow up ABG-pH 7.15; cyanide levels: admission 5,806 ng/mL; 7 hr 11,300 ng/mL; 20 hr 82.8 ng/mL; Day 2 45.5 ng/mL, $<$30 ng/mL, and 31.6 ng/mL.
Clinical Course: Hyperkalemia was treated per standard protocol. He then had bradycardia and hypotension, followed by a cardiac arrest from which he was resuscitated within 5 min. Persistent hypotension and bradycardia were treated with pressors; 2 mg of naloxone and glucagon up to 8 mg were tried. Bolus doses of sodium bicarbonate were administered with some improvement of QRS complex; magnesium sulfate infusion was started. BP was supported to BP 50s (MAP 20) with insulin 75 units/hr, intralipid infusion, and maximum infusion doses of norepinephrine, phenylephrine and vasopressin. Five-hour post-presentation BP was stable at 100 on continuous intralipid infusion and maximum infusion doses of epinephrine, norepinephrine, phenylephrine, and vasopressin. Insulin was discontinued for hypoglycemia and D10W infusion was added. Additional history from the patient's friend was provided that the patient may have ordered sodium cyanide over the internet. Sodium thiosulfate and hydroxocobalamin were recommended but the patient required transfer since hydroxocobalamin was not available in the treating hospital. Sodium thiosulfate (12.5 g) was administered; sodium nitrate was not administered due to hypotension. At 7 hr following sodium thiosulfate and hydroxocobalamin, vasopressors were off. Pupils were fixed and dilated, no responses could be elicited, neurology examined the patient and suspected brain death. Comfort measures were instituted and he expired on Day 2.
Autopsy Findings: Autopsy was not performed.

Case 84. Acute cyanide, venlafaxine, and lorazepam ingestion: undoubtedly responsible.
Scenario/Substances: 33 y/o female found unresponsive in a hotel room with a white powdery substance chopped on a cutting board. The substance was initially believed to be methamphetamine. The patient collapsed at the scene, and EMS found her in an agonal rhythm and deteriorated into cardiac arrest. ACLS with intubation in the field occurred before being transported to the ED.
Past Medical History: The patient had a history of cholecystectomy and depression. She was prescribed buspirone 100 mg and lorazepam 0.5 mg.
Physical Exam: Intubated patient in cardiac arrest with CPR in progress and pulseless electrical activity noted. Pupils fixed and dilated, cyanotic with cool skin.
Laboratory Data: ABG-pH 6.95/pCO_2 11.8/pO_2 25, O_2 saturation 22%; Hgb 14.3, Hct 42.0.

Na 141	Cl 105	BUN 8	Glu 171
K 4.2	HCO_3 25	Cr 0.2	

Ionized calcium 1.10, troponin 0.04.
Clinical Course: The patient's husband advised ED staff that the patient had ingested potassium cyanide. CPR

continued with ACLS but was unsuccessful and the patient expired in the ED.
Autopsy Findings: The oral mucosa was severely congested and partially denuded with coagulative necrosis consistent with alkaline chemical burns. The esophageal mucosa was also partially denuded distally, just proximal to the gastroesophageal junction. Cyanide was 15 mg/L in antemortem blood. Cause of Death: Cyanide poisoning. Manner of Death: Suicide (ingestion).

Case 98. Acute cyanide ingestion: undoubtedly responsible.
Scenario/Substances: 59 y/o male brought to ED after spouse called EMS to report he ingested potassium cyanide in a suicide attempt. He was found comatose, bradycardic with agonal respirations and was intubated.
Past Medical History: Depression, alcoholism, and chronic back pain. Medications escitalopram, disulfiram, and eye drops. Seen the day earlier for chest pain for which he received meperidine and was found to have uncontrolled hypertension.
Physical Exam: Unresponsive, with fixed and dilated pupils. No heart sounds detected, breath sounds were equal on both sides with bag ventilation. His skin was noted to be pink and warm.
Laboratory Data: No labs were assessed during resuscitation.
Clinical Course: The patient was given multiple doses of epinephrine and atropine, 300 mg of sodium nitrite was followed by 50 ml of 25% sodium thiosulfate. A brief return of a weak pulse with HR followed; CPR was continued and sodium nitrite and sodium thiosulfate were repeated 15 min later. Asystole with cyanosis continued and the patient expired in the ED 25 min after arrival.
Autopsy Findings: Scleral hemorrhage in the right eye, areas of petechiae in both the right and left eye, extensive amount of dark brownish red discoloration of the entire body of stomach and lower esophagus and congestion of the spleen were found. Premortem blood cyanide 4.7 mg/L, citalopram 0.061 mg/L (average therapeutic level of 0.5 mg/L). Post mortem blood cyanide 13.3 mg/L. Death was ruled as successful suicide with potassium cyanide.

Case 103. Acute hydrochloric acid ingestion: undoubtedly responsible.
Scenario/Substances: A 46 y/o male was brought in by EMS after a witnessed intentional ingestion of 38% hydrochloric acid in a suicide attempt.
Past Medical History: Depression and previous suicidality.
Physical Exam: In the ED he was unresponsive and had oral lesions consistent with chemical burns.
Laboratory Data: He was acidotic, EKG showed an acute MI, C×R was clear and a distended abdomen was also noted.
Diagnostics: A CT of the abdomen was ordered but the patient was not stable enough to leave the department to undergo the study.
Clinical Course: On arrival to the ED, the patient had multiple episodes of emesis, he was intubated for airway protection, an NG tube was placed, and a large amount of fluid was recovered. Despite aggressive supportive care and early surgical consultation the patient expired a few hours after admission.
Autopsy Findings: Not performed.

Case 104. Acute ethylene glycol ingestion: undoubtedly responsible.
Scenario/Substances: A 63 y/o male was found unresponsive at home more than 12 hr after being seen awake by his partner. EMS found him apneic, but with a pulse and intubated him prior to transport to ED.
Physical Exam: On arrival in the ED he was hypotensive, hypothermic, in 3rd degree heart block. Pupils were oval, fixed and dilated. Copious bright blue-green emesis and stool were noted.
Laboratory Data: ABG-pH 6.4/pCO_2 24/pO_2 594/HCO_3 1.6, lactate 8, ethylene glycol 474 mg/dL, methanol, ethanol, isopropanol, phenobarbital, tricyclics, acetaminophen, and salicylate not detected.
Clinical Course: In the ED he was unresponsive with Cheyne–Stokes respirations requiring no sedation. The appearance of the vomitus/stool and profound acidemia raised suspicion for ingestion of antifreeze, so he was given fomepizole, thiamine, pyridoxine, and hemodialysis was initiated. Dopamine and norepinephrine were given for continued hypotension with oliguria. After warming, his T normalized. Adequate BP maintained on vasopressors and he began to spontaneously open his eyes and move his extremities, but did not respond to verbal stimuli. He continued to vomit despite gastric suction. His ABG improved to pH 7.41/pCO_2 30/pO_2 166/HCO_3 18.3. Vancomycin and ampicillin/sulbactam were started for suspected aspiration pneumonia. After 16 hr of hemodialysis, his ethylene glycol level was 42 mg/dL, lactate 8.1. He tolerated weaning of vasopressor support, but was only minimally responsive to painful stimuli. He developed decerebrate posturing and multiple seizures without status epilepticus. He maintained adequate BP and sinus rhythm with no ectopy but SBP spiked into 200s during seizure activity. He was given lorazepam for the seizures and labetalol for the hypertensive episodes. He continued oliguric, so hemodialysis was continued. Despite maximal support and he never regained meaningful response to stimuli. Goals of care were changed to comfort only; he died on Day 10.
Autopsy Findings: Autopsy revealed cardiomegaly, pulmonary edema, and swollen kidneys with oxalate crystals visible on touch prep. Cause of death was ruled ethylene glycol toxicity with manner of death suicide.

Case 108. Acute ethylene glycol ingestion: undoubtedly responsible.
Scenario/Substances: A 65 y/o female did not answer phone calls or the door. She had last been seen 16 hr earlier. EMS broke down the door and found her comatose with no gag reflex and dilated pupils, HR 94, BP 60 by palpation, Kussmal respirations with RR 30, O_2 sat 69%, Glu (finger

stick) 130. She was endotracheally intubated and transported to the ED.
Past Medical History: Anxiety, depression, myasthenia gravis, biliary cirrhosis, COPD, asthma, degenerative disc disease of lumbar spine, diverticulosis, gastric hypomobility syndrome, melanosis coli, suicidal overdose on her medications 1 month prior. Medications (N = 14).
Physical Exam: She was unresponsive to painful stimuli, pupils 6 mm and sluggishly reactive lungs clear. After IV fluids: BP 165/79, HR 112, RR 21, O_2 sat 100% on FiO_2 60%, T 37°C.
Laboratory Data: ABG-pH 7.08/pCO_2 16.2/pO_2 341, FiO_2 100%, WBC 9.0, platelets 596, Ca 8.8, AST 34, ALT 32,

Na 149	Cl 119	BUN 11	Glu 148
K 4.2	HCO_3 9	Cr 0.65	

lactate 3.4 mmol/L, anion gap of 42, osmolal gap of 147, CK 63, UDS positive for benzodiazepines only. Serum acetaminophen, ethanol, ketones and salicylate not detected. ECG: sinus rhythm, normal intervals, nonspecific ST segment changes; C×R was unremarkable, CT scan without contrast showed a questionable small subdural bleed, and an abnormal appearance to the brain stem.
Clinical Course: She was given IV fluids, started on methylprednisolone and admitted to the ICU. The metabolic acidosis did not respond to sodium bicarbonate, her renal function continued to deteriorate and she developed seizures. Blood was sent to an outside laboratory for ethylene glycol and volatiles screen. Crystals resembling oxalate were observed in the urine. Hemodialysis, fomepizole, folate, pyridoxine, thiamine were started. The patient remained comatose on the ventilator, and developed status epilepticus which was treated with phenytoin, lorazepam, and midazolam infusions. She became hypotensive and her status continued to deteriorate, the family opted for institution of comfort measures, and she expired 2.5 days after being found by EMS. Further history was obtained, and it was suspected that she ingested antifreeze and fertilizer (bat guano). Ethylene glycol level was later reported as 646 mg/dL, other volatiles (methanol, ethanol, isopropanol, acetone, acetaldehyde) were negative.
Autopsy Findings: Not available.

Case 122. Acute hypochlorite ingestion: undoubtedly responsible.
Scenario/Substances: 32 y/o male brought to the ED by EMS after drinking an unknown amount of a cleaning solution (hypochlorites 5.25%) some time that morning.
Past Medical History: Bipolar, morbid obesity, and sleep apnea.
Physical Exam: Awake and alert with vomiting, coughing, and wheezing. BP 157/70, HR 119, RR 28, T 36°C; O_2 sat 94% on 3 L of O_2NC.
Laboratory Data: Acetaminophen, ethanol and salicylate not detected; UDS negative.
Clinical Course: O_2 increased to 6 L NC. GI consult was requested for endoscopic evaluation but never completed. BP 148/53, HR 92. He was given lorazepam and ondansetron for agitation and vomiting and normal saline at 75 ml/hr. In the ICU he became combative and had respiratory distress. Intubation was attempted about 5.5 hr after presentation; the larynx was noted to be very edematous and swollen, and he was successfully intubated but the balloon of the endotracheal tube subsequently ruptured, he developed bradycardia and cardiopulmonary arrest and expired ~8 hr after arrival in the ED.
Autopsy Findings: (performed after embalming).Significant respiratory tract injury (wrinkled tan-pink to tan gray mucosa at the larynx and trachea) was noted along with cardiomegaly. Cause of death: respiratory insufficiency due to ingestion of bleach with contribution of bipolar disorder. Post mortem heart blood clot was significant only for isopropanol at 60 mg/dL and methanol, consistent with being embalmed; no drugs of abuse (benzodiazepines, cocaine, fentanyl, opiates) were detected.

Case 125. Acute toilet bowl cleaner (acid): undoubtedly responsible.
Scenario/Substances: 44 y/o female brought to the ED by family and stated that she had intentionally ingested ¾ of a bottle of a toilet bowl cleaner containing 15–25% hydrochloric acid ~45 min prior to arrival. The patient's complained of severe abdominal pain and sore throat.
Past Medical History: Multiple previous suicide attempts, schizoaffective disorder, major depression, hypertension, GERD, and a cholecystectomy.
Physical Exam: Awake, alert, oriented, drooling patient. BP 126/72, HR 79, 37°C, O_2 sat 99% on 3L NC. Oropharynx had coagulative necrosis with large amount of exudate and secretions. Stridor was audible over the neck area. Her abdomen was soft, nondistended, with bowel sounds.
Laboratory Findings: ABG-pH 7.24/pCO_2 27/HCO_3 12. WBC 13.2, platelets 91K, PTT 46.7, d-dimer $>$20 mcg/mL, fibrinogen 232 mg/dL; Cr 1.1, lactate 3.2, myoglobin 192 ng/mL, UA large amount of blood, protein 30 mg/dL, UDS unable to perform due to black color or urine sample. Acetaminophen not detected, salicylate $<$1.7 mg/dL.
Clinical Course: The patient was sent directly to the OR for possible tracheostomy but the stridor and oral swelling stabilized as she developed DIC, so the tracheostomy was not performed. She was admitted to the ICU, given pantoprazole, IV fluids with sodium bicarbonate and antibiotics. Hemodialysis was initiated for the metabolic acidosis. Stridor, oral edema and tachypnea increased requiring intubation. She became hypotensive and febrile T 39°C 3 and required pressor support. CT scan indicated perforation of her esophagus, stomach and small intestine then septic shock, lactateosis and multi organ failure. Her family declined surgical intervention, comfort measures were instituted and she expired on Day 2.
Autopsy Findings: Bilateral pleural effusions of 500 mL of brown-black fluid and 2700 mL of similar fluid in the peritoneal cavity. The proximal esophagus was white, the distal esophagus was brown-black with focal perforation posteriorly. The stomach had diffusely thick and black necrotic mucosa, full thickness at the fundus, with a large perforation. The trachea showed sloughed epithelium with

extensive necrosis of the epiglottis. The cause of death was the sequelae of hydrochloric acid ingestion. The manner of death was suicide.

Case 126. Acute alkali drain cleaner ingestion with aspiration: undoubtedly responsible.
Scenario/Substances: A 46 y/o male reportedly ingested "3 gulps" of an alkali drain cleaner in a suicide attempt. EMS noted burns to his tongue, oropharynx, and wrist but no respiratory distress. He vomited once, was diaphoretic, complained of abdominal pain and had bradycardia of 54 during transport.
Physical Exam: In the ED the patient's "whole oropharynx" was white without erythema. BP 204/104, HR 52, RR 16, O_2 sat 97%.
Laboratory Data: WBC was "elevated", serum pH 7.09, UDS positive for THC only. Serum acetaminophen and salicylate were not detected.
Clinical Course: In the ED he was electively intubated and given hydromorphone for pain. Insertion of an NG tube was attempted but was unsuccessful and the patient was taken to surgery. Exploratory laparotomy revealed full thickness necrosis and perforation of the esophagus, stomach and entire small intestine through the transverse colon with necrotic lesions of the gallbladder and mesentery were also reported. The patient's condition was deemed not survivable, the laporotomy was closed, and he was returned to the ICU. The patient's family asked for comfort measures and he died on Day 2.
Autopsy Findings: Cause of death: internal bleeding secondary to perforation of the esophagus, stomach, and intestine secondary to ingestion of caustic alkali. The manner of death was suicide.

Case 129. Acute cleaner (acid), ethylene glycol, and hydrocarbons ingestion: undoubtedly responsible.
Scenario/Substances: 54 y/o male in ED with a history of ingesting 4 cups of an unknown "wood conditioner."
Past Medical History: Bi-polar disease. Medications included aripiprazole, quetiapine, bupropion, zolpidem, and simvastatin for home meds. Five months previously he had a negative work up to rule out a myocardial infarct.
Physical Exam: Altered mental status. BP 87/49, HR 40–156, O_2 sat 97% on 100% oxygen.
Laboratory Data: ABG-pH 7.21;

Na 139	Cl 104	BUN 18	Glu 242
K 3.6	HCO_3 18	Cr 2.1	

Ca 5.5, albumin 3.7, lipase 452, lactate 6.9, anion gap 17, troponin 1.25. Acetaminophen, ethanol and salicylate were not detected. A volatile screen was negative but an ethylene glycol level was never ordered. ECG showed a widened QRS and atrial fibrillation. A urine sample fluoresced under an ultraviolet lamp.
Clinical Course: The patient was intubated and given 3 amps Ca and admitted to ICU. Acidosis worsened to pH 7.08 with serum bicarb 7.7 and lactate 6.1 with the anion gap 23. SVT, bigeminy, widened QRS, and wide complex bradycardia with 3–5 sec pauses were seen; hypotension was refractory to pressors. Fomepizole was started for suspected ethylene glycol ingestion. Hours later the patient had a junctional rhythm, became pulseless and was not able to be resuscitated.
Autopsy Findings: Caustic fluid with severe metabolic acidosis; polarizable, birefringent calcium oxalate crystals in renal tubules. Insufficient sample for ethylene glycol and formic acid testing. Cause of death: Severe metabolic acidosis due to ingestion of caustic fluids.

Case 139. Acute hydrogen peroxide ingestion with aspiration: undoubtedly responsible.
Scenario/Substances: An 82 y/o female ingested up to 2 tablespoons of 32% hydrogen peroxide given to her by her husband, a self-claimed homeopath.
Past Medical History: Atrial fibrillation, dementia.
Physical Exam: Trismus was present on arrival. BP 100s; HR 50s; afebrile, O_2 sat 98% on 60% FiO_2; No oral burns seen.
Laboratory Data: WBC 11.3, Hgb 15.2, Hct 45.4, platelets 120, Troponin <0.5, electrolytes reported normal except Ca 7.0; ECG atrial fibrillation, C×R diffuse increased lung marking and plural fluid.
Clinical Course: The patient reported vomiting at home, developed respiratory distress thought due to aspiration pneumonitis, was intubated, sedated, and given antibiotics. Day 2 she had bloody return on suctioning of gastric contents. No endoscopy was performed. Sedation was weaned periodically but the patient was unable to breath over the ventilator. The patient was extubated on Day and was unable to verbalize discomfort. On Day 10 a MRI of the head showed multiple bilateral areas of restricted diffusion consistent with ischemia due to emboli. Comfort measures were instituted and she expired on Day 15.
Autopsy Findings: Not performed.

Case 157. Acute nitrogen oxide inhalation: probably responsible.
Scenario/Substances: 26 y/o healthy male farm-worker entered a silo and collapsed after 5–10 min. He arrived at the ED after ~15 min down time.
Physical Exam: BP 143/102, HR 99, RR 14, O_2 sat 99% after intubation, pupils equal at 3 mm with no corneal reflex, no gag reflex; withdraws to pain, comatose.
Laboratory Data: ABG-pH 7.08/pCO_2 59/pO_2 506,

Na 140	Cl 103	BUN 11	Glu 270
K 3.5	HCO_3 20	Cr 1.5	

Lactate 13.8, troponin 0.87, INR 1.41, acetaminophen and salicylate not detected, UDS, negative, COHb 1.5 at 1 hr after exposure, CT showed extensive bilateral pulmonary infiltrates.
Clinical Course: The patient arrived at the ED in cardiovascular arrest. Spontaneous circulation returned after epinephrine, atropine, and dopamine infusion, but he remained unresponsive.

The patient underwent post-arrest hypothermia for cardiac arrest and cleared his lactate. He developed pneumonia on Day 6 and persistent diffuse cerebral edema on Day 7. Due to poor prognosis, comfort measures were instituted and he expired.
OHSA Findings: Occupational health authorities reported normal oxygen levels in the silo on the day of exposure. They investigated the silo 3 days later and found carbon dioxide levels of 880 ppm (OSHA limit is 10,000 ppm). The levels of nitrogen and sulfur containing species were undetectable.
Autopsy Findings: Autopsy revealed pneumonia and cerebral edema. Postmortem toxicology tests were negative.

Case 192. Acute carbon monoxide exposure: undoubtedly responsible. Unintentional Environmental, Carbon Monoxide.
Scenario/Substances: 64 y/o female was found at home during a house fire. EMS resuscitated her after suppressing the fire to get to her.
Past Medical History: Bipolar disease, hypertension, rheumatoid arthritis, tobacco use, and alcohol abuse. Medications included methotrexate, folic acid, prednisone, lisinopril, propoxyphene with acetaminophen, and amitriptyline.
Physical Exam: Unresponsive female, covered with soot with singed nose hairs and with pulseless VT; full thickness burns on the dorsum of the right hand.
Laboratory Data: Lactate 8.9 mmol/L, ABG-pH 6.97/pCO_2 51/pO_2 468, bicarbonate 11.6, COHb 45.9%, met Hgb 0.3%.
Clinical Course: The patient's rhythm converted to sinus with epinephrine and atropine. She was intubated and given hydroxocobalamin for suspected cyanide poisoning. The patient was stabilized and transferred to another hospital for emergent hyperbaric oxygen treatment. At the second hospital she developed multiple episodes of seizure-like activity. Lorazepam was administered during and after hyperbaric treatment, then transferred to the ICU where she remained on the ventilator, sedated and unresponsive to pain. On Day 3, the patient developed a fever to T 39°C and became hypertensive with BP 177/101 on Day 5. Pupils were fixed with an upper gaze; tonic-clonic seizure activity continued with occasional posturing and no reflexes were present. Empiric bronchodilator therapy and antibiotics were started for course breath sounds and infiltrates on C×R. The patient remained on a ventilator, unconscious and unresponsive. An EEG showed a burst suppression pattern suggestive of poor prognosis. CT of the brain without contrast showed no intracranial hemorrhage or herniation. Comfort measures were instituted and he expired on Day 6.
Autopsy Findings: Not performed. The ME concluded that the cause of death was anoxic encephalopathy, and the manner of death was accidental.

Case 221. Acute fluorochlorocarbon inhalation: undoubtedly responsible.
Scenario/Substances: 28 y/o male found slumped over his computer in asystole after inhaling a compressed gas duster. Estimated time he was apneic was 30 min. He was defibrillated, then given epinephrine and vasopressin enroute.
Past Medical History: Substance abuse.
Physical Exam: Obtunded, intubated and ventilated. BP 183/68, HR 164, O_2 sats 94% on ventilator.
Laboratory Data: ABG-pH 6.96; K 2.9. At 12 hr ABG-pH 7.28/pCO_2 42/pO_2 156. WBC, Hgb 18, platelets 293, INR 1.1.

Na 139	Cl 103	BUN 9	Glu 304
K 3.2	HCO_3 21	Cr 1.6	

Clinical Course: The patient received epinephrine 2 vials, naloxone 2 vials, sodium bicarbonate 2 vials, and atropine 3 vials. Postresuscitation, ECG showed atrial fibrillation, head CT demonstrated evidence of severe hypoxic injury. He was hypertensive (BP 153/113) and tachycardic (HR 170) treated with a diltiazem infusion. Seizures were treated with diazepam and midazolam. At 12 hr pupils were fixed and dilated, lower extremities were rigid, the upper extremities had tremors and T was 106.9 despite cooling blankets. At 24 hr he became hypotensive (BP 50–60). Comfort measures were instituted and he expired on Day 2.
Autopsy Findings: Autopsy not performed, the patient was embalmed prior to ME notification; the cause of death was determined to be cerebral hypoxia and cardiac arrhythmia, secondary to toxicity from an inhaled aerosol. Manner of death was accidental.

Case 226 Fluorochlorocarbon inhalation: undoubtedly responsible.
Scenario/Substances: A 50 y/o female was found unresponsive by her daughter who initiated CPR and called 911. The patient had reportedly been "huffing" a keyboard cleaner aerosol. EMS intubated the patient continued CPR. Initial rhythm was PEA, and she arrived at the ED with CPR in progress. Estimated downtime was 30 min.
Past Medical History: Breast cancer with bilateral mastectomy and chemotherapy 4 years ago. History of polysubstance abuse including tobacco, alcohol, marijuana, cocaine, methamphetamine, and huffing.
Physical Exam: Intubated unresponsive female, BP 101/83, HR 113, RR 20 with bagging. Normocephalic and atraumatic, pupils equal and reactive to light, mucous membranes pink and moist.
Laboratory Data: ABG-pH 7.15/pCO_2 58/pO_2 366 EKG: SR at 92, QRS 124 ms, QTc 556 ms, RBBB, ST depression with biphasic T waves leads II, II, aVF, and V4–6. WBC 5.1, Hgb 11.9, Hct 37.7, platelets 198, PT 11.9, INR 1.1.

Na 139	Cl 104	BUN 9	Glu 365
K 3.5	HCO_3 16	Cr 1.7	

Ca 8.0, total bilirubin 0.3, Alk phos 170, AST 343, ALT 267, CK 136, troponin I < 0.04 ng/mL. Salicylate, ethanol, acetaminophen were not detected. UDS negative, C×R: bilateral lower lobe infiltrates, echocardiogram: no pericardial

effusion, EEG: diffuse generalized slow wave activity consistent with metabolic encephalopathy.
Clinical Course: In the ED, spontaneous circulation was restored with administration of normal saline bolus, epinephrine, and sodium bicarbonate. The patient was given a single dose of amiodarone and started on dopamine and norepinephrine infusions. She was admitted to the ICU and started on antibiotics for presumed aspiration pneumonia. Despite multiple vasopressor infusions, she became hypotensive and pulseless and expired on Day 2.
Autopsy Findings: Fractures of left ribs 2–5 (anterolateral) and right ribs 2–7 (anterior). Postmortem blood 1,1-difluoroethane 32 mcg/mL.

Case 228. Acute mineral spirits ingestion: undoubtedly responsible.
Scenario/Substances: 18-month-old female was carried into the ED unresponsive by her father ~15 min after an unwitnessed ingestion. Father reported that the child ingested "paint thinner" that had been stored in a water bottle. Soon after the ingestion the patient became unresponsive, had convulsions, and vomited.
Physical Exam: Seizing patient with agonal respirations with an organic solvent odor. BP 98/71, HR 166, O_2 sat, 78% on room air. Mouth had copious secretions. Face, neck and torso skin had well demarcated erythema with overlying, oily emesis.
Laboratory Data: ABG (after 40 min resuscitation) pH 6.83/pCO_2 85/pO_2 20; COHb and metHgb were negative. Capillary blood Glu 88, K 5.6. Hgb 13.
Clinical Course: The patient seized for 1 min and was resuscitated for 60 min with airway suctioning, bag valve mask RR with 100% FiO_2, chest compressions, seven rounds of epinephrine and atropine, endotracheal intubation, sodium bicarbonate, NS bolus, and 500 mg pralidoxime. Spontaneous circulation was never regained. The patient expired when resuscitation was concluded. The father later clarified that the chemical was used to clean surfaces prior to applying paint.
Autopsy Findings: Postmortem revealed acute lung injury and alveolar hemorrhage. Cause of death was due to aspiration of aromatic and aliphatic hydrocarbons.

Case 236. Acute alkyldimethylbenzyl ammonium chloride/nonionic disinfectant ingestion: probably responsible.
Scenario/Substances: 55 y/o female accidentally ingested 1 mouthful of a disinfectant containing non-ionic surfactant (1%–5%), cationic detergents (5%), and sodium carbonate (1%–5%)/pH 11.7. She reportedly immediately spit it out, was given yogurt, milk and fluids at home, but she was unable to drink due to vomiting.
Past Medical History: Renal failure, dialysis, legally blind, diabetes, hypertension, hyperlipidemia, and bilateral below the knee amputations.
Physical Exam: She was alert and oriented without respiratory distress. BP 207/85, HR 100, RR 18, O_2 sat 96% on 2L O_2. She only complained of a sore throat. C×R was clear on Day 1.
Laboratory Data: Glu 454, C×R "clear", blood cultures positive.
Clinical Course: BP was treated with labetalol, insulin given for hyperglycemia; she had no difficulty swallowing and was able to eat and drink later on Day 1. Day 2 she vomited after an oral fluid challenge and complained of throat irritation upper endoscopy later that day was negative. She received scheduled dialysis and developed an axillary T 40°C and became hypotensive with diminished lung sounds. A blood culture was positive and she received vancomycin and gentamycin. Patient expired unexpectedly on Day 3.
Autopsy Findings: No autopsy was performed. ME review stated the cause of death was complications of erosive esophagitis secondary to ingestion of cleaning fluid. Manner of death was accidental.

Case 238. Acute phosphine inhalation: undoubtedly responsible (see also Case 257).
Scenario/Substances: A 4 y/o female developed nausea, vomiting and lethargy at home after the family yard had been treated with up to 1.2 pounds of aluminum phosphide pellets for pest control.
Past Medical History: Healthy female.
Laboratory Data: COHb was 0.8% at the ED.
Clinical Course: She was taken to the ED and died shortly after arrival.
Environmental Findings: Phosphine gas concentrations were measured at the home the next day: Front door 25 ppm, garage 48 ppm, and top of stairs 25 ppm.
Autopsy Findings: Pulmonary edema, pleural petechiae, hepatic congestion. Postmortem toxicology blood phosphorus 0.69 mg/mL (ICP/MS, normal 0.31–0.44 mg/mL). Cause of death: Phosphine gas toxicity. Phosphine gas concentrations were measured at the home the next day: Front door 25 ppm, garage 48 ppm, and top of stairs 25 ppm.

Case 241. Acute chlorfenapyr ingestion: undoubtedly responsible.
Scenario/Substances: A 46 y/o male reportedly took a drink of a commercial insecticide that he mistook for water after it had been transferred from its original container into an unlabeled container. He spit it out, but ingested a small quantity described as "drops." He developed nausea and vomiting ~1 hr (post ingestion). EMS was called at 10 hr when he had abdominal pain, back pain, and diaphoresis with normal lung sounds and no diarrhea or increased salivation. EMS transported the patient to the ED. The type of insecticide was initially unknown.
Past Medical History: Patient reported as "health conscious" with no significant pre-existing medical problems.
Physical Exam: Generalized mild weakness, abdominal pain and back pain, diaphoretic, but mouth was dry. BP 104/59, HR 89, RR 16, T 37°C, O_2 sat 100%, lungs clear. He reported no further GI symptoms, but he was periodically restless, wanting to get up and walk around.
Laboratory Data: HCO_3 25, renal and hepatic tests WNL.

Clinical Course: The product was identified as a chlorfenapyr containing pesticide. The manufacturer reported that the other ingredients were surfactants and emulsifiers. At 16 hr the patient was still diaphoretic, but wished to leave the hospital against medical advice. He was convinced to stay for further observation and treatment. At 21 hr, the patient developed tachypnea (RR 28–30) and hypoxia (O_2 sat 80%) if nasal cannula oxygen was removed. He was still alert and oriented but requiring oxygen with slightly labored respirations. BP 110/62, HR 113, T 37.1°C and O_2 sat 99% on nasal cannula oxygen. He developed increasing respiratory distress, and he was transferred to the ICU. He died on Day 2.
Autopsy Findings: Marked pulmonary congestion, generalized visceral congestion, and mild bilateral apical emphysema. Blood ethanol was not detected, blood lorazepam 170 ng/mL, and the remainder of the benzodiazepine, drugs of abuse, and alcohols testing was negative. The lab was not able to test for chlorfenapyr. The cause of death was cardiorespiratory arrest secondary to toxic effects of insecticide ingestion (chlorfenapyr).

Case 242. Methomyl ingestion: probably responsible.
Scenario/Substances: A 47 y/o male ingested an unknown white powder. He initially presented to the ED with complaints of "shakiness" was given 2 doses of lorazepam and discharged home. The next morning he returned to the ED with complaints of feeling shaky and could barely walk. He then went into full arrest/asystole.
Past Medical History: Depression for the past week.
Physical Exam: In the ED: Unresponsive, fixed pupils with miosis. HR 70s, BP 89/45, T 31°C.
Laboratory Data: Prior to resuscitation: ABG-pH 6.7/pCO_2 127/pO_2 68, BE 23. After resuscitation: pH 7.05/pCO_2 61/pO_2 94/BE 15. Hgb 15, Hct 46, platelets 162, Ca 9.1,

Na 149	Cl 106	BUN 12	Glu 366
K 4.0	HCO_3 19	Cr	

Serum osmol 311, CK 1080, AST 147, ALT 108. UA: 3 + sediment, protein > 3000, RBC 5–10, pH 6.0. Acetaminophen, ethanol and salicylate not detected. UDS negative.
Clinical Course: He was intubated and placed on a ventilator. He was treated with epinephrine, atropine, bicarbonate, calcium, naloxone and vasopressin. Norepinephrine was started. He was admitted to ICU on max doses of norepinephrine, epinephrine and vasopressin drips were started. He had foul-smelling diarrhea that was described as clear red with mucoid chunks. Warming was attempted with warm IV fluids. He was drooling significantly but had no oral lesions. The next day the white powder was sent to an analytical lab for testing. The patient remained on norepinephrine, epinephrine, and vasopressin drips as his HR dropped to the 30s. Based on the prognosis the family opted for institution of comfort measures and he expired of respiratory failure.
Toxin Findings: The white powder was thought to be a "fish stunning powder" which is placed in the water to stupefy the fish and make them easier to catch. Two weeks later, the results of the lab testing revealed that the white powder was methomyl.
Autopsy Findings: No drugs or substances were found on the toxicology screening. They were unable to locate a laboratory that could test body fluids for methomyl. Cause of death was "undetermined."

Case 244. Acute paraquat ingestion: undoubtedly responsible.
Scenario/Substances: 50 y/o homeless male was brought to a hospital vomiting blood. Approximately 5 days earlier, he ingested a substance he believed to be fruit juice in an agricultural field. Since that time he has had throat pain and been hoarse. On the day of presentation he was dyspneic. A bystander told responding EMS that he believed that the substance ingested was paraquat.
Past Medical History: Not available.
Physical Exam: Awake, alert jaundiced male in mild respiratory distress. Vital signs described as "stable." The oropharynx was erythematous consistent with a corrosive insult.
Laboratory Data: ABG-pH 7.45/pCO_2 30/pO_2 59 on 2L NC. BUN 146, Cr 12.2, AST 259, ALT 189, Alk phos 1252, total bilirubin 9.4, albumin 2.5. C×R showed pulmonary fibrosis.
Clinical Course: Bi-PAP and hemodialysis was initiated. Over days his liver and renal function improved. Oxygenation declined steadily through Day 10 when the patient expired from respiratory failure.
Autopsy Findings: No autopsy was performed. A Day 4 urine specimen (~9 days post ingestion) found urine paraquat to be 1.03 mcg/mL.

Case 248. Acute chlorpyrifos ingestion: contributory.
Scenario/Substances: 56 y/o male inadvertently ingested a mouthful of chlorpyrifos insecticide mistaking it for his water after drinking 10–12 beers. He drank water to dilute it but started vomiting immediately and was brought to the ED by a family member.
Past Medical History: The patient had a history of hypertension, osteoarthritis, chronic ethanol abuse and was a heavy smoker.
Physical Exam: Alert and followed commands; diaphoretic, with vomiting, diarrhea, fasciculations and increased oral secretions. BP 150/90, HR 80, 37°C with O_2 sat 100%. He was given atropine and pralidoxime, sedated, intubated and mechanically ventilated for airway protection. Exam showed rhonchi bilaterally, moist skin, soft abdomen with active bowel sounds. He had good urine output from his Foley catheter.
Laboratory Findings: Na 140, K 3.4, BUN 9, Cr 0.8; AST 30, ALT 40, CK 135; RBC cholinesterase level was 1585 IU/L (reference 5300–10,000 IU/L). Triglyceride level was 397 mg/dL, blood alcohol 0.23 g/L.
Clinical Course: He patient was admitted to the ICU and given atropine for diarrhea stools and increased oral secretions. He developed tremors and agitation which was thought to be symptoms of alcohol withdrawal. His C×R showed bilateral infiltrates and aspiration pneumonia was

suspected. After Day 5, his level of consciousness decreased and he became unresponsive even without sedation. Later he became hemodynamically unstable and required vasopressors. On Day 8 he had 2 cardiac arrests and expired.
Autopsy Findings: Evidence of arteriosclerotic and hypertensive heart disease, chronic ethanol abuse, arteriole nephrosclerosis, bronchopneumonia and alveolar damage were noted. The cause of death was deemed organophosphate poisoning. The manner of death was undetermined.

Case 251. Acute organophosphate ingestion: undoubtedly responsible.
Scenario/Substances: 64 y/o male was found in cardiopulmonary arrest by his wife after ingestion of 16 ounces of 50% malathion. She performed CPR until EMS arrived on scene. EMS intubated him. He was revived following a single 1 mg dose of atropine IV.
Past Medical History: Not provided.
Physical Exam: Unresponsive male with bradycardia, miosis and mild hypotension. Lung fields clear to auscultation; odor of malathion present.
Laboratory Data: RBC AChE 1057 IU/L [reference range: 9572–15031] (2 hr postingestion and pre-2-PAM dosing); 3254 IU/L (one day with continuous 2-PAM infusion). 19 H postingestion: pH 7.31; $HCO_3$13.
Clinical Course: The patient was treated with bolus doses of 1 mg atropine and a norepinephrine infusion was titrated successfully to MAP $>$ 60. His lung sounds were clear and he was easy to ventilate. A persistent smell of malathion including from the ventilator circuit was described. A Mark 1 2-PAM injector was administered followed by a loading dose and continuous infusion at 8 mg/kg/H. Bolus doses of midazolam infusion were administered for neuro-protection. At 3 hr he developed mild fasciculations which resolved 5 hr later. At 17 hr he remained unresponsive without any sedation or midazolam with fasciculations resuming. Lungs remained clear, continuous 2-PAM infusion was in place and he was restarted on a norepinephrine infusion due to hypotension with HR 58. At 25 hr re-warming from therapeutic hypothermia began without sedation. Neurologically he was unresponsive except for occasional eye-opening without tracking. ECG showed QTc 501 ms; pH 7.31, HCO_3 3 for which he received 2 amps of sodium bicarbonate IVP. At 34 hr EEG showed no brain activity, comfort measures were instituted and he expired on Day 5.
Autopsy Findings: Autopsy was not performed.

Case 257. Acute phosphine inhalation: undoubtedly responsible. (see also Case 238)
Scenario/Substances: A 15 m/o female presented to the ED with difficulty breathing, nausea and vomiting for several hr after the family's yard had been treated with up to 1.2 pounds of aluminum phosphide pellets for pest control.
Past Medical History: Healthy female.
Physical Exam: Cyanotic, BP 98/76, HR 164, RR 40.
Laboratory Data: ECG: RBBB, lactate 3.4, UDS negative for cocaine, amphetamines, benzodiazepines, barbiturates, and opiates. COHb 2.4%. C×R: mild pulmonary edema.
Clinical Course: She received low dose dopamine for hypotension 1 hr after presentation. Heart rhythm deteriorated to wide complex tachycardia and cardiac arrest 10–12 hr after presentation. The patient was intubated and placed on ECMO for ~36 hr before she expired.
Environmental Findings: Phosphine gas concentrations were measured at the home the next day: Front door 25 ppm, garage 48 ppm, and top of stairs 25 ppm.
Autopsy Findings: Pulmonary edema, cerebral edema, hepatic congestion, bilateral pulmonary effusions. Postmortem toxicology blood phosphorus 0.50 mg/mL (ICP/MS, normal 0.31–0.44 mg/mL). Cause of death: Phosphine toxicity.

Case 262. Acute phosgene inhalation and dermal exposure: undoubtedly responsible.
Scenario/Substances: A 58 y/o employee at a chemical plant was sprayed in the face with phosgene while servicing a transfer hose. EMS transported him to the ED.
Physical Exam: HR 80, BP 98/65, RR 26, T 35.6°C.
Clinical Course: In the ED he complained of a sore throat. He was decontaminated and started on IV fluids. About 2.5 hr later he developed shortness of breath, tachypnea, and his O_2 sat dropped to 80%. His condition continued to worsen, he was intubated, he developed pulmonary edema and hypotension. Despite norepinephrine, steroids, nebulizations, and oxygen, lorazepam and fentanyl his condition rapidly deteriorated and he died the following day.
OHSA Findings: Later investigations of the chemical plant confirmed the phosgene leak.
Autopsy Findings: Not performed.

Case 264. Acute methadone ingestion: undoubtedly responsible.
Scenario/Substances: A 2 y/o male was found in cardiopulmonary arrest on the couch while being watched by family friends. A bottle of methadone was found near the child. The owner of the methadone tablets stated he had recently spilled his methadone prescription, but believed he had recovered all the spilled tablets. EMS was called and transported the child to the ED.
Past Medical History: Recent respiratory tract infection.
Laboratory Data: Clinical Course: Resuscitation efforts by EMS and ED staff were not successful.
Autopsy Findings: Autopsy showed findings suggestive of positional asphyxia, including being found unresponsive on pillows on a couch with an adult, bilateral conjunctival hemorrhages, multifocal visceral petechial hemorrhages, tardieu spots and diffuse cerebral edema with early acute hypoxic neuronal changes. Additional findings were miltifocal areas of bronchopneumonia with edema and congestion. Postmortem blood methadone 514 ng/mL, EDDP 33.5 ng/mL. Cause of death: methadone intoxication with bronchopneumonia as a significant contributing factor.

Case 267. Acute fentanyl transdermal exposure: undoubtedly responsible.
Scenario/Substances: A 5 y/o male was found to be minimally responsive. Over the next hr he remained obtunded,

appeared to be gasping for breath and became cyanotic. He was brought to the ED by the family and rescue breathing was initiated enroute. On arrival at the ED he was pulseless, was intubated and received epinephrine and dopamine with return of circulation. He was then transported via helicopter to an HCF with a pediatric ICU. He did not receive further sedation or analgesia. The cause of illness was uncertain, although the patient was exposed to lindane the previous evening.

Physical Exam: After resuscitation, ECG showed sinus rhythm with a QRS of 86 ms, and a slightly prolonged QTc. HR was 120, gag and corneal reflexes were absent and he did not respond to noxious stimuli, pupils were fixed and dilated with bilateral retinal hemorrhages.

Laboratory Data: During cardiac arrest ABG-pH was 6.0. Following resuscitation venous blood gas: pH 7.28/pCO_2 46/pO_2 26, O_2 sat of 39, lactate 7.7, anion gap 25

Na 144	Cl 101	BUN 34	Glu 281
K 3.5	HCO_3 18	Cr 1.4	

Acetaminophen and salicylate were not detected, UDS was negative ALT 574, AST 760, CK 4472.

Clinical Course: Head CT: diffuse cerebral edema with effacement of basal cisterns and sulci. CT angiography: no intracranial blood flow. He was given comfort care and expired shortly thereafter.

Autopsy Findings: Antemortem blood (on ED arrival) fentanyl 5 ng/mL. The manner of death was an accident, cause of death was anoxic brain injury. Lindane was not detected postmortem and judged not contributory. Further history: the patient's grandmother used transdermal fentanyl, which the child had been observed playing with on previous occasions. Fentanyl patches were not recovered however, specific efforts to recover material from the GI tract were not made as this history was unavailable at the time of autopsy.

Case 268. Acute oxycodone ingestion: undoubtedly responsible.

Scenario/Substances: A 7 y/o 48 kg previously healthy male experienced severe dental pain while visiting relatives out of state. Administration of 400 mg of ibuprofen orally at home failed to control the pain, so the child was given 1 oxycodone 30 mg immediate-release tablet prescribed for an adult relative. At 30 min (after ingestion) the child complained of dizziness and was instructed to sit down. At 1 hr he was unarousable. CPR was initiated by an adult relative and EMS was summoned. The child was immediately intubated by EMS, IV access was established; 5 doses of epinephrine were required to achieve a pulse and detectable BP. One dose of naloxone was administered with no response.

Clinical Course: Resuscitation in the ED included dopamine at 20 mcg/kg/min, epinephrine at 3 mg/kg/min with return of circulation. Initial ABG-pH 6.9, neuro exam revealed fixed, irregular, and dilated pupils with no spontaneous movement, breathing, T 32°C. Once HR had been maintained for 30 min, the child was transported via helicopter to a tertiary care HCF. An additional dose of naloxone was administered with no effect. On arrival at the second HCF: WBC 12.2, Hgb 14.7, PT 20.5, INR 1.7, PTT 65.7, Ca 8.3 Ca (ionized) 1.63, PO4 7.5

Na 142	Cl 109	BUN 18	Glu 388
K	HCO_3 13	Cr 1.37	

AST 955, ALT 496, Alk phos 283, bilirubin 0.4, HCO_3 12, BE -16, lactate 13 mmol/L. The patient was admitted to a pediatric ICU where, despite continued care, his condition continued to deteriorate. Because irreversible neurologic and organ damage had occurred heroic measures were not initiated; the patient expired 12 hr postadmission.

Autopsy Findings: Pulmonary congestion and edema/pulmonary aspiration with acute pneumonia; history suspicious for a drug related death. Silver colored metal cap on the third tooth to the left of the midline in the lower jaw; its counter- part on the right is behind its neighboring teeth, history of tooth ache. Antemortem blood: oxycodone 0.39 mcg/mL, oxymorphone 17 ng/mL, ethanol not detected. Cause of death: oxycodone drug toxicity, manner of death: accident.

Case 257. Acute oxycodone ingestion: probably responsible.

Scenario/Substances: A 15 y/o male texted his mother to inform her that he was "getting high" on oxycodone. He ingested an unknown amount that evening and was found by his mother the next morning hypoxic. EMS found the patient in cardiac arrest, resuscitated him, and transported him to the ED.

Past Medical History: Tourette's Syndrome.

Physical Exam: Non-responsive, pupils fixed and dilated.

Laboratory Data: UDS was positive for synthetic opioids and negative for barbiturates, benzodiazepines, cocaine. Serum acetaminophen and salicylate were not detected. Cr 4.21, CK 17,435, ALT 4222, AST 1954, lactate 4.1 mmol/L, troponin 10.03.

Clinical Course: In the ED he was intubated and placed on a naloxone drip, and later was transferred to a tertiary care pediatric hospital. He remained unresponsive without movement. He was placed on vasopressors to maintain BP. Trial doses of naloxone 6 mg and flumazenil 2 mg were given and brain exams were conducted. The patient was declared brain dead on Day 3. Comfort measures were instituted and he expired on Day 4.

Autopsy Findings: Cerebral edema, liver congestion, pulmonary edema, obesity. Antemortem blood oxycodone 0.14 mcg/mL. Blood negative for cocaine, methamphetamine, morphine. Cause of Death: drug toxicity (oxycodone).

Case 280. unknown acetaminophen/diphenhydramine ingestion: undoubtedly responsible.

Scenario/Substances: 17 y/o female was brought to the ED for slurred speech and picking at things in the air. EMS reported a pre-hospital seizure. Time of ingestion unknown. Empty bottle containing acetaminophen/diphenhydramine found under patient's bed.

Past Medical History: Bipolar disorder, anxiety. Medications: alprazolam, hydrocodone/acetaminophen, ziprasidone
Physical Exam: BP 117/58, HR 167, RR 16 (intubated, ventilator) T 39°C, O_2 sat 100%. Pupils dilated; skin red and dry, no rigidity noted.
Laboratory Data: WBC 19.3, Hgb 12.0, Hct 36, platelets 147; PT 17.5, INR 1.7, PTT 27.3, fibrinogen 152, Ddimer >5800 (normal < 500)

Na 148	Cl 120	BUN 11	Glu 75
K 3.6	HCO_3 18	Cr 1.4	

Acetaminophen 100 mcg/mL (unknown time), AST 125, ALT 53; UDS positive for benzodiazepines and diphenhydramine; Head CT negative.
Clinical Course: Delirium was present and she developed seizures which were difficult to control with alprazolam and phenobarbital. Core T increased to 107 within hr and she was transferred to a tertiary care center without complete control of the hyperthermia. Hypotension was treated with dopamine. The patient remained unresponsive on a ventilator without sedation. N-acetylcysteine was given. Maximum AST 659, ALT 886. MRI of brain showed multiple areas of ischemic/hypoxic injury. LP results was negative; CK 10,645. C×R showed bilateral pulmonary atelectasis. Patient was sedated, paralyzed, actively cooled; the pupils became unequal and nonreactive. Neurological status continued to deteriorate; cerebral herniation occurred, comfort measures were instituted and she expired on Day 9.
Autopsy Findings: An autopsy was not performed. ME determined the cause of death was hypoxic-ischemic encephalopathy due to probable anticholinergic (diphenhydramine) and acetaminophen toxicity, ruled accidental.

Case 282. Acute salicylate and loratadine ingestion: undoubtedly responsible.
Scenario/Substances: 18 y/o male presented 6 hr after ingesting an entire bottle of aspirin, and 24 hr after ingesting 120 tablets of loratadine 10 mg.
Past Medical History: healthy male.
Physical Exam: In the ED (6 hr) BP 114/68; HR 120; RR 17; T 37°C; O_2 sat, 97% on room air; alert and oriented.
Laboratory Data: ABG-pH 7.55/pCO_2 23/pO_2 128, WBC 12.2, AST 20, ALT 16, UDS negative; urine pH 6.5,

Na 141	Cl 106	
K 4.1	HCO_3 21	Cr 1.1

salicylate 85.5 mg/dL (6 hr).
Clinical Course: 2 hr after arrival (8 hr postingestion), the patient began to have seizures and was hyperthermic. He was treated with lorazepam, and intubated. Just prior to this, he developed VT. After intubation he was given 2 boluses of sodium bicarbonate then a continuous infusion. However, he continued to have seizures and phenobarbital was added. Serum pH dropped to 7.22 and urine pH dropped to 6.1 despite alkalinization and hyperventilation. He was transferred to a tertiary care hospital for hemodialysis and expired shortly after arrival.
Autopsy Findings: Pulmonary edema (severe), no pill fragments or residue in the stomach. Postmortem serum salicylate, 98.2 mg/dL; serum acetaminophen 5.2 mcg/mL. Cause of death: was acute salicylate poisoning, Manner cause of death: suicide.

Case 289. Acute ibuprofen, salicylate, acetaminophen and hydrocodone ingestion: undoubtedly responsible.
Scenario/Substances: A 19 y/o female took acute oral overdose of ibuprofen 200 mg (max 500 tablets), aspirin 325 mg (max 100 tablets), and hydrocodone/acetaminophen (max 30 tablets). Family found her unresponsive and attempted to revive her in cold shower. EMS found her unresponsive and administered naloxone. She had a seizure en route to hospital and underwent rapid sequence intubation.
Past Medical History: Depression, alcohol abuse.
Physical Exam: BP 88/40–71/36, HR 124, T 35°C, lungs clear, pupils pinpoint and unreactive,, moving all extremities unresponsive to voice, withdraws to pain.
Laboratory Data: ABG-pH 7.20, HCO_3 11, base excess −15 mMol/L, lactate 6.5 mMol/L (peaked at 9.8), acetaminophen 10.3 mcg/mL, peak salicylate 29 mg/dL. Urine tox screen positive for opiates, benzodiazepines (administered therapeutically), and barbiturates thought to be false positive secondary to ibuprofen as confirmatory testing was negative). Patient had no history of barbiturate use. Peak values for anion gap 22, K 6.1, INR 2.5, Cr 2.3, CK 51,381. Blood ibuprofen 410 mcg/mL on Day 4. Admission urine: hydrocodone 1576 ng/mL, hydromorphone 298 ng/mL.
Clinical Course: Lorazepam and vecuronium were administered in ED for agitation. Orogastric tube was placed, stomach aspirated of pill fragments, and 50 grams activated charcoal instilled. She remained hypotensive in ED despite 4 L fluid resuscitation and initiation of pressors. Head CT was normal. She was alkalinized for suspected salicylate intoxication. She remained hypotensive throughout hospital course despite infusions of dopamine, norepinephrine, neosynephrine, and vasopressin. She was dialyzed on Day 2 for acidosis, hyperkalemia, and suspected salicylate intoxication. BP improved briefly, but fell again and remained low. Propofol infusion was begun for agitation. Transvenous pacemaker inserted for slow, idioventricular rhythm on Day 3. She arrested and died on day 4.
Autopsy Findings: Death was due to multiorgan system failure due to polydrug overdose of ibuprofen, opiates, and salicylate.

Case 295. Acute colchicine ingestion: undoubtedly responsible.
Scenario/Substances: A 20 y/o male ingested an unknown number of his mother's 0.6 mg. colchicine tablets. He had one episode of emesis and diarrhea at home.
Physical Exam: Alert and oriented.
Laboratory Data: UDS positive for cocaine and THC metabolites.
Clinical Course: and presented to the ED 8 hr after ingestion. In the ED he complained of nausea only. Initial HR 75, BP 136/78, ECG: normal sinus rhythm. He was admitted

to a medical floor, given an antiemetic, and had no further episodes of emesis or diarrhea. At 35 hr postingestion he developed the sudden onset of vomiting, abdominal pain and bloody diarrhea, systolic BP 90, HR 110–120, and he was transferred to the ICU. He continued to be alert and oriented despite watery, bloody rectal discharge and diminished urine output despite 3 L of IV fluids. ABG-pH 7.13/pCO_2 15/pO_2 66 on a nonrebreather mask with FiO_2 100%. WBC 29.0, Hgb of 18.2, CK 1845 IU/L, HCO_3 15, BUN 37, Cr 2.9, amylase 233 IU/L, lipase 106 IU/L, lactate 12.2, Ca 6.9L, AST 386, ALT 175, total protein 5.5 g/dL, PT 41.9, aPTT 74.2, INR 11.8. Patient was transferred to another facility for ECMO support. His O_2 sat remained in the 40% range despite intubation and was bleeding from multiple sites. ABG-pH 6.94, T 36.4°C, HR 110, BP 96/50 with multiple vasopressors. The patient expired at ~46 hr post ingestion.
Autopsy Findings: Not performed.

Case 392. Acute fentanyl ingestion with aspiration: undoubtedly responsible.
Scenario/Substances: 31 y/o male was found unresponsive lying supine in pool of emesis. The night before he told his girlfriend he was suicidal and intended to use a fentanyl patch. He reportedly had been buying his drugs on the street and would frequently chew on fentanyl 25 mcg patches. He was believed to have been chewing on a 100 mcg patch that morning.
Past Medical History: Depression, recreational drug abuse.
Physical Exam: Unresponsive, labored breathing with periods of apnea, B/P 120/71, HR 114, T 38°C. Pinpoint pupils, coarse lungs sounds.
Laboratory Data: ABG-pH, 7.15/pCO_2 75/pO_2 145.

Na 143	Cl 102	BUN 29	Glu 88
K 6.1	HCO_3 29	Cr 3.5	

AST 246, ALT 134; CK, 6871, acetaminophen and ethanol not detected; Urine was tea colored, UDS negative. C×R positive for aspiration. ECG QRS 72 ms, QT 459 ms, peaked T waves.
Clinical Course: Post-fluid resuscitation and intubation: B/P101/54, HR 120, RR 34, ECG: normal QRS and QT with sinus tachycardia. Urine output ~50 cc/hr. Day 2 CK 49,763 IU/L, AST 1288. The patient was sedated with propofol. Day 5 pancreatitis found (lipase 4727); EEG showed no seizure activity but dampened alpha waves. The patient was unresponsive with posturing; comfort measures were instituted and she expired on Day 14.
Autopsy Findings: Not performed. ME's report attributed the cause of death as cerebral anoxia secondary to fentanyl overdose, but determined the manner of death to be accidental.

Case 468. Acute acetaminophen/diphenhydramine ingestion: undoubtedly responsible.
Scenario/Substances: A 38 y/o female ingested 90 acetaminophen/diphenhydramine tablets in an intentional overdose. She presented to the ED 2 days after the ingestion.
Physical Exam: Initially patient was alert and oriented, tachycardic, but hemodynamically stable. Pupils were dilated and icteric.
Laboratory Data: In the ED acetaminophen was 107 mcg/mL, AST 9162, ALT 6888, INR 9.4, CK 1534, total bilirubin 4.29, Cr 1.3 mg/dL, WBC 20.
Clinical Course: Patient was started on IV N-acetylcysteine, received Glu for initial hypoglycemia, IVFS and vitamin K. AST increased to 12,341, ammonia to 101, lactate 4.9, repeat Cr to 1.81. She was treated with antibiotics and transferred to a tertiary care facility. She became encephalopathic and was intubated and ventilated. She was placed in phenobarbital-induced coma and hypothermia. She received a liver transplant and had a partial small bowel resection secondary to necrotic bowel. She developed hypotension and was started on pressors, then became hypertensive. Patient didn't improve clinically following the transplant, CT scan of her abdomen suggested bowel perforation and she died from a cardiac arrest on Day 15; 9 days after the transplant.
Autopsy Findings: Cause of death: acute acetaminophen toxicity.

Case 506. Acute tramadol ingestion: probably responsible.
Scenario/Substances: 41 y/o female found by her husband unresponsive and cyanotic after complaints of nausea and vomiting followed by an episode of syncope at home. She was on tramadol and pregabalin for fibromyalgia. The tramadol was recently filled but the medication bottle could not be found. EMS found her to be apneic, unresponsive, and in PEA. Intubation was performed in the field and she was given naloxone, epinephrine, and atropine resulting in sinus rhythm but remaining unresponsive.
Past Medical History: Chronic pain, and fibromyalgia. Medications included tramadol, pregabalin, and acetaminophen/hydrocodone.
Physical Exam: Unresponsive with pupils were fixed and dilated at 8 mm. BP 78/38, HR 117, RR 20 (ventilator), T 37°C. There were no localizing movements of any extremity; breath sounds was coarse bilaterally, and she had no spontaneous breaths.

Na 143	Cl 103	BUN	Glu 250
K 3.5	HCO_3 18	Cr 1.7	

Laboratory Data: ABG-pH 6.62/pCO_2 118 AST 142, ALT 125, acetaminophen 5 mg/L, salicylate 5.4 mg/dL, ethanol not detected. ECG showed sinus tachycardia with inferior ST depression consistent with ischemia secondary to prolonged CPR.
Clinical Course: Shortly after arrival to the ED, she had 2 additional episodes of PEA and bradycardia treated with additional atropine and epinephrine. Dopamine was used for her hypotension and acidemia was treated with sodium bicarbonate and ventilation. Repeat ABG-pH of 7.2/pCO_2 38.8. A CT scan of the head showed loss of grey/white differentiation and diffuse cerebral edema suggestive of diffuse

anoxic brain injury. Comfort measures were instituted and he expired on Day 1.
Autopsy Findings: Cardiomegaly with biventricular dilatation and obesity (body mass index 34.3). Postmortem peripheral blood was positive for tramadol (2500 ng/mL) and o-desmethyltramadol (400 ng/mL). The cause of death was reported as acute tramadol toxicity.

Case 552. Acute salicylate ingestion: undoubtedly responsible.
Scenario/Substances: A 45 y/o female ingested 800 aspirin tablets (325 mg) in a self-harm attempt and presented to the ED 1 hr later.
Past Medical History: Multiple sclerosis, seizure disorder, renal insufficiency; medications: clonazepam, lorazepam, carbamazepine, and phenytoin.
Physical Exam: In the ED, altered mental status "staring into space".
Laboratory Data: Serum K 4.3, Cr 0.9, BUN 19, salicylate 53.4 mg/dL, ABG-pH 7.56/pCO_2 16/pO_2 98/HCO_3 14, phenytoin 9 mg/L, carbamazepine 4.5 mg/L, acetaminophen not detected.
Clinical Course: She was started on bicarbonate IV drip. At 5–6 hr after admission she was tachypneic, vomiting, T 42.8°C, treated with cooling blankets, salicylate 121 mg/dL. At 8 hr after admission the patient was intubated and placed on ventilator. One hr after intubation she suffered a cardiac arrest and expired.
Autopsy Findings: Pulmonary edema, charcoal liquid in the stomach; Postmortem blood salicylate 650 mcg/mL; blood screen: alcohol, cocaine, methamphetamine and morphine not detected. Cause of Death: Acute salicylate toxicity.

Case 588. Acute-on-chronic colchicine and ethanol ingestion: undoubtedly responsible.
Scenario/Substances: A 48 y/o male ingested 60 colchicine tablets (unknown strength) with alcohol.
Past Medical History: Gout, diabetes, coronary artery disease, alcoholism, depression, previous suicide attempts.
Physical Exam: Initial vital signs and ECG in the ED were "normal." Later that day he became tachycardic to 120, BP 123/79, T (oral) 37°C, RR 15, O_2 sat 98% on 2 L O_2.
Laboratory Data: Serum HCO_3 19, pH 7.5. Salicylate and acetaminophen were undetected, UDS was negative. WBC 14.4, hepatic enzymes were WNL, ECG: sinus tachycardia 155. QRS and Q-T WNL.
Clinical Course: Gastric lavage was performed and he was given activated charcoal in the ED. He received IV NS. On Day 2, he developed a tremor, vomited and appeared to be in alcohol withdrawal. He was started on benzodiazepines for ethanol withdrawal per the CIWA protocol. His systolic BP 130 and his HR 100–120. On Day 3 he was agitated and in sinus tachycardia, BUN 40, Cr 3.55 with normal urine output. He was started on sodium polystyrene sulfonate for hyperkalemia. On Day 4 he became hypotensive, bradycardic and suffered cardiac arrest during hemodialysis. He was pronounced dead on Day 4.
Autopsy Findings: Toxicology: postmortem blood ethanol 0.08 g%, caffeine was present, venlafaxine and norvenlafaxine were not detected. Ante-mortem serum colchicine 15 ng/mL, delta-9-tetra-hydrocannabinol and 11-hydroxy-delta-9-THC were not detected, but 11-nor-delta-9 THC 10 ng/mL. Norvenlafaxine was present in the urine. The cause of death was intoxicating effects of colchicine overdose, the manner of death was suicide.

Case 602. Acute salicylate ingestion: undoubtedly responsible.
Scenario/Substances: 49 y/o male presented to the ED with signs of salicylate poisoning. He was severely agitated and confused, had tachypnea and the initial salicylate level was 102 mg/dL.
Past Medical History: Not reported.
Physical Exam: Agitated and confused male. BP 140/90, HR 140, RR 32, T38.2°C.
Laboratory Data: K 3.9, salicylate 105 mg/dL; at 2 hr salicylate 126 mg/dL. Serum pH 7.55 while on IV bicarbonate infusion.
Clinical Course: The patient remained agitated and aggressive but was not intubated until dialysis access was to be placed. Dialysis was delayed and he expired before dialysis could be initiated on Day 1.
Autopsy Findings: Not available.

Case 612. Acute-on-chronic colchicine, alprazolam ingestion: undoubtedly responsible.
Scenario/Substances: 50 y/male ingested 30 colchicine tablets, 0.6 mg each, and 60 alprazolam, 0.25 mg each. Ingestion was witnessed by two older sons.
Past Medical History: Arthritis and gout.
Physical Exam: Ataxic and confused male. BP 129/81, HR 97, RR 18.
Laboratory Data:

Na 139	Cl 100	BUN 8	Glu 70
K 4.1	HCO_3 29	Cr 0.9	

Calcium 9.3 mg/dL, albumin 4.1, total protein 7.3, total bilirubin 0.8, Alk phos 86, AST 30, ALT 23, lipase 22, acetaminophen and ethanol not detected; CK 82, troponin not detected, UDS was positive for benzodiazepines.
Clinical Course: The patient presented within 1 hr of ingestion. He was ambulating in ED and was able to drink activated charcoal. At 12 hr he had tachypnea, tachycardia and worsened mental status. He was intubated and sedated with propofol and given additional activated charcoal given via NGT. BP 94/73, HR 109, RR 26, T 37°C, O_2 sat 100% on 30% FiO_2 via ventilator. At 36 hr urine output was less than 5 ml/hr and he had hypoactive bowel sounds. Cr 2.92, HCO_3 16. Bicarbonate IV infusion and antibiotics were started. At 60 hr: BP 133/100, HCO3 16, BUN 41, Cr 5.4, CK, 5806, Glu 216 and hemodialysis was started. At 80 hr he had bleeding from IV site, eyes, nose, mouth, blood in urine (dark color) and found to have platelets 34 and AST of 380. Bleeding continued and he expired 108 hr after exposure.
Autopsy: Not performed.

Case 616. Fentanyl transdermal, ethanol: undoubtedly responsible.
Scenario/Substances: 51 y/o female found unresponsive several hours after she was witnessed cutting open and eating the contents of a fentanyl patch. EMS found the patient in asystole and hypoglycemic. CPR was initiated, she was intubated, given oxygen and an IV was started. Three doses of epinephrine, 1 dose of atropine, naloxone 2 mg, and dextrose 50% in route were given enroute to the ED. No significant change the patient's condition occurred.
Past Medical History: The patient had a history of herniated disk surgery, back pain, hypertension, tobacco and alcohol use. Medications found at the home included an empty container of metoprolol and the cut open fentanyl patch.
Physical Exam: The patient was in asystole with CPR in progress. Her breath smelled of alcohol, pupils were dilated, and she appeared to be posturing.
Laboratory Data: WBC 6.3, Hgb 11.1, Hct 38, platelet 122;
Ca 23.8, Mg 2.8, anion gap18, ALT 2722, AST 3440, CK 112, CKMB 2.4, troponin 0.29, ethanol 176 mg/dL.

Na 135	Cl 111	BUN 9	Glu 729
K 10.2	HCO_3 16	Cr 1.0	

Clinical Course: The patient received multiple doses of epinephrine, atropine, and naloxone as well as sodium bicarbonate and calcium chloride and was defibrillated several times without success. ACLS was discontinued after 30 min and the patient expired in the ED.
Autopsy Findings: There were no significant gross or microscopic findings. Blood fentanyl was 7.3 ng/mL, and was positive in the urine. Ethanol was 206 mg/dL in the blood and 248 mg/dL in the urine. The blood drug screen was positive for citalopram (trace) and alprazolam at less than 5 ng/mL. The UDS was positive for citalopram and metoprolol.
Cause of Death: Intoxication with Ethanol and Fentanyl.
Manner of Death: Accidental ingestion of alcohol and Fentanyl patch contents.

Case 658. Acute-on-chronic acetaminophen/propoxyphene, lorazepam ingestion: undoubtedly responsible.
Scenario/Substances: 54 y/o male found unresponsive by his mother at home with empty bottles of acetaminophen/propoxyphene and lorazepam; was last seen "normal" the previous day.
Past Medical History: Depression with previous suicide attempts, anxiety, polysubstance abuse, seizures, bipolar disorder, and ethanol abuse. Medications included acetaminophen/propoxyphene, 120 tablets filled 11 days previously and lorazepam.
Physical Exam: Unresponsive. BP 90/52, HR 85, RR 16 (ventilator), T 33.5°C. Lungs clear.
Laboratory Data: ABG-pH 7.12/pCO_2 47/pO_2 80.

Na 139	Cl 102	BUN 11	Glu 172
K 3.8	HCO_3 12	Cr 3.9	

AST 153, ALT 53, Alk phos 63, INR 1.9, platelets 117; ammonia 64, lactate 19, acetaminophen 735 mcg/mL; UDS positive for benzodiazepines and cocaine. At 1 hr ABG-pH 7.0/pCO_2 31/pO_2 134; at 6 hr ABG-pH 6.9/pCO_2 31/pO_2 105; CPK 16,202, troponin 0.08; ammonia 95, AST 842, ALT 183; acetaminophen 530 mcg/mL. At 9 hr ABG-pH 6.86/pCO_2 36/pO_2 95; ammonia 149, AST 983, ALT 242, PT, 29.3 sec; INR 2.7, PTT 64 sec; acetaminophen 500 mcg/mL. At 20 hr acetaminophen 444 mcg/mL; INR 4.1, Cr 3.1. HCO3 8.
Clinical Course: The patient was intubated, hypothermic and hypotensive, did not respond to 1 dose of naloxone or IV fluids, and was started on vasopressors, norepinepherine and dopamine. He was started on N-acetylcysteine via nasogastric tube. Due to worsening acidosis, he patient was started on fomepizole and given 100 mg of thiamine and folic acid 50 mg every 4 hr. N-acetylcysteine was switched to IV at 2.5 hr due to loss of bowel sounds; alkalinzation therapy was started at 4.5 hr. At 6.5 hr, activated charcoal was given via nasogastric tube. He remained acidotic with significantly elevated acetaminophen levels (500 mcg/mL at 9 hr) and hemodialysis was recommended. A 3rd pressor was added to maintain BP, pupils were fixed and dilated, no gag or cough reflex were present. Comfort measures were instituted and he expired on Day 2.
Autopsy Findings: No autopsy was performed. Antemortem serum contained norpropoxyphene 1.3 mg/L, propoxyphene 2.0 mg/L. Cause of death was acute hepatic failure due to acetaminophen toxicity with contributions from propoxyphene toxicity. However, the clinical course is not consistent with typical acetaminophen hepatotoxicity but more with an acute acidosis from a highly elevated serum acetaminophen level.

Case 784. Acute morphine ingestion: undoubtedly responsible.
Scenario/Substances: 84 y/o female was found by nursing home staff to have altered mental status, uneven breathing, and "gurgling" in her chest. She was transported to a tertiary care hospital.
Past Medical History: Dementia, hypertension, anemia, osteoporosis, and osteoarthritis.
Physical Exam: C×R: consistent with pneumonia
Laboratory Data: UDS positive for opioids. Confirmatory testing resulted in a morphine level > 50,000 ng/mL.
Clinical Course: The patient expired on Day 2.
Autopsy Findings: No autopsy was performed. An ME review determined the cause of death to be aspiration pneumonia due to acute morphine toxicity. Six other patients at the same nursing home unit also tested positive for morphine; none (including this patient) had been prescribed morphine. A nurse at the facility was later charged with second degree murder and 6 counts of felony patient abuse.

Case 792. Acute opioid ingestion: probably responsible.
Scenario/Substances: A 15-month-old, was noted to be "congested" with wheezing when the mother came home from her work. The mother did not attempt to awaken the child. 5 hr later, the child was unresponsive. EMS found the child in respiratory arrest.
Past Medical History: previously healthy child, on no medications.
Physical Exam: Unresponsive in respiratory arrest of unknown duration. Post resuscitation on ventilator BP 114/66, HR 144, O_2 Sat 100%, lung sounds were coarse.
Laboratory Data: Glu 40, UDS positive for opiates by GS/MS confirmed morphine. Serum drug screen drawn 12 hr post admission was negative for opiates barbiturate, benzodiazepines, cannabinoids, cocaine, fentanyl, methadone, phencyclidine, propoxyphene, alcohols analgesics, anesthetics antihistamines and antipsychotics.
Clinical Course: Resuscitation by EMS and ED staff was successful, but there was no response to naloxone. Therapies included intubation, mechanical ventilation, dextrose, antibiotics and sedation with midazolam. The child displayed no purposeful movements. An MRI showed anoxic brain injury. The child suffered subsequent brain herniation and expired on Day 4. After an investigation, it was believed the child had ingested morphine belonging to one of the several adults in the home, as more than one adult had pain medications available to them. It was unknown if the child found a tablet that had been dropped or had possibly been given the morphine by one of the adults.
Autopsy Findings: Diffuse hypoxic-ischemic encephalopathy, cerebral edema and central brain herniation. There was no evidence of inflicted trauma. Cause of death: complication of morphine intoxication.

Case 803. Acute-on-chronic valproic acid (extended release), ziprasidone ingestion: undoubtedly responsible.
Scenario/Substances: 28 y/o female was found obtunded in bed. She had taken ~260 valproic acid 500 and possibly 40 tablets of ziprasidone. CPR was performed by EMS.
Past Medical History: Bipolar disorder, PTSD, substance abuse, including cocaine, tobacco, and ethanol; schizoaffective disorder, and multiple suicide attempts.
Physical Exam: Obtunded female, BP 91/50, HR 95, RR 15, O_2 sat 100% on 40% FiO_2.
Laboratory Data: ABG-pH 7.31/pCO_2 35/pO_2 138; Cr 1.5; UDS positive for cocaine. Valproic acid level was 1000 mcg/mL; acetaminophen and ethanol were not detected.
Clinical Course: She was intubated and put on the ventilator, given a normal saline fluid bolus and activated charcoal. A second valproic acid level was 1072 mcg/mL, 2 additional doses of activated charcoal of 0.5 gm/kg were given. BP decreased to 67/30 and required dopamine 10 mcg/min. A 3rd valproic acid level was 987.1 mcg/mL.

Na 152	Cl 120	BUN 8
K 4.6	HCO_3 14	Cr 1.7

ABG-pH 7.26/pCO_2 31/pO_2 111; AST 16, ALT 20. She was started on a sodium bicarbonate drip and dopamine was increased. Ammonia level was 298; lactulose started. Day 2 sedation was discontinued, her pupils reacted sluggishly. Ammonia 505 mmol/L

Na 154	Cl 116	BUN 8
K 2.7	HCO_3 20	Cr 1.7

Sodium bicarbonate was stopped; IV fluids and dopamine were continued. Lactulose was stopped and L-carnitine IV infusion was started; valproic acid 1073.1 mcg/mL. The patient had respiratory decompensation and worsened hypotension. Propofol was started. Comfort measures were instituted and she expired on Day 5.
Autopsy Findings: An autopsy was not performed. ME review determined the cause of death to be drug overdose due to polysubstance abuse, severe mental illness and bipolar disease.
Manner of death was suicide.

Case 809. Acute valproic acid and methamphetamine ingestion: undoubtedly responsible.
Scenario/Substances: 37 y/o male ingested an unknown amount of valproic acid at some unknown time. He was found unresponsive outside, wet and hypothermic and was transported to the ED. A suicide note was found in his clothing. He was intubated in the field.
Past Medical History: Bi-polar disorder, chronic hepatitis C, chronic alcoholism, hypertension, history of drug abuse. He had been hospitalized 3 times in the past 30 days with previous suicide attempts.
Physical Exam: Heart rate 125, BP 102/51, HR 125, RR 18 on the ventilator, T 35°C. O_2 sat 100% on FIO_2 30%.
Laboratory Data: ABG-pH 6.93/pCO_2 25/pO_2 143,

Na 150	Cl 110	BUN 12
K 4.1	HCO_3 20	Cr 0.8

UDS positive for methamphetamine, amphetamine and THC. Initial valproic acid level on arrival was 1286 mcg/mL which increased to 1399 mcg/mL when repeated.
Clinical Course: After admission to the ICU, the patient was started on lactulose and oral L-carnitine and remained unresponsive. Day 2 labs: valproic acid 1548 mcg/mL, NH_3 827, ABG-pH 7.41/pCO_2 33/pO_2 80,

Na 161	Cl 120	BUN 12	Glu 70
K 4.2	HCO_3 19	Cr 1.4	

Ca 6.2, Mg 2.3, AST 203, ALT 168. The patient was made DNR. On Day 3 he was unresponsive, intubated, hypotensive (82/31) and having runs of SVT in the 200 range.

Na 158	Cl 125	BUN 18	Glu 31
K 2.6	HCO_3 18	Cr 3.5	

valproic acid 532 mcg/mL, NH_3 345. Comfort measures were instituted and he expired on Day 3.
Autopsy Findings: Cause of death was listed as multiorgan system failure due to acute valproic acid poisoning. Other significant conditions: Bi-polar disorder, chronic hepatitis C, chronic alcoholism, hypertension, hypothermia, history of drug abuse, recent methamphetamine use. Serum concentrations from hospital samples showed valproic acid 414 mg/L (potentially toxic at 150–200 mg/L); d-Methamphetamine 0.11 mg/L (potentially toxic at 0.2–5 mg/L); d-Amphetamine 0.11 mg/L (potentially toxic at 0.2 mg/L).

Case 818. Acute-on-chronic oxcabazepine, bupropion (extended release), diltiazem (extended release) ingestion: undoubtedly responsible.
Scenario/Substances: 50 y/o male brought himself to the ED 2.5 hr after reported ingestion of 0.8 grams of diltiazem extended release, 3.6 grams of oxcarbazepine, and 4.5 grams of bupropion XL as a suicide gesture to escape impending legal trouble.
Past Medical History: depression, sexual perversion (with previous incarceration), antisocial personality disorder, alcohol abuse, tobacco use, hypertension.
Physical Exam: 3.5 hr postingestion: awake, alert and oriented. BP, 173/73, HR, 92, RR 18, T 37°C, O_2 sat, 99% on RA. No remarkable physical findings.
Laboratory Data: WBC 17.9, PT 13.4, INR 1.0.

Na 138	Cl 98	BUN 27	Glu 171
K 3.7	HCO_3 19	Cr 1.6	

Anion gap 21, lactate 182, AST 21; and ALT 26; Acetaminophen and salicylate were not detected; Serum tox screen was positive for benzodiazepines; toxic alcohol levels returned later negative for both methanol and ethylene glycol.
Clinical Course: The patient complained of "lightheadedness" and mild epigastric pain, became diaphoretic and tachypneic and at 2 hr was given oral activated charcoal and had a witnessed aspiration. At 6 hr the patient became hypotensive and bradycardic, hyperglycemic (Glu 353) and was incubated. ECG showed a junctional rhythm, first degree block, with a QRS of nearly 120 ms. IV fluid, 5 mg glucagon, 2 amps Calcium Chloride, and 2 amps Calcium gluconate were given with minimal response. 1 mg of atropine was given and the patient was transvenously paced at a rate of 81 bpm and transferred to the ICU and sedated with benzodiazepines. High dose insulin, 100 units/hr (1 unit/kg/hr) was started and he also received 20% lipid emulsion (150 ml bolus, then infusion of 25 ml/kg/hr). Bilateral lung rhonchi were noted; ABG-pH 6.96/pCO_2 55/pO_2 109. Glu continued to rise despite insulin increased to 200 units per hour. At 12.5 hr pressors were required to keep systolic BP in the 50s with transvenous pacing. Day 2 Ph 7.2, Glu 723 mg/dL, C×R showed bilateral pleural effusions and pulmonary edema; ECMO was started, Despite insulin infusion (300 units/hr), the patient remained hyperglycemic and acidotic with BP's in the 90s. The lipid infusion was discontinued and fentanyl infusion started. Day 3 Hyperkalemia developed with low K 2.5 the day prior. Hemodialysis started, insulin infusion decreased to 250 units/hr, pressors continued with BP 75. HR 90–100, and cardiac output recorded at 16 L/min. Day 4 the patient had a L leg fasciotomy for a compartment syndrome below the ECMO catheter site. Day 4 a fasciotomy was performed on the left leg with anticipated future amputation. Insulin infusion stopped and D10W infusion started for Glu 85; no activity seen on EEG. Day 5 ECMO stopped; pressors continued to keep BP 70–90, eyes opened, responded to touch, AST increased 4101, ALT 1711. Day 6 a necrotic scrotum, thought secondary to prolong pressors was diagnosed; due to ongoing poor brain activity and significant heart damage, the patient was transferred to palliative care and expired 1 hr after pressors were discontinued.
Autopsy: Not performed.

Case 833. Acute-on-chronic citralopram and ethanol ingestion: undoubtedly responsible.
Scenario/Substances: A 19 y/o female ingested an unknown number of her citalopram 40 mg tablets and ethanol in a suicide attempt.
Physical Exam: In the ED her HR 120, systolic BP 117; alert and oriented.
Laboratory Data: Ethanol 0.16 g/dL, citalopram: 6,600 ng/mL, acetaminophen not detected, UDS: negative;
Clinical Course: Patient quickly developed twitching activity treated with lorazepam. Minutes later she developed a VT, which deteriorated to VF. CPR was initiated and she was defibrillated twice. IV fat emulsion 1.5 ml/kg was administered. She developed PEA and expired.
Autopsy Findings: No significant natural disease process, injury or trauma was identified. Cause of death was citalopram toxicity.

Case 899. Doxepin ingestion: undoubtedly responsible.
Scenario/Substances: 49 y/o female presented to the ED after ingesting ~60 doxepin tablets witnessed by her husband in an apparent suicide attempt.
Past Medical History: Depression, anxiety, insomnia, Hepatitis C
Physical Exam: Somnolent; BP 85/51, HR 90, RR 16, T 37°C, O_2 sat 100% on 100% FIO_2 on mechanical ventilation. Pupils 4 mm, sluggishly reactive to light; unable to follow commands.
Laboratory Data:

Na 142	Cl 108	BUN 14	Glu 105
K 3.6	HCO_3 27	Cr 0.9	

AST 36, ALT 36; ethanol, acetaminophen, salicylate not detected; UDS negative. ECG: QRS 160 ms, QTC 649 ms.
Clinical Course: Upon arrival to the ED generalized seizures occurred. The patient was intubated, given 12 mg lorazepam and 1 gm phenobarbital which controlled the seizure activity. 30 amps of sodium bicarbonate and oral activated charcoal were given. ECG intervals decreased to QRS 126 and QTc 600. Follow up Na was 170, pH 7.75. EEG showed encephalopathy consistent with phenobarbital

and TCA overdose. Day 2 head CT showed abnormal focal hypodensities in the frontal lobes bilaterally, as well as possibly in the bilateral basal ganglia, which represent ischemia or edema, or possibly nonhemorrhagic contusion in the frontal lobes. The patient was unresponsive to pain without sedation; pupils were slightly reactive. Na decreased to 150, pH normalized, QRS was 104, QTc in the mid 500s with ongoing K and Mg replacement. Phenobarbital 6 mcg/mL. On Day 3, pupils became fixed and dilated, head CT showed cerebral edema with brain stem herniation, cerebral perfusion study did not show evidence of cerebral blood flow. Comfort measures were instituted and she expired on Day 5. Blood concentrations from Day 2 showed doxepin 1,133 ng/mL, n-desmethyl-doxepin at 514 ng/mL.
Autopsy Findings: Not performed. Cause of death was acute doxepin intoxication. Manner of death was suicide.

Case 906. unknown doxepin ingestion: undoubtedly responsible.
Scenario/Substances: A 51 y/o male was admitted for detoxification/alcohol withdrawal. He was discharged 2 days later and started to drink again. The day after discharge, he presented to the ED at and requested readmission for detoxification. He was released but returned 3 hr later stating that 15 min prior to his return he had ingested 60 tablets of doxepin 100 mg in the parking lot so that he would have to be admitted. He was not suicidal, but stated that he was looking for a place to stay.
Past Medical History: Homelessness, alcohol dependence, poly-substance abuse, GERD, tobacco abuse, hypertension, IV drug abuse, and COPD. Medications included doxepin.
Clinical Course: In the ED was ambulatory and conversant. He refused interventions, pulled out his IV catheter, and refused to drink activated charcoal. He then became unresponsive, requiring endotracheal intubation for airway management. An orogastric tube was inserted and activated charcoal was administered. He seized and became hypotensive with a systolic BP of 30. He was given 4 mg of IV lorazepam for the seizure and was placed on a high-dose norepinephrine infusion for the hypotension. He continued to have intermittent seizures. His HR decreased to 26 with a narrow QRS complex and he then developed cardiac arrest. CPR was initiated including 5 ampules each of epinephrine, atropine and calcium chloride IV. Resuscitation was unsuccessful and he expired 2 hr after the ingestion.
Autopsy Findings: Cause of death was drug overdose with the primary drugs being ethanol and doxepin, manner undetermined.

Case 907. Acute venlafaxine and paroxetine ingestion: undoubtedly responsible.
Scenario/Substances: A 52 y/o took a "bunch of pills" and cut his wrists. A venlafaxine capsule was found in his throat.
Past Medical History: Depression.
Physical Exam: In the ED, HR 109, BP 91/66, T 36.6°C; O_2 sat 100% on room air. Patient was rigid, exhibited myoclonus, hyper-reflexive, altered mental status, and seizures.
Laboratory Data: ABG- pH 7.3/pCO_2 45/pO_2 149/HCO_3 22; CK 888, acetaminophen and salicylate not detected, blood venlafaxine 28 mg/L, ECG: QRS 162 ms.
Clinical Course: Patient was intubated and admitted to the ICU. He was placed on a lorazepam infusion for seizures and required dopamine and vasopressin to support his BP. He received multiple doses of sodium bicarbonate during cardiopulmonary arrests, but ultimately could not be resuscitated.
Autopsy Findings: Cause of death: acute venlafaxine and paroxetine intoxication.

Case 932. Acute amitriptyline ingestion: undoubtedly responsible.
Scenario/Substances: 62 y/o male ingested 60 tablets of his 10 mg amitriptyline at an unknown time.
Past Medical History: Diabetes Mellitus.
Physical Exam: Initially responsive with rapid deterioration; ECG showed QRS 140 ms. Vital signs on day 2: HR, 92, BP, 110/50, T, 35.7°C.
Laboratory Data: ABG-pH 7.45/pCO_2 40; bicarbonate 27.4.
Clinical Course: The patient rapidly deteriorated, seized in the ED and required intubation. HCO_3 was given for the wide QRS. He was admitted to the ICU, given phenytoin for seizures and norepinephrine/dopamine for hypotension without BP response. Vasopressin and epinephrine were added and he was placed on a bicarbonate infusion. The patient had a cardiopulmonary arrest in the ICU, was given epinephrine, bicarbonate boluses and atropine. Phenytoin was stopped, lorazepam started and fat emulsion (20% 100 ml IV, then 25 ml/hr IV infusion) initiated. After brief improvement in BP (systolic BP 130s), epinephrine, dopamine, and norepinephrine were weaned off prior to the patient becoming hypotensive again and widening his QRS again to 160 ms. Therapy with norepinephrine, epinephrine, dopamine and intralipid was restarted, 2 sodium bicarbonate boluses given without response. Comfort measures were instituted and he expired on Day 1.
Autopsy Findings: The Coroner's stated cause of death was amitriptyline toxicity.

Case 964. Acute quetiapine, quinine, acetaminophen/diphenhydramine, and carprofen ingestion: probably responsible.
Scenario/Substances: A 38 y/o female was found unresponsive at home with a suicide note. Family had last spoken to her by phone 3 hr earlier. EMS intubated the patient and placed intraosseous access, Glu was normal, and there was no response to intraosseous naloxone in the field. EMS noted wide QRS that narrowed with 1 amp sodium bicarbonate en route to the ED.
Past Medical History: Mitral insufficiency, idiopathic pulmonary insufficiency, asthma, hypothyroidism, diabetes, GERD, depression with prior suicide attempts. She was on 25 medications including quetiapine, escitalopram, hydromorphone, not including quinine or quinidine.

Physical Exam: BP 72/41, HR100, on ventilator, T 36.3°C no evidence of trauma, course ronchi bilaterally, GCS 3, pupils fixed and 6 mm.
Laboratory Data: At 4 hr in the ED**,** ABG-pH 7.31/pCO_2 54/pO_2 159, WBC 11.3, Hct 34.9, platelets 377, Glu 79, electrolytes, BUN, Cr, ALT, AST, bilirubin, CK, troponin, and UA unremarkable, acetaminophen 29 mg/L, salicylate not detected. UDS positive for benzodiazepines, opiates, and amphetamines; negative for alcohol, barbiturate, cannabinoid, cocaine, and phencyclidine; urine HCG negative. C×R and head CT were noncontributory. ECG: sinus tachycardia 105, a new LBBB, QRS 174 ms, QTc 520 ms.
Clinical Course: In the ED, the patient was given additional sodium bicarbonate push, and infusion was started. Saline boluses were given, dopamine and norepinephrine infusions were begun for hypotension. A generalized seizure responded to lorazepam. The patient developed VT followed by VF, she was cardioverted multiple times, and initially responded to Ca, magnesium, and epinephrine, but the patient again became pulseless. CPR per ACLS was unsuccessful and she died at 7 hr.
Autopsy Findings: Acquired aortic valve stenosis with fusion or right and left coronary artery valve cusps; cardiac hypertrophy, pulmonary congestion, congestion of abdominal viscera. Postmortem UDS positive for opiates, benzodiazepines, quinine, citalopram + metabolite, quetiapine metabolites, and promethazine + metabolite. Postmortem blood screen positive for opiates. Postmortem (cardiac blood) serum quinine 49 mcg/mL (toxic > 6), serum hydromorphone 33 ng/mL.

Case 965. Acute levamisole and cocaine inhalation/nasal: probably responsible.
Scenario/Substances: A 57 y/o female presented to the ED with altered mental status, fever and neutropenia.
Past Medical History: Mild mental retardation, obesity, peptic ulcer disease, B cell lymphoma, low back pain, Castleman's disease, lymphadenopathies, hypertension, asthma, depression, diabetes, hepatitis B and C, polysubstance abuse including crack cocaine, methadone maintenance. He had anemia, neutropenia and thrombocytopenia due to 3 cycles of antineoplastic therapy (cyclophosphamide, doxorubicin, vincristine, prednisone) for the lymphoma. Ten days prior to presentation, her WBC 1.2.
Physical Exam: Appeared toxic and ill, HR 129, BP 142/83, RR 29, T (rectal) 41°C, lungs clear, mild bilateral lower extremity edema, GCS 7, ECG: sinus tachycardia with nonspecific T wave changes.
Laboratory Data: WBC: 0.6, Hgb 9.0, platelets 86, INR 1.6, PTT 17.6, ABG- pH 7.49/pCO_2 28/pO_2 76/HCO_3. 22,

Na 133	Cl 109	BUN 12	Glu 104
K 3.2	HCO_3 22	Cr 1.9	

AST 23, ALT 19, Alk phos 75, bilirubin 2.1, lactate 1.3 mmol/L, troponin < 0.04 ng/mL, UDS positive for cocaine, cocaine metabolites, levamisole, opiate, methadone and methadone metabolites, acetaminophen, lidocaine, propofol, fluconazole and citalopram, blood volatile screen negative, serum methadone 0.13 mg/L, benzoylecgonine 0.26 mg/L, citalopram 170 ng/mL.
Clinical Course: Patient was sedated, intubated, and received IV fluids and antibiotics for bilateral pneumonia. On Day 2 she became increasingly hypotensive and acidotic, developed oliguric renal failure and CVVHD was initiated. She suffered 2 VT arrests which responded to electric cardioversion and amiodarone. Levofloxacin was discontinued for the long QT. Norepinephrine and vasopressin were started. On Day 3 dobutamine was started, additional broad spectrum antibiotics were initiated and filgrastim was started for neutropenia. Her INR and bilirubin increased, albumin and platelets decreased. Platelets and packed red blood cells were infused. On Day 4 prognosis was poor, comfort measures were instituted, and she expired.
Autopsy Findings: Bone marrow showed microscopic neutropenia and increased megakaryocytes consistent with levamisole exposure. Immediate cause of death was ruled as neutropenia due to recent levamisole exposure.

Case 970. Chronic methotrexate ingestion: undoubtedly responsible.
Scenario/Substances: A 69 y/o, 91 kg male mistakenly took 30 methotrexate tablets over 10 days.
Laboratory Data: WBC 0.2, Hgb 11.2, Hct 32.6, platelets 30,

Na 133	Cl 99	BUN 21	Glu 115
K 4.2	HCO_3 26	Cr 0.97	

Ca 7.8, AST 25, ALT 34, Alk phos 53, total protein 5.4 g/dL, albumin 2.6 g/dL
Clinical Course: He presented to the ED with complaints of sores in his mouth, congestion in the lungs, incontinence, confusion, and drowsiness. A normal saline bolus and IV leucovorin were administered while in the ED; the patient was intubated and placed on a ventilator. After brief admission to a medical floor, he was transferred to an ICU. Blood cultures were positive for Enterobacter aerogenes, Morganella morganii, and Streptococcus pneumoniae; respiratory cultures were positive for Haemophilus influenzae, Moraxella catarrhalis, and Streptococcus pneumoniae. A CT scan revealed a left-sided pleural effusion with consolidation within the left lower lobe of the lungs and atelectasis and/or consolidation within the right lower lobe. Multiple C×Rs revealed a progressive pneumonia. Medications administered included albuterol, vancomycin, ciprofloxacin, and piperacillin/tazobactam. Despite aggressive care, the patient expired ~24 hr postadmission.
Autopsy Findings: An autopsy was not performed. ME: Elderly white male with no evidence of trauma. Cause of death: sepsis due to pancytopenia, due to methotrexate intoxication. Manner of death: accident.

Case 986. Acute-on-chronic diltiazem, amiodarone, metoprolol and lisinopril ingestion: undoubtedly responsible.
Scenario/Substances: A 31 y/o ingested 20 tabs of 120 mg diltiazem, 10 tabs of 200 mg amiodarone, 10 tabs

of 50 mg metoprolol, and 10 tabs of 2.5 mg lisinopril 5–8 hr prior.
Past Medical History: Hypertrophic cardiomyopathy, AICD, previous overdose of diltiazem.
Physical Exam: On arrival to the ED (5–8 hr after ingestion) she was drowsy and globally weak. HR 70, systolic BP 80–90.
Laboratory Data: UDS positive for benzodiazepines, caffeine, lidocaine, and theobromine. Ethanol, acetone, ispropranol, methanol, acetaminophen blood levels not detected.
Clinical Course: The patient was treated initially with IV fluids. She became more hypotensive and was admitted to the ICU. She became dyspneic and was intubated. Shortly thereafter she suffered a cardiac arrest that was treated with glucagon and vasopressors without response. IV fat emulsion therapy was given with return of spontaneous circulation. She was treated with insulin at 100 units/hr and a calcium infusion as well as dopamine, phenylephrine and vasopressin. She improved clinically, was alert and able to follow commands. Shortly thereafter, 13 hr postingestion, she suffered a second cardiac arrest and could not be resuscitated.
Autopsy Findings: Amiodarone: 1916 ng/mL (ref range 500–2500), desmethylamiodarone 801 ng/mL (ref range 500–2500), Metoprolol 162 ng/mL (ref range 30–280), 7-amino clonazepam 3.4 ng/mL, Diltiazem 4500 ng/mL (ref range 130–190). Cause of death was diltiazem toxicity.

Case 1055. Acute-on-chronic propafenone (extended release): undoubtedly responsible.
Scenario/Substances: 65 y/o male found by his spouse to be incoherent ~10 hr after intentionally ingesting 18.2 gm of propafenone (56 × 325 mg extended release tablets).
Physical Exam: BP 70, HR 50; Semi conscious male with muscle fasciculations and brief, intermittent seizures.
Laboratory Data: pH 7.33, Glu normal; acetaminophen or salicylate not detected. ECG QRS 150–200 ms, junctional rhythm. A transthoracic echocardiogram showed low LV function and asynchronous contractions.
Clinical Course: The patient was intubated and given benzodiazepines for seizures, propofol for sedation, sodium bicarbonate for widened QRS and IV fluids, dopamine, and epinephrine for low BP. IV fat emulsion therapy was given at 2 hr (~12 hr post exposure; bolus then infusion). BP 96/61, HR 69; QRS 240 ms. BP support over next 24 hr with dopamine and epinephrine; QRS normalized ~20 hr post exposure. Transthoracic echocardiogram on Day 2 demonstrated normal myocardial function. He developed intermittent first degree heart block, myoclonus, and fever; antibiotics were given. At 40 hr post ingestion, the patient improved, pressors and sedation were being weaned, spontaneous RR 20, QRS duration normalized, and he was successfully extubated. Several hours later QRS widening redeveloped with seizures and hypotension (BP 50–60), refractory to vasopressors and bicarbonate therapy. The patient expired 57 hr post exposure.
Autopsy Findings: Unavailable.

Case 1095. Acute-on-chronic flecainide ingestion: undoubtedly responsible.
Scenario/Substances: 21 month-old male with a history of supraventricular tachycardia (SVT) drank an unknown amount of flecainide and became unconscious and unresponsive within 5 min. When EMS arrived, he was in cardiac arrest.
Past Medical History: Permanent junctional reciprocating tachycardia form of SVT controlled with oral flecainide at 0.8 mL (16 mg) orally 3 times a day (~4.4 mg/kg/day).
Laboratory Data: ABG-pH 6,75/pCO_2 102, Na 129, K 5.6
Physical Exam: Unresponsive infant in asystole.
Clinical Course: Cardiopulmonary resuscitation with compressions and epinephrine were started and 20% intralipid infusion was initiated which resulted in return of spontaneous circulation. He received maximum doses of epinephrine and atropine which increased BP to 135/92 transiently. The patient was intubated, IV fluids and sodium bicarbonate were administered. The patient arrived to the second HCF about 5 hr post ingestion via the transport team. Chest compressions continued throughout the transport. Atropine, 20% intralipid infusion, dopamine infusion and IV NS were continued. At the second HCF he was still in asystole, pupils were fixed and dilated at 5 mm; additional epinephrine, atropine, sodium bicarbonate, and calcium were administered without effect. He expired when resuscitation was concluded.
Autopsy Findings: Left ventricular wall measured 8 mm and right ventricular wall 2 mm and the size and contours of the heart were normal. There was patchy congestion particularly in both lower lobes, pulmonary arteries were free of emboli. No brain injury was detectable and the unfixed brain weight was 1150 grams. Body weight was 11.8 kg. Postmortem blood flecainide 54 mcg/mL and liver 104 mcg/gm.

Case 1108. Acute selenium and citric acid ingestion/inhalation: probably responsible.
Scenario/Substances: A 30 y/o male was exposed to l-selenomethione powder at work. He reportedly inhaled and ingested some powder after opening a box containing the compound. He developed nausea and vomiting for 4 hr before going to the ED. He also reportedly took 3 teaspoons of citric acid during the day, but the exact time is unknown.
Past Medical History: opioid dependence.
Physical Exam: HR 80–120, BP 110/50, RR 30–40, normal pupils. Lungs clear bilaterally. Heart: irregular rhythm, abdomen nontender, extremities cyanotic, skin pale, no rash or burns. Neuro: confused and lethargic. Smelled strongly of chemical odor.
Laboratory Data: ECG: atrial fibrillation. ABG-pH 7.01/pCO_2 17/pO_2 329, UDS negative for benzodiazepine, amphetamine, barbiturates, and cocaine; Serum salicylate, TCA, acetaminophen, ethanol were not detected.

Na 146	Cl 107	BUN 14	Glu 29
K 3.2	HCO_3 12	Cr 1.5	

Lactate 20.0 mmol/L, AST 444, ALT 545. C×R: peribronchial cuffing without infiltrates.

Clinical Course: The patient was intubated on ED arrival and placed on 100% oxygen. He became hypotensive (70/40), the atrial fibrillation deteriorated to bradycardia then asystole. He was given naloxone, and multiple doses of epinephrine and atropine without response. He received IV D50W, bicarbonate IV, butt was unable to be resuscitated and died in the ED.
Autopsy Findings: Coagulative necrosis of esophagus, stomach and duodenum, acute hepatic necrosis, and hypoxic ischemic encephalopathy. Postmortem toxicology: blood selenium 11,000 mcg/mL (normal range, 60–230 mcg/mL), urine selenium 25,000 mcg/L (normal $<$ 200 mcg/mL); whole blood cyanide 0.14 µg/mL, methadone 0.10 µg/mL. Cause of death: Acute selenium toxicity.

Case 1113. Metformin ingestion: undoubtedly responsible.
Scenario/Substances: A 24 y/o female inmate presented to the prison infirmary with severe GI distress, vomiting and dehydration. She reported taking metformin prior to presentation.
Past Medical History: Unknown.
Physical Exam: BP 106/38, HR 70–113, T 31.9°C. Mental status quickly deteriorated, the patient was intubated and mechanical ventilated.
Laboratory Data: pH 6.82; lactate 41 mmol/L,

Na 145	Cl 116	BUN 17	Glu 20
K 4.0	HCO_3 5	Cr 1.3	

acetaminophen and salicylate were not detected.
Clinical Course: The patient received 24 ampules (44 mEq each) of sodium bicarbonate, aggressive fluid resuscitation, and dextrose therapy prior to transfer to a tertiary hospital for hemodialysis. At the receiving hospital, she received another 18 ampules of sodium bicarbonate and underwent hemodialysis with additional bicarbonate in the dialysate. Hypotension and acidosis continued. The patient expired 22 hr after presenting to the hospital.
Autopsy Findings: Not performed.

Case 1118. Acute metformin ingestion: undoubtedly responsible. Bilirubin 0.83, ALT 33, AST 26L, Alk phos 37.
Scenario/Substances: 39 y/o male presented after ingestion of 40–60 1,000 mg tablets of metformin with 4 10 mg tranylcypromine ~3–4 hr prior to arrival.
Past Medical History: Depression, diabetes, multiple previous suicidal attempts, MRSA abscesses with several incision and drainage procedures.
Physical Exam: Heart Rate 122, Respiratory Rate 14, BP 127/84, HR 122, RR 14, T 37°C, SaO_2 98% on room air. PE showed tachycardia; remainder reported as normal.
Laboratory Data: ABG- pH 7.341/pCO_2 37.4/pO_2 70.4; WBC 11.3, Hgb 13.9,

Na 140	Cl 105	BUN 14
K 4.2	HCO_3 23	Cr 1.7

Platelets 184, Ca 8.8, Mg 1.7, Phos 4.3, Lactate 4.3 mmol/L, ethanol, acetaminophen and salicylate were not detected.
Clinical Course: The patient was admitted to the step-down ICU, IV fluids were given with one amp of sodium bicarbonate (50 mEq of sodium). Ten hr later pH was 7.169, anion gap increased to 22, Cr to 3.0, and lactate to 20.1 mmol/L. HCO_3 infusion was started and nephrology consulted for hemodialysis. Dialysis initially ran for only 30 min due to poor flow in the catheter. Oxygenation worsened and the patient was intubated at 24 hr. A new dialysis catheter was placed and hemodialysis ran for 12 hr followed by continuous veno-venous hemodialysis for the duration of the patient's course. A THAM infusion was also initiated. At 36 hr, refractory hypotension emerged followed by acute respiratory distress syndrome, hepatic failure and renal failure. Antibiotics were given for a possible ventilator-associated pneumonia; cisatracurium was given IV to maximize ventilation; Intralipid (20% fat emulsion) was also started by bolus, followed by a 2 hr infusion) without clinical change. At 43 hr the patient went into a PEA arrest and could not be resuscitated. Metformin levels predialysis and 26 hr later were 66 mcg/mL and 21 mcg/mL respectively. The patient's nadir pH was 6.72 immediately after intubation; lactate was $>$30 mmol/L after intubation and ranged from 18 mmol/L to $>$30 mmol/L for the duration of the hospitalization.
Autopsy Findings: Not performed.

Case 1134. Acute epinephrine subcutaneously: undoubtedly responsible.
Scenario/Substances: A 57 y/o male experienced an allergic reaction to shellfish and went to the ED.
Past Medical History: Seafood allergy, hyperlipidemia, hypertension. coronary disease status post coronary stenting $\times$ 3, GERD. Medications including: valsartan, atorvastatin, metoprolol, and esomeprazole.
Clinical Course: In the ED he received an initial 0.3 mg 1:1000 epinephrine subcutaneously and IV solumedrol. He developed recurrence of his symptoms and was inadvertently given 3 mg subcutaneously instead of the intended 0.3 mg. The patient experienced immediate chest pain, tachycardia, ventricular ectopy and vomiting. The patient was given amiodarone with slowing of the HR. He was intubated with a great deal of difficulty due to airway edema. The patient expired after a resuscitation lasting 1 hr during which he received aspirin, fentanyl, nitroglycerin and morphine.
Autopsy Findings: Cause of death: global myocardial necrosis due to iatrogenic overdose of epinephrine administered for anaphylaxis.

Case 1135. Acute baclofen parenteral: undoubtedly responsible**.**
Scenario/Substances: This 19 y/o male had an intrathecal catheter for baclofen infusion.
Past Medical History: Transverse myelitis with neurogenic quadriparesis thought due to immunization for H flu type B in infancy. He underwent elective spinal fusion for scoliosis

and revision of his intrathecal catheter for baclofen infusion which had been initiated many years ago.

Clinical Course: One day after surgery, he developed increased muscle tone and agitation which were attributed to baclofen or benzodiazepine withdrawal, so he was returned to surgery for revision of the intrathecal access placement. He did well and was transferred out of ICU Day 2 after initial surgery, but 1 day later he developed fever to 41.7°C with agitation, hallucinations, muscle rigidity and clonus. His baclofen infusion rate was adjusted, cooling and acetaminophen were provided. On Day 3 he was given haloperidol for agitation and hallucinations without significant improvement. Treatment with dantrolene was begun on Day 4 and he improved somewhat with T 39.4°C and HR 120s, and was well-sedated on lorazepam with no breakthrough agitation. However on Day 5 he developed respiratory depression and hypotension and rhabodmyolysis with a CK > 300,000, increased AST, GI bleeding and thrombocytopenia. The findings were thought to represent baclofen withdrawal so the baclofen infusion rate was increased and the concentrations in the reservoir and CSF (120 mcg/mL) were confirmed. Daily hemodialysis was begun. He continued to require vasopressor support and external cooling, antibiotic therapy was initiated empirically. Levetiracetam and phenytoin were added for seizure activity which continued despite the addition of propofol, midazolam and fentanyl and he became anuric. Midazolam and propofol were discontinued after seizure activity resolved. He maintained papillary and gag reflexes but was responsive only to painful stimuli. Goals of care were changed to comfort only, and he died on Day 27.

Autopsy Findings: Not performed.

Case 1136. Acute-on-chronic carisoprodol and acetaminophen: undoubtedly responsible.

Scenario/Substances: 27 y/o female found lethargic on the floor with a bottle of carisoprodol, was moved to a couch then found unresponsive several hr later when EMS was called. EMS reported BP 70/40 and Glu 20. An IV was inserted and glucagon and 1 amp of 50% dextrose were administered. The prescription for carisoprodol had just been filled for 96 tablets, and only 6 remained.

Past Medical History: Major depressive disorder; previous suicide attempt.

Physical Exam: Unresponsive female. BP 113/61, HR 120, RR 20, T 37°C, O_2 sat on 2 L of oxygen 100%.

Laboratory Data:

Na 143	Cl 110	BUN 14	Glu 196
K 4.8	HCO_3 6	Cr 0.9	

WBC 24, PT 35.1, INR 2.91, PTT 45.7. AST 1426, ALT 1240, total bilirubin 1.9, direct bilirubin 1.3; acetaminophen 43 mcg/mL, salicylate and ethanol not detected. UDS was positive for opiates.

Clinical Course: The patient was intubated and placed on a ventilator in the ED, sedated with propofol and antibiotics were administered. The 21 hr N-acetyl-cysteine protocol was started. At 5 hr the PT was 88.8 sec, INR 7.23, ABG-pH 6.965/pCO_2 19.8/pO_2 173.5. Sodium bicarbonate was given and she was admitted to the ICU. At 16 hr AST 10,654, ALT 6228 which increased to >10,000 for both on Day 2 with WBC 25.5, PT 140.2 and INR >9. NAC was restarted and FFP given. Day 3 the patient was completely unresponsive, urinary output decreased to 10–15 cc/hr, $NH_3$167, Cr 2.5, AST 9219, ALT 7581, total bilirubin 3.3, direct bilirubin 1.5, PT 63.8, INR 5.23, PTT 37.7, WBC 26.7, Hgb 9.6 g/dL, Hct 27.3, platelets 103. Brain herniation occurred, and the patient was extubated and expired on Day 4.

Autopsy Findings: Severe pulmonary congestion and edema, and cerebral edema were noted. Carisoprodol was measured at 4.4 mcg/mL and meprobamate at 36 mcg/mL in premortem hospital serum from the ED. The cause of death was determined to be complications of drug toxicity and the manner of death was undetermined.

Case 1156. Acute-on-chronic tizanidine and ethanol ingestion: undoubtedly responsible.

Scenario/Substances: A 63 y/o female ingested 160 of her tizanidine 160 tablets with vodka. A hand written suicide note to her children was found with the patient. The patient was found unresponsive by the family and EMS was called. EMS found the patient hypotensive and obtunded.

Laboratory Data: Chemistry panel was unremarkable except for a Glu of 161 and lipase of 300 U/L. Ethanol 219 mg/dL, acetaminophen 2.2 mcg/mL, salicylate 3.9 mg/dL, UDS negative for barbiturate, amphetamines, benzodiazepines, methadone, opiates, PCP and TCA.

Clinical Course: The patient arrived unresponsive and rapidly deteriorated to respiratory arrest and then full cardiopulmonary arrest. Resuscitation efforts by ED staff including intubation and full ACLS protocol were not successful.

Autopsy Findings: Post mortem blood: tizanidine 440 ng/mL (therapeutic ~2 ng/mL), ethanol 0.184 g%, hydrocodone 10.7 ng/mL, rocuronium 5499 ng/mL, venlafaxine 379 ng/mL, norvenlafaxine 581 ng/mL (~2 × therapeutic).

Case 1159. Acute haloperidol ingestion: undoubtedly responsible.

Scenario/Substances: 2 y/o female was found in the bedroom with a pill container and tablets in her hand. A shelf had fallen down causing a container of haloperidol and zolpidem to fall. The mother tried to make her vomit by sticking fingers in her mouth, which was not successful so the child was given a glass of milk and put to bed. The family believed they could account for all tablets, and did not consult the poison center or a physician. Later in the afternoon the child was found unresponsive and presumed dead.

Laboratory Data: In the ED: Postmortem labs upon arrival

Na 141	Cl 115	BUN 16	Glu 24
K 14.8	HCO_3 9	Cr 0.2	

Clinical Course: The child was pronounced dead on arrival.

Autopsy Findings: Pulmonary edema. Post-mortem haloperidol (subclavian blood) 90 ng/mL (normal 5–15).

Haloperidol was the only substance detected. ME cause of death: acute haloperidol toxicity.

Case 1259. Acute latrodectus envenomation: undoubtedly responsible.
Scenario/Substances: 37 y/o male presented to the ED after sustaining a suspected black widow spider bite on his right shin.
Past Medical History: Asthma. Medications; included cyclobenzaprine, albuterol meter dose inhaler, and fluticasone propionate diskus.
Physical Exam: Male in moderate distress. BP 159/74, HR 103, RR 22, O_2 sat, 96% on room air; T 37°C. He had a small area of raised erythema on right anterior mid-shin, no diaphoresis, soft, non-tender abdomen without peritoneal signs.
Laboratory Data: WBC 6.5, Hgb 15.1, platelets 195,

Na 136	Cl 105	BUN 12	Glu 135
K 3.8	HCO_3 26	Cr 0.9	

ALT 19, AST 21.
Clinical Course: At 1 hr after the envenomation he developed tightening in his shoulders and neck with nausea, diaphoresis, back pain and chest pain, treated with 30 mg ketorolac, 2 mg lorazepam and 2 mg hydromorphone unsuccessfully. He received a test dose of normal horse serum in saline per the package insert with no reaction prior to an infusion of 2.5 mL antivenin in 50 mL of 0.9% normal saline. At 15 min into the antivenin infusion, after reporting facial tingling and dyspnea, he had HR 135, RR 36 and developed anaphylactic shock with respiratory then cardiac arrest. He was resuscitated, given IV steroids, epinephrine, diphenhydramine and naloxone but suffered another cardiac arrest 30 min later and again was prior to transfer to a tertiary care center on multiple pressors and a ventilator. He remained pressor-dependent, displayed myoclonic jerking of shoulders, neck and arms, had oliguria with fixed and dilated pupils. He received a bolus dose of 1 mg/kg of methylene blue was given IV. Within 30 min pressors were discontinued and he improved significantly over the next 12 hr becoming able to follow commands and attempting to get out of bed. The patient developed acute tubular necrosis and a HCO_3 infusion was started. On Day 2 T rose to 39°C, BP dropped to 54/35, O_2 sat abruptly decreased to 80%. He was given pressor therapy but had another cardiac arrest and expired 36 hr after presentation.
Autopsy Findings: An autopsy was not performed. The ME viewed the body and listed the cause of death to be anaphylactic shock.

Case 1275. Acute methylenedioxymethamphetamine (MDMA) ingestion: undoubtedly responsible.
Scenario/Substances: A 23 y/o male was running at a rave (electronic dance party), when he fell down 5 steps and began to have generalized tonic-clonic seizure activity. EMS administered midazolam 4 mg IV without cessation of seizures and transported him to the ED. After a 15 min transport time, he arrived at the ED unresponsive and actively seizing. The poison center was consulted on 11 other similar cases from the same event.
Physical Exam: Seizing male patient, BP normal, HR 168–179, core T 42.2°C; A 3 cm scalp laceration was represent, pupils 5 mm and nonreactive, eyes deviated upward. Tonic-clonic seizure activity continued in bilateral lower extremities.
Laboratory Data: K 6.1, BUN 19, Cr 1.7, Lactate 8.9, AST 918, ALT 202, CK 1592, (reaching 54,000), venous blood: pH 7.21 and pCO_2 58. UDS positive for MDMA.
Clinical Course: The patient was intubated, had ice packs applied to his groin and axilla and received normal saline fluid boluses, phosphenytoin, acetaminophen, Ca gluconate, insulin and dextrose. In the ICU he received more cool IV fluids and was placed on a surface cooling blanket. Three hours after arrival his core T 38.7°C and he developed disseminated intravascular coagulopathy and bleeding with an elevated troponin of 9.7 ng/mL. He received dantrolene at 6 hr, paralytic therapy with vecuronium at 8 hr, and levetiracetam was started. A massive transfusion protocol was started with administration of packed RBC, platelets, fresh frozen plasma, DDAVP, Factor 7, cryoprecipitate and prothrombin complex concentrate. Hypotension was treated with 3 pressors; CVVH was started for hyperkalemia and anuric renal failure. Comfort measures were instituted at 18 hr and he expired at 20 hr.
Autopsy Findings: Multiple ecchymoses were present on the skin. Both lungs were essentially airless and diffusely wet, heavy with diffuse red-black coloration and red fluid filling the bronchi. Laboratory analysis from the time of admission showed: MDMA 0.83 mg/L, MDA 0.04 mg/L, L-methamphetamine 0.04 mg/L. Post mortem heart blood analysis showed MDMA 1.42 mg/L, MDA 0.43 mg/L. The cause of death was reported as multiple system failure due to sequelae of methylenedioxymethamphetamine (MDMA) intoxication.

Case 1280. Methylenedioxymethamphetamine (MDMA) ingestion: undoubtedly responsible.
Scenario/Substances: 23 y/o female was found unresponsive by her husband, who brought her to the ED and reported she ingested MDMA the previous night and that she may have had a seizure prior to presentation to the ED.
Past Medical History: Not provided.
Physical Exam: Intubated female. BP 123/84, HR 111. Pupils were mydriatic and nonreactive; muscle tone supple.
Laboratory Data:

Na 122	Cl 87	BUN 9	Glu 210
K 3.3	HCO_3 14	Cr 0.4	

AST 21, ALT 16, CK 425; acetaminophen, ethanol, and salicylate, ethanol were not detected. ECG: QRS 90 ms, QTc 453 ms. CT scan showed cerebral edema.
Clinical Course: The patient's clinical condition deteriorated upon arrival to the ED. She required norepinephrine

and phenylephrine for hemodynamic support. She expired Day 2.

Autopsy Findings: Autopsy was not performed. Cause of death was methlenedioxy methamphetamine (MDMA) toxicity. Hospital urine was positive for methylenedioxymethamphetamine, methylene dioxyamphetamine, benzyl piperazine, caffeine, and lidocaine and metabolites. Hospital blood showed methylenedioxymethamphetamine 0.22 mg/L, methylene dioxyamphetamine was trace, less than 0.05 mg/L, and positive for benzylpiperazine.

Case 1283. Acute methylenedioxymethamphetamine (MDMA) ingestion: probably responsible.

Scenario/Substances: A 25 y/o male took 2 pills of "ecstasy" at a party. He began feeling unwell and called friends who picked him up. En route to the hospital he became unresponsive. They were seen by a police officer who recognized the patient was in distress and the patient was brought directly into the ED.

Physical Exam: In the ED the patient was somewhat cyanotic, unresponsive, warm, and rigid, T 39°C, pupils fixed and dilated, mouth clamped, did not withdraw to pain. He was apneic, had a weak and thready pulse with a HR in the 20s, then developed PEA.

Laboratory Data: ABG-pH 7.09/pCO_2 38/p O_2 352 on 70% FiO_2, WBC 15.7, Hct 51, platelets 207, Mg 4.8, free Ca 0.6,

Na 142	Cl 107	BUN 23
K 7.4	HCO_3 13.7	Cr 3.8

CK 4214, troponin 0.8, CKMB 4.7, AST 160, ALT 113, Alk phos 51, bilirubin 0.3, UDS positive for amphetamines, negative for tricyclics. Acetaminophen, ethanol and salicylate not detected. EKG (post resuscitation): tachycardia, ST elevations in inferior leads, nonspecific QRS widening, normal QTc. The initial CT scan was unremarkable.

Clinical Course: CPR was initiated, he was intubated, and IV access obtained. He received atropine, calcium and bicarbonate. He regained a palpable pulse with a HR in the 130s, BP in the 60s, QRS 90 ms. He was started on a bicarbonate infusion along with aggressive fluid resuscitation. An NG tube was inserted and activated charcoal was administered. A norepinephrine infusion was necessary to support his BP. Additional IV bicarbonate was administered for QRS 146 ms. A dopamine infusion was started for bradycardia and hypotension. Cooling measures were initiated for hyperthermia. Sequential CTs showed progressive bilateral cerebral edema treated with mannitol and dexamethasone. Pressor support was gradually reduced. He developed rhabdomyolysis and central diabetes insipidus. His family opted for comfort measures on Day 8 and he died shortly afterward. Cause of death: cerebral edema secondary to drug overdose, possibly methylenedioxymethamphetamine (MDMA).

Autopsy Findings: Not performed.

Case 1287. Acute heroin, alprazolam, and THC homolog ingestion: undoubtedly responsible.

Scenario/Substances: 26 y/o male y/o was found unresponsive by his girlfriend in her home the day after being released from incarceration the day before and given 2 doses of amitriptyline before leaving the jail facility. He reportedly had altered mental status for ~12 hr prior to "passing out" early the next morning after possibly taking K2 and alprazolam bars. Rescue breathing was performed prior to EMS arrival. Intubation was performed in the field and naloxone 0.4 mg was administered.

Past Medical History: Bipolar disorder/schizophrenia.

Physical Exam: BP 120/69, HR 105, RR 14. GCS 11, intubated on mechanical ventilation.

Laboratory Data: Ca 8.7, ALT 37, AST 56, INR 1.1,

Na 141	Cl 105	BUN 8	Glu 216
K 3.5	HCO_3 25	Cr 1.1	

ethanol, acetaminophen and salicylate were undetectable. UDS positive for benzodiazepines, opiates, and cannabinoids. ECG: QRS 94, QTc 462.

Clinical Course: In the ED, 2 episodes of hypotension were treated with fluid boluses. The patient was extubated on Day 2 and left the hospital against medical advice. One day later, he was found at home breathing heavily with foam around the mouth by his girlfriend. EMS performed CPR and ALS, cardiac rhythm converted to VT and he was transported to the ED. Upon arrival resuscitation efforts continued but were unsuccessful. Quantitation of the UDS from the previous day showed morphine 16,560 ng/mL and codeine 193 ng/mL.

Autopsy Findings: Anatomical findings included pulmonary edema, dilated myocardium and acute vesicular and visceral congestion. Blood toxicology showed alprazolam 31.3 ng/mL, morphine 35.5 ng/mL, 6-monoacetylmorphine 3.9 ng/mL, nortriptyline 27.5 ng/mL, and amiodarone (not quantitated).

Urine toxicology showed alprazolam 315 ng/mL, a-OH-alprazolam 757 ng/mL, morphine >10,000 ng/mL, 6-monoacetylmorphine 854 ng/mL, and codeine 641 ng/mL. Cause of death was listed as acute heroin intoxication.

Case 1303. Acute methylenedioxymethamphetamine (MDMA) ingestion: undoubtedly responsible.

Scenario/Substances: 31 y/o female witnessed to have ingested a white powdery substance at a concert became unresponsive and was transported to the hospital by EMS.

Physical Exam: Unresponsive female. BP 70, HR 160, T 43°C, O_2 sat 100% $Fi0_2$ 100%.

Clinical Course: Patient was intubated in ED, IV access obtained and cooling measures were initiated. She remained hypotensive and developed cardiac arrest and was unable to be resuscitated.

Autopsy Findings: Peripheral blood toxicology; 3, 4-methylenedioxyamphetamines 1.8 mg/L. Pulmonary congestion and edema, minor blunt trauma of lower legs and cholelithiasis.

Case 1325. Acute-on-chronic cocaine parenteral: undoubtedly responsible.
Scenario/Substances: A 44 y/o female was abusing cocaine, became agitated, and developed violent erratic behavior. She hit her head and then ran out of the home and collapsed. EMS found her unresponsive, with shallow, tachypneic breathing. Electrical cardioversion failed × 2 and she was subsequently given adenosine with return of a HR of 190, T 39.5°C and rising.
Laboratory Data: In the ED: ABG-pH 7.22/pCO_2 38/pO_2 271, WBC 16.8, Hgb 9.3, platelets 67,

Na 139	Cl 112		Glu 205
K 6.5	HCO_3 6	Cr 3.5	

AST 393; ALT 88, CK 6158, troponin 32, myoglobin >1000 ng/mL; lactate 18.2 mmol/L. Serum acetaminophen, salicylates, and ethanol were not detected.
Clinical Course: In the ICU, the patient became hypotensive and was treated with phenylephrine, vasopressin, norepinephrine, dopamine, IV fluids, and sodium bicarbonate. She then developed DIC with bleeding from multiple sites and was treated with FFP. INR >10, fibrinogen <60 mg/dL, and d-dimer >10,000 ng/mL. Subsequent Cr was 3.5, BUN 20. Hgb declined to 1.8 with a pH as low as 6.99, and lactate as high as 18.2 mmol/L. Her pupils were fixed and dilated and she expired on Day 1.
Autopsy Findings: ME cause of death: cocaine toxicity, with DIC, rhabdomyolysis and excited delirium. Postmortem blood benzoylecgonine 830 ng/mL, liver benzoylecgonine 1000 ng/mL. There was evidence of trauma and hemorrhage in periorbital, frontal scalp, larynx, breast, thigh, abdomen, and around a recent needle puncture in the right antecubital fossa.

Case 1344. Acute unknown drug ingestion: probably responsible.
Scenario/Substances: A previously healthy 3 y/o female went to a pharmacy with her mother the day prior to hospital presentation. There were multiple tablets on the floor, which the child reportedly "picked up and placed in her mouth." She vomited once in the pharmacy and once at home in the evening. She was last seen the night before hospital presentation. The next morning she was noted to be sleepy but was left at home. A few hours later, the parents could not wake her and called EMS who found her to be near apneic. She presented to the ED actively ventilated via bag-valve mask.
Past Medical History: Unremarkable.
Physical Exam: BP 119/57, HR 119; O_2 sat normal, pupils miotic, a sticky substance on the child's eyelids, a "bump" on the forehead, and the child was only responsive to pain.
Laboratory Data: Acetaminophen and salicylate not detected.

Na 142	Cl 113	BUN 59	Glu 93
K 5.6	HCO_3	Cr 2.7	

ABG (post-intubation)-pH 7.05/pCO_2 63/p O_2 73/HCO_3 17. Ca 8, anion gap of 18, INR 2.6, PT 28, serum iron 49 mg/dL. ECG: sinus tachycardia with normal intervals, head CT: bilateral cerebellar infarcts with herniation.
Clinical Course: Upon arrival to the ED, the child was intubated, sodium bicarbonate infusion was started for metabolic acidemia and ventilator was adjusted to correct respiratory acidemia. Neurosurgery admitted her to the PICU.

Administration for Children's Services was involved due to heightened suspicion of child abuse. The child was declared brain-dead late in Day 1 and died on Day 2.
Autopsy Findings: The ME determined the cause of death to be cerebellar infarction and manner of death to be natural. They reported antemortem blood norbuprenorphine 1.2 ng/mL.

Abbreviations & Normal ranges for Abstracts

Disclaimer – all laboratories are different and provide their own normal ranges. Units and normal ranges are provided here for general guidance only. These values were taken from Harrison's[12], Goldfrank[13] or Dart[14].
Serum electrolyte summary table

Sodium [136–146]	Chloride [102–109]	BUN [7–20] mg/dL	Glucose [75–110] mg/dL
Potassium [3.5–5]	Bicarbonate [22–26]	Creatinine [0.5–1.2] mg/dL	

serum electrolytes have units of mEq/L = mmol/L
~ = approximately

ABG-pH/pCO_2/pO_2/HCO_3/BE

ABG	= arterial blood gases
ABG-pCO_2	= partial pressure of carbon dioxide [38–42]
ABG-pH	= hydrogen ion concentration [7.38–7.42]
ABG-pO_2	= partial pressure of oxygen [90–100]
ACLS	= advanced cardiac life support, protocol for the provision of cardiac resuscitation
Alk phos	= alkaline phosphatase [13–100] U/L
amp	= ampoule
ALT	= Alanine aminotransferase [7–41] U/L = (SGPT)
AMA	= against medical advice
Ammonia	= [25–80] mcg/dL = [15–47] mcmol/L
ARDS	= acute respiratory distress syndrome
AST	= Aspartate aminotransferase [12–38] U/L = (SGOT)
AVblock	= atrio-ventricular block
BAL	= British anti-Lewisite
BE	= base excess, mmol/L
Bicarbonate	= [22–26] mEq/L
Bilirubin	= total [0.3–1.3] mg/dL, direct [0.1, 0.4] mg/dL, indirect [0.2, 0.9] mg/dL
BLQ	= below the limit of quantitation
BMI	= body mass index
BP	= Blood Pressure, systolic/diastolic, (Torr)
BUN	= see Urea nitrogen
C	= degrees Centigrade

Ca = calcium, [8.7–10.2] mg/dL
CABG = coronary artery bypass graft
CAD = coronary artery disease
CIWA = Clinical Institute Withdrawal Assessment for Alcohol
CK = creatinine kinase (CPK), total: [39–238] U/L females, [51–294] U/L males
CKMB = MB fraction of CK [0.0–5.5 mcg/L = 0.0–5.5 ng/mL]

Fraction of total CK activity [0–0.04 = 0–4.0%]

Cl = chloride [102–109] mEq/L
CNS = central nervous system
COHb = carboxyhemoglobin
COPD = chronic obstructive pulmonary disease
CPR = cardio pulmonary resuscitation
Cr = creatinine [0.5–0.9] mg/dL females, [0.6–1.2] males,
CRRT = continuous renal replacement therapy
CSF = cerebrospinal fluid
CT = computed tomography (CAT scan)
CVA = cerebrovascular accident
CVVHD = continuous venovenous hemodiafiltration
C×R = chest radiograph, chest xray
D10W = 10% dextrose in water
D5W = 5% dextrose in water
Day = when capitalized, Day = hospital day, i.e., days since admission
DIC = disseminated Intravascualar coagulation
Dx = diagnosis
ECMO = extracorporeal membrane oxygenation
ECG = electrocardiogram (EKG), leads = I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6
ED = emergency department, in these abstracts refers to the initial health care facility
EDDP = principal methadone metabolite, 2-ethylidene-1,5-dimethyl-3,3-diphenyl-pyrrolidine
EEG = electroencephalogram
ELISA = enzyme-linked immunosorbent assay
EMS = emergency medical services, paramedics, the first responders
ER = extended release (sustained release)
FFP = fresh frozen plasma
FiO_2 = fraction of inspired oxygen
g/dL = grams per deciliter
GCS = Glasgow Coma Score, ranges from 3 to 15
GERD = gastroesophageal reflux disease
GI = gastrointestinal
Glu = glucose, fasting [75–110] mg/dL
HCF = health care facility
HCG = human chorionic gonadotropin test for pregnancy
HCO_3 = bicarbonate
HCP = health care provider
Hct = hematocrit [35.4–44.4] females, [38.8–46.4]% males
Hgb = Hgb [12.0–15.8] g/dL females, [13.3–16.2] g/dL males
HIV = human immunodefficiency virus
HR = HR, beats per min
hr = hour(s)
ICU = intensive care unit
IgE = immunoglobulin E
IM = intramuscular
INR = international normalized ratio (PT to control) [0.8–1–2]
IU/L = international units per Liter
IV = intravenous
K = potassium, [3.5–5] mEq/L
kg = kilogram
L = Liter
Lactate = lactic acid [4.5–14.4] mg/dL arterial, [4.5–19.8] mg/dL venous
LBBB = left bundle branch block on ECG
Leukocyte count = white blood count [3.54–9.06] $10^3/mm^3$
m/o = months old
mcg/dL = micrograms per deciliter
mcg/L = micrograms per Liter
mcg/min = micrograms per minute
mcg/mL = micrograms per milliliter
mcmol/L = micromoles per liter
MDA = 3,4-methylenedioxyamphetamine
MDMA = methylenedioxymethamphetamine (ecstasy)
ME = medical examiner
mEq = milliequivalents
mEq/L = milliequivalents per Liter
Mg = magnesium [1.5–2.3] mg/dL
mg = milligrams
mg/dL = milligrams per deciliter
mg/kg = milligrams per kilogram
mg/L = milligrams per Liter
min = minutes
mmol/L = millmoles per Liter
mosm/kg = milliosmoles per kilogram
mosm/L = milliosmoles per Liter
MRI = Magnetic Resonance Imaging
ms = milliseconds

Narrative Headers:
Scenario/Substances: concise narrative of EMS & pre-HCF events
Past Medical History: available relevant past medical history
Physical Exam: initial physical exam if available
Clinical Course: concise narrative of HCF & beyond with outcome
Laboratory Data: initial results, give units except for units given in abbreviations
Autopsy Findings: = medical examiner and/or autopsy results

NG = nasogastric
ng/mL = nanograms per milliliter
not detected = analyte below the level of quantitation, negative
NS = normal saline
O_2 sat = oxygen percent saturation [94–100]% at sea level
OR = operating room
Osm = osmole
PALS = pediatric advanced life support
PC = poison center (= PCC, or Poison Control Center)
PCP = primary care provider
PEA = pulseless electrical activity
PEEP = positive end expiratory pressure
Platelets = platelet count [150–400] $x10^9$/L
PO = per os ("by mouth" in Latin)
Potassium = [3.5–5] mEq/L
Ppm = parts per million
PR = P-R interval [120–200] msec on the ECG
PT = prothrombin time, INR is preferred, but PT may be used if INR is not available
PTA = Prior to admission
PTT = partial thromboplastin time [26.3–39.4] sec
QRS = ECG QRS complex duration [60–100] msec
QT = Q to T interval on the ECG waveform, varies with HR
QTc = QT interval corrected for HR, usually $QTcB = QT/RR^{½}$ (Bazett correction) 1–15 y-o [$<$440] msec, adult male [$<$430] msec, adult female [$<$450] msec
RBBB = right bundle branch block on ECG
RBC = red blood cell(s)
RR = RR, breaths per minute
s/p = status post
sec = seconds
SVT = supraventricular tachycardia
T (oral) = Temperature (oral) [36.4, 37.2]°C or
T (rectal) = Temperature (rectal) [36.4, 37.2]°C or
T (tympanic) = Temperature (tympanic) [36.4, 37.2]°C
THC = tetrahydrocannabinol
Tprot = total protein
Troponin I = normal range [0–0.08] ng/mL, Cut-off for MI $>$ 0.04 ng/mL
U/dL = units per deciliter
U/L = units per liter
U/mL = units per milliliter
UA = urinalysis
UDS = urine drug screen
Urea nitrogen (BUN) = [6–17] mg/dL
VF = Ventricular fibrillation
VT = Ventricular tachycardia
WBC = white blood count, see leukocyte count
WNL = within normal limits
y/o = years old