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NPDS REPORT 2014

2014 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS): 32nd Annual Report

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ABSTRACT

***Background*:** This is the 32nd Annual Report of the American Association of Poison Control Centers' (AAPCC) National Poison Data System (NPDS). As of 1 January 2014, 56 of the nation's poison centers (PCs) uploaded case data automatically to NPDS. The upload interval was 7.82 [7.02, 11.17] (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 medical and clinical toxicologist reviewers using an ordinal scale of 1–6 to assess the Relative Contribution to Fatality (RCF) of the exposure to the death.

***Results*:** In 2014, 2,890,909 closed encounters were logged by NPDS: 2,165,142 human exposures, 56,265 animal exposures, 663,305 information calls, 6,085 human confirmed nonexposures, and 112 animal confirmed nonexposures. US poison centers (PCs) also made 2,617,346 follow-up calls in 2014. Total encounters showed a 5.5% decline from 2013, while health care facility human exposure cases increased by 3.3% from 2013. All information calls decreased by 17.7% and health care facility (HCF) information calls were essentially flat, decreasing by 0.04%, medication identification requests (Drug ID) decreased 29.8%, and human exposures reported to US PCs decreased 1.1%. Human exposures with less serious outcomes have decreased 3.40% per year since 2008 while those with more serious outcomes (moderate, major or death) have increased by 4.29% per year since 2000.

The top 5 substance classes most frequently involved in all human exposures were analgesics (11.3%), cosmetics/personal care products (7.7%), household cleaning substances (7.7%), sedatives/hypnotics/antipsychotics (5.9%), and antidepressants (4.4%). Sedative/Hypnotics/Antipsychotics exposures as a class increased the most rapidly (2,368 calls (12.2%)/year) over the last 13 years for cases showing more serious outcomes. The top 5 most common exposures in children age 5 years or less were cosmetics/personal care products (14.0%), household cleaning substances (11.0%), analgesics (9.3%), foreign bodies/toys/miscellaneous (6.7%), and topical preparations (5.8%). Drug identification requests comprised 43.3% of all information calls. NPDS documented 1,835 human exposures resulting in death with 1,408 human fatalities judged related (RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).

***Conclusions*:** These data support the continued value of PC expertise and need for specialized medical toxicology information to manage more serious exposures, despite a decrease in calls involving less serious 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 surveillance for all types of exposures (e.g., foreign body, viral, bacterial, venomous, chemical agent, or commercial product), the identification of events of public health significance, resilience, response and situational awareness tracking. NPDS is a model system for the real-time surveillance of national and global public health.

NOTE: 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 of included deaths to single-substance cases to improve precision and avoid misinterpretation.

Introduction

This is the 32nd Annual Report of the American Association of Poison Control Centers' (AAPCC; http://www.aapcc.org) National Poison Data System (NPDS).(1) On 1 January 2014, fifty-six 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.

NPDS is the data warehouse for the nation's PCs. Poison centers place emphasis on exposure management, accurate data collection and coding, and responding to the continuing need for poison related public and professional education. The PC's health care professionals are available free of charge to users, 24-hours a day, every day of the year. Poison centers respond to questions from the public, health care professionals, and public health agencies. The continuous staff dedication at the PCs is manifest as the number of exposure and information call encounters averages 3.0 million annually. Poison center encounters either involve an exposed human or animal (EXPOSURE CALL) or a request for information with no person or animal exposed to any foreign body, viral, bacterial, venomous, or chemical agent or commercial product (INFORMATION CALL). A unique feature of PC case management is the use of follow-up calls to monitor case progress and medical outcome.

The NPDS Products Database

The NPDS products database contains over 419,000 products ranging from viral and bacterial agents to commercial chemical and drug products. The products database is maintained and continuously updated by data analysts at the Micromedex Poisindex® System (Micromedex Healthcare Series [Internet database]. Greenwood Village, CO: Truven Health Analytics). A robust generic coding system categorizes the product data into 1,081 generic codes. These generic codes collapse into Non-Pharmaceutical (562) and Pharmaceutical (519) groups. These two groups are divided into Major (68) and Minor (172) categories. The generic coding schema

undergoes continuous improvement through the work of the AAPCC – Micromedex Joint Coding Group. The group consists of AAPCC members and editorial and lexicon staff working to meet best terminology practices. The generic code system provides enhanced report granularity as reflected in Table 22. The following 67 new generic codes were introduced in 2014.

Table: Generic Codes Added in 2014

1	Acetaminophen and Acetylsalicylic Acid with Antihistamine without Opioids
2	Acetaminophen and Acetylsalicylic Acid with Decongestant and Antihistamine without Opioids
3	Acetaminophen and Acetylsalicylic Acid with Decongestant without Opioids
4	Acetaminophen and Codeine with Antihistamine
5	Acetaminophen and Codeine with Decongestant
6	Acetaminophen and Codeine with Decongestant and Antihistamine
7	Acetaminophen and Dextromethorphan with Antihistamine
8	Acetaminophen and Dextromethorphan with Decongestant
9	Acetaminophen and Dextromethorphan with Decongestant and Antihistamine
10	Acetaminophen and Other Opioid with Antihistamine
11	Acetaminophen and Other Opioid with Decongestant
12	Acetaminophen and Other Opioid with Decongestant and Antihistamine
13	Acetaminophen with Antihistamine without Opioids
14	Acetaminophen with Decongestant and Antihistamine without Opioids
15	Acetaminophen with Decongestant without Opioids
16	Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan with Antihistamine
17	Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan with Decongestant
18	Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan with Decongestant and Antihistamine
19	Acetaminophen, Acetylsalicylic Acid, and Opioid with Antihistamine
20	Acetaminophen, Acetylsalicylic Acid, and Opioid with Decongestant
21	Acetaminophen, Acetylsalicylic Acid, and Opioid with Decongestant and Antihistamine
22	Acetylsalicylic Acid and Codeine with Antihistamine
23	Acetylsalicylic Acid and Codeine with Decongestant
24	Acetylsalicylic Acid and Codeine with Decongestant and Antihistamine
25	Acetylsalicylic Acid and Dextromethorphan with Antihistamine
26	Acetylsalicylic Acid and Dextromethorphan with Decongestant
27	Acetylsalicylic Acid and Dextromethorphan with Decongestant and Antihistamine
28	Acetylsalicylic Acid and Other Opioid with Antihistamine
29	Acetylsalicylic Acid and Other Opioid with Decongestant
30	Acetylsalicylic Acid and Other Opioid with Decongestant and Antihistamine
31	Acetylsalicylic Acid with Antihistamine without Opioids
32	Acetylsalicylic Acid with Decongestant and Antihistamine without Opioids
33	Acetylsalicylic Acid with Decongestant without Opioids
34	Antihistamine and Decongestant with Codeine
35	Antihistamine and Decongestant with Dextromethorphan
36	Antihistamine and Decongestant with Other Opioid
37	Antihistamine and Decongestant without Opioid
38	Antihistamine with Codeine
39	Antihistamine with Dextromethorphan
40	Antihistamine with Other Opioid
41	Antihistamine without Opioid
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51	eCigarettes: Marijuana Liquid With Added Flavors
52	eCigarettes: Marijuana Liquid Without Added Flavors
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(continued)

Continued

Because the new codes were added at different times during the year, the numbers in Table 22 for these generic codes do not reflect the entire year. For completeness, certain categories require customized data retrieval until these categories have been in place for a year or more.

Methods

Characterization of Participating Poison Centers and Population Served

Fifty-six participating centers submitted data to AAPCC through 29 July 2014, when one participating center closed with its calls picked up by other poison centers in its state, leaving 55 participating centers as of 31 December 2014. Fifty-two centers (94.5%) were accredited by AAPCC as of 1 July 2014. 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 2014.(2,3,4)

The average number of human exposure cases managed per day by all US PCs was 5,932. Similar to other years,

higher volumes were observed in the warmer months, with a mean of 6,275 cases per day in August compared with 5,512 per day in December. On average, US PCs received a call about an actual human exposure every 14.6 seconds.

Call Management – Specialized Poison Exposure Emergency Providers

Poison center Managing Directors are primarily responsible for patient care/information service operations, clinical education, and staff instruction. Most are PharmDs or RNs with American Board of Applied Toxicology (ABAT) board certification in clinical toxicology. Medical direction is provided by Medical Directors who are board-certified physician medical toxicologists. At some PCs, the Managing and Medical Director roles are held by the same person.

Calls received at US PCs are managed by healthcare professionals who have received specialized training in toxicology to allow for assessment, triage, management and monitoring of toxic exposure emergencies. These providers include medical and clinical toxicologists, registered nurses, pharmacists (PharmD or BS), physicians and physician assistants. Most commonly, registered nurses and pharmacists (PharmD or BS) make up the contingent of ''Specialists in Poison Information'' (SPIs) or ''Certified Specialists in Poison Information'' (CSPIs) in the US who triage lay public calls to the most appropriate level of care and provide health care professional callers with the most up-to-date management recommendations to care for their poisoned/overdosed patients. In order for a SPI to become nationally certified as a CSPI, they must log a minimum of 2,000 calls and 2,000 hours in the PC as a care provider to become eligible to take the national CSPI examination for certification in poison information. ''Poison Information Providers'' (PIPs) are allied healthcare professionals who are allowed to manage information-type and low acuity (non-hospital) calls while working under the supervision of a CSPI. Of note, while the only individuals eligible to sit for the CSPI examination are nurses, pharmacists, physicians and PA's, there is a lack of an appropriate toxicology core training within these health professional training curriculums to allow for them to be prepared for PC patient management operations. These SPIs must receive significant additional training above their degree programs to become SPIs/CSPIs. Such training is only offered within the PCs. Poison centers undergo a rigorous accreditation process administered by the AAPCC and must be reaccredited every 7 years.

NPDS – Near Real-time Data Capture

Launched on 12 April 2006, NPDS is the data repository for all of the US PCs. In 2014, all 56 US PCs uploaded case data automatically to NPDS. All PCs submitted data in near real-time, making NPDS one of the few operational systems of its kind. Poison center staff record calls contemporaneously in 1 of 4 case data management systems. Each PC uploads case data automatically. The average time to upload data for all PCs is 7.82 [7.02, 11.17] (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 exposure data. Users are able to access local and regional data for their own areas and view national aggregate data. 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 2014 database was locked on 10 July 2015 at 17:44 EDT.

Annual Report Case Inclusion Criteria

Note: In this year's report, human and animal ''exposure calls'' have been renamed to human and animal ''exposure cases'', since a single call may result in multiple cases and the NPDS database contains information about individual exposure cases. The information in this report reflects only those cases that are not duplicates and classified by the 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 cases are ''closed'' within a few hours of the initial call. Some cases regarding complex hospitalized patients or 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, enabling continual updates of case information, augmenting patient guidelines, and providing poison prevention education, 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 PC. 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, which use cases reported from a geographic location regardless of which poison center managed the case. This functionality is available not only to the AAPCC surveillance team, but to every PC. Poison centers 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 drug or commercial products of public health interest like contaminated food or product recalls. Thus, NPDS can provide real-time adverse event monitoring, surveillance, resilience, response and situational awareness.

Surveillance definitions can be created to monitor a variety of parameters, i.e., volume; case based or on any desired substance or commercial product in the Micromedex Poisindex products database and/or set of clinical effects or other parameters. The products database contains over 419,000 entries ranging from viral and bacterial agents to commercial chemical and drug products. Surveillance definitions may be constructed using volume or case based definitions with a variety of mathematical options and historical baseline periods from 1 to 14 years. NPDS surveillance tools include:

- Volume Alert 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
- Syndromic Surveillance Definitions allows Boolean based definitions utilizing various NPDS data fields to be run based on historical trends for user defined periods of interest.

Incoming data is monitored continuously and anomalous signals generate an automated email alert to the AAPCC's surveillance team, designated PC or public health agency staff. These anomaly alerts are reviewed daily by the AAPCC surveillance team, the PC, or the public health agency that created the surveillance definition. When reports of potential public health significance are detected, additional information is obtained from reporting PCs via the NPDS surveillance correspondence system or phone as appropriate. The PC then alerts their respective state or local health departments. Public health issues are brought to the attention of the Health Studies Branch, National Center for Environmental Health, Centers for Disease Control and Prevention (HSB/NCEH/CDC). This near real-time tracking ability is a unique feature offered by NPDS and the 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 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. Deaths (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 are 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 4 pediatric toxicologists, evaluated cases for patients under 19 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. The pediatric fatality cases reviewed exhibited a bimodal age distribution. Exposures causing death in children ≤ 5 years of age 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 were unclear or absent. In response to these findings, the Pediatric Fatality Review Team developed and distributed Pediatric Narrative Guidelines, with specific attention to the root cause of these cases. Poison centers are requested to heed these guidelines and the need for a more in-depth investigation of ''causality.''

RESULTS

Information Calls to Poison Centers

Data from 663,305 information calls to PCs in 2014 (Table 1C) was transmitted to NPDS, including calls in optional reporting categories such as prevention/safety/education (23,498), administrative (24,751) and caller referral (50,071).

Figure 2 shows that All Drug ID calls have decreased dramatically since mid-2009 through 2014. Law enforcement Drug ID Calls also showed a decline. The most frequent information call was for Drug ID, comprising 287,038 calls to PCs during the year. Of these, 167,223 (58.3%) 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 19.5% from 2013 (113,378 calls) to 2014 (91,306 calls), the distribution of these call types remained steady at 13.8% of all information request calls. The most common drug information requests were about drug-drug interactions, followed by other drug information, questions about dosage, inquiries of adverse effects and therapeutic use and indications. Environmental inquiries comprised 2.6% of all information calls. Of these environmental inquiries, specific questions related to cleanup of mercury (thermometers and other) remained the most common followed by questions involving pesticides and air quality.

Of all the information calls, poison information comprised 8.1% of the requests with inquiries involving general toxicity the most common followed by questions involving food preparation practices, safe use of household products and plant toxicity.

Exposure Calls to Poison Centers

In 2014, the participating PCs logged 2,890,909 total encounters including 2,165,142 closed human exposure cases (Table 1A), 56,265 animal exposures (Table 1B), 663,305 information calls (Table 1C), 6,085 human confirmed non-exposures, and 112 animal confirmed non-exposures. An additional 122 calls were still open at the time the database was locked. The cumulative AAPCC database now contains more than 62 million human exposure case records (Table 1A). A total of 17,764,183 information calls have been logged into the AAPCC database since the year 2000.

Figure 1 shows the human exposures, information calls and animal exposures by day since January 1, 2001. Second order (quadratic) least squares regression of these data shows a statistically significant departure from linearity (declining rate of calls since mid-2007) for Human Exposure Cases. Information Calls are declining more rapidly than a quadratic regression and are described by a smoothing spline fit, and Animal Exposure Cases have likewise been declining since mid-2005. The 2 May 2006

Table 1A. AAPCC Population Served and Reported Exposures (1983–2014).

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
2011	57[c]	315.7[b]	2,334,004	7.4
2012	57	318.0[b]	2,275,141	7.2
2013	57[d]	320.2[e]	2,188,013	6.8
2014	56[d]	322.9[f]	2,165,142	6.7
Total			**62,282,510**	

[a]As of 1 July 2010 there were 60 Participating Centers.
[b]AAPCC Total as of 1 July Mid Year US Census (2012 data for 50 United States, District of Columbia and Puerto Rico; 2011 data for Guam; 2010 data for American Samoa, Federated States of Micronesia, and the US Virgin Islands)
[c]As of 1 July 2011 there were 57 Participating Centers.
[d]One Participating Center closed in September 2013. Its data is included in the 2013 totals but not in the 2014 data.
[e]AAPCC Total as of 1 July Mid Year US Census (2013 data for 50 United States, District of Columbia and Puerto Rico, Guam, American Samoa, Federated States of Micronesia, and the US Virgin Islands)
[f]AAPCC Total as of 1 July Mid Year US Census (2014 data for 50 United States, District of Columbia and Puerto Rico, Guam, American Samoa, Federated States of Micronesia, and the US Virgin Islands) (2,3)

Table 1B. Non-Human Exposures by Animal Type.

Animal	N	%
Dog	50,696	90.10
Cat	4,809	8.55
Bird	188	0.33
Rodent/lagomorph	141	0.25
Horse	115	0.20
Sheep/goat	63	0.11
Cow	41	0.07
Aquatic	22	0.04
Other	190	0.34
Total	**56,265**	**100.00**

Table 1C. Distribution of Information Calls.

Information call type	N	% of Info. calls
Drug identification		
Public inquiry: Drug sometimes involved in abuse	127,059	19.16
Public inquiry: Drug not known to be abused	60,040	9.05
Public inquiry: Unknown abuse potential	2,229	0.34
Public inquiry: Unable to identify	25,350	3.82
HCP inquiry: Drug sometimes involved in abuse	1,807	0.27
HCP inquiry: Drug not known to be abused	3,207	0.48
HCP inquiry: Unknown abuse potential	122	0.02
HCP inquiry: Unable to identify	1,162	0.18
Law Enf. Inquiry: Drug sometimes involved in abuse	38,357	5.78
Law Enf. Inquiry: Drug not known to be abused	20,853	3.14
Law Enf. Inquiry: Unknown abuse potential	758	0.11
Law Enf. Inquiry: Unable to identify	5,102	0.77
Other drug ID	992	0.15
Subtotal	**287,038**	**43.27**
Drug information		
Adverse effects (no known exposure)	8,130	1.23
Brand/generic name clarifications	1,271	0.19
Calculations	129	0.02
Compatibility of parenteral medications	248	0.04
Compounding	254	0.04
Contraindications	1,220	0.18
Dietary supplement, herbal, and homeopathic	513	0.08
Dosage	10,485	1.58
Dosage form/formulation	1,552	0.23
Drug use during breast-feeding	1,973	0.30
Drug-drug interactions	21,071	3.18
Drug-food interactions	1,401	0.21
Foreign drug	246	0.04
Generic substitution	300	0.05
Indications/therapeutic use	7,954	1.20
Medication administration	4,574	0.69
Medication availability	429	0.06
Medication disposal	2,522	0.38
Pharmacokinetics	1,607	0.24
Pharmacology	1,072	0.16
Regulatory	2,522	0.38
Stability/storage	2,148	0.32
Therapeutic drug monitoring	450	0.07
Other drug info	19,235	2.90
Subtotal	**91,306**	**13.77**
Environmental information		
Air quality	1,390	0.21
Carbon monoxide – no known patient(s)	625	0.09
Carbon monoxide alarm use	405	0.06
Chem/bioterrorism/weapons (suspected or confirmed)	16	0.00
Clarification of media reports of environmental contamination	494	0.07
Clarification of substances involved in a HAZMAT incident – no known victim(s)	132	0.02
General questions about contamination of air and/or soil	283	0.04
HAZMAT planning	126	0.02
Lead – no known patient(s)	349	0.05
Mercury thermometer cleanup	1,293	0.19
Mercury (excluding thermometers) cleanup	2,801	0.42
Notification of a HAZMAT incident – no known patient(s)	721	0.11
Pesticide application by a professional pest control operator	582	0.09
Pesticides (other)	2,047	0.31
Potential toxicity of chemicals in the environment	975	0.15
Radiation	55	0.01
Safe disposal of chemicals	1,190	0.18
Water purity/contamination	583	0.09
Other environmental	3,406	0.51
Subtotal	**17,473**	**2.63**
Medical information		
Dental questions	92	0.01
Diagnostic or treatment recommendations for diseases or conditions – non-toxicology	6,771	1.02

(continued)

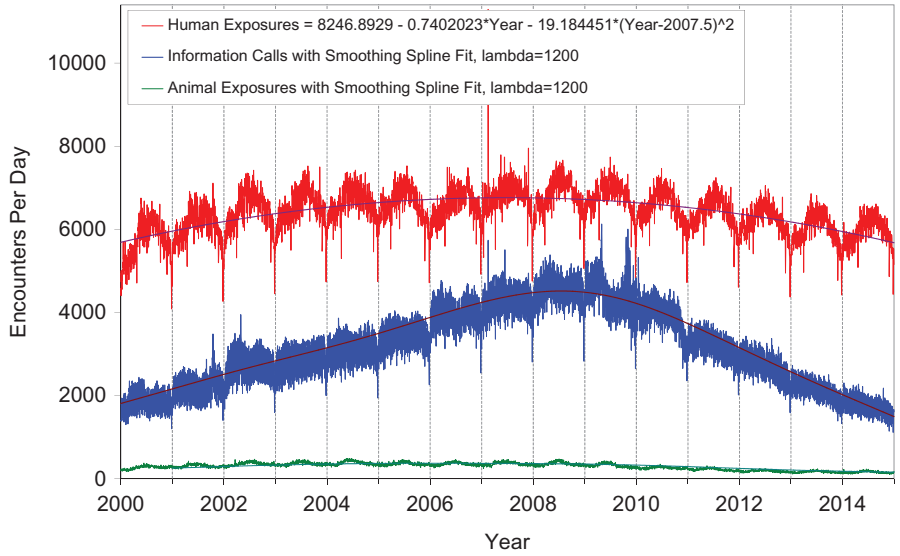
Table 1C. Continued

Information call type	N	% of Info. calls
Disease prevention	618	0.09
Explanation of disease states	1,114	0.17
General first-aid	946	0.14
Interpretation of non-toxicology laboratory reports	104	0.02
Medical terminology questions	46	0.01
Rabies – no known patient(s)	208	0.03
Sunburn management	46	0.01
Other medical	49,922	7.53
Subtotal	**59,867**	**9.03**
Occupational information		
Occupational treatment/first-aid guidelines – no known patient(s)	29	0.00
Information on chemicals in the workplace	100	0.02
MSDS interpretation	45	0.01
Occupational MSDS requests	606	0.09
Routine toxicity monitoring	35	0.01
Safe handling of workplace chemicals	71	0.01
Other occupational	207	0.03
Subtotal	**1,093**	**0.16**
Poison information		
Analytical toxicology	734	0.11
Carcinogenicity	77	0.01
Food poisoning – no known patient(s)	1,717	0.26
Food preparation/handling practices	5,635	0.85
General toxicity	22,232	3.35
Mutagenicity	54	0.01
Plant toxicity	1,986	0.30
Recalls of non-drug products (including food)	158	0.02
Safe use of household products	3,465	0.52
Toxicology information for legal use/litigation	143	0.02
Other poison	17,424	2.63
Subtotal	**53,625**	**8.08**
Prevention/Safety/Education		
Confirmation of poison center number	14,397	2.17
General (non-poison) injury prevention requests	389	0.06
Media requests	313	0.05
Poison prevention material requests	7,050	1.06
Poison prevention week date inquiries	34	0.01
Professional education presentation requests	197	0.03
Public education presentation requests	369	0.06
Other prevention	749	0.11
Subtotal	**23,498**	**3.54**
Teratogenicity information		
Teratogenicity	1,305	0.20
Subtotal	**1,305**	**0.20**
Other information		
Other	48,528	7.32
Subtotal	**48,528**	**7.32**
Substance Abuse		
Drug screen information	3,605	0.54
Effects of illicit substances – no known patient(s)	208	0.03
New trend information	189	0.03
Withdrawal from illicit substances – no known patient(s)	149	0.02
Other substance abuse	599	0.09
Subtotal	**4,750**	**0.72**
Administrative		
Expert witness requests	45	0.01
Faculty activities	31	0.00
Funding	22	0.00
Personnel issues	204	0.03
Poison center record request	152	0.02
Product replacement/malfunction (issues intended for the manufacturer)	2,755	0.42
Scheduling of poison center rotations	73	0.01
Other administration	21,469	3.24
Subtotal	**24,751**	**3.73**

(continued)

Table 1C. Continued

Information call type	N	% of Info. calls
Caller Referred		
Immediate referral – animal poison center or veterinarian	15,036	2.27
Immediate referral – drug identification	5,844	0.88
Immediate referral – drug information	221	0.03
Immediate referral – health department	9,415	1.42
Immediate referral – medical advice line	614	0.09
Immediate referral – pediatric triage service	420	0.06
Immediate referral – pesticide hotline	258	0.04
Immediate referral – pharmacy	645	0.10
Immediate referral – poison center	3,176	0.48
Immediate referral – private physician	2,324	0.35
Immediate referral – psychiatric crisis line	122	0.02
Immediate referral – teratology information program	103	0.02
Other call referral	11,893	1.79
Subtotal	**50,071**	**7.55**
Total	**663,305**	**100.00**



Both linear and second order (quadratic) terms were statistically significant for least-squares second order regressions of Human Exposures (RSqr = 0.377). Smoothing spline fit with lambda=1200 was used for Information Calls (RSqr = 0.768) and Animal Exposures (RSqr = 0.882).

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

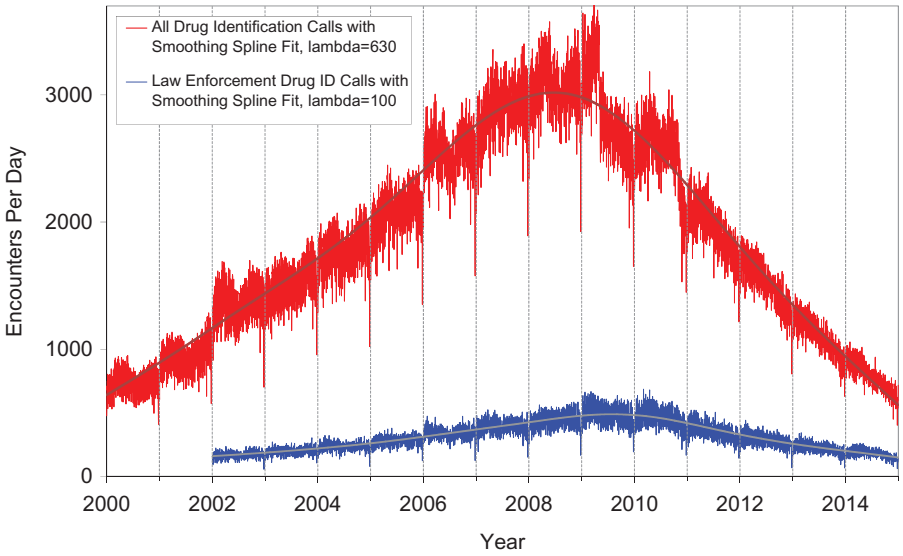
exposure data spike on the figure was the result of 602 children in a Midwest school reporting a noxious odor which caused anxiety, but resolved without sequelae.

A hallmark of PC case management is the use of follow-up calls to monitor case progress and medical outcome. US PCs made 2,617,346 follow-up calls in 2014. Follow-up calls were done in 46.0% of human exposure cases. One follow-up call was made in 21.8% of human exposure cases, and multiple follow-up calls (range 2–172) were placed in 24.3% of cases. For human exposure cases in which follow up calls were documented, an average of 2.53 follow up calls per case were done.

Figure 3 shows a graphic summary and analyses of Health Care Facility (HCF) Exposure and HCF Information calls. HCF Exposure Cases slightly departed from linearity but continued to increase at a steady rate, while the rate of HCF Information Calls has been declining since early 2005. This increasing use of the PCs for the more serious exposures (HCF calls) is important in the face of the overall decline in exposure and information encounters.

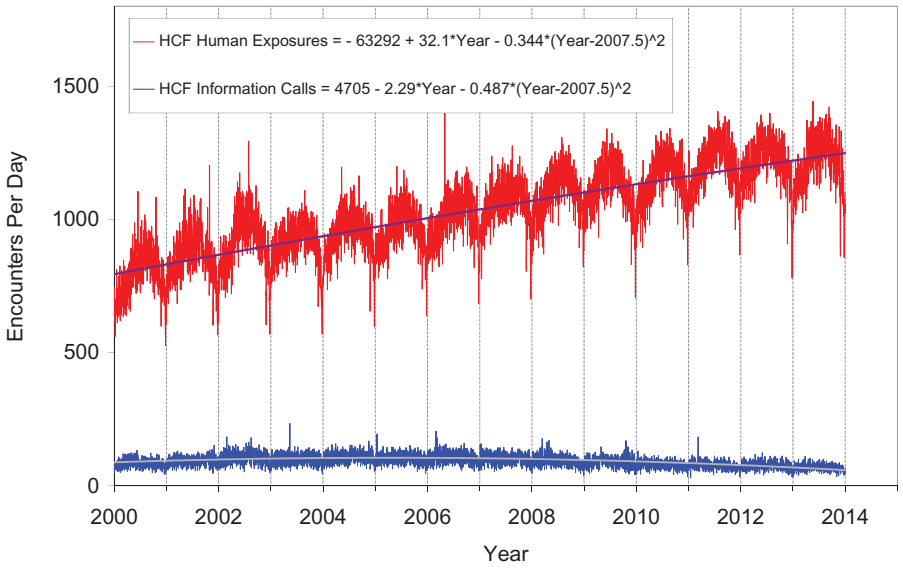
Tables 22A (Nonpharmaceuticals) and 22B (Pharmaceuticals) provide summary demographic data on patient age, reason for exposure, medical outcome, and use of a health care facility for all 2,165,142 human exposure cases, presented by substance categories. The Pharmaceuticals category includes both licit and illicit drugs.

Column 1: Name of the major, minor generic categories and their associated generic substances (Alternate Names). Note that for pharmaceuticals, the generic category or generic substance listed is for the



Smoothing Spline Fits used lambda = 639 for All Drug Identification Calls (RSqr = 0.942) and lambda = 100 for Law Enforcement Drug ID Calls (RSqr = 0.800).

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



Regression lines show least-squares second order regressions for HCF Exposure (RSqr = 0.692) and HCF Information Calls (RSqr = 0.281). All terms shown were statistically significant for each of the 2 regressions.

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

initial FDA approved indication and may not reflect current indications or uses for the pharmaceutical.

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

Column 3: No. of Single Exposures 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 (75.9%) of all exposures. In contrast, only 42.2% of fatalities are single substance exposures (Table 5).

Tables 22A and 22B tabulate 2,557,756 substance-exposures, of which 1,925,657 were single-substance exposures, including 999,812 (51.9%) nonpharmaceuticals and 925,845 (48.1%) pharmaceuticals. In 20.5% of single-substance exposures that involved pharmaceutical substances, the reason for exposure was intentional, compared to only 3.4% when the exposure involved a nonpharmaceutical substance. Correspondingly, treatment in an HCF was provided in a higher percentage of exposures that involved pharmaceutical substances (30.9%) compared with nonpharmaceutical substances (16.2%). Exposures to pharmaceuticals also had more severe outcomes. Of single-substance exposure-related fatal cases, 620

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

	Site of caller		Site of exposure	
Site	**N**	**%**	**N**	**%**
Residence				
Own	1,506,125	69.56	1,976,666	91.29
Other	30,229	1.40	47,340	2.19
Workplace	22,688	1.05	36,544	1.69
Health care facility	458,938	21.20	6,229	0.29
School	9,878	0.46	27,271	1.26
Restaurant/food service	441	0.02	4,417	0.20
Public area	6,871	0.32	19,452	0.90
Other	124,255	5.74	25,178	1.16
Unknown	5,717	0.26	22,045	1.02

Table 3B. Population-Adjusted Exposures by Age Group.

Age Group	Exposures/100 k population	Number of Exposures[a]	Population[b]
Children (<20)			
<1	2,834	113,209	3,994,930
1	8,327	333,811	4,008,864
2	8,085	323,772	4,004,608
3	3,575	144,879	4,052,400
4	1,758	71,255	4,052,349
5	1,056	42,815	4,053,999
Child 6–12	453	132,067	29,145,160
Teen 13–19	530	158,468	29,879,841
Subgroup	**1,595**	**1,326,789**	**83,192,151**
Adults (≥20)			
20–29	402	182,868	45,460,063
30–39	350	146,847	41,964,029
40–49	291	122,322	42,001,257
50–59	265	118,056	44,595,465
60–69	235	80,552	34,332,733
70–79	255	49,075	19,279,568
80–89	291	28,220	9,712,705
90+	266	6,295	2,365,351
Subgroup	**344**	**825,009**	**239,711,171**
Overall Total	**671**	**2,165,142**	**322,903,322**

[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]AAPCC Total as of 1 July 2014 322,903,322 (see Table 1A).(3,4,5)

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	59,033	52.15	53,823	47.54	353	0.31	113,209	5.23	113,209	5.23
1	173,775	52.06	159,529	47.79	507	0.15	333,811	15.42	447,020	20.65
2	168,968	52.19	154,261	47.64	543	0.17	323,772	14.95	770,792	35.60
3	79,566	54.92	65,005	44.87	308	0.21	144,879	6.69	915,671	42.29
4	39,945	56.06	31,101	43.65	209	0.29	71,255	3.29	986,926	45.58
5	24,305	56.77	18,340	42.84	170	0.40	42,815	1.98	1,029,741	47.56
Unknown ≤5	987	45.15	870	39.80	329	15.05	2,186	0.10	1,031,927	47.66
Child 6–12	75,605	57.25	55,504	42.03	958	0.73	132,067	6.10	1,163,994	53.76
Teen 13–19	63,211	39.89	94,620	59.71	637	0.40	158,468	7.32	1,322,462	61.08
Unknown Child	1,586	36.65	1,509	34.87	1,232	28.47	4,327	0.20	1,326,789	61.28
Subtotal	**686,981**	**51.78**	**634,562**	**47.83**	**5,246**	**0.40**	**1,326,789**	**61.28**	**1,326,789**	**61.28**
Adults (≥20)										
20–29	85,207	46.59	97,461	53.30	200	0.11	182,868	8.45	1,509,657	69.73
30–39	63,305	43.11	83,407	56.80	135	0.09	146,847	6.78	1,656,504	76.51
40–49	50,130	40.98	72,096	58.94	96	0.08	122,322	5.65	1,778,826	82.16
50–59	47,197	39.98	70,785	59.96	74	0.06	118,056	5.45	1,896,882	87.61
60–69	30,712	38.13	49,788	61.81	52	0.06	80,552	3.72	1,977,434	91.33
70–79	17,747	36.16	31,310	63.80	18	0.04	49,075	2.27	2,026,509	93.60
80–89	9,715	34.43	18,494	65.54	11	0.04	28,220	1.30	2,054,729	94.90
≥90	1,932	30.69	4,360	69.26	3	0.05	6,295	0.29	2,061,024	95.19
Unknown adult	34,859	38.40	52,853	58.22	3,062	3.37	90,774	4.19	2,151,798	99.38
Subtotal	**340,804**	**41.31**	**480,554**	**58.25**	**3,651**	**0.44**	**825,009**	**38.10**	**2,151,798**	**99.38**
Other										
Unknown age	4,365	32.71	6,018	45.10	2,961	22.19	13,344	0.62	2,165,142	100.00
Total	**1,032,150**	**47.67**	**1,121,134**	**51.78**	**11,858**	**0.55**	**2,165,142**	**100.00**	**2,165,142**	**100.00**

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

Age (y)	Male	Female	Unknown	Total (%)	Cumulative total (%)
<1 year	0	1	0	1 (0.1%)	1 (0.1%)
1 year	3	4	0	7 (0.6%)	8 (0.7%)
2 years	2	0	0	2 (0.2%)	10 (0.9%)
3 years	0	1	0	1 (0.1%)	11 (0.9%)
4 years	1	1	0	2 (0.2%)	13 (1.1%)
5 years	2	1	0	3 (0.3%)	16 (1.4%)
Child 6–12 years	6	4	0	10 (0.9%)	26 (2.2%)
Teen 13–19 years	27	34	0	61 (5.2%)	87 (7.4%)
Unknown Child	0	0	1	1 (0.1%)	88 (7.5%)
20–29 years	93	68	0	161 (13.7%)	249 (21.2%)
30–39 years	87	96	0	183 (15.6%)	432 (36.8%)
40–49 years	78	116	0	194 (16.5%)	626 (53.4%)
50–59 years	104	127	0	231 (19.7%)	857 (73.1%)
60–69 years	72	70	0	142 (12.1%)	999 (85.2%)
70–79 years	30	46	0	76 (6.5%)	1,075 (91.7%)
80–89 years	29	41	0	70 (6.0%)	1,145 (97.6%)
>=90 years	4	10	0	14 (1.2%)	1,159 (98.8%)
Unknown adult	5	3	1	9 (0.8%)	1,168 (99.6%)
Unknown age	3	2	0	5 (0.4%)	1,173 (100.0%)
Total	**546**	**625**	**2**	**1,173 (100.0%)**	**1,173 (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.

Table 5. Number of Substances Involved in Human Exposure Cases.

	Human exposures		Fatal exposures[a]	
No. of Substances	**N**	**%**	**N**	**%**
1	1,925,657	88.94	495	42.20
2	150,008	6.93	288	24.55
3	49,883	2.30	171	14.58
4	20,436	0.94	93	7.93
5	9,196	0.42	55	4.69
6	4,323	0.20	27	2.30
7	2,309	0.11	13	1.11
8	1,281	0.06	9	0.77
>=9	2,049	0.09	22	1.88
Total	**2,165,142**	**100.00**	**1,173**	**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.

(70.3%) were pharmaceuticals compared with 262 (29.7%) nonpharmaceuticals.

Age and Gender Distributions

The age and gender distribution of human exposures is outlined in Table 3. Children younger than 3 years of age were involved in 35.6% of exposures and children younger than 6 years accounted for approximately half of all human exposures (47.7%). 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.

Caller Site and Exposure Site

As shown in Table 2, of the 2,165,142 human exposures reported, 71.0% of calls originated from a residence (own or other) but 93.5% actually occurred at a residence (own or other). Another 21.2% of calls were made from a health care facility. Beyond residences, exposures occurred in the workplace in 1.7% of cases, schools (1.3%), health care facilities (0.3%), and restaurants or food services (0.2%).

Exposures in Pregnancy

Exposure during pregnancy occurred in 7,240 women (0.3% of all human exposures). Of those with known pregnancy duration (n = 6,681), 30.1% occurred in the first trimester, 37.8% in the second trimester, and 31.5% in the third trimester. Most (74.7%) were unintentional exposures and 19.0% were intentional exposures. There were two deaths in pregnant females in 2014.

Chronicity

Most human exposures, 1,898,862 (87.7%), were acute cases (single, repeated or continuous exposure occurring over 8 hours or less) compared to 944 acute cases among the 1835 fatalities (51.4%). Chronic exposures (continuous or repeated exposures occurring over > 8 hours) comprised 2.0% (44,088) 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 hours) numbered 192,428 (8.9%).

Reason for Exposure

The reason category for most human exposures was unintentional (79.4%) with unintentional general (53.8%), therapeutic error (12.6%) and unintentional misuse (5.8%) of all exposures (Table 6A).

Scenarios

Of the total 271,737 therapeutic errors, the most common scenarios for all ages included: inadvertent double-dosing (29.2%), wrong medication taken or given (17.2%), other incorrect dose (14.8%), doses given/taken too close together (11.6%) and inadvertent exposure to someone else's medication (8.4%). The types of therapeutic errors observed are different for each age group and are summarized in Table 6B.

Table 6A. Reason for Human Exposure Cases.

Reason	N	% Human exposures
Unintentional		
Unintentional – General	1,164,029	53.8
Unintentional – Therapeutic error	271,737	12.6
Unintentional – Misuse	125,086	5.8
Unintentional – Environmental	58,586	2.7
Unintentional – Bite/sting	49,914	2.3
Unintentional – Occupational	26,880	1.2
Unintentional – Food poisoning	19,343	0.9
Unintentional – Unknown	3,193	0.1
Subtotal	**1,718,768**	**79.4**
Intentional		
Intentional – Suspected suicide	241,804	11.2
Intentional – Misuse	54,679	2.5
Intentional – Abuse	46,727	2.2
Intentional – Unknown	19,451	0.9
Subtotal	**362,661**	**16.7**
Adverse Reaction		
Adverse reaction – Drug	36,542	1.7
Adverse reaction – Other	10,055	0.5
Adverse reaction – Food	5,054	0.2
Subtotal	**51,651**	**2.4**
Unknown		
Unknown reason	16,038	0.7
Subtotal	**16,038**	**0.7**
Other		
Other – Contamination/tampering	7,472	0.3
Other – Malicious	7,051	0.3
Other – Withdrawal	1,501	0.1
Subtotal	**16,024**	**0.7**
Total	**2,165,142**	**100.0**

Reason by Age

Intentional exposures accounted for 16.7% of human exposures. Suicidal intent was suspected in 11.2% 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 1,173 reported fatalities with RCF 1–3, the major reason reported for children ≤ 5 years was unintentional while most fatalities in adults ($\geq$20 years) were intentional (Table 8).

Route of Exposure

Ingestion was the route of exposure in 83.7% of cases (Table 9), followed in frequency by dermal (7.0%), inhalation/nasal (6.1%), and ocular routes (4.3%). For the 1,173 exposure-related fatalities, ingestion (81.4%), inhalation/nasal (10.1%), unknown (7.8%) and parenteral (5.2%) 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 individual clinical effects (signs, symptoms, or laboratory abnormalities) for each case. Each clinical effect can be further defined as related, not related, or unknown if related. Clinical effects were coded in 797,920 (36.9%)

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	79,248	16.39	12.69	6.05	58.64	0.05	5.87	0.30
Wrong medication taken/given	46,864	15.10	12.07	6.32	60.36	0.09	5.71	0.35
Other incorrect dose	40,302	31.54	12.15	6.66	45.61	0.08	3.70	0.25
Medication doses given/taken too close together	31,523	16.12	10.18	6.28	59.91	0.09	7.13	0.30
Inadvertently took/given someone else's medication	22,946	15.91	21.19	7.38	50.81	0.06	4.44	0.21
Other/unknown therapeutic error	16,339	19.63	10.97	6.55	55.03	0.15	6.95	0.72
Incorrect dosing route	14,789	7.62	3.94	2.96	72.65	0.08	11.93	0.82
Confused units of measure	9,744	56.24	19.64	4.40	18.10	0.09	1.35	0.16
Dispensing cup error	5,863	64.17	20.81	3.14	10.80	0.05	0.96	0.09
Incorrect formulation or concentration given	5,592	46.16	17.24	4.74	29.29	0.05	2.36	0.16
Health professional/iatrogenic error (pharmacist/nurse/physician)	5,541	26.84	10.83	6.15	50.39	0.25	4.60	0.94
More than 1 product containing same ingredient	4,695	12.06	15.02	14.23	51.54	0.02	6.75	0.38
Drug interaction	2,185	6.50	7.96	7.92	63.62	0.09	13.50	0.41
10-fold dosing error	1,145	65.33	8.47	2.10	22.01	0.00	1.92	0.17
Incorrect formulation or concentration dispensed	1,142	43.26	17.78	5.87	28.98	0.00	3.33	0.79
Exposure through breast milk	134	90.30	0.75	0.00	5.97	0.00	2.99	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 2014, 402,055 (18.6%) were coded to 1 or more of 54 scenarios.

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	1,026,055	62.40	115,526	7.03	58,533	3.56	435,926	26.51	3,678	0.22	70,792	4.31	8,258	0.50	1,718,768	79.38
Intentional	325	0.09	11,390	3.24	92,664	26.36	244,031	69.42	271	0.08	10,847	3.09	3,133	0.89	362,661	16.75
Adverse reaction	3,384	7.40	2,616	5.72	3,725	8.15	35,166	76.94	102	0.22	5,843	12.78	815	1.78	51,651	2.39
Unknown	766	5.20	882	5.99	1,854	12.59	10,427	70.79	76	0.52	1,233	8.37	800	5.43	16,038	0.74
Other	1,397	10.15	1,653	12.01	1,692	12.29	8,685	63.09	200	1.45	2,059	14.96	338	2.46	16,024	0.74
Total	**1,031,927**	**49.85**	**132,067**	**6.38**	**158,468**	**7.66**	**734,235**	**35.47**	**4,327**	**0.21**	**90,774**	**4.39**	**13,344**	**0.64**	**2,165,142**	**100.00**

cases (17.7% had 1 effect, 9.4% had 2 effects, 5.1% had 3 effects, 2.2% had 4 effects, 1.1% had 5 effects, and 1.4% had >5 effects coded). Of clinical effects coded, 78.0% were deemed related to the exposure, 9.8% were considered not related, and 12.2% were coded as unknown if related.

Case Management Site

The majority of cases reported to PCs were managed in a non–HCF (68.1%), usually at the site of exposure, primarily the patient's own residence (Table 10). 1.5% of cases were referred to an HCF but refused referral. Treatment in an HCF was rendered in 28.3% of cases.

Of the 612,184 cases managed in an HCF, 290,219 (47.4%) were treated and released, 101,141 (16.5%) were admitted for critical care, and 69,552 (11.4%) were admitted to a noncritical unit.

The percentage of patients treated in an HCF varied considerably with age. Only 12.7% of children $\leq$5 years and only 16.5% of children between 6 and 12 years were managed in an HCF compared to 61.1% of teenagers (13–19 years) and 46.5% of adults (age $\geq$20 years).

Medical Outcome

Table 11 displays the medical outcome of human exposure cases distributed by age. Older age groups exhibit a greater number of serious medical outcomes. Table 12 compares medical outcome and reason for exposure and shows a greater frequency of serious outcomes in intentional exposures.

The duration of effect is required for all cases which report at least one clinical effect and have a medical outcome of minor, moderate or major effect (n = 503,864; 23.3% of exposures). Table 13 demonstrates an increasing duration of the clinical effects observed with more serious outcomes.

Decontamination Procedures and Specific Antidotes

Tables 14 and 15 outline the use of decontamination procedures, specific physiological antagonists (antidotes), and measures to enhance elimination in the treatment of patients reported in the NPDS database. These should 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 41 (0.0%) pediatric exposures in 2014. The continued decrease in ipecac syrup use over the last 2 decades was likely a result of ipecac use guidelines issued in 1997 by the American Academy of Clinical Toxicology and the 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, but

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	4	2	1	14	0	1	0	22
Unintentional–Environmental	3	5	2	30	0	0	1	41
Unintentional–Occupational	0	0	1	8	0	1	2	12
Unintentional–Therapeutic error	1	0	0	22	0	0	0	23
Unintentional–Misuse	0	0	0	17	1	0	0	18
Unintentional–Bite/sting	1	0	0	3	0	0	0	4
Unintentional–Food poisoning	0	0	0	1	0	0	0	1
Unintentional–Unknown	1	0	0	3	0	0	0	4
Subtotal	10	7	4	98	1	2	3	125
Intentional								
Intentional–Suspected suicide	0	2	31	606	0	4	1	644
Intentional–Misuse	0	0	1	32	0	0	0	33
Intentional–Abuse	0	1	19	112	0	2	1	135
Intentional–Unknown	0	0	3	69	0	0	0	72
Subtotal	0	3	54	819	0	6	2	884
Other								
Other–Contamination/tampering	1	0	0	0	0	0	0	1
Other–Malicious	1	0	0	3	0	0	0	4
Subtotal	2	0	0	3	0	0	0	5
Adverse reaction								
Adverse reaction–Drug	0	0	1	42	0	0	0	43
Adverse reaction–Other	0	0	0	3	0	0	0	3
Subtotal	0	0	1	45	0	0	0	46
Unknown								
Unknown reason	4	0	2	106	0	1	0	113
Subtotal	4	0	2	106	0	1	0	113
Total	16	10	61	1,071	1	9	5	1,173

[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 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	1,813,189	79.63	83.74	955	75.85	81.42
Dermal	151,796	6.67	7.01	8	0.64	0.68
Inhalation/nasal	132,653	5.83	6.13	118	9.37	10.06
Ocular	91,932	4.04	4.25	0	0.0	0
Bite/sting	49,875	2.19	2.30	4	0.32	0.34
Parenteral	18,999	0.83	0.88	61	4.85	5.20
Unknown	11,504	0.51	0.53	91	7.23	7.76
Other	2,346	0.10	0.11	2	0.16	0.17
Otic	1,821	0.08	0.08	0	0.0	0
Aspiration (with ingestion)	1,207	0.05	0.06	19	1.51	1.62
Vaginal	933	0.04	0.04	1	0.08	0.09
Rectal	751	0.03	0.03	0	0.0	0
Total Number of Routes	**2,277,006**	**100.00**	**105.17**	**1,259**	**100.00**	**107.33[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.

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 0.8% in 2014.

Top Substances in Human Exposures

Table 17A presents the most common 25 substance categories, listed by frequency of human exposure for cases with more serious outcomes (moderate, severe and death). This ranking provides an indication where

Table 10. Management Site of Human Exposures.

Site of management	N	%
Managed on site, nonhealth care facility	1,474,249	68.1
Managed in healthcare facility		
Treated/evaluated and released	290,219	13.4
Admitted to critical care unit	101,141	4.7
Patient lost to follow-up/left AMA	84,095	3.9
Admitted to noncritical care unit	69,552	3.2
Admitted to psychiatric facility	67,177	3.1
Subtotal (managed in HCF)	**612,184**	**28.3**
Other	23,685	1.1
Refused referral	31,838	1.5
Unknown	23,186	1.1
Total	**2,165,142**	**100.0**

prevention efforts might be focused, as well as the types of serious 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 with more serious outcomes per year over the last 14 years for the change over time for each of the 68 major generic categories via least squares linear regression. The serious outcome exposure cases per year over this period were increasing for 39 and decreasing for 29 of the 68 categories. The change over time for the 14 yearly values was statistically significant ($p < 0.05$) for 47 of the 67 categories with data for the entire time period. Table 17B shows the 25 categories which were increasing the most rapidly. Statistical significance of the linear regressions can be verified by noting the 95% confidence interval on the rate of increase excludes zero for all but 1 of the 25 categories. Figure 5 shows the change over time and 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 ($\leq$5 years) fatalities in 2014.

Table 17F reports the 25 Drug ID categories most frequently queried in 2014, highlighting the value of Drug ID information to the AAPCC, public health, public safety, and regulatory agencies. Internet based resources do not afford the caller the option to speak with a health care professional if needed. 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 reports the 25 substance categories most frequently reported in exposures involving pregnant patients.

Changes Over Time

Total encounters peaked in 2008 at 4,333,012 calls with 2,491,049 human exposure cases and 1,703,762

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

	<= 5 y		6–12 y		13–19 y		>= 20 y		Unknown child		Unknown adult		Unknown age		Total	
Outcome	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
No effect	239,073	23.17	22,869	17.32	28,942	18.26	92,298	12.57	721	16.66	9,116	10.04	1,329	10.0	394,348	18.21
Minor effect	86,156	8.35	19,539	14.79	42,561	26.86	168,679	22.97	421	9.73	12,360	13.62	2,113	15.8	331,829	15.33
Moderate effect	10,263	0.99	4,037	3.06	24,670	15.57	107,759	14.68	30	0.69	2,798	3.08	352	2.6	149,909	6.92
Major effect	761	0.07	237	0.18	2,612	1.65	18,310	2.49	2	0.05	179	0.20	25	0.2	22,126	1.02
Death	23	0.00	11	0.01	76	0.05	1,419	0.19	3	0.07	19	0.02	8	0.1	1,559	0.07
No follow–up, nontoxic	190,756	18.49	19,291	14.61	7,465	4.71	44,651	6.08	555	12.83	11,403	12.56	965	7.2	275,086	12.71
No follow-up, minimal toxicity	473,223	45.86	60,138	45.54	37,424	23.62	229,672	31.28	1,922	44.42	39,592	43.62	3,866	29.0	845,837	39.07
No follow-up, potentially toxic	18,565	1.80	2,959	2.24	10,834	6.84	42,134	5.74	552	12.76	11,791	12.99	4,273	32.0	91,108	4.21
Unrelated effect	13,096	1.27	2,981	2.26	3,876	2.45	29,085	3.96	121	2.80	3,500	3.86	405	3.0	53,064	2.45
Death, indirect report	11	0.00	5	0.00	8	0.01	228	0.03	0	0.00	16	0.02	8	0.1	276	0.01
Total	**1,031,927**	**100.00**	**132,067**	**100.0**	**158,468**	**100.00**	**734,235**	**100.00**	**4,327**	**100.00**	**90,774**	**100.00**	**13,344**	**100.00**	**2,165,142**	**100.00**

[a]Total number of cases where Death was an outcome (1,559 + 276) is greater than the number of fatalities (1,173) 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**	**%**
Death	158	0.01	1,064	0.29	10	0.06	81	0.16	246	1.53	1,559	0.07
Death, indirect report	27	0.00	213	0.06	6	0.04	3	0.01	27	0.17	276	0.01
Major effect	2,623	0.15	17,247	4.76	165	1.03	776	1.50	1,315	8.20	22,126	1.02
Minor effect	209,432	12.19	104,936	28.94	2,868	17.90	12,024	23.28	2,569	16.02	331,829	15.33
Moderate effect	42,570	2.48	94,810	26.14	1,185	7.40	7,452	14.43	3,892	24.27	149,909	6.92
No effect	328,561	19.12	61,323	16.91	1,750	10.92	1,445	2.80	1,269	7.91	394,348	18.21
No follow-up, nontoxic	268,396	15.62	4,178	1.15	1,190	7.43	1,039	2.01	283	1.76	275,086	12.71
No follow-up, minimal toxicity	787,066	45.79	33,176	9.15	6,175	38.54	17,511	33.90	1,909	11.90	845,837	39.07
No follow-up, potentially toxic	45,067	2.62	37,928	10.46	1,549	9.67	3,526	6.83	3,038	18.94	91,108	4.21
Unrelated effect	34,868	2.03	7,786	2.15	1,126	7.03	7,794	15.09	1,490	9.29	53,064	2.45
Total	**1,718,768**	**100.00**	**362,661**	**100.00**	**16,024**	**100.00**	**51,651**	**100.00**	**16,038**	**100.00**	**2,165,142**	**100.00**

[a]Total number of cases where Death was an outcome (1,559 + 276) is greater than the number of fatalities (1,173) judged to be exposure-related (relative contribution to fatality of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).

Table 13. Duration of Clinical Effects by Medical Outcome.

	Minor effect		Moderate effect		Major effect	
Duration of effect	**N**	**%**	**N**	**%**	**N**	**%**
<= 2 hours	108,722	32.76	7,262	4.84	439	1.98
>2 hours, <= 8 hours	90,401	27.24	29,864	19.92	1,084	4.90
>8 hours, <= 24 hours	62,139	18.73	54,498	36.35	4,996	22.58
>24 hours, <= 3 days	22,083	6.65	30,460	20.32	7,555	34.15
>3 days, <= 1 week	3,829	1.15	7,454	4.97	4,141	18.72
>1 week, <= 1 month	1,143	0.34	1,571	1.05	1,264	5.71
>1 month	364	0.11	312	0.21	133	0.60
Anticipated permanent	480	0.14	228	0.15	468	2.12
Unknown	42,668	12.86	18,260	12.18	2,046	9.25
Total	**331,829**	**100.00**	**149,909**	**100.00**	**22,126**	**100.00**

information calls. Total encounters decreased 5.5% from 3,060,122 in 2013 to 2,890,909 in 2014. Information calls decreased by 17.7% from 806,347 calls in 2013 to 663,305 in 2014, with a 29.8% decrease in drug identification calls and a 0.04 % decrease in HCF information calls. Human exposures decreased by 1.1% from 2,188,013 to 2,165,142 cases over the same time period.

Figure 4 shows the year-to-year change through 2000 as a percentage of year 2000 for human exposure cases broken down into cases with more serious outcomes (death, major effect and moderate effect) and less serious outcomes (minor effect, no effect, not followed (non-toxic), not followed (minimal toxicity possible), unable to follow (potentially toxic), and unrelated effect). Since 2000, cases with more serious outcomes have increased by 4.29% (95% CI [3.87%, 4.72%]) per year from 108,148 cases in 2000 to 173,594 cases in 2014. However, cases with less serious outcomes have consistently decreased since 2008 by 3.40% (95% CI [−4.08%, −2.72%]) per year from 2,339,460 in 2008 to 1,991,272 cases in 2014. This has driven the overall decrease in human exposures since 2008.

Thus we see a consistent increase in exposure cases from HCFs (Figure 3) and for the more severe exposures (Figure 4), despite a decrease in calls involving less severe exposures.

Table 14. Decontamination and Therapeutic Interventions.

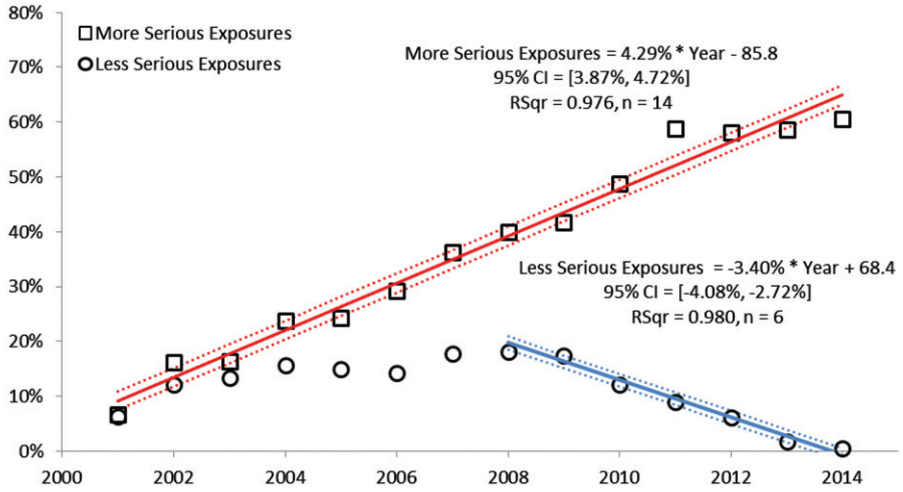
Therapy	**N**	**%**
Decontamination Only	1,051,515	48.6
Therapeutic Intervention Only	249,621	11.5
Decontamination and Therapeutic Intervention	138,078	6.4
Not Coded	725,928	33.5
Total	**2,165,142**	**100.0**

Distribution of Suicides

Table 19A shows a modest variation in the distribution of suicides and pediatric deaths over the past 2 decades as reported to the NPDS national database. Within the last decade, the percent of exposures determined to be suspected suicides ranged from 30.3%% to 53.9% and the percent of pediatric cases has ranged from 1.5% to 3.2%. The relatively large change seen for 2011 and 2012 reflects the large increase in indirect death reports in those years. Analyses of suicides and pediatric deaths for Direct and Indirect reports are shown in Table 19B.

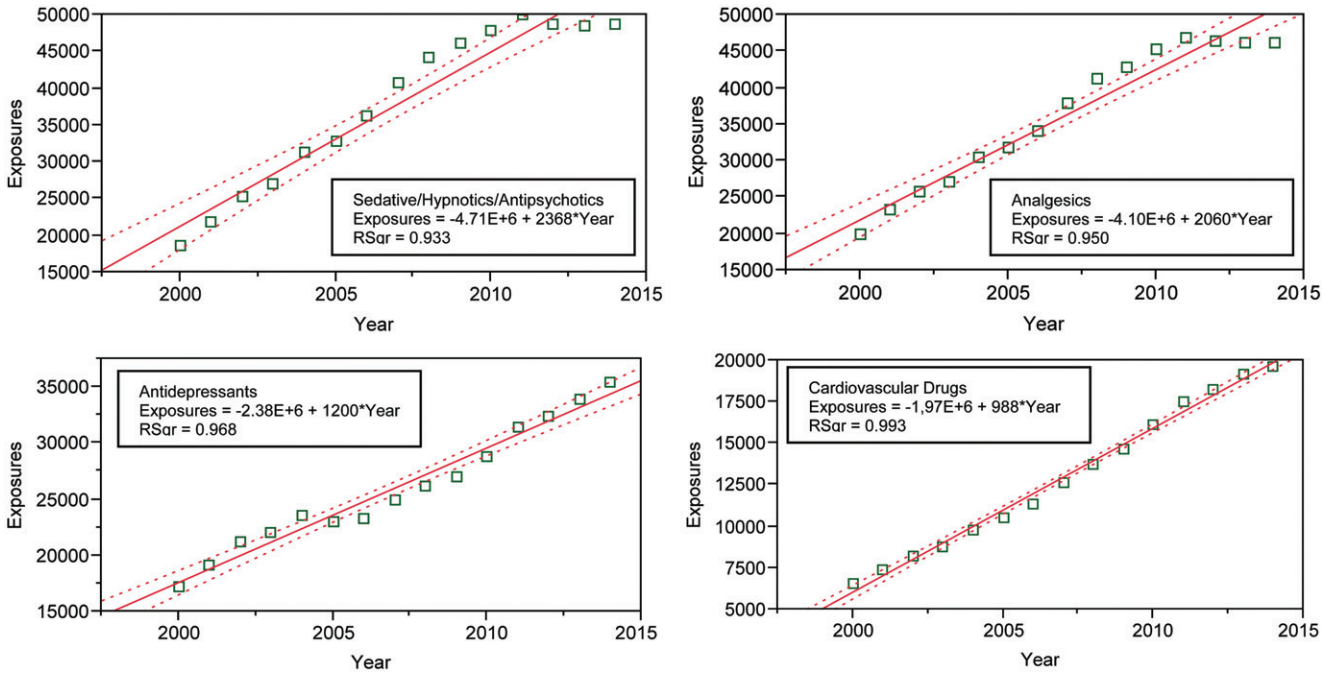
Plant Exposures

Table 20 provides the number of times the specific plant was reported to NPDS (N = 44,731). The 25 most commonly involved plant species and categories account



The figure shows the percent change from baseline (year 2000) for Human Exposure Cases divided among the 10 Medical Outcomes. The More Serious Exposures (major, moderate and death) increased. The Less Serious Exposures (no effect, minor effect, not followed ((non-toxic), not followed (minimal toxicity possible), unable to follow (potentially toxic) and unrelated effect) decreased after 2008. Solid lines show least-squares linear regressions for the change in More Serious Exposures per year (□) and Less Serious Exposures (○). Broken lines show 95% confidence intervaal on the regression.

Figure 4. Change in Encounters by Outcome from 2000.



Solid lines show least-squares linear regressions for the Human Exposure Cases per year for that category (□). Broken lines show 95% confidence interval on the regression.

Figure 5. Substance Categories with the Greatest Rate of Exposure Increase for More Serious Outcomes (Top 4).

for 39.5% of all plant exposures reported. The top 3 categories in the table are essentially synonymous for unknown plant and comprise 12.2% (5,466/44,731) of all plant exposures. For a variety of reasons it was not possible to make a precise identification in these 3 groups. The top most frequent plant exposures where positive plant identification was made were (descending order): *Cherry* (Species unspecified), *Phytolacca americana* (L.) (Botanic name), *Spathiphyllum* species (Botanic name), *Ilex* species (Botanic name), *Philodendron* (Species unspecified), *Mold, food-related, Zantedeschia aethiopica (Botanic name)* and *Malus* species (Botanical name).

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	657	159	2,291	4,917	0	43	3	8,070
Charcoal, multiple doses	76	19	332	884	0	6	0	1,317
Charcoal, single dose	7,901	915	11,541	24,135	5	191	25	44,713
Dilute/irrigate/wash	500,468	50,592	29,139	181,814	1,321	30,413	2,653	796,400
Food/snack	127,659	11,102	5,932	29,923	127	4,452	275	179,470
Fresh air	6,365	4,138	4,897	40,642	770	10,593	1,317	68,722
Ipecac	41	6	29	52	0	4	0	132
Lavage	57	16	414	1,551	2	13	0	2,053
Other emetic	6,604	537	1,045	4,835	7	401	53	13,482
Whole bowel irrigation	70	32	369	1,265	0	8	0	1,744
Other Therapies								
2-PAM	7	1	5	50	0	0	0	63
Alkalinization	124	91	2,053	8,966	0	35	6	11,275
Amyl nitrite	0	0	0	1	0	0	0	1
Antiarrhythmic	12	4	239	1,409	0	6	0	1,670
Antibiotics	1,759	764	1,225	12,841	6	563	76	17,234
Anticonvulsants[a]	66	24	154	924	0	3	0	1,171
Antiemetics	1,316	568	6,251	13,163	35	140	24	21,497
Antihistamines	2,080	1,275	1,663	8,918	14	897	75	14,922
Antihypertensives	17	6	155	2,410	0	6	0	2,594
Antivenin (fab fragment)	190	196	150	1,431	1	8	5	1,981
Antivenin/antitoxin[b]	60	36	35	274	0	4	1	410
Atropine	103	20	111	1,120	0	5	0	1,359
BAL	8	1	0	23	0	0	0	32
Benzodiazepines	1,119	506	6,225	27,282	1	170	34	35,337
Bronchodilators	456	212	390	4,260	2	173	17	5,510
Calcium	8,380	563	293	2,550	3	98	17	11,904
Cardioversion	2	2	14	184	0	0	0	202
CPR	36	17	120	976	0	7	7	1,163
Deferoxamine	2	3	23	32	0	0	0	60
ECMO	5	1	15	21	0	0	0	42
EDTA	18	1	4	9	0	0	0	32
Ethanol	2	1	6	48	0	0	0	57
Extracorp. procedure (other)	1	0	2	29	0	1	0	33
Fab fragments	19	12	17	543	0	4	0	595
Fluids, IV	6,907	2,542	30,509	118,965	12	742	97	159,774
Flumazenil	97	17	193	1,499	0	8	0	1,814
Folate	10	0	28	1,087	0	8	1	1,134
Fomepizole	120	15	90	1,794	0	14	1	2,034
Glucagon	46	6	97	1,916	0	12	0	2,077
Glucose, >5%	393	27	304	3,507	0	21	5	4,257
Hemodialysis	9	10	108	2,339	0	11	4	2,481
Hemoperfusion	1	1	1	40	0	0	0	43
Hydroxocobalamin	12	5	3	97	0	5	1	123
Hyperbaric oxygen	17	33	41	267	0	39	2	399
Insulin	9	8	106	1,889	0	3	0	2,015
Intubation	532	124	1,853	19,132	3	133	21	21,798
Methylene blue	12	1	6	107	0	1	0	127
NAC, IV	190	177	4,604	13,949	1	60	13	18,994
NAC, PO	61	40	1,101	2,858	0	12	1	4,073
Nalmefene	0	0	0	11	0	0	0	11
Naloxone	1,149	183	1,748	17,535	1	120	22	20,758
Neuromuscular blocker	46	9	159	1,243	0	3	0	1,460
Octreotide	84	6	36	308	0	1	1	436
Other	34,436	7,587	12,266	75,940	179	4,335	927	135,670
Oxygen	1,550	683	3,737	42,394	9	418	103	48,894
Pacemaker	1	0	4	158	0	2	0	165
Penicillamine	0	1	0	1	0	0	0	2
Physostigmine	13	11	102	189	0	1	0	316
Phytonadione	12	6	63	692	0	4	2	779
Pyridoxine	8	2	43	369	0	4	1	427
Sedation (other)	393	117	1,781	15,679	2	79	9	18,060
Sodium nitrite	1	0	3	20	0	0	0	24

(continued)

Table 15. Continued

Therapy	<= 5 y	6–12 y	13–19 y	>= 20 y	Unknown child	Unknown adult	Unknown age	Total
Sodium thiosulfate	3	1	1	40	0	1	0	46
Steroids	728	312	430	4,223	6	302	26	6,027
Succimer	75	6	11	64	0	0	1	157
Transplantation	0	0	1	15	0	0	0	16
Vasopressors	92	41	376	5,572	0	22	3	6,106
Ventilator	487	120	1,729	18,137	3	119	18	20,613

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

Table 16A. Decontamination Trends (1985–2014).

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)
2011	2,334,004	262 (0.0100)	66,770 (2.9)	1,144,729 (49.1)	98 (0.0100)	13,930 (1.22)
2012	2,275,141	193 (0.0100)	57,888 (2.5)	1,102,307 (48.5)	83 (0.0100)	11,284 (1.02)
2013	2,188,013	134 (0.0100)	50,459 (2.3)	1,049,475 (48.0)	42 (0.0000)	9,334 (0.89)
2014	2,165,142	132 (0.0061)	46,030 (2.1)	1,031,927 (47.7)	41 (0.0040)	7,977 (0.77)

Table 16B. Decontamination Trends: Total Human and Pediatric Exposures <= 5 Years[a].

	Human exposures		Exposures children <= 5 y	
Therapy	**N**	**%**	**N**	**%**
Activated charcoal administered	46,030	2.13	7,977	0.77
Cathartic	8,070	0.37	657	0.06
Ipecac administered	132	0.01	41	0.00
Lavage	2,053	0.09	57	0.01
Other Emetic	13,482	0.62	6,604	0.64
Whole Bowel Irrigation	1,744	0.08	70	0.01
Total	**71,511**	**3.30**	**15,406**	**1.49**

[a]Human exposures = 2,165,142; Pediatric exposures = 1,031,927

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, and 19 consider all deaths, irrespective of the Relative Contribution to Fatality (RCF). Beginning in 2010, cases with outcome of Death, Indirect Report were not further reviewed by the AAPCC Fatality Review Team and the RCF was determined by the individual PC review team.

Table	Fatalities Included	RCF	N
4	Death only	1,2,3	1,173
5	Death only	1,2,3	1,173
8	Death only	1,2,3	1,173
9	Death only	1,2,3	1,173
11	Death and Death (indirect report)	All	1,835
12	Death and Death (indirect report)	All	1,835
17E	Pediatric Death and Death (indirect report)	All	34
18	Death only	1,2,3	1,173
19A	Death and Death (indirect report)	All	1,835
19B	Death and Death (indirect report)	All	1,835
21	Death and Death (indirect report)	1,2,3	1,408
22	Death and Death (indirect report) – Single substance deaths only	All	882

There were 276 deaths, indirect and 1,559 deaths. Of these 1,835 cases, 1,408 were judged exposure-related fatalities (RCF = 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory). The remaining 427 cases were judged as follows: 111 as RCF = 4-Probably not responsible, 38 as 5 = Clearly not responsible, and 278 as 6 = Unknown.

Deaths are sorted in Table 21 according to the category, then substance deemed most likely responsible for the death (Cause Rank), and then by patient age. The Cause Rank permits the PC to judge 2 or more substances as indistinguishable in terms of cause, e.g., 2 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 75.9% of reported human exposures, and 24.1% of patients were exposed to 2 or more drugs or products. The exposure-related fatalities involved a single substance in 495 cases (42.2%), 2 substances in 288 cases (24.6%), 3 in 171 cases (14.6%) 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 235, 16.7% of cases), p = prehospital cardiac and/or respiratory arrest (occurred in 468 of 1,408, 33.2% of cases), h = hospital records reviewed (occurred in 647, 46.0% of cases), a = autopsy report reviewed (occurred in 476, 33.8% of cases). The distribution of NPDS RCF was: 1 = Undoubtedly responsible in 597 cases (42.4%), 2 = Probably responsible in 629 cases (44.7%), 3 = Contributory in 182 cases (12.9%). The denominator for these Table 21 percentages is 1,408.

All fatalities – all ages

Table 4 presents the age and gender distribution for these 1,173 exposure-related fatalities (excluding death,

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

Substance (Major Generic Category)	All substances	%[a]	Single substance exposures	%[b]
Analgesics	291,062	11.29	187,329	9.73
Cosmetics/Personal Care Products	199,291	7.73	192,552	10.00
Cleaning Substances (Household)	198,018	7.68	178,973	9.29
Sedative/Hypnotics/Antipsychotics	150,715	5.85	55,653	2.89
Antidepressants	112,412	4.36	46,517	2.42
Antihistamines	103,327	4.01	72,989	3.79
Cardiovascular Drugs	102,170	3.96	45,466	2.36
Foreign Bodies/Toys/Miscellaneous	99,835	3.87	96,748	5.02
Pesticides	83,005	3.22	77,480	4.02
Topical Preparations	82,819	3.21	80,746	4.19
Alcohols	68,648	2.66	22,277	1.16
Vitamins	66,058	2.56	56,938	2.96
Cold and Cough Preparations	61,288	2.38	43,645	2.27
Stimulants and Street Drugs	59,869	2.32	34,660	1.80
Anticonvulsants	56,832	2.20	23,314	1.21
Hormones and Hormone Antagonists	56,775	2.20	38,651	2.01
Antimicrobials	56,726	2.20	46,358	2.41
Bites and Envenomations	55,017	2.13	54,298	2.82
Gastrointestinal Preparations	48,501	1.88	36,440	1.89
Plants	44,731	1.74	42,351	2.20
Dietary Supplements/Herbals/Homeopathic	42,535	1.65	34,569	1.80
Chemicals	38,975	1.51	33,138	1.72
Fumes/Gases/Vapors	33,944	1.32	31,238	1.62
Other/Unknown Nondrug Substances	32,001	1.24	28,688	1.49
Hydrocarbons	31,903	1.24	29,907	1.55

[a]Percentages are based on the total number of substances reported in all exposures (N = 2,577,557)
[b]Percentages are based on the total number of single substance exposures (N = 1,925,657)

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

Substance (Major Generic Category)	Increase in serious exposures per year[a]		All substances in 2014
	Mean	95% CI[b]	
Sedative/Hypnotics/ Antipsychotics	2,368	[1,987, 2,749]	48,650
Analgesics	2,060	[1,777, 2,344]	46,107
Antidepressants	1,200	[1,069, 1,331]	35,472
Cardiovascular Drugs	988	[938, 1,038]	19,661
Alcohols	925	[837, 1,013]	21,319
Stimulants and Street Drugs	693	[378, 1,007]	20,534
Anticonvulsants	635	[584, 687]	15,185
Antihistamines	533	[455, 610]	13,512
Muscle Relaxants	483	[418, 549]	9,488
Unknown Drug	309	[263, 355]	6,720
Cold and Cough Preparations	277	[210, 345]	7,869
Hormones and Hormone Antagonists	249	[233, 266]	5,907
Miscellaneous Drugs	101	[66, 135]	2,194
Gastrointestinal Preparations	76	[65, 88]	2,673
Diuretics	57	[47, 67]	1,416
Anticoagulants	53	[45, 60]	1,098
Electrolytes and Minerals	41	[34, 49]	1,009
Other/Unknown Nondrug Substances	41	[11, 72]	1,131
Vitamins	40	[32, 48]	929
Anticholinergic Drugs	39	[30, 49]	1,104
Antimicrobials	19	[−6, 44]	2,568
Automotive/Aircraft/ Boat Products	15	[2, 28]	1,228
Weapons of Mass Destruction	11	[3, 19]	251
Essential Oils	10	[9, 12]	203
Narcotic Antagonists	8	[6, 9]	168

[a]Serious exposures have outcomes of Moderate, Major or Death.
[b]Increase and confidence intervals are based on least squares linear regression of the number of calls per year for 2000–2014.

indirect). The age distribution of reported fatalities showed a decrease in deaths among children (<20 years old) compared to 2013, with 88 cases representing 7.5% of fatalities. This was an absolute decrease of 11 fatalities and an 11.1% decrease in that age group, and possibly due to a decrease in indirect death reports this year. The age distribution of reported fatalities in adults (age ≥20 years) is similar to prior years with 1,080 of 1,173 (92.1%) fatal cases occurring in that age group and 5 (0.4%) of fatalities occurring in Unknown Age patients. While children ≤5 years old were involved in the majority of exposures, the 16 deaths in this group comprised just 1.4% of the exposure-related fatalities. While most (65.6%) of the fatalities occurred in 20- to 59-year-old individuals, the percentage is slightly decreased from prior years.

Table 21 lists each of the 1,408 human fatalities (including death, indirect report) along with all of the substances involved for each case. Please note: the substance listed in column 3 of Table 21 (alternate name) was chosen to be the most specific generic name based upon the Micromedex Poisindex product name and generic code selected for that substance. 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 miscellaneous stimulants and street drugs lead this list followed by miscellaneous alcohols, acetaminophen alone, acetaminophen combinations, selective serotonin reuptake inhibitors (SSRIs) and miscellaneous fumes/gases/vapors. 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 1,105 (78.5%) of the 1,408 fatalities. These 1,105 first ranked pharmaceuticals included:

- 391 analgesics (112 acetaminophen, 47 acetaminophen/hydrocodone, 40 oxycodone, 35 methadone, 25 salicylate, 23 acetaminophen/oxycodone, 20 morphine, 18 fentanyl, 16 hydrocodone, 13 tramadol)
- 191 stimulants/street drugs (67 heroin, 48 methamphetamine, 30 cocaine, 10 amphetamines, 8 amphetamine (hallucinogenic))
- 188 cardiovascular drugs (34 amlodipine, 23 verapamil, 22 cardiac glycoside, 17 metoprolol, 10 propranolol, 9 carvedilol, 9 diltiazem (extended release), 8 diltiazem)
- 98 antidepressants (20 amitriptyline, 15 bupropion, 9 lithium, 9 venlafaxine, 8 doxepin, 7 citalopram, 6 bupropion (extended release))
- 77 sedative/hypnotic/antipsychotics (22 quetiapine, 14 alprazolam, 7 temazepam, 6 diazepam, 5 olanzapine, 4 clonazepam)

The exposure was acute in 774 (55.0%), A/C = acute on chronic in 289 (20.5%), C = chronic in 108 (7.7%) and U = unknown in 237 (16.8%).

A total of 1,214 tissue concentrations for 1 or more related analytes were reported in 555 cases. Most of these (1,128) involved fatalities with RCF of 1–3, and are listed in Table 21, while all tissue concentrations are available to the PCs through the NPDS Enterprise Reports. These 123 analytes included: 196 acetaminophen, 97 ethanol, 58 salicylate, 33 carboxyhemoglobin, 31 alprazolam, 31 morphine, 27 oxycodone, 27 digoxin, 20 ethylene glycol, 20 benzoylecgonine, 19 methamphetamine, 17 amphetamine, 16 diphenhydramine, 16 quetiapine, 15 methanol, 15 diazepam.

Route of exposure was: Ingestion only in 996 cases (70.7%), Inhalation/nasal in 116 cases (8.2%) and Parenteral in 52 cases (3.7%). Most other routes were combination routes or unknown.

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	150,530	14.01	147,396	14.70
Cleaning Substances (Household)	118,207	11.00	114,009	11.37
Analgesics	100,399	9.34	91,819	9.16
Foreign Bodies/Toys/Miscellaneous	72,099	6.71	70,266	7.01
Topical Preparations	62,053	5.78	60,904	6.08
Vitamins	48,214	4.49	43,976	4.39
Antihistamines	45,915	4.27	41,671	4.16
Pesticides	35,152	3.27	34,196	3.41
Gastrointestinal Preparations	28,460	2.65	25,829	2.58
Plants	27,941	2.60	26,912	2.68
Dietary Supplements/Herbals/Homeopathic	27,619	2.57	25,561	2.55
Antimicrobials	26,216	2.44	24,671	2.46
Cold and Cough Preparations	23,830	2.22	21,883	2.18
Cardiovascular Drugs	22,059	2.05	14,084	1.40
Arts/Crafts/Office Supplies	20,861	1.94	20,244	2.02
Hormones and Hormone Antagonists	19,416	1.81	15,331	1.53
Electrolytes and Minerals	18,637	1.73	16,962	1.69
Deodorizers	16,392	1.53	16,212	1.62
Other/Unknown Nondrug Substances	13,611	1.27	12,335	1.23
Sedative/Hypnotics/Antipsychotics	11,544	1.07	8,865	0.88
Alcohols	11,088	1.03	10,820	1.08
Antidepressants	10,897	1.01	7,847	0.78
Tobacco/Nicotine/eCigarette Products	10,571	0.98	10,452	1.04
Chemicals	9,706	0.90	8,970	0.89
Hydrocarbons	9,546	0.89	9,245	0.92

[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 = 1,074,395)
[c]Percentages are based on the total number of single substance pediatric exposures (N = 1,002,495)

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	133,864	11.86	61,589	9.37
Sedative/Hypnotics/Antipsychotics	117,682	10.43	37,044	5.64
Antidepressants	75,622	6.70	26,095	3.97
Cardiovascular Drugs	68,579	6.08	25,131	3.82
Cleaning Substances (Household)	64,217	5.69	51,688	7.87
Alcohols	51,344	4.55	9,088	1.38
Anticonvulsants	41,738	3.70	14,717	2.24
Pesticides	39,968	3.54	35,978	5.47
Bites and Envenomations	36,944	3.27	36,478	5.55
Antihistamines	34,804	3.08	16,892	2.57
Cosmetics/Personal Care Products	31,975	2.83	29,453	4.48
Stimulants and Street Drugs	31,931	2.83	15,475	2.35
Hormones and Hormone Antagonists	31,788	2.82	19,512	2.97
Fumes/Gases/Vapors	24,442	2.17	22,479	3.42
Chemicals	23,527	2.09	19,305	2.94
Antimicrobials	22,064	1.96	15,754	2.40
Muscle Relaxants	20,515	1.82	7,469	1.14
Cold and Cough Preparations	20,399	1.81	11,098	1.69
Hydrocarbons	18,147	1.61	16,727	2.55
Topical Preparations	15,925	1.41	15,244	2.32
Gastrointestinal Preparations	15,551	1.38	7,722	1.18
Other/Unknown Nondrug Substances	13,668	1.21	12,076	1.84
Foreign Bodies/Toys/Miscellaneous	13,574	1.20	12,668	1.93
Miscellaneous Drugs	12,300	1.09	6,240	0.95
Unknown Drug	11,747	1.04	7,472	1.14

[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 = 1,128,313)
[c]Percentages are based on the total number of single substance adult exposures (N = 657,161)

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

Substance (Major Generic Category)	All substances	%[b]	Single substance exposures	%[c]
Fumes/Gases/Vapors	10	20.00	4	15.38
Analgesics	7	14.00	4	15.38
Cleaning Substances (Household)	7	14.00	2	7.69
Alcohols	3	6.00	1	3.85
Antihistamines	2	4.00	2	7.69
Cardiovascular Drugs	2	4.00	1	3.85
Cosmetics/Personal Care Products	2	4.00	0	0.00
Miscellaneous Drugs	2	4.00	0	0.00
Sedative/Hypnotics/Antipsychotics	2	4.00	0	0.00
Anesthetics	1	2.00	1	3.85
Batteries	1	2.00	1	3.85
Bites and Envenomations	1	2.00	1	3.85
Cold and Cough Preparations	1	2.00	1	3.85
Electrolytes and Minerals	1	2.00	1	3.85
Hydrocarbons	1	2.00	1	3.85
Information Calls	1	2.00	1	3.85
Muscle Relaxants	1	2.00	0	0.00
Other/Unknown Nondrug Substances	1	2.00	1	3.85
Serums, Toxoids, Vaccines	1	2.00	1	3.85
Stimulants and Street Drugs	1	2.00	1	3.85
Tobacco/Nicotine/eCigarette Products	1	2.00	1	3.85
Unknown Drug	1	2.00	1	3.85
Total	**50**	**100.00**	**26**	**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 = 50)
[c]Percentages are based on the total number of single substance pediatric fatalities (N = 26)

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

Substance (Major Generic Category)	All substances	%[a]
Analgesics	131,450	39.46
Sedative/Hypnotics/Antipsychotics	56,062	16.83
Unknown Drug	18,716	5.62
Cardiovascular Drugs	17,720	5.32
Muscle Relaxants	16,562	4.97
Antidepressants	16,066	4.82
Antihistamines	12,693	3.81
Antimicrobials	10,270	3.08
Stimulants and Street Drugs	10,103	3.03
Anticonvulsants	9,754	2.93
Information Calls	8,358	2.51
Hormones and Hormone Antagonists	6,594	1.98
Gastrointestinal Preparations	6,409	1.92
Diuretics	3,801	1.14
Miscellaneous Drugs	2,309	0.69
Cold and Cough Preparations	1,372	0.41
Anticholinergic Drugs	970	0.29
Anticoagulants	646	0.19
Electrolytes and Minerals	639	0.19
Vitamins	631	0.19
Asthma Therapies	564	0.17
Other/Unknown Nondrug Substances	418	0.13
Dietary Supplements/Herbals/Homeopathic	216	0.06
Antineoplastics	136	0.04
Anesthetics	122	0.04

[a]Percentages are based on the total number of substances reported in all drug identification calls (N = 333,110)

The Intentional exposure reason was: Abuse in 174 cases (12.4%), Suspected suicide in 672 cases (47.7%), Unknown in 200 cases (14.2%) and Misuse in 35 cases (2.5%). Unintentional exposure reason was: Environmental in 53 cases (3.8%), Therapeutic error in 24 cases (1.7%), and Misuse in 20 cases (1.4%). Adverse drug reaction was the reason in 43 (3.1%).

Pediatric fatalities – age ≤ 5 years

Although children younger than 6 years were involved in the majority of exposures, they comprised 34 of 1,835 (1.9%) of fatalities. These numbers are similar to those reported since 1985 (Table 19A, all RCFs and includes indirect deaths). Table 8 (RCF 1,2 or 3, excludes indirect deaths) shows the percentage fatalities in children ≤5 years related to total pediatric exposures was 16/1,031,927 = 0.00156%. By comparison, 1,080/825,009 = 0.13% of all adult exposures involved a fatality. Of these 16 pediatric fatalities, 10 (62.5%) were reported as unintentional, 4 (25.0%) were reported as unknown and 2 (12.5%) were coded as resulting from malicious intent (Table 8).

The 25 fatalities in children ≤ 5 years old in Table 21 (includes death, indirect reports and RCF 1–3) included 10 pharmaceuticals and 15 nonpharmaceuticals. The first ranked substances associated with these fatalities included: fumes/gases/vapors (7), analgesics (6), cleaning substances (household) (3), antihistamines (2) and 7 other substances (1 each).

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	944	11.37	586	9.00
Cleaning Substances (Household)	754	9.08	557	8.56
Pesticides	600	7.23	554	8.51
Fumes/Gases/Vapors	591	7.12	562	8.63
Bites and Envenomations	418	5.03	415	6.38
Sedative/Hypnotics/Antipsychotics	326	3.93	149	2.29
Vitamins	282	3.40	202	3.10
Cosmetics/Personal Care Products	267	3.22	241	3.70
Foreign Bodies/Toys/Miscellaneous	266	3.20	260	3.99
Antihistamines	220	2.65	139	2.14
Antidepressants	211	2.54	112	1.72
Antimicrobials	198	2.38	153	2.35
Other/Unknown Nondrug Substances	187	2.25	166	2.55
Chemicals	180	2.17	143	2.20
Infectious and Toxin-Mediated Diseases	167	2.01	165	2.53
Hormones and Hormone Antagonists	162	1.95	141	2.17
Hydrocarbons	158	1.90	150	2.30
Stimulants and Street Drugs	153	1.84	85	1.31
Information Calls	138	1.66	118	1.81
Cold and Cough Preparations	138	1.66	84	1.29
Gastrointestinal Preparations	137	1.65	109	1.67
Paints and Stripping Agents	136	1.64	125	1.92
Cardiovascular Drugs	127	1.53	84	1.29
Alcohols	126	1.52	45	0.69
Plants	125	1.51	106	1.63

[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 = 8,303)
[c]Percentages are based on the total number of single substance pregnant exposures (N = 6,509)

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	384	13.77	19	3.84
Miscellaneous Cardiovascular Drugs	371	13.30	52	10.51
Opioids	220	7.89	19	3.84
Miscellaneous Stimulants and Street Drugs	206	7.39	54	10.91
Miscellaneous Alcohols	157	5.63	12	2.42
Acetaminophen Alone	143	5.13	53	10.71
Acetaminophen Combinations	134	4.80	31	6.26
Selective Serotonin Reuptake Inhibitors (SSRI)	99	3.55	1	0.20
Miscellaneous Fumes/Gases/Vapors	73	2.62	47	9.49
Miscellaneous Antidepressants	66	2.37	4	0.81
Miscellaneous Muscle Relaxants	63	2.26	3	0.61
Miscellaneous Anticonvulsants	59	2.12	0	0.00
Nonsteroidal Antiinflammatory Drugs	52	1.86	2	0.40
Acetylsalicylic Acid Alone	51	1.83	12	2.42
Miscellaneous Antihistamines	48	1.72	6	1.21
Miscellaneous Chemicals	46	1.65	21	4.24
Tricyclic Antidepressants (TCA)	46	1.65	10	2.02
Miscellaneous Unknown Drug	43	1.54	13	2.63
Oral Hypoglycemic	42	1.51	7	1.41
Anticonvulsants: Gamma Aminobutyric Acid and Analogs	40	1.43	1	0.20
Serotonin Norepinephrine Reuptake Inhibitors (SNRI)	32	1.15	2	0.40
Miscellaneous Hormones and Hormone Antagonists	29	1.04	3	0.61
Miscellaneous Anticoagulants	25	0.90	7	1.41
Cannabinoids and Analogs	24	0.86	1	0.20
Automotive Products	23	0.82	13	2.63

[a]Numbers represent total exposures associated with 1,173 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 = 2,789)
[c]Percentages are based on the total number of single substance fatal exposures (N = 495)

Pediatric fatalities – ages 6–12 years

In the age range 6 to 12 years, there were 10 reported fatalities, 5 of which were unintentional environmental, 2 were unintentional general, 2 were intentional suspected suicide and 1 was intentional abuse (Table 8). The 15 fatalities listed in Table 21 (includes death, indirect reports and RCF 1–3) included: 8 carbon monoxide, 2 smoke, 2 benzonatate, 1 nortriptyline, 1 ethanol, 1 butane.

Table 19A. Comparisons of Death Data (1985–2014)[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
2011	2,765	0.118	865	31.3	42	1.5
2012	2,937	0.129	890	30.3	46	1.6
2013	2,477	0.113	785	31.7	51	2.1
2014	1,835	0.085	790	43.1	34	1.9

[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.

Adolescent fatalities – ages 13–19 years

In the age range 13 to 19 years, there were 61 reported fatalities, a decrease of 3 (4.68%) from 2013, and included 54 intentional, 4 unintentional, 1 adverse reaction and 2 unknown reason (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: heroin (4), diphenhydramine (3), amphetamine (hallucinogenic) (3), methylenedioxymethamphetamine (MDMA) (3), methadone (2), salicylate (2), amphetamine (hallucinogenic), 2C (2) and methamphetamine (2) and the remainder with 1 substance each. The first ranked nonpharmaceutical associated with these fatalities included: ethanol (3), carbon monoxide (2), hydrogen sulfide (2), methanol (1), chemical (inhalation), unknown (1), cyanide (1), lysergic acid diethylamide (LSD) (1), helium (1), hyperthermia (1) and dinitrophenol (1).

Pregnancy and Fatalities

A total of 33 deaths of pregnant women have been reported from the years 2000 through 2013. The majority (28 of 33) were intentional exposures (misuse, abuse or suspected suicide). There were 2 deaths in pregnant women reported to NPDS in 2014.

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, 28 PCs utilize NPDS as part of their surveillance programs. The Centers for Disease Control and

Table 19B. Comparisons of Direct and Indirect Death Data (2000–2014)[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	1,066	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	1,423	1,332	91	666	46.80	656	49.25	10	32	2.25	26	1.95	6
2006	1,515	1,415	100	705	46.53	687	48.55	18	39	2.57	32	2.26	7
2007	1,597	1,502	95	737	46.15	712	47.40	25	47	2.94	41	2.73	6
2008	1,756	1,535	221	797	45.39	750	48.86	47	39	2.22	32	2.08	7
2009	1,544	1,452	92	779	50.45	748	51.52	31	37	2.40	31	2.13	6
2010	1,730	1,455	275	779	45.03	732	50.31	47	55	3.18	47	3.23	8
2011	2,765	1,503	1,262	865	31.28	758	50.43	107	42	1.52	31	2.06	11
2012	2,937	1,507	1,430	890	30.30	759	50.36	131	46	1.57	30	1.99	16
2013	2,477	1,552	925	785	31.69	698	44.97	87	51	2.06	43	2.77	8
2014	1,835	1,559	276	790	43.05	757	48.56	33	34	1.85	23	1.48	11

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

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	2,257
2	Unknown Botanical Name	Unknown Toxic Types or Unknown if Toxic	1,756
3	BOTANICAL TERMS	Unknown Toxic Types or Unknown if Toxic	1,453
4	Cherry (Species unspecified)	Amygdalin and/or Cyanogenic Glycosides	1,158
5	*Phytolacca americana* (L.)	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	1,135
6	*Spathiphyllum* spp.	Oxalates	902
7	Plants-toxicodendrol	Skin Irritants (Excluding Oxalate Containing Plants)	873
8	Plants-cardiac glycosides	Cardiac Glycosides (Excluding Drugs)	677
9	*Ilex* spp (not otherwise specified)	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	637
10	*Philodendron* spp.	Oxalates	621
11	Plants-pokeweed	Other Toxic Types	551
12	Mold (not otherwise specified)	Unknown Toxic Types or Unknown if Toxic	512
13	*Zantedeschia aethiopica*	Oxalates	500
14	Berry (not otherwise specified)	Unknown Toxic Types or Unknown if Toxic	482
15	*Malus* spp.	Amygdalin and/or Cyanogenic Glycosides	463
16	*Solanum dulcamara*	Solanine	457
17	*Caladium* spp.	Oxalates	429
18	Plants-oxalates	Oxalates	399
19	*Solanum nigrum*	Solanine	368
20	*Narcissus pseudonarcissus* (L.)	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	354
21	*Epipremnum areum*	Oxalates	352
22	*Solanum tuberosum*	Solanine	350
23	*Euphorbia pulcherrima* (Willd.)	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	343
24	Unknown Botanical Name	Non-Toxic	321
25	*Nandina domestica* (Thumb)	Amygdalin and/or Cyanogenic Glycosides	310

[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 = 44,731.

Prevention (CDC), six state health departments and one state police department run surveillance definitions in NPDS. Since Surveillance Anomaly 1, generated at 2:00 pm EDT on 17 September 2006, over 250,000 anomalies have been detected. More than 1,700 were confirmed as being of public health significance with PCs working collaboratively with their local and state health departments and in some instances CDC on the public health issues identified.

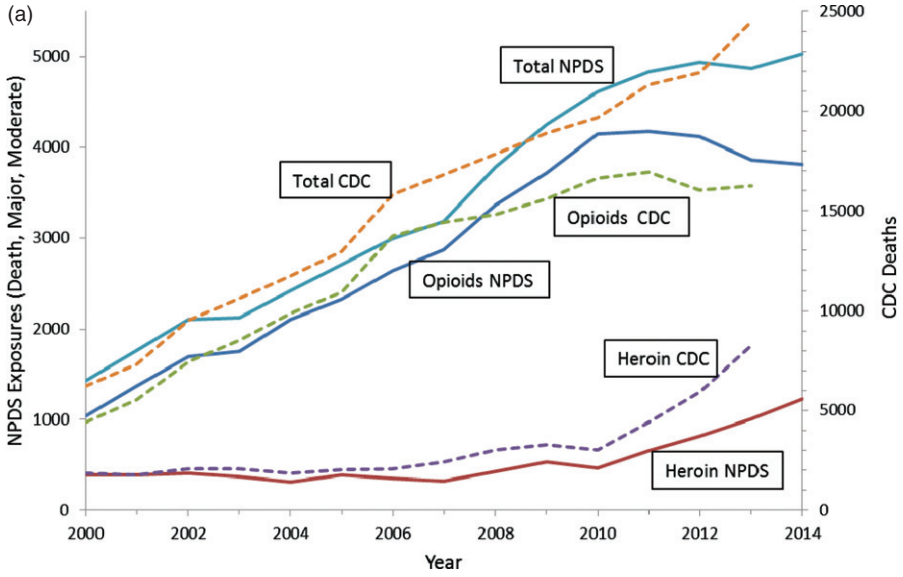
At the time of this report, 294 surveillance definitions run continuously, monitoring case and clinical effects volume and a variety of case based definitions from food poisoning to nerve agents. These definitions represent the surveillance work by many PCs, state health departments, the AAPCC, and the Health Studies Branch, Division of Environmental Hazards and Health Effects, National Center for Environmental Health, Centers for Disease Control and Prevention (CDC).

The underlying methodology of automated surveillance continues to be improved in an effort to detect the index case of a public health event. Uniform algorithms for the identification of these index cases vary greatly by the agent seeking to be identified and no one uniform algorithm is without flaw.(8) However, the situational awareness that NPDS provides is undoubtedly beneficial to public health surveillance.(9) 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.

A current example of the involvement of the PC system and NPDS can be seen in the following. Increasing restrictions on the prescribing of opioids for chronic pain have been associated with a decrease in opioid exposures and an increase in heroin exposures.(10) We examined NPDS single substance more serious exposures (outcomes = moderate, major or death) to heroin and prescription opioids from 2000 to 2014 and compared them to mortality data from the CDC's National Center for Health Statistics for 2000 to 2013.(11)

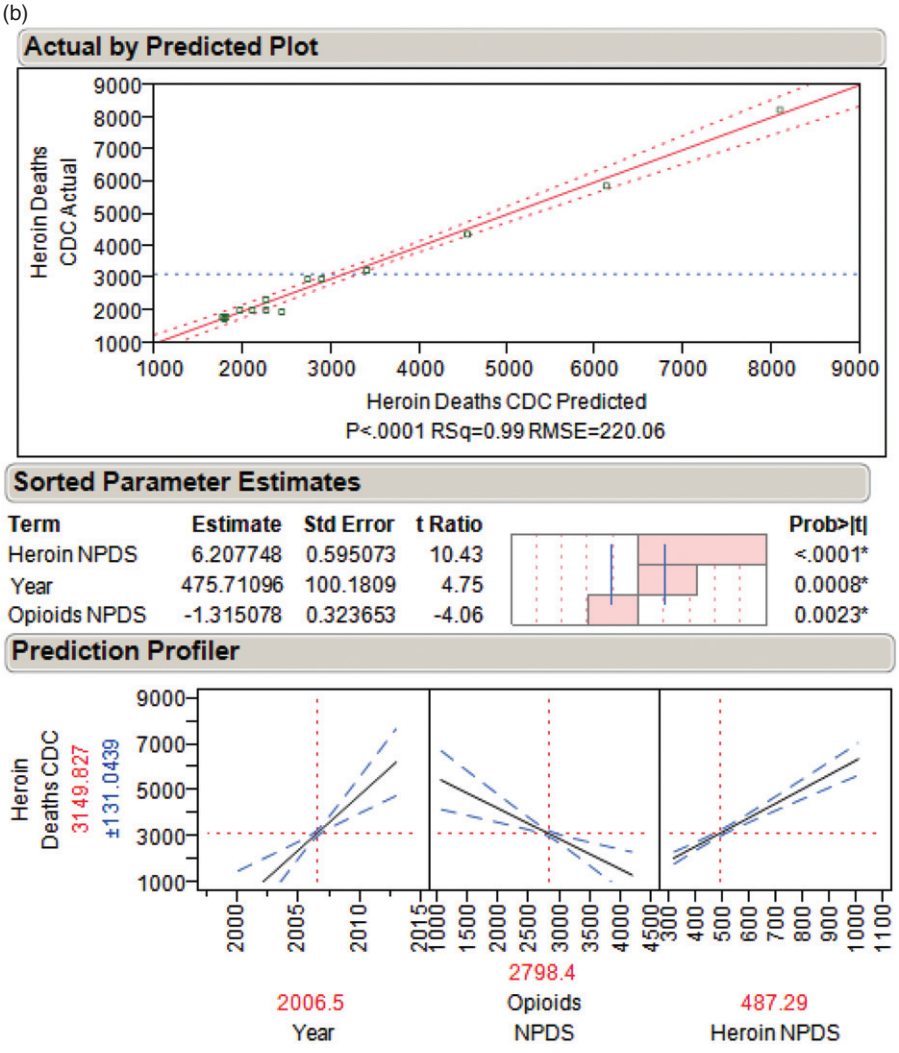
Figure 6a shows the change over time for these 4 data sets and the sums (Total NPDS and Total CDC). The large difference in absolute frequencies between the CDC and NPDS data reflect voluntary reporting to NPDS compared to CDC's use of national death certificate data. Both NPDS and CDC prescription opioid cases steadily increased until 2010, after which they plateaued and decreased in subsequent years. Heroin cases for both data sources show relatively small increases, until after 2010, when the frequency of reported cases showed sharp increases. Opioids NPDS and Opioids CDC are strongly correlated ($r = 0.976$), as are Heroin NPDS and Heroin CDC ($r = 0.989$). The sums show a linear increase over time for Total NPDS ($r = 0.986$, increase of 8.33%/year) and for Total CDC ($r = 0.996$, increase of 8.85%/year). All of these correlations are statistically significant, $p < 0.0001$. This strong linear increase over time suggests that the decrease in opioid morbidity and mortality is associated with a corresponding increase in heroin morbidity and mortality.

We also examined the potential for these NPDS exposure data to predict these CDC mortality data over time. Figure 6b shows the best least squares prediction of CDC Heroin Mortality by NPDS Heroin and Opioid



Solid lines show the frequencies for NPDS more serious (outcome = moderate, major and death) single substance human exposure cases and are graphed on the left axis. Broken lines show the frequencies for CDC mortality data and are graphed on the right axis. Total NPDS = Opioids NPDS + Heroin NPDS. Total CDC = Opioids CDC + Heroin CDC.

(b)



Top panel shows the scatter plot of predicted vs, observed CDC Heroin Deaths. The middle panel shows the 3 predictors sorted by their statistical contribution and associated p-values. The bottom panel shows a graphical summary of each predictor's contribution (leverage).

Figure 6. (a) NPDS Exposures and the CDC Fatalities for Heroin and Prescription Opioids. (b) Best Prediction of CDC Heroin Mortality by NPDS Heroin and Opioid Exposures.

Exposures and Time (Year). The overall R-Squared was 0.989 ($p < 0.0001$) and the coefficients and associated p-values for each predictor are shown in the middle panel of Figure 6b. Prediction of CDC Opioid Mortality by NPDS Heroin Exposures and Time showed an overall R-Squared of 0.991 ($p < 0.0001$). These 2 statistical models predict the 2014 mortality [95% confidence interval] to be 15,246 [13,915, 16,935] for opioids and 9,968 [9,186, 10,750] for heroin.

Discussion

The exposure cases and information requests reported by PCs in 2014 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 since poison exposures and poisoning deaths are not currently required to be reported to PCs.

NPDS 2000-2014 call volume data clearly demonstrate a continuing decrease in exposure cases. This decline has been apparent and increasing since mid-2007 and reflects the decreasing use of the PC for less serious exposures. However, in contrast, during this same period, exposures with a more serious outcome (death, major, moderate) and HCF cases have continued a consistent increase. Possible contributors to the declining PC access include: declining US birth (especially since exposure rates are much higher in children ≤ 5 years of age), increasing use of text rather than voice communication, and increasing use of and reliance on internet search engines and web resources. To meet our public health goals, PCs will need to understand and meet the public's 21st century communication preferences. We are concerned that failure to respond to these changes may result in a retro-shift with more people seeking medical care for exposures that could have been managed at home by a PC. Likewise, minor exposures may progress to more serious morbidity and mortality because of incorrect internet information or no telephone management. The net effect could be more serious poisoning outcomes because fewer people took advantage of PC services, with a resultant increased burden on the national healthcare infrastructure as may be reflected in the increased number of cases managed in a healthcare facility this year.

NPDS statistical analyses indicate that all analgesic exposures including opioids and sedatives are increasing year over year. This trend is shown in Table 17B and Figure 5. NPDS data mirrors CDC data that demonstrates similar findings.(9) 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. However, when change over time is studied, NPDS is clearly consistent with other public health fatality analyses. One of the issues leading to this concern is the fact that medical record systems seldom have 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 2014 shown in Figures 1, 3 and 4 include:

- Total encounters (all exposure and information calls) decreased by 5.5%;
- All information calls decreased 17.7%, Drug ID calls decreased 29.8%, and human exposures decreased 1.1%;
- Health care facility (HCF) information requests decreased 0.04% and HCF exposure cases increased 3.3% in line with the steady increase since 2000;
- Human exposures with less serious outcomes decreased 1.20% while those with more serious outcomes (moderate, major or death) increased 1.17% not withstanding an overall 4.29% yearly increase since 2000;
- The categories of substance exposures in cases with more serious outcomes increasing most rapidly are: sedative/hypnotics/antipsychotics, followed by analgesics, antidepressants, and cardiovascular drugs.

These data support the continued value of PC expertise and need for specialized medical toxicology information to manage the more severe exposures, despite a decrease in cases involving less severe exposures. Poison centers must consider newer communication approaches that match current public communication patterns in addition to the traditional telephone call.

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.

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).

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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										
1ph	6 y M				A	Ingst	Unt-G	3		
		ethanol	1	1					ethanol	76 mg/dL In Blood (unspecified) @ Unknown
		salicylate	2	2					salicylate	7.6 mg/dL In Blood (unspecified) @ Unknown
2 p	15 y F				A	Ingst	Int-A	1		
		ethanol	1	1					ethanol	409 mg/dL In Blood (unspecified) @ Autopsy
		ethanol	1	1					ethanol	467 mg/dL In Vitreous @ Autopsy
3ph	19 y M				A	Ingst	Int-M	3		
		ethanol	1	1						
		opioid	2	2						
		zolpidem	3	3						
[4h]	19 y F				A	Unk	Int-U	1		
		methanol	1	1					methanol	10 mg/dL In Blood (unspecified) @ Unknown
		methanol	1	1					methanol	130 mg/dL In Blood (unspecified) @ Unknown
		methanol	1	1					methanol	29 mg/dL In Blood (unspecified) @ Unknown
		methanol	1	1					methanol	65 mg/dL In Blood (unspecified) @ Unknown
5pa	19 y F				A	Ingst	Unk	1		
		ethanol	1	1					ethanol	199 mg/dL In Blood (unspecified) @ Unknown
		benzodiazepine	2	2						
		fluoxetine	3	3						
		sertraline	4	4						
		methadone	5	5					methadone	330 ng/mL In Blood (unspecified) @ Unknown
		amphetamine	6	6					amphetamine	140 ng/mL In Blood (unspecified) @ Unknown
6ai	22 y M				A	Ingst + Inhal	Int-U	2		
		ethanol	1	1						
		nitrous oxide	2	2						
7ai	22 y F				A	Ingst + Unk	Int-U	2		
		ethanol	1	1						
		methamphetamine	2	2						
8ai	23 y M				U	Ingst	Int-U	2		
		ethanol	1	1						
		oxycodone	2	2						
		oxymorphone	3	3						
9	25 y M				A	Ingst	Int-S	2		
		methanol	1	1						
10ai	25 y M				A	Ingst	Int-U	2		
		ethanol	1	1						
		carisoprodol	2	2						
11ai	26 y M				U	Unk	Int-U	2		
		ethanol	1	1						
		cocaine	2	2						
		hydrocodone	3	3						
		alprazolam	4	4						
12 h	26 y M				A	Ingst + Inhal	Int-A	3		
		ethanol	1	1					ethanol	268 mg/dL In Blood (unspecified) @ Unknown
		nitrous oxide	2	2						
13 p	32 y M				C	Ingst	Int-A	3		
		isopropanol	1	1						
14ai	32 y M				A	Ingst	Int-U	2		
		ethanol	1	1						
15ai	32 y M				A	Ingst	Int-U	2		
		ethanol	1	1						
16 h	33 y M				A	Ingst	Int-S	1		
		methanol	1	1					methanol	10 mg/dL In Blood (unspecified) @ 24 h (pe)
		methanol	1	1					methanol	297 mg/dL In Blood (unspecified) @ 5 h (pe)
		methanol	1	1					methanol	351 mg/dL In Blood (unspecified) @ 7 h (pe)
		methanol	1	1					methanol	80 mg/dL In Whole Blood @ 13 h (pe)
		acetone	2	2						
17pai	33 y F				A	Ingst + Unk	Int-A	1		
		ethanol	1	1					ethanol	0.14 % 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
		diazepam	2	2					nordiazepam	177 ng/mL In Whole Blood @ Autopsy
		diazepam	2	2					diazepam	189 ng/mL In Whole Blood @ Autopsy
		alprazolam	3	3					alprazolam	26 ng/mL In Whole Blood @ Autopsy
		acetaminophen/ oxycodone*	4	4					acetaminophen	21 mcg/mL In Whole Blood @ Autopsy
		acetaminophen/ oxycodone*	4	4					oxycodone	471 ng/mL In Whole Blood @ Autopsy
		cyclobenzaprine*	5	4						
		tramadol	6	6					tramadol	0.53 mcg/mL In Whole Blood @ Autopsy
		caffeine	7	7						
		temazepam	8	8					temazepam	25 ng/mL In Whole Blood @ Autopsy
18ai	33 y F				A	Ingst	Int-U	2		
		ethanol	1	1						
		alprazolam	2	2						
		trazodone	3	3						
19ai	33 y F				A	Ingst	Int-S	2		
		ethanol	1	1						
		diphenhydramine	2	2						
[20h]	34 y F				C	Ingst	Int-S	1		
		methanol	1	1					methanol	182 mg/dL In Blood (unspecified) @ Unknown
21ai	36 y M				A	Ingst	Int-U	2		
		ethanol	1	1						
22	39 y M				A	Ingst	Unk	2		
		ethanol	1	1					ethanol	430 mg/dL In Blood (unspecified) @ Unknown
23	40 y M				U	Ingst	Int-S	1		
		methanol	1	1					methanol	323 mg/dL In Blood (unspecified) @ Unknown
24	41 y F				U	Ingst	Int-S	3		
		ethanol	1	1					ethanol	225 mg/dL In Blood (unspecified) @ Unknown
		hair spray	2	2						
		glycol/methanol	3	3						
25	42 y M				A	Ingst	Int-S	3		
		ethanol	1	1					ethanol	188 mg/dL In Blood (unspecified) @ 10 m (pe)
		zolpidem	2	2						
		alprazolam	3	3						
26 h	42 y F				C	Ingst	Int-A	3		
		ethanol	1	1						
27ha	42 y F				A/C	Ingst	Int-S	3		
		ethanol	1	1						
28ai	42 y M				A	Ingst	Int-U	2		
		ethanol	1	1						
		hydrocodone	2	2						
29ai	43 y M				U	Ingst	Int-U	2		
		ethanol	1	1						
		hydrocodone	2	2						
30ai	43 y F				U	Ingst	Unk	2		
		ethanol	1	1						
		carisoprodol	2	2						
		diazepam	3	3						
		amitriptyline	4	4						
		hydrocodone	5	5						
31ph	43 y M				C	Ingst	Int-A	2		
		ethanol (non-beverage)	1	1					ethanol	136 mg/dL In Blood (unspecified) @ Unknown
		drug, unknown	2	2						
32ai	44 y M				A	Ingst	Int-U	2		
		ethanol	1	1						
		diphenhydramine	2	2						
33ai	44 y M				A	Ingst	Int-U	2		
		ethanol	1	1						
		tramadol	2	2						
34ai	44 y M				A	Ingst	Int-U	2		
		ethanol	1	1						
		alprazolam	2	2						
35ha	45 y M				A	Ingst	Int-U	1		
		methanol	1	1						
36 h	46 y F				A	Ingst	Unk	3		
		ethanol	1	1						
		propylene glycol	2	2						
37pi	47 y F				U	Ingst	Int-U	1		
		ethanol (denatured)	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
38	47 y M				A	Ingst + Inhal	Int-S	3		
		ethanol	1	1						
		freon	2	2						
39ai	47 y M				A	Ingst	Int-U	2		
		ethanol	1	1						
		cyclobenzaprine	2	2						
40ai	48 y M				U	Ingst	Unt-U	2		
		ethanol	1	1						
		fluoxetine	2	2						
41ai	49 y M				A	Ingst	Int-S	2		
		ethanol	1	1						
42ai	49 y M				A	Ingst + Unk	Int-U	2		
		ethanol	1	1						
		morphine	2	2						
43ai	50 y M				A	Ingst	Int-U	2		
		ethanol	1	1						
		hydrocodone	2	2						
44 h	51 y F				U	Ingst	Unt-M	1		
		methanol	1	1						
45ai	51 y M				A	Ingst	Int-U	2		
		isopropanol	1	1						
46ai	51 y F				A	Ingst	Int-U	2		
		ethanol	1	1						
47	53 y F				A	Ingst	Int-S	1		
		methanol	1	1					methanol	74 mg/dL In Blood (unspecified) @ Unknown
		pyrethroids	2	2						
48 h	54 y F				A	Ingst	Int-U	2		
		methanol	1	1						
		sertraline	2	2						
		ethylene glycol (antifreeze)	3	3						
49 h	56 y M				C	Ingst	Unk	3		
		ethanol	1	1						
50ai	57 y M				A	Ingst	Int-S	2		
		ethanol	1	1						
		venlafaxine	2	2						
		midazolam	3	3						
51	58 y M				U	Ingst	Int-U	2		
		ethanol	1	1					ethanol	92 mg/dL In Blood (unspecified) @ Unknown
		loratadine	2	2						
52	59 y M				A	Ingst	Unk	2		
		methanol	1	1					methanol	7.6 mg/dL In Blood (unspecified) @ Unknown
		isopropanol	2	2					isopropanol	20.4 mg/dL In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	118 mg/dL In Blood (unspecified) @ Unknown
53ai	59 y F				A	Ingst	Int-S	2		
		ethanol	1	1						
		tramadol	2	2						
		morphine	3	3						
		amantadine	4	4						
54ai	60 y M				A	Ingst	Int-U	2		
		ethanol	1	1						
		carisoprodol	2	2						
55 a	60 y F				A	Ingst	Int-S	3		
		ethanol (non-beverage)	1	1					ethanol	361 mg/dL In Blood (unspecified) @ Unknown
		risperidone	2	2						
		alprazolam	3	3						
56ai	62 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
57phi	63 y F				C	Ingst	Int-A	3		
		ethanol	1	1						
58 h	78 y M				C	Ingst	Unk	2		
		ethanol	1	1						

See Also case 66, 69, 70, 74, 98, 99, 100, 118, 185, 186, 187, 195, 198, 202, 205, 260, 270, 271, 315, 318, 322, 327, 355, 359, 365, 367, 372, 374, 382, 385, 390, 395, 397, 400, 403, 404, 411, 413, 430, 442, 451, 458, 462, 492, 507, 526, 535, 547, 549, 581, 600, 607, 623, 624, 631, 635, 660, 669, 692, 693, 702, 709, 713, 715, 720, 722, 725, 752, 764, 765, 769, 771, 774, 776, 782, 797, 798, 801, 804, 806, 807, 810, 845, 848, 877, 891, 899, 901, 902, 915, 920, 921, 923, 924, 925, 930, 945, 949, 969, 976, 984, 986, 992, 1007, 1051, 1052, 1072, 1078, 1091, 1106, 1112, 1117, 1123, 1145, 1156, 1184, 1204, 1237, 1240, 1260, 1275, 1288, 1313, 1318, 1322, 1326, 1329, 1334, 1335, 1338, 1345, 1346, 1348, 1349, 1354, 1358, 1368, 1369, 1370, 1373, 1376, 1377, 1378, 1404

Automotive/Aircraft/Boat Products

59ha	33 y F				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	116 mg/dL In Blood (unspecified) @ Unknown
		ethylene glycol (antifreeze)	1	1					ethylene glycol	42 mg/dL In Blood (unspecified) @ Unknown
60	34 y M				U	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
61 h	38 y F				A	Ingst	Int-M	1		
		glycol/methanol	1	1					ethylene glycol	29 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
		glycol/methanol	1	1					methanol	690 mg/dL In Blood (unspecified) @ Unknown
62i	38 y F				A	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
63	38 y M				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1						
64 h	41 y M				A	Ingst	Int-S	1		
		methanol	1	1					methanol	210 mg/dL In Serum @ Unknown
65	42 y M				A	Ingst	Int-A	1		
		methanol	1	1						
		ethanol (hand sanitizer)	2	2						
66 h	43 y M				A	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
		methamphetamine	2	2						
67pi	44 y M				A	Ingst	Int-M	2		
		ethylene glycol (antifreeze)	1	1						
68 h	44 y F				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1						
		venlafaxine (extended release)	2	2						
		clonazepam*	3	3						
		labetalol*	4	3						
69i	46 y F				A	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
		ethanol	2	2						
70ph	48 y M				A	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
		ethanol	2	2						
71 h	50 y F				C	Ingst	Int-S	2		
		methanol	1	1						
		clonazepam	2	2						
72	50 y M				C	Ingst	Int-S	3		
		ethylene glycol (antifreeze)	1	1						
73 p	52 y F				U	Ingst	Int-U	1		
		ethylene glycol (antifreeze)	1	1						
74	56 y F				A	Ingst + Inhal	Int-S	2		
		hydrocarbon	1	1						
		atenolol	2	2						
		alprazolam	3	3						
		methanol	4	4						
75	56 y M				A	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
76 h	59 y F				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1						
		acetaminophen	2	2						
77	61 y M				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1						
78ha	62 y M				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	56 mg/dL In Serum @ 6 h (pe)
		ethylene glycol (antifreeze)	1	1					ethylene glycol	61.4 mg/dL In Serum @ 1 h (pe)
		ethylene glycol (antifreeze)	1	1					ethylene glycol	9 mg/dL In Serum @ 14 h (pe)
		acetaminophen/oxycodone	2	2					acetaminophen	35 mg/L In Serum @ 1 h (pe)
79 a	71 y M				A	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
80 h	83 y F				A	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
81 a	83 y M				C	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	2000 mg/L In Blood (unspecified) @ Autopsy
82pa	30 + y M				A	Ingst	Int-U	1		
		methanol	1	1					methanol	109 mg/dL In Blood (unspecified) @ Unknown
See Also case 24, 985										
Batteries										
83i	4 y F				A	Ingst	Unt-G	1		
		disc battery, lithium	1	1						
84i	62 y M				A	Ingst + Aspir	Unt-M	2		
		disc battery	1	1						
Bites and Envenomations										
[85]	4 y M				A	B-S	Unt-B	1		
		envenomation (crotalid)	1	1						
86pi	42 y M				A	B-S	Unt-O	1		
		envenomation (crotalid)	1	1						
87pi	52 y M				A	B-S	Unt-B	1		
		envenomation (agkistrodon)	1	1						
88	69 y F				A	B-S	Unt-B	1		
		envenomation (crotalid)	1	1						
[89]	74 y F				A	B-S	Unt-B	1		
		envenomation (crotalid)	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
90 p	78 y F				A	B-S	Unt-B	2		
		sting (hymenoptera)	1	1						
Chemicals										
91 p	16 y F				A	Ingst	Int-S	1		
		cyanide	1	1						
92ph	17 y M				A	Ingst	Int-S	2		
		lysergic acid diethylamide (LSD)	1	1						
		doxylamine	2	2						
		drug, unknown	3	3						
		trazodone	4	4						
		fluoxetine	5	5						
93ph	19 y M				A	Inhal	Unt-O	2		
		chemical (inhalation), unknown *	1	1						
		toluene-xylene *	2	1						
94 p	20 y M				A	Ingst	Int-S	1		
		cyanide	1	1						
[95pa]	23 y M				A	Ingst	Int-S	1		
		cyanide	1	1					cyanide	166 mcg/mL In Blood (unspecified) @ Autopsy
96 h	24 y M				A	Ingst	Unk	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	33 mg/dL In Blood (unspecified) @ Unknown
		ethylene glycol (antifreeze)	1	1					ethylene glycol	49 mg/dL In Blood (unspecified) @ Unknown
		mercaptobenzothiazole	2	2						
97	25 y M				A	Ingst	Int-S	1		
		hydrochloric acid	1	1						
98	26 y M				A	Ingst + Unk	Int-S	2		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	16.2 mg/dL In Serum @ Unknown
		ethanol	2	2					ethanol	161.5 mg/dL In Serum @ Unknown
[99ha]	33 y M				A	Ingst	Int-U	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	1394 mg/dL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	17 mg/dL In Blood (unspecified) @ Autopsy
100 a	33 y F				A	Ingst	Int-S	1		
		acid, unknown	1	1						
		isopropanol	2	2						
101ha	34 y M				A	Ingst	Int-S	1		
		cyanide	1	1						
[102ha]	34 y F				A	Ingst	Int-S	1		
		cyanide	1	1					cyanide	6.7 mcg/mL In Blood (unspecified) @ Unknown
103 h	35 y F				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	228 mg/dL In Blood (unspecified) @ Unknown
104 h	37 y M				U	Ingst	Unk	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	98 mg/dL In Serum @ Unknown
105 p	41 y M				A	Ingst	Unk	1		
		cyanide	1	1						
106 h	42 y M				A	Ingst	Int-U	1		
		hydrofluoric acid	1	1						
107 a	44 y F				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	50.8 mg/dL In Blood (unspecified) @ Unknown
108ph	46 y M				A	Inhal	Unt-O	2		
		chemical (inhalation), unknown	1	1						
		toluene-xylene	2	2						
109 h	46 y M				A	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
110	48 y M				A	Ingst	Unk	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	129 mg/dL In Blood (unspecified) @ Unknown
111ha	49 y F				U	Ingst	Int-S	3		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	68 mg/dL In Blood (unspecified) @ Unknown
112ph	51 y M				U	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
[113pa]	52 y M				A	Ingst	Int-S	1		
		cyanide	1	1					cyanide	6.4 mcg/mL In Blood (unspecified) @ Unknown
114	54 y M				A	Ingst	Int-S	1		
		cyanide	1	1						
115ph	56 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
		ethylene glycol (antifreeze)	1	1					ethylene glycol	160 mg/dL In Blood (unspecified) @ Unknown
116	59 y F				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1						
		benzodiazepine	2	2						
117 h	61 y M				A	Ingst	Int-S	1		
		alkali	1	1						
118	62 y M				U	Ingst	Unk	1		
		ethylene glycol (antifreeze)	1	1						
		ethanol	2	2						
119 h	63 y F				A	Ingst	Int-S	2		
		alkali	1	1						
120	63 y M				A	Ingst	Int-S	2		
		sulfuric acid	1	1						
121ph	64 y F				A	Ingst	Unt-E	3		
		cyanide	1	1						
		carbon monoxide	2	2						
122 a	65 y F				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	97 mg/dL In Whole Blood @ Unknown
[123h]	65 y F				C	Oth	AR-O	1		
		cobalt	1	1						
124	67 y F				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	764.5 mg/dL In Serum @ Unknown
		amlodipine	2	2						
		clonazepam	3	3						
		acetaminophen	4	4					acetaminophen	75.6 mg/L In Plasma @ Unknown
		opioid	5	5						
125 h	76 y F				A	Ingst	Oth-M	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	487 mg/dL In Blood (unspecified) @ 2 h (pe)
		metformin	2	2						
126 h	77 y M				A	Ingst	Int-S	1		
		acid	1	1						
127 a	82 y M				A	Ingst	Int-S	1		
		hydrochloric acid	1	1						
128 h	87 y M				A	Ingst	Int-U	2		
		borate	1	1						
129 p	Unknown adult (>=20 yrs) F				A	Inhal	Int-S	2		
		sulfuric acid	1	1						
[130ph]	Unknown age F				A	Ingst + Derm	Unt-E	2		
		hydrofluoric acid	1	1						
See Also case 16, 36, 48, 151, 187, 193, 198, 219, 220, 227, 231, 242, 295, 930, 1184, 1329										
Cleaning Substances (Household)										
131ph	1 y F				A	Ingst + Inhal	Unt-G	3		
		disinfectant (isopropanol/ pine oil)	1	1						
132 a	23 y F				A	Ingst	Int-S	1		
		hypochlorite	1	1						
		toilet bowl cleaner (acid)	2	2						
[133ha]	25 y M				A	Ingst	Int-S	1		
		drain cleaner (alkali)	1	1						
134 h	35 y F				A	Par	Int-S	3		
		hypochlorite	1	1						
135 a	43 y F				A	Ingst	Unt-G	3		
		laundry detergent (pod)	1	1						
136ph	47 y F				A	Ingst	Int-U	1		
		hypochlorite	1	1						
137	49 y M				A	Ingst	Int-S	1		
		toilet bowl cleaner (acid)	1	1						
138	60 y F				A	Ingst	Int-S	1		
		drain cleaner, alkali	1	1						
		fluoxetine	2	2						
		acetaminophen	3	3						
139 a	61 y F				A	Ingst	Int-S	1		
		cleaner, alkali	1	1						
		alprazolam	2	2						
140	61 y M				A	Ingst	Int-S	1		
		drain cleaner (alkali)	1	1						
141 h	65 y F				A	Ingst	Unk	1		
		disinfectant (phenol)	1	1						
142ai	67 y M				A	Ingst	Unt-M	1		
		laundry detergent (pod)	1	1						
143 h	72 y M				A	Ingst + Aspir	Unt-G	3		
		laundry detergent (pod)	1	1						
144 h	80 y M				A	Ingst	Int-S	1		
		drain cleaner (alkali)	1	1						
145	82 y M				A	Ingst + Aspir	Int-S	3		
		cleaner (anionic/nonionic)	1	1						
146	90 y M				A	Ingst	Int-S	1		
		toilet bowl cleaner (acid)	1	1						
[147h]	100 y F				A	Ingst + Aspir	Unt-G	2		
		laundry detergent (pod)	1	1						
[148ha]	17 m F				A	Derm	Unt-G	1		
		hypochlorite	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
149i	17 m M				U	Par	Oth-M	3		
		disinfectant (phenol)	1	1						
		perfume	2	2						
150 p	80 + y F				A	Ingst	Unt-M	1		
		cleaner (anionic/nonionic)	1	1						
151 p	Unknown age F				U	Inhal	Int-S	2		
		toilet bowl cleaner (acid)	1	1						
		calcium polysulfide	2	2						
		hydrogen sulfide	3	3						
See Also case 152, 290, 356, 692, 1352										
Cosmetics/Personal Care Products										
152i	39 y M				U	Ingst	Unk	3		
		ethanol (hand sanitizer)	1	1						
		cleaner (cationic)	2	2						
153 h	52 y M				A	Ingst	Int-A	3		
		ethanol (non-beverage)	1	1					ethanol	259 mg/dL In Serum @ Unknown
[154h]	75 y M				A	Ingst	Unt-M	1		
		hydrogen peroxide	1	1						
155	76 y F				A	Ingst + Aspir	Int-M	1		
		shampoo	1	1						
[156h]	81 y M				A	Ingst	Unt-M	1		
		peroxides	1	1						
157	90 y F				A	Ingst	Unt-G	3		
		shampoo	1	1						
See Also case 24, 65, 149, 692										
Deodorizers										
158 p	24 y M				U	Inhal	Int-A	1		
		hydrocarbon	1	1						
159 h	39 y F				U	Ingst	Int-M	2		
		paradichorobenzene	1	1						
Dyes										
160ph	79 y M				A	Par	AR-D	1		
		fluorescein	1	1						
Foreign Bodies/Toys/Miscellaneous										
161pha	41 y M				U	Ingst	Int-A	1		
		foreign body	1	1						
		cocaine	2	2						
		amphetamine	3	3						
See Also case 747										
Fumes/Gases/Vapors										
162ph	2 y M				A	Inhal + Derm	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	1 % In Blood (unspecified) @ Unknown
		carbon monoxide	1	1					carboxyhemoglobin	28.4 % In Blood (unspecified) @ Unknown
		carbon monoxide	1	1					carboxyhemoglobin	42 % In Blood (unspecified) @ 1 h (pe)
		carbon monoxide	1	1					carboxyhemoglobin	8.4 % In Blood (unspecified) @ Unknown
163pi	3 y M				A	Inhal	Unt-E	1		
		smoke	1	1						
		carbon monoxide	2	2						
164ai	3 y F				A	Inhal	Oth-M	2		
		carbon monoxide	1	1						
165pi	4 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		smoke	2	2						
166pi	6 y F				A	Inhal	Unt-E	1		
		smoke	1	1						
167pai	6 y F				A	Inhal	Unt-G	1		
		carbon monoxide	1	1					carboxyhemoglobin	60 % In Blood (unspecified) @ Autopsy
168ph	7 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	17 % In Blood (unspecified) @ 2 h (pe)
		carbon monoxide	1	1					carboxyhemoglobin	5 % In Blood (unspecified) @ 3 h (pe)
169 p	7 y M				U	Inhal	Unt-E	1		
		carbon monoxide	1	1						
170pi	8 y M				A	Inhal	Unt-E	1		
		smoke	1	1						
		carbon monoxide	2	2						
171pi	8 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
172pa	10 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		natural gas	2	2						
173pi	11 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
174 p	11 y M				A	Inhal	Int-A	1		
		butane	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
175 p	11 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
176pa	12 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	60 % In Blood (unspecified) @ Autopsy
177ph	13 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	10 % In Blood (unspecified) @ 4 h (pe)
		carbon monoxide	1	1					carboxyhemoglobin	38 % In Blood (unspecified) @ 2 h (pe)
178pha	16 y F				A	Inhal	Int-S	1		
		hydrogen sulfide	1	1					thiosulfate	2.2 mcg/mL In Blood (unspecified) @ Autopsy
179pa	19 y F				A	Inhal	Int-S	1		
		hydrogen sulfide	1	1					thiosulfate	19 mcg/mL In Plasma @ Autopsy
		citalopram	2	2					citralopram	0.18 mcg/mL In Whole Blood @ Autopsy
		benzodiazepine	3	3					nordiazepam	127 ng/mL In Whole Blood @ Autopsy
		benzodiazepine	3	3					diazepam	243 ng/mL In Whole Blood @ Autopsy
		tramadol	4	4						
[180pa]	19 y M				A	Inhal	Int-S	1		
		helium	1	1						
181ph	21 y M				A	Inhal	Unt-E	1		
		smoke	1	1						
182pha	25 y M				A	Inhal	Int-S	1		
		carbon monoxide	1	1						
183ph	26 y M				A	Inhal + Derm	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	55 % In Blood (unspecified) @ Unknown
184ha	27 y F				C	Inhal	Int-S	1		
		carbon monoxide	1	1					carboxyhemoglobin	46.5 % In Whole Blood @ 0.1 h (pe)
185	28 y F				A	Inhal + Derm	Oth-M	2		
		carbon monoxide	1	1						
		ethanol	2	2					ethanol	260 mg/dL In Serum @ Unknown
186pha	28 y M				A	Inhal	Unk	1		
		carbon monoxide	1	1					carboxyhemoglobin	78 % In Blood (unspecified) @ Autopsy
		ethanol (non-beverage)	2	2					ethanol	0.22 % (wt/Vol) In Vitreous @ Unknown
187pai	32 y F				U	Unk	Unk	1		
		carbon monoxide	1	1					carboxyhemoglobin	7.6 % In Blood (unspecified) @ Autopsy
		ethanol*	2	2						
		sulfur*	3	2						
		guanidine	4	3						
188pi	33 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
189ai	35 y M				A	Inhal	Int-U	2		
		propane	1	1						
190pa	36 y F				A	Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	60 % In Blood (unspecified) @ Autopsy
191 p	36 y M				A	Inhal	Unt-O	1		
		hydrogen sulfide	1	1						
192 ph	37 y M				A	Ingst + Inhal	Int-S	2		
		carbon monoxide	1	1						
		acetaminophen/ hydrocodone	2	2						
193pha	38 y F				A	Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	41.1 % In Blood (unspecified) @ 30 m (pe)
		cyanide	2	2						
194ai	39 y F				A	Inhal	Int-S	2		
		carbon monoxide	1	1						
195pa	39 y M				A	Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	60 % In Whole Blood @ Autopsy
		ethanol	2	2					ethanol	150 mg/dL In Blood (unspecified) @ Autopsy
196 p	39 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
197	40 y M				A	Inhal	Unk	1		
		carbon monoxide	1	1						
		benzodiazepine	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
198 ph	41 y F				A	Ingst + Inhal	Unk	1		
		carbon monoxide	1	1						
		cyanide	2	2						
		smoke	3	3						
		ethanol	4	4						
		cocaine	5	5						
		benzodiazepine	6	6						
199 p	41 y M				A	Inhal	Unt-O	1		
		hydrogen sulfide	1	1						
200 p	42 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	47 % In Blood (unspecified) @ 1 h (pe)
201 p	42 y F				A	Inhal	Int-S	2		
		carbon monoxide	1	1					carboxyhemoglobin	16.9 % In Blood (unspecified) @ Unknown
202pa	46 y F				A	Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	33 % In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	300 mg/dL In Blood (unspecified) @ Autopsy
203 pi	46 y M				A	Inhal	Int-S	1		
		helium	1	1						
204 pi	47 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
205 a	47 y M				A	Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	12.4 % In Blood (unspecified) @ 6 h (pe)
		smoke	1	1					cyanide	170 mcg/dL In Blood (unspecified) @ 1 h (pe)
		smoke	1	1					carboxyhemoglobin	62.1 % In Blood (unspecified) @ 1 h (pe)
		ethanol	2	2					ethanol	238 mg/dL In Serum @ 1 h (pe)
		ethanol	2	2					ethanol	292 mg/dL In Blood (unspecified) @ 1 h (pe)
[206ph]	47 y M				A	Inhal	Unt-O	2		
		hydrogen sulfide	1	1						
207 pi	49 y M				U	Inhal	Unt-E	1		
		carbon monoxide	1	1						
208 ph	50 y M				A	Inhal	Unt-O	3		
		chlorine gas	1	1						
		bromine	2	2						
		chlorine dioxide	3	3						
209 pi	51 y F				U	Inhal	Unt-E	1		
		carbon monoxide	1	1						
210 p	52 y M				A	Inhal	Unt-O	2		
		hydrogen sulfide	1	1						
211 p	53 y M				A	Inhal	Unt-E	2		
		smoke	1	1						
212 p	53 y F				A	Inhal	Unt-E	2		
		smoke	1	1						
213 ph	54 y F				U	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	57 % In Whole Blood @ 15 m (pe)
		smoke	2	2						
214 p	55 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
215 ha	56 y M				A	Inhal	Unt-O	1		
		hydrogen sulfide	1	1					thiosulfate	7.4 mcg/mL In Blood (unspecified) @ Autopsy
[216h]	58 y M				A	Inhal	Unt-O	2		
		chlorine gas	1	1						
217 p	60 y M				A	Inhal	Int-S	1		
		hydrogen sulfide	1	1						
218pa	61 y F				A	Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	60 % In Blood (unspecified) @ Autopsy
219 h	63 y M				U	Inhal	Unt-E	1		
		carbon monoxide*	1	1						
		cyanide*	2	1						
220 ph	64 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	29.6 % In Blood (unspecified) @ 1 h (pe)
		carbon monoxide	1	1					carboxyhemoglobin	48.5 % In Blood (unspecified) @ 5 m (pe)
		cyanide	2	2						
221 p	70 y F				A	Inhal	Int-S	2		
		propane	1	1						
222 p	70 y M				A	Inhal	Unt-E	3		
		carbon monoxide	1	1						
223 pi	72 y F				A	Inhal	Unt-E	1		
		smoke	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
		carbon monoxide	2	2						
224 p	75 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
225pa	75 y F				A	Inhal	Unt-M	2		
		chlorine gas	1	1						
226 p	80 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	14 % In Blood (unspecified) @ Unknown
227 ph	81 y F				A	Inhal	Unt-E	1		
		smoke	1	1						
228 p	81 y M				A	Inhal	Unt-E	1		
		smoke	1	1						
229	85 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
230 ph	85 y M				A	Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	46 % In Blood (unspecified) @ Unknown
231 ha	85 y F				A	Inhal + Derm	Unt-E	3		
		carbon monoxide	1	1					carboxyhemoglobin	27.7 % In Blood (unspecified) @ 15 m (pe)
		cyanide	2	2						
232pha	87 y F				A	Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	8 % In Blood (unspecified) @ Autopsy
233 h	88 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
234 h	90 y M				A	Ingst	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	27 % In Blood (unspecified) @ Unknown
235pha	12 m M				A	Inhal	Unt-E	1		
		smoke	1	1						
236 pi	18 m F				A	Inhal	Unt-E	1		
		smoke	1	1						
		carbon monoxide	2	2						
237 ph	21 m F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
238pa	Teen F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
239 p	20 + y M				U	Inhal + Unk	Unk	2		
		propane	1	1						
240pai	30 + y M				A	Inhal	Int-S	1		
		hydrogen sulfide	1	1						
241 p	30 + y M				A	Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	49 % In Blood (unspecified) @ Unknown
242 ph	50 + y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		cyanide	2	2						
243 pi	Unknown adult (> = 20 yrs) M				A	Inhal	Int-S	1		
		carbon monoxide	1	1						
244 p	Unknown adult (> = 20 yrs) U				A	Inhal	Int-S	1		
		carbon monoxide	1	1						
245 p	Unknown age M				A	Inhal	Unt-O	1		
		hydrogen sulfide	1	1					thiosulfate	110 mcg/mL In Urine (quantitative only) @ Autopsy
		fume-gas-vapor, unknown	2	2						
246 p	Unknown age M				A	Inhal	Unt-O	2		
		hydrogen sulfide	1	1						
See Also case 121, 151, 274										
Heavy Metals										
247ai	67 y F				U	Unk	Unk	3		
		cadmium	1	1						
See Also case 990, 1007										
Hydrocarbons										
[248]	5 y M				A	Ingst	Unt-G	1		
		lamp oil	1	1						
[249pha]	20 y M				A/C	Ingst + Inhal	Int-A	2		
		freon	1	1						
		chlorpheniramine/ dextromethorphan	2	2					chlorpheniramine	1 Other (see abst) In Serum @ Unknown
		chlorpheniramine/ dextromethorphan	2	2					dextromethorphan	1 Other (see abst) In Serum @ Unknown
250	21 y F				A	Inhal	Int-A	1		
		freon	1	1						
251 p	27 y M				A	Inhal	Int-A	2		
		freon	1	1						
252 ph	28 y M				U	Inhal	Int-A	1		
		freon	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
253ai	31 y M				A	Inhal	Int-U	2		
		freon	1	1						
254 h	34 y F				A	Inhal	Int-A	1		
		freon	1	1						
255 p	41 y M				A	Unk	Unt-U	2		
		gasoline	1	1						
256	43 y M				C	Inhal	Int-A	2		
		freon	1	1						
257 ph	44 y M				A	Inhal	Int-A	1		
		freon	1	1						
258 h	46 y F				A	Inhal	Int-A	1		
		freon	1	1						
259 p	47 y M				C	Inhal	Int-A	1		
		freon	1	1						
260 p	50 y M				A	Inhal	Int-A	2		
		freon	1	1						
		ethanol	2	2					ethanol	167 mg/dL In Serum @ Unknown
261 p	Unknown adult (>=20 yrs) M				A	Inhal	Unt-O	2		
		freon	1	1						
See Also case 38, 93, 108, 1287										
Industrial Cleaners										
262	71 y F				A	Ingst	Unt-G	1		
		detergents (cationic)	1	1						
Information Calls										
[263ha]	3 y F				A	Unk	Unk	2		
		water	1	1						
Matches/Fireworks/Explosives										
264 h	41 y F				A/C	Ingst	Unk	3		
		matches	1	1						
Mushrooms										
[265h]	31 y M				A	Ingst	Int-U	2		
		Amanita phalloides	1	1						
[266h]	60 y M				A	Ingst	Unt-M	2		
		mushroom (cyclopeptides)	1	1						
		mushroom (cyclopeptides)	1	1						
267	71 y M				A	Ingst	Unt-F	2		
		mushroom (cyclopeptides)	1	1						
[268ha]	Unknown adult (>=20 yrs) F				A	Ingst	Unt-G	1		
		mushroom (gastrointestinal)	1	1						
		Coprinus comatus	2	2						
		Coprinus atrametarius	3	3						
See Also case 1192										
Other/Unknown Nondrug Substances										
269pa	18 y M				A	Unk	Unk	1		
		hyperthermia	1	1						
270 ph	37 y F				U	Ingst	Unk	2		
		substance (non-drug), unknown	1	1						
		ethanol	2	2						
271	68 y M				U	Ingst	Unk	1		
		substance (non-drug), unknown	1	1						
		ethanol	2	2						
272i	86 y F				A	Ingst	Unt-G	2		
		disinfectant (perineal)	1	1						
273pha	97 y F				A	Ingst	Unt-G	3		
		nondrug, unknown	1	1						
274 pi	Unknown adult (>=20 yrs) M				A	Inhal	Unk	2		
		substance (non-drug), unknown	1	1						
		hydrocarbon propellant	2	2						
See Also case 49, 298, 299										
Paints and Stripping Agents										
275 ph	68 y M				C	Inhal	Int-A	2		
		paint (aerosol)	1	1						
Pesticides										
[276h]	19 y M				A	Ingst	Int-S	1		
		dinitrophenol	1	1						
277	22 y M				A	Ingst	Int-U	1		
		dinitrophenol	1	1						
278 h	26 y M				A	Ingst	Int-S	2		
		chlorpyrifos	1	1						
[279ph]	30 y F				A	Inhal	Int-U	2		
		sulfuryl fluoride	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
[280]	45 y F				A	Ingst	Oth-M	1		
		rodenticide (antocoagulant)	1	1						
[281h]	48 y F				A/C	Ingst	Int-S	2		
		brodifacoum	1	1						
[282a]	50 y M				A	Ingst	Unt-M	1		
		glyphosate	1	1						
		cocaine	2	2					benzoylecognine	299 ng/mL In Urine (quantitative only) @ Unknown
[283p]	55 y M				A	Ingst	Int-S	2		
		sodium fluoroacetate	1	1						
[284]	57 y M				A	Ingst	Int-S	1		
		organophosphate	1	1						
[285h]	58 y F				A	Inhal	Unt-M	2		
		phosphine	1	1						
286 h	59 y M				A	Ingst	Int-S	2		
		pesticide, unknown	1	1						
		phosmet (organophosphate)	2	2						
[287h]	59 y F				U	Ingst	Int-S	1		
		glyphosate	1	1						
[288a]	60 y F				A	Ingst	Int-S	3		
		carbofuran	1	1						
[289]	65 y M				A	Ingst	Unt-M	1		
		paraquat	1	1						
290 h	65 y M				A	Ingst	Int-S	3		
		acephate	1	1						
		atropine	2	2						
		hypochlorite	3	3						
291	67 y F				A	Ingst	Int-S	1		
		malathion	1	1						
292	71 y M				A	Inhal	Unt-M	3		
		pyrethroids	1	1						
		pesticide, unknown	2	2						
293 h	82 y F				A	Ingst + Inhal	Int-S	1		
		pyrethroids	1	1						
		oxycodone	2	2						
[294h]	85 y M				A	Ingst	Int-S	1		
		rodenticide	1	1						
295 p	50 + y M				A	Inhal	Int-M	2		
		pyrethroids	1	1						
		chemical, unknown	2	2						
See Also case 47, 96, 410, 457, 943										
Plants										
[296h]	62 y M				A	Ingst	Unt-M	2		
		Aconitum napellus	1	1						
297 h	Unknown child (<= 19 yrs) U				A	Ingst	Unt-M	2		
		Manihot esculenta (cassava)	1	1						
Stimulants and Street Drugs										
298 ha	26 y F				U	Unk	Unk	3		
		cocaine*	1	1						
		substance (non-drug), unknown*	2	1						
See Also case 5, 7, 11, 17, 66, 161, 198, 282, 308, 318, 324, 325, 328, 330, 339, 342, 344, 346, 347, 363, 364, 375, 387, 407, 425, 447, 452, 461, 463, 467, 479, 510, 521, 543, 547, 558, 572, 588, 591, 605, 625, 693, 734, 749, 770, 816, 819, 830, 869, 881, 895, 1030, 1074, 1122, 1123, 1130, 1136, 1191, 1392, 1396, 1399										
Tobacco/Nicotine/eCigarette Products										
299pa	31 y F				C	Inhal	AR-D	2		
		nicotine	1	1						
		nondrug, unknown	2	2						
300 ph	12 m M				A	Ingst	Unt-G	2		
		nicotine	1	1						
Weapons of Mass Destruction										
301pha	23 y M				U	Unk	Unk	2		
		non-powder, unknown	1	1						
302	34 y M				A	Par	Int-M	3		
		powder, unknown	1	1						
303 pi	Unknown adult (>= 20 yrs) M				U	Unk	Int-S	2		
		non-powder, unknown	1	1						
Pharmaceutical Exposures										
Analgesics										
[304pha]	2 y M				A	Ingst	Unk	1		
		buprenorphine	1	1						
[305pha]	4 y F				A	Ingst	Unt-T	1		
		methadone	1	1					methadone	16 ng/mL In Serum @ 11 d (pe)
		methadone	1	1					methadone	43 ng/mL In Serum @ 4 d (pe)
306 h	5 y F				C	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen	17.6 mcg/mL In Blood (unspecified) @ 8 h (pe)
		drug, unknown	2	2						
307 ph	15 y F				A	Ingst	Int-S	1		
		methadone	1	1						
		oxycodone (extended release)	2	2						
308	15 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
		salicylate	1	1						
		methylphenidate	2	2						
		acetaminophen	3	3						
		tramadol	4	4						
		diclofenac	5	5						
309 h	15 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	229.6 mcg/mL In Blood (unspecified) @ 4 h (pe)
		salicylate	2	2					salicylate	54.7 mg/dL In Blood (unspecified) @ Unknown
		diazepam	3	3						
		ibuprofen	4	4						
310 ph	16 y M				A	Ingst	Int-U	1		
		morphine (extended release)	1	1						
		acetaminophen/ hydrocodone	2	2						
		escitaopram	3	3						
		cyclobenzaprine	4	4						
		aripiprazole	5	5						
		drug, unknown	6	6						
311ai	16 y F				A	Ingst	Int-U	2		
		oxycodone	1	1						
312 ha	16 y M				A	Ingst	Int-S	1		
		methadone	1	1					methadone	856 ng/mL In Blood (unspecified) @ Unknown
		trazodone	2	2						
		ondansetron	3	3						
		thyroid preparation	4	4						
		benzodiazepine	5	5						
313	16 y F				A	Ingst	Int-S	1		
		salicylate	1	1						
314	18 y M				A	Inhal	Int-A	2		
		tramadol	1	1						
315pha	20 y M				A/C	Ingst	Int-S	1		
		oxycodone	1	1					oxymorphone (total)	0.09 mg/L In Blood (unspecified) @ Unknown
		oxycodone	1	1					oxycodone (free)	0.42 mg/L In Blood (unspecified) @ Unknown
		oxycodone	1	1					oxycodone (total)	0.45 mg/L In Blood (unspecified) @ Unknown
		alprazolam	2	2					alprazolam	0.18 mg/L In Blood (unspecified) @ Unknown
		carisoprodol	3	3						
		ethanol	4	4					ethanol	44 mg/dL In Serum @ Unknown
316 h	20 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	83 mcg/mL In Blood (unspecified) @ 1 h (pe)
317ai	20 y M				A	Unk	Int-U	2		
		oxycodone	1	1						
318pha	20 y M				U	Unk	Int-U	1		
		morphine	1	1					morphine	55.6 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	2	2					methamphetamine	192 ng/mL In Blood (unspecified) @ Unknown
		ethanol	3	3						
319 p	20 y M				A	Ingst	Int-S	1		
		methadone	1	1						
		alprazolam	2	2						
320 ha	20 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	41 mg/L In Plasma @ 54 h (pe)
321	20 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	383 mcg/mL In Serum @ Unknown
		benzodiazepine	2	2						
322 ph	21 y M				A	Ingst	Int-A	1		
		fentanyl (transdermal)	1	1						
		ethanol	2	2						
		acetaminophen/ hydrocodone	3	3						
		alprazolam	4	4						
323 h	21 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	196.6 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen	2147 mcg/mL In Blood (unspecified) @ Unknown
		lorazepam	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
324 h	22 y F-Pregnant				A	Ingst	Int-U	3		
		acetaminophen	1	1						
		cocaine	2	2						
325 ph	22 y M				A/C	Ingst	Int-S	1		
		hydromorpinone	1	1						
		amphetamine	2	2						
		benzodiazepine	3	3						
		marijuana	4	4						
326 h	22 y F				U	Ingst	Unk	2		
		acetaminophen	1	1						
327 p	22 y M				A	Ingst + Unk	Int-U	2		
		oxymorphone	1	1						
		ethanol	2	2						
328 ph	23 y F				A/C	Inhal	Int-A	1		
		acetyl fentanyl	1	1						
		phencyclidine	2	2						
329 ha	23 y F				U	Ingst	Int-U	3		
		morphine	1	1					morphine	17 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen	2	2						
330 ha	23 y M				A/C	Par	Int-A	1		
		oxycodone	1	1					oxycodone (free)	1400 ng/mL In Blood (unspecified) @ Autopsy
		heroin	2	2					morphine	380 ng/mL In Blood (unspecified) @ Autopsy
		heroin	2	2					6-monoacetylmorphine	5 ng/mL In Urine (quantitative only) @ Autopsy
		duloxetine	3	3					duloxetine	340 ng/mL In Blood (unspecified) @ Autopsy
331 a	23 y F-Pregnant				C	Ingst	Unt-T	1		
		acetaminophen	1	1					acetaminophen	68 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/oxycodone	2	2						
332ai	23 y M				A	Unk	Int-U	2		
		fentanyl	1	1						
333 ha	23 y F				C	Ingst	Unk	3		
		acetaminophen	1	1					acetaminophen	21 mcg/mL In Serum @ Unknown
334 h	23 y F				A	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen	42 mcg/mL In Plasma @ 15 m (pe)
		cyclic antidepressant, unknown	2	2						
		tizanidine	3	3						
335 ha	23 y F				U	Unk	Unk	1		
		fentanyl	1	1					fentanyl	1.1 ng/mL In Blood (unspecified) @ 2 d (pe)
		levetiracetam	2	2					levetiracetam	14 mcg/mL In Blood (unspecified) @ 2 d (pe)
		phenytoin	3	3					phenytoin	3.3 mcg/mL In Blood (unspecified) @ 2 d (pe)
336 h	24 y F				C	Ingst	Int-A	1		
		acetaminophen	1	1					acetaminophen	25 mg/L In Blood (unspecified) @ 5 m (pe)
		dextromethorphan/ guaifenesin	2	2						
		dextromethorphan	3	3						
337 ha	24 y F				A/C	Ingst	Int-S	1		
		methadone	1	1						
		acetaminophen/ hydrocodone	2	2					acetaminophen	187.4 mcg/mL In Blood (unspecified) @ Unknown
		amitriptyline	3	3						
		tramadol	4	4						
		quetiapine	5	5						
		oxcarbazepine	6	6					10-hydroxy carbazepine	14 mcg/mL In Blood (unspecified) @ Unknown
338ai	24 y F				A	Ingst	Int-U	2		
		oxycodone	1	1						
		alprazolam	2	2						
339 h	24 y M				U	Inhal	Unk	2		
		fentanyl	1	1						
		cocaine	2	2						
340pa	24 y M				A	Ingst	Int-A	1		
		methadone	1	1						
		alprazolam	2	2						
341 h	25 y F				A	Ingst	Int-S	2		
		sulindac	1	1						
		clonazepam	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
342 pi	25 y M				U	Par	Int-A	2		
		fentanyl	1	1						
		heroin	2	2						
343	25 y M				A/C	Ingst	Int-S	1		
		salicylate	1	1					salicylate	100 mg/dL In Blood (unspecified) @ 2 h (pe)
		salicylate	1	1					salicylate	58 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	84 mg/dL In Blood (unspecified) @ 14 h (pe)
344 h	25 y F				U	Ingst	Unt-M	2		
		acetaminophen	1	1					acetaminophen	130 mcg/mL In Blood (unspecified) @ Unknown
		cocaine	2	2						
		alprazolam	3	3						
		salicylate	4	4					salicylate	28 mcg/mL In Blood (unspecified) @ Unknown
345 h	25 y M				A	Ingst	Int-S	2		
		acetaminophen	1	1						
346 ph	25 y M				A	Ingst	Int-S	1		
		droperidol/fentanyl	1	1						
		cocaine	2	2						
		diazepam	3	3						
347ai	26 y M				A	Unk	Int-U	2		
		oxycodone	1	1						
		cocaine	2	2						
		diazepam	3	3						
348 p	26 y M				A	Ingst	Int-U	2		
		fentanyl (transdermal)	1	1						
		alprazolam	2	2						
349pa	26 y F				A/C	Ingst + Aspir	Int-A	1		
		fentanyl (transdermal)	1	1					fentanyl	76.9 Other (see abst) In Liver @ Autopsy
		alprazolam	2	2						
350 ha	26 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	529 mcg/mL In Serum @ 4 h (pe)
		ondansetron	2	2						
		citalopram	3	3						
351 h	26 y M				A	Ingst	Int-S	1		
		acetaminophen/opioid	1	1						
		benzodiazepine	2	2						
352 h	26 y F				U	Ingst	Unt-G	2		
		acetaminophen	1	1					acetaminophen	56 mcg/mL In Blood (unspecified) @ Unknown
353	26 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	105 mcg/mL In Blood (unspecified) @ Unknown
354 h	27 y M				A/C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen	27 mcg/mL In Blood (unspecified) @ 18 h (pe)
		acetaminophen	1	1					acetaminophen	41 mcg/mL In Blood (unspecified) @ 12 h (pe)
		acetaminophen/ hydrocodone	2	2						
355 p	27 y M				A/C	Ingst	Int-A	1		
		methadone	1	1						
		ethanol	2	2						
356 h	27 y M				A/C	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	50 mcg/mL In Serum @ Unknown
		cleaner (ammonia)	2	2						
		disinfectants (pine oil)	3	3						
		fabric softener	4	4						
357ai	27 y M				A	Ingst	Int-U	2		
		methadone	1	1						
358ai	27 y F				A	Ingst + Unk	Int-U	2		
		fentanyl	1	1						
		tramadol	2	2						
359pa	28 y F				U	Ingst	Int-U	1		
		acetaminophen/oxycodone	1	1					oxycodone	0.063 mg/L In Blood (unspecified) @ 5 m (pe)
		acetaminophen/oxycodone	1	1					acetaminophen	128 mcg/mL In Blood (unspecified) @ 5 m (pe)
		acetaminophen/oxycodone	1	1					acetaminophen	60.6 mcg/mL In Blood (unspecified) @ 11 h (pe)
		ethanol	2	2					ethanol	64 mg/dL In Blood (unspecified) @ 5 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
		gabapentin	3	3					gabapentin	10 mg/L In Blood (unspecified) @ 5 m (pe)
360pai	28 y F				U	Ingst	Int-A	1		
		oxycodone	1	1					oxycodone	430 ng/mL In Whole Blood @ Autopsy
		benzodiazepine	2	2					risperidone	2.6 ng/mL In Whole Blood @ Autopsy
		benzodiazepine	2	2					pregabalin	24 mcg/mL In Whole Blood @ Autopsy
		benzodiazepine	2	2					diazepam	250 ng/mL In Whole Blood @ Autopsy
		pregabalin	3	3						
		skeletal muscle relaxant	4	4						
361 ph	28 y M				A/C	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	5.2 mg/dL In Blood (unspecified) @ Unknown
		alprazolam	2	2						
362 ph	28 y M				C	Ingst	Int-A	2		
		methadone	1	1						
		alprazolam	2	2						
363pha	29 y F				A	Ingst	Int-A	1		
		fentanyl (transdermal)	1	1					fentanyl	5.4 ng/mL In Blood (unspecified) @ Autopsy
		gabapentin	2	2						
		marijuana	3	3					delta-9-thc	1.6 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	3	3					carboxy-thc	54.8 ng/mL In Blood (unspecified) @ Autopsy
364pai	29 y M				A	Ingst + Par	Int-A	1		
		fentanyl	1	1					fentanyl	11.3 ng/mL In Blood (unspecified) @ Autopsy
		heroin	2	2						
		amphetamine	3	3						
		citalopram	4	4						
365 p	29 y M				U	Ingst	Int-U	2		
		acetaminophen/ hydrocodone	1	1						
		alprazolam	2	2						
		ethanol	3	3						
		ethanol	4	4						
366	29 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	119 mcg/mL In Blood (unspecified) @ 30 h (pe)
367 ha	29 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	31 mcg/mL In Serum @ 2 d (pe)
		ethanol	2	2						
368 h	29 y F				A	Ingst	Int-S	1		
		acetaminophen/oxycodone	1	1						
		acetaminophen/butalbital/ caffeine	2	2						
		hydrocodone	3	3						
		alprazolam	4	4						
369 h	29 y M				C	Par	Int-A	2		
		oxymorphone (extended release)	1	1						
370pha	30 y M				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	24 mg/L In Serum @ Unknown
		acetaminophen/ hydrocodone	1	1					hydrocodone	310 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	2	2					nordiazepam	110 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	2	2					diazepam	75 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	2	2					alprazolam	76 ng/mL In Blood (unspecified) @ Unknown
371ai	30 y M				A	Ingst	Int-U	2		
		methadone	1	1						
		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
372	30 y M				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	277 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
		salicylate	3	3					salicylate	29 mg/dL In Blood (unspecified) @ Unknown
373 ph	30 y M				A	Ingst	Int-U	2		
		methadone	1	1						
		acetaminophen/ diphenhydramine	2	2						
		alprazolam	3	3						
		zolpidem	4	4						
		clonazepam	5	5						
374	31 y F				A/C	Ingst	Int-M	2		
		acetaminophen	1	1					acetaminophen	48 mcg/mL In Blood (unspecified) @ 24 h (pe)
		acetaminophen	1	1					acetaminophen	64 mcg/mL In Blood (unspecified) @ 12 h (pe)
		acetaminophen	1	1					acetaminophen	96 mcg/mL In Blood (unspecified) @ 10 m (pe)
		ethanol	2	2						
375 pi	31 y F				A/C	Ingst + Inhal	Int-U	2		
		oxymorphone (extended release)	1	1						
		cocaine	2	2						
		alprazolam	3	3						
376 h	31 y M				A	Ingst	Int-S	2		
		salicylate	1	1					salicylate	83.5 mg/dL In Serum @ Unknown
377	31 y M				C	Ingst	Int-U	2		
		methadone	1	1						
		acetaminophen/oxycodone	2	2						
378	31 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	24 mcg/mL In Blood (unspecified) @ Unknown
379 ph	31 y F				A/C	Unk	Int-S	2		
		buprenorphine	1	1						
		quetiapine	2	2						
380 h	31 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	88 mg/L In Serum @ Unknown
		vitamins	2	2						
381 h	31 y F				A/C	Ingst	Int-M	2		
		acetaminophen	1	1					acetaminophen	119 mcg/mL In Blood (unspecified) @ Unknown
382	31 y F				C	Ingst	Int-M	2		
		acetaminophen/ diphenhydramine	1	1						
		ethanol	2	2						
383 h	32 y F				A/C	Ingst	Int-S	1		
		oxycodone	1	1					oxymorphone	0.05 mg/L In Blood (unspecified) @ Unknown
		promethazine	2	2						
		venlafaxine	3	3						
		tizanidine	4	4						
		clonidine	5	5						
		phenazopyridine	6	6						
		alprazolam	7	7						
		chlorzoxazone	8	8						
		oxymorphone	9	9						
		zolpidem	10	10					zolpidem	0.11 mg/L In Blood (unspecified) @ Unknown
		fluoxetine	11	11						
384 a	32 y M				U	Unk	Int-S	1		
		morphine	1	1					morphine	1169 ng/mL In Urine (quantitative only) @ Unknown
		oxycodone	2	2					oxycodone	25.7 ng/mL In Blood (unspecified) @ Unknown
		oxycodone	2	2					oxycodone	7921 ng/mL In Urine (quantitative only) @ Unknown
		oxycodone	2	2					oxymorphone	901 ng/mL In Urine (quantitative only) @ Unknown
		acetaminophen/ hydrocodone	3	3					hydrocodone	124 mg/mL In Urine (quantitative only) @ Unknown
		acetaminophen/ hydrocodone	3	3					hydromorphone	179 ng/mL In Urine (quantitative only) @ 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
		methadone	4	4						
		alprazolam	5	5					alpha-oh-alprazolam	1420 ng/mL In Urine (quantitative only) @ Unknown
		alprazolam	5	5					alprazolam	27 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	5	5					alprazolam	532 ng/mL In Urine (quantitative only) @ Unknown
		clonazepam	6	6					7-aminoclonazepam	147 ng/mL In Urine (quantitative only) @ Unknown
		diazepam	7	7					nordiazepam	170 ng/mL In Urine (quantitative only) @ Unknown
		diazepam	7	7					temazepam	194 ng/mL In Urine (quantitative only) @ Unknown
		diazepam	7	7					oxazepam	69 ng/mL In Urine (quantitative only) @ Unknown
		metformin	8	8						
		quetiapine	9	9						
		fluoxetine	10	10						
		ibuprofen	11	11						
		levothyroxine	12	12						
		naproxen	13	13						
385 a	32 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1						
		ethanol	2	2						
386 h	32 y F				U	Ingst	Int-U	3		
		acetaminophen	1	1					acetaminophen	0 mcg/mL In Blood (unspecified) @ Unknown
387pa	32 y M				A	Ingst	Int-S	1		
		methadone	1	1					methadone	0.6 mg/L In Blood (unspecified) @ Autopsy
		amphetamine	2	2					amphetamine	0.1 mg/L In Blood (unspecified) @ Autopsy
		cocaine	3	3					benzoylecognine	1 mg/L In Blood (unspecified) @ Autopsy
		promethazine	4	4					promethazine	0.1 mg/L In Blood (unspecified) @ Autopsy
388ai	32 y F				U	Ingst	Int-U	2		
		morphine	1	1						
		hydrocodone	2	2						
		doxylamine	3	3						
		hydromorphone	4	4						
		sertraline	5	5						
		tramadol	6	6						
389ai	32 y F				A	Ingst	Int-U	2		
		hydrocodone	1	1						
		alprazolam	2	2						
390 ha	32 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	67.9 mg/L In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	0.22 % In Blood (unspecified) @ Unknown
		butalbital	3	3					butalbital	0.215 mg/L In Blood (unspecified) @ Unknown
391 ph	32 y F				A/C	Ingst	Int-U	3		
		acetaminophen/ hydrocodone	1	1						
		labetalol	2	2						
		vilazodone	3	3						
		warfarin	4	4						
392 p	33 y M				A	Ingst	Int-U	2		
		morphine	1	1						
393 p	33 y F				A	Par	Int-A	1		
		opioid	1	1						
[394a]	33 y M				U	Inhal	Unk	1		
		fentanyl	1	1					fentanyl	3.64 ng/mL In Blood (unspecified) @ Unknown
395 a	33 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	54 mg/dL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	0.184 % In Blood (unspecified) @ Unknown
396 ha	33 y F				C	Ingst	Int-U	1		
		acetaminophen	1	1					acetaminophen	20.9 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
397 ha	33 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	102.4 mg/L In Serum @ Unknown
		ibuprofen	2	2						
		ethanol	3	3						
398pa	33 y F				A/C	Ingst	Int-S	1		
		acetaminophen/oxycodone	1	1					acetaminophen	301 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	2	2						
		carisoprodol	3	3						
		levothyroxine	4	4						
		phenazopyridine	5	5						
399 h	33 y F				C	Ingst	Int-M	2		
		acetaminophen	1	1						
400 h	33 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1						
		ethanol	2	2						
401ai	34 y F				U	Ingst	Int-A	2		
		methadone	1	1						
402pai	34 y F				A	Par	Int-A	1		
		fentanyl	1	1					fentanyl	10.2 ng/mL In Blood (unspecified) @ Autopsy
403 h	34 y F				U	Ingst	Int-M	2		
		acetaminophen	1	1					acetaminophen	5.6 mcg/mL In Blood (unspecified) @ Unknown
		methanol	2	2						
404pai	34 y M				A	Ingst + Unk	Int-A	1		
		acetaminophen/oxycodone	1	1					acetaminophen	19 mcg/mL In Whole Blood @ Autopsy
		acetaminophen/oxycodone	1	1					oxycodone	470 ng/mL In Whole Blood @ Autopsy
		ethanol	2	2					ethanol	16 g/dL In Blood (unspecified) @ Autopsy
		diphenhydramine	3	3					diphenhydramine	0.9 mcg/mL In Blood (unspecified) @ Autopsy
405ai	34 y M				A	Ingst	Int-U	2		
		oxycodone	1	1						
406pha	34 y M				U	Ingst	Int-U	1		
		oxycodone	1	1					oxycodone	0.015 mg/L In Urine (quantitative only) @ Unknown
		oxymorphone	2	2					oxymorphone	0.006 mg/kg In Blood (unspecified) @ 7 h (pe)
		oxymorphone	2	2					oxymorphone	0.078 mg/L In Blood (unspecified) @ Unknown
		oxymorphone	2	2					oxymorphone	1.2 mg/L In Urine (quantitative only) @ Unknown
		alprazolam	3	3					alprazolam	0.03 mg/kg In Blood (unspecified) @ 7 h (pe)
		alprazolam	3	3					alprazolam	0.039 mg/L In Blood (unspecified) @ Unknown
		gabapentin	4	4						
		escitalopram	5	5						
		trazodone	6	6						
407pa	35 y M				A	Ingst + Aspir	Int-S	1		
		acetaminophen/oxycodone	1	1					oxycodone	0.32 mg/L In Blood (unspecified) @ Unknown
		tizanidine	2	2						
		trazodone	3	3						
		caffeine	4	4						
408	35 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	103.5 mcg/mL In Serum @ Unknown
409ai	35 y M				A	Ingst	Int-U	2		
		methadone	1	1						
		alprazolam	2	2						
410	35 y M				A	Ingst	Int-S	2		
		oxycodone	1	1						
		rodenticide, unknown	2	2						
		drug, unknown	3	3						
411pa	35 y M				A	Ingst + Par + Unk	Int-U	2		
		fentanyl	1	1					fentanyl	10 ng/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	0.1 g/dL In Blood (unspecified) @ Unknown
412	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
		acetaminophen	1	1					acetaminophen	136 mcg/mL In Serum @ 5 m (pe)
		acetaminophen	1	1					acetaminophen	59.7 mcg/mL In Serum @ 7 h (pe)
413 ha	36 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	60 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen	88 mcg/mL In Blood (unspecified) @ 5 m (pe)
		lorazepam	2	2						
		ethanol	3	3					ethanol	47 mg/dL In Blood (unspecified) @ Unknown
414 ph	36 y M				A/C	Ingst	Int-S	2		
		acetaminophen*	2	1					acetaminophen	31 mcg/mL In Serum @ Unknown
		acetaminophen/ hydrocodone*	1	1					acetaminophen	31 mcg/mL In Serum @ Unknown
415 ph	37 y M				A	Ingst	Unk	2		
		methadone	1	1					methadone	0.28 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	2	2						
		propranolol	3	3						
		buspirone	4	4						
		citalopram	5	5						
		clonazepam	6	6						
416 ha	37 y F				A/C	Ingst	Unt-U	1		
		acetaminophen	1	1					acetaminophen	122 mcg/mL In Serum @ 45 m (pe)
		acetaminophen	1	1					acetaminophen	26 mcg/mL In Serum @ 22 h (pe)
417ai	37 y M				U	Ingst	Int-U	2		
		hydrocodone	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
		diazepam	4	4						
418 ph	37 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		buspirone	2	2						
419	37 y F				U	Ingst	Int-S	1		
		opioid	1	1						
		acetaminophen	2	2					acetaminophen	52 mcg/mL In Plasma @ Unknown
420ai	37 y F				A	Ingst	Unt-U	2		
		morphine	1	1						
		oxycodone	2	2						
421ai	37 y M				A	Ingst	Int-U	2		
		methadone	1	1						
422 p	37 y M				A/C	Ingst	Int-S	1		
		acetaminophen/ oxycodone	1	1						
		baclofen	2	2						
		meloxicam	3	3						
		zolpidem	4	4						
		clonazepam	5	5						
423 h	37 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	470 mcg/mL In Blood (unspecified) @ Autopsy
		salicylate	1	1					salicylate	67.7 mg/dL In Blood (unspecified) @ 2 h (pe)
		salicylate	1	1					salicylate	78.1 mg/dL In Blood (unspecified) @ 21.5 h (pe)
		oxcarbazepine	2	2					10-hydroxy carbazepine	28 mcg/mL In Blood (unspecified) @ Autopsy
		gabapentin	3	3					gabapentin	5 mcg/mL In Blood (unspecified) @ Autopsy
424	37 y M				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	26 mcg/mL In Serum @ 3 d (pe)
		salicylate	2	2						
425 ph	37 y M				U	Par + Unk	Unk	1		
		opioid	1	1					codeine	0.011 mg/L In Blood (unspecified) @ 1 h (pe)
		opioid	1	1					morphine	0.1 mg/L In Blood (unspecified) @ 1 h (pe)
		amphetamine	2	2						
426 ph	37 y F				U	Ingst + Derm	Int-U	1		
		fentanyl (transdermal)	1	1						
427 h	37 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
		lamotrigine	2	2						
		topiramate	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
428	37 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	114 mg/dL In Serum @ Unknown
		acetaminophen	2	2					acetaminophen	343 mcg/mL In Serum @ Unknown
429 ph	38 y F				A/C	Ingst	Int-S	2		
		oxycodone (extended release)	1	1					oxycodone	0.019 mg/L In Blood (unspecified) @ 9 h (pe)
430	38 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
		ethanol	2	2						
431pha	38 y M				A	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen	260 mcg/mL In Serum @ Unknown
		acetaminophen	1	1					acetaminophen	295 mcg/mL In Blood (unspecified) @ Unknown
		naproxen	2	2					naproxen	450 mcg/mL In Serum @ Unknown
		ibuprofen	3	3					ibuprofen	221 mcg/mL In Serum @ Unknown
432 a	38 y M				A	Ingst	Int-S	1		
		salicylate	1	1						
433 ph	38 y F				A/C	Ingst	Int-S	2		
		tramadol	1	1					tramadol	15.5 mg/L In Blood (unspecified) @ Unknown
		tramadol	1	1					tramadol	22.5 mg/L In Blood (unspecified) @ Autopsy
		trazodone	2	2					trazodone	3.5 mcg/mL In Blood (unspecified) @ Unknown
		hydrocodone	3	3					dihydrocodeine	12 mcg/L In Vitreous @ Autopsy
		hydrocodone	3	3					hydrocodone	131 mcg/L In Vitreous @ Autopsy
		hydrocodone	3	3					hydrocodone	192 mcg/L In Blood (unspecified) @ Autopsy
		hydrocodone	3	3					dihydrocodeine	20 mcg/L In Blood (unspecified) @ Autopsy
		diazepam	4	4						
		sertraline	5	5					sertraline	0.73 mg/L In Blood (unspecified) @ Autopsy
		dextromethorphan	6	6					dextromethorphan	0.11 mg/L In Blood (unspecified) @ Autopsy
		clonazepam	7	7						
434ai	38 y F				A	Ingst	Int-U	2		
		hydrocodone	1	1						
435 h	38 y F				A	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1					diphenhydramine	2.2 mg/L In Blood (unspecified) @ 10 m (pe)
		acetaminophen/ diphenhydramine	1	1					acetaminophen	240 mg/L In Blood (unspecified) @ 10 m (pe)
436 ph	38 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	523.7 mg/L In Serum @ Unknown
		methadone	2	2						
437 ph	39 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
438 h	39 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	76 mcg/mL In Serum @ 2 d (pe)
439pha	39 y F				A/C	Ingst	Int-S	1		
		oxycodone	1	1					oxycodone (free)	408 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	2	2					alprazolam	72 ng/mL In Blood (unspecified) @ Unknown
440 h	39 y M				A/C	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
441 a	40 y F				U	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					hydromorphone	4.7 ng/mL In Blood (unspecified) @ 1 h (pe)
		acetaminophen/ hydrocodone	1	1					dihydrocodeine/ hydrocodol (free)	50 ng/mL In Blood (unspecified) @ 1 h (pe)
		acetaminophen/ hydrocodone	1	1					hydrocodone (free)	730 ng/mL In Blood (unspecified) @ 1 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
		acetaminophen/ hydrocodone	1	1					acetaminophen	94 mcg/mL In Blood (unspecified) @ 1 h (pe)
		lamotrigine	2	2					lamotrigine	10 mcg/mL In Blood (unspecified) @ 1 h (pe)
		citalopram	3	3					citalopram	94 ng/mL In Blood (unspecified) @ 1 h (pe)
		zolpidem	4	4					zolpidem	580 ng/mL In Blood (unspecified) @ 1 h (pe)
		ibuprofen	5	5					ibuprofen	260 mcg/mL In Blood (unspecified) @ 1 h (pe)
442 h	40 y F				U	Ingst	Int-U	2		
		acetaminophen	1	1					acetaminophen	72 mcg/mL In Serum @ Unknown
		acetaminophen/ diphenhydramine	2	2						
		ethanol	3	3					ethanol	12 mg/dL In Unknown @ Unknown
443	40 y F				A	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1					acetaminophen	608 mcg/mL In Blood (unspecified) @ Unknown
444ai	40 y F				U	Ingst	Int-U	2		
		methadone	1	1						
445 h	40 y F				A/C	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	36 mg/L In Serum @ Unknown
446ai	40 y F				A	Ingst	Int-U	2		
		hydrocodone	1	1						
447ai	40 y F				A	Unk	Int-U	2		
		morphine	1	1						
		methamphetamine	2	2						
448ai	40 y M				A	Ingst	Int-U	2		
		oxycodone	1	1						
		oxymorphone	2	2						
449	41 y M				C	Ingst	Unt-M	1		
		acetaminophen	1	1					acetaminophen	109 mcg/mL In Blood (unspecified) @ Unknown
450	41 y M				C	Ingst	Int-S	3		
		caffeine/salicylamide/ salicylate	1	1					salicylate	22.2 mg/dL In Blood (unspecified) @ 1 d (pe)
		caffeine/salicylamide/ salicylate	1	1					salicylate	40 mg/dL In Blood (unspecified) @ Unknown
		caffeine/salicylamide/ salicylate	1	1					salicylate	50 mg/dL In Blood (unspecified) @ Unknown
		caffeine/salicylamide/ salicylate	1	1					salicylate	61 mg/dL In Blood (unspecified) @ 0.5 d (pe)
451 p	41 y F				A/C	Ingst	Unt-T	1		
		oxycodone	1	1						
		oxymorphone	2	2						
		alprazolam	3	3						
		ethanol	4	4						
452 p	42 y F				A/C	Ingst	Int-S	2		
		acetaminophen/oxycodone	1	1						
		alprazolam	2	2						
		heroin	3	3						
		cocaine	4	4						
453 ph	42 y M				A	Ingst + Par + Unk	Int-S	2		
		oxycodone	1	1						
		trazodone	2	2						
454 ha	42 y F				C	Unk	Int-S	1		
		hydromorphone	1	1					hydromorphone	2.5 ng/mL In Blood (unspecified) @ Autopsy
		butalbital	2	2					butalbital	570 ng/mL In Whole Blood @ Autopsy
		fentanyl	3	3					norfentanyl	1.1 ng/mL In Whole Blood @ Autopsy
455ai	42 y F				A	Ingst	Int-U	2		
		acetaminophen	1	1						
456 ph	42 y F				A/C	Ingst	Int-S	3		
		methadone	1	1						
		amitriptyline	2	2					amitriptyline	124 ng/mL In Blood (unspecified) @ Unknown
		fluoxetine	3	3						
457 ph	42 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	100 mg/dL In Blood (unspecified) @ 4 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
		salicylate	1	1					salicylate	114 mg/dL In Blood (unspecified) @ 1 h (pe)
		salicylate	1	1					salicylate	17 mg/dL In Blood (unspecified) @ 2 d (pe)
		salicylate	1	1					salicylate	25 mg/dL In Blood (unspecified) @ 15 h (pe)
		acetaminophen	2	2					acetaminophen	192 mcg/mL In Blood (unspecified) @ 2 d (pe)
		acetaminophen	2	2					acetaminophen	314 mcg/mL In Blood (unspecified) @ 15 h (pe)
		acetaminophen	2	2					acetaminophen	400 mcg/mL In Blood (unspecified) @ 4 h (pe)
		pyrethroids	3	3						
458 h	42 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen	56 mcg/mL In Serum @ 0.25 h (pe)
		ethanol	2	2					ethanol	33.4 mg/dL In Serum @ 0.25 h (pe)
459 p	43 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	506 mcg/mL In Serum @ Unknown
460 ha	43 y F				U	Ingst	Int-U	1		
		acetaminophen	1	1					acetaminophen	17 mcg/mL In Blood (unspecified) @ Unknown
461ha	43 y M				A/C	Ingst + Par	Int-S	1		
		methadone	1	1						
		heroin	2	2					morphine	150 mcg/L In Blood (unspecified) @ 1 m (pe)
		alprazolam	3	3					alprazolam	277 mcg/L In Blood (unspecified) @ 1 m (pe)
		lorazepam	4	4						
462ai	43 y F				A	Ingst	Int-U	2		
		methadone	1	1						
		ethanol	2	2						
463ai	43 y M				A	Ingst + Unk	Int-U	2		
		fentanyl	1	1						
		methamphetamine	2	2						
464ai	43 y F				A	Derm	Int-U	2		
		fentanyl	1	1						
		morphine	2	2						
465ai	43 y F				A	Unk	Int-U	2		
		morphine	1	1						
466ai	43 y F				A	Ingst	Int-S	2		
		hydrocodone	1	1						
		cyclobenzaprine	2	2						
		citalopram	3	3						
467i	43 y M				U	Par	Int-A	2		
		fentanyl	1	1						
		heroin	2	2						
468pha	43 y F				U	Ingst	Int-S	1		
		morphine	1	1					hydromorphone	36 ng/mL In Blood (unspecified) @ Autopsy
		morphine	1	1					morphine	730 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	21 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alpha-oh-alprazolam	22 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	3	3					hydrocodone	6.6 ng/mL In Blood (unspecified) @ Autopsy
		carisoprodol	4	4					meprobamate	6.6 ng/mL In Blood (unspecified) @ Autopsy
469	44 y M				A/C	Ingst	Int-S	1		
		colchicine	1	1						
		carvedilol	2	2						
		lisinopril	3	3						
470	44 y F				U	Unk	Int-S	1		
		acetaminophen	1	1					acetaminophen	119.2 mcg/mL In Blood (unspecified) @ Unknown
471 ha	44 y F				U	Unk	Unk	2		
		acetaminophen	1	1						
472 p	44 y F				A/C	Ingst	Int-M	2		
		acetaminophen/caffeine/ salicylate	1	1					salicylate	27 mcg/mL In Blood (unspecified) @ 1 h (pe)
		acetaminophen/caffeine/ salicylate	1	1					acetaminophen	6 mcg/mL In Blood (unspecified) @ 1 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
		valproic acid	2	2					valproic acid	26 mcg/mL In Blood (unspecified) @ 1 h (pe)
473 ph	44 y M				A	Ingst	Int-A	2		
		methadone	1	1						
474 ha	44 y F				C	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	19 mcg/mL In Unknown @ Unknown
		venlafaxine	2	2					o-desmethyl venlafaxine	890 ng/mL In Whole Blood @ Autopsy
475 h	44 y F				A	Ingst	Int-A	2		
		acetaminophen	1	1						
476	44 y F				A	Ingst	Unk	2		
		acetaminophen	1	1						
		ibuprofen	2	2						
477pha	45 y F				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
478 h	45 y M				A	Ingst	AR-D	3		
		oxycodone	1	1						
479	45 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		cocaine	2	2						
480	45 y F				A/C	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1						
		clonazepam	2	2						
481	45 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	19.7 mcg/mL In Blood (unspecified) @ Unknown
		diphenhydramine/ ibuprofen	2	2						
482pha	45 y M				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					dihydrocodeine/hydro-codol (free)	33 ng/mL In Serum @ 10 m (pe)
		acetaminophen/ hydrocodone	1	1					hydrocodone (free)	347 ng/mL In Serum @ 10 m (pe)
		zolpidem	2	2					zolpidem	140 ng/mL In Serum @ 10 m (pe)
		alpha blocker	3	3						
		hydrochlorothiazide	4	4						
		naproxen	5	5						
		tetracycline	6	6						
483 ph	45 y F				U	Ingst	Int-S	3		
		acetaminophen/ oxycodone	1	1					acetaminophen	55 mcg/mL In Blood (unspecified) @ Unknown
		oxycodone	2	2						
484ai	45 y F				A	Ingst + Derm	Int-U	2		
		fentanyl	1	1						
		fluoxetine	2	2						
485	45 y F				A	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1					acetaminophen	16 mcg/mL In Blood (unspecified) @ Unknown
486ai	45 y M				A	Unk	Int-U	2		
		morphine	1	1						
487 h	45 y F				U	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen	278.6 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen	376.2 mcg/mL In Blood (unspecified) @ Unknown
488 ha	45 y M				C	Ingst	Unt-T	1		
		acetaminophen	1	1					acetaminophen	115 mcg/mL In Blood (unspecified) @ 1 h (pe)
489	46 y M				A/C	Ingst	Int-A	3		
		hydrocodone/ibuprofen	1	1						
		cyclobenzaprine	2	2						
		ibuprofen	3	3						
490 h	46 y F				A	Ingst	Int-U	2		
		acetaminophen	1	1					acetaminophen	25 mcg/mL In Blood (unspecified) @ Unknown
		quetiapine	2	2						
		escitalopram	3	3						
		sertraline	4	4						
		buspirone	5	5						
491 h	46 y F				A/C	Ingst	Int-S	2		
		tramadol	1	1						
		amitriptyline	2	2						
		insulin	3	3						
492	46 y M				A	Ingst	Int-U	1		
		acetaminophen/ hydrocodone	1	1						
		ethanol	2	2						
493 h	46 y M				C	Ingst	Int-M	2		
		acetaminophen	1	1						
		acetaminophen/salicylate	2	2						
		ibuprofen	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
494	46 y M				U	Ingst	Unk	1		
		acetaminophen	1	1						
495 ha	47 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1						
496 h	47 y F				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	137 mg/L In Serum @ Unknown
		carisoprodol	2	2						
497 h	47 y M				C	Ingst	Int-M	3		
		acetaminophen	1	1					acetaminophen	98 mcg/mL In Serum @ 16 h (pe)
498ai	47 y F				A	Ingst	Int-U	2		
		hydrocodone	1	1						
		alprazolam	2	2						
499ai	47 y M				A	Ingst	Int-U	2		
		morphine	1	1						
		hydrocodone	2	2						
		alprazolam	3	3						
		diphenhydramine	4	4						
500ai	47 y F				A	Unk	Int-U	2		
		oxycodone	1	1						
		oxymorphone	2	2						
501 a	48 y M				A	Ingst	Unt-M	1		
		oxycodone	1	1					oxycodone	0.12 mcg/mL In Blood (unspecified) @ Unknown
		oxycodone	1	1					oxycodone	0.18 mcg/mL In Serum @ Unknown
		oxycodone	1	1					oxymorphone	11 ng/mL In Blood (unspecified) @ Unknown
		oxycodone	1	1					oxymorphone	14 ng/mL In Serum @ Unknown
		salicylate	2	2					salicylate	64 mcg/mL In Blood (unspecified) @ Unknown
502 h	48 y F				A	Ingst + Aspir	Int-S	2		
		acetaminophen	1	1						
503	48 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	84 mg/dL In Unknown @ Unknown
504	48 y M				U	Ingst	Unk	3		
		acetaminophen	1	1					acetaminophen	66 mcg/mL In Blood (unspecified) @ Unknown
505ai	48 y F				A	Ingst	Int-U	2		
		oxycodone	1	1						
506ai	48 y M				A	Ingst	Int-U	2		
		oxycodone	1	1						
		alprazolam	2	2						
507 h	48 y F				A	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen	30 mcg/mL In Serum @ Unknown
		ethanol	2	2						
508 p	48 y F				U	Ingst	Int-A	2		
		methadone	1	1						
		salicylate	2	2					salicylate	19.7 mg/dL In Serum @ Unknown
509 a	49 y F				A/C	Ingst	Int-S	1		
		oxycodone	1	1						
		trazodone	2	2					trazodone	2.9 mcg/mL In Blood (unspecified) @ 1 h (pe)
510ai	49 y M				A	Ingst	Int-U	2		
		fentanyl	1	1						
		cocaine	2	2						
		diazepam	3	3						
511 ha	49 y F				U	Ingst	Unt-G	1		
		acetaminophen	1	1					acetaminophen	126 mg/L In Blood (unspecified) @ Unknown
512	49 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	58.7 mg/dL In Blood (unspecified) @ Unknown
		temazepam	2	2						
		diuretics, potassium sparing	3	3						
		ibuprofen	4	4						
513pa	49 y M				A/C	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	310 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/codeine	2	2						
		salicylate	3	3					salicylate	17 mg/dL In Blood (unspecified) @ Unknown
		ibuprofen	4	4						
		lisinopril	5	5						
		pantoprazole	6	6						
514 h	49 y F				A/C	Ingst	Unk	3		
		oxycodone	1	1						
		acetaminophen/oxycodone	2	2						
		gabapentin	3	3						
		clonazepam	4	4						
		zolpidem	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
515 ha	49 y F				A	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen	88 mg/L In Serum @ Unknown
516 pi	49 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
517 ph	50 y M				A/C	Ingst	Int-S	2		
		acetaminophen/oxycodone	1	1						
518 h	50 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1						
519	50 y F				U	Ingst	Int-S	2		
		acetaminophen	1	1						
		opioid	2	2						
520ai	50 y F				A	Unk	Int-U	2		
		morphine	1	1						
521ai	50 y M				A	Ingst + Unk	Int-U	2		
		hydrocodone	1	1						
		alprazolam	2	2						
		diazepam	3	3						
		methamphetamine	4	4						
522	50 y F				A	Ingst	Int-S	1		
		salicylate	1	1						
523	51 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	400 mcg/mL In Blood (unspecified) @ Unknown
524 ha	51 y F				U	Ingst + Par	Int-S	1		
		methadone	1	1					methadone	0.1 mg/L In Blood (unspecified) @ 10 m (pe)
		tramadol	2	2						
525	51 y M				A	Ingst	Int-S	2		
		salicylate	1	1						
526 h	51 y M				A/C	Ingst	Unt-T	2		
		acetaminophen/ hydrocodone	1	1						
		ethanol	2	2						
527	51 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1						
		tramadol	2	2						
		opioid	3	3						
528ai	51 y M				U	Unk	Int-U	2		
		morphine	1	1						
529	51 y M				C	Ingst	Int-A	2		
		salicylate	1	1					salicylate	55.8 mg/dL In Serum @ Unknown
530 ha	51 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	335 mg/L In Serum @ Unknown
		opioid	2	2						
531hai	51 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen	180 mcg/mL In Blood (unspecified) @ Unknown
532ai	51 y F				A	Ingst	Int-U	2		
		oxycodone	1	1						
		fluoxetine	2	2						
533ai	51 y M				A	Ingst + Unk	Int-U	2		
		hydrocodone	1	1						
		fentanyl	2	2						
534ai	51 y F				U	Ingst	Int-U	2		
		hydrocodone	1	1						
		alprazolam	2	2						
		trazodone	3	3						
		diphenhydramine	4	4						
535ai	51 y M				U	Ingst	Int-U	2		
		hydrocodone	1	1						
		ethanol	2	2						
536 h	51 y M				A/C	Ingst	Unk	2		
		salicylate	1	1					salicylate	58.1 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen	2	2						
537pha	51 y M				A/C	Ingst	Int-S	2		
		tramadol	1	1					tramadol	180 ng/mL In Serum @ 30 m (pe)
		tramadol	1	1					o-demethyl tramadol	210 ng/mL In Serum @ 30 m (pe)
		alprazolam	2	2					alprazolam	68 ng/mL In Serum @ 30 m (pe)
		citalopram	3	3					citralopram	1100 ng/mL In Serum @ 30 m (pe)
		citalopram	3	3					desmethyl citalopram	230 ng/mL In Serum @ 30 m (pe)
538 h	51 y F				C	Ingst	Unk	3		
		acetaminophen/ hydrocodone	1	1						
539	51 y M				A/C	Ingst	Int-S	2		
		tramadol	1	1						
		amitriptyline	2	2						
540	51 y F				A/C	Ingst	Int-S	2		
		tramadol	1	1						
		pregabalin	2	2						
		zolpidem	3	3						
		carisoprodol	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
		acetaminophen	5	5					acetaminophen	133 mcg/mL In Serum @ Unknown
541	51 y M				A	Ingst	Int-S	2		
		oxycodone	1	1						
		metoprolol	2	2						
		gabapentin	3	3						
542pha	52 y F				A	Ingst	Int-A	2		
		oxycodone	1	1					oxycodone	0.78 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/oxycodone	2	2						
543	52 y M				A	Ingst	Int-S	2		
		methadone	1	1						
		heroin	2	2						
544ai	52 y F				A	Ingst + Derm	Int-U	2		
		fentanyl	1	1						
		morphine	2	2						
545 h	52 y F				A/C	Ingst	Int-U	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	149.4 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	2	2						
546 ha	52 y F				A/C	Ingst	AR-D	1		
		acetaminophen	1	1					acetaminophen	17 mcg/mL In Serum @ 2 d (pe)
		acetaminophen	1	1					acetaminophen	5 mcg/mL In Serum @ 4 d (pe)
		acetaminophen	1	1					acetaminophen	74 mcg/mL In Serum @ 15 m (pe)
547 ph	52 y F				A	Ingst	Unk	3		
		acetaminophen/ hydrocodone	1	1						
		methamphetamine	2	2						
		drug, unknown	3	3						
		ethanol	4	4						
548	52 y M				C	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen	68 mcg/mL In Blood (unspecified) @ Unknown
549 ha	53 y F				U	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1					acetaminophen	32.6 mcg/mL In Blood (unspecified) @ Unknown
		salicylate	2	2					salicylate	7.6 mg/dL In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	36 mg/dL In Blood (unspecified) @ Unknown
		quetiapine	4	4					quetiapine	1200 ng/mL In Blood (unspecified) @ Autopsy
		lorazepam	5	5						
550	53 y F				A	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1						
551ai	53 y F				A	Unk	Int-U	2		
		morphine	1	1						
552 p	53 y M				A	Ingst	Int-S	3		
		oxycodone	1	1						
		benzodiazepine	2	2						
		pregabalin	3	3						
		salicylate	4	4						
553 h	53 y F				U	Ingst	Unt-T	2		
		acetaminophen	1	1						
554 ph	53 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
555 ph	54 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		diphenhydramine	2	2						
556 h	54 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		lorazepam	2	2						
557 ph	54 y F				A	Ingst	Int-A	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	38.9 mg/L In Serum @ Unknown
558 p	54 y F				A/C	Ingst	Int-S	2		
		methadone	1	1						
		tizanidine	2	2						
		acetaminophen/ hydrocodone	3	3						
		salicylate	4	4						
		marijuana	5	5						
559 ha	54 y M				U	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen	100 mcg/mL In Blood (unspecified) @ 36 h (pe)
		acetaminophen	1	1					acetaminophen	105 mcg/dL In Blood (unspecified) @ 50 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
		acetaminophen	1	1					acetaminophen	47 mcg/mL In Blood (unspecified) @ 68 h (pe)
		carisoprodol	2	2					carisoprodol	30 mcg/mL In Blood (unspecified) @ 42.5 h (pe)
		carisoprodol	2	2					meprobamate	40 mcg/mL In Blood (unspecified) @ 42.5 h (pe)
		zolpidem	3	3					zolpidem	920 ng/mL In Blood (unspecified) @ 42.5 h (pe)
		alprazolam	4	4					alpha-oh-alprazolam	35 ng/mL In Blood (unspecified) @ 36 h (pe)
		alprazolam	4	4					alprazolam	44 ng/mL In Blood (unspecified) @ 36 h (pe)
		hydrocodone	5	5					hydrocodone (free)	190 ng/mL In Blood (unspecified) @ 36 h (pe)
		hydromorphone	6	6					hydromorphone	12 ng/mL In Blood (unspecified) @ 36 h (pe)
560ai	54 y M				A	Unk	Int-U	2		
		hydrocodone	1	1						
		alprazolam	2	2						
561ai	54 y F				A	Ingst	Int-U	2		
		oxycodone	1	1						
562ai	54 y F				A	Ingst	Int-U	2		
		methadone	1	1						
563ai	54 y M				A	Ingst	Int-U	2		
		methadone	1	1						
		fluoxetine	2	2						
564ai	54 y M				A	Ingst	Int-U	2		
		morphine	1	1						
		oxycodone	2	2						
565 h	54 y F				C	Unk	Unk	3		
		ibuprofen	1	1						
566 h	54 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	135 mg/dL In Blood (unspecified) @ 27 h (pe)
		salicylate	1	1					salicylate	95 mg/dL In Blood (unspecified) @ 24 h (pe)
567	54 y F				C	Ingst	Int-M	3		
		acetaminophen	1	1						
568 h	54 y M				U	Ingst	Int-S	3		
		morphine	1	1						
569 p	55 y M				A/C	Ingst	Int-U	2		
		methadone	1	1						
		trazodone	2	2						
570	55 y F				A	Ingst + Par	Int-S	2		
		morphine	1	1						
		oxycodone	2	2						
		zolpidem	3	3						
571pha	55 y M				U	Unk	Unk	1		
		methadone	1	1					methadone	0.28 mcg/mL In Blood (unspecified) @ 1 m (pe)
		oxycodone	2	2						
		alprazolam	3	3					alprazolam	68 mcg/L In Blood (unspecified) @ 1 m (pe)
572ai	55 y F				U	Ingst + Unk	Int-U	2		
		hydrocodone	1	1						
		oxycodone	2	2						
		methamphetamine	3	3						
573	55 y M				C	Ingst	Int-M	2		
		acetaminophen/oxycodone	1	1					acetaminophen	15 mg/L In Serum @ Unknown
		acetaminophen	2	2						
574 ph	55 y F				A	Ingst	Int-S	2		
		methadone	1	1						
		morphine	2	2						
575 ph	55 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		tramadol	2	2						
		hydromorphone	3	3						
		benzodiazepine	4	4						
576 a	56 y F				A	Ingst	Int-S	1		
		acetaminophen/oxycodone	1	1					acetaminophen	112 mcg/mL In Serum @ 1 h (pe)
		tramadol	2	2						
		phenothiazine	3	3						
		salicylate	4	4					salicylate	5.9 mg/dL In Serum @ 1 h (pe)
577ai	56 y M				A	Ingst	Int-U	2		
		oxycodone	1	1						
578ai	56 y F				A	Ingst	Int-U	2		
		tramadol	1	1						
		venlafaxine	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
579 h	56 y F				U	Unk	Int-S	2		
		acetaminophen	1	1					acetaminophen	55.1 mcg/mL In Blood (unspecified) @ Unknown
		opioid	2	2						
		warfarin	3	3						
580 h	56 y M				A	Inhal	Int-A	1		
		hydromorphone	1	1						
581 h	56 y F				C	Ingst	Int-U	1		
		acetaminophen	1	1					acetaminophen	165 mcg/mL In Serum @ Unknown
		ethanol	2	2					ethanol	53 mg/dL In Serum @ Unknown
		salicylate	3	3						
582	57 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	194 mcg/mL In Serum @ Unknown
		salicylate	2	2					salicylate	5.4 mg/dL In Serum @ Unknown
583 ha	57 y F				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	46 mg/L In Serum @ Unknown
		acetaminophen/butalbital/ caffeine	2	2						
		clonazepam	3	3						
584pha	57 y F				U	Unk	Unk	2		
		codeine	1	1					morphine	0.024 mg/L In Blood (unspecified) @ Autopsy
		codeine	1	1					codeine	0.52 mg/L In Blood (unspecified) @ Autopsy
		gabapentin	2	2					gabapentin	19 mg/L In Blood (unspecified) @ Autopsy
585 h	57 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	392 mcg/mL In Serum @ Unknown
586 ha	57 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	12.8 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen	1	1					acetaminophen	44 mg/L In Serum @ Unknown
		clonazepam	2	2						
		acetaminophen/ hydrocodone	3	3					hydrocodone	0.15 mg/L In Blood (unspecified) @ Autopsy
587 ph	57 y F				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
		antidepressant (SSRI)	2	2						
		benzodiazepine	3	3						
588 ha	57 y M				A	Ingst	Int-U	1		
		acetaminophen	1	1					acetaminophen	330 mcg/mL In Serum @ Unknown
		diphenhydramine	2	2						
		caffeine	3	3						
		valproic acid	4	4						
		ibuprofen	5	5						
589	57 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		diazepam	2	2						
		carisoprodol	3	3						
		codeine/pseudoephedrine/ guaifenesin	4	4						
590 ph	57 y F				A	Ingst	Int-S	2		
		methadone	1	1						
591 a	57 y M				A	Ingst	Int-S	1		
		morphine	1	1					morphine (free)	0.56 mg/L In Whole Blood @ Autopsy
		methamphetamine	2	2						
592	57 y F				C	Ingst	Unk	2		
		acetaminophen/codeine	1	1						
593 h	57 y F				A/C	Ingst	Int-S	2		
		tramadol	1	1						
		trazodone	2	2						
		acetaminophen/ hydrocodone	3	3						
594 h	58 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	914 mcg/mL In Serum @ 2 h (pe)
		propranolol	2	2						
595pha	58 y F				A	Ingst	Int-S	1		
		acetaminophen/oxycodone	1	1					acetaminophen	458 mg/mL In Serum @ Unknown
		acetaminophen/oxycodone	1	1					oxycodone	9.06 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
596 h	58 y M				A/C	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1						
597 ha	58 y M				A/C	Ingst	Int-M	3		
		methadone	1	1						
598 h	58 y M				U	Ingst	Int-S	3		
		oxycodone	1	1						
		fentanyl	2	2						
		alprazolam	3	3						
599 h	58 y M				C	Ingst	Int-S	2		
		ibuprofen	1	1						
600 p	58 y F				U	Ingst	Int-S	2		
		acetaminophen	1	1					ethanol	23 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen	73 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
601 h	59 y F				U	Ingst	Unk	2		
		acetaminophen/ hydrocodone	1	1						
602	59 y F				U	Ingst	Int-S	3		
		acetaminophen/ diphenhydramine	1	1					acetaminophen	62 mg/L In Plasma @ Unknown
		diphenhydramine/ ibuprofen	2	2						
603 h	59 y F				U	Ingst	Int-U	3		
		acetaminophen	1	1					acetaminophen	71 mcg/mL In Blood (unspecified) @ Unknown
604	59 y F				A/C	Ingst	Int-M	2		
		acetaminophen/oxycodone	1	1						
605 a	60 y M				A	Ingst + Inhal	Int-S	1		
		salicylate	1	1					salicylate	58.9 mg/dL In Serum @ 3 h (pe)
		salicylate	1	1					salicylate	83 mg/dL In Serum @ 30 m (pe)
		medicines, cultural*	3	2						
		phenmetrazine*	2	2						
		THC homolog	4	4						
606 h	60 y F				A/C	Ingst	Int-S	2		
		opioid	1	1						
		zolpidem	2	2						
607 ha	60 y F				A	Ingst + Unk	Int-S	1		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.14 mg/L In Blood (unspecified) @ 12 h (pe)
		acetaminophen/ hydrocodone	1	1					acetaminophen	48 mg/L In Blood (unspecified) @ 12 h (pe)
		ethanol	2	2					ethanol	77 mg/dL In Serum @ 12 m (pe)
		salicylate	3	3						
608 ph	60 y F				A/C	Ingst	Int-A	1		
		acetaminophen/oxycodone	1	1					acetaminophen	55 mcg/mL In Serum @ Unknown
609 h	60 y F				A	Ingst	Int-S	2		
		acetaminophen/ caffeine/salicylate	1	1						
610ai	60 y F				A	Ingst	Int-U	2		
		methadone	1	1						
611ai	60 y F				A	Derm	Int-U	2		
		fentanyl	1	1						
612ai	60 y F				A	Ingst	Int-U	2		
		hydrocodone	1	1						
		oxycodone	2	2						
		carisoprodol	3	3						
		diazepam	4	4						
613 h	60 y F				U	Ingst	Unk	2		
		acetaminophen	1	1						
614	60 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ hydrocodone*	2	1					acetaminophen	22 mcg/mL In Blood (unspecified) @ Unknown
		lorazepam*	1	1						
		naproxen (extended release)	3	3						
		temazepam	4	4						
615	61 y F				C	Ingst	Unk	2		
		salicylate	1	1					salicylate	93 mg/dL In Unknown @ Unknown
616	61 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	350.5 mcg/mL In Serum @ Unknown
617	61 y M				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen	47 mcg/mL In Blood (unspecified) @ 24 h (pe)
618 ph	61 y M				C	Ingst	Unk	3		
		acetaminophen/ hydrocodone	1	1					acetaminophen	36 mcg/mL In Blood (unspecified) @ 1 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
		salicylate	2	2					salicylate	18 mg/dL In Blood (unspecified) @ 1 h (pe)
		metoprolol (extended release)	3	3						
		amlopidipine	4	4						
		quetiapine	5	5						
619 ph	62 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	5.6 mg/L In Blood (unspecified) @ Unknown
		benzodiazepine	2	2						
		opioid	3	3						
		oxazepam	4	4					oxazepam	1638 ng/mL In Urine (quantitative only) @ Unknown
		temazepam	5	5					temazepam	18714 ng/mL In Urine (quantitative only) @ Unknown
		morphine	6	6						
620ai	62 y M				A	Ingst	Int-U	2		
		oxycodone	1	1						
621ai	62 y F				U	Ingst	Int-A	2		
		hydrocodone	1	1						
		morphine	2	2						
622 ph	62 y F				A	Ingst	Int-S	2		
		tramadol	1	1						
		trazodone	2	2						
		eszopiclone	3	3						
		diazepam	4	4						
623 ha	62 y M				C	Ingst	AR-D	3		
		acetaminophen	1	1					acetaminophen	124 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	39 mg/dL In Blood (unspecified) @ Unknown
624	63 y M				A	Ingst	Int-S	1		
		salicylate	1	1						
		ethanol (non-beverage)	2	2						
625 h	63 y M				A	Ingst	Int-S	3		
		acetaminophen/oxycodone	1	1						
		oxycodone	2	2						
		cocaine	3	3						
626	63 y M				A/C	Ingst	Int-S	3		
		acetaminophen/oxycodone	1	1					acetaminophen	141 mcg/mL In Serum @ Unknown
627	63 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1						
628ai	63 y F				A	Ingst + Derm	Int-U	2		
		fentanyl	1	1						
		hydrocodone	2	2						
		temazepam	3	3						
629	63 y M				U	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	195.4 mcg/mL In Blood (unspecified) @ 1 h (pe)
630	63 y M				U	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1					acetaminophen	121 mcg/mL In Blood (unspecified) @ 10 h (pe)
		insulin	2	2						
631 h	63 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	385.5 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
632 h	63 y M				A/C	Ingst	Unk	3		
		hydromorphone	1	1					hydromorphone	0 mg/mL In Blood (unspecified) @ Unknown
		morphine (extended release)	2	2					morphine	0 mg/mL In Blood (unspecified) @ Unknown
		diazepam	3	3					diazepam	0 mg/mL In Blood (unspecified) @ Unknown
633pha	64 y F				U	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
634 h	64 y F				A	Ingst	Int-S	3		
		acetaminophen	1	1						
		levetiracetam	2	2						
635pa	64 y F				U	Ingst	Int-S	1		
		oxycodone	1	1					oxycodone (free)	1000 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	1	1					oxymorphone (total)	8.7 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	79 mg/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
		alprazolam	3	3					alprazolam	15 mcg/mL In Blood (unspecified) @ Autopsy
		duloxetine	4	4					duloxetine	50 ng/mL In Blood (unspecified) @ Autopsy
636 ph	64 y M				A	Ingst	Int-S	2		
		acetaminophen*	1	1						
		zolpidem*	2	1						
637	65 y M				U	Ingst	Unk	2		
		acetaminophen	1	1						
638	65 y F				C	Ingst	Int-M	1		
		oxycodone	1	1						
		oxycodone	2	2						
639pa	65 y F				A/C	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	159 mcg/mL In Blood (unspecified) @ 24 h (pe)
		acetaminophen	1	1					acetaminophen	304 mcg/mL In Blood (unspecified) @ 20 m (pe)
		acetaminophen	1	1					acetaminophen	370 mcg/mL In Blood (unspecified) @ 47 h (pe)
		acetaminophen	1	1					acetaminophen	441 mcg/mL In Blood (unspecified) @ 42 h (pe)
		acetaminophen	1	1					acetaminophen	442 mcg/mL In Urine (quantitative only) @ Unknown
		acetaminophen	1	1					acetaminophen	462.9 mcg/mL In Blood (unspecified) @ 40 h (pe)
		acetaminophen	1	1					acetaminophen	80.5 mcg/mL In Blood (unspecified) @ 61 h (pe)
		olanzapine	2	2						
640	65 y M				U	Ingst	Unt-T	3		
		methadone	1	1						
		morphine	2	2						
		corticosteroids	3	3						
641 h	65 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	131.7 mg/dL In Blood (unspecified) @ 9 h (pe)
		salicylate	1	1					salicylate	75.4 mg/dL In Blood (unspecified) @ 45 m (pe)
642ai	65 y F				U	Ingst	Int-U	2		
		oxycodone	1	1						
643 h	65 y F				A	Ingst	Unk	3		
		acetaminophen/ hydrocodone	1	1					acetaminophen	81.6 mcg/mL In Serum @ Unknown
644ai	66 y M				U	Ingst	Int-U	2		
		tramadol	1	1						
		diphenhydramine	2	2						
645 h	66 y F				U	Ingst	Unk	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	163 mcg/mL In Serum @ 0.5 h (pe)
		acetaminophen/ hydrocodone	1	1					acetaminophen	29 mcg/mL In Serum @ 8 h (pe)
		drug, unknown	2	2						
646 ha	66 y F				A	Ingst	Int-M	1		
		acetaminophen/ oxycodone	1	1					acetaminophen	30.8 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ oxycodone	1	1					acetaminophen	52.5 mcg/mL In Blood (unspecified) @ Unknown
647	66 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	129.9 mg/dL In Blood (unspecified) @ Unknown
		atorvastatin	2	2						
648 ha	66 y F				A	Ingst	Int-S	1		
		acetaminophen/ oxycodone	1	1						
649pa	67 y F				A/C	Ingst	Int-S	1		
		oxycodone	1	1					oxycodone	2503 ng/mL In Blood (unspecified) @ Unknown
		oxycodone	1	1					oxymorphone	50.9 ng/mL In Blood (unspecified) @ Unknown
		zolpidem	2	2						
		hydrocodone	3	3					hydrocodone	63.3 ng/mL In Blood (unspecified) @ Unknown
		lorazepam	4	4					lorazepam	39.2 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
650	67 y F				C	Ingst	Unt-M	1		
		acetaminophen	1	1					acetaminophen	229 mcg/mL In Blood (unspecified) @ 1 h (pe)
651 h	67 y M				U	Ingst	Int-S	2		
		tramadol	1	1						
		diclofenac	2	2						
		drug, unknown	3	3						
		opioid	4	4						
652 h	67 y F				U	Ingst	Unk	2		
		acetaminophen/ oxycodone*	1	1						
		hydromorphone*	2	1						
		citalolpram	3	3						
653i	68 y M				U	Ingst	Unk	3		
		salicylate	1	1					salicylate	65 mg/dL In Serum @ Unknown
		acetaminophen	2	2					acetaminophen	13 mg/L In Serum @ Unknown
654	68 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	319 mg/L In Plasma @ Unknown
655ai	68 y M				U	Ingst	Int-U	2		
		hydrocodone	1	1						
		carisoprodol	2	2						
656 p	68 y F				A/C	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	118 mcg/mL In Blood (unspecified) @ 24 h (pe)
		clonazepam	2	2						
657	68 y M				U	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen	50.9 mcg/mL In Serum @ Unknown
658 ha	69 y M				A	Ingst	Int-S	1		
		oxycodone	1	1					oxycodone (free)	0.86 mcg/mL In Whole Blood @ Autopsy
		oxycodone	1	1					oxycodone (free)	5.3 mg/mL In Plasma @ Unknown
		diazepam	2	2						
		temazepam	3	3					temazepam	2 mcg/mL In Plasma @ Unknown
659 h	69 y F				A	Ingst	Unk	2		
		opioid	1	1						
		benzodiazepine	2	2						
		acetaminophen	3	3					acetaminophen	14.4 mcg/mL In Serum @ Unknown
		cyclic antidepressant, unknown	4	4						
660 p	70 y F				A	Ingst	Int-S	1		
		oxycodone	1	1						
		ethanol	2	2					ethanol	120 mg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	3	3					acetaminophen	92 mcg/mL In Blood (unspecified) @ Unknown
661 h	70 y M				A/C	Ingst	Int-S	1		
		salicylate	1	1					salicylate	95.3 mg/dL In Serum @ Unknown
		fluoxetine	2	2						
662	71 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	959 mcg/mL In Blood (unspecified) @ Unknown
		quetiapine	2	2						
		alprazolam	3	3						
		acetaminophen/ hydrocodone	4	4						
[663ha]	71 y M				A	Ingst	Int-S	1		
		tramadol	1	1					tramadol	18000 ng/mL In Blood (unspecified) @ 5 m (pe)
		tramadol	1	1					o-demethyl tramadol	780 ng/mL In Blood (unspecified) @ 5 m (pe)
664 p	71 y M				A	Ingst	Int-S	1		
		acetaminophen/ oxycodone	1	1					acetaminophen	96 mcg/mL In Blood (unspecified) @ Unknown
665	72 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	82 mcg/mL In Blood (unspecified) @ Unknown
666 h	72 y F				U	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen	3.4 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen	5.6 mcg/mL In Blood (unspecified) @ Unknown
667 h	72 y F				A/C	Ingst	Int-S	3		
		oxycodone	1	1						
668	74 y F				U	Ingst	Int-S	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
		acetaminophen	1	1					acetaminophen	544 mcg/mL In Unknown @ Unknown
		alprazolam	2	2						
669	74 y M				C	Ingst	Unk	3		
		acetaminophen/ oxycodone	1	1					acetaminophen	10 mcg/mL In Blood (unspecified) @ 2 d (pe)
		acetaminophen/ oxycodone	1	1					acetaminophen	18 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
670 ha	75 y F				A/C	Ingst + Aspir	Int-S	2		
		acetaminophen/ hydrocodone	1	1					hydrocodone	203 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	1	1					hydrocodone	60 ng/mL In Urine (quantitative only) @ Autopsy
		temazepam	2	2					oxazepam	104 ng/mL In Urine (quantitative only) @ Autopsy
		temazepam	2	2					temazepam	2600 ng/mL In Urine (quantitative only) @ Autopsy
		temazepam	2	2					temazepam	561 ng/mL In Blood (unspecified) @ Autopsy
671ai	75 y M				A	Ingst	Int-U	2		
		hydrocodone	1	1						
672 ha	76 y F				A/C	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
		acetaminophen	2	2					acetaminophen	11.2 mcg/mL In Blood (unspecified) @ 87 h (pe)
		acetaminophen	2	2					acetaminophen	128.8 mcg/mL In Blood (unspecified) @ 1 h (pe)
		acetaminophen	2	2					acetaminophen	136.7 mcg/mL In Blood (unspecified) @ 50 h (pe)
		acetaminophen	2	2					acetaminophen	161.6 mcg/mL In Blood (unspecified) @ 47 h (pe)
		acetaminophen	2	2					acetaminophen	26.6 mcg/mL In Blood (unspecified) @ 81 h (pe)
		acetaminophen	2	2					acetaminophen	41.6 mcg/mL In Blood (unspecified) @ 14 h (pe)
		acetaminophen	2	2					acetaminophen	43.9 mcg/mL In Blood (unspecified) @ 70 h (pe)
		acetaminophen	2	2					acetaminophen	47.4 mcg/mL In Blood (unspecified) @ 34 h (pe)
		acetaminophen	2	2					acetaminophen	85.9 mcg/mL In Blood (unspecified) @ 5 h (pe)
		acetaminophen	2	2					acetaminophen	95.5 mcg/mL In Blood (unspecified) @ 58 h (pe)
		diazepam	3	3					diazepam	201 ng/mL In Blood (unspecified) @ 25 h (pe)
673 h	76 y F				A/C	Ingst	Int-U	2		
		acetaminophen/butalbital/ caffeine	1	1						
674 p	77 y M				A	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen	27 mcg/mL In Blood (unspecified) @ 1 h (pe)
675 ha	78 y F				A	Ingst	Int-S	1		
		acetaminophen/ oxycodone*	2	1					acetaminophen	97.6 mg/mL In Serum @ 4 h (pe)
		morphine*	1	1						
676	79 y F				A/C	Ingst	Int-S	3		
		oxycodone	1	1						
		zolpidem	2	2						
677	79 y M				A/C	Ingst	Int-S	3		
		oxycodone	1	1						
678 h	79 y F				C	Ingst	Unt-T	3		
		acetaminophen	1	1					acetaminophen	13 mcg/mL In Blood (unspecified) @ Unknown
679 h	79 y F				U	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	67 mcg/mL In Serum @ 24 h (pe)
680	80 y F				A/C	Ingst	Int-M	3		
		acetaminophen/ oxycodone	1	1					acetaminophen	79 mcg/mL In Serum @ 7 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
681 ha	82 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	640 mcg/mL In Blood (unspecified) @ Autopsy
		salicylate	1	1					salicylate	82 mg/dL In Blood (unspecified) @ Unknown
		warfarin	2	2						
682 h	83 y F				U	Ingst	Int-U	1		
		acetaminophen	1	1					acetaminophen	285 mcg/mL In Serum @ Unknown
683 a	83 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	130 mg/dL In Blood (unspecified) @ 3 h (pe)
		salicylate	1	1					salicylate	900 mcg/mL In Blood (unspecified) @ Autopsy
684	84 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	291 mcg/mL In Blood (unspecified) @ Unknown
685 h	84 y M				C	Ingst	Unk	3		
		tramadol	1	1						
		citalopram	2	2						
686 p	86 y M				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	130 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					dihydrocodeine/ hydrocodol (free)	21 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					hydromorphone	3.1 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					hydrocodone (free)	340 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					acetaminophen	94 mcg/mL In Blood (unspecified) @ Unknown
687 ha	89 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	146 mcg/mL In Serum @ 7.5 h (pe)
		acetaminophen	1	1					acetaminophen	504 mcg/mL In Serum @ 15 m (pe)
		diphenhydramine	2	2						
		naproxen	3	3						
		ibuprofen	4	4						
[688ha]	90 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	814 mcg/mL In Serum @ 4 h (pe)
689	96 y F				C	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen	50.8 mg/L In Plasma @ Unknown
		salicylate	2	2						
		hydrochlorothiazide/ lisinopril	3	3						
690 pi	18 m M				U	Ingst	Unk	2		
		morphine	1	1						
[691pa]	18 m F				A	Unk	Unk	1		
		morphine	1	1					morphine	1300 ng/mL In Whole Blood @ Autopsy
		morphine	1	1					morphine	2100 ng/mL In Gastric (stomach content) @ Autopsy
[692pa]	23 m M				A	Ingst	Unt-U	1		
		oxycodone	1	1					oxymorphone	20.8 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	1	1					oxymorphone	2514 ng/mL In Urine (quantitative only) @ Autopsy
		oxycodone	1	1					oxycodone	3518 ng/mL In Urine (quantitative only) @ Autopsy
		oxycodone	1	1					oxycodone	838 ng/mL In Blood (unspecified) @ Autopsy
		carisoprodol	2	2					meprobamate	19.84 mcg/mL In Blood (unspecified) @ Autopsy
		carisoprodol	2	2					carisoprodol	27.47 mcg/mL In Blood (unspecified) @ Autopsy
		carisoprodol	2	2					meprobamate	33149 ng/mL In Urine (quantitative only) @ Autopsy
		carisoprodol	2	2					carisoprodol	4099 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
		clonazepam	3	3					7-aminoclonazepam	196 ng/mL In Urine (quantitative only) @ Autopsy
		clonazepam	3	3					7-aminoclonazepam	54.6 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	3	3					clonazepam	9.2 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	4	4					alprazolam	15.1 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	4	4					alpha-oh-alprazolam	343 ng/mL In Urine (quantitative only) @ Autopsy
		alprazolam	4	4					alprazolam	73 ng/mL In Urine (quantitative only) @ Autopsy
		ethanol	5	5					ethanol	0.062 % (wt/Vol) In Urine (quantitative only) @ Autopsy
		cleaner (ammonia)	6	6						
		laundry (prewash)	7	7						
		laundry (prewash)	8	8						
		cleaner (anionic/nonionic)	9	9						
		bath salts	10	10						
693pai	Unknown adult (>=20 yrs) M				A	Par	Int-A	2		
		fentanyl	1	1						
		heroin	2	2						
		ethanol	3	3						
694 pi	Unknown age M				A	Unk	Unk	2		
		opioid	1	1						
See Also case 1, 3, 5, 8, 11, 17, 28, 29, 30, 33, 42, 43, 53, 76, 78, 124, 138, 179, 192, 293, 700, 702, 704, 710, 725, 728, 733, 738, 744, 752, 755, 757, 759, 760, 770, 776, 782, 784, 788, 805, 806, 808, 811, 812, 813, 815, 822, 826, 830, 835, 840, 841, 843, 849, 854, 855, 856, 863, 869, 870, 878, 885, 892, 896, 897, 899, 904, 931, 939, 948, 953, 966, 974, 976, 982, 983, 997, 999, 1004, 1006, 1011, 1028, 1030, 1048, 1052, 1053, 1055, 1056, 1061, 1062, 1067, 1068, 1070, 1077, 1087, 1098, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1113, 1114, 1116, 1119, 1120, 1122, 1124, 1128, 1129, 1130, 1133, 1139, 1144, 1151, 1154, 1157, 1160, 1165, 1177, 1181, 1182, 1185, 1186, 1191, 1194, 1209, 1210, 1214, 1226, 1237, 1241, 1244, 1258, 1259, 1261, 1275, 1282, 1286, 1287, 1298, 1299, 1300, 1309, 1311, 1314, 1315, 1318, 1320, 1328, 1334, 1343, 1345, 1347, 1351, 1356, 1358, 1360, 1363, 1377, 1382, 1385, 1392, 1397, 1406										
Anesthetics										
[695ph]	15 y F				A	Ingst	Int-S	1		
		lidocaine	1	1						
[696h]	24 y M				A	Unk	Int-U	1		
		methoxetamine (MXE)	1	1						
697 p	47 y F				A	Ingst	Int-S	2		
		lidocaine	1	1						
See Also case 6, 12, 1129, 1261										
Anticoagulants										
698	57 y M				A/C	Ingst	Int-S	3		
		apixiban	1	1						
		zolpidem (extended release)	2	2						
[699h]	67 y M				C	Ingst	AR-D	2		
		fondaparinux	1	1						
700 h	69 y F				A/C	Ingst	Unt-T	2		
		warfarin	1	1						
		acetaminophen	2	2					acetaminophen	116 mcg/mL In Blood (unspecified) @ Unknown
701 ph	70 y M				A/C	Ingst	AR-D	2		
		rivaroxaban	1	1						
702 p	72 y F				A	Ingst	Int-S	2		
		warfarin	1	1						
		naproxen	2	2						
		acetaminophen	3	3						
		sertraline	4	4						
		antihyperlipidemic	5	5						
		ibuprofen	6	6						
		drug, unknown	7	7						
		ethanol	8	8						
703 h	75 y F				C	Ingst	AR-D	2		
		factor Xa inhibitor	1	1						
704	76 y F				C	Ingst	Int-S	1		
		dabigatran	1	1						
		acetaminophen/oxycodone	2	2					acetaminophen	128 mcg/mL In Serum @ 10 m (pe)
705 h	79 y M				C	Ingst	AR-D	3		
		dabigatran	1	1						
706 h	80 y M				C	Ingst	AR-D	2		
		factor Xa inhibitor	1	1						
707 h	83 y F				A/C	Ingst	AR-D	3		
		rivaroxaban	1	1						
708 h	85 y F				C	Ingst	Unk	1		
		thrombin inhibitor	1	1						
See Also case 391, 579, 681, 730, 906, 917, 932, 981, 983, 987, 991, 1002, 1007, 1028										
Anticonvulsants										
[709ha]	20 y F				U	Ingst	Int-S	1		
		topiramate	1	1					topiramate	51000 ng/mL In Serum @ Unknown
		ethanol	2	2						
710 ha	21 y F				A/C	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
		carbamazepine	1	1					carbamazepine	12 mcg/mL In Blood (unspecified) @ Autopsy
		lamotrigine	2	2					lamotrigine	5.7 mcg/mL In Blood (unspecified) @ Autopsy
		fluoxetine	3	3					fluoxetine	0.3 mcg/mL In Blood (unspecified) @ Autopsy
		hydroxyzine	4	4						
		ibuprofen	5	5						
711 h	22 y F				A/C	Ingst	Int-S	2		
		lamotrigine	1	1						
		clonazepam	2	2						
712 ha	35 y F				C	Ingst	AR-D	3		
		zonisamide	1	1						
		levetiracetam	2	2						
713	36 y F				A	Ingst	Int-S	2		
		gabapentin	1	1						
		ethanol	2	2					ethanol	15 mg/dL In Blood (unspecified) @ Unknown
714 ph	42 y F				A	Ingst	Int-S	2		
		lamotrigine	1	1						
		venlafaxine	2	2						
		aripiprazole	3	3						
		bupropion	4	4						
715	44 y F				A/C	Ingst	Int-S	1		
		lamotrigine	1	1						
		clonidine	2	2						
		ethanol	3	3					ethanol	145 mg/dL In Blood (unspecified) @ Unknown
716	44 y F				A/C	Ingst	Int-S	2		
		zonisamide	1	1						
		benzodiazepine	2	2						
717	47 y F				A	Ingst + Par	Int-S	2		
		lamotrigine	1	1						
		insulin	2	2						
		fluoxetine	3	3						
		eszopiclone	4	4						
		alprazolam	5	5						
718 h	48 y F				A/C	Ingst	Int-S	1		
		lamotrigine	1	1						
		trazodone	2	2						
719	52 y F				A/C	Ingst	Int-S	2		
		valproic acid	1	1					valproic acid	150 mcg/mL In Blood (unspecified) @ Unknown
		lamotrigine	2	2						
		paroxetine	3	3						
		citalopram	4	4						
720 a	53 y F				U	Ingst	Int-U	2		
		pregabalin	1	1						
		clonazepam	2	2						
		ethanol	3	3						
721 p	54 y F				A	Ingst	Int-S	2		
		carbamazepine	1	1					carbamazepine	19.7 mg/L In Serum @ Unknown
		nortriptyline	2	2						
		diazepam	3	3						
		lorazepam	4	4						
		mirtazapine	5	5						
		gabapentin	6	6						
722 p	55 y M				U	Ingst	Unk	2		
		gabapentin	1	1						
		ethanol	2	2					ethanol	53 mg/dL In Blood (unspecified) @ Unknown
723 p	55 y M				U	Ingst	Unk	2		
		gabapentin	1	1						
724 h	56 y M				A/C	Ingst	Int-S	2		
		valproic acid	1	1					valproic acid	199 mcg/mL In Blood (unspecified) @ 7 h (pe)
		valproic acid	1	1					valproic acid	284 mcg/mL In Blood (unspecified) @ 4 h (pe)
		valproic acid	1	1					valproic acid	330 mcg/mL In Blood (unspecified) @ 1 h (pe)
		quetiapine	2	2						
725 h	58 y F				A	Ingst	Int-S	2		
		lamotrigine	1	1						
		ethanol	2	2					ethanol	148 mg/dL In Unknown @ Unknown
		opioid	3	3						
726 ph	61 y M				A/C	Ingst	Int-S	1		
		lamotrigine	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
727 a	67 y M				A/C	Ingst	Int-S	1		
		valproic acid	1	1					valproic acid	129 mg/mL In Blood (unspecified) @ Unknown
		trazodone	2	2						
		olanzapine	3	3						
		amantadine	4	4						
		haloperidol	5	5						
		fenofibrate	6	6						
		fosinopril	7	7						
		tamulosin	8	8						
728	69 y F				C	Ingst	Int-S	2		
		gabapentin	1	1						
		acetaminophen	2	2						
		paroxetine	3	3						
729 h	71 y F				A/C	Ingst	AR-D	3		
		phenytoin	1	1					phenytoin	35.1 mcg/mL In Blood (unspecified) @ 10 d (pe)
		phenytoin	1	1					phenytoin	36 mcg/mL In Blood (unspecified) @ 8 d (pe)
		phenytoin	1	1					phenytoin	42.5 mcg/mL In Blood (unspecified) @ 5 d (pe)
		phenytoin	1	1					phenytoin	46.8 mcg/mL In Blood (unspecified) @ 1 h (pe)
		phenytoin	1	1					phenytoin	50.2 mcg/mL In Blood (unspecified) @ 2 d (pe)
		phenytoin	1	1					phenytoin	51.5 mcg/mL In Blood (unspecified) @ 3 d (pe)
730 h	73 y F				C	Ingst	Unt-T	3		
		phenytoin	1	1						
		warfarin	2	2						
731 h	75 y F				A	Ingst	Int-S	2		
		valproic acid (extended release)	1	1						
		alprazolam	2	2						
See Also case 335, 337, 359, 360, 363, 406, 423, 427, 441, 472, 514, 540, 541, 552, 584, 588, 634, 732, 734, 746, 749, 755, 760, 761, 764, 766, 769, 776, 777, 780, 786, 788, 793, 797, 814, 819, 821, 838, 843, 851, 867, 872, 877, 889, 892, 894, 899, 901, 904, 908, 917, 925, 929, 931, 935, 947, 956, 964, 999, 1024, 1042, 1052, 1067, 1073, 1078, 1115, 1116, 1131, 1132, 1137, 1140, 1144, 1146, 1152, 1176, 1259, 1298, 1314, 1320, 1337										
Antidepressants										
732pa	8 y M				A	Ingst	Unt-G	3		
		nortriptyline	1	1					nortriptyline	3000 ng/mL In Whole Blood @ Autopsy
		trazodone	2	2						
		atomoxetine	3	3						
		valproic acid	4	4					valproic acid	12 mcg/mL In Whole Blood @ Autopsy
		lamotrigine	5	5					lamotrigine	1.5 mcg/mL In Whole Blood @ Autopsy
733	15 y F				A	Ingst	Int-S	2		
		citalopram	1	1						
		morphine	2	2						
		acetaminophen/ hydrocodone	3	3						
		oxycodone	4	4						
		temazepam	5	5						
734pa	16 y F				A	Ingst	Int-S	1		
		bupropion	1	1					bupropion	1400 ng/mL In Whole Blood @ Unspecified
		amphetamine	2	2					amphetamine	170 ng/mL In Whole Blood @ Unspecified
		caffeine/herbs/green tea	3	3						
		valproic acid	4	4					valproic acid	5 mcg/mL In Serum @ 1 h (pe)
735 h	17 y M				C	Ingst	AR-D	3		
		lithium	1	1						
736 h	18 y M				A	Ingst	Int-S	1		
		bupropion (extended release)	1	1						
737pa	19 y M				A/C	Ingst + Aspir	Int-S	1		
		doxepin	1	1						
738 h	19 y F				A/C	Ingst	Int-S	1		
		venlafaxine	1	1						
		trazodone	2	2						
		acetaminophen/caffeine	3	3						
739	20 y F				A	Ingst	Int-S	2		
		bupropion	1	1						
740ai	20 y M				A	Ingst	Int-S	2		
		citalopram	1	1						
741pha	21 y F				A	Ingst	Int-S	1		
		venlafaxine	1	1					venlafaxine	19.4 mg/L In Blood (unspecified) @ Autopsy
		benzodiazepine	2	2					alprazolam	0.04 mg/L In Blood (unspecified) @ Autopsy
742 p	22 y F				A	Ingst	Int-S	2		
		escitaopram	1	1						
		diazepam	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
743	22 y M				A/C	Ingst	Int-S	1		
		bupropion	1	1						
		clonazepam	2	2						
		clonidine	3	3						
744pa	24 y F				A	Ingst	Int-U	1		
		bupropion	1	1					bupropion	1.2 mg/L In Blood (unspecified) @ Autopsy
		nonsteroidal antiinflammatory	2	2						
		drug, unknown	3	3						
745 h	25 y F				A	Ingst + Aspir	Unk	2		
		citalolpram	1	1						
		alprazolam	2	2						
746 a	25 y M				A	Ingst + Aspir	Int-S	1		
		bupropion (extended release)	1	1						
		escitalopram	2	2						
		lamotrigine	3	3						
		clonazepam	4	4						
747 h	25 y F				A/C	Ingst + Aspir	Int-S	2		
		amitriptyline	1	1						
		activated charcoal*	2	2						
		sertraline*	3	2						
		zolpidem	4	3						
748 h	27 y M				U	Ingst	Unk	2		
		lithium	1	1					lithium	2.8 mmol/L In Blood (unspecified) @ Unknown
		lithium	1	1					lithium	6 mmol/L In Blood (unspecified) @ 30 m (pe)
749 ha	27 y F				A	Ingst	Int-S	1		
		amitriptyline	1	1					amitriptyline	175 ng/mL In Blood (unspecified) @ Unknown
		amitriptyline	1	1					nortriptyline	204 ng/mL In Blood (unspecified) @ Unknown
		amitriptyline	1	1					amitriptyline	240 ng/mL In Blood (unspecified) @ Unknown
		chlorpromazine	2	2					chlorpromazine	68 ng/mL In Blood (unspecified) @ Unknown
		citalopram	3	3					citalopram	323 ng/mL In Blood (unspecified) @ Unknown
		gabapentin	4	4					gabapentin	1.9 mcg/mL In Blood (unspecified) @ Unknown
		zolpidem	5	5					zolpidem	398 ng/mL In Blood (unspecified) @ Unknown
		cocaine	6	6					benzoylecognine	2730 ng/mL In Urine (quantitative only) @ Unknown
		alprazolam	7	7					alprazolam	4.3 ng/mL In Blood (unspecified) @ Unknown
750 ha	29 y M				A	Ingst	Int-S	1		
		bupropion	1	1					bupropion	1800 ng/mL In Blood (unspecified) @ 3 d (pe)
		bupropion	1	1					hydroxybupropion	2300 ng/mL In Blood (unspecified) @ 2 h (pe)
		bupropion	1	1					hydroxybupropion	5000 ng/mL In Blood (unspecified) @ 3 d (pe)
		bupropion	1	1					bupropion	730 ng/mL In Blood (unspecified) @ 2 h (pe)
751 h	30 y F				U	Ingst	Int-S	2		
		citalopram	1	1						
752	30 y F				A/C	Ingst	Int-S	3		
		sertraline	1	1						
		ibuprofen	2	2						
		ethanol	3	3						
753pha	31 y F				A	Ingst	Int-S	1		
		lithium	1	1					lithium	9.15 mEq/L In Serum @ Unknown
		beta blocker	2	2						
		bupropion	3	3						
		benzodiazepine	4	4						
		metformin	5	5						
[754ha]	31 y F				A/C	Ingst	Int-S	2		
		venlafaxine	1	1					venlafaxine	26 mg/L In Blood (unspecified) @ Unknown
		venlafaxine	1	1					venlafaxine	80 mg/kg In Liver @ Autopsy
755 ha	33 y M				A/C	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
		escitalopram	1	1					citralopram	2336 ng/mL In Blood (unspecified) @ Unknown
		dextromethorphan	2	2					dextromethorphan	645 ng/mL In Blood (unspecified) @ Unknown
		cyclobenzaprine	3	3					cyclobenzaprine	16.9 ng/mL In Blood (unspecified) @ Unknown
		topiramate	4	4					topiramate	7 mcg/mL In Blood (unspecified) @ Unknown
		chlorpheniramine	5	5					chlorpheniramine	104 ng/mL In Blood (unspecified) @ Unknown
		meloxicam	6	6						
		trazodone	7	7						
		olanzapine	8	8						
		sumatriptan	9	9						
		benzonatate	10	10						
		buspirone	11	11						
756 ph	33 y M				A/C	Ingst	Int-S	1		
		nortriptyline	1	1						
		propranolol	2	2						
757 h	33 y F				U	Ingst	Int-S	2		
		venlafaxine	1	1						
		tramadol	2	2						
		promethazine	3	3						
758ai	36 y M				U	Ingst	Int-U	2		
		doxepin	1	1						
		citalopram	2	2						
759 ha	37 y F				A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
		opioid	2	2						
		alprazolam	3	3						
		clonazepam	4	4						
760	37 y F				C	Ingst	Int-S	2		
		amitriptyline	1	1						
		pregabalin	2	2						
		acetaminophen/butalbital/caffeine	3	3						
761	37 y F				A	Ingst	Int-S	2		
		trazodone	1	1						
		hydralazine	2	2						
		carbamazepine	3	3						
762 ph	38 y M				A/C	Ingst	Int-S	2		
		lithium	1	1						
763 ha	38 y F				A/C	Ingst	Int-S	2		
		lithium	1	1					lithium	10 mmol/L In Serum @ 0 d (pe)
		lithium	1	1					lithium	5.9 mmol/L In Serum @ 2 d (pe)
		quetiapine	2	2						
		sertraline	3	3						
764 h	39 y M				A/C	Ingst + Par	Int-S	3		
		bupropion	1	1						
		lamotrigine	2	2						
		clonidine	3	3						
		haloperidol	4	4						
		ethanol	5	5					ethanol	59 mg/dL In Blood (unspecified) @ Unknown
765 ha	39 y M				A/C	Ingst	Int-S	1		
		bupropion (extended release)	1	1					bupropion	3700 ng/mL In Blood (unspecified) @ Unknown
		bupropion (extended release)	1	1					hydroxybupropion	980 ng/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	252 mg/dL In Blood (unspecified) @ Unknown
766 ha	39 y F				A/C	Ingst	Int-S	2		
		bupropion	1	1					bupropion	1900 ng/mL In Blood (unspecified) @ 1 h (pe)
		bupropion	1	1					hydroxybupropion	5100 mg/mL In Blood (unspecified) @ 1 h (pe)
		topiramate	2	2					topiramate	15000 ng/mL In Blood (unspecified) @ 1 h (pe)
		clonazepam	3	3					clonazepam	42 ng/mL In Blood (unspecified) @ 1 h (pe)
		clonazepam	3	3					7-aminoclonazepam	91 ng/mL In Blood (unspecified) @ 1 h (pe)
		lorazepam	4	4					lorazepam	11 ng/mL In Blood (unspecified) @ 1 h (pe)
		metoprolol	5	5						
		vortioxetine	6	6						
		meclizine	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
767 p	39 y F				U	Ingst	Int-S	1		
		amitriptyline	1	1						
768 h	40 y F				A/C	Ingst	Unk	3		
		amitriptyline	1	1						
769pha	41 y M				U	Ingst	Int-S	2		
		amitriptyline	1	1					nortriptyline	378 ng/mL In Blood (unspecified) @ Unknown
		amitriptyline	1	1					amitriptyline	489 ng/mL In Blood (unspecified) @ Unknown
		amlodipine	2	2						
		levetiracetam	3	3					levetiracetam	11.7 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	4	4					ethanol	21 mg/dL In Blood (unspecified) @ Unknown
		ethanol	4	4					ethanol	37 mg/dL In Vitreous @ Unknown
770 ph	41 y F				A	Ingst	Int-S	2		
		bupropion	1	1						
		buprenorphine/ naloxone (film)	2	2						
		aripiprazole	3	3						
		venlafaxine	4	4						
		amphetamine/ dextroamphetamine	5	5						
		quetiapine	6	6						
771 a	42 y M				A	Ingst	Int-S	2		
		citalopram	1	1					citalopram	0.46 mg/L In Blood (unspecified) @ Unknown
		verapamil	2	2					verapamil	0.52 mg/L In Blood (unspecified) @ Unknown
		promethazine	3	3					promethazine	0.18 mg/L In Blood (unspecified) @ Unknown
		ethanol	4	4					ethanol	110 mg/dL In Blood (unspecified) @ Unknown
772 ha	42 y F				A	Ingst	Int-S	3		
		bupropion	1	1					bupropion	358 ng/mL In Blood (unspecified) @ Unknown
		bupropion	1	1					bupropion	6255 ng/mL In Blood (unspecified) @ Unknown
		trazodone	2	2						
773 h	42 y M				A	Ingst	Int-S	2		
		amitriptyline	1	1						
		carvedilol	2	2						
774	44 y F				C	Ingst	Int-S	2		
		bupropion	1	1						
		venlafaxine	2	2						
		clonazepam	3	3						
		fluoxetine	4	4						
		ethanol	5	5					ethanol	159 mg/dL In Blood (unspecified) @ Unknown
775	44 y M				A/C	Ingst	Int-S	1		
		bupropion (extended release)	1	1						
		venlafaxine (extended release)	2	2						
776 a	44 y F				A/C	Ingst	Int-S	1		
		citalopram	1	1						
		ethanol	2	2						
		oxycodone	3	3						
		lamotrigine	4	4						
777 p	45 y F				U	Ingst	Int-S	3		
		trazodone	1	1						
		gabapentin	2	2						
		cyclobenzaprine	3	3						
778 h	45 y M				A	Ingst	Int-S	2		
		amitriptyline	1	1						
		paroxetine	2	2						
		lorazepam	3	3						
779 p	45 y F				U	Ingst	Int-S	2		
		amitriptyline	1	1						
		metoprolol	2	2						
		clonazepam	3	3						
		cyclobenzaprine	4	4						
780 ph	46 y F				A	Ingst	Int-S	3		
		amitriptyline	1	1					amitriptyline	1864 ng/mL In Blood (unspecified) @ Unknown
		gabapentin	2	2						
781	47 y M				A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
782 p	47 y M				U	Ingst + Unk	Int-S	2		
		cyclic antidepressant, unknown	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
		opioid	2	2						
		ethanol	3	3					ethanol	79 mg/dL In Blood (unspecified) @ Unknown
783 p	47 y M				A	Ingst	Int-S	1		
		doxepin	1	1						
784	47 y F				A/C	Ingst	Int-S	1		
		amitriptyline	1	1					amitriptyline	2514 ng/mL In Serum @ Unknown
		amitriptyline	1	1					nortriptyline	961 ng/mL In Serum @ Unknown
		alprazolam	2	2					alprazolam	187 ng/mL In Serum @ Unknown
		acetaminophen/ hydrocodone	3	3						
		metoprolol	4	4					metoprolol	60.2 ng/mL In Serum @ Unknown
		paroxetine	5	5					paroxetine	426 ng/mL In Serum @ Unknown
785 a	48 y F				A/C	Ingst	Int-S	1		
		citalopram	1	1					citalopram	685 ng/mL In Blood (unspecified) @ Autopsy
		quetiapine	2	2					quetiapine	7864 ng/mL In Blood (unspecified) @ Autopsy
		metformin	3	3						
		diazepam	4	4					diazepam	184 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	4	4					nordiazepam	278 ng/mL In Blood (unspecified) @ Autopsy
		benztropine	5	5					benztropine mesylate	34.4 ng/mL In Blood (unspecified) @ Autopsy
786 ph	48 y M				A	Ingst	Int-S	1		
		venlafaxine	1	1					venlafaxine	1919 ng/mL In Blood (unspecified) @ 2 h (pe)
		venlafaxine	1	1					norvenlafaxine	999 ng/mL In Blood (unspecified) @ 2 h (pe)
		lamotrigine	2	2						
		paroxetine	3	3						
787 h	49 y F				U	Ingst	Int-S	2		
		cyclic antidepressant, unknown	1	1						
		benzodiazepine	2	2						
788 h	49 y F				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		diazepam	2	2						
		baclofen	3	3						
		trazodone	4	4						
		ibuprofen	5	5						
		ranitidine	6	6						
		hydrochlorothiazide	7	7						
		valsartan	8	8						
		gabapentin	9	9						
		levothyroxine	10	10						
		simvastatin	11	11						
		omeprazole	12	12						
		melatonin	13	13						
789pha	50 y M				U	Unk	Int-S	2		
		doxepin	1	1					desmethyldoxepin	200 ng/mL In Blood (unspecified) @ Autopsy
		doxepin	1	1					doxepin	46 ng/mL In Blood (unspecified) @ Autopsy
		aripiprazole*	3	2					aripiprazole	66 ng/mL In Blood (unspecified) @ Autopsy
		metoprolol*	2	2						
		sildenafil	4	4						
790	50 y F				U	Ingst	Int-S	2		
		duloxetine	1	1						
		alprazolam	2	2						
791 h	51 y M				A/C	Ingst	Int-S	2		
		venlafaxine	1	1						
		risperidone	2	2						
792 h	51 y F				A	Ingst	Int-S	1		
		doxepin	1	1						
793 h	52 y M				A	Ingst	Int-S	1		
		escitalopram	1	1						
		lamotrigine	2	2						
		atenolol	3	3						
794ai	52 y F				U	Ingst	Int-S	2		
		doxepin	1	1						
		sertraline	2	2						
795 ha	53 y F				A	Ingst	Int-S	1		
		desipramine	1	1					desipramine	10 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
		desipramine	1	1					desipramine	15 mcg/mL In Whole Blood @ Autopsy
796	53 y F				A/C	Ingst	Int-S	1		
		sertraline	1	1						
		ziprasidone	2	2						
		bupropion	3	3						
		alprazolam	4	4						
797 ha	53 y F				A	Ingst	Int-S	1		
		bupropion	1	1					bupropion	7.3 mcg/mL In Blood (unspecified) @ Autopsy
		fluoxetine	2	2					fluoxetine	3.1 mcg/mL In Blood (unspecified) @ Autopsy
		gabapentin	3	3						
		ethanol	4	4					ethanol	110 mg/dL In Serum @ Unknown
798 h	53 y M				U	Ingst	Int-S	2		
		lithium	1	1						
		ethanol	2	2						
		drug, unknown	3	3						
799 h	53 y F				A/C	Ingst	Int-S	2		
		duloxetine	1	1						
		clonazepam	2	2						
		baclofen	3	3						
		escitalopram	4	4						
		thyroid preparation	5	5						
800 p	54 y F				A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
801 p	55 y F				A/C	Unk	Int-S	2		
		trazodone	1	1						
		clonazepam	2	2						
		ethanol	3	3						
802ai	55 y F				A	Ingst	Int-U	2		
		citalopram	1	1						
		mirtazapine	2	2						
		benztropine	3	3						
		donepezil	4	4						
		quetiapine	5	5						
803 h	55 y M				C	Ingst	AR-D	2		
		lithium	1	1					lithium	3.2 mmol/L In Blood (unspecified) @ Unknown
		lithium	1	1					lithium	4.6 mmol/L In Blood (unspecified) @ Unknown
804 p	56 y F				A	Ingst	Int-S	1		
		doxepin	1	1						
		ethanol	2	2					ethanol	234 mg/dL In Blood (unspecified) @ Unknown
		alprazolam	3	3						
805ai	56 y F				A	Ingst	Int-U	2		
		trazodone	1	1						
		butalbital	2	2						
		hydromorphone	3	3						
		alprazolam	4	4						
806pha	56 y M				U	Ingst	Int-U	2		
		amitriptyline	1	1						
		tramadol	2	2						
		ethanol	3	3					ethanol	141 mg/dL In Serum @ Unknown
807 a	58 y F				A/C	Ingst	Int-S	1		
		bupropion	1	1					hydroxybupropion	12000 ng/mL In Blood (unspecified) @ Autopsy
		bupropion	1	1					bupropion	53000 ng/mL In Blood (unspecified) @ Autopsy
		angiotensin receptor blocker	2	2						
		ethanol	3	3					ethanol	30 mg/dL In Blood (unspecified) @ Autopsy
		calcium antagonist	4	4					diltiazem	1200 ng/mL In Blood (unspecified) @ Autopsy
		lorazepam	5	5					lorazepam	32 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	6	6					fluoxetine	680 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	6	6					norfluoxetine	720 ng/mL In Blood (unspecified) @ Autopsy
808pha	58 y M				U	Ingst	Int-S	1		
		amitriptyline	1	1						
		acetaminophen/ oxycodone	2	2					oxycodone	27 mcg/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
		diazepam	3	3					nordiazepam	77 ng/mL In Blood (unspecified) @ Unknown
		diazepam	3	3					diazepam	94 ng/mL In Blood (unspecified) @ Unknown
809	58 y F				A	Ingst	Int-S	2		
		desipramine	1	1						
		clonazepam	2	2						
		pantoprazole	3	3						
		levothyroxine	4	4						
810 p	59 y F				A/C	Ingst	Unk	1		
		amitriptyline	1	1					amitriptyline	13031 ng/mL In Blood (unspecified) @ Autopsy
		amitriptyline	1	1					nortriptyline	904 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	2	2					norfluoxetine	1214 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	2	2					fluoxetine	1515 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	0.092 % In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	0.101 % In Vitreous @ Autopsy
811 h	60 y M				A/C	Ingst	Int-S	1		
		bupropion	1	1					hydroxybupropion	130 ng/mL In Blood (unspecified) @ Unknown
		bupropion	1	1					bupropion	80 ng/mL In Blood (unspecified) @ Unknown
		citalopram	2	2					citalopram	1200 ng/mL In Blood (unspecified) @ Unknown
		hydrocodone	3	3					hydrocodone (free)	110 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen	4	4					acetaminophen	37 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	4	4					acetaminophen	80 mcg/mL In Blood (unspecified) @ Unknown
		glipizide	5	5						
		metformin	6	6						
		naproxen	7	7						
		tamsulosin	8	8						
		salicylate	9	9					salicylate	9 mg/dL In Blood (unspecified) @ Unknown
		clonazepam	10	10						
		losartan	11	11						
		omeprazole	12	12						
812ai	60 y M				A	Ingst	Int-S	2		
		venlafaxine	1	1						
		hydrocodone	2	2						
813 h	60 y M				A/C	Ingst + Aspir	Int-S	3		
		maprotiline	1	1						
		oxycodone	2	2						
		morphine	3	3						
814 p	61 y M				A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
		metoprolol	2	2						
		duloxetine	3	3						
		gabapentin	4	4						
		lisinopril	5	5						
		prednisone	6	6						
		antibiotic, unknown	7	7						
		hydrochlorothiazide	8	8						
		atorvastatin	9	9						
815	63 y M				A	Ingst	Int-S	2		
		bupropion	1	1						
		metoprolol	2	2						
		acetaminophen/ hydrocodone	3	3						
		vortioxetine	4	4						
		drug, unknown	5	5						
816	64 y M				A/C	Ingst	Int-S	2		
		doxepin	1	1						
		clonidine	2	2						
		cocaine	3	3						
817	64 y M				A/C	Ingst	Int-S	3		
		escitalopram	1	1						
		amlodipine	2	2						
818 h	64 y F				A/C	Ingst	Int-S	2		
		lithium	1	1					lithium	1.7 mcg/mL In Blood (unspecified) @ 84 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
		lithium	1	1					lithium	4.87 mcg/mL In Blood (unspecified) @ 36 h (pe)
		lithium	1	1					lithium	6 mcg/mL In Blood (unspecified) @ 24 h (pe)
		imipramine	2	2						
		levothyroxine	3	3						
		zolpidem	4	4						
819pa	64 y M				A	Ingst	Int-U	1		
		trazodone	1	1					trazodone	33 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2						
		lamotrigine	3	3						
		sildenafil	4	4						
820	66 y M				A	Ingst	Int-S	1		
		amitriptyline	1	1						
821 h	67 y F				A	Ingst	Int-S	1		
		venlafaxine	1	1						
		benzodiazepine	2	2						
		thyroid preparation	3	3						
		lamotrigine	4	4						
		antipsychotic (atypical)	5	5						
822 h	67 y F				A/C	Ingst + Aspir	Int-S	2		
		amitriptyline	1	1						
		oxycodone	2	2						
		tramadol	3	3						
		temazepam	4	4						
		clonazepam	5	5						
		furosemide	6	6						
[823ha]	68 y F				A/C	Ingst	Int-S	1		
		bupropion (extended release)	1	1					bupropion	0.285 mg/L In Blood (unspecified) @ Unknown
824 ph	69 y M				U	Ingst	Int-S	2		
		cyclic antidepressant, unknown	1	1						
825 h	70 y F				A/C	Ingst	Int-S	2		
		escitalopram	1	1						
		citalopram	2	2						
826 h	81 y M				A/C	Ingst	Int-S	2		
		lithium	1	1					lithium	3.3 mEq/L In Blood (unspecified) @ 7 h (pe)
		zolpidem	2	2						
		salicylate	3	3					salicylate	50.7 mg/dL In Blood (unspecified) @ 15 m (pe)
		salicylate	3	3					salicylate	72 mg/dL In Blood (unspecified) @ 7 h (pe)
		salicylate	3	3					salicylate	85 mg/dL In Blood (unspecified) @ 10 h (pe)
		ezetimibe/simvastatin	4	4						
		lisinopril	5	5						
		mirtazapine	6	6						
		lorazepam	7	7						
827 h	82 y F				U	Ingst	Int-S	2		
		venlafaxine	1	1						
828 p	82 y F				A	Ingst	Int-S	2		
		desipramine	1	1						
		amitriptyline	2	2						
		alprazolam	3	3						
829pha	30 + y F				A	Ingst	Int-U	1		
		bupropion (extended release)	1	1					bupropion	660 ng/mL In Whole Blood @ Autopsy
		dextromethorphan	2	2					chlorpheniramine	1300 ng/mL In Whole Blood @ Autopsy
		dextromethorphan	2	2					dextromethorphan	4700 ng/mL In Whole Blood @ Autopsy
		chlorpheniramine	3	3						

See Also case 5, 18, 30, 40, 48, 50, 68, 92, 138, 179, 310, 312, 330, 334, 337, 350, 364, 383, 384, 388, 391, 406, 407, 415, 433, 441, 453, 456, 466, 474, 484, 490, 491, 509, 532, 534, 537, 539, 563, 569, 578, 587, 593, 622, 635, 652, 659, 661, 685, 702, 710, 714, 717, 718, 719, 721, 726, 727, 728, 843, 847, 855, 862, 871, 876, 878, 882, 885, 888, 892, 895, 896, 897, 899, 901, 902, 912, 915, 924, 925, 929, 930, 931, 932, 933, 935, 947, 950, 961, 963, 980, 988, 992, 1007, 1011, 1016, 1035, 1048, 1068, 1070, 1111, 1115, 1117, 1126, 1128, 1131, 1132, 1133, 1136, 1137, 1144, 1148, 1152, 1153, 1154, 1174, 1178, 1180, 1185, 1186, 1189, 1214, 1221, 1263, 1314, 1320, 1337, 1345, 1361

Antihistamines

830 ph	16 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1						
		acetaminophen	2	2						
		THC homolog	3	3						
831 h	16 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
832 p	19 y F				A	Ingst	Int-U	2		
		diphenhydramine	1	1						
833	20 y M				A	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	7.2 mg/L In Blood (unspecified) @ Unknown
834ai	29 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
835 h	29 y F				A	Ingst	Int-S	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
		diphenhydramine	1	1						
		diazepam	2	2						
		acetaminophen/ oxycodone	3	3						
836i	1 m M				U	Ingst	Oth-M	1		
		promethazine	1	1						
837 h	32 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
838 p	33 y F				U	Ingst	Int-S	1		
		hydroxyzine	1	1						
		drug, unknown	2	2						
		pregabalin	3	3						
839	35 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1						
840ai	39 y F				A	Ingst + Unk	Int-U	2		
		diphenhydramine	1	1						
		hydrocodone	2	2						
		fentanyl	3	3						
841 ha	42 y M				A	Ingst	Unk	1		
		diphenhydramine	1	1					diphenhydramine	1.8 mcg/mL In Blood (unspecified) @ Unknown
		diphenhydramine	1	1					diphenhydramine	41 Other (see abst) In Liver @ Autopsy
		diphenhydramine	1	1					diphenhydramine	7.5 mcg/mL In Blood (unspecified) @ Autopsy
		salicylate	2	2					salicylate	16.2 mg/dL In Blood (unspecified) @ Unknown
		salicylate	2	2					salicylate	26.2 mg/dL In Blood (unspecified) @ Unknown
		salicylate	2	2					salicylate	37 mg/dL In Blood (unspecified) @ Unknown
		diazepam	3	3					nordiazepam	0.067 mcg/mL In Blood (unspecified) @ Unknown
		diazepam	3	3					diazepam	0.077 mcg/mL In Blood (unspecified) @ Unknown
842phi	43 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1						
843 h	45 y F				A	Ingst	Int-S	3		
		diphenhydramine	1	1					diphenhydramine	0.13 mg/L In Blood (unspecified) @ Autopsy
		gabapentin	2	2					gabapentin	1.14 mg/L In Blood (unspecified) @ Autopsy
		gabapentin	2	2					gabapentin	14.94 mg/L In Blood (unspecified) @ Unknown
		doxepin	3	3						
		tramadol	4	4						
844 h	46 y M				A	Ingst	Int-S	2		
		hydroxyzine	1	1						
		benzodiazepine	2	2						
845 p	47 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1						
		ethanol	2	2						
846ai	48 y M				A	Ingst	Int-U	2		
		diphenhydramine	1	1						
847pha	51 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	7.3 mg/L In Serum @ Unknown
		buspirone	2	2						
		ziprasidone	3	3					ziprasidone	0.09 mg/L In Serum @ Unknown
		sertraline	4	4						
848 ha	53 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
		ethanol	2	2						
849 ha	56 y M				U	Unk	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	520 ng/mL In Whole Blood @ Autopsy
		alprazolam	2	2					alprazolam	30 ng/mL In Whole Blood @ Autopsy
		fentanyl	3	3					fentanyl	1.1 ng/mL In Whole Blood @ Autopsy
		lorazepam	4	4					lorazepam	14 ng/mL In Whole Blood @ Autopsy
850 a	74 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	650 ng/mL In Blood (unspecified) @ Autopsy
851	84 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1						
		gabapentin	2	2						
852ai	3 m F				U	Ingst	Unk	2		
		diphenhydramine	1	1						

See Also case 19, 32, 51, 383, 387, 404, 499, 534, 555, 588, 644, 687, 710, 755, 757, 771, 788, 829, 854, 903, 911, 980, 1007, 1011, 1098, 1115, 1116, 1126, 1127, 1131, 1153, 1190, 1198, 1259, 1263, 1376

(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
Antimicrobials										
[853]	15 y F				A	Ingst	Int-S	2		
		rifampin	1	1						
854	17 y F				U	Ingst	Int-S	1		
		hydroxychloroquine	1	1						
		hydroxyzine	2	2					hydroxyzine	960 ng/mL In Plasma @ 20 m (pe)
		acetaminophen/butalbital/caffeine	3	3						
		meloxicam	4	4						
		cetirizine	5	5						
855	48 y F				C	Ingst	Int-S	1		
		hydroxychloroquine	1	1						
		amitriptyline	2	2						
		cyclobenzaprine	3	3						
		acetaminophen/diphenhydramine	4	4					acetaminophen	171 mcg/mL In Serum @ Unknown
		tramadol	5	5						
856i	50 y M				C	Ingst	Unt-T	2		
		isoniazid	1	1						
		acetaminophen	2	2						
857 h	83 y M				A	Ingst	Unt-T	3		
		acyclovir	1	1						
[858pa]	Unknown adult (>=20 yrs) F				A	Par	Int-S	1		
		tilmicosin	1	1						
See Also case 53, 482, 727, 814, 863, 953, 1284										
Asthma Therapies										
859	70 y F				C	Ingst	AR-D	1		
		theophylline	1	1						
860 h	83 y M				C	Ingst	AR-D	3		
		theophylline (extended release)	1	1					theophylline	51.4 mcg/mL In Blood (unspecified) @ Unknown
See Also case 955, 1004, 1035										
Cardiovascular Drugs										
861 p	14 y F				A/C	Ingst	Int-S	2		
		propranolol	1	1						
862	14 y M				A	Ingst	Int-S	1		
		metoprolol (extended release)	1	1						
		escitaopram	2	2						
		bupropion	3	3						
863	17 y F				A	Ingst	Int-S	1		
		diltiazem (extended release)	1	1					diltiazem	424 ng/mL In Blood (unspecified) @ Unknown
		metoprolol (extended release)	2	2						
		hydrochlorothiazide/irbesartan	3	3						
		furosemide	4	4						
		salicylate	5	5						
		ibuprofen	6	6						
		minocycline	7	7						
864 h	17 y M				U	Ingst	Int-S	1		
		verapamil	1	1						
865	17 y F				A	Ingst	Int-S	1		
		carvedilol	1	1						
		nifedipine	2	2						
[866pha]	18 y F				U	Ingst	Int-S	1		
		flecainide	1	1					flecainide	2.6 mcg/mL In Blood (unspecified) @ Autopsy
867 ph	19 y M				A	Ingst	Int-S	2		
		clonidine	1	1						
		valproic acid	2	2						
		quetiapine	3	3						
868 h	20 y F				A	Ingst	Int-S	1		
		angiotensin converting enzyme inhibitor	1	1						
		angiotensin receptor blockers	2	2						
		metformin	3	3						
		antihyperlipidemic	4	4						
		drug, unknown	5	5						
869 ha	22 y F				A/C	Ingst	Int-S	1		
		diltiazem (extended release)	1	1					diltiazem	17000 ng/mL In Whole Blood @ Autopsy
		diltiazem (extended release)	1	1					diltiazem	9800 ng/mL In Whole Blood @ Unknown
		oxycodone	2	2					oxycodone (free)	6.7 ng/mL In Whole Blood @ Autopsy
		olanzapine	3	3					olanzapine	13 ng/mL In Whole Blood @ Autopsy
		lorazepam	4	4					lorazepam	9.8 ng/mL In Whole Blood @ Autopsy
		marijuana	5	5					thc (tetrahydro cannabinol)	1.5 ng/mL In Whole Blood @ Autopsy
870 h	23 y M				A/C	Ingst	Int-S	1		
		propafenone	1	1						
		atenolol	2	2						
		amlodipine	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
		hydrochlorothiazide/ lisinopril	4	4						
		cardiac glycoside	5	5					digoxin	4.2 ng/mL In Blood (unspecified) @ Unknown
		metformin	6	6						
		glipizide	7	7						
		acetaminophen	8	8						
		omeprazole	9	9						
871 ph	25 y F				A	Ingst	Int-S	1		
		propranolol	1	1						
		escitalopram	2	2						
872 ph	25 y F				A	Ingst	Int-S	1		
		propranolol	1	1						
		temazepam	2	2						
		clonazepam	3	3						
		zolpidem	4	4						
		risperidone	5	5						
		lamotrigine	6	6						
873	30 y F				A	Ingst	Int-S	1		
		verapamil	1	1						
874pha	31 y M				A/C	Ingst	Int-S	1		
		calcium antagonist	1	1					diltiazem	3.3 mg/L In Blood (unspecified) @ Unknown
		hydrochlorothiazide	2	2						
875	32 y M				U	Ingst	Int-S	2		
		calcium antagonist	1	1						
876 ph	32 y F				A/C	Ingst	Int-S	2		
		metoprolol (extended release)	1	1						
		citalolpram	2	2						
		lithium	3	3						
		mirtazapine	4	4						
		clonazepam	5	5						
877 h	32 y M				A	Ingst	Int-S	2		
		amlodipine	1	1						
		gabapentin	2	2						
		ethanol	3	3						
		angiotensin converting enzyme inhibitor	4	4						
878	33 y F				A/C	Ingst + Aspir	Int-S	1		
		propranolol	1	1						
		fluoxetine	2	2						
		trazodone	3	3						
		quetiapine	4	4						
		metaxalone	5	5						
		acetaminophen	6	6						
879 h	34 y F				U	Unk	Unk	2		
		verapamil	1	1						
		propranolol	2	2						
880 ha	35 y M				A	Ingst	Int-S	1		
		flecainide	1	1					flecainide	16 mcg/mL In Blood (unspecified) @ Autopsy
		angiotensin converting enzyme inhibitor	2	2						
881pa	37 y M				A/C	Ingst	Int-S	3		
		propafenone	1	1						
		lisinopril	2	2						
		levothyroxine	3	3						
		caffeine	4	4						
		lorazepam	5	5					lorazepam	98 ng/mL In Blood (unspecified) @ Unknown
882 a	37 y F				A/C	Ingst	Int-S	1		
		beta blocker	1	1					atenolol	4800 ng/mL In Blood (unspecified) @ Unknown
		lisinopril	2	2						
		escitaopram	3	3					citalopram	260 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	4	4						
		trazodone	5	5					trazodone	1 mcg/mL In Blood (unspecified) @ Unknown
883 ha	37 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	0.294 mg/L In Blood (unspecified) @ Unknown
884ai	38 y M				A	Ingst	Int-S	1		
		verapamil	1	1					diphenhydramine	0.41 mg/L In Blood (unspecified) @ Unknown
		verapamil	1	1					verapamil	1.5 mg/L In Blood (unspecified) @ Unknown
		verapamil	1	1					naproxen	7.6 mg/L In Blood (unspecified) @ Unknown
		beta blocker	2	2						
885 ph	38 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
		amlodipine	1	1						
		losartan	2	2						
		benzodiazepine	3	3						
		barbiturate	4	4						
		cyclic antidepressant, unknown	5	5						
		ibuprofen	6	6						
886 h	39 y M				C	Par	Unt-T	3		
		cardiac glycoside	1	1					digoxin	7.2 mcg/mL In Serum @ Unknown
887 h	39 y F				A	Ingst	Int-S	1		
		verapamil	1	1						
888hi	40 y F				U	Ingst	Int-S	1		
		amlodipine	1	1						
		citalopram	2	2						
889	40 y F				A	Ingst	Int-S	2		
		amlodipine	1	1						
		metoprolol	2	2						
		pregabalin	3	3						
		hydrochlorothiazide	4	4						
		metformin	5	5						
890	41 y F				A	Ingst	Int-M	1		
		verapamil	1	1						
891 h	41 y M				A/C	Ingst	Int-S	2		
		diltiazem	1	1						
		metoprolol	2	2						
		metformin	3	3						
		ethanol	4	4					ethanol	261 mg/dL In Blood (unspecified) @ Unknown
892 ha	41 y F				U	Ingst	Int-S	2		
		amlodipine	1	1						
		atenolol	2	2						
		clonazepam	3	3						
		carbamazepine	4	4					carbamazepine	15.7 mg/L In Blood (unspecified) @ Unknown
		oxycodone	5	5						
		bupropion	6	6						
		acetaminophen	7	7						
893	42 y F				A	Ingst	Int-S	2		
		metoprolol	1	1						
		lisinopril	2	2						
894	42 y M				C	Ingst	Int-S	1		
		metoprolol	1	1						
		oxcarbazepine	2	2						
895 h	42 y F				A	Ingst	Int-S	2		
		calcium antagonist	1	1						
		alprazolam	2	2						
		amphetamine	3	3						
		lithium	4	4						
896 h	42 y F				A	Ingst	Int-S	1		
		metoprolol	1	1						
		oxycodone	2	2						
		zolpidem	3	3						
		diazepam	4	4						
		escitalopram	5	5						
897 ph	43 y F				A/C	Ingst	Int-S	1		
		propranolol	1	1					propranolol	3.5 mg/L In Plasma @ 23 h (pe)
		propranolol	2	2						
		clonidine	3	3						
		alprazolam	4	4						
		tramadol	5	5						
		zolpidem	6	6						
		acetaminophen/ hydrocodone	7	7						
		oxycodone	8	8						
		acetaminophen/ oxycodone	9	9						
		venlafaxine	10	10						
		doxylamine	11	11						
		acetaminophen/ codeine	12	12						
898 h	44 y F				A/C	Ingst	Unk	2		
		amlodipine	1	1						
		propranolol	2	2						
899 ha	44 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1					verapamil	40000 ng/mL In Blood (unspecified) @ Autopsy
		baclofen	2	2						
		acetaminophen/ hydrocodone	3	3					hydrocodone (free)	7.7 ng/mL In Whole Blood @ Autopsy
		trazadone	4	4						
		cyclobenzaprine	5	5					cyclobenzaprine	1900 ng/mL In Whole Blood @ Autopsy
		valproic acid	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
		ethanol	7	7						
900 ha	45 y F				A	Ingst	Int-S	1		
		atenolol	1	1					atenolol	13000 ng/mL In Blood (unspecified) @ Autopsy
		amlodipine	2	2						
		zolpidem	3	3					zolpidem	230 ng/mL In Blood (unspecified) @ Autopsy
901 a	45 y F				A/C	Ingst	Int-S	1		
		carvedilol	1	1						
		ethanol	2	2					ethanol	145 mg/dL In Serum @ 1 h (pe)
		ethanol	2	2					ethanol	147 mg/dL In Blood (unspecified) @ 1 h (pe)
		hydrochlorothiazide/ lisinopril	3	3						
		fluoxetine	4	4					norfluoxetine	0.16 mg/L In Serum @ 1 h (pe)
		fluoxetine	4	4					fluoxetine	0.28 mg/L In Serum @ 1 h (pe)
		acetaminophen/ dextromethorphan/ pseudoephedrine	5	5					acetaminophen	16 mcg/mL In Blood (unspecified) @ 1 h (pe)
		lamotrigine	6	6					lamotrigine	18 mg/L In Serum @ 1 h (pe)
		venlafaxine	7	7					o-desmethylvenla faxine	0.14 mg/L In Serum @ 1 h (pe)
		venlafaxine	7	7					venlafaxine	0.45 mg/L In Serum @ 1 h (pe)
		acetaminophen/ dextromethorphan	8	8						
902pa	45 y F				A	Ingst	Int-S	2		
		verapamil	1	1						
		metoprolol	2	2						
		fluoxetine	3	3						
		ethanol	4	4					ethanol	0.23 % (wt/Vol) In Blood (unspecified) @ Unknown
		ethanol	4	4					ethanol	0.33 % (wt/Vol) In Urine (quantitative only) @ Unknown
903	46 y F				A	Ingst	Int-S	1		
		diltiazem (extended release)	1	1						
		diltiazem	2	2						
		eszopiclone	3	3						
		promethazine	4	4						
		cyclobenzaprine	5	5						
904	46 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		metoprolol	2	2						
		baclofen	3	3						
		celecoxib	4	4						
		gabapentin	5	5						
905	46 y F				U	Ingst	Int-S	1		
		amlodipine/ olmesartan	1	1						
		thiazide	2	2						
906 a	46 y F				A/C	Ingst	Int-S	2		
		flecainide	1	1						
		diltiazem	2	2						
		warfarin	3	3						
907	46 y M				A/C	Ingst	Int-S	1		
		nadolol	1	1						
		atenolol	2	2						
		verapamil	3	3						
908 h	47 y F				A	Ingst	Int-S	1		
		verapamil	1	1					verapamil	0.29 mg/L In Blood (unspecified) @ 30 m (pe)
		verapamil	1	1					norverapamil	1.3 mg/L In Blood (unspecified) @ Autopsy
		verapamil	1	1					verapamil	150 mg/kg In Liver @ Autopsy
		verapamil	1	1					norverapamil	40 mg/kg In Liver @ Autopsy
		verapamil	1	1					verapamil	7 mg/L In Blood (unspecified) @ Autopsy
		cyclobenzaprine	2	2						
		topiramate	3	3					topiramate	14 mg/L In Blood (unspecified) @ Autopsy
		topiramate	3	3					topiramate	40 mg/L In Blood (unspecified) @ 30 m (pe)
909 ha	47 y M				A/C	Ingst	Int-S	1		
		beta blocker	1	1					metoprolol	6700 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
		diltiazem	2	2					diltiazem	230 ng/mL In Blood (unspecified) @ Autopsy
910 a	49 y F				U	Ingst	Int-S	2		
		beta blocker	1	1						
		calcium antagonist	2	2						
911ai	49 y F				A	Ingst	Int-U	2		
		verapamil	1	1						
		alprazolam	2	2						
		hydroxyzine	3	3						
912	50 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		venlafaxine	2	2						
		clonidine	3	3						
913ai	50 y M				A/C	Ingst	Int-S	1		
		flecainide	1	1					flecainide	5.6 mcg/mL In Serum @ 2 h (pe)
		zolpidem	2	2					zolpidem	1900 ng/mL In Blood (unspecified) @ Autopsy
914	51 y M				A/C	Ingst	Int-S	1		
		carvedilol (extended release)	1	1						
		amlodipine	2	2					amlodipine	233 ng/mL In Blood (unspecified) @ Autopsy
		carisoprodol	3	3					meprobamate	17.88 mcg/mL In Blood (unspecified) @ Autopsy
		carisoprodol	3	3					carisoprodol	2.08 mcg/mL In Blood (unspecified) @ Autopsy
915	51 y M				A/C	Ingst	Int-S	2		
		atenolol	1	1						
		citalopram	2	2						
		trazodone	3	3						
		buspirone	4	4						
		eszopiclone	5	5						
		levothyroxine	6	6						
		clonazepam	7	7						
		ethanol	8	8						
916	51 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1						
		propranolol	2	2						
917 h	52 y F				A/C	Ingst	Unt-T	1		
		carvedilol	1	1						
		diltiazem	2	2						
		clonidine	3	3						
		lisinopril	4	4						
		metoprolol (extended release)	5	5						
		phenytoin	6	6						
		clopidogrel	7	7						
		potassium chloride	8	8						
918	52 y M				A/C	Ingst	Int-S	1		
		atenolol	1	1						
		amlodipine	2	2						
		hydralazine	3	3						
919 h	52 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		metoprolol	2	2						
		lisinopril	3	3						
920 ph	52 y M				A	Ingst	Int-S	2		
		nifedipine	1	1						
		ethanol	2	2					ethanol	114 mg/dL In Blood (unspecified) @ Unknown
921 p	52 y M				A/C	Ingst	Int-S	2		
		carvedilol	1	1						
		simvastatin	2	2						
		acetaminophen/dextromethorphan/doxalamine	3	3						
		ethanol	4	4						
922	53 y M				A	Ingst	Unt-M	2		
		amlodipine	1	1						
		methocarbamol	2	2						
		phenothiazine	3	3						
923	53 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1						
		hydrochlorothiazide/lisinopril	2	2						
		hydrochlorothiazide	3	3						
		alprazolam	4	4						
		zolpidem	5	5						
		ethanol	6	6					ethanol	233 mg/dL In Serum @ Unknown
924	53 y F				A/C	Ingst	Int-S	3		
		amlodipine/benazepril	1	1						
		amlodipine/benazepril	2	2						
		venlafaxine	3	3						
		ethanol	4	4					ethanol	75 mg/dL 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
925pha	53 y M				A/C	Ingst	Int-S	3		
		metoprolol (extended release)	1	1						
		sertraline	2	2					sertraline	1100 ng/mL In Blood (unspecified) @ Autopsy
		sertraline	2	2					norsertraline	150 ng/mL In Blood (unspecified) @ Autopsy
		quetiapine	3	3					quetiapine	1400 ng/mL In Blood (unspecified) @ Autopsy
		mirtazapine	4	4						
		benztropine	5	5						
		gabapentin	6	6						
		sildenafil	7	7						
		hydrochlorothiazide	8	8						
		ethanol	9	9					ethanol	320 mg/dL In Blood (unspecified) @ Unknown
926 h	53 y M				A	Ingst	Int-S	1		
		metoprolol	1	1						
927	53 y F				A	Ingst	Int-S	2		
		verapamil	1	1						
[928ha]	53 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	0.39 mg/L In Blood (unspecified) @ Unknown
929 h	53 y F				A	Ingst	Int-S	1		
		metoprolol	1	1					metoprolol	21 mg/L In Blood (unspecified) @ Autopsy
		venlafaxine	2	2					venlafaxine	0.71 mg/L In Blood (unspecified) @ Autopsy
		pregabalin	3	3						
		paliperidone	4	4						
		clonazepam	5	5						
		baclofen	6	6						
930	53 y M				A/C	Ingst	Int-S	2		
		clonidine	1	1						
		amlodipine/benazepril	2	2						
		venlafaxine (extended release)	3	3						
		quetiapine	4	4						
		zolpidem	5	5						
		alprazolam	6	6						
		potassium chloride	7	7						
		ethanol	8	8						
931	54 y F				C	Ingst	Int-S	2		
		metoprolol	1	1						
		baclofen	2	2						
		acetaminophen/ hydrocodone	3	3						
		benazepril	4	4						
		hydralazine	5	5						
		citalopram	6	6						
		clonazepam	7	7						
		metformin	8	8						
		meloxicam	9	9						
		gabapentin	10	10						
		furosemide	11	11						
		pravastatin	12	12						
932 h	54 y M				A/C	Ingst	Int-S	1		
		carvedilol	1	1						
		dabigatran	2	2						
		bupropion (extended release)	3	3						
		lisinopril	4	4						
		mirtazapine	5	5						
		furosemide	6	6						
933 h	54 y F				A	Ingst	Int-S	3		
		amlodipine	1	1						
		carvedilol	2	2						
		fluoxetine	3	3						
[934h]	54 y F				A	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	46 ng/mL In Blood (unspecified) @ Unknown
935 h	54 y F				A/C	Ingst	Int-S	1		
		nadolol	1	1						
		fluoxetine	2	2						
		lamotrigine	3	3						
		topiramate	4	4						
		spironolactone	5	5						
936	54 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		carvedilol	2	2						
		hydrochlorothiazide/ lisinopril	3	3						
937	54 y M				A	Ingst	Int-S	1		
		amlodipine	1	1						
938	54 y F				A	Ingst	Int-S	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
		amlodipine/ olmesartan	1	1						
		nebivolol	2	2						
939	55 y M				A	Ingst	Int-S	2		
		labetalol	1	1						
		opioid	2	2						
940 h	55 y F				A/C	Ingst + Aspir	Int-S	1		
		diltiazem (extended release)	1	1						
		carisoprodol	2	2						
		clonazepam	3	3						
941	56 y F				A	Ingst	Int-S	1		
		verapamil	1	1						
942	56 y F				U	Ingst	Int-S	1		
		amlodipine	1	1						
		lisinopril	2	2						
		alprazolam	3	3						
943 ph	56 y F				U	Unk	Unk	2		
		verapamil	1	1						
		tizanidine	2	2						
		pyrethroids	3	3						
944 h	56 y M				A/C	Ingst	Int-S	1		
		verapamil	1	1						
		chlorthalidone	2	2						
945	56 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		baclofen	2	2						
		quetiapine	3	3						
		metoprolol	4	4						
		ethanol	5	5						
946	57 y M				A/C	Ingst	Int-S	2		
		metoprolol	1	1						
		amlodipine	2	2						
		verapamil	3	3						
		clonazepam	4	4						
947 h	57 y F				A/C	Ingst	Int-S	1		
		bisoprolol/ hydrochlorothiazide	1	1						
		amlodipine	2	2						
		gabapentin	3	3						
		fluoxetine	4	4						
		alprazolam	5	5						
948	57 y F				A	Ingst	Int-S	1		
		diltiazem (extended release)	1	1						
		hydrocodone	2	2						
949pha	57 y M				U	Ingst	Int-U	1		
		diltiazem	1	1					diltiazem	0.025 mg/L In Blood (unspecified) @ Unknown
		propafenone	2	2					propafenone	0 ng/mL In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	82 mg/dL In Blood (unspecified) @ Unknown
950	57 y F				A	Ingst	Int-S	1		
		verapamil	1	1						
		fluoxetine	2	2						
		fluphenazine	3	3						
951	57 y M				C	Ingst	AR-D	3		
		cardiac glycoside	1	1					digoxin	3.8 ng/mL In Serum @ 24 h (pe)
		carvedilol	2	2						
		amiodarone	3	3						
		hydralazine	4	4						
952 ph	57 y F				A/C	Ingst	Int-S	1		
		propafenone	1	1						
953 h	57 y F				A	Ingst	Int-S	2		
		amlodipine/benazepril	1	1						
		progestins	2	2						
		emtricitabine/tenofovir	3	3						
		salicylate	4	4						
954	58 y F				A/C	Ingst	Int-S	1		
		amlopidipine	1	1						
		lisinopril	2	2						
955 h	59 y M				A/C	Ingst	Int-S	2		
		verapamil	1	1						
		theophylline	2	2					theophylline	17.4 mcg/mL In Blood (unspecified) @ 2.5 h (pe)
		theophylline	2	2					theophylline	20.7 mcg/mL In Blood (unspecified) @ 10 h (pe)
		theophylline	2	2					theophylline	26.1 mcg/mL In Blood (unspecified) @ 14 h (pe)
956 p	59 y F				U	Ingst	Int-S	2		
		verapamil	1	1						
		topiramate	2	2						
		quetiapine	3	3						
[957ha]	59 y F				A	Ingst	Int-S	1		
		propranolol	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
958 h	59 y F				A/C	Ingst	Int-S	2		
		beta blocker	1	1						
		amlodipine	2	2						
		metformin/ sitagliptin	3	3						
		clonazepam	4	4						
959 h	60 y M				C	Ingst	Unt-T	2		
		verapamil	1	1						
960	60 y F				A	Ingst	Unt-G	1		
		metoprolol	1	1						
		clonidine	2	2						
		alprazolam	3	3						
961 ph	60 y F				A	Ingst	Int-S	2		
		metoprolol	1	1						
		quetiapine	2	2						
		citalopram	3	3						
		trazodone	4	4						
962 h	61 y M				A/C	Ingst	Int-S	2		
		verapamil	1	1						
		nebivolol	2	2						
		lisinopril	3	3						
963 h	61 y F				A	Ingst	Int-S	1		
		diltiazem	1	1						
		sertraline	2	2						
964	61 y F				A/C	Ingst	Int-S	2		
		metoprolol	1	1						
		amlodipine	2	2						
		pregabalin	3	3						
		benzonatate	4	4						
965	61 y M				A	Ingst	Int-S	1		
		metoprolol	1	1						
		amlodipine	2	2						
		angiotensin converting enzyme inhibitor	3	3						
966	61 y F				A/C	Ingst	Int-S	1		
		amlodipine/benazepril	1	1						
		ibuprofen	2	2						
967	62 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	330 ng/mL In Blood (unspecified) @ 10 h (pe)
		metoprolol	2	2					metoprolol	14 ng/mL In Blood (unspecified) @ 10 h (pe)
		clonidine	3	3					clonidine	3.6 ng/mL In Blood (unspecified) @ 10 h (pe)
		candesartan/ hydrochlorothiazide	4	4						
		hydrochlorothiazide/ triamterene	5	5						
		glucagon	6	6						
968	62 y F				A	Ingst	Int-S	2		
		diltiazem	1	1						
969 h	62 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	500 ng/mL In Blood (unspecified) @ Unknown
		angiotensin receptor blocker	2	2						
		ethanol	3	3					ethanol	68 mg/dL In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	78.2 mg/dL In Serum @ Unknown
970	62 y M				A	Ingst	Int-S	2		
		amlodipine	1	1						
971 h	63 y F				A/C	Ingst	Int-S	2		
		flecainide	1	1						
		olmesartan	2	2						
		zolpidem	3	3						
972 ha	63 y M				A/C	Ingst	Int-S	2		
		nifedipine	1	1						
973 h	64 y F				A	Par	Unt-T	1		
		metoprolol	1	1						
		metoprolol (extended release)	2	2						
974 h	64 y M				U	Ingst	Int-S	2		
		beta blocker	1	1						
		isosorbide mononitrate	2	2						
		oxycodone	3	3						
		naproxen	4	4						
975 ph	64 y M				U	Ingst	Int-S	3		
		beta blocker	1	1						
976	65 y M				A/C	Ingst	Int-S	1		
		metoprolol	1	1						
		cardiac glycoside	2	2						
		acetaminophen/ hydrocodone	3	3						
		baclofen	4	4						
		ethanol	5	5						
977 h	65 y M				U	Ingst	Int-S	1		
		amlodipine	1	1						
		carvedilol	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
978 ph	65 y F				A/C	Ingst	Int-S	2		
		carvedilol	1	1						
		benzodiazepine	2	2						
979 h	66 y M				A/C	Ingst	Int-S	3		
		terazosin	1	1						
980	66 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		quetiapine	2	2						
		fluoxetine	3	3						
		hydroxyzine	4	4						
		alprazolam	5	5						
981 h	66 y M				A/C	Ingst	Int-S	1		
		metoprolol	1	1						
		cardiac glycoside	2	2					digoxin	13.6 ng/mL In Blood (unspecified) @ 5 h (pe)
		cardiac glycoside	2	2					digoxin	46 ng/mL In Blood (unspecified) @ 1 h (pe)
		warfarin	3	3						
		lisinopril	4	4						
		simvastatin	5	5						
982	67 y F				A	Ingst	Int-S	2		
		ranolazine	1	1						
		acetaminophen	2	2					acetaminophen	400 mg/L In Serum @ 30 m (pe)
		acetaminophen	2	2					acetaminophen	469 mg/L In Serum @ 1 h (pe)
983	67 y M				A	Ingst	Int-S	1		
		diltiazem	1	1						
		sotalol	2	2						
		warfarin	3	3						
		oxycodone	4	4						
		lorazepam	5	5						
		metformin	6	6						
984 h	67 y M				A/C	Ingst	Int-S	1		
		diltiazem (extended release)	1	1						
		ethanol	2	2						
985 h	68 y M				A	Ingst	Int-S	1		
		verapamil	1	1						
		glycol/methanol	2	2					methanol	0.223 g/dL In Blood (unspecified) @ Unknown
		glycol/methanol	2	2					methanol	0.554 g/dL In Blood (unspecified) @ Unknown
		glycol/methanol	2	2					ethylene glycol	23 mg/dL In Blood (unspecified) @ Unknown
		glycol/methanol	2	2					ethylene glycol	35 mg/dL In Blood (unspecified) @ Unknown
986	68 y F				A/C	Ingst	Int-S	1		
		diltiazem	1	1						
		ethanol	2	2						
987 p	69 y F				C	Ingst	AR-D	3		
		digoxin*	2	1						
		factor Xa inhibitor*	1	1						
988 h	69 y F				A/C	Ingst	Int-S	1		
		hydrochlorothiazide/ metoprolol	1	1						
		amlodipine	2	2						
		lorazepam	3	3						
		paroxetine	4	4						
		donepezil	5	5						
989 h	69 y F				A	Ingst	Int-U	2		
		metoprolol (extended release)	1	1						
990	70 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		losartan	2	2						
		atorvastatin	3	3						
		potassium chloride	4	4						
991 h	70 y M				C	Ingst	AR-D	3		
		cardiac glycoside	1	1						
		warfarin	2	2						
992 ph	70 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		venlafaxine	2	2						
		lisinopril	3	3						
		ethanol	4	4						
993 h	70 y M				U	Ingst	Unk	2		
		cardiac glycoside	1	1					digoxin	13 ng/mL In Blood (unspecified) @ 10 m (pe)
994 h	71 y M				C	Ingst	Unk	1		
		digoxin	1	1					digoxin	2.7 ng/mL In Serum @ Unknown
995 h	71 y F				C	Ingst	AR-D	1		
		cardiac glycoside	1	1					digoxin	2.8 ng/mL In Serum @ 3 d (pe)
996 ph	71 y F				U	Ingst	Unk	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
		cardiac glycoside	1	1					digoxin	4.2 ng/mL In Blood (unspecified) @ 30 m (pe)
997	71 y F				A/C	Ingst	Int-S	2		
		sotalol	1	1						
		alprazolam	2	2						
		salicylate	3	3						
998 h	73 y F				A/C	Ingst	AR-D	3		
		digoxin	1	1					digoxin	3.22 ng/mL In Plasma @ Unknown
999 ha	73 y M				U	Ingst	Int-S	1		
		carvedilol	1	1						
		amiodarone	2	2						
		acetaminophen	3	3					acetaminophen	110 mcg/mL In Serum @ 0.01 d (pe)
		phenytoin	4	4					phenytoin	19.1 mcg/mL In Serum @ 1 d (pe)
		phenytoin	4	4					phenytoin	28.5 mcg/mL In Serum @ 0.01 d (pe)
		phenobarbital	5	5					phenobarbital	21.2 mcg/mL In Serum @ 4 d (pe)
		phenobarbital	5	5					phenobarbital	24.1 mcg/mL In Serum @ 1 d (pe)
		phenobarbital	5	5					phenobarbital	34 mcg/mL In Serum @ 0.01 d (pe)
		lisinopril	6	6						
		levothyroxine	7	7						
1000h	73 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		metformin	2	2						
		glipizide	3	3						
		losartan	4	4						
1001h	74 y F				C	Ingst	AR-D	3		
		cardiac glycoside	1	1					digoxin	6.1 ng/mL In Blood (unspecified) @ Unknown
		cardiac glycoside	1	1					digoxin	7.2 ng/mL In Blood (unspecified) @ Unknown
1002 ha	74 y M				A	Ingst	Unt-G	1		
		amlodipine	1	1					amlodipine	53 ng/mL In Serum @ 7 h (pe)
		atenolol	2	2					atenolol	1900 ng/mL In Serum @ 7 h (pe)
		losartan	3	3						
		atenolol/chlorthalidone	4	4						
		clopidogrel	5	5						
		simvastatin	6	6						
1003	74 y F				A	Ingst	Int-S	2		
		metoprolol	1	1						
		baclofen	2	2						
		metformin	3	3						
1004h	76 y M				A/C	Ingst	Int-S	1		
		propranolol	1	1					propranolol	329 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen	2	2					acetaminophen	996 mcg/mL In Blood (unspecified) @ Autopsy
		glipizide	3	3						
		metformin	4	4						
		cyclobenzaprine	5	5					cyclobenzaprine	196 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	6	6					alprazolam	17.4 ng/mL In Blood (unspecified) @ Autopsy
		omeprazole	7	7						
		oxybutynin	8	8						
		montelukast	9	9						
1005	76 y M				A/C	Ingst	Unt-T	3		
		amlodipine	1	1						
		calcium	2	2						
1006	76 y F				A	Ingst	Int-S	1		
		atenolol	1	1						
		diltiazem	2	2						
		acetaminophen/ oxycodone	3	3						
		zolpidem	4	4						
1007a	76 y F				A/C	Ingst	Int-S	1		
		diltiazem	1	1					diltiazem	1700 ng/mL In Blood (unspecified) @ Autopsy
		propranolol	2	2					propranolol	1600 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	3	3					fluoxetine	5000 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	3	3					norfluoxetine	630 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
		temazepam	4	4					temazepam	270 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	5	5					ethanol	0.08 g/dL In Vitreous @ Autopsy
		ethanol	5	5					ethanol	82 mg/dL In Blood (unspecified) @ Autopsy
		promethazine	6	6					promethazine	43 ng/mL In Blood (unspecified) @ Autopsy
		warfarin	7	7						
		potassium chloride	8	8						
		levothyroxine	9	9						
		pravastatin	10	10						
		furosemide	11	11						
[1008]	77 y M				A	Ingst	Int-S	1		
		propafenone	1	1						
1009	77 y F				A	Ingst	Int-S	2		
		amlodipine	1	1						
1010 ph	78 y F				C	Ingst	AR-D	3		
		cardiac glycoside	1	1					digoxin	2.3 mcg/mL In Blood (unspecified) @ Unknown
1011h	79 y F				A/C	Ingst	Int-S	2		
		diltiazem	1	1						
		clonidine	2	2						
		bisoprodol	3	3						
		tramadol	4	4						
		bupropion (extended release)	5	5						
		sertraline	6	6						
		clonazepam	7	7						
		promethazine	8	8						
		acetaminophen/ hydrocodone	9	9						
		diphenhydramine	10	10						
		meloxicam	11	11						
1012h	79 y M				A/C	Ingst	AR-D	3		
		cardiac glycoside	1	1						
		atenolol	2	2						
		carvedilol	3	3						
		furosemide	4	4						
		diuretic, unknown	5	5						
1013	81 y F				A/C	Ingst + Par	AR-D	3		
		propranolol	1	1						
		insulin	2	2						
1014	81 y F				A/C	Ingst	AR-D	2		
		cardiac glycoside	1	1					digoxin	7 ng/mL In Serum @ Unknown
1015h	82 y F				C	Ingst	AR-D	2		
		cardiac glycoside	1	1					digoxin	0.9 ng/mL In Blood (unspecified) @ Unknown
		cardiac glycoside	1	1					digoxin	2.7 ng/mL In Blood (unspecified) @ Unknown
1016a	82 y F				A/C	Ingst	Int-S	2		
		diltiazem (extended release)	1	1						
		alprazolam	2	2						
		trazodone	3	3						
1017h	82 y M				C	Ingst	AR-D	3		
		cardiac glycoside	1	1					digoxin	3.37 ng/mL In Blood (unspecified) @ Unknown
1018h	83 y F				C	Ingst	AR-D	3		
		cardiac glycoside	1	1					digoxin	1.7 ng/mL In Plasma @ Unknown
		metoprolol	2	2						
		verapamil	3	3						
1019	83 y M				C	Ingst	AR-D	1		
		cardiac glycoside	1	1						
1020h	83 y M				C	Ingst	AR-D	3		
		cardiac glycoside	1	1						
1021h	83 y M				C	Ingst	AR-D	3		
		cardiac glycoside	1	1					digoxin	4.4 ng/mL In Blood (unspecified) @ Unknown
1022 ha	83 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	770 ng/mL In Blood (unspecified) @ Autopsy
		angiotensin receptor blocker	2	2						
1023	84 y M				A/C	Ingst	Unt-G	3		
		cardiac glycoside	1	1					digoxin	4.7 ng/mL In Serum @ Unknown
1024h	84 y M				A	Ingst	Int-S	2		
		amlodipine	1	1						
		metformin	2	2						
		furosemide	3	3						
		phenytoin	4	4					phenytoin	4 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
1025	85 y M				C	Ingst	AR-D	3		
		cardiac glycoside	1	1					digoxin	2.4 mcg/dL In Blood (unspecified) @ 1 h (pe)
1026	85 y M				A	Ingst	Int-S	2		
		amlodipine	1	1						
		alpha blocker	2	2						
		finasteride	3	3						
		omeprazole	4	4						
1027h	85 y F				A	Ingst	Int-S	2		
		verapamil	1	1						
		angiotensin converting enzyme inhibitor	2	2						
1028	85 y F				A/C	Ingst	Int-S	2		
		carvedilol	1	1						
		amlodipine	2	2						
		clopidogrel	3	3						
		salicylate	4	4						
		isosorbide mononitrate	5	5						
		drug, unknown	6	6						
		rosuvastatin	7	7						
		hydralazine	8	8						
		Vitamin D	9	9						
1029a	86 y F				A	Ingst	Unk	3		
		beta blocker	1	1						
1030	86 y F				A	Ingst	Unt-G	1		
		amlodipine/benazepril	1	1						
		metformin	2	2						
		memantine	3	3						
		sitagliptin	4	4						
		ibuprofen	5	5						
		tetrahydrocannabinol	6	6						
		vitamin D	7	7						
		ibandronate	8	8						
1031h	86 y F				C	Ingst	AR-D	3		
		digoxin	1	1						
1032h	86 y F				C	Ingst	Unt-T	2		
		cardiac glycoside	1	1						
1033h	87 y F				C	Ingst	AR-D	3		
		digoxin	1	1					digoxin	4.5 ng/mL In Serum @ Unknown
1034h	87 y F				A/C	Ingst	Unt-G	2		
		carvedilol	1	1						
		ezetimibe	2	2						
1035 ph	87 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		trazodone	2	2						
		tamulosin	3	3						
		olanzapine	4	4						
		paroxetine	5	5						
		vitamin D	6	6						
		omeprazole	7	7						
		montelukast	8	8						
		docusate	9	9						
		melatonin	10	10						
1036	87 y F				A/C	Ingst + Par	Unt-T	3		
		diltiazem (extended release)	1	1						
		diltiazem	2	2						
		diltiazem (extended release)	3	3						
		carvedilol	4	4						
		nitroglycerin	5	5						
1037	88 y F				C	Ingst	AR-D	3		
		cardiac glycoside	1	1						
1038	88 y M				U	Ingst	Unk	3		
		metoprolol	1	1						
1039h	89 y F				U	Ingst	Unk	3		
		diltiazem (extended release)	1	1						
1040 ha	89 y F				A	Ingst	Int-S	1		
		amlodipine	1	1						
		metoprolol	2	2						
		lisinopril	3	3						
1041	90 y M				U	Unk	Unk	2		
		amiodarone	1	1						
1042h	91 y F				A	Ingst	Unt-T	3		
		propranolol	1	1						
		primidone	2	2						
		hydroxyurea	3	3						
1043	92 y F				C	Ingst	AR-D	3		
		cardiac glycoside	1	1					digoxin	3.9 ng/mL In Blood (unspecified) @ Unknown
1044h	94 y F				C	Ingst	AR-D	2		
		digoxin	1	1					digoxin	2.1 ng/mL In Blood (unspecified) @ Unknown
1045	94 y F				C	Ingst	Unt-T	3		
		cardiac glycoside	1	1					digoxin	4.2 ng/mL In Serum @ Unknown
		metoprolol	2	2						
1046h	94 y F				A	Par	Unt-T	2		
		metoprolol	1	1						
		diltiazem	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
1047	80 + y F				C	Ingst	AR-D	2		
		digoxin	1	1					digoxin	3.3 ng/mL In Blood (unspecified) @ 1 d (pe)
		digoxin	1	1					digoxin	3.4 ng/mL In Blood (unspecified) @ 2 d (pe)
		digoxin	1	1					digoxin	3.5 ng/mL In Blood (unspecified) @ Unknown
1048	Unknown adult (>= 20 yrs) M				U	Ingst	Int-S	1		
		propranolol	1	1						
		ibuprofen	2	2						
		naproxen	3	3						
		citalopram	4	4						
		tramadol	5	5						
See Also case 68, 74, 124, 383, 391, 415, 469, 482, 513, 541, 594, 618, 647, 689, 702, 715, 727, 743, 753, 756, 761, 764, 766, 769, 771, 773, 779, 784, 788, 789, 793, 807, 811, 814, 815, 816, 817, 819, 826, 1067, 1083, 1088, 1092, 1101, 1132, 1135, 1182, 1209, 1214, 1337, 1405										
Cold and Cough Preparations										
[1049pha]	12 y F				A	Ingst	Int-S	1		
		benzonatate	1	1						
[1050ph]	12 y F				A	Ingst	Int-S	1		
		benzonatate	1	1						
1051a	19 y F				A/C	Ingst	Int-S	1		
		acetaminophen/ dextromethorphan/ doxalamine	1	1						
		antipsychotic (atypical)	2	2						
		benzodiazepine	3	3						
		ethanol	4	4						
1052 ha	34 y M				A/C	Ingst	Int-S	1		
		acetaminophen/ antihistamine/ dextromethorphan	1	1						
		aripiprazole	2	2						
		acetaminophen/ decongestant/ dextromethorphan	3	3						
		ibuprofen	4	4						
		pregabalin	5	5						
		varenicline	6	6						
		varenicline	7	7						
		ethanol	8	8					ethanol	24 mg/dL In Serum @ 10 m (pe)
		salicylate	9	9					salicylate	13.4 mg/dL In Serum @ 15 m (pe)
1053 ha	36 y M				A	Ingst	Int-S	2		
		doxylamine	1	1						
		hydrocodone	2	2						
		cyclobenzaprine	3	3						
1054	46 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
1055 ha	51 y F				U	Ingst	Int-U	3		
		cough and cold preparation	1	1						
		acetaminophen/codeine	2	2					hydrocodone	0.212 mg/L In Whole Blood @ Autopsy
		acetaminophen/codeine	2	2					acetaminophen	180 mcg/mL In Whole Blood @ Autopsy
		acetaminophen/codeine	2	2					acetaminophen	42 mcg/mL In Serum @ Unknown
		oxycodone	3	3					oxycodone	0.37 mg/L In Whole Blood @ Autopsy
1056	71 y M				A	Ingst	AR-D	2		
		dextromethorphan/ guaifenesin	1	1						
		morphine (extended release)	2	2						
See Also case 249, 336, 388, 433, 589, 755, 766, 829, 897, 901, 921, 964, 1137, 1210, 1214, 1259										
Dietary Supplements/Herbals/Homeopathic										
1057h	18 y M				A	Ingst	Int-A	2		
		dietary supplement	1	1						
		dietary supplement	2	2						
		dinitrophenol	3	3						
[1058ha]	22 y M				A	Ingst	AR-O	1		
		energy product, other	1	1						
1059h	48 y F				A	Ingst	Int-S	1		
		calcium/epigallocatechin gallate/ginseng/green tea	1	1						
See Also case 605, 788, 1035, 1116										
Electrolytes and Minerals										
[1060ha]	5 y M				A	Ingst	Oth-M	2		
		sodium	1	1						
1061p	42 y M				A	Ingst	Unk	2		
		dietary supplement	1	1						
		acetaminophen/ hydrocodone	2	2						
1062h	57 y F				A	Ingst	Int-U	1		
		sodium chloride	1	1						
		sodium bicarbonate	2	2						
		tramadol	3	3						
See Also case 734, 917, 1005, 1132										

(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
Gastrointestinal Preparations										
[1063ha]	25 y F				A	Ingst	Int-A	1		
		loperamide	1	1					loperamide	35 ng/mL In Blood (unspecified) @ Unknown
		loperamide	2	2						
1064 ph	25 y M				U	Unk	Int-A	2		
		loperamide	1	1						
[1065pha]	27 y M				U	Ingst	Int-U	1		
		loperamide	1	1					loperamide	0.013 mg/L In Blood (unspecified) @ 14.5 h (pe)
		loperamide	1	1					loperamide	0.034 mg/L In Blood (unspecified) @ Autopsy
		loperamide	1	1					loperamide	1.4 mg/kg In Liver @ Autopsy
1066p	53 y M				A	Ingst	Int-S	1		
		doxylamine/pyridoxine	1	1						
See Also case 312, 350, 513, 788, 809, 811, 870, 1004, 1026, 1035, 1087, 1098, 1116, 1178										
Hormones and Hormone Antagonists										
1067 ha	14 y M				A/C	Ingst	Int-S	1		
		metformin	1	1					metformin	4.4 mcg/mL In Blood (unspecified) @ Unknown
		clonidine	2	2						
		quetiapine	3	3					quetiapine	1100 ng/mL In Blood (unspecified) @ Unknown
		valproic acid	4	4					valproic acid	21 mcg/mL In Blood (unspecified) @ Unknown
		valproic acid	4	4					valproic acid	32 mcg/mL In Blood (unspecified) @ Unknown
		ibuprofen	5	5						
1068h	25 y F				A/C	Ingst	Int-S	2		
		metformin	1	1						
		fluoxetine	2	2						
		ibuprofen	3	3						
1069	32 y F				A	Ingst	Int-S	1		
		metformin	1	1						
		diazepam	2	2						
1070	35 y F				A/C	Ingst	Int-S	2		
		insulin	1	1						
		bupropion	2	2						
[1071h]	35 y M				C	Unk	Int-A	3		
		androgen	1	1						
1072p	38 y M				C	Par	Int-A	3		
		androgen	1	1						
		ethanol	2	2					ethanol	68 mg/dL In Blood (unspecified) @ Unknown
1073 ph	40 y M				A	Ingst	Int-S	2		
		glipizide	1	1						
		gabapentin	2	2						
1074 ha	41 y F				A/C	Ingst	Int-S	1		
		metformin	1	1					metformin	190 mcg/mL In Blood (unspecified) @ Unknown
		clonazepam	2	2					clonazepam	102 ng/mL In Blood (unspecified) @ Unknown
		cocaine	3	3					benzoylecognine	11547 ng/mL In Blood (unspecified) @ Unknown
1075h	47 y M				A	Par	Int-S	1		
		insulin	1	1					insulin	372 microU/mL In Serum @ Unknown
1076a	48 y M				A	Ingst	AR-D	1		
		metformin	1	1						
1077h	49 y F				A/C	Ingst + Par	Int-S	1		
		insulin	1	1						
		oxymorphone	2	2						
		tizanidine	3	3						
		drug, unknown	4	4						
1078a	50 y F				A	Ingst	Int-S	1		
		metformin	1	1						
		ethanol	2	2					ethanol	0.2 % (wt/Vol) In Serum @ 2.5 h (pe)
		ethanol	2	2					ethanol	0.27 % (wt/Vol) In Urine (quantitative only) @ 2.5 h (pe)
		lamotrigine	3	3						
1079p	52 y F				A	Ingst + Par	Int-S	1		
		insulin	1	1						
		risperidone	2	2						
		zopiclone	3	3						
		zolpidem	4	4						
1080	54 y M				A/C	Ingst	Int-S	2		
		metformin	1	1						
1081	57 y M				A/C	Ingst	Int-S	1		
		glipizide	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
1082	57 y M				A	Ingst	Unk	3		
		metformin	1	1						
1083a	58 y F				A/C	Ingst	Int-S	1		
		metformin	1	1					metformin	8.6 mg/L In Blood (unspecified) @ Unknown
		clonidine	2	2					clonidine	55 ng/mL In Blood (unspecified) @ Unknown
		asenapine	3	3						
1084	59 y F				A	Ingst	Int-S	1		
		metformin	1	1						
		clonazepam	2	2						
1085	59 y F				A/C	Par	Int-S	1		
		insulin	1	1						
1086h	60 y F				A/C	Ingst	Int-U	2		
		metformin	1	1						
1087	63 y F				A/C	Ingst + Derm + Par	Int-S	2		
		insulin	1	1						
		acetaminophen	2	2						
		oxybutynin	3	3						
1088a	65 y M				A/C	Ingst	Int-S	1		
		metformin	1	1					metformin	280 mcg/mL In Blood (unspecified) @ 1 h (pe)
		carvedilol	2	2						
		diazepam	3	3					diazepam	0.1 mcg/mL In Blood (unspecified) @ 1 h (pe)
		diazepam	3	3					nordiazepam	1 mcg/mL In Blood (unspecified) @ 1 h (pe)
1089h	66 y M				C	Unk	Unk	2		
		metformin	1	1						
1090	67 y M				A/C	Ingst	Unt-T	1		
		metformin	1	1						
1091h	68 y M				U	Ingst	Int-U	3		
		metformin	1	1						
		ethanol	2	2					ethanol	172 mg/dL In Plasma @ Unknown
1092h	82 y F				A/C	Ingst	Int-S	2		
		metformin	1	1						
		enalapril	2	2						
		levothyroxine	3	3						
See Also case 125, 312, 384, 398, 491, 630, 640, 717, 753, 785, 788, 799, 809, 811, 814, 818, 821, 868, 870, 881, 889, 891, 915, 931, 953, 958, 983, 999, 1000, 1003, 1004, 1007, 1013, 1024, 1030, 1129, 1300, 1399										
Miscellaneous Drugs										
1093	31 y M				A/C	Ingst	Int-S	2		
		atomoxetine	1	1						
		lurasidone	2	2						
[1094h]	39 y F				A	Vag	Unt-T	1		
		glycine	1	1						
[1095ph]	43 y F				A	Par	Unk	1		
		succinylcholine	1	1						
1096h	83 y F				A/C	Ingst	Int-S	2		
		pramipexole	1	1						
See Also case 306, 732, 755, 802, 868, 967, 988, 1026, 1030, 1042, 1052, 1215										
Muscle Relaxants										
1097	30 y M				U	Ingst	Int-U	2		
		cyclobenzaprine	1	1					cyclobenzaprine	1.6 mg/L In Blood (unspecified) @ Autopsy
1098 ha	33 y M				A/C	Ingst	Int-S	1		
		baclofen	1	1						
		tizanidine	2	2						
		promethazine	3	3						
		carisoprodol	4	4						
		morphine	5	5					morphine	0.018 mg/L In Blood (unspecified) @ Unknown
		hydromorphone	6	6						
		oxybutynin	7	7						
		acetaminophen/ diphenhydramine	8	8					diphenhydramine	3.6 mg/kg In Liver @ Autopsy
		lorazepam	9	9						
		polyethylene glycol	10	10						
		lactulose	11	11						
		clonazepam	12	12					7-aminoclonazepam	0.67 mg/L In Blood (unspecified) @ Unknown
		clonazepam	12	12					clonazepam	0.74 mg/L In Blood (unspecified) @ Unknown
1099 ph	33 y F				A/C	Ingst	Int-S	2		
		metaxalone	1	1						
1100h	35 y M				A	Ingst	Int-S	2		
		cyclobenzaprine	1	1						
1101	36 y F				A	Ingst	Int-S	1		
		baclofen*	2	1						
		verapamil*	1	1						
		cyclobenzaprine	3	2						
		alprazolam	4	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
1102pha	37 y F				U	Ingst	Int-S	3		
		cyclobenzaprine	1	1					cyclobenzaprine	101 ng/mL In Blood (unspecified) @ Unknown
		drug, unknown	2	2					oxycodone	228 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	3	3					nordiazepam	404 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	3	3					diazepam	496 ng/mL In Blood (unspecified) @ Unknown
1103p	39 y F				A/C	Ingst	Int-S	1		
		tizanidine	1	1						
		drug, unknown	2	2						
1104	42 y M				A/C	Ingst	Int-S	1		
		cyclobenzaprine	1	1						
		hydrocodone	2	2						
		oxycodone	3	3						
1105p	47 y M				A/C	Ingst	Unk	2		
		carisoprodol	1	1						
		acetaminophen	2	2						
1106	48 y F				A/C	Ingst	Int-S	2		
		baclofen	1	1						
		diazepam	2	2						
		tramadol	3	3						
		ethanol	4	4					ethanol	15 mg/dL In Blood (unspecified) @ Unknown
1107	49 y F				A/C	Ingst	Int-S	3		
		tizanidine	1	1						
		acetaminophen	2	2					acetaminophen	135 mcg/mL In Serum @ Unknown
		zolpidem	3	3						
1108 ha	49 y F				U	Ingst	Int-S	2		
		baclofen	1	1						
		acetaminophen/oxycodone	2	2						
		drug, unknown	3	3						
1109h	54 y F				A	Ingst	Int-S	2		
		metaxalone	1	1						
		acetaminophen/ hydrocodone	2	2					acetaminophen	65 mcg/mL In Blood (unspecified) @ 4 h (pe)
		diazepam	3	3						
1110h	55 y F				A/C	Ingst + Par	Int-U	2		
		cyclobenzaprine	1	1						
		morphine	2	2						
		lorazepam	3	3						
[1111a]	55 y F				U	Ingst	Unk	1		
		carisoprodol	1	1					carisoprodol (n-isopropyl meprobamate)	7.29 mcg/mL In Blood (unspecified) @ Unknown
		carisoprodol	1	1					carisoprodol	72.17 mcg/mL In Blood (unspecified) @ Unknown
		paroxetine	2	2						
1112	56 y F				A	Ingst	Int-S	3		
		carisoprodol	1	1						
		ethanol	2	2						
1113	57 y F				A/C	Ingst	Int-S	2		
		baclofen	1	1						
		diclofenac	2	2						
1114 ph	62 y F				U	Ingst	Int-S	3		
		carisoprodol	1	1						
		acetaminophen/ hydrocodone	2	2						
See Also case 10, 17, 30, 39, 54, 310, 315, 334, 360, 383, 398, 407, 422, 466, 468, 489, 496, 540, 558, 559, 589, 612, 655, 692, 755, 777, 779, 788, 799, 855, 878, 899, 903, 904, 908, 914, 922, 929, 931, 940, 943, 945, 976, 1003, 1004, 1053, 1077, 1116, 1160, 1214										
Sedative/Hypnotics/Antipsychotics										
1115pa	16 y F				A	Ingst	Int-S	1		
		quetiapine	1	1					quetiapine	6.6 mg/L In Blood (unspecified) @ Unknown
		diazepam	2	2					diazepam	0.044 mg/L In Blood (unspecified) @ Unknown
		lorazepam	3	3					lorazepam	0.013 mg/L In Blood (unspecified) @ Unknown
		carbamazepine	4	4					carbamazepine	2.7 mcg/mL In Blood (unspecified) @ Unknown
		fluoxetine	5	5					fluoxetine	0.25 mg/L In Blood (unspecified) @ Unknown
		cetirizine	6	6						
		hydroxyzine	7	7					hydroxyzine	46 ng/mL In Blood (unspecified) @ Autopsy
1116pa	20 y M				A	Ingst	Unk	2		
		diazepam	1	1					nordiazepam	134 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
		diazepam	1	1					diltiazem	162 ng/mL In Blood (unspecified) @ Unknown
		cyclobenzaprine	2	2					cyclobenzaprine	11.9 ng/mL In Blood (unspecified) @ Unknown
		dicyclomine	3	3						
		gabapentin	4	4					gabapentin	1.9 mcg/mL In Blood (unspecified) @ Unknown
		buprenorphine/naloxone (sublingual)	5	5					norbuprenorphine	1.5 ng/mL In Blood (unspecified) @ Unknown
		l-theanine	6	6						
		chlordiazepoxide	7	7					chlordiazepoxide	425 ng/mL In Blood (unspecified) @ Unknown
		hydroxyzine	8	8					hydroxyzine	55 ng/mL In Blood (unspecified) @ Unknown
1117p	21 y M				U	Ingst	Int-S	2		
		olanzapine	1	1						
		clonazepam	2	2						
		mirtazapine	3	3						
		ethanol	4	4						
1118h	21 y M				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
1119p	25 y M				A/C	Unk	Int-A	2		
		diazepam	1	1					oxazepam	503 ng/mL In Urine (quantitative only) @ Unknown
		diazepam	1	1					temazepam	620 ng/mL In Urine (quantitative only) @ Unknown
		diazepam	1	1					nordiazepam	903 ng/mL In Urine (quantitative only) @ Unknown
		benzodiazepine	2	2					alprazolam	39 ng/mL In Urine (quantitative only) @ Unknown
		codeine	3	3					codeine	133 ng/mL In Urine (quantitative only) @ Unknown
		codeine	3	3					morphine	3785 ng/mL In Urine (quantitative only) @ Unknown
1120 ph	25 y M				A	Ingst + Inhal	Int-M	2		
		alprazolam	1	1						
		opioid	2	2						
		drug, unknown	3	3						
1121pha	26 y F				A	Ingst	Int-S	1		
		quetiapine (extended release)	1	1					quetiapine	1.08 mg/L In Serum @ 2 h (pe)
1122 ph	26 y M				A	Ingst	Int-A	2		
		alprazolam	1	1						
		methadone	2	2						
		cocaine	3	3						
		opioid	4	4						
1123pha	29 y F				U	Ingst	Int-S	1		
		temazepam	1	1					temazepam	3477 ng/mL In Blood (unspecified) @ Unknown
		temazepam	1	1					oxazepam	55 ng/mL In Blood (unspecified) @ Unknown
		cocaine	2	2					benzoylecognine	977 ng/mL In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	0.064 g/dL In Blood (unspecified) @ Unknown
		alprazolam	4	4					alprazolam	326 ng/mL In Blood (unspecified) @ Unknown
1124p	29 y F				A/C	Ingst	Int-A	2		
		alprazolam	1	1						
		hydrocodone	2	2						
1125 ph	29 y F				A/C	Ingst	Int-S	2		
		temazepam	1	1						
		risperidone	2	2						
		drug, unknown	3	3						
1126pha	30 y M				U	Ingst	Int-S	3		
		quetiapine	1	1					quetiapine	380 ng/mL In Blood (unspecified) @ Autopsy
		duloxetine	2	2					duloxetine	230 ng/mL In Blood (unspecified) @ Autopsy
		hydroxyzine	3	3						
1127pai	30 y F				A	Ingst + Par	Int-A	2		
		alprazolam	1	1					alprazolam	230 ng/mL In Blood (unspecified) @ Autopsy
		diphenhydramine	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
1128pa	30 y M				A/C	Ingst	Unk	3		
		olanzapine	1	1					olanzapine	440 ng/mL In Blood (unspecified) @ Autopsy
		fluvoxamine	2	2					fluvoxamine	700 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	3	3					nordiazepam	1500 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	3	3					diazepam	490 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	3	3					oxazepam	67 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	3	3					temazepam	68 ng/mL In Blood (unspecified) @ Autopsy
		tramadol	4	4					tramadol	210 ng/mL In Blood (unspecified) @ Autopsy
		tramadol	4	4					o-demethyl tramadol	97 ng/mL In Blood (unspecified) @ Autopsy
		aripiprazole	5	5					aripiprazole	420 ng/mL In Blood (unspecified) @ Autopsy
1129h	31 y F				A	Par	Int-S	2		
		propofol	1	1						
		ketamine	2	2						
		insulin	3	3						
		opioid	4	4						
		benzodiazepine	5	5						
1130pha	32 y F				U	Ingst	Int-S	1		
		quetiapine	1	1					quetiapine	5529 ng/mL In Blood (unspecified) @ Autopsy
		morphine	2	2					morphine (free)	27 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	3	3					oxycodone	59 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	4	4					methamphetamine	50 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	4	4					amphetamine	50 ng/mL In Blood (unspecified) @ Autopsy
1131 ph	33 y F				A/C	Ingst + Unk	Unk	1		
		alprazolam	1	1						
		hydroxyzine	2	2						
		topiramate	3	3						
		fluoxetine	4	4						
		zolpidem	5	5						
		drug, unknown	6	6						
1132	35 y M				A	Ingst	Int-U	3		
		quetiapine	1	1						
		propranolol	2	2						
		valproic acid	3	3						
		paliperidone	4	4						
		lisinopril	5	5						
		potassium salts	6	6						
		thiazide	7	7						
		buspirone	8	8						
		alprazolam	9	9						
		benztropine	10	10						
		paroxetine	11	11						
		simvastatin	12	12						
1133ai	35 y M				A	Ingst	Int-U	2		
		butalbital	1	1						
		citalopram	2	2						
		oxycodone	3	3						
1134ai	36 y F				A	Unk	Int-U	2		
		alprazolam	1	1						
1135pa	37 y F				U	Ingst	Int-S	1		
		quetiapine	1	1					quetiapine	4.2 mcg/mL In Blood (unspecified) @ Autopsy
		clonidine	2	2						
1136h	37 y F				A/C	Ingst	Int-S	3		
		zolpidem	1	1						
		clonazepam	2	2						
		duloxetine	3	3						
		aripiprazole	4	4						
		amphetamine	5	5						
		marijuana	6	6						
1137pha	38 y F				A/C	Ingst	Int-S	1		
		quetiapine	1	1					quetiapine	2911 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
		venlafaxine	2	2					venlafaxine	24592 ng/mL In Blood (unspecified) @ Unknown
		fluoxetine	3	3					norfluoxetine	1.06 mg/L In Blood (unspecified) @ Autopsy
		fluoxetine	3	3					fluoxetine	2.2 mg/L In Blood (unspecified) @ Autopsy
		fluoxetine	3	3					fluoxetine	358 pg/mL In Blood (unspecified) @ Unknown
		pseudoephedrine	4	4					pseudoephedrine	205 ng/mL In Blood (unspecified) @ Unknown
		topiramate	5	5					topiramate	3.31 mg/L In Blood (unspecified) @ Autopsy
		dextromethorphan	6	6					dextromethorphan	545 ng/mL In Blood (unspecified) @ Unknown
		pregabalin	7	7					pregabalin	21.3 mcg/mL In Blood (unspecified) @ Unknown
1138 pi	39 y F				U	Ingst	Int-S	2		
		quetiapine	1	1						
1139ai	40 y M				A	Ingst	Int-U	2		
		alprazolam	1	1						
		hydrocodone	2	2						
		methadone	3	3						
1140	41 y F				C	Ingst	Int-S	2		
		quetiapine	1	1						
		buspirone	2	2						
		gabapentin	3	3						
		midazolam	4	4						
1141	42 y F				A/C	Ingst + Aspir	Int-S	2		
		quetiapine	1	1						
1142 ph	43 y F				A/C	Ingst	Int-S	2		
		olanzapine	1	1						
		zolpidem	2	2						
1143	43 y M				A/C	Ingst	Int-S	1		
		quetiapine	1	1						
1144 ha	44 y F				A	Ingst	Int-S	1		
		quetiapine	1	1					quetiapine	32 mg/mL In Blood (unspecified) @ Autopsy
		paroxetine	2	2					paroxetine	1.68 mg/L In Blood (unspecified) @ Autopsy
		lamotrigine	3	3					lamotrigine	8.2 mg/mL In Blood (unspecified) @ Autopsy
		oxycodone	4	4					oxycodone (free)	7 ng/mL In Blood (unspecified) @ Autopsy
		hydrochlorothiazide	5	5						
		bupropion	6	6						
		alprazolam	7	7						
1145	44 y F				A/C	Ingst	Int-S	1		
		quetiapine	1	1					quetiapine	2310 ng/mL In Blood (unspecified) @ Autopsy
		quetiapine	2	2					quetiapine	2310 ng/mL In Blood (unspecified) @ Autopsy
		quetiapine	3	3					quetiapine	2310 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	4	4					ethanol	221 mg/dL In Blood (unspecified) @ Autopsy
1146 ha	44 y F				A	Ingst	Int-S	1		
		quetiapine	1	1					quetiapine	5.2 mcg/mL In Blood (unspecified) @ 2 d (pe)
		lamotrigine	2	2						
		topiramate	3	3						
		gabapentin	4	4					gabapentin	26 mcg/mL In Blood (unspecified) @ 2 d (pe)
1147 ph	44 y F				A	Ingst	Int-S	2		
		clonazepam	1	1						
1148h	45 y M				A	Ingst	Int-S	2		
		lorazepam	1	1						
		temazepam	2	2						
		zolpidem	3	3						
		quetiapine	4	4						
		lithium	5	5					lithium	1.8 mEq/L In Serum @ Unknown
		risperidone	6	6						
		bupropion	7	7						
		benztropine	8	8						
		lurasidone	9	9						
		paroxetine	10	10						

(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
1149h	45 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		zolpidem	2	2						
1150	47 y F				A/C	Ingst	Int-S	2		
		alprazolam	1	1						
		drug, unknown	2	2						
1151ai	49 y M				A	Ingst + Oth	Int-S	2		
		alprazolam	1	1						
		hydrocodone	2	2						
		oxycodone	3	3						
		oxymorphone	4	4						
1152i	49 y F				U	Ingst	Int-S	3		
		clonazepam	1	1						
		bupropion	2	2						
		venlafaxine	3	3						
		gabapentin	4	4						
		lamotrigine	5	5						
1153 ha	50 y F				A/C	Ingst + Par	Unk	3		
		asenapine	1	1						
		diphenhydramine*	3	2					diphenhydramine	0.18 mg/L In Blood (unspecified) @ Unknown
		paroxetine*	2	2						
1154 ph	50 y F				A/C	Ingst	Unk	2		
		benzodiazepine	1	1						
		tramadol	2	2						
		citalopram	3	3						
1155	50 y M				A	Ingst	Int-S	2		
		quetiapine	1	1						
1156 ph	51 y M				U	Ingst	Int-S	2		
		zolpidem	1	1						
		ethanol	2	2					ethanol	0.22 mg/mL In Blood (unspecified) @ Unknown
1157pha	51 y M				A	Unk	Int-U	2		
		benzodiazepine	1	1					alprazolam	14 ng/mL In Blood (unspecified) @ 1 d (pe)
		opioid	2	2					oxycodone	108 ng/mL In Blood (unspecified) @ 1 d (pe)
[1158ha]	51 y M				A	Par	Int-S	1		
		propofol	1	1					propofol	0.61 mcg/mL In Serum @ 1 h (pe)
1159h	52 y M				A/C	Ingst	Int-S	2		
		olanzapine	1	1						
1160ai	52 y F				A	Ingst	Int-U	2		
		butalbital	1	1						
		carisoprodol	2	2						
		oxycodone	3	3						
1161ai	52 y M				A	Ingst	Int-U	2		
		diazepam	1	1						
		alprazolam	2	2						
1162h	52 y M				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
1163	54 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		benzodiazepine	2	2						
1164p	54 y F				A	Ingst	Int-S	3		
		alprazolam	1	1						
1165p	56 y M				U	Ingst	Int-A	3		
		alprazolam	1	1						
		acetaminophen/ hydrocodone	2	2						
1166	57 y F				A	Ingst	Int-S	2		
		alprazolam	1	1						
1167i	58 y F				A	Ingst	Int-S	3		
		zolpidem	1	1						
1168 ph	59 y M				A/C	Ingst + Unk	AR-O	3		
		olanzapine	1	1						
1169ai	59 y F				A	Ingst	Int-U	2		
		diazepam	1	1						
		midazolam	2	2						
1170	59 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
		clonazepam	2	2						
1171h	60 y M				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
1172 ph	60 y F				A	Ingst + Aspir	Int-S	2		
		temazepam	1	1						
1173pa	61 y M				A	Ingst	Unk	2		
		clonazepam	1	1					clonazepam	6.8 ng/mL In Serum @ Autopsy
1174h	62 y M				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		lithium	2	2					lithium	0.39 mcg/mL In Blood (unspecified) @ 15 m (pe)
		sertraline	3	3						
1175	62 y F				A/C	Ingst	Int-S	3		
		diazepam	1	1						
1176 ph	62 y M				U	Ingst	Int-S	1		
		phenobarbital	1	1						
		phenytoin	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
1177p	66 y M				A/C	Ingst + Unk	Int-S	2		
		haloperidol	1	1						
		tramadol	2	2						
		salicylate	3	3					salicylate	4.7 mg/dL In Serum @ Unknown
		salicylate	3	3					salicylate	5 mg/dL In Serum @ 1 d (pe)
		opioid	4	4						
1178p	67 y F				A	Ingst	Int-S	2		
		clonazepam	1	1						
		mirtazapine	2	2						
		trazodone	3	3						
		zolpidem	4	4						
		antacid (proton pump inhibitor)	5	5						
		drug, unknown	6	6						
1179h	68 y M				A/C	Ingst	Int-S	3		
		triazolam	1	1						
1180h	69 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
		clonazepam	2	2						
		citalopram	3	3						
1181h	72 y F				A/C	Ingst	Int-S	3		
		temazepam	1	1						
		oxycodone	2	2						
1182i	73 y F				A/C	Ingst	Int-S	3		
		temazepam	1	1						
		losartan	2	2						
		tramadol	3	3						
1183p	73 y F				A	Ingst	Int-S	2		
		benzodiazepine	1	1						
1184 ha	74 y F				U	Ingst	Unk	2		
		diazepam	1	1					diazepam	0.12 mg/L In Blood (unspecified) @ Autopsy
		diazepam	1	1					nordiazepam	0.18 mg/L In Blood (unspecified) @ Autopsy
		ethanol	2	2						
		propylene glycol	3	3						
1185	75 y F				A	Ingst	Int-S	2		
		zolpidem	1	1						
		acetaminophen/codeine	2	2					acetaminophen	85 mcg/mL In Serum @ Unknown
		trazodone	3	3						
		acetaminophen/ hydrocodone	4	4						
1186a	76 y F				A/C	Ingst	Int-S	2		
		temazepam	1	1						
		acetaminophen/ hydrocodone	2	2						
		venlafaxine	3	3						
		citalopram	4	4						
		naproxen	5	5						
1187	81 y M				A	Ingst	Int-S	2		
		alprazolam	1	1						
		zolpidem	2	2						
1188	85 y F				A/C	Ingst	Int-S	2		
		temazepam	1	1						
1189	88 y F				A/C	Ingst	Int-S	2		
		lorazepam	1	1						
		fluoxetine	2	2						
1190h	93 y M				A	Ingst	Int-S	2		
		alprazolam	1	1						
		diphenhydramine	2	2						
1191 pi	Unknown adult (>=20 yrs) F				A/C	Ingst	Int-S	2		
		zolpidem	1	1						
		methadone	2	2						
		clonazepam	3	3						
		methylphenidate	4	4						

See Also case 3, 5, 11, 17, 18, 25, 30, 34, 50, 55, 68, 71, 74, 92, 116, 124, 139, 179, 197, 198, 309, 310, 312, 315, 319, 321, 322, 323, 325, 337, 338, 340, 341, 344, 345, 346, 347, 348, 349, 351, 360, 361, 362, 365, 368, 370, 373, 375, 379, 383, 384, 389, 390, 406, 409, 413, 415, 417, 418, 422, 433, 439, 441, 451, 452, 454, 461, 468, 480, 482, 490, 498, 499, 506, 510, 512, 514, 521, 534, 537, 540, 549, 552, 556, 559, 560, 570, 571, 575, 576, 583, 586, 587, 589, 598, 606, 612, 614, 618, 619, 622, 628, 632, 635, 636, 639, 649, 656, 658, 659, 662, 668, 670, 672, 676, 692, 698, 711, 714, 716, 717, 720, 721, 724, 727, 731, 733, 741, 742, 743, 745, 746, 747, 749, 753, 755, 759, 763, 764, 766, 770, 774, 778, 779, 784, 785, 787, 788, 789, 790, 791, 796, 799, 801, 802, 804, 805, 807, 808, 809, 811, 818, 821, 822, 826, 828, 835, 841, 844, 847, 849, 867, 869, 872, 876, 878, 881, 882, 885, 892, 895, 896, 897, 900, 903, 911, 913, 915, 922, 923, 925, 929, 930, 931, 940, 942, 945, 946, 947, 950, 956, 958, 960, 961, 971, 978, 980, 983, 988, 997, 999, 1004, 1006, 1007, 1011, 1016, 1035, 1051, 1052, 1067, 1069, 1074, 1079, 1083, 1084, 1088, 1093, 1098, 1101, 1102, 1103, 1106, 1107, 1109, 1110, 1217, 1219, 1226, 1239, 1246, 1259, 1261, 1263, 1275, 1277, 1286, 1290, 1298, 1314, 1320, 1321, 1322, 1328, 1338, 1345, 1346, 1360, 1373, 1378, 1406

Stimulants and Street Drugs

1192 ph	15 y M				A	Ingst + Inhal	Int-A	1		
		amphetamine (hallucinogenic), 2 C	1	1						
		mushroom (psilocybin-psilocin)	2	2						
		marijuana	3	3						
1193 pi	16 y M				A	Ingst	Int-A	2		
		amphetamine (hallucinogenic)	1	1						
1194pa	17 y F				A/C	Ingst + Unk	Int-A	1		
		amphetamine (hallucinogenic), 25 C-NBOMe	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
		amphetamine (hallucinogenic), 2C-I	2	2						
		marijuana	3	3						
		oxycodone	4	4						
1195ai	17 y M				U	Unk	Int-A	2		
		heroin	1	1						
1196pha	17 y F				A	Unk	Int-A	1		
		heroin	1	1						
1197pha	17 y F				A	Ingst	Int-A	1		
		amphetamine (hallucinogenic), 2C	1	1						
1198pha	17 y M				U	Unk	Int-A	1		
		amphetamine	1	1					methamphetamine	0.1 mg/L In Blood (unspecified) @ Autopsy
		amphetamine	1	1					methamphetamine	0.21 mg/L In Blood (unspecified) @ Unknown
		diphenhydramine	2	2					diphenhydramine	0.02 mcg/mL In Blood (unspecified) @ Autopsy
1199	17 y M				A	Ingst	Int-A	1		
		amphetamine (hallucinogenic)	1	1						
		lysergic acid diethylamide (LSD)	2	2						
[1200ph]	17 y M				A	Ingst	Int-A	2		
		lysergic acid diethylamide (LSD)	1	1						
		methylenedioxymethamphetamine (MDMA)	2	2						
1201 ph	18 y M				A	Inhal	Int-A	2		
		amphetamine (hallucinogenic), 2C-I	1	1						
		marijuana	2	2						
1202 pi	18 y M				A	Ingst	Int-A	2		
		amphetamine (hallucinogenic)	1	1						
1203pai	18 y M				U	Ingst	Unt-U	2		
		caffeine	1	1					caffeine	100 mcg/mL In Blood (unspecified) @ Autopsy
1204	18 y F				A	Ingst	Int-A	1		
		methylenedioxymethamphetamine (MDMA)	1	1						
		ethanol	2	2						
1205i	19 y M				A	Unk	Int-A	2		
		tryptamine (hallucinogenic)	1	1						
1206 ha	19 y M				A	Ingst	Int-A	1		
		methylenedioxymethamphetamine (MDMA)	1	1					mda (3,4-methylene dioxyamphetamine)	110 ng/mL In Blood (unspecified) @ Autopsy
		methylenedioxymethamphetamine (MDMA)	1	1					mdma (3,4-methylenedioxy-metham-phetamine)	5400 ng/mL In Blood (unspecified) @ Autopsy
1207p	19 y F				A	Unk	Int-A	1		
		heroin	1	1						
1208 ha	19 y M				A	Inhal + Par	Int-A	2		
		THC homolog	1	1						
		marijuana	2	2						
1209h	19 y M				A	Ingst	Unt-G	2		
		cocaine	1	1						
		disopyramide	2	2						
		oxycodone	3	3						
1210 ph	19 y F				A	Oth + Unk	Int-A	2		
		methamphetamine	1	1						
		morphine	2	2						
		codeine	3	3						
		pseudoephedrine	4	4						
1211	19 y M				A	Ingst	Int-A	1		
		methylenedioxymethamphetamine (MDMA)	1	1						
1212h	19 y M				U	Ingst	Int-A	2		
		methamphetamine	1	1						
1213p	19 y F				U	Unk	Int-A	1		
		heroin	1	1						
1214pa	20 y F				A	Ingst + Inhal	Int-A	1		
		heroin	1	1					6-monoacetylmorphine	0.96 mg/L In Urine (quantitative only) @ Autopsy
		codeine	2	2					morphine	0.096 mg/L In Blood (unspecified) @ Autopsy
		codeine	2	2					codeine	0.22 mg/L In Urine (quantitative only) @ Autopsy
		codeine	2	2					morphine	3.9 mg/L In Urine (quantitative only) @ Autopsy
		hydrocodone	3	3					hydrocodone	0.089 mg/L 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
		oxycodone	4	4					oxymorphone	0.02 mg/L In Urine (quantitative only) @ Autopsy
		oxycodone	4	4					oxycodone	1.1 mg/L In Urine (quantitative only) @ Autopsy
		citalopram	5	5					citalopram	0.2 mg/L In Blood (unspecified) @ Autopsy
		citalopram	5	5					citalopram	1.3 mg/kg In Liver @ Autopsy
		cyclobenzaprine	6	6						
		dextromethorphan	7	7						
		diltiazem	8	8						
1215pha	20 y M				U	Par + Unk	AR-D	1		
		cocaine	1	1					benzoylecognine	0.8 mg/L In Blood (unspecified) @ Autopsy
		lipid emulsion	2	2						
1216pai	20 y M				A	Unk	Int-A	1		
		methylenedioxymethamphetamine (MDMA)	1	1						
1217p	20 y M				U	Unk	Int-U	2		
		methamphetamine	1	1						
		benzodiazepine	2	2						
[1218ph]	20 y M				A/C	Ingst	Int-A	1		
		amphetamine (hallucinogenic)	1	1						
1219pa	21 y M				C	Unk	Int-A	1		
		heroin	1	1					morphine	0.026 mg/L In Urine (quantitative only) @ Autopsy
		alprazolam	2	2					alprazolam	0.11 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	0.12 mg/kg In Blood (unspecified) @ 14 h (pe)
1220h	21 y M				A	Ingst	Int-A	2		
		amphetamine (hallucinogenic), 2 C	1	1						
1221h	21 y M				U	Unk	Unk	2		
		amphetamine	1	1						
		bupropion	2	2						
		amphetamine (hallucinogenic)	3	3						
1222pai	21 y F				A/C	Unk	Int-A	2		
		heroin	1	1					morphine	151 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	2	2						
[1223ph]	21 y F				U	Ingst	Int-U	1		
		methamphetamine	1	1					amphetamine	0.32 mg/L In Blood (unspecified) @ Autopsy
		methamphetamine	1	1					methamphetamine	12.53 mg/L In Blood (unspecified) @ Autopsy
[1224ha]	21 y F				A	Ingst	Int-A	1		
		methylenedioxymethamphetamine (MDMA)	1	1					mda (3,4-methylene dioxyamphetamine)	16 ng/mL In Blood (unspecified) @ Autopsy
		methylenedioxymethamphetamine (MDMA)	1	1					mdma (3,4-methylene dioxymethamphetamine)	460 ng/mL In Blood (unspecified) @ Autopsy
1225p	21 y F				A	Ingst	Int-A	1		
		amphetamine (hallucinogenic)	1	1						
1226pa	22 y M				A	Ingst + Inhal	Int-A	1		
		heroin	1	1					morphine	0.092 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	2	2					oxycodone	0.012 mg/L In Blood (unspecified) @ Autopsy
		clonazepam	3	3					clonazepam	0.005 mg/L In Blood (unspecified) @ Autopsy
		clonazepam	3	3					7-aminoclonazepam	0.065 mg/L In Blood (unspecified) @ Autopsy
1227pa	22 y M				A	Inhal	Int-A	1		
		amphetamine (hallucinogenic), 25 C-NBOMe	1	1					25 c-nbome	31.7 ng/mL In Whole Blood @ 17 h (pe)
		amphetamine (hallucinogenic), 2 C-I	2	2						
		marijuana	3	3					carboxy-thc	68.5 ng/mL In Whole Blood @ 17 h (pe)
		marijuana	3	3					thc (tetrahydrocannabinol)	7.9 ng/mL In Whole Blood @ 17 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
1228 ph	22 y F				A	Par	Int-A	1		
		heroin	1	1					morphine	92 ng/mL In Blood (unspecified) @ Unknown
1229ai	22 y F				U	Unk	Int-U	2		
		methamphetamine	1	1						
1230 ph	22 y F				U	Par	Unk	1		
		heroin	1	1						
1231	22 y M				A	Ingst	Int-A	2		
		methamphetamine	1	1						
1232	22 y F				A	Ingst + Inhal	Int-U	1		
		marijuana	1	1						
		diet aid, nonprescription	2	2						
1233pha	22 y F				A	Par	Int-A	1		
		heroin	1	1					morphine	121 ng/mL In Blood (unspecified) @ Autopsy
1234p	23 y M				U	Par	Int-A	1		
		heroin	1	1					6-monoacetylmorphine	220 ng/mL In Urine (quantitative only) @ Autopsy
		heroin	1	1					morphine	92 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	2	2					amphetamine	120 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	2	2					methamphetamine	300 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	3	3					delta-9-thc	3.1 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	3	3					delta-9-carboxy-thc	37 ng/mL In Blood (unspecified) @ Autopsy
1235p	23 y F				A	Ingst	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
1236	23 y M				A	Ingst	Int-A	2		
		gamma-hydroxybutyric acid	1	1						
		methamphetamine	2	2						
1237pai	23 y F				C	Ingst + Inhal	Int-A	1		
		heroin	1	1						
		droperidol/ fentanyl	2	2					fentanyl	3.1 ng/mL In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	0.232 % In Serum @ Unknown
[1238pa]	23 y M				A	Unk	Int-A	1		
		methamphetamine	1	1					methamphetamine	10000 ng/mL In Urine (quantitative only) @ Autopsy
		methamphetamine	1	1					amphetamine	10000 ng/mL In Urine (quantitative only) @ Autopsy
		methamphetamine	1	1					amphetamine	413 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	1	1					methamphetamine	8036 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	2	2					carboxy-thc	6.9 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	2	2					thc (tetrahydro cannabinol)	62 ng/mL In Urine (quantitative only) @ Autopsy
1239 ha	23 y M				A	Unk	Unt-U	1		
		heroin	1	1					6-monoacetylmorphine	9 mcg/L In Vitreous @ Autopsy
		clonazepam	2	2					clonazepam	43 ng/mL In Blood (unspecified) @ Unknown
1240pha	23 y F				A	Ingst + Inhal	Int-A	1		
		3,4-methylenedioxyamphetamine (MDA)	1	1					mda (3,4-methylene dioxyamphetamine)	12000 ng/mL In Blood (unspecified) @ Unknown
		ethanol*	3	2					ethanol	115 mg/dL In Blood (unspecified) @ Unknown
		methylenedioxymethamphetamine (MDMA) *	2	2						
1241p	23 y M				A	Inhal	Int-A	1		
		cocaine	1	1						
		fentanyl	2	2						
1242 ph	24 y M				A	Unk	Int-U	2		
		caffeine	1	1						
1243h	24 y M				A/C	Par	Int-A	1		
		heroin	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
1244pa	24 y F				A	Unk	Int-A	1		
		heroin	1	1						
		oxycodone	2	2						
1245p	24 y M				A	Par	Int-A	1		
		heroin	1	1						
1246	25 y M				A/C	Ingst	Int-S	2		
		amphetamine/ dextroamphetamine	1	1						
		alprazolam	2	2						
1247 ph	25 y M				C	Par	Int-A	1		
		heroin	1	1						
		drug, unknown	2	2						
1248pai	25 y F				A	Par	Int-A	1		
		heroin	1	1					morphine	260 ng/mL In Blood (unspecified) @ Autopsy
1249ai	25 y M				A	Unk	Int-U	2		
		heroin	1	1						
1250	25 y M				A/C	Par	Int-A	3		
		amphetamine	1	1						
1251	26 y M				A	Ingst	Int-M	2		
		methamphetamine	1	1						
1252a	26 y M				U	Unk	Int-A	3		
		cocaine	1	1						
		heroin	2	2						
		methamphetamine	3	3						
1253 pi	26 y M				A	Ingst	Int-A	2		
		heroin	1	1						
		drug, unknown	2	2						
1254p	26 y M				A	Ingst	Int-M	1		
		cocaine	1	1						
1255pha	26 y M				A	Unk	Unk	1		
		heroin	1	1					morphine	1395 ng/mL In Urine (quantitative only) @ Unknown
		heroin	1	1					codeine	79 ng/mL In Urine (quantitative only) @ Unknown
1256 ph	27 y F				U	Inhal	Int-A	1		
		methamphetamine	1	1						
[1257ha]	27 y M				U	Ingst	Int-A	1		
		amphetamine (hallucinogenic)	1	1					mda (3,4-methylene dioxyam phetamine)	0.096 mg/L In Whole Blood @ Unknown
		amphetamine (hallucinogenic)	1	1					mdma (3,4-methylene dioxymetham phetamine)	4.46 mg/L In Whole Blood @ Unknown
1258	28 y M				A	Ingst	Int-A	2		
		cocaine	1	1						
		opioid	2	2						
		marijuana	3	3						
1259pa	28 y F				U	Ingst	Int-S	1		
		heroin	1	1					morphine	10 mg/L In Urine (quantitative only) @ Autopsy
		heroin	1	1					morphine	19069 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					6-mono acetylmorphine	3261 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					codeine	3261 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					codeine	3503 ng/mL In Urine (quantitative only) @ Autopsy
		heroin	1	1					6-mono acetylmorphine	5503 ng/mL In Urine (quantitative only) @ Autopsy
		hydroxyzine	2	2					hydroxyzine	1327 ng/mL In Blood (unspecified) @ Autopsy
		dextromethorphan	3	3					dextromethorphan	1206 ng/mL In Blood (unspecified) @ Autopsy
		diphenhydramine	4	4					diphenhydramine	114.3 mg/L In Blood (unspecified) @ Autopsy
		clonazepam	5	5					7-aminoclonazepam	356 ng/mL In Urine (quantitative only) @ Autopsy
		clonazepam	5	5					7-aminoclonazepam	52.9 ng/mL In Blood (unspecified) @ Autopsy
		lamotrigine	6	6					lamotrigine	7.3 ng/mL In Blood (unspecified) @ Autopsy
		topiramate	7	7					topiramate	3.9 ng/mL In Blood (unspecified) @ Autopsy
		quetiapine	8	8					quetiapine	1225 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
		acetaminophen	9	9					acetaminophen	119 ng/mL In Blood (unspecified) @ Autopsy
		guaifenesin	10	10						
1260pai	28 y M				A	Par	Int-A	3		
		heroin	1	1					morphine	104 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.221 % (wt/Vol) In Blood (unspecified) @ Autopsy
1261pai	28 y M				U	Ingst + Unk	Int-A	1		
		cocaine	1	1					benzoylecognine	0.6 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	0.13 mg/L In Blood (unspecified) @ Autopsy
		oxycodone (extended release)	3	3					oxycodone	0.1 mg/L In Blood (unspecified) @ Autopsy
		quetiapine	4	4						
		clonazepam	5	5						
		lidocaine	6	6						
1262 ph	28 y M				U	Unk	Int-A	2		
		heroin	1	1						
1263pha	29 y F				U	Unk	Int-A	1		
		heroin	1	1					morphine (free)	190 ng/mL In Whole Blood @ Unspecified
		citalopram	2	2					citalopram	120 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	3	3					clonazepam	21 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	3	3					7-aminoclonazepam	40 ng/mL In Blood (unspecified) @ Unknown
		hydroxyzine	4	4					hydroxyzine	15 ng/mL In Blood (unspecified) @ Unknown
1264 ha	29 y M				U	Unk	Int-U	1		
		methamphetamine	1	1					amphetamine	177 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	1	1					methamphetamine	8728 ng/mL In Blood (unspecified) @ Autopsy
		amphetamine (hallucinogenic)	2	2						
1265pha	29 y M				A	Unk	Int-A	1		
		amphetamine	1	1					amphetamine	0.42 mcg/mL In Blood (unspecified) @ Autopsy
		methamphetamine	2	2					methamphetamine	10 mcg/mL In Blood (unspecified) @ Autopsy
		methylenedioxymetham-phetamine (MDMA)	3	3						
		marijuana	4	4						
1266pha	29 y M				U	Par	Int-U	1		
		heroin	1	1					morphine (free)	160 ng/mL In Blood (unspecified) @ Unknown
		heroin	1	1					6-mono acetylmorphine	4.7 ng/mL In Blood (unspecified) @ Unknown
		heroin	1	1					codeine (free)	7.2 ng/mL In Blood (unspecified) @ Unknown
1267 pi	30 y F				A	Par	Int-A	2		
		heroin	1	1						
1268h	30 y M				A	Unk	Unk	3		
		cocaine	1	1						
1269p	30 y F				A	Par	Int-A	2		
		heroin	1	1						
1270h	30 y M				A	Unk	Int-S	1		
		methamphetamine	1	1						
1271ai	30 y F				A	Par	Int-U	2		
		heroin	1	1						
1272p	30 y M				A/C	Par	Int-A	1		
		heroin	1	1						
1273 ha	31 y M				A	Unk	Int-A	3		
		heroin	1	1					morphine (free)	7 ng/mL In Serum @ Unknown
1274 ph	31 y F				A/C	Par	Int-A	1		
		heroin	1	1						
1275pha	31 y F				U	Ingst	Int-A	1		
		amphetamine	1	1					amphetamine	8098 Other (see abst) In Urine (quantitative only) @ 9 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
		acetaminophen/ hydrocodone	2	2						
		ethanol	3	3					ethanol	151 mg/dL In Serum @ 1 h (pe)
		alprazolam	4	4					alpha-oh-alprazolam	116 Other (see abst) In Urine (quantitative only) @ 9 h (pe)
		alprazolam	4	4					alprazolam	172 Other (see abst) In Urine (quantitative only) @ 9 h (pe)
		clonazepam	5	5					7-aminoclonazepam	264 Other (see abst) In Urine (quantitative only) @ 9 h (pe)
		fentanyl (transdermal)	6	6					norfentanyl	114 Other (see abst) In Urine (quantitative only) @ 9 h (pe)
		fentanyl (transdermal)	6	6					fentanyl	72 Other (see abst) In Urine (quantitative only) @ 9 h (pe)
1276ai	31 y M				U	Unk	Int-U	2		
		phencyclidine	1	1						
[1277pa]	31 y M				A	Ingst	Unk	1		
		amphetamine	1	1					amphetamine	262 ng/mL In Blood (unspecified) @ Unknown
		amphetamine	1	1					methamphetamine	9796 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	2	2						
1278p	32 y M				A	Ingst	Int-M	1		
		cocaine	1	1						
1279p	32 y M				U	Inhal	Int-A	2		
		THC homolog	1	1						
1280 ha	32 y M				A	Unk	Int-A	1		
		methamphetamine	1	1					methamphetamine	3800 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	1	1					amphetamine	72 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	2	2						
1281 ph	32 y M				U	Unk	Int-S	2		
		heroin	1	1						
1282 pi	32 y F				A	Inhal + Par	Int-A	2		
		cocaine*	2	1						
		fentanyl*	1	1						
1283 ph	33 y F				U	Par	Int-A	2		
		heroin	1	1						
1284pa	33 y M				A/C	Inhal	Int-U	1		
		cocaine	1	1					cocaethylene	0.013 mg/L In Blood (unspecified) @ Autopsy
		cocaine	1	1					cocaine	2.9 mg/L In Blood (unspecified) @ Autopsy
		cocaine	1	1					benzoylecognine	8.2 mg/L In Blood (unspecified) @ Autopsy
		levamisole	2	2						
1285pa	33 y M				A	Unk	Int-S	1		
		heroin	1	1						
1286 ph	35 y M				A/C	Ingst + Par	Int-U	2		
		heroin	1	1						
		benzodiazepine	2	2						
		acetaminophen/ hydrocodone	3	3						
1287ai	35 y M				A	Ingst + Unk	Int-U	2		
		methamphetamine	1	1						
		hydrocodone	2	2						
		freon	3	3						
1288 ha	35 y M				U	Ingst + Par + Unk	Unk	1		
		cocaine	1	1					benzoylecognine	800 ng/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	0.031 g/dL In Blood (unspecified) @ Unknown
		heroin	3	3					6-mono acetylmorphine	6 ng/mL In Vitreous @ Autopsy
1289pa	36 y M				A	Unk	Int-A	3		
		heroin	1	1					morphine (free)	35 mcg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	0.3 mg/L In Blood (unspecified) @ Autopsy
1290ai	36 y M				A	Ingst + Unk	Int-U	2		
		methamphetamine	1	1						
		alprazolam	2	2						
1291ai	36 y M				A	Unk	Int-U	2		
		methamphetamine	1	1						
		heroin	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
1292h	36 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		methamphetamine	2	2						
		heroin	3	3						
1293p	37 y M				A/C	Par	Int-A	2		
		heroin	1	1						
1294phi	37 y M				A	Par	Int-A	2		
		heroin	1	1						
1295ai	37 y M				A	Unk	Int-U	2		
		methamphetamine	1	1						
1296 ph	37 y M				A/C	Ingst	Int-M	1		
		methamphetamine	1	1						
1297	37 y M				U	Par	Unk	1		
		heroin	1	1						
1298a	37 y M				U	Ingst	Unk	1		
		methamphetamine	1	1					methamphetamine	250 mcg/L In Urine (quantitative only) @ Unknown
		methamphetamine	1	1					methamphetamine	3320 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	1	1					amphetamine	71 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	1	1					amphetamine	8280 ng/mL In Urine (quantitative only) @ Unknown
		cocaine	2	2					benzoylecognine	4420 ng/mL In Urine (quantitative only) @ Unknown
		clonazepam	3	3					7-aminoclonazepam	14.5 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	3	3					7-aminoclonazepam	263 ng/mL In Urine (quantitative only) @ Unknown
		alprazolam	4	4					alprazolam	260 ng/mL In Urine (quantitative only) @ Unknown
		alprazolam	4	4					alpha-oh-alprazolam	429 ng/mL In Urine (quantitative only) @ Unknown
		alprazolam	4	4					alprazolam	9.1 ng/mL In Blood (unspecified) @ Unknown
		buprenorphine	5	5					buprenorphine	1 ng/mL In Blood (unspecified) @ Unknown
		buprenorphine	5	5					buprenorphine	442 ng/mL In Urine (quantitative only) @ Unknown
		marijuana	6	6					carboxy-thc	21 ng/mL In Urine (quantitative only) @ Unknown
		marijuana	6	6					carboxy-thc	3.1 ng/mL In Blood (unspecified) @ Unknown
		gabapentin	7	7					gabapentin	2.5 mcg/mL In Blood (unspecified) @ Unknown
1299h	37 y M				A	Ingst	Int-S	2		
		cocaine	1	1						
		opioid	2	2						
		marijuana	3	3						
1300 ph	37 y F				A/C	Ingst	Int-A	2		
		amphetamine*	2	1						
		cocaine*	1	1						
		opioid	3	2						
		glipizide	4	3						
1301 ph	38 y F				A	Ingst	Unk	2		
		heroin	1	1						
1302ai	38 y M				A	Unk	Int-U	2		
		methamphetamine	1	1						
1303ai	38 y M				A	Unk	Int-A	2		
		methamphetamine	1	1						
1304ai	38 y F				A	Unk	Int-U	2		
		methamphetamine	1	1						
1305pai	38 y M				A	Ingst	Int-A	2		
		THC homolog	1	1						
1306 ph	38 y F				A	Par	Int-S	2		
		heroin	1	1						
1307p	38 y M				A	Ingst	Int-U	1		
		methamphetamine	1	1						
1308p	39 y M				U	Par	Int-S	2		
		heroin	1	1						
1309ai	39 y M				A	Unk	Int-U	2		
		methamphetamine	1	1						
		oxycodone	2	2						
1310ai	39 y M				A	Unk	Int-U	2		
		methamphetamine	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
1311h	39 y M				C	Inhal + Unk	Int-A	2		
		amphetamine (hallucinogenic)	1	1						
		methamphetamine	2	2						
		methadone	3	3						
1312ai	40 y M				A	Unk	Int-U	2		
		methamphetamine	1	1						
1313ai	42 y M				A	Ingst + Par	Int-U	2		
		heroin	1	1						
		ethanol	2	2						
1314a	42 y F				A	Ingst	Int-S	1		
		amphetamine	1	1					amphetamine	88 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	2	2					methamphetamine	170 ng/mL In Blood (unspecified) @ Unknown
		lamotrigine	3	3					lamotrigine	19 mcg/mL In Blood (unspecified) @ Unknown
		valproic acid	4	4					valproic acid	4.5 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	5	5						
		salicylate	6	6						
		paroxetine	7	7						
		quetiapine	8	8						
		ibuprofen	9	9						
1315p	42 y M				A	Inhal	Int-A	1		
		cocaine	1	1						
		fentanyl	2	2						
1316	43 y F				A	Ingst	Int-S	2		
		methamphetamine	1	1						
1317h	43 y M				A	Ingst	Int-U	3		
		methamphetamine	1	1						
1318ai	43 y F				A	Ingst + Unk	Int-U	2		
		methamphetamine	1	1						
		hydrocodone	2	2						
		ethanol	3	3						
1319 ha	44 y M				A	Inhal	Int-A	3		
		amphetamine	1	1						
		methamphetamine	2	2						
1320a	44 y M				A/C	Ingst	Int-S	1		
		cocaine*	1	1					benzoylecognine	2300 ng/mL In Blood (unspecified) @ Unknown
		cocaine*	1	1					cocaine	91 ng/mL In Blood (unspecified) @ Unknown
		oxycodone (extended release)*	2	1					oxycodone (free)	720 ng/mL In Blood (unspecified) @ Unknown
		topiramate	3	3					topiramate	770 ng/mL In Blood (unspecified) @ Unknown
		zolpidem	4	4					zolpidem	18 ng/mL In Blood (unspecified) @ Unknown
		chlorpromazine	5	5					chlorpromazine	240 ng/mL In Blood (unspecified) @ Unknown
		duloxetine	6	6					duloxetine	130 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	7	7					alprazolam	53 ng/mL In Blood (unspecified) @ Unknown
1321ai	44 y F				U	Unk	Int-U	2		
		cocaine	1	1						
		alprazolam	2	2						
1322 ha	44 y F				U	Ingst	Int-A	1		
		caffeine	1	1					caffeine	150 mg/L In Blood (unspecified) @ Autopsy
		caffeine	1	1					caffeine	96 mg/L In Blood (unspecified) @ 2 h (pe)
		cocaine	2	2					benzoylecognine	0.024 mg/L In Blood (unspecified) @ 2 h (pe)
		cocaine	2	2					benzoylecognine	0.038 mg/L In Blood (unspecified) @ Autopsy
		lorazepam	3	3					lorazepam	0.042 mg/L In Blood (unspecified) @ Autopsy
		lorazepam	3	3					lorazepam	0.044 mg/L In Blood (unspecified) @ 2 h (pe)
		ethanol	4	4					ethanol	100 mg/dL In Blood (unspecified) @ 2 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
1323ai	44 y M				A	Unk	Int-U	2		
		methamphetamine	1	1						
1324pai	45 y M				A/C	Unk	Int-A	1		
		heroin	1	1						
1325ai	45 y F				A	Unk	Int-U	2		
		methamphetamine	1	1						
1326pha	45 y M				U	Ingst + Inhal + Par	Unk	1		
		heroin	1	1					fentanyl	4.1 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	130 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	152 mg/dL In Urine (quantitative only) @ Unknown
		ethanol	3	3					ethanol	157 mg/dL In Blood (unspecified) @ Unknown
1327h	45 y F				A/C	Ingst	Int-A	2		
		phentermine	1	1						
1328pha	45 y M				U	Unk	Int-U	2		
		cocaine	1	1						
		acetaminophen/ hydrocodone	2	2						
		heroin	3	3						
		clonazepam	4	4						
1329 ha	46 y M				C	Unk	Unk	3		
		methamphetamine	1	1						
		ethanol (non-beverage)	2	2						
		methemoglobin causing chemical	3	3						
[1330ha]	46 y F				A	Ingst	Int-M	1		
		methamphetamine	1	1					methamphetamine	6.7 mcg/mL In Blood (unspecified) @ Autopsy
1331ai	46 y M				A	Unk	Int-U	2		
		cocaine	1	1						
1332ai	47 y M				A	Unk	Int-U	2		
		methamphetamine	1	1						
1333ai	47 y M				A	Unk	Int-U	2		
		methamphetamine	1	1						
1334 pi	48 y M				A	Unk	Int-A	2		
		heroin	1	1						
		methadone	2	2						
		ethanol	3	3						
1335pa	48 y M				A	Unk	Int-A	3		
		heroin	1	1					codeine	12.5 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					6-monoacetylmorphine	16.6 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					morphine	334 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.167 % In Blood (unspecified) @ Autopsy
1336ai	48 y M				A	Unk	Int-U	2		
		cocaine	1	1						
1337p	48 y F				U	Ingst + Par + Unk	Int-A	2		
		heroin	1	1						
		clonidine	2	2						
		mirtazapine	3	3						
		lisinopril	4	4						
		carbamazepine	5	5						
1338pa	48 y M				A	Ingst	Int-A	1		
		cocaine	1	1					cocaine	0.06 mg/L In Blood (unspecified) @ Unknown
		cocaine	1	1					benzoylecognine	2.41 mg/L In Blood (unspecified) @ Unknown
		quetiapine	2	2						
		ethanol	3	3						
1339a	49 y M				A	Ingst	Unk	3		
		cocaine	1	1						
		phencyclidine	2	2						
1340ai	49 y F				U	Unk	Int-U	2		
		methamphetamine	1	1						
1341pai	50 y F				A	Par	Int-A	2		
		heroin	1	1						
1342pha	50 y M				A	Ingst	Int-A	1		
		amphetamine	1	1						
1343	51 y M				U	Ingst + Par + Unk	Int-A	2		
		methamphetamine	1	1						
		acetaminophen	2	2						
		heroin	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
1344ai	51 y M				A	Unk	Int-U	2		
		methamphetamine	1	1						
1345pa	51 y F				A	Ingst	Int-A	3		
		heroin	1	1					morphine	151 ng/mL In Urine (quantitative only) @ Autopsy
		heroin	1	1					morphine	183 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					6-mono acetylmorphine	4.7 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					6-monoacetylmorphine	853 ng/mL In Urine (quantitative only) @ Autopsy
		ethanol	2	2					ethanol	0.187 % In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.195 % In Vitreous @ Autopsy
		ethanol	2	2					ethanol	0.259 % In Urine (quantitative only) @ Autopsy
		oxycodone	3	3					oxycodone	131 ng/mL In Urine (quantitative only) @ Autopsy
		oxycodone	3	3					oxycodone	21.8 ng/mL In Blood (unspecified) @ Autopsy
		bupropion	4	4						
		quetiapine	5	5						
1346ai	51 y M				A	Unk	Int-U	2		
		cocaine	1	1						
		ethanol	2	2						
		temazepam	3	3						
1347ai	52 y F				A	Unk	Int-U	2		
		methamphetamine	1	1						
		morphine	2	2						
1348	52 y M				A	Ingst	Int-U	3		
		cocaine	1	1						
		ethanol	2	2						
1349p	53 y M				A	Ingst + Par	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
1350p	53 y F				U	Unk	Int-A	2		
		cocaine	1	1						
1351 ha	53 y F				U	Ingst + Unk	Int-A	1		
		cocaine	1	1					cocaine	37872 Other (see abst) In Urine (quantitative only) @ Unknown
		methadone	2	2						
1352 ph	53 y M				A	Par	Unt-M	2		
		heroin	1	1						
		hypochlorite	2	2						
1353 ph	53 y M				A	Ingst	Int-A	2		
		amphetamine (hallucinogenic)	1	1						
1354 ha	55 y M				A	Unk	Unk	3		
		heroin	1	1						
		cocaine	2	2					cocaine	5660 ng/mL In Urine (quantitative only) @ Unknown
		cocaine	2	2					benzoylecognine	637 ng/mL In Blood (unspecified) @ Unknown
		ethanol	3	3						
1355	55 y M				A	Inhal	Int-A	2		
		cocaine	1	1						
1356ai	56 y M				A	Ingst + Unk	Int-U	2		
		methamphetamine	1	1						
		hydrocodone	2	2						
		oxycodone	3	3						
1357ai	56 y F				A	Unk	Int-U	2		
		cocaine	1	1						
1358pha	56 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		opioid	2	2					ethanol	200 mg/dL In Serum @ 30 m (pe)
		ethanol	3	3						
1359 ph	56 y M				A	Unk	Unk	2		
		methamphetamine	1	1					methamphetamine	2000 ng/mL In Urine (quantitative only) @ 1 h (pe)
		methamphetamine	1	1					methamphetamine	440 ng/mL In Blood (unspecified) @ 1 h (pe)
		amphetamine	2	2						
1360	57 y M				A/C	Ingst	Int-A	3		
		cocaine	1	1						
		alprazolam	2	2						
		acetaminophen	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
1361	59 y M				A	Ingst	Int-S	1		
		methamphetamine	1	1						
		fluoxetine	2	2						
1362pa	2 m F				A	Ingst	Oth-C	1		
		methamphetamine	1	1						
1363pha	61 y F				C	Par	Int-A	3		
		methamphetamine	1	1					methamphetamine	358 ng/mL In Blood (unspecified) @ Unknown
		amphetamine	2	2					amphetamine	50.8 ng/mL In Blood (unspecified) @ Unknown
		cocaine	3	3						
		opioid	4	4					fentanyl	1.3 ng/mL In Blood (unspecified) @ Unknown
1364ai	62 y F				A	Unk	Int-U	2		
		methamphetamine	1	1						
1365ai	62 y M				A	Unk	Int-U	2		
		methamphetamine	1	1						
1366ai	64 y M				U	Unk	Int-U	2		
		methamphetamine	1	1						
1367ai	66 y M				A	Unk	Int-U	2		
		methamphetamine	1	1						
1368 ph	67 y M				A/C	Par	Int-A	1		
		heroin	1	1						
		ethanol	2	2					ethanol	86 mg/dL In Blood (unspecified) @ Unknown
1370 ph	20 + y M				A	Ingst + Inhal	Int-A	2		
		gamma-hydroxybutyric acid	1	1						
		marijuana	2	2						
		ethanol	3	3						
1369 ph	20 + y M				A	Ingst + Inhal	Int-A	2		
		gamma-hydroxybutyric acid	1	1						
		marijuana	2	2						
		ethanol	3	3						
1371 pi	Unknown adult (>=20 yrs) U				A	Par	Int-A	2		
		heroin	1	1						
1372 pi	Unknown adult (>=20 yrs) U				A	Par	Int-A	2		
		heroin	1	1						
1373a	Unknown adult (>=20 yrs) M				A	Ingst	Int-A	1		
		methamphetamine	1	1						
		heroin	2	2					codeine	10.2 ng/mL In Blood (unspecified) @ Autopsy
		heroin	2	2					morphine	138 ng/mL In Blood (unspecified) @ Autopsy
		heroin	2	2					6-monoacetylmorphine	32 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	3	3					clonazepam	11.3 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	3	3					7-aminoclonazepam	59.1 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	4	4					diazepam	546 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	4	4					nordiazepam	910 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	5	5					ethanol	0.153 % (wt/Vol) In Blood (unspecified) @ Autopsy
1374 pi	Unknown adult (>=20 yrs) U				A	Par	Int-A	2		
		heroin	1	1						
1375 ph	Unknown adult (>=20 yrs) M				A	Par	Int-A	1		
		heroin	1	1						
1376ai	Unknown adult (>=20 yrs) F				U	Inhal	Int-A	1		
		THC homolog, XLR-11	1	1						
		ethanol	2	2					ethanol	0.057 mg/dL In Vitreous @ Unknown
		ethanol	2	2					ethanol	0.08 mg/dL In Urine (quantitative only) @ 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
		diphenhydramine	3	3					diphenhydramine	81 ng/mL In Blood (unspecified) @ Autopsy
		caffeine	4	4						
1377 pi	Unknown age F				U	Unk	Unk	2		
		heroin	1	1						
		oxycodone	2	2						
		ethanol	3	3						
1378 pi	Unknown age M				U	Unk	Unk	2		
		heroin	1	1						
		diazepam	2	2						
		ethanol	3	3						
1379 pi	Unknown age M				A	Unk	Int-U	2		
		heroin	1	1						
1380i	Unknown age U				A	Inhal	Int-A	1		
		heroin	1	1						
1381i	Unknown age U				A	Inhal	Int-A	2		
		heroin	1	1						
1382pa	Unknown age M				U	Unk	Int-A	1		
		heroin	1	1						
		fentanyl	2	2						
See Also case 5, 7, 11, 17, 66, 161, 198, 282, 308, 318, 324, 325, 328, 330, 339, 342, 344, 346, 347, 363, 364, 375, 387, 407, 425, 447, 452, 461, 463, 467, 479, 510, 521, 543, 547, 558, 572, 588, 591, 605, 625, 693, 734, 749, 770, 816, 819, 830, 869, 881, 895, 1030, 1074, 1122, 1123, 1130, 1136, 1191, 1392, 1396, 1399										
Topical Preparations										
1383	86 y M				A	Ingst+ Aspir	Unt-G	3		
		camphor/eucalyptus oil/ menthol	1	1						
Unknown Drug										
1384p	20 y F				A	Ingst	Int-S	2		
		drug, unknown	1	1						
1385 ph	25 y F				A	Unk	Int-A	2		
		drug, unknown	1	1						
		opioid	2	2						
1386i	26 y F				A/C	Par+ Unk	Unk	2		
		drug, unknown	1	1						
1387 ph	26 y M				A/C	Ingst	Int-S	1		
		drug, unknown	1	1						
1388p	27 y F				A/C	Ingst	Int-S	3		
		drug, unknown	1	1						
1389	27 y F				A	Ingst+ Par	Int-A	2		
		drug, unknown	1	1						
1390 ph	29 y F				U	Ingst	Int-S	2		
		drug, unknown	1	1						
1391p	29 y M				U	Unk	Unk	2		
		drug, unknown	1	1						
1392a	30 y M				U	Unk	Unk	2		
		drug, unknown	1	1						
		cocaine	2	2					benzoylecognine	772 ng/mL In Blood (unspecified) @ Unknown
		opioid	3	3					morphine	39.6 ng/mL In Blood (unspecified) @ Unknown
1393	30 y M				A	Unk	Unk	2		
		drug, unknown	1	1						
1394	31 y F				U	Unk	Unk	3		
		drug, unknown	1	1					acetaminophen	142 mcg/mL In Blood (unspecified) @ Unknown
		drug, unknown	1	1					salicylate	25 mg/dL In Blood (unspecified) @ Unknown
1395ai	34 y F				A	Unk	Int-U	2		
		drug, unknown	1	1						
1396	34 y F				A	Ingst+ Inhal	Int-S	3		
		drug, unknown	1	1						
		cocaine	2	2						
1397 ph	34 y M				A	Ingst	Int-S	2		
		drug, unknown	1	1						
		acetaminophen	2	2					acetaminophen	61 mg/L In Blood (unspecified) @ Unknown
1398phi	43 y M				A	Par	Int-A	2		
		drug, unknown	1	1						
1399pha	46 y M				A	Unk	Unk	3		
		drug, unknown	1	1						
		cocaine	2	2					cocaine	0.208 mg/L In Urine (quantitative only) @ Unknown
		cocaine	2	2					benzoylecognine	2.628 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	5.841 mg/L In Urine (quantitative only) @ 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
		metformin	3	3					metformin	20 mg/L In Blood (unspecified) @ Autopsy
1400pai	49 y F				A/C	Ingst	Int-S	2		
		drug, unknown	1	1						
1401p	49 y M				A	Ingst	Int-S	2		
		drug, unknown	1	1						
1402 ha	52 y M				A/C	Ingst	Int-U	2		
		drug, unknown	1	1						
1403 ph	53 y F				A	Unk	Int-S	2		
		drug, unknown	1	1						
1404 ph	54 y M				A	Unk	Int-S	2		
		drug, unknown	1	1						
		ethanol	2	2						
1405p	58 y M				A	Ingst	Unk	2		
		drug, unknown	1	1						
		atorvastain	2	2						
1406	58 y M				A	Ingst	Int-S	3		
		drug, unknown	1	1						
		acetaminophen/ hydrocodone	2	2						
		alprazolam	3	3						
1407p	64 y M				A	Ingst	Int-S	2		
		drug, unknown	1	1						
1408 ph	Unknown adult (>=20 yrs) M				U	Unk	Unk	2		
		drug, unknown	1	1						

See Also case 31, 92, 310, 410, 547, 584, 645, 651, 702, 744, 798, 815, 838, 1028, 1077, 1102, 1108, 1120, 1125, 1131, 1150, 1178, 1247, 1253

Listing of 1,408 (1,173 Direct + 235 Indirect) 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.

			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
Nonpharmaceuticals																			
Adhesives/Glues																			
Miscellaneous Adhesives/Glues																			
Cyanoacrylates (Superglues, etc)	5,295	5,228	2,568	317	285	1,596	19	388	55	5,054	130	19	17	1,307	725	925	162	1	0
Epoxy	509	468	163	15	25	209	2	45	9	445	12	3	8	114	87	108	23	2	0
Non-Toxic Adhesives/Glues (White Glue, Paper Glue, etc)	1,125	1,"026	706	205	31	66	1	14	3	984	30	6	4	36	109	28	0	0	0
Toluene/Xylene (Adhesives Only)	336	325	160	11	16	100	4	31	3	304	13	0	7	51	75	46	9	2	0
Unknown Types of Adhesive, Glue, Cement or Paste	3,609	3,385	1,629	311	185	988	5	237	30	3,192	113	31	43	607	617	539	96	5	0
Category Total:	**10,874**	**10,432**	**5,226**	**859**	**542**	**2,959**	**31**	**715**	**100**	**9,979**	**298**	**59**	**79**	**2,115**	**1,613**	**1,646**	**290**	**10**	**0**
Alcohols																			
Miscellaneous Alcohols																			
Ethanol (Beverages)	49,305	6,026	1,475	157	771	3,109	5	417	92	2,076	3,340	285	144	2,726	662	984	1,021	219	15
Ethanol (Non-Beverage, Non-Rubbing)	4,280	3,508	2,477	196	120	613	4	84	14	3,228	221	25	15	333	776	236	39	13	4
Higher Alcohols (Butanol, Amyl Alcohol, Propanols, etc)	128	92	43	2	8	33	0	5	1	83	8	1	0	21	24	15	5	1	0
Isopropanol (Excluding Rubbing Alcohols and Cleaning Agents)	2,868	2,445	1,117	89	102	1,011	1	108	17	1,863	537	18	12	705	505	500	175	29	1
Methanol (Excluding Automotive Products and Cleaning Agents)	590	457	105	6	36	270	0	33	7	393	51	6	0	213	101	88	30	11	7
Other Types of Alcohol	287	269	191	9	3	58	0	8	0	259	8	0	1	34	46	32	4	1	0
Unknown Types of Alcohol	561	208	59	13	20	105	1	7	3	105	82	7	3	85	36	38	24	10	1
Rubbing Alcohols																			
Rubbing Alcohols: Ethanol with Methyl Salicylate	3	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Rubbing Alcohols: Ethanol without Methyl Salicylate	189	181	122	5	6	46	1	0	1	162	18	0	0	31	46	27	3	1	0
Rubbing Alcohols: Isopropanol with Methyl Salicylate	240	231	160	4	8	53	0	6	0	216	15	0	0	46	72	38	5	0	0
Rubbing Alcohols: Isopropanol without Methyl Salicylate	9,587	8,799	5,039	278	354	2,732	5	367	24	7,467	1,177	96	21	1,720	1,849	1,298	385	30	1
Rubbing Alcohols: Unknown	71	60	32	2	2	19	0	4	1	46	13	1	0	20	23	10	3	0	0
Category Total:	**68,109**	**22,277**	**10,820**	**762**	**1,430**	**8,049**	**17**	**1,039**	**160**	**15,899**	**5,470**	**439**	**196**	**5,934**	**4,140**	**3,266**	**1,694**	**315**	**29**
Arts/Crafts/Office Supplies																			
Miscellaneous Arts/Crafts/Office Supplies																			
Artist Paints (Non-Water Color)	3,118	3,018	2,373	183	85	314	7	52	4	2,955	38	8	16	116	396	111	10	0	0
Artist Paints (Water Color)	1,047	1,028	893	75	12	36	4	7	1	1,012	8	5	2	11	134	13	0	0	0
Chalks	1,853	1,822	1,722	41	27	28	3	1	0	1,798	21	1	1	38	218	50	2	0	0
Clays	1,956	1,915	1,599	141	52	90	9	22	2	1,876	23	8	6	71	207	49	2	0	0
Crayons	2,034	1,948	1,683	141	42	65	6	10	1	1,914	29	1	0	49	182	55	3	0	0
Glazes	127	123	33	17	45	20	0	8	0	116	5	1	1	13	20	12	2	0	0
Office Supplies: Miscellaneous	138	134	74	6	4	42	0	5	3	127	6	0	1	21	24	15	0	0	0
Other Types of Arts/Crafts/Writing Products	5,024	4,725	3,473	449	162	507	13	109	12	4,569	105	27	17	207	638	217	14	0	0
Pencils	1,229	1,183	548	454	89	58	12	15	7	1,074	82	21	1	53	121	74	4	0	0
Pens or Inks	10,631	10,381	7,355	1,741	774	355	27	113	16	9,869	411	47	41	291	1,236	245	15	0	0

(continued)

Table 22A. 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
Typewriter Correction Fluids	701	684	433	77	67	85	3	17	2	631	39	10	0	72	140	59	9	0	0
Unknown Types of Arts/Crafts/ Writing Products	108	101	58	21	6	13	1	1	1	95	5	0	1	6	14	4	1	1	0
Category Total:	**27,966**	**27,062**	**20,244**	**3,346**	**1,365**	**1,613**	**85**	**360**	**49**	**26,036**	**772**	**129**	**87**	**948**	**3,330**	**904**	**62**	**1**	**0**
Automotive/Aircraft/Boat Products																			
Automotive Products																			
Automotive Products: Brake Fluids	830	783	206	16	48	427	1	83	2	725	42	8	3	322	161	230	39	4	0
Automotive Products: Ethylene Glycol (Including Antifreeze)	6,078	5,552	432	129	431	3,942	8	557	53	4,596	753	131	18	2,134	992	916	411	141	16
Automotive Products: Glycol and Methanol Mixtures	209	190	51	14	8	98	0	18	1	171	14	1	3	59	50	31	5	1	1
Automotive Products: Hydrocarbons (Transmission Fluids, Power Steering Fluids, etc)	2,066	1,937	661	55	97	960	4	149	11	1,837	71	16	9	587	377	599	116	7	0
Automotive Products: Methanol (Dry Gas, Windshield Washing Solutions, etc)	1,235	1,153	221	50	87	655	4	126	10	1,058	75	8	2	412	289	240	51	5	2
Automotive Products: Other Glycols	187	178	70	13	4	81	0	10	0	158	9	9	1	47	47	36	2	1	0
Miscellaneous Automotive/Aircraft/Boat Products																			
Automotive/Aircraft/Boat Products: Non-Toxic	15	15	11	1	0	3	0	0	0	15	0	0	0	2	2	0	1	0	0
Automotive/Aircraft/Boat Products: Other	1,434	1,381	543	66	73	590	4	93	12	1,328	28	8	14	429	280	385	77	3	0
Automotive/Aircraft/Boat Products: Unknown	194	171	37	6	15	95	1	12	5	155	7	6	1	79	23	42	20	0	0
Category Total:	**12,248**	**11,360**	**2,232**	**350**	**763**	**6,851**	**22**	**1,048**	**94**	**10,043**	**999**	**187**	**51**	**4,071**	**2,221**	**2,479**	**722**	**162**	**19**
Batteries																			
Disc Batteries																			
Disc Batteries: Alkaline (MNO2)	422	417	273	63	10	58	0	12	1	399	9	7	1	310	246	38	8	2	0
Disc Batteries: Lithium	168	140	60	19	11	42	1	7	0	111	15	2	9	109	54	23	20	5	1
Disc Batteries: Mercuric Oxide	4	3	0	0	0	3	0	0	0	3	0	0	0	0	2	0	0	0	0
Disc Batteries: Nickel Cadmium	3	3	1	1	0	1	0	0	0	3	0	0	0	2	1	0	0	0	0
Disc Batteries: Other	4	4	1	1	0	2	0	0	0	3	1	0	0	2	2	0	0	0	0
Disc Batteries: Silver Oxide	47	46	25	5	0	16	0	0	0	46	0	0	0	30	29	4	1	0	0
Disc Batteries: Unknown	2,662	2,616	1,740	378	68	386	7	35	2	2,506	88	9	1	1,983	1,300	150	29	10	1
Disc Batteries: Zinc-Air	111	105	37	5	0	63	0	0	0	102	1	1	1	48	67	5	1	0	0
Miscellaneous Batteries																			
Automotive/Aircraft/Boat Batteries	638	630	48	17	51	429	1	78	6	624	2	1	3	225	54	189	56	1	0
Other Types of Battery	204	198	33	10	55	71	2	19	8	185	10	0	3	47	72	23	9	0	0
Penlight/Flashlight/Dry Cell Batteries	4,834	4,704	2,722	520	227	981	12	219	23	4,274	360	44	15	901	1,252	488	91	2	0
Unknown Types of Battery	85	70	25	5	6	30	1	3	0	62	4	3	0	14	20	9	4	0	0
Category Total:	**9,182**	**8,936**	**4,965**	**1,024**	**428**	**2,082**	**24**	**373**	**40**	**8,318**	**490**	**67**	**33**	**3,671**	**3,099**	**929**	**219**	**20**	**2**

(continued)

Table 22A. 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
Bites and Envenomations																			
Aquatic																			
Fish Stings	584	577	17	28	62	420	0	43	7	566	4	2	5	259	6	187	82	0	0
Jellyfish and Other Coelenterate Stings	274	269	41	70	27	115	1	11	4	267	1	0	0	70	3	99	26	1	0
Other or Unknown Marine Animal Bites and/or Envenomations	305	296	161	22	19	82	1	10	1	270	16	1	3	49	36	38	9	0	0
Exotic Snakes																			
Exotic Snake: Unknown If Poisonous	2	2	0	0	0	2	0	0	0	2	0	0	0	1	0	1	1	0	0
Exotic Snakes: Non-Poisonous	28	28	0	6	3	17	0	2	0	28	0	0	0	20	1	16	1	0	0
Exotic Snakes: Poisonous	49	46	6	2	2	32	0	4	0	45	0	1	0	23	0	10	13	2	0
Insects																			
Ant or Fire Ant Bites	757	717	236	54	33	325	3	55	11	703	4	8	1	97	16	181	42	1	0
Bee, Wasp, or Hornet Stings	3,968	3,861	713	403	219	2,134	10	344	38	3,858	0	2	1	498	30	1,287	245	15	1
Caterpillars	1,293	1,292	366	195	92	527	1	98	13	1,264	14	4	10	238	52	371	65	0	0
Centipede or Millipede Bites	864	860	140	74	59	501	3	70	13	856	1	1	2	111	38	278	31	0	0
Mosquito Bites	164	157	38	14	10	73	3	16	3	157	0	0	0	28	1	50	9	0	0
Other Insect Bites and/or Stings	6,049	5,883	1,329	401	372	3,085	11	594	91	5,717	16	111	15	949	214	1,174	348	5	0
Scorpion Stings	16,440	16,421	1,591	1,622	1,403	10,870	14	735	186	16,413	5	0	1	1,379	85	9,966	730	16	0
Tick Bites	1,203	1,180	276	109	47	561	9	170	8	1,179	0	0	1	261	36	171	37	0	0
Mammals																			
Bat Bites	694	685	79	74	77	324	13	95	23	656	3	2	0	437	91	63	2	0	0
Cat Bites	741	733	48	57	51	477	3	82	15	731	0	0	2	461	8	225	29	0	0
Dog Bites	2,302	2,296	325	448	227	1,110	11	135	40	2,293	3	0	0	1,674	17	822	183	7	0
Fox Bites	21	21	4	1	3	13	0	0	0	21	0	0	0	17	2	4	3	0	0
Human Bites	23	23	5	0	2	12	0	3	1	22	0	1	0	11	0	5	2	0	0
Other Mammal Bites	703	690	97	93	58	342	8	73	19	678	0	2	5	357	64	137	20	0	0
Raccoon Bites	112	110	10	5	9	74	0	8	4	108	1	1	0	72	5	27	3	0	0
Rodent or Lagomorph Bites (Squirrels, Rats, Mice, Gerbils, Hamsters, Rabbits, etc)	899	878	207	160	81	322	9	82	17	847	1	24	6	284	39	229	17	0	0
Skunk Bites	15	15	3	0	0	9	0	3	0	15	0	0	0	8	2	2	0	0	0
Miscellaneous Bites and Envenomations																			
Other or Unknown Animal Bites	297	294	41	30	23	162	0	27	11	289	2	1	1	101	12	85	42	2	0
Other or Unknown Reptile Bites	392	387	143	85	26	110	2	17	4	365	11	4	4	76	31	92	13	1	0
Unknown Types of Insect or Spider Bite and/or Envenomation	2,883	2,841	666	184	179	1,456	15	291	50	2,810	10	15	2	471	58	670	108	1	0
Miscellaneous Snake Bites and Envenomations																			
Unknown or Known Non-Poisonous Snake Bites	722	715	56	111	106	402	1	36	3	711	1	0	1	406	28	345	46	2	0
Unknown Types of Snake Envenomation	1,581	1,554	99	198	172	1,014	4	54	13	1,551	2	0	0	1,323	44	735	409	17	0
Snakes																			
Copperhead Envenomations	1,840	1,809	63	145	179	1,380	1	39	2	1,806	3	0	0	1,743	24	539	1,067	38	1
Coral Envenomations	91	90	3	4	11	69	0	1	2	90	0	0	0	76	3	41	17	3	0
Cottonmouth Envenomations	232	227	5	18	20	179	0	4	1	224	1	0	0	208	3	74	106	6	0

(continued)

Table 22A. 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
Rattlesnake Envenomations	774	754	30	44	50	609	1	16	4	744	6	0	3	704	15	190	373	66	3
Unknown Crotalid Envenomations	1,028	1,011	63	89	103	725	0	27	4	1,007	1	1	2	944	20	258	541	59	1
Spiders																			
Black Widow Spider Bites and/or Envenomations	1,717	1,692	107	78	126	1,270	0	96	15	1,689	0	1	0	765	54	484	285	13	0
Brown Recluse Spider Bites and/or Envenomations	1,330	1,306	92	62	89	843	1	212	7	1,304	0	0	1	481	28	275	218	11	0
Other Necrotizing Spider Bites and/or Envenomations	119	115	19	8	9	75	0	4	0	115	0	0	0	37	1	39	9	0	0
Other Spider Bites and/or Envenomations	4,464	4,420	463	288	345	2,833	11	437	43	4,400	4	7	6	934	81	1,088	309	4	0
Tarantula Bites and/or Envenomations	43	43	5	3	5	24	0	6	0	41	0	0	2	11	2	10	2	1	0
Category Total:	**55,003**	**54,298**	**7,547**	**5,185**	**4,299**	**32,578**	**136**	**3,900**	**653**	**53,842**	**110**	**189**	**74**	**15,584**	**1,150**	**20,268**	**5,443**	**271**	**6**
Building and Construction Products																			
Insulation																			
Asbestos	336	292	37	12	17	149	5	66	6	284	3	2	2	57	38	24	2	0	0
Fiberglass	506	482	187	47	33	163	5	45	2	456	6	4	16	77	57	114	11	1	0
Other Types of Insulation	112	106	43	4	6	42	0	10	1	101	4	0	0	26	14	13	7	0	0
Unknown Types of Insulation	424	407	257	24	17	85	3	20	1	395	4	3	3	36	62	58	8	0	0
Urea or Formaldehyde Insulations	20	19	3	2	0	8	0	5	1	18	0	0	0	3	2	1	0	0	0
Miscellaneous Building and Construction Products																			
Caulking Compounds and Construction Putties	2,501	2,435	1,715	85	64	430	28	100	13	2,386	25	8	15	168	507	142	19	1	0
Cement or Concrete (Excluding Glues)	1,075	1,008	311	30	37	549	3	75	3	981	10	1	12	408	116	198	198	7	0
Other Types of Building or Construction Products	2,498	2,313	1,014	103	77	830	19	242	28	2,229	43	14	23	430	524	372	94	6	1
Soldering Flux	177	169	57	4	13	61	0	32	2	163	2	1	2	37	50	33	12	0	0
Unknown Types of Building or Construction Products	73	66	15	3	0	37	1	9	1	65	0	0	1	27	7	27	5	0	0
Category Total:	**7,722**	**7,297**	**3,639**	**314**	**264**	**2,354**	**64**	**604**	**58**	**7,078**	**97**	**33**	**74**	**1,269**	**1,377**	**982**	**356**	**15**	**1**
Chemicals																			
Acids																			
Hydrochloric Acid	1,947	1,596	71	53	189	1,078	6	175	24	1,505	49	22	10	636	96	529	219	13	2
Hydrofluoric Acid	645	531	18	1	24	444	0	37	7	508	13	2	5	435	48	221	117	15	2
Other Types of Acid	4,553	3,877	542	222	270	2,334	7	461	41	3,647	101	43	56	1,447	468	1,161	427	26	3
Unknown Types of Acid	180	151	13	3	15	88	0	29	3	138	4	7	0	78	6	37	31	0	0
Miscellaneous Chemicals																			
Acetone (Excluding Nail Polish Removers)	1,206	1,026	337	47	85	467	5	79	6	920	60	27	10	288	169	249	41	6	0
Alkalis (Excluding Cleaning Agents, Bleaches, Batteries, and Detergents)	3,735	3,270	530	116	283	1,972	7	327	35	3,078	91	51	29	1,629	286	945	571	38	2
Ammonia (Excluding Cleaning Agents)	2,990	2,083	514	113	122	1,070	4	226	34	1,943	77	25	25	720	274	556	226	16	0
Borates or Boric Acid (Excluding Topicals and Pesticides)	3,497	3,159	1,557	226	88	1,057	13	200	18	2,929	116	57	47	453	556	302	36	4	1

(continued)

Table 22A. 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
Chlorates (Excluding Matches and Fireworks)	26	20	10	2	2	5	0	1	0	20	0	0	0	4	3	5	0	0	0
Cyanides (Excluding Rodenticides)	245	187	13	2	9	121	0	38	4	126	19	25	0	134	38	43	13	4	9
Dioxins	7	4	1	0	0	3	0	0	0	2	0	0	1	1	0	0	0	0	0
Ethylene Glycol (Excluding Automotive, Aircraft, or Boat Products)	731	537	40	9	31	421	2	34	0	321	162	21	3	345	108	68	55	72	10
Formaldehyde or Formalin	648	594	73	39	77	327	3	68	7	536	27	15	15	260	84	191	33	1	0
Ketones	337	290	65	7	16	168	2	29	3	279	3	3	4	129	54	105	29	2	0
Methylene Chloride (Excluding Paint Strippers)	179	161	35	5	10	87	0	21	3	154	2	3	2	74	28	44	10	1	0
Nitrates and Nitrites (Excluding Medications and Substances of Abuse)	1,094	990	319	245	98	266	1	54	7	829	126	26	7	214	177	128	32	3	0
Other Chemicals	11,622	10,163	3,893	826	578	3,952	34	770	110	9,304	394	114	298	2,322	1,551	1,856	494	28	2
Other Glycols (Excluding Automotive, Aircraft, or Boat Products)	700	566	226	32	27	200	1	72	8	490	23	11	31	180	90	108	50	3	0
Phenol or Creosotes (Excluding Disinfectants)	239	220	25	5	7	149	1	31	2	209	4	1	5	101	28	73	25	2	0
Strychnine (Excluding Rodenticides)	31	27	16	2	3	5	0	1	0	15	4	1	5	10	6	4	1	0	0
Toluene Diisocyanate	457	426	91	12	21	226	1	63	12	412	10	0	4	125	48	103	20	1	0
Unknown Chemicals	3,525	3,260	581	177	268	1,699	14	450	71	2,648	117	309	87	1,076	629	629	257	16	1
Category Total:	**38,594**	**33,138**	**8,970**	**2,144**	**2,223**	**16,139**	**101**	**3,166**	**395**	**30,013**	**1,402**	**763**	**644**	**10,661**	**4,747**	**7,357**	**2,687**	**251**	**32**
Cleaning Substances (Household)																			
Automatic Dishwasher Detergents																			
Automatic Dishwasher Detergents: Granules (Unit Dose)	641	638	601	6	3	21	1	6	0	635	2	1	0	30	162	91	2	0	0
Automatic Dishwasher Detergents: Granules (Various Containers)	2,460	2,426	2,053	40	37	238	1	53	4	2,387	8	30	1	90	533	328	14	1	0
Automatic Dishwasher Detergents: Granules with Liquids (Unit Dose)	7,193	7,158	6,865	36	33	174	7	42	1	7,139	9	7	3	359	1,831	1,263	27	0	0
Automatic Dishwasher Detergents: Liquids (Unit Dose)	617	611	563	8	5	27	1	7	0	605	1	5	0	70	157	117	8	1	0
Automatic Dishwasher Detergents: Liquids (Various Containers)	1,970	1,934	1,626	30	17	216	2	39	4	1,903	9	19	3	122	492	237	26	0	0
Automatic Dishwasher Detergents: Tablets	2,951	2,938	2,759	19	23	114	1	19	3	2,923	8	5	2	128	764	372	10	1	0
Automatic Dishwasher Rinse Agents	967	933	737	20	11	141	1	19	4	915	5	11	0	94	193	186	15	1	0
	2,201	2,172	1,838	29	27	219	2	53	4	2,143	6	19	4	135	394	231	17	0	0

(continued)

Table 22A. 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
Other or Unknown Types of Automatic Dishwasher Detergent																			
Bleaches																			
Bleaches: Borates	187	154	67	4	6	65	0	12	0	142	8	1	3	31	25	29	4	0	0
Bleaches: Hypochlorite (Liquid and Dry)	43,771	37,066	15,157	1,411	2,431	15,143	68	2,553	303	33,693	2,310	608	294	9,137	5,317	9,881	1,272	38	5
Bleaches: Non-Hypochlorite	390	326	136	22	15	134	0	15	4	285	25	6	6	81	56	93	16	0	0
Bleaches: Other or Unknown (Household)	496	423	182	13	39	174	0	14	1	347	37	30	7	153	88	98	18	0	0
Cleansers																			
Anionic or Nonionic Cleansers	1,946	1,789	1,391	41	43	255	4	45	10	1,747	29	7	5	142	429	158	14	0	0
Other or Unknown Types of Household Cleanser	2,740	2,472	1,589	75	81	601	5	108	13	2,298	95	58	11	474	476	360	72	4	0
Disinfectants																			
Disinfectants: Hypochlorite (Non-Bleach Products)	2,783	2,423	1,038	88	115	972	3	190	17	2,266	92	35	25	533	338	557	119	5	0
Disinfectants: Other or Unknown	5,896	5,560	3,405	340	254	1,253	11	254	43	5,216	207	63	63	627	1,040	1,025	90	3	0
Disinfectants: Phenol	877	838	551	61	32	152	0	39	3	785	42	9	1	89	232	117	15	0	1
Disinfectants: Pine Oil	4,386	3,867	2,249	133	127	1,111	8	206	33	3,630	153	43	25	672	965	731	45	6	1
Drain Cleaners																			
Drain Cleaners: Acids	89	70	10	2	2	49	0	7	0	65	4	0	0	25	10	20	9	1	0
Drain Cleaners: Alkalis	2,775	2,362	337	62	83	1,542	5	301	32	2,184	119	15	38	728	341	628	257	40	4
Drain Cleaners: Hydrochloric Acid	52	32	5	4	1	21	0	0	1	28	1	1	1	11	7	15	1	0	0
Drain Cleaners: Other or Unknown	848	684	115	12	20	415	3	106	13	612	44	12	15	205	92	145	53	10	0
Drain Cleaners: Sulfuric Acid	479	378	38	12	11	259	2	48	8	369	5	0	3	154	40	120	75	4	0
Fabric Softeners/Antistatic Agents																			
Fabric Softener/Antistatic Agent: Other or Unknown	16	14	12	0	0	0	0	2	0	14	0	0	0	2	6	1	0	0	0
Fabric Softeners/Antistatic Agents: Aerosol or Spray	93	91	80	0	1	8	0	2	0	90	1	0	0	2	16	5	2	0	0
Fabric Softeners/Antistatic Agents: Dry or Powder (Unit Dose)	5	5	4	0	0	0	0	1	0	5	0	0	0	0	2	1	0	0	0
Fabric Softeners/Antistatic Agents: Dry or Powder (Various Containers)	10	10	9	0	0	0	0	1	0	9	0	0	1	1	0	2	0	0	0
Fabric Softeners/Antistatic Agents: Liquid (Unit Dose)	12	11	6	1	1	2	1	0	0	10	1	0	0	5	4	1	0	0	0
Fabric Softeners/Antistatic Agents: Liquid (Various Containers)	856	800	631	21	14	108	0	26	0	761	17	4	16	79	190	93	4	0	0
Fabric Softeners/Antistatic Agents: Solid or Sheet	577	564	474	14	12	41	2	18	3	550	7	4	3	20	93	22	3	0	0
Glass Cleaners																			
	1,876	1,658	1,321	49	66	193	1	24	4	1,573	63	16	4	149	371	202	14	0	0

(continued)

Table 22A. 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
Glass Cleaners: Ammonia Containing																			
Glass Cleaners: Anionics or Nonionics	102	89	53	4	6	22	1	2	1	82	5	1	1	14	14	15	2	0	0
Glass Cleaners: Isopropanol	1,856	1,702	1,241	71	59	294	2	29	6	1,622	68	7	1	154	353	220	11	1	0
Glass Cleaners: Other or Unknown Types of Household	1,694	1,539	1,107	60	68	251	5	43	5	1,433	78	18	8	187	329	186	14	0	0
Hand Dishwashing																			
Anionic or Nonionic Hand Dishwashing Detergents	5,335	4,696	3,030	224	117	1,131	10	176	8	4,465	94	102	29	329	622	812	46	2	1
Other or Unknown Types of Household Hand Dishwashing Detergent	2,798	2,531	1,061	66	48	462	2	880	12	2,439	16	59	8	116	979	277	9	0	0
Laundry Additives																			
Enzyme and/or Microbiological Laundry Additives	79	72	44	2	0	23	0	3	0	68	0	0	4	20	12	18	0	0	0
Laundry Bluing and/or Brightening Agents (without Detergent)	18	17	9	0	2	3	0	3	0	15	1	0	1	2	2	5	0	0	0
Laundry Detergent Boosters	365	325	235	18	12	57	0	3	0	314	6	4	1	27	98	48	4	0	0
Other or Unknown Laundry Additives or Miscellaneous Products	973	924	764	39	22	81	2	15	1	898	9	16	1	83	204	107	10	0	0
Water Softeners	47	45	32	3	0	6	0	4	0	44	0	1	0	4	6	7	0	0	0
Laundry Detergents																			
Laundry Detergents: Granules (Unit Dose)	306	290	226	13	5	42	1	3	0	279	6	2	3	75	72	71	13	0	0
Laundry Detergents: Granules (Various Containers)	2,856	2,737	2,087	91	56	425	4	69	5	2,641	59	23	12	458	484	588	60	0	0
Laundry Detergents: Granules with Liquids (Unit Dose)	327	325	308	8	1	4	1	3	0	324	1	0	0	149	68	144	22	0	1
Laundry Detergents: Liquids (Unit Dose)	12,686	12,403	11,458	407	111	333	29	48	17	12,317	61	8	9	5,621	2,134	6,206	861	55	3
Laundry Detergents: Liquids (Various Containers)	6,807	6,503	4,928	194	175	998	7	182	19	6,294	144	40	17	1,204	1,150	1,497	170	5	0
Laundry Detergents: Other or Unknown Types of Household Laundry Detergent and/or Fabric Cleaner	354	330	245	12	12	51	2	5	3	316	7	2	5	100	80	92	17	0	0
Laundry Detergents: Soaps	147	132	95	5	4	19	0	8	1	126	2	2	2	14	27	26	3	0	0
Laundry Prewash/Stain Removers																			
Laundry Prewash/Stain Removers: Aerosol or Spray Solvent Based	185	175	158	6	2	7	0	2	0	173	1	1	0	19	31	37	5	0	0
Laundry Prewash/Stain Removers: Aerosol or Spray Surfactant Based	198	192	174	1	3	12	0	2	0	189	2	0	1	18	29	33	5	0	0
Laundry Prewash/Stain Removers: Dry Solvent Based	3	2	2	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0

(continued)

Table 22A. 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
Laundry Prewash/Stain Removers: Dry Surfactant Based	113	110	91	5	2	12	0	0	0	109	0	0	1	6	22	9	0	0	0
Laundry Prewash/Stain Removers: Liquid Solvent Based	936	912	745	11	10	119	1	22	4	895	9	3	4	134	280	136	14	0	0
Laundry Prewash/Stain Removers: Liquid Surfactant Based	1,633	1,549	1,336	20	15	144	1	29	4	1,508	20	11	10	134	279	241	18	1	0
Laundry Prewash/Stain Removers: Other or Unknown	2,111	2,003	1,535	51	34	331	3	44	5	1,959	20	8	16	229	439	377	21	1	0
Laundry Prewash/Stain Removers: Other or Unknown Solvent Based	24	22	17	0	1	4	0	0	0	21	1	0	0	6	6	8	1	0	0
Laundry Prewash/Stain Removers: Other or Unknown Surfactant Based	39	38	32	1	1	2	0	2	0	37	1	0	0	1	5	4	1	0	0
Miscellaneous Cleaners																			
Miscellaneous Cleaning Agents: Acids	1,191	1,031	439	30	43	446	4	64	5	975	28	21	5	263	218	241	51	2	0
Miscellaneous Cleaning Agents: Alkalis	7,339	6,539	4,044	184	253	1,752	13	260	33	6,204	218	58	39	1,244	1,367	1,154	252	20	0
Miscellaneous Cleaning Agents: Anionics or Nonionics	5,276	4,759	3,183	151	149	1,071	13	174	18	4,532	122	68	25	637	887	681	71	2	1
Miscellaneous Cleaning Agents: Cationics	2,518	2,318	1,294	96	106	706	3	101	12	2,147	118	30	16	437	428	461	68	5	0
Miscellaneous Cleaning Agents: Ethanol (Excluding Automotive Products)	544	520	403	20	11	78	0	8	0	502	10	2	6	35	99	59	4	0	0
Miscellaneous Cleaning Agents: Glycols (Excluding Automotive Products)	544	498	319	33	14	108	1	21	2	468	19	7	3	78	108	89	6	0	0
Miscellaneous Cleaning Agents: Isopropanol (Excluding Automotive Products and Glass)	1,813	1,728	1,107	165	82	287	4	75	8	1,634	61	18	8	148	338	236	21	0	0
Miscellaneous Cleaning Agents: Methanol (Excluding Automotive Products)	18	18	8	0	0	10	0	0	0	16	2	0	0	4	3	4	0	0	0
Miscellaneous Cleaning Agents: Other or Unknown Household Cleaning Agents	3,985	3,601	2,029	223	170	970	12	168	29	3,322	149	72	41	693	736	725	101	4	0
Miscellaneous Cleaning Agents: Phenol (Excluding Disinfectants)	9	9	3	0	0	5	0	1	0	8	0	0	1	1	3	3	0	0	0
Miscellaneous Cleaning Substances (Household)																			
Ammonia Cleaners (All Purpose)	815	555	179	20	24	283	0	45	4	508	32	9	6	121	82	113	13	1	0
Carpet, Upholstery, Leather, or Vinyl Cleaners	3,306	3,093	2,180	87	62	672	7	78	7	2,990	47	32	18	405	604	460	43	1	0

(continued)

Table 22A. 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
Hydrofluoric Acid or Bifluoride Wheel Cleaners	59	58	6	1	5	41	0	4	1	56	1	0	0	45	4	19	18	0	0
Starches, Fabric Finishes, or Sizing	255	246	202	8	9	20	0	7	0	239	3	2	1	16	58	22	1	0	0
Oven Cleaners																			
Oven Cleaners: Acids	10	10	3	0	3	4	0	0	0	10	0	0	0	2	4	1	1	0	0
Oven Cleaners: Alkalis	2,231	2,163	391	74	154	1,243	8	271	22	2,032	43	64	20	741	271	575	260	11	0
Oven Cleaners: Detergent Types	10	10	3	0	2	5	0	0	0	9	1	0	0	4	3	2	0	0	0
Oven Cleaners: Other or Unknown	274	258	37	10	16	169	1	20	5	236	6	10	4	95	32	57	31	5	0
Rust Removers																			
Rust Removers: Acids Other Than Hydrofluoric Acid Types	356	301	100	10	5	165	1	18	2	291	6	2	2	72	69	77	21	1	0
Rust Removers: Alkalis	3	3	0	0	0	2	0	1	0	3	0	0	0	3	0	1	1	0	0
Rust Removers: Anionics or Nonionics	1	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
Rust Removers: Hydrofluoric Acid	308	296	49	2	8	209	1	16	11	276	12	2	3	147	81	140	21	0	0
Rust Removers: Other or Unknown	180	161	20	4	6	109	0	21	1	150	5	1	5	40	19	46	14	0	0
Spot Removers/Dry Cleaning Agents																			
Spot Removers/Dry Cleaning Agents: Anionics or Nonionics	118	114	82	6	2	23	0	1	0	111	2	1	0	12	21	16	3	0	0
Spot Removers/Dry Cleaning Agents: Glycols	114	107	73	6	3	20	0	4	1	104	1	1	0	16	16	24	1	0	0
Spot Removers/Dry Cleaning Agents: Isopropanol	39	35	21	2	2	9	0	1	0	33	2	0	0	6	9	4	0	0	0
Spot Removers/Dry Cleaning Agents: Other Halogenated Hydrocarbon Containing Products	26	24	15	0	1	7	0	1	0	22	1	1	0	3	2	6	0	0	0
Spot Removers/Dry Cleaning Agents: Other Hydrocarbon and/or Non-Halogenated Containing	404	388	237	14	14	103	0	20	0	372	8	3	4	73	87	77	16	0	0
Spot Removers/Dry Cleaning Agents: Other or Unknown	98	94	63	2	3	25	0	1	0	90	1	2	1	14	15	18	1	0	0
Spot Removers/Dry Cleaning Agents: Perchloroethylene	10	10	6	0	0	3	0	1	0	10	0	0	0	1	3	3	0	0	0
Toilet Bowl Cleaners																			
Toilet Bowl Cleaners: Acids	3,440	2,518	1,120	84	104	1,009	2	184	15	2,382	90	10	27	503	545	706	110	7	2
Toilet Bowl Cleaners: Alkalis	4,246	3,899	3,145	67	67	513	1	98	8	3,830	55	3	10	472	1,157	571	59	7	0
Toilet Bowl Cleaners: Other or Unknown	3,302	3,080	2,661	56	41	253	5	57	7	3,029	29	7	9	286	786	221	25	1	0
Wall/Floor/Tile Cleaners																			
Wall/Floor/Tile/All-Purpose Cleaning Agents: Acids	1,770	1,503	980	43	47	350	6	71	6	1,442	40	8	9	276	360	307	31	2	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Alkalis	6,609	5,937	3,993	149	194	1,349	10	215	27	5,641	191	54	43	1,079	1,190	1,349	149	11	0

(continued)

Table 22A. 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
Wall/Floor/Tile/All-Purpose Cleaning Agents: Anionics or Nonionics	8,555	7,742	4,979	228	254	1,980	9	261	31	7,328	318	55	29	1,209	1,625	1,090	108	7	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Cationics	2,420	2,162	1,430	93	75	466	2	92	4	2,024	97	29	9	293	468	352	27	3	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Ethanol	409	385	298	15	12	43	2	15	0	373	7	2	2	19	102	45	0	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Glycols	873	806	628	23	18	116	1	18	2	779	19	3	5	88	163	113	6	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Isopropanol	497	456	374	7	13	50	0	9	3	439	9	4	1	33	99	55	3	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Other or Unknown	1,590	1,467	1,042	36	39	302	1	42	5	1,405	35	12	13	213	324	200	33	0	0
Category Total:	**197,717**	**178,973**	**114,009**	**5,814**	**6,287**	**43,457**	**307**	**8,231**	**868**	**169,922**	**5,707**	**1,910**	**1,033**	**33,279**	**34,776**	**38,617**	**5,079**	**270**	**19**
Cosmetics/Personal Care Products																			
Dental Care Products																			
False Teeth Cleaning Agents	2,492	2,461	308	54	38	1,843	0	207	11	2,365	56	10	26	114	439	163	7	0	0
Other Dental Care Products (Excluding Fluoride Supplements)	2,020	1,951	695	125	135	834	4	142	16	1,805	46	3	92	172	295	222	20	0	0
Toothpastes (with Fluoride)	19,421	18,948	16,606	561	357	1,155	19	227	23	18,378	237	102	215	306	3,202	870	26	1	0
Toothpastes (without Fluoride)	2,029	1,959	1,694	50	39	141	2	31	2	1,913	18	5	23	15	290	65	4	0	0
Hair Care Products																			
Curl Activators	52	51	43	1	1	5	0	1	0	47	1	0	3	12	11	6	0	0	0
Hair Coloring Agents (Excluding Peroxides)	2,165	2,089	1,013	37	127	757	3	135	17	1,806	23	11	243	375	368	405	79	1	0
Hair Oils	488	471	409	10	10	32	0	9	1	463	4	3	1	66	110	56	9	0	0
Hair Relaxers (with Other Alkalines)	323	320	247	7	8	50	0	8	0	310	4	0	5	153	74	91	44	5	0
Hair Relaxers (with Other Non-Alkalines)	50	49	37	0	0	10	0	2	0	48	0	0	1	12	12	5	5	0	0
Hair Relaxers (with Sodium Hydroxide)	518	512	358	14	17	103	1	15	4	489	5	0	18	224	102	155	47	0	0
Hair Rinses, Conditioners, Relaxers	2,068	1,959	1,654	67	50	152	3	31	2	1,885	37	5	29	147	390	179	19	0	0
Hair Sprays	1,396	1,252	839	45	81	237	3	40	7	1,104	133	7	5	186	267	168	35	2	0
Other Hair Care Products (Excluding Peroxides)	2,846	2,703	1,987	78	112	426	2	89	9	2,566	37	6	86	368	488	382	51	1	0
Permanent Wave Solutions	217	214	129	4	5	62	0	14	0	200	3	1	10	70	32	65	17	0	0
Shampoos	5,970	5,674	4,346	289	205	688	7	117	22	5,430	158	10	70	400	690	874	51	0	2
Hand Sanitizers																			
Hand Sanitizers: Ethanol Based	18,715	18,322	14,494	1,415	557	1,586	32	210	28	16,918	1,093	251	14	1,291	4,634	1,363	161	11	0
Hand Sanitizers: Isopropanol Based	172	169	134	10	5	18	0	1	1	153	13	2	0	19	44	11	4	0	0
Hand Sanitizers: Non-Alcohol Based	1,632	1,603	1,267	130	57	122	3	23	1	1,539	50	13	0	72	274	86	7	0	0
Hand Sanitizers: Unknown	527	491	295	73	40	68	0	12	3	403	57	27	0	76	104	78	7	0	0

(continued)

Table 22A. 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
Miscellaneous Cosmetics/Personal Care Products																			
Baby Oils	1,866	1,816	1,658	25	25	82	3	19	4	1,780	17	4	12	148	378	172	14	0	0
Bath Oils and/or Bubble Baths	2,690	2,632	2,359	120	23	102	6	20	2	2,582	31	4	14	126	442	235	14	1	0
Creams, Lotions, and Make-Up	22,876	22,117	18,618	572	413	2,044	37	357	76	21,427	204	47	419	713	2,912	998	73	2	0
Deodorants	19,154	18,900	17,239	324	475	694	34	120	14	18,454	245	52	141	577	2,408	1,215	38	2	0
Depilatories	718	702	257	19	75	286	1	57	7	522	36	5	137	171	98	166	50	1	0
Douches	63	60	44	4	2	8	0	2	0	55	1	0	4	5	8	5	0	0	0
Eye Products	1,422	1,369	1,146	22	29	139	1	23	9	1,324	8	7	29	73	188	69	14	0	0
Lipsticks and Lip Balms (with Camphor)	1,021	993	882	31	21	43	4	12	0	970	13	1	9	21	179	39	2	0	0
Lipsticks and Lip Balms (without Camphor)	5,027	4,873	4,450	137	66	144	5	41	30	4,693	30	3	142	81	541	201	9	0	0
Perfumes, Colognes, and Aftershaves	9,658	9,323	7,618	484	366	721	13	107	14	8,833	343	107	21	855	1,999	1,583	74	1	0
Peroxides	7,242	6,764	2,200	309	361	3,222	9	608	55	6,216	252	49	223	985	795	1,299	180	14	2
Powders Made of Material Other Than Talc	1,919	1,884	1,712	50	32	65	4	19	2	1,851	19	6	8	130	274	309	10	0	0
Powders Made of Talc	2,427	2,365	1,974	88	67	176	7	48	5	2,293	45	13	10	253	415	452	37	3	0
Soaps (Bar, Hand or Complexion)	13,784	13,093	9,693	636	437	1,995	14	286	32	12,450	342	87	183	746	1,748	1,592	77	5	0
Suntan and/or Sunscreen Products	9,291	9,162	8,178	369	96	412	11	86	10	9,021	43	15	80	273	1,079	816	33	0	0
Mouthwashes																			
Mouthwashes: Ethanol Containing	7,122	6,539	1,919	637	460	3,009	10	466	38	5,450	1,008	28	28	964	977	649	209	20	2
Mouthwashes: Fluoride Containing	6,057	5,974	4,099	1,124	116	552	3	69	11	5,867	73	2	29	83	964	175	6	0	0
Mouthwashes: Non Ethanol Containing	1,826	1,763	671	182	98	717	0	90	5	1,658	67	2	33	67	266	93	11	0	0
Mouthwashes: Unknown	221	203	58	22	13	93	0	17	0	174	19	2	7	23	29	23	4	1	0
Nail Products																			
Acrylic Nail Adhesives	898	890	352	119	113	263	2	36	5	859	18	4	3	362	87	254	60	0	0
Acrylic Nail Primers	236	226	183	8	9	22	0	4	0	221	4	1	0	68	54	49	9	3	0
Acrylic Nail Removers	20	20	11	3	1	5	0	0	0	20	0	0	0	5	6	4	0	0	0
Miscellaneous Nail Products	822	792	558	26	21	150	3	30	4	767	4	2	17	143	148	140	22	1	0
Nail Polish Removers (Acetone Containing)	2,205	2,147	1,561	95	98	340	3	46	4	2,065	63	12	5	234	506	304	20	1	0
Nail Polishes	8,660	8,434	7,525	276	152	386	12	73	10	8,288	104	22	14	545	1,474	873	24	0	0
Other Nail Polish Removers	928	901	670	44	43	125	0	17	2	860	33	6	1	103	245	138	4	0	0
Unknown Nail Polish Removers	7,689	7,412	5,206	348	424	1,191	6	211	26	7,083	249	53	13	897	1,546	969	51	1	0
Category Total:	**198,943**	**192,552**	**147,396**	**9,044**	**5,880**	**25,275**	**267**	**4,178**	**512**	**183,605**	**5,246**	**990**	**2,423**	**12,729**	**31,592**	**18,066**	**1,638**	**77**	**6**
Deodorizers																			
Air Freshener																			
Air Fresheners: Aerosols	1,963	1,920	1,355	152	60	295	2	50	6	1,819	56	28	15	151	356	307	14	1	1
Air Fresheners: Liquids	7,581	7,485	6,532	244	97	499	7	94	12	7,343	70	46	16	534	1,608	985	49	1	0
Air Fresheners: Solids	3,513	3,483	3,079	107	36	205	6	46	4	3,429	33	16	3	197	666	263	12	0	0
Air Fresheners: Unknown Form	1,509	1,484	1,235	69	24	129	1	23	3	1,443	25	3	8	150	317	177	10	1	0
Miscellaneous Deodorizers																			
Diaper Pail Deodorizers (Excluding Moth Repellants)	17	15	15	0	0	0	0	0	0	15	0	0	0	0	6	1	0	0	0
	5,042	4,847	3,511	203	142	784	6	152	49	4,675	98	45	20	532	952	685	54	1	0

(continued)

Table 22A. 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
Other Types of Deodorizer (Not For Personal Use)																			
Toilet Bowl Deodorizers	517	507	435	15	5	46	1	5	0	495	9	2	1	65	125	52	5	0	1
Unknown Types of Deodorizer (Not for Personal Use)	76	73	50	2	1	14	0	6	0	68	4	1	0	14	14	11	3	1	0
Category Total:	**20,218**	**19,814**	**16,212**	**792**	**365**	**1,972**	**23**	**376**	**74**	**19,287**	**295**	**141**	**63**	**1,643**	**4,044**	**2,481**	**147**	**5**	**2**
Dyes																			
Miscellaneous Dyes																			
Dyes: Chlorate Containing	2	2	2	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0
Dyes: Fabrics	380	368	272	38	7	44	0	6	1	356	6	2	4	28	91	18	0	0	0
Dyes: Foods (Including Easter Egg)	991	925	768	84	22	36	7	8	0	891	17	1	16	28	126	43	6	0	0
Dyes: Leathers	53	51	34	5	1	10	0	1	0	50	0	0	1	2	19	2	0	0	0
Dyes: Other	378	349	144	66	73	47	1	15	3	315	16	1	16	27	54	28	2	0	1
Dyes: Unknown	43	36	23	1	3	7	0	2	0	32	1	0	3	3	8	2	1	0	0
Category Total:	**1,847**	**1,731**	**1,243**	**194**	**106**	**144**	**8**	**32**	**4**	**1,646**	**40**	**4**	**40**	**88**	**299**	**93**	**9**	**0**	**1**
Essential Oils																			
Miscellaneous Essential Oil																			
Cinnamon Oil	592	527	278	67	60	100	5	13	4	385	111	6	24	82	57	183	20	0	0
Clove Oil	510	471	318	8	12	106	3	21	3	429	16	1	24	101	109	114	7	0	0
Eucalyptus Oil	755	693	438	28	11	190	2	23	1	654	20	2	17	149	165	139	12	2	0
Miscellaneous Essential Oils	8,536	8,171	6,247	287	144	1,195	17	257	24	7,843	119	31	163	732	1,689	1,509	86	1	0
Pennyroyal Oil	23	18	4	2	1	8	0	3	0	14	4	0	0	5	3	4	0	0	0
Tea Tree Oil	2,647	2,512	1,474	114	79	693	3	137	12	2,318	96	23	72	353	656	301	34	1	0
Category Total:	**13,063**	**12,392**	**8,759**	**506**	**307**	**2,292**	**30**	**454**	**44**	**11,643**	**366**	**63**	**300**	**1,422**	**2,679**	**2,250**	**159**	**4**	**0**
Fertilizers																			
Miscellaneous Fertilizers																			
Household Plant Foods (Generally for Indoor Plants)	1,514	1,462	803	109	42	416	2	83	7	1,416	13	24	6	55	252	49	0	0	0
Other Types of Fertilizer	1,406	1,273	752	90	40	326	7	53	5	1,219	17	18	17	100	250	100	11	0	0
Outdoor Fertilizers	1,915	1,824	1,187	119	44	398	3	65	8	1,766	16	28	13	106	371	109	13	0	0
Plant Hormones	54	51	15	0	2	30	0	4	0	48	1	0	1	14	8	6	1	1	0
Unknown Types of Fertilizer	103	90	42	7	0	37	0	3	1	85	2	2	0	12	13	10	1	0	0
Category Total:	**4,992**	**4,700**	**2,799**	**325**	**128**	**1,207**	**12**	**208**	**21**	**4,534**	**49**	**72**	**37**	**287**	**894**	**274**	**26**	**1**	**0**
Fire Extinguishers																			
Miscellaneous Fire Extinguisher																			
Miscellaneous Fire Extinguishers	2,624	2,562	220	373	352	1,074	166	314	63	2,258	70	211	7	602	402	625	111	2	0
Category Total:	**2,624**	**2,562**	**220**	**373**	**352**	**1,074**	**166**	**314**	**63**	**2,258**	**70**	**211**	**7**	**602**	**402**	**625**	**111**	**2**	**0**
Foreign Bodies/Toys/Miscellaneous																			
Miscellaneous Foreign Bodies/Toys/Miscellaneous																			
Ashes	359	336	280	6	7	32	1	9	1	331	1	3	1	14	44	24	0	0	0
Bubble Blowing Solutions	3,676	3,628	3,380	156	23	50	8	9	2	3,602	18	2	6	120	419	501	9	0	0
Charcoals	553	466	358	15	17	56	1	17	2	433	10	4	15	31	83	20	2	2	0
Christmas ornaments	300	296	228	13	6	30	0	17	2	294	2	0	0	24	60	21	0	0	0
Coins	4,701	4,636	3,907	632	31	48	11	5	2	4,553	71	6	1	1,540	1,144	463	33	5	0
Desiccants	23,254	23,096	19,689	1,319	345	1,293	79	314	57	22,738	228	111	8	957	2,549	191	3	0	0
Feces/Urine	5,834	5,069	4,084	170	100	523	18	154	20	4,895	28	133	7	191	638	119	8	0	0
Glass	5,953	5,863	1,295	418	326	2,407	67	1,233	117	5,729	42	57	30	331	853	267	16	0	0

(continued)

Table 22A. 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
Glow Products	19,445	19,382	14,721	3,670	397	393	54	126	21	19,126	234	9	7	854	1,953	3,487	48	0	0
Incense (Punk)	248	230	173	6	10	34	0	7	0	210	15	1	4	29	40	24	6	0	0
Other Types of Foreign Body, Toy, or Miscellaneous Substance	23,060	21,844	14,634	2,313	819	2,944	90	875	169	20,860	487	297	158	1,935	3,384	1,042	97	3	0
Oxygen Absorbers	489	485	202	127	32	92	0	30	2	447	19	17	1	27	77	12	0	0	0
Soil	2,070	1,811	1,239	111	46	335	3	66	11	1,740	35	6	30	142	212	127	10	1	0
Toys	6,259	6,195	4,905	922	121	177	24	42	4	6,090	75	14	12	373	850	315	15	0	0
Unknown Types of Foreign Body, Toy, or Miscellaneous Substance	723	705	481	107	21	69	5	21	1	669	10	21	3	59	125	42	3	0	0
Thermometers																			
Thermometers: Mercury	1,607	1,592	321	245	126	504	32	315	49	1,545	28	11	5	113	306	29	1	0	0
Thermometers: Other	919	898	314	155	97	213	5	106	8	869	14	9	3	50	150	50	3	0	0
Thermometers: Unknown	220	216	55	23	14	97	0	25	2	215	0	1	0	16	12	3	0	0	0
Category Total:	**99,670**	**96,748**	**70,266**	**10,408**	**2,538**	**9,297**	**398**	**3,371**	**470**	**94,346**	**1,317**	**702**	**291**	**6,806**	**12,899**	**6,737**	**254**	**11**	**0**
Fumes/Gases/Vapors																			
Miscellaneous Fumes/Gases/Vapors																			
Carbon Dioxide	417	399	28	93	43	163	1	64	7	365	27	1	2	85	50	82	23	0	0
Carbon Monoxide	13,636	12,478	1,387	1,244	840	7,000	139	1,590	278	12,068	302	20	17	5,346	3,073	3,207	1,159	154	46
Chloramine Gas	1,977	1,888	70	31	94	1,412	5	262	14	1,777	108	0	1	365	203	583	178	1	1
Chlorine Gas	3,898	3,604	285	266	244	2,308	18	456	27	3,430	102	13	50	1,042	268	1,287	453	8	2
Chlorine Gas (When Household Acid is Mixed with Hypochlorite)	2,087	1,998	70	55	122	1,479	44	204	24	1,907	90	1	0	537	206	719	264	2	0
Hydrogen Sulfide (Sewer Gas)	941	742	62	29	17	499	2	111	22	732	5	0	3	355	111	224	79	14	9
Methane and Natural Gas	5,014	4,730	928	383	285	2,315	57	685	77	4,701	17	2	2	878	1,296	784	116	8	0
Other Types of Fume, Gas or Vapor	1,561	1,389	125	63	116	774	31	259	21	1,310	40	11	23	335	207	338	88	7	3
Polymer Fume Fever	4	4	1	0	0	3	0	0	0	4	0	0	0	0	3	0	0	0	0
Simple Asphyxiants	2,404	2,190	238	183	180	1,197	20	324	48	2,006	165	7	3	634	415	475	166	5	6
Unknown Types of Fume, Gas or Vapor	1,908	1,816	96	75	132	908	47	466	92	1,738	19	33	9	468	251	440	123	2	0
Category Total:	**33,847**	**31,238**	**3,290**	**2,422**	**2,073**	**18,058**	**364**	**4,421**	**610**	**30,038**	**875**	**88**	**110**	**10,045**	**6,083**	**8,139**	**2,649**	**201**	**67**
Heavy Metals																			
Miscellaneous Heavy Metals																			
Aluminum	742	679	377	41	25	179	6	44	7	635	11	20	12	52	99	32	6	1	0
Arsenic (Excluding Pesticides)	738	651	124	23	15	405	3	68	13	410	13	112	8	346	88	48	30	1	2
Barium, Soluble Salts	20	13	1	1	6	4	0	1	0	11	2	0	0	5	2	1	1	0	0
Cadmium	42	29	0	1	1	22	0	5	0	16	1	4	0	14	1	7	0	2	1
Copper	648	513	67	52	126	220	0	45	3	455	33	7	12	168	65	141	26	1	0
Fireplace Flame Colors	24	23	11	3	0	4	2	3	0	22	0	1	0	1	3	2	0	0	0
Gold	4	2	0	0	0	1	0	1	0	1	1	0	0	0	0	0	0	0	0
Lead	2,374	2,241	1,110	184	102	652	10	140	43	2,078	39	39	17	1,129	747	98	55	4	0
Manganese	44	34	5	6	1	21	0	1	0	29	0	0	4	17	4	6	2	1	0
Mercury (Other)	106	101	12	3	3	64	0	19	0	75	5	7	8	32	30	7	4	0	0
Mercury, Elemental (Excluding Thermometer)	1,384	1,322	79	104	166	630	46	201	96	1,101	110	30	41	362	394	49	14	2	0

(continued)

Table 22A. 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
Metal Fume Fever	366	343	22	17	32	231	2	36	3	301	21	7	9	118	26	85	41	1	0
Other Types of Heavy Metal	2,808	1,864	646	108	94	815	3	182	16	1,483	143	52	164	397	290	195	63	7	0
Thallium	26	17	3	0	1	11	0	2	0	5	1	3	2	11	4	1	3	1	0
Unknown Types of Heavy Metal	64	59	6	3	2	36	0	11	1	41	2	5	6	27	7	5	5	0	0
Category Total:	**9,390**	**7,891**	**2,463**	**546**	**574**	**3,295**	**72**	**759**	**182**	**6,663**	**382**	**287**	**283**	**2,679**	**1,760**	**677**	**250**	**21**	**3**
Hydrocarbons																			
Miscellaneous Hydrocarbons																			
Benzene	103	65	5	1	2	39	0	18	0	64	0	0	0	37	10	13	6	0	0
Carbon Tetrachloride	39	35	4	3	0	19	0	8	1	30	0	1	4	9	14	5	1	0	0
Diesel Fuels	777	733	112	25	34	466	1	88	7	688	32	9	1	198	103	221	36	2	0
Freon and Other Propellants	5,051	4,795	357	211	473	2,974	12	552	216	3,709	985	43	27	1,788	655	1,279	561	43	14
Gasolines	10,344	9,916	1,952	576	916	5,413	17	958	84	9,053	742	73	20	2,074	1,328	3,156	293	13	3
Kerosenes	922	869	359	59	35	343	7	62	4	807	40	20	0	286	157	224	56	7	0
Lamp Oils	1,314	1,291	871	43	34	286	2	42	13	1,246	25	14	1	417	348	279	107	9	1
Lighter Fluids and/or Naphtha	2,350	2,222	1,156	66	141	709	4	126	20	2,035	88	78	14	700	430	592	137	9	0
Lubricating Oils and/or Motor Oils	3,627	3,384	1,923	122	122	997	6	185	29	3,251	76	42	13	663	943	531	81	9	0
Mineral Seal Oil	14	14	11	1	1	0	0	1	0	13	1	0	0	3	3	3	0	0	0
Mineral Spirits	1,459	1,310	374	43	80	684	8	112	9	1,207	60	22	10	484	203	363	100	7	0
Other Types of Halogenated Hydrocarbon	240	212	27	7	14	142	2	19	1	200	7	0	4	78	24	79	13	0	0
Other Types of Hydrocarbon	4,168	3,813	1,807	151	173	1,375	9	269	29	3,595	129	43	33	1,021	812	817	168	12	0
Toluene and/or Xylene (Excluding Adhesives)	611	503	65	9	24	348	0	51	6	458	30	5	6	245	46	162	51	4	0
Turpentine	328	290	67	12	15	161	0	33	2	236	45	2	4	105	52	74	10	4	0
Unknown Types of Hydrocarbon	501	455	155	12	31	216	5	31	5	379	63	6	4	197	83	121	49	4	0
Category Total:	**31,848**	**29,907**	**9,245**	**1,341**	**2,095**	**14,172**	**73**	**2,555**	**426**	**26,971**	**2,323**	**358**	**141**	**8,305**	**5,211**	**7,919**	**1,669**	**123**	**18**
Industrial Cleaners																			
Miscellaneous Industrial Cleaners																			
Industrial Cleaner: Disinfectants	2,390	2,233	183	67	177	1,451	4	328	23	2,057	128	18	23	648	225	684	182	7	1
Industrial Cleaner: Other or Unknown	1,446	1,330	428	36	83	665	3	110	5	1,232	50	33	9	498	208	393	121	2	0
Industrial Cleaners: Acids	1,719	1,442	410	35	59	791	4	135	8	1,363	46	21	11	446	221	410	109	4	0
Industrial Cleaners: Alkalis	2,388	2,222	472	43	143	1,314	20	199	31	2,052	72	74	15	1,130	262	704	355	21	0
Industrial Cleaners: Anionics or Nonionics	638	570	294	19	19	202	6	29	1	538	20	6	6	140	89	110	21	1	0
Industrial Cleaners: Cationics	869	831	111	29	152	441	0	93	5	740	72	9	8	296	164	259	32	2	0
Category Total:	**9,450**	**8,628**	**1,898**	**229**	**633**	**4,864**	**37**	**894**	**73**	**7,982**	**388**	**161**	**72**	**3,158**	**1,169**	**2,560**	**820**	**37**	**1**
Infectious and Toxin-Mediated Diseases																			
Botulinum Toxins																			
Botulism	231	214	43	4	2	131	0	29	5	139	10	12	51	70	30	13	18	4	0
Ichthyosarcotoxins																			
Ciguatera Poisoning	161	157	4	1	8	131	0	11	2	132	0	0	25	87	0	24	57	7	0
Clupeotoxic Fish Poisoning	13	12	0	0	1	8	0	3	0	8	0	0	4	4	0	1	2	0	0
Other Types of Seafood Poisoning	208	186	5	8	18	129	0	24	2	149	4	3	23	54	13	35	24	6	0
Paralytic Shellfish Poisoning	142	134	6	6	2	94	0	22	4	106	0	1	26	31	10	27	12	3	0
Scombroid Fish Poisoning	144	136	4	3	12	103	0	13	1	99	0	0	37	40	10	28	27	1	0
Tetrodon Poisoning	107	104	18	15	9	49	0	11	2	91	7	3	3	23	12	15	4	0	0

(continued)

Table 22A. 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
Infectious Diseases																			
Bacterial Diseases	375	359	75	40	18	175	3	44	4	325	1	21	10	53	32	47	13	4	0
Fungal Diseases	2,155	2,071	552	174	160	928	8	224	25	1,830	5	153	75	51	251	104	9	0	0
Other Types of Bacterial Food Poisoning (Salmonella, Shigella, Vibrio, Staphylococcus, Streptococcus, etc)	83	82	25	12	9	30	0	6	0	77	0	4	0	4	8	7	2	0	0
Parasitic Diseases	21	16	2	3	2	6	2	1	0	15	0	1	0	4	3	3	0	0	0
Prion Diseases	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0
Unknown Types of Bacterial Food Poisoning	258	246	32	14	18	159	1	20	2	238	0	3	5	25	8	43	1	0	0
Unknown Types of Suspected Food Poisoning	11,285	11,017	1,837	800	722	6,190	36	1,281	151	10,350	23	134	488	1,010	691	1,895	422	8	0
Viral Diseases	46	43	9	1	3	14	1	3	12	38	0	1	1	13	2	7	0	0	0
Category Total:	**15,230**	**14,778**	**2,612**	**1,081**	**984**	**8,148**	**51**	**1,692**	**210**	**13,598**	**50**	**336**	**748**	**1,470**	**1,070**	**2,249**	**592**	**33**	**0**
Information Calls																			
Food Information Calls																			
Information Calls About Food Products, Additives or Supplements	9,789	8,147	4,158	643	383	2,286	45	534	98	6,526	383	485	692	751	1,007	871	122	6	2
Information Calls About Possibly Spoiled Foods	7,193	7,012	1,693	744	435	3,247	25	714	154	6,469	14	239	267	241	697	438	108	2	0
Category Total:	**16,982**	**15,159**	**5,851**	**1,387**	**818**	**5,533**	**70**	**1,248**	**252**	**12,995**	**397**	**724**	**959**	**992**	**1,704**	**1,309**	**230**	**8**	**2**
Lacrimators																			
Miscellaneous Lacrimators																			
Lacrimators: Capsicum Defense Sprays	3,213	3,181	615	658	670	885	29	255	69	2,435	182	422	32	578	101	1,513	117	1	0
Lacrimators: CN (Chloroacetophenone)	554	543	108	82	110	157	1	37	48	392	45	81	8	110	12	219	22	1	0
Lacrimators: CS (O-Chlorobenzylidene Malonitrile)	19	18	2	1	1	11	0	2	1	16	0	2	0	8	0	11	2	1	0
Lacrimators: Other	88	51	2	3	2	31	0	13	0	50	0	1	0	13	2	30	2	1	0
Lacrimators: Unknown	251	250	32	55	51	61	0	50	1	190	11	45	1	50	5	159	7	0	0
Category Total:	**4,125**	**4,043**	**759**	**799**	**834**	**1,145**	**30**	**357**	**119**	**3,083**	**238**	**551**	**41**	**759**	**120**	**1,932**	**150**	**4**	**0**
Matches/Fireworks/Explosives																			
Miscellaneous Matches/Fireworks/Explosives																			
Explosives	167	152	93	11	12	27	1	8	0	143	5	3	1	32	31	18	6	0	0
Fireworks	758	748	642	54	14	32	1	4	1	736	9	3	0	79	247	48	9	0	0
Matches	518	512	445	11	10	33	0	11	2	491	14	4	1	18	116	13	1	0	1
Other Types of Match, Firework, or Explosive	91	90	66	10	4	9	0	1	0	82	3	4	1	13	24	12	2	0	0
Unknown Types of Match, Firework, or Explosive	4	4	1	1	0	2	0	0	0	3	1	0	0	2	1	0	1	0	0
Category Total:	**1,538**	**1,506**	**1,247**	**87**	**40**	**103**	**2**	**24**	**3**	**1,455**	**32**	**14**	**3**	**144**	**419**	**91**	**19**	**0**	**1**
Miscellaneous Foods																			
Foods																			
Capsicum Peppers	2,748	2,670	532	294	410	1,090	41	277	26	2,004	218	24	416	222	76	1,041	75	1	0

(continued)

Table 22A. 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
Food Additives	448	413	125	48	28	166	0	41	5	297	22	12	80	63	45	72	10	2	0
Food Products	4,409	4,009	2,151	333	173	1,054	19	239	40	3,347	105	78	464	238	484	332	82	4	0
Other Adverse Reactions to Food	1,475	1,381	256	138	75	642	13	231	26	616	17	82	647	244	74	335	130	3	0
Category Total:	**9,080**	**8,473**	**3,064**	**813**	**686**	**2,952**	**73**	**788**	**97**	**6,264**	**362**	**196**	**1,607**	**767**	**679**	**1,780**	**297**	**10**	**0**
Mushrooms																			
Miscellaneous Mushrooms																			
Group 1 Mushrooms: Cyclopeptides	50	43	7	2	3	25	0	6	0	28	10	0	3	28	6	3	6	7	3
Group 2 Mushrooms: Muscimol (Ibotenic Acid)	45	37	5	1	5	24	0	2	0	12	21	0	4	28	4	4	19	5	0
Group 3 Mushrooms: Monomethylhydrazine (MMH)	45	44	3	4	2	33	0	2	0	26	6	0	12	18	12	10	8	2	0
Group 4 Mushrooms: Muscarine and Histamine	28	26	4	0	2	19	0	1	0	18	1	0	7	15	1	10	5	0	0
Group 5 Mushrooms: Coprine	18	14	6	3	0	1	0	4	0	13	0	0	1	5	5	1	0	0	0
Group 6 Mushrooms: Hallucinogenics (Psilocybin and Psilocin)	484	335	22	4	132	156	0	14	7	49	266	7	8	265	23	83	142	7	0
Group 7 Mushrooms: Gastrointestinal Irritants	208	195	60	17	15	99	0	3	1	151	26	0	18	109	42	72	29	0	0
Mushrooms: Miscellaneous, Non-Toxic	97	81	34	4	0	35	1	7	0	61	5	0	14	25	14	8	4	0	0
Mushrooms: Other Potentially Toxic	129	117	42	7	2	60	0	6	0	88	7	0	20	34	21	38	5	1	0
Mushrooms: Unknown	5,370	5,225	3,379	486	260	950	15	103	32	4,480	589	5	129	1,669	2,145	678	248	15	0
Category Total:	**6,474**	**6,117**	**3,562**	**528**	**421**	**1,402**	**16**	**148**	**40**	**4,926**	**931**	**12**	**216**	**2,196**	**2,273**	**907**	**466**	**37**	**3**
Other/Unknown Nondrug Substances																			
Miscellaneous Other/Unknown Nondrug Substances																			
Other Non-Drug Substances	27,164	24,339	11,169	1,972	1,010	7,592	158	1,923	515	22,147	642	729	543	3,443	4,265	3,796	559	28	5
Unknown Substances Unlikely to be Drug Products	4,611	4,349	1,166	258	236	1,978	22	583	106	2,987	159	674	175	1,440	427	609	251	30	12
Category Total:	**31,775**	**28,688**	**12,335**	**2,230**	**1,246**	**9,570**	**180**	**2,506**	**621**	**25,134**	**801**	**1,403**	**718**	**4,883**	**4,692**	**4,405**	**810**	**58**	**17**
Paints and Stripping Agents																			
Miscellaneous Paints and Stripping Agents																			
Other Types of Paint, Varnish or Lacquer	446	419	196	21	18	146	0	35	3	407	4	4	3	78	59	70	17	0	0
Unknown Types of Paint, Varnish or Lacquer	5,296	4,988	3,342	205	147	981	15	274	24	4,851	66	24	35	571	781	335	89	5	0
Varnishes and Lacquers	993	938	259	36	38	459	7	114	25	905	12	7	11	178	143	207	36	4	0
Paints																			
Anti-Algae Paints	13	13	2	0	1	9	0	1	0	13	0	0	0	3	3	0	1	0	0
Anti-Corrosion Paints	47	41	10	0	2	27	0	2	0	38	2	1	0	17	7	9	4	0	0
Oil-Base Paints	2,030	1,911	600	168	143	790	6	190	14	1,765	101	18	22	402	238	403	83	5	1
Water Base Paints (Acrylic, Latex, etc)	2,896	2,829	2,241	97	61	355	3	70	2	2,777	23	7	22	204	477	157	18	0	0
Wood stains	625	600	264	28	24	225	0	55	4	582	8	0	10	74	99	96	6	1	0

(continued)

Table 22A. 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
Stripping Agents																			
Methylene Chloride Stripping Agents	356	338	43	8	17	212	3	40	15	321	9	1	5	133	18	144	35	0	0
Other Types of Stripping Agent	454	422	94	8	22	248	2	45	3	402	13	1	4	172	48	125	51	2	0
Unknown Types of Stripping Agent	81	74	9	1	4	55	0	5	0	68	4	0	2	35	7	23	12	1	0
Category Total:	**13,237**	**12,573**	**7,060**	**572**	**477**	**3,507**	**36**	**831**	**90**	**12,129**	**242**	**63**	**114**	**1,867**	**1,880**	**1,569**	**352**	**18**	**1**
Pesticides																			
Fumigants																			
Aluminum Phosphide	85	55	0	4	2	42	2	5	0	52	3	0	0	39	7	16	6	3	1
Methyl Bromide	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0
Other Fumigants	46	40	5	3	3	25	1	3	0	38	1	1	0	16	6	12	5	0	0
Sulfuryl Fluoride	241	205	29	16	7	123	1	20	9	195	3	6	1	27	23	14	0	0	1
Unknown Fumigants	79	74	4	5	1	51	1	10	2	70	1	1	2	23	3	14	12	0	0
Fungicides (Non-medicinal)																			
Carbamate Fungicides	86	71	18	7	1	39	0	4	2	64	2	1	3	20	8	14	5	0	0
Copper Compound Fungicides	68	64	4	2	3	48	0	7	0	62	2	0	0	9	9	15	1	0	0
Mercurial Fungicides	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Other Types of Non-Medicinal Fungicide	452	366	86	14	7	210	2	39	8	351	4	1	8	75	60	81	10	0	0
Phthalimide Fungicides	38	31	18	4	0	9	0	0	0	30	1	0	0	4	4	1	0	0	0
Unknown Types of Non-Medicinal Fungicide	41	27	5	1	0	17	1	3	0	26	0	0	1	5	3	7	1	0	0
Wood Preservatives	114	104	9	4	2	77	0	10	2	98	3	1	2	25	14	15	3	0	0
Herbicides (Including Algaecides, Defoliants, Desiccants, Plant Growth Regulators)																			
Carbamate Herbicides (Excluding Metam Sodium)	11	11	1	0	0	10	0	0	0	11	0	0	0	5	0	3	0	0	0
Chlorophenoxy Herbicides	1,782	1,534	350	83	40	877	8	162	14	1,470	25	9	27	283	314	339	51	0	0
Diquat	383	352	73	13	7	229	0	25	5	338	4	2	8	52	83	68	15	0	0
Glyphosate	3,315	3,003	727	111	75	1,724	6	336	24	2,830	38	30	97	504	639	686	70	0	1
Other Types of Herbicide	1,300	1,025	228	39	40	596	2	114	6	981	14	9	18	191	178	218	38	0	1
Paraquat	90	69	2	1	1	56	0	8	1	65	3	0	0	38	13	13	7	1	1
Triazine Herbicides	204	154	29	7	9	91	0	17	1	143	4	3	4	42	21	44	6	0	0
Unknown Types of Herbicide	460	390	87	21	20	224	11	24	3	352	19	10	8	93	50	64	15	1	0
Urea Herbicides	80	38	17	4	3	9	1	3	1	37	1	0	0	8	16	5	1	0	0
Insecticides (Including Insect Growth Regulators, Molluscicides, Nematicides)																			
Carbamate Insecticides Alone	1,469	1,362	465	63	50	634	3	136	11	1,257	69	11	19	321	293	209	61	7	1
Carbamate Insecticides in Combination with Other Insecticides	192	184	44	6	6	97	0	28	3	180	1	2	1	25	33	17	5	0	0
Chlorinated Hydrocarbon Insecticides Alone	180	161	45	5	8	81	1	19	2	139	11	0	9	40	37	23	9	0	0
Chlorinated Hydrocarbon Insecticides in Combination with Other Insecticides	168	160	49	7	11	75	0	17	1	150	4	2	4	25	16	37	5	0	0
Insect Growth Regulators	166	82	35	8	2	27	0	8	2	77	1	0	4	8	13	6	2	0	0
Metaldehyde	52	47	22	1	0	21	0	3	0	47	0	0	0	12	11	5	0	0	0
Nicotine (Excluding Tobacco Products)	49	45	17	0	5	17	0	4	2	40	2	0	3	11	4	13	1	0	0

(continued)

Table 22A. 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
Organophosphate Insecticides Alone	2,355	2,180	596	132	70	1,124	13	214	31	2,010	72	31	52	573	478	473	109	20	3
Organophosphate Insecticides in Combination with Carbamate Insecticides	40	39	10	5	0	18	0	6	0	33	2	2	2	6	10	6	1	0	0
Organophosphate Insecticides in Combination with Non-Carbamate Insecticides	506	474	86	22	23	276	0	65	2	446	12	4	9	104	71	96	26	3	0
Other Types of Insecticide	9,275	8,729	4,063	367	205	3,252	20	713	109	8,425	95	47	143	773	1,585	802	93	6	1
Pyrethrins	5,667	5,304	1,706	444	226	2,362	20	478	68	4,842	148	31	254	944	723	1,202	219	1	0
Pyrethroids	22,695	21,490	5,388	1,108	875	11,619	54	2,167	279	19,989	537	201	697	3,344	3,059	5,121	633	25	1
Rotenone	30	28	4	1	2	17	0	4	0	26	1	0	1	4	4	7	1	0	0
Unknown Types of Insecticide	4,321	3,943	966	211	179	2,005	25	479	78	3,459	157	122	159	1,071	495	708	184	6	2
Miscellaneous Pesticides																			
Arsenic Pesticides	34	31	16	2	1	11	0	1	0	30	0	0	1	5	8	3	0	0	0
Borates and/or Boric Acid Pesticides (Excluding Other Uses)	6,078	5,997	5,197	126	45	498	3	111	17	5,897	51	29	16	475	1,230	183	11	1	0
Metam Sodium	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0
Repellents																			
Animal Repellents	458	437	131	35	12	185	3	61	10	410	8	9	6	52	57	111	9	0	0
Insect Repellents with DEET	3,899	3,805	2,028	520	161	889	16	161	30	3,479	66	44	202	381	554	1,041	73	1	0
Insect Repellents without DEET	1,343	1,316	959	107	30	175	0	42	3	1,258	13	11	33	74	207	212	20	0	0
Naphthalene Moth Repellants (Excluding Deodorizing Products)	1,220	1,198	773	66	22	260	9	65	3	1,148	33	4	10	178	361	83	7	1	0
Other Types of Moth Repellant	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Paradichlorobenzene Moth Repellants (Excluding Deodorizing Products)	100	94	54	1	3	30	0	5	1	89	2	0	3	14	21	5	1	0	0
Unknown Types of Insect Repellent	123	115	54	7	2	42	1	8	1	105	2	3	4	19	19	23	4	0	0
Unknown Types of Moth Repellant	1,851	1,819	986	89	41	479	9	199	16	1,726	57	17	18	292	403	177	22	1	0
Rodenticides																			
ANTU (1-naphthalenylthiourea)	2	2	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0
Bromethalin Rodenticides	647	609	459	16	6	96	3	21	8	567	22	15	2	253	207	22	1	1	0
Cholecalciferol Rodenticides	3	3	1	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0
Long-Acting Anticoagulant Rodenticides	8,645	8,372	7,180	162	79	746	14	142	49	7,960	301	76	14	2,352	2,335	111	37	11	3
Other Types of Rodenticide	331	318	200	18	9	77	1	10	3	293	22	1	2	53	70	17	8	3	1
PNU (n-3-pyridylmethyl-n1-p-nitrophenyl urea)	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0
Sodium Monofluoroacetate	4	4	1	0	2	1	0	0	0	2	2	0	0	4	1	1	0	0	1
Strychnine Rodenticides	66	53	6	2	2	33	0	6	4	27	10	11	0	31	15	2	7	2	1
Unknown Types of Rodenticide	1,323	1,186	790	28	29	257	6	59	17	1,002	104	63	3	466	306	32	20	4	0
Warfarin Type Anticoagulant Rodenticides	188	181	142	8	3	23	0	4	1	170	7	4	0	61	64	6	1	0	0
Zinc Phosphide Rodenticides	99	94	30	3	1	46	0	14	0	85	4	0	2	42	30	14	2	0	0

(continued)

Table 22A. 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:	**82,459**	**77,480**	**34,196**	**3,909**	**2,331**	**29,937**	**237**	**6,041**	**829**	**72,590**	**1,944**	**814**	**1,852**	**13,475**	**14,171**	**12,399**	**1,818**	**98**	**19**
Photographic Products																			
Miscellaneous Photographic Products																			
Developers, Fixing Baths, Stop Baths	97	79	19	2	27	26	0	5	0	72	5	1	1	19	15	14	4	0	0
Other Types of Photographic Product	117	111	60	7	10	31	0	3	0	106	2	1	2	16	14	16	2	0	0
Photographic Coating Fluids	2	2	0	0	1	1	0	0	0	2	0	0	0	1	1	0	0	0	0
Unknown Types of Photographic Product	6	6	1	0	1	3	0	0	1	6	0	0	0	2	1	3	0	0	0
Category Total:	**222**	**198**	**80**	**9**	**39**	**61**	**0**	**8**	**1**	**186**	**7**	**2**	**3**	**38**	**31**	**33**	**6**	**0**	**0**
Plants																			
Miscellaneous Plants																			
Plants: Amygdalin and/or Cyanogenic Glycosides	3,649	3,587	1,930	507	105	835	11	181	18	3,331	122	24	102	211	755	133	21	3	2
Plants: Anticholinergics	668	610	329	52	60	135	2	27	5	454	133	3	15	191	164	71	80	8	0
Plants: Cardiac Glycosides (Excluding Drugs)	1,410	1,372	797	169	37	303	8	50	8	1,279	62	6	20	169	367	92	20	2	0
Plants: Colchicine	27	25	18	5	1	1	0	0	0	22	3	0	0	6	6	5	0	0	0
Plants: Depressants	186	151	83	7	15	34	1	9	2	107	24	1	17	29	27	18	9	0	0
Plants: Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	6,432	6,177	4,279	668	147	865	18	182	18	5,737	252	20	155	477	1,168	583	77	2	0
Plants: Hallucinogenics (Code as Street Drug Unless Plant Part Involved)	635	510	151	26	104	202	1	22	4	254	205	7	39	213	79	87	100	7	0
Plants: Nicotine (Excluding Tobacco Products)	169	162	68	31	13	32	0	18	0	130	26	0	3	52	35	39	16	2	0
Plants: Non-Toxic	5,136	4,733	3,228	647	132	558	23	126	19	4,256	176	8	284	273	584	316	56	1	0
Plants: Other Toxic Types	4,058	3,813	2,526	473	111	593	9	86	15	3,473	184	11	132	398	804	273	87	7	1
Plants: Oxalates	5,134	5,044	3,740	591	128	477	10	90	8	4,731	234	8	67	382	969	966	47	1	0
Plants: Skin Irritants (Excluding Oxalate Containing Plants)	5,005	4,646	2,028	499	194	1,545	21	329	30	4,133	172	53	272	691	482	734	193	2	1
Plants: Solanine	1,664	1,632	1,046	113	39	336	1	87	10	1,496	53	7	75	134	380	115	14	0	0
Plants: Stimulants	347	323	111	32	22	122	1	33	2	278	32	2	10	64	89	48	7	1	0
Plants: Toxalbumins	248	239	84	21	12	95	0	24	3	189	22	18	5	102	74	27	13	0	0
Plants: Unknown Toxic Types or Unknown if Toxic	9,783	9,327	6,494	1,135	195	1,138	56	261	48	8,755	325	27	190	682	1,629	653	94	4	0
Category Total:	**44,551**	**42,351**	**26,912**	**4,976**	**1,315**	**7,271**	**162**	**1,525**	**190**	**38,625**	**2,025**	**195**	**1,386**	**4,074**	**7,612**	**4,160**	**834**	**40**	**4**
Polishes and Waxes																			
Miscellaneous Polishes and Waxes																			
Floor Waxes, Polishes, or Sealers	434	397	245	8	12	95	2	33	2	379	9	4	4	57	97	55	7	0	0
Furniture Polishes	1,496	1,445	1,245	30	14	123	1	30	2	1,414	18	8	5	114	435	195	15	0	0
Miscellaneous Polishes and Waxes (Excluding Mineral Seal Oils)	2,274	2,177	1,633	62	59	353	4	57	9	2,106	38	16	17	221	463	220	36	0	0
Category Total:	**4,204**	**4,019**	**3,123**	**100**	**85**	**571**	**7**	**120**	**13**	**3,899**	**65**	**28**	**26**	**392**	**995**	**470**	**58**	**0**	**0**

(continued)

Table 22A. 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
Radiation																			
Ionizing Radiation																			
Ionizing Radiation: Type Unknown	91	86	5	7	0	53	0	20	1	67	2	2	12	37	14	5	3	0	0
Radon	58	51	6	7	1	32	0	3	2	50	0	0	0	17	5	3	1	0	0
Specific Nonpharmaceutical Radionuclides	41	27	1	0	1	23	0	1	1	25	0	0	1	13	3	4	0	0	0
X-ray Radiation	15	15	3	0	0	9	0	3	0	11	0	0	3	5	1	1	0	0	0
Miscellaneous Radiation																			
Nonpharmaceutical Radiation: Type Unknown	1	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Non-ionizing Radiation																			
Extremely Low-frequency Radiation	2	2	0	0	0	2	0	0	0	1	1	0	0	1	0	1	1	0	0
Infrared Radiation	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
Microwave Radiation	30	24	0	0	0	12	0	12	0	20	1	2	1	4	4	2	1	0	0
Non-ionizing Radiation: Type Unknown	13	13	0	0	0	6	1	6	0	13	0	0	0	5	0	2	1	0	0
Radio Frequency Radiation	12	12	0	2	0	7	0	3	0	11	0	1	0	7	2	0	1	0	0
Ultraviolet Radiation	6	3	0	0	0	2	0	0	1	2	0	0	0	2	0	1	0	0	0
Visible Light Radiation (Lasers)	13	13	0	1	3	3	3	3	0	11	0	1	0	3	0	1	0	0	0
Category Total:	**283**	**248**	**15**	**17**	**6**	**150**	**4**	**51**	**5**	**211**	**4**	**6**	**18**	**95**	**29**	**20**	**8**	**0**	**0**
Sporting Equipment																			
Miscellaneous Sporting Equipment																			
Fishing Baits	46	45	36	1	2	3	0	2	1	43	1	0	1	2	11	3	1	0	0
Fishing Products, Miscellaneous	14	14	10	0	1	2	0	1	0	12	0	2	0	1	1	2	0	0	0
Golf Balls (Including Liquid Center of Golf Balls)	4	4	1	0	2	1	0	0	0	3	1	0	0	0	1	0	0	0	0
Golf Products, Miscellaneous	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0
Gun Bluing Compounds	29	26	17	2	0	7	0	0	0	26	0	0	0	7	9	5	2	0	0
Hunting Products, Miscellaneous	246	240	147	18	19	47	0	8	1	211	13	8	2	83	70	21	9	0	0
Other Types of Sporting Equipment	14	14	12	1	0	1	0	0	0	14	0	0	0	1	3	1	0	0	0
Unknown Types of Sporting Equipment	1	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
Category Total:	**355**	**345**	**224**	**22**	**24**	**62**	**0**	**11**	**2**	**311**	**15**	**10**	**3**	**94**	**96**	**33**	**12**	**0**	**0**
Swimming Pool/Aquarium																			
Miscellaneous Swimming Pool/Aquarium																			
Algicides	1,206	1,162	350	118	61	543	2	68	20	1,123	14	3	21	221	103	343	88	2	0
Aquarium Products, Miscellaneous	1,135	1,068	809	57	24	133	2	40	3	1,047	12	6	3	89	234	71	4	0	0
Bromine Shock Treatments	70	64	26	6	2	25	0	5	0	64	0	0	0	7	11	20	1	0	0
Chlorine Shock Treatments	2,909	2,824	435	395	204	1,501	16	244	29	2,688	47	12	68	785	156	1,117	325	10	0
Other Types of Swimming Pool or Aquarium Product	1,400	1,320	351	147	91	631	4	82	14	1,261	17	1	36	265	124	480	78	3	0
Swimming Pool and Aquarium Test Kits	96	79	49	13	1	14	1	1	0	78	1	0	0	12	27	12	1	1	0
Category Total:	**6,816**	**6,517**	**2,020**	**736**	**383**	**2,847**	**25**	**440**	**66**	**6,261**	**91**	**22**	**128**	**1,379**	**655**	**2,043**	**497**	**16**	**0**

(continued)

Table 22A. 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
Tobacco/Nicotine/eCigarette Products																			
eCigarettes: Nicotine Containing																			
eCigarettes: Nicotine Device Flavor Unknown	71	65	36	3	3	17	0	6	0	56	3	0	6	20	18	19	1	0	0
eCigarettes: Nicotine Device With Added Flavors	4	4	2	0	1	1	0	0	0	2	1	0	1	2	1	2	0	0	0
eCigarettes: Nicotine Device Without Added Flavors	3,208	3,122	1,833	75	174	854	6	166	14	2,805	142	18	148	1,087	966	696	91	2	1
eCigarettes: Nicotine Liquid Flavor Unknown	171	168	107	0	11	42	0	6	2	152	9	4	0	66	56	61	12	0	0
eCigarettes: Nicotine Liquid With Added Flavors	15	15	9	0	0	3	0	3	0	11	4	0	0	7	5	3	1	0	0
eCigarettes: Nicotine Liquid Without Added Flavors	545	536	372	7	21	119	1	15	1	517	14	1	3	213	189	163	17	0	0
Miscellaneous Tobacco Products																			
Chewing Tobacco	1,307	1,285	1,158	16	41	55	2	11	2	1,240	20	15	8	285	339	388	32	2	0
Cigarettes	5,893	5,714	5,373	45	47	207	1	36	5	5,602	52	23	30	787	1,922	973	41	0	0
Cigars	116	110	74	2	12	17	1	3	1	89	9	0	11	14	34	16	1	0	0
Dissolvable Tobacco	5	5	2	0	0	3	0	0	0	5	0	0	0	0	1	1	0	0	0
Filter Tips Only (i.e. Butts)	66	62	53	1	1	5	0	2	0	60	1	1	0	4	18	9	0	0	0
Other Types of Tobacco Product	202	169	74	6	28	42	0	17	2	128	26	1	14	43	23	30	11	2	0
Snuff	459	443	378	6	15	37	0	5	2	422	14	3	4	107	116	147	14	0	0
Unknown Types of Tobacco Product	1,640	1,554	981	30	75	385	4	70	9	1,379	94	9	58	456	401	316	51	3	0
Category Total:	**13,702**	**13,252**	**10,452**	**191**	**429**	**1,787**	**15**	**340**	**38**	**12,468**	**389**	**75**	**283**	**3,091**	**4,089**	**2,824**	**272**	**9**	**1**
Waterproofers/Sealants																			
Miscellaneous Waterproofers/Sealants																			
Waterproofers/sealants: aerosols	232	223	107	13	11	77	1	14	0	208	2	2	11	62	34	45	20	1	0
Waterproofers/sealants: liquids	90	87	45	4	3	31	0	3	1	83	2	0	1	24	15	12	6	0	0
Waterproofers/sealants: solids	2	2	1	0	0	1	0	0	0	1	0	0	1	1	1	0	0	0	0
Waterproofers/sealants: unknown form	35	31	12	0	2	12	0	5	0	30	1	0	0	7	6	4	2	0	0
Category Total:	**359**	**343**	**165**	**17**	**16**	**121**	**1**	**22**	**1**	**322**	**5**	**2**	**13**	**94**	**56**	**61**	**28**	**1**	**0**
Weapons of Mass Destruction																			
Miscellaneous Weapons of Mass Destruction																			
Anthrax	6	6	0	0	0	3	0	3	0	4	0	1	0	4	3	0	1	0	0
Nerve Gases	1	1	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0
Other Biological Weapons	50	50	2	0	5	32	0	8	3	41	2	1	0	29	3	4	1	1	0
Other Chemical Weapons	80	58	3	0	2	41	1	3	8	41	0	16	0	37	2	14	6	0	1
Other Radiological Weapons	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Other Suspicious Powders	141	126	23	14	14	52	1	19	3	79	13	27	0	43	31	22	7	1	0
Other Suspicious Substances (Non-Powder)	1,639	1,504	306	69	100	759	11	206	53	875	104	252	57	605	162	276	143	33	6
Suspicious Powders in Envelope or Package	45	40	4	3	1	16	1	13	2	22	2	15	0	20	13	4	1	0	1
Category Total:	**1,963**	**1,786**	**338**	**86**	**122**	**905**	**14**	**252**	**69**	**1,063**	**121**	**313**	**57**	**739**	**214**	**320**	**159**	**35**	**8**
Nonpharmaceuticals Total:	**1,106,662**	**999,812**	**555,458**	**63,538**	**42,908**	**273,804**	**3,160**	**53,402**	**7,542**	**935,623**	**34,415**	**11,619**	**14,213**	**161,845**	**164,270**	**162,874**	**30,892**	**2,164**	**262**

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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	34,863	23,029	6,807	902	5,120	9,420	13	650	117	11,952	10,518	14	263	13,041	6,201	2,980	1,758	475	49
Acetaminophen Alone, Pediatric	23,799	22,097	20,347	1,449	121	136	25	12	7	21,814	174	9	73	2,983	4,661	284	47	6	0
Acetaminophen Alone, Unknown if Adult or Pediatric	8,525	5,270	1,840	262	1,011	1,992	7	110	48	2,859	2,223	6	71	2,968	1,436	632	429	129	16
Acetaminophen Combinations																			
Acetaminophen in Combination with Other Drugs, Adult Formulations	5,956	3,238	850	120	979	1,210	3	60	16	1,318	1,769	10	105	2,004	837	754	394	36	1
Acetaminophen in Combination with Other Drugs, Pediatric Formulations	48	39	33	4	1	1	0	0	0	37	1	0	1	11	10	1	0	0	0
Acetaminophen with Codeine	3,362	1,763	345	114	296	904	2	79	23	832	728	0	181	892	426	360	162	16	1
Acetaminophen with Diphenhydramine	6,369	3,804	755	90	689	2,127	2	114	27	1,303	2,417	4	45	2,622	779	935	691	89	7
Acetaminophen with Hydrocodone	22,349	9,833	1,688	276	1,109	6,168	5	510	77	4,445	4,618	26	582	5,327	2,385	2,000	835	144	24
Acetaminophen with Other Narcotics or Narcotic Analogs	533	249	44	7	38	153	0	6	1	107	121	0	14	155	65	52	24	9	0
Acetaminophen with Oxycodone	8,824	3,967	643	80	301	2,666	3	229	45	1,833	1,774	8	268	2,244	896	847	405	92	10
Acetaminophen with Propoxyphene	147	58	3	1	10	33	0	10	1	18	34	0	2	37	13	11	7	0	0
Acetylsalicylic Acid Alone																			
Acetylsalicylic Acid Alone, Adult Formulations	5,980	3,495	1,434	173	667	1,131	0	75	15	1,913	1,470	4	69	1,847	901	468	489	54	4
Acetylsalicylic Acid Alone, Pediatric Formulations	653	382	256	45	32	43	1	5	0	319	53	1	9	109	111	14	10	0	0
Acetylsalicylic Acid Alone, Unknown if Adult or Pediatric Formulations	11,837	5,948	1,769	265	1,268	2,473	7	114	52	2,632	2,999	6	128	3,775	1,328	981	1,158	147	9
Acetylsalicylic Acid Combinations																			
Acetylsalicylic Acid in Combination with Other Drugs, Adult Formulations	1,335	844	253	41	91	419	4	27	9	463	319	0	50	426	192	137	134	17	2
Acetylsalicylic Acid in Combination with Other Drugs, Pediatric Formulations	2	2	2	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0
Acetylsalicylic Acid with Carisoprodol	12	6	0	0	0	6	0	0	0	2	3	0	1	5	2	1	2	0	0
Acetylsalicylic Acid with Codeine	53	28	3	1	5	18	0	1	0	9	16	0	1	20	7	7	10	0	0
Acetylsalicylic Acid with Other Narcotics or Narcotic Analogs	11	5	1	0	0	3	0	1	0	1	2	0	1	2	2	0	0	0	0
	15	9	1	0	0	6	0	2	0	3	5	0	1	5	2	1	0	1	0

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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 Oxycodone																			
Acetylsalicylic Acid with Propoxyphene	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Miscellaneous Analgesics																			
Non-Aspirin Salicylates (Excluding Topicals and/or Gastrointestinal Drugs)	230	198	122	5	18	47	0	5	1	155	35	0	7	67	49	23	16	1	0
Other Analgesics	358	298	159	11	17	97	0	14	0	257	21	1	18	43	68	37	6	0	0
Phenacetin	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phenazopyridine	1,090	872	596	34	31	196	0	13	2	767	56	0	44	212	292	89	17	4	0
Salicylamide	7	6	6	0	0	0	0	0	0	6	0	0	0	1	3	1	0	0	0
Unknown Analgesics	223	95	22	3	26	33	1	5	5	32	58	0	1	62	15	18	13	0	0
Nonsteroidal Antiinflammatory Drugs																			
Colchicine	339	233	51	5	6	161	0	9	1	164	37	0	30	112	53	42	27	4	0
Cyclooxygenase-2 Inhibitors	816	404	151	15	11	197	0	28	2	352	30	0	22	60	86	17	1	0	0
Ibuprofen	79,615	61,902	42,482	3,430	7,221	7,765	50	771	183	50,521	10,652	24	553	12,786	13,674	3,492	757	52	2
Ibuprofen with Diphenhydramine	2,885	1,824	377	43	329	992	1	65	17	892	897	1	28	938	350	364	261	14	0
Ibuprofen with Hydrocodone	207	111	14	3	20	65	0	9	0	56	42	0	12	48	30	21	8	0	0
Indomethacin	477	243	65	9	29	125	0	14	1	153	63	0	25	74	70	30	3	1	0
Ketoprofen	86	34	10	2	4	15	0	3	0	22	8	0	4	10	10	3	1	0	0
Naproxen	14,060	8,438	2,644	288	1,935	3,189	4	326	52	5,108	2,930	2	353	3,069	2,003	1,073	233	7	0
Other Types of Nonsteroidal Antiinflammatory Drug	7,039	3,922	1,483	174	268	1,742	1	235	19	3,266	490	2	149	783	905	356	59	7	0
Unknown Types of Nonsteroidal Antiinflammatory Drug	21	11	2	0	1	6	0	0	2	6	5	0	0	5	0	3	2	0	0
Opioids																			
Buprenorphine	3,484	2,137	929	29	89	907	3	147	33	1,207	620	84	185	1,529	291	652	406	44	1
Butorphanol	65	45	14	2	1	27	0	1	0	38	4	0	2	17	11	9	1	0	0
Codeine	1,709	1,254	487	190	83	448	0	43	3	1,049	133	2	64	266	345	148	29	5	0
Dihydrocodeine	5	3	0	0	1	2	0	0	0	1	2	0	0	1	0	0	1	0	0
Fentanyl	1,418	797	45	8	32	645	1	52	14	186	496	9	81	582	71	160	217	102	5
Hydrocodone Alone or in Combination (Excluding Combination Products with Acetaminophen, Acetylsalicylic Acid or Ibuprofen)	1,956	989	233	62	94	510	2	78	10	646	243	2	76	351	188	211	47	2	4
Hydromorphone	1,588	657	69	13	17	500	0	51	7	331	259	11	48	389	131	127	91	20	1
Levorphanol	4	3	0	0	1	1	0	1	0	1	1	0	1	1	2	0	0	0	0
Meperidine	129	53	10	4	0	34	0	5	0	32	13	0	7	30	14	16	2	3	0
Methadone	3,425	1,450	214	21	70	1,039	1	86	19	553	718	34	74	1,121	181	256	394	169	12
Morphine	3,527	1,633	242	36	72	1,140	2	123	18	929	540	16	106	929	300	309	241	56	10
Nalbuphine	20	10	1	0	0	8	0	1	0	4	1	1	4	9	0	2	3	0	0
Other or Unknown Narcotics	1,487	432	58	6	29	296	1	29	13	76	236	54	20	371	21	80	114	80	5
Oxycodone Alone or in Combination (Excluding Combination Products with Acetaminophen or Acetylsalicylic Acid)	7,740	3,300	672	103	197	2,054	6	224	44	1,763	1,286	26	159	1,828	649	782	397	81	15

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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
Oxymorphone	542	249	33	4	11	182	0	16	3	108	116	3	13	163	39	54	47	17	1
Pentazocine	33	13	2	0	1	9	0	1	0	5	4	1	2	7	5	1	1	0	0
Propoxyphene	19	5	1	0	0	2	0	2	0	1	3	0	0	5	0	0	1	0	0
Sufentanil	1	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	0
Tapentadol	310	179	13	2	10	142	0	12	0	93	66	0	16	98	26	37	23	4	0
Tramadol	13,120	6,478	1,331	162	688	3,974	10	257	56	2,840	3,118	45	381	4,173	1,575	1,408	1,000	181	4
Other Acetaminophen and Acetylsalicylic Acid Combinations																			
Acetaminophen and Acetylsalicylic Acid with Other Ingredients	6,911	4,807	2,142	115	1,122	1,302	0	108	18	2,797	1,851	2	129	2,259	1,256	801	416	11	1
Acetaminophen and Acetylsalicylic Acid without Other Ingredients	270	177	65	5	19	84	0	4	0	93	73	0	5	105	34	25	33	5	0
Category Total:	**289,891**	**187,329**	**91,819**	**8,614**	**24,191**	**56,846**	**155**	**4,743**	**961**	**126,372**	**54,352**	**408**	**4,484**	**70,978**	**43,002**	**21,112**	**11,424**	**2,085**	**184**
Anesthetics																			
Inhalation Anesthetics																			
Nitrous Oxide	179	134	18	20	21	69	0	4	2	48	62	2	21	82	17	25	25	3	0
Other Types of Inhalation Anesthetic	88	66	6	1	2	46	1	9	1	50	7	4	3	36	10	17	7	0	0
Unknown Types of Inhalation Anesthetic	2	2	1	1	0	0	0	0	0	0	0	0	2	2	0	0	2	0	0
Local and/or Topical Anesthetics																			
Dibucaine	20	20	14	0	0	5	0	1	0	17	0	0	3	3	4	4	0	0	0
Lidocaine	1,508	1,303	508	78	90	539	0	73	15	1,064	70	6	150	319	301	172	66	17	2
Other or Unknown Local and/or Topical Anesthetic	3,871	3,667	2,384	168	122	812	7	152	22	3,307	119	15	219	487	1,006	395	78	11	1
Miscellaneous Anesthetics																			
Ketamine and Analogs	327	162	15	7	28	109	0	2	1	35	112	5	5	149	20	34	59	13	1
Other Types of Anesthetic	27	19	3	3	1	11	0	0	1	13	1	0	5	9	2	4	1	0	0
Unknown Types of Anesthetic	10	7	4	0	0	3	0	0	0	5	0	0	2	3	0	1	0	0	0
Category Total:	**6,032**	**5,380**	**2,953**	**278**	**264**	**1,594**	**8**	**241**	**42**	**4,539**	**371**	**32**	**410**	**1,090**	**1,360**	**652**	**238**	**44**	**4**
Anticholinergic Drugs																			
Miscellaneous Anticholinergic Drugs																			
Anticholinergic Drugs (Excluding Cough and Cold Preparations, and Plants)	10,774	8,271	297	70	127	6,636	3	1,079	59	7,774	336	9	128	721	1,052	255	200	16	1
Category Total:	**10,774**	**8,271**	**297**	**70**	**127**	**6,636**	**3**	**1,079**	**59**	**7,774**	**336**	**9**	**128**	**721**	**1,052**	**255**	**200**	**16**	**1**
Anticoagulants																			
Miscellaneous Anticoagulants																			
Glycoprotein IIIa/IIb Inhibitors	5	4	0	0	0	4	0	0	0	4	0	0	0	4	2	1	0	0	0
Heparins	302	244	42	2	9	158	0	28	5	195	17	1	29	87	54	19	15	3	1
Other Antiplatelets	2,746	1,028	203	13	11	703	0	91	7	950	44	1	31	170	225	28	14	3	0
Other Types of Anticoagulant	1,826	1,168	147	6	10	899	2	100	4	1,010	48	1	99	305	228	50	60	15	6
Unknown Types of Anticoagulant	17	10	3	0	1	4	0	2	0	5	2	2	0	5	2	1	1	0	0
Warfarin (Excluding Rodenticides)	3,402	1,766	355	16	19	1,271	0	93	12	1,485	205	5	62	507	327	64	137	16	0
Category Total:	**8,298**	**4,220**	**750**	**37**	**50**	**3,039**	**2**	**314**	**28**	**3,649**	**316**	**10**	**221**	**1,078**	**838**	**163**	**227**	**37**	**7**

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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
Anticonvulsants																			
Anticonvulsants: Carbamazepine and Analogs																			
Carbamazepine	3,734	1,880	253	66	151	1,331	6	61	12	800	777	1	216	1,336	300	543	429	62	0
Oxcarbazepine	3,620	1,674	393	226	414	584	1	48	8	1,008	607	1	44	853	377	407	206	14	0
Anticonvulsants: Gamma Aminobutyric Acid and Analogs																			
Gabapentin	15,465	5,367	884	109	356	3,696	4	288	30	2,503	2,522	23	246	2,992	1,360	1,184	479	53	4
Other Types of Gamma Aminobutyric Acid Anticonvulsant	3,204	1,205	284	40	62	762	3	45	9	638	471	8	58	653	328	223	159	21	0
Anticonvulsants: Hydantoins																			
Fosphenytoin	14	13	2	0	1	10	0	0	0	4	0	0	9	12	1	4	4	0	0
Phenytoin	2,745	1,712	100	17	48	1,475	0	63	9	618	459	3	504	1,381	233	505	482	45	1
Miscellaneous Anticonvulsants																			
Felbamate	41	19	5	4	4	6	0	0	0	17	2	0	0	4	3	3	0	0	0
Lamotrigine	9,208	3,600	544	205	640	2,012	1	176	22	2,152	1,261	5	149	1,816	648	877	435	66	0
Levetiracetam	4,341	2,258	875	237	194	884	0	62	6	1,832	361	3	48	659	619	299	70	7	1
Other Types of Anticonvulsant (Excluding Barbiturates)	701	270	69	28	25	140	0	7	1	207	55	0	6	122	65	44	28	7	0
Primidone	317	107	20	0	3	79	0	5	0	79	17	1	10	52	25	32	7	0	0
Succinimides	164	114	52	44	11	7	0	0	0	103	7	1	2	30	42	25	1	0	0
Topiramate	4,598	1,838	470	167	361	769	0	64	7	1,077	663	2	83	919	537	377	170	7	0
Unknown Types of Anticonvulsant (Excluding Barbiturates)	20	10	3	0	1	4	0	2	0	9	1	0	0	4	1	2	1	0	0
Valproic Acid	7,902	2,998	369	170	427	1,912	0	99	21	1,327	1,162	5	376	1,964	681	650	476	61	0
Zonisamide	545	249	71	25	24	116	0	10	3	204	36	0	7	64	63	24	5	2	0
Category Total:	**56,619**	**23,314**	**4,394**	**1,338**	**2,722**	**13,787**	**15**	**930**	**128**	**12,578**	**8,401**	**53**	**1,758**	**12,861**	**5,283**	**5,199**	**2,952**	**345**	**6**
Antidepressants																			
Lithium Salts																			
Lithium	6,850	3,597	133	80	410	2,835	1	119	19	952	1,202	9	1,202	3,014	513	799	1,219	160	7
Miscellaneous Antidepressants																			
Antidepressants: Type Unknown to Consumer	87	22	2	1	5	9	0	4	1	6	14	1	0	13	5	3	1	1	0
Bupropion	11,222	5,195	634	141	963	3,180	3	242	32	2,789	2,236	7	105	3,330	1,084	833	1,115	338	4
Other Types of Antidepressant	635	277	56	10	34	160	1	15	1	131	118	2	24	178	59	59	42	10	0
Trazodone	18,382	6,853	513	207	1,442	4,400	1	223	67	1,717	4,945	16	108	5,240	1,400	2,259	1,195	72	1
Monoamine Oxidase Inhibitors (MAOI)																			
Isocarboxazid	7	2	0	0	0	2	0	0	0	0	0	0	2	1	0	0	1	0	0
Other Types of Monoamine Oxidase Inhibitor (MAOI)	86	42	6	1	2	29	0	4	0	35	3	0	3	11	10	5	4	0	0
Phenelzine	46	23	4	0	1	16	0	2	0	12	4	1	6	15	6	2	7	1	0
Selegiline	40	16	1	0	0	13	0	1	1	10	2	0	4	6	2	1	2	0	0
Tranylcypromine	58	26	1	0	0	24	0	1	0	12	7	2	4	20	4	7	8	2	0
Selective Serotonin Reuptake Inhibitors (SSRI)																			
Citalopram	10,193	3,969	926	203	969	1,680	4	163	24	2,019	1,828	4	96	2,204	1,149	729	439	53	2
Escitalopram	6,607	2,729	503	235	878	999	3	97	14	1,361	1,242	6	101	1,476	781	511	298	10	0
Fluoxetine	10,920	4,343	802	318	1,622	1,447	3	120	31	1,846	2,385	5	82	2,584	1,472	791	338	26	1
Fluvoxamine	439	138	21	7	39	63	0	7	1	86	44	2	5	51	40	24	11	2	0
Other Types of Selective Serotonin Reuptake Inhibitor (SSRI)	3,010	1,299	303	76	330	546	0	39	5	608	626	2	50	812	339	256	156	22	0

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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
Paroxetine	3,899	1,524	355	52	232	812	0	62	11	820	605	9	74	768	379	269	139	7	0
Sertraline	14,232	6,577	1,595	379	2,070	2,288	4	205	36	3,138	3,175	6	207	3,764	1,772	1,470	683	29	0
Serotonin Norepinephrine Reuptake Inhibitors (SNRI)																			
Duloxetine	4,196	1,570	523	50	121	796	0	65	15	1,073	392	14	81	700	465	261	133	6	2
Nefazodone	46	15	5	0	0	9	0	1	0	10	5	0	0	5	5	3	0	0	0
Other Types of Serotonin Norepinephrine Reuptake Inhibitor (SNRI)	825	366	128	9	21	191	0	15	2	250	91	2	23	153	120	48	29	3	0
Venlafaxine	5,738	2,210	537	63	256	1,246	0	97	11	1,292	782	14	97	1,210	619	362	294	46	2
Tetracyclic Antidepressants																			
Maprotiline	6	3	1	0	0	2	0	0	0	3	0	0	0	1	0	0	0	0	0
Mirtazapine	4,112	1,271	182	69	180	792	1	43	4	477	730	5	47	832	302	349	171	7	1
Tricyclic Antidepressants (TCA)																			
Amitriptyline	6,354	2,790	418	116	426	1,730	0	76	24	974	1,665	8	89	2,124	415	614	830	225	7
Amoxapine	11	8	1	2	0	4	0	1	0	3	4	0	1	6	0	3	2	0	0
Clomipramine	241	116	14	2	10	78	0	12	0	77	33	0	5	51	25	23	19	5	0
Desipramine	69	38	2	0	3	24	0	9	0	21	9	0	8	17	4	6	5	3	1
Doxepin	1,523	561	45	12	36	442	0	21	5	161	376	2	18	431	83	144	149	47	3
mipramine	298	129	25	18	19	60	0	5	2	70	49	0	8	71	24	27	17	6	0
Loxapine	105	40	3	2	2	31	0	2	0	14	24	0	2	26	9	10	7	2	0
Nortriptyline	1,159	524	64	17	69	357	1	15	1	242	243	1	28	328	92	100	103	19	0
Other Types of Tricyclic Antidepressant (TCA)	495	208	36	4	29	134	0	4	1	74	112	1	7	161	25	34	56	34	1
Protriptyline	14	3	0	0	0	1	0	2	0	1	0	0	2	1	0	0	0	0	0
Tricyclic Antidepressants (TCA) Formulated with a Benzodiazepine	18	12	2	0	1	8	0	1	0	7	5	0	0	6	3	4	0	1	0
Tricyclic Antidepressants (TCA) Formulated with a Phenothiazine	45	17	6	0	0	11	0	0	0	10	7	0	0	10	5	0	4	0	0
Tricyclic Antidepressants (TCA): Type Unknown to Consumer	17	4	0	0	1	3	0	0	0	1	2	1	0	3	0	0	2	1	0
Category Total:	**111,985**	**46,517**	**7,847**	**2,074**	**10,171**	**24,422**	**22**	**1,673**	**308**	**20,302**	**22,965**	**120**	**2,489**	**29,623**	**11,211**	**10,006**	**7,479**	**1,138**	**32**
Antihistamines																			
Miscellaneous Antihistamines																			
Cimetidine and Other Histamine-2 Blockers	8,425	6,205	4,721	238	194	893	4	142	13	5,883	240	3	73	517	1,414	198	18	0	1
Diphenhydramine Alone (Over the Counter)	28,086	20,663	11,653	1,418	2,249	4,879	19	368	77	14,834	5,396	9	294	7,407	4,428	3,036	2,223	198	3
Diphenhydramine Alone (Prescription)	1,618	1,116	500	110	168	309	0	19	10	704	371	2	29	486	220	204	141	19	0
Diphenhydramine Alone (Unknown if Over the Counter or Prescription)	14,193	9,682	4,762	695	1,236	2,699	8	224	58	6,285	3,131	6	174	4,007	1,903	1,618	1,224	136	10
Other Antihistamines Alone (Excluding Cough and Cold Preparations)	49,747	35,323	20,035	4,943	2,867	6,602	17	757	102	30,899	3,876	15	428	6,247	8,564	2,397	814	37	3
Category Total:	**102,069**	**72,989**	**41,671**	**7,404**	**6,714**	**15,382**	**48**	**1,510**	**260**	**58,605**	**13,014**	**35**	**998**	**18,664**	**16,529**	**7,453**	**4,420**	**390**	**17**

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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
Antimicrobials																			
Anthelmintics																			
Diethylcarbamazine	38	38	15	1	0	21	1	0	0	36	0	1	1	2	6	1	0	0	0
Levamisole	33	15	2	0	0	12	0	1	0	8	4	0	3	11	2	1	4	1	0
Other Types of Anthelmintic	1,799	1,664	900	116	37	521	3	76	11	1,564	45	2	49	174	405	125	10	0	0
Piperazine	213	205	155	9	6	27	1	6	1	192	11	1	0	24	59	8	1	0	0
Unknown Types of Anthelmintic	11	8	3	0	2	2	0	1	0	6	1	1	0	2	2	2	0	0	0
Antibiotics																			
Systemic Antibiotic Preparations (Oral, Intravenous, Intramuscular)	31,245	25,145	11,651	2,407	1,559	8,158	38	1,216	116	21,322	1,225	14	2,524	3,142	3,924	1,785	330	31	3
Topical Antibiotic Preparations (Dermal, Otic, Ophthalmic, Nasal)	5,996	5,741	4,070	263	125	1,043	7	206	27	5,531	61	5	142	207	847	250	29	0	1
Unknown Types of Antibiotic Preparation	336	232	119	23	18	55	0	10	7	183	15	0	34	35	38	21	4	0	0
Antifungals																			
Systemic Antifungal Preparations (Oral, Intravenous, Intramuscular)	1,415	1,150	587	90	29	357	1	81	5	1,025	22	1	102	133	215	76	26	0	0
Topical Antifungal Preparations (Dermal, Otic, Ophthalmic, Nasal)	8,395	8,032	5,870	238	104	1,498	15	288	19	7,802	53	7	164	514	1,259	512	48	3	0
Unknown Types of Antifungal Preparation	18	14	7	0	0	6	0	1	0	14	0	0	0	1	0	3	0	0	0
Antiparasitics																			
Antimalarials	790	501	122	28	52	261	0	37	1	405	54	0	41	182	122	57	34	3	0
Metronidazole	1,079	672	200	22	40	339	1	63	7	525	49	0	97	107	106	51	11	0	0
Other Types of Antiparasitic	32	29	6	6	0	15	0	2	0	23	2	0	4	12	6	4	2	0	0
Antituberculars																			
Isoniazid	172	123	26	8	32	52	0	5	0	68	36	0	17	73	26	15	14	17	0
Other Types of Antitubercular	25	9	2	0	0	7	0	0	0	9	0	0	0	1	1	0	0	0	0
Rifampin	76	47	15	1	5	23	0	3	0	38	6	0	3	15	11	9	5	0	1
Antivirals																			
Amantadine	244	79	19	10	7	43	0	0	0	57	16	0	6	32	25	10	10	2	0
Antiretrovirals	672	346	67	4	14	214	0	43	4	278	64	0	3	95	63	29	11	0	0
Other Anti-Influenza Agents	772	720	268	194	59	169	2	26	2	645	6	0	66	60	144	43	13	1	0
Systemic Antiviral Preparations (Oral, Intravenous, Intramuscular)	1,252	915	235	31	57	521	0	69	2	770	96	0	46	176	166	59	14	4	0
Topical Antiviral Preparations (Dermal, Otic, Ophthalmic, Nasal)	175	171	101	9	3	44	0	14	0	161	6	0	4	5	34	11	0	0	0
Unknown Types of Antiviral Preparations	522	317	114	19	25	140	0	19	0	266	32	0	17	68	69	18	9	2	1
Miscellaneous Antimicrobials																			
Other Types of Antimicrobial	194	176	112	6	2	47	0	8	1	168	4	0	4	25	44	15	2	1	0
Unknown Types of Antimicrobial	13	9	5	0	0	4	0	0	0	8	0	0	1	1	1	0	0	0	0

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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:	**55,517**	**46,358**	**24,671**	**3,485**	**2,176**	**13,579**	**69**	**2,175**	**203**	**41,104**	**1,808**	**32**	**3,328**	**5,097**	**7,575**	**3,105**	**577**	**65**	**6**
Antineoplastics																			
Miscellaneous Antineoplastics																			
Antineoplastic Drugs	1,931	1,474	254	37	45	995	3	127	13	1,318	45	1	104	458	306	157	65	12	0
Category Total:	**1,931**	**1,474**	**254**	**37**	**45**	**995**	**3**	**127**	**13**	**1,318**	**45**	**1**	**104**	**458**	**306**	**157**	**65**	**12**	**0**
Asthma Therapies																			
Miscellaneous Asthma Therapies																			
Albuterol	5,154	4,643	3,053	664	243	576	7	86	14	4,068	356	18	185	572	1,081	474	245	0	0
Aminophylline or Theophylline	199	133	14	3	3	107	0	5	1	83	12	0	32	81	23	15	37	8	2
Leukotriene Antagonist or Inhibitor	6,743	5,189	3,755	785	151	419	7	66	6	5,021	134	1	26	524	1,153	70	5	0	0
Non-Selective Beta Agonists	3,774	3,729	1,559	1,054	208	800	7	96	5	3,588	106	11	22	1,026	272	1,593	303	1	0
Other Asthma Therapeutic Agents	319	224	62	12	6	122	0	19	3	175	22	1	25	58	49	25	18	2	0
Terbutaline and Other Beta-2 Agonists	1,312	1,133	215	138	51	622	2	97	8	1,007	71	2	47	130	147	86	65	0	0
Unknown Asthma Therapeutic Agents	7	3	0	1	0	2	0	0	0	2	1	0	0	1	1	0	1	0	0
Category Total:	**17,508**	**15,054**	**8,658**	**2,657**	**662**	**2,648**	**23**	**369**	**37**	**13,944**	**702**	**33**	**337**	**2,392**	**2,726**	**2,263**	**674**	**11**	**2**
Cardiovascular Drugs																			
Miscellaneous Cardiovascular Drugs																			
Alpha Blockers	3,643	1,232	238	21	84	825	0	59	5	916	258	0	50	451	350	123	87	0	1
Angiotensin Converting Enzyme Inhibitors	16,959	7,391	2,995	475	241	3,382	4	271	23	6,493	781	3	102	2,227	2,740	265	206	9	0
Angiotensin Receptor Blockers	7,200	3,418	803	107	93	2,198	1	205	11	3,185	180	1	46	665	1,031	138	72	3	0
Antiarrhythmics	1,956	1,127	152	19	13	877	0	59	7	1,032	45	0	47	443	438	74	82	19	8
Antihyperlipidemics	12,157	4,705	1,794	161	111	2,345	3	280	11	4,416	162	2	118	496	789	100	19	3	0
Antihypertensives (Excluding Diuretics)	5,090	2,856	875	1,087	403	434	4	42	11	2,429	330	6	65	1,420	949	443	402	16	0
Beta Blockers (Including All Propranolol Cases)	24,755	10,459	2,952	359	416	6,285	2	401	44	8,701	1,506	6	187	4,221	4,015	537	914	89	14
Calcium Antagonists	12,007	5,001	1,214	123	175	3,244	2	224	19	4,309	565	5	101	2,447	1,933	300	423	86	20
Cardiac Glycosides	2,220	1,432	94	14	12	1,279	0	30	3	615	74	1	665	1,101	218	137	526	122	38
Clonidine	9,710	5,063	1,769	1,224	741	1,239	0	77	13	3,460	1,427	12	121	3,553	994	1,145	1,518	143	0
Hydralazine	1,085	403	128	6	16	236	0	14	3	348	44	0	10	168	136	40	32	1	0
Long-Acting Nitrates	856	282	49	2	7	207	0	17	0	255	13	0	13	82	87	22	26	1	0
Nitroglycerin	1,177	759	471	38	7	208	1	30	4	648	85	4	18	243	340	49	24	0	0
Nitroprusside	31	28	0	1	1	26	0	0	0	12	1	0	15	25	4	4	3	2	1
Other Types of Cardiovascular Drug	561	212	71	3	5	119	0	14	0	203	7	0	1	46	61	16	7	1	0
Other Types of Vasodilator	1,065	703	268	27	21	338	1	40	8	521	74	7	95	260	202	79	38	4	0
Unknown Types of Cardiovascular Drug	60	18	6	0	0	12	0	0	0	11	5	0	1	7	3	1	3	0	0
Unknown Types of Vasodilator	16	10	3	0	0	7	0	0	0	9	1	0	0	4	6	0	2	0	0
Vasopressors	639	367	202	37	19	90	0	17	2	341	11	1	13	84	81	42	31	2	0
Category Total:	**101,187**	**45,466**	**14,084**	**3,704**	**2,365**	**23,351**	**18**	**1,780**	**164**	**37,904**	**5,569**	**48**	**1,668**	**17,943**	**14,377**	**3,515**	**4,415**	**501**	**82**
Cold and Cough Preparations																			
Acetaminophen and Acetylsalicylic Acid with Decongestant and/or Antihistamine																			
	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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 and Acetylsalicylic Acid with Antihistamine without Opioids	1	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Acetaminophen and Acetylsalicylic Acid with Decongestant and Antihistamine without Opioids	55	35	18	6	1	7	0	3	0	26	6	0	3	9	10	2	1	0	0
Acetaminophen and Acetylsalicylic Acid with Decongestant and/or Antihistamine Combinations without Phenylpropanolamine or Opioids	99	79	52	9	8	9	0	1	0	68	9	0	2	18	14	9	0	0	0
Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan with Antihistamine	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan with Decongestant	2	2	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan with Decongestant and Antihistamine	14	9	2	0	2	4	0	0	1	2	5	0	2	6	2	3	1	0	0
Acetaminophen, Acetylsalicylic Acid, and Opioid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	26	21	14	1	2	4	0	0	0	17	1	0	3	4	6	2	0	0	0
Acetaminophen with Decongestant and/or Antihistamine																			
Acetaminophen and Codeine Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	11,732	6,851	3,266	559	1,021	1,825	4	146	30	4,670	1,855	9	264	2,285	1,524	941	401	20	2
Acetaminophen and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	13	10	6	1	1	1	0	0	1	6	2	1	1	2	2	0	2	0	0

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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 and Dextromethorphan with Antihistamine																			
Acetaminophen and Dextromethorphan with Decongestant	14	8	3	2	0	3	0	0	0	7	1	0	0	1	1	1	0	0	0
Acetaminophen and Dextromethorphan with Decongestant and Antihistamine	23	12	5	1	2	4	0	0	0	7	4	0	1	5	2	3	2	0	0
Acetaminophen and Other Opioid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	13	4	4	0	0	0	0	0	0	4	0	0	0	0	1	0	0	0	0
Acetaminophen and Other Opioid with Decongestant and Antihistamine	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Acetaminophen with Antihistamine without Opioids	14	9	6	2	0	1	0	0	0	8	1	0	0	6	5	2	0	0	0
Acetaminophen with Decongestant and Antihistamine without Opioids	12	10	6	3	1	0	0	0	0	10	0	0	0	1	1	1	0	0	0
Acetaminophen with Decongestant and/or Antihistamine Combinations without Phenylpropanolamine or Opioids	2,742	1,744	842	155	302	414	0	29	2	1,218	447	5	62	560	373	212	154	8	1
Acetaminophen with Decongestant without Opioids	4	3	2	0	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0
Acetylsalicylic Acid with Decongestant and/or Antihistamine																			
Acetylsalicylic Acid and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	36	30	19	3	2	6	0	0	0	25	2	0	3	8	8	5	1	0	0
Acetylsalicylic Acid with Antihistamine without Opioids	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acetylsalicylic Acid with Decongestant and Antihistamine without Opioids	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acetylsalicylic Acid with Decongestant and/or Antihistamine Combinations without Phenylpropanolamine or Opioids	73	46	29	3	7	7	0	0	0	35	7	0	4	10	10	8	3	0	0

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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
Antihistamine and/or Decongestant																			
Antihistamine and Decongestant with Codeine	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Antihistamine and Decongestant with Dextromethorphan	29	25	14	8	2	0	0	1	0	24	0	0	1	1	8	3	0	0	0
Antihistamine and Decongestant without Opioid	16	14	11	1	0	1	0	1	0	12	0	0	2	4	1	4	0	0	0
Antihistamine and/or Decongestant with Codeine without Phenylpropanolamine	926	705	243	88	68	290	0	14	2	551	122	1	20	205	157	135	33	1	0
Antihistamine and/or Decongestant with Dextromethorphan without Phenylpropanolamine	10,561	8,588	4,430	902	1,692	1,488	4	60	12	5,720	2,690	9	125	3,281	1,700	1,394	1,270	57	1
Antihistamine and/or Decongestant with Other Opioid without Phenylpropanolamine	554	443	150	46	29	199	0	19	0	377	50	1	11	143	113	93	23	3	0
Antihistamine and/or Decongestant without Phenylpropanolamine and Opioid	11,399	8,636	5,104	930	582	1,818	8	167	27	7,779	621	7	205	1,373	2,134	698	232	8	1
Antihistamine with Codeine	2	2	1	1	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0
Antihistamine with Dextromethorphan	23	19	9	2	4	4	0	0	0	10	7	1	0	9	1	1	6	1	0
Antihistamine without Opioid	6	5	4	1	0	0	0	0	0	5	0	0	0	0	1	0	0	0	0
Decongestant with Dextromethorphan	12	6	4	1	0	1	0	0	0	4	1	0	1	2	0	1	1	0	0
Decongestant without Opioid	16	11	2	3	0	5	0	0	1	9	1	0	1	2	1	0	1	0	0
Miscellaneous Cold and Cough Preparations																			
Acetaminophen in Combination with Dextromethorphan (Without Decongestants or Antihistamines)	166	116	76	13	13	13	0	0	1	91	21	0	4	33	29	17	6	0	0
Acetylsalicylic Acid in Combination with Dextromethorphan	2	2	0	0	0	1	0	1	0	1	1	0	0	1	0	1	0	0	0
Cough and Cold Preparations (Not Otherwise Classified)	2,077	1,745	1,376	117	72	155	3	20	2	1,625	81	1	34	176	394	103	34	2	0
Dextromethorphan Preparations (Not Otherwise Classified)	13,197	10,189	4,183	1,339	1,660	2,763	9	196	39	6,987	2,878	5	259	3,592	1,773	1,679	1,277	43	0
Dextromethorphan With Expectorants	13	12	8	2	1	1	0	0	0	11	1	0	0	1	2	1	0	0	0
Expectorants or Antitussives (Without Narcotics or Narcotic Analogs)	3,153	2,226	981	177	186	762	3	108	9	1,879	245	3	91	511	496	152	52	3	3
Expectorants Without Dextromethorphan	9	6	5	0	1	0	0	0	0	6	0	0	0	0	1	0	0	0	0
	14	10	4	4	0	2	0	0	0	8	2	0	0	1	3	1	0	0	0

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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
Non-Acetylsalicylic Acid Salicylates in Combination with Dextromethorphan																			
Non-Narcotic Antitussives Excluding Dextromethorphan	4	3	0	1	0	2	0	0	0	2	1	0	0	1	1	0	0	0	1
Unknown Types of Cough and Cold Preparation	1,718	841	257	53	211	282	1	27	10	360	439	2	22	521	156	184	125	8	0
Non-Acetylsalicylic Acid Salicylates with Decongestant and/or Antihistamine																			
Non-Acetylsalicylic Acid Salicylates and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	17	12	8	0	1	3	0	0	0	11	0	0	1	1	1	0	0	0	0
Non-Acetylsalicylic Acid Salicylates and Opioid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	2	2	1	0	0	1	0	0	0	2	0	0	0	1	2	0	0	0	0
Non-Acetylsalicylic Acid Salicylates with Decongestant and/or Antihistamine without Phenylpropanolamine and Opioid	14	12	9	1	2	0	0	0	0	11	0	0	1	1	1	1	0	0	0
Phenylpropanolamine Containing Preparations																			
Acetaminophen and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	109	67	41	7	8	11	0	0	0	58	9	0	0	21	19	7	5	0	0
Acetaminophen, Acetylsalicylic Acid, and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	13	7	3	0	3	0	0	1	0	3	4	0	0	3	3	1	0	0	0
Acetaminophen, Acetylsalicylic Acid, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	86	60	40	4	5	11	0	0	0	51	7	0	1	11	9	5	2	0	0
Acetaminophen, Acetylsalicylic Acid, Phenylpropanolamine, and Opioid Combinations with Decongestant and/or Antihistamine	7	1	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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, Phenylpropanolamine, and Codeine 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, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	247	167	118	12	14	22	1	0	0	146	16	0	4	39	44	23	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
Acetylsalicylic Acid and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	49	41	23	4	6	8	0	0	0	30	8	0	3	8	9	6	3	0	0
Acetylsalicylic Acid, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	22	20	13	3	1	3	0	0	0	19	1	0	0	6	9	0	0	0	0
Acetylsalicylic Acid, Phenylpropanolamine, and Other Opioid Combinations with Decongestant and/or Antihistamine	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine and Codeine	13	7	3	1	0	3	0	0	0	6	0	0	1	2	5	0	0	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine and Dextromethorphan	415	355	233	41	21	55	1	2	2	297	50	0	8	80	97	47	18	1	0
Antihistamine and/or Decongestant with Phenylpropanolamine and Other Opioid	7	6	4	0	0	1	0	1	0	4	1	0	1	3	4	1	0	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine without Opioid	283	207	144	30	13	20	0	0	0	184	19	0	3	45	66	13	4	0	0

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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
Non-Acetylsalicylic Acid Salicylates and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	7	7	7	0	0	0	0	0	0	7	0	0	0	1	1	0	0	0	0
Non-Acetylsalicylic Acid Salicylates, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	11	9	6	2	0	1	0	0	0	9	0	0	0	1	2	1	0	0	0
Other Phenylpropanolamine Preparations (Excluding Street Drugs and Diet Aids)	218	183	89	3	3	78	0	10	0	183	0	0	0	9	58	5	0	0	0
Category Total:	**60,300**	**43,645**	**21,883**	**4,543**	**5,948**	**10,291**	**34**	**807**	**139**	**32,598**	**9,616**	**45**	**1,144**	**13,005**	**9,262**	**5,767**	**3,662**	**155**	**9**
Diagnostic Agents																			
Miscellaneous Diagnostic Agents																			
Diagnostic Tablets for Glucose or Ketones	1	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Other Types of Diagnostic Agent	368	333	55	5	9	207	1	49	7	283	3	1	46	134	58	62	16	4	0
Unknown Types of Diagnostic Agent	8	6	1	0	0	4	0	1	0	3	1	0	2	2	1	0	0	1	0
Category Total:	**377**	**340**	**56**	**5**	**10**	**211**	**1**	**50**	**7**	**287**	**4**	**1**	**48**	**136**	**59**	**62**	**16**	**5**	**0**
Dietary Supplements/Herbals/Homeopathic																			
Amino Acids																			
Creatine	258	196	114	11	25	39	0	3	4	149	14	0	29	54	35	22	11	1	0
Other Amino Acid Dietary Supplements	671	473	261	23	26	142	1	15	5	366	43	2	60	91	96	43	13	3	0
Botanical Products																			
Citrus Aurantium (Single Ingredient)	11	8	4	2	0	2	0	0	0	8	0	0	0	1	0	1	0	0	0
Echinacea	187	146	103	17	3	18	0	5	0	135	7	0	3	10	37	2	2	0	0
Ginkgo Biloba	102	60	29	3	3	20	0	5	0	49	3	0	8	8	8	7	2	0	0
Ginseng	89	68	39	1	1	24	0	3	0	53	3	0	12	14	12	5	3	0	0
Kava Kava	48	28	3	0	4	18	0	3	0	4	12	0	11	17	3	6	3	0	0
Ma Huang/Ephedra (Single Ingredient)	24	13	5	0	3	4	0	1	0	5	4	0	4	7	2	3	0	0	0
Multi-Botanicals with Citrus Aurantium	108	81	42	2	12	24	0	1	0	49	16	0	16	42	28	9	9	0	0
Multi-Botanicals with Ma Huang	131	87	33	0	15	36	0	2	1	44	26	1	16	53	16	16	13	1	0
Multi-Botanicals without Ma Huang or Citrus Aurantium	1,870	1,504	879	70	105	392	0	52	6	1,056	178	2	261	425	287	175	103	6	1
Other Single Ingredient Botanicals	2,941	2,310	1,414	93	89	597	7	100	10	1,931	111	5	250	336	453	180	69	4	0
St. John's Wort	199	127	74	4	16	26	0	6	1	93	22	1	10	28	26	7	6	0	0
Valerian	236	130	44	5	11	62	0	5	3	72	41	0	16	48	25	17	11	0	0
Yohimbe	209	159	22	3	12	111	0	10	1	55	19	0	83	98	13	31	52	1	0

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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
Cultural Medicines																			
Asian Medicines	127	113	60	6	8	34	3	2	0	96	7	1	9	35	24	15	6	1	0
Ayurvedic Medicines	15	11	5	2	1	3	0	0	0	9	0	0	2	2	1	2	0	0	0
Hispanic Medicines	4	4	1	0	0	3	0	0	0	1	2	0	1	3	0	2	1	0	0
Other Cultural Medicines	45	35	15	1	3	15	0	1	0	21	5	0	9	15	3	4	6	1	0
Energy Products																			
Energy Drinks: Caffeine Containing (From Any Source Including Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc)	1,123	824	424	74	142	165	2	16	1	561	126	3	132	184	165	153	69	9	0
Energy Drinks: Caffeine Only (Without Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc)	1,039	741	450	68	73	135	0	11	4	556	114	2	68	110	159	110	42	2	0
Energy Drinks: Ethanol and Caffeine Containing (From Any Source Including Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc)	152	46	14	2	13	16	0	1	0	17	24	1	4	22	6	11	8	1	0
Energy Drinks: Ethanol and Caffeine Only (Without Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc)	2	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
Energy Drinks: Ethanol Containing Without Caffeine (From Any Source)	2	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Energy Drinks: No Caffeine (From Any Source)	14	11	5	1	0	5	0	0	0	8	0	0	3	2	2	2	0	0	0
Energy Drinks: Unknown	538	362	153	37	59	98	0	14	1	226	70	2	61	101	60	58	36	1	0
Energy Products: Other	349	277	136	19	30	88	0	4	0	186	41	0	46	102	63	52	28	1	2
Hormonal Products																			
Androgen or Androgen Precursor Dietary Supplements	127	92	63	0	3	17	1	7	1	70	8	1	13	21	24	3	3	0	0
Glandular Dietary Supplements	47	36	27	0	1	7	0	1	0	31	0	0	5	5	5	0	2	0	0
Melatonin	16,843	13,860	10,451	1,631	995	669	15	83	16	12,246	1,396	42	123	2,084	3,024	1,556	54	0	0
Phytoestrogen Dietary Supplements	54	35	11	1	2	14	0	6	1	19	5	0	11	11	5	1	2	0	0
Miscellaneous Dietary Supplements/Herbals/Homeopathic																			
Homeopathic Agents	10,100	9,547	8,597	348	114	394	11	74	9	9,202	126	5	207	681	1,694	243	29	2	0
Unknown Dietary Supplements or Homeopathic Agents	1,975	1,564	1,001	66	81	361	1	47	7	1,206	103	4	238	391	302	143	91	7	1
Other Dietary Supplements																			
Blue-Green Algae	221	163	41	34	13	56	1	16	2	151	1	2	7	42	19	27	10	0	0
Glucosamine (with or without Chondroitin)	571	395	292	8	8	70	0	14	3	374	7	1	13	28	74	15	3	1	0
Other Single Ingredient Non-Botanical Dietary Supplements	1,834	1,061	747	73	33	180	1	25	2	934	50	3	71	121	158	60	22	1	1
Category Total:	**42,266**	**34,569**	**25,561**	**2,605**	**1,904**	**3,845**	**43**	**533**	**78**	**29,985**	**2,584**	**78**	**1,802**	**5,192**	**6,830**	**2,981**	**709**	**43**	**5**

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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	3,291	1,061	405	48	32	521	0	50	5	962	70	1	24	265	241	126	36	0	0
Other Types of Diuretic	2,243	890	369	46	48	390	0	35	2	765	83	0	41	226	248	64	29	0	0
Thiazide	4,413	1,612	674	116	53	708	3	52	6	1,430	142	3	29	382	446	84	23	3	0
Unknown Types of Diuretic	239	76	30	4	5	30	0	6	1	58	14	0	4	22	20	5	4	0	0
Category Total:	**10,186**	**3,639**	**1,478**	**214**	**138**	**1,649**	**3**	**143**	**14**	**3,215**	**309**	**4**	**98**	**895**	**955**	**279**	**92**	**3**	**0**
Electrolytes and Minerals																			
Miscellaneous Electrolytes and Minerals																			
Calcium and Calcium Salts	12,768	11,335	10,060	545	143	476	21	79	11	11,081	182	3	63	343	1,702	205	22	0	0
Chromium, Trivalent	255	214	83	17	7	75	10	19	3	193	5	5	11	30	38	29	2	0	0
Colloidal Silver	90	77	26	3	3	34	0	10	1	50	5	0	19	28	13	4	3	0	0
Fluoride (Excluding Vitamins, Hydrofluoric Acid & Mouthwashes)	1,664	1,559	1,276	159	23	84	1	15	1	1,489	16	2	48	86	278	85	3	0	0
Iron and Iron Salts (Excluding Vitamins with Iron)	5,455	4,024	2,095	141	417	1,209	6	142	14	3,244	547	8	205	1,152	957	465	133	1	1
Magnesium and Magnesium Salts	1,554	1,246	506	62	56	543	0	69	10	1,006	107	2	126	174	200	150	28	5	0
Multi-Mineral and Multi-Herbal Dietary Supplement	909	725	418	25	104	169	1	7	1	504	139	0	80	274	196	121	66	3	0
Multi-Mineral Dietary Supplements	161	137	83	6	9	34	0	4	1	118	7	0	11	24	23	17	2	0	0
Other Types of Electrolyte or Mineral	39	30	5	2	1	20	0	2	0	26	2	0	2	7	2	9	0	1	0
Potassium and Potassium Salts	1,437	594	183	12	25	334	0	35	5	485	77	5	24	128	145	23	27	1	0
Selenium and Selenium Salts	77	54	14	3	2	29	0	6	0	42	6	1	4	25	11	6	4	0	0
Sodium and Sodium Salts	3,795	3,042	1,664	277	151	767	7	149	27	2,605	296	54	72	431	588	397	37	3	1
Unknown Types of Electrolyte or Mineral	14	10	6	1	0	2	0	1	0	9	0	0	1	4	5	1	0	0	0
Vanadium and Vanadium Salts	1	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0
Zinc and Zinc Salts	1,158	989	543	33	47	307	4	51	4	816	67	2	98	107	107	112	24	0	0
Category Total:	**29,377**	**24,037**	**16,962**	**1,286**	**988**	**4,084**	**50**	**589**	**78**	**21,668**	**1,457**	**82**	**764**	**2,814**	**4,265**	**1,624**	**351**	**14**	**2**
Eye/Ear/Nose/Throat Preparations																			
Miscellaneous Eye/Ear/Nose/Throat Preparations																			
Topical Steroids For Eye/Nose/Throat	1,644	1,343	720	245	39	268	4	63	4	1,258	34	5	42	46	210	107	5	0	0
Nasal Preparations																			
Other Nasal Decongestants or Sympathomimetics (Excluding Tetrahydrazoline)	2,215	2,103	977	110	118	750	0	136	12	1,888	59	12	140	219	548	207	29	2	0
Other Types of Nasal Preparation	581	558	343	12	10	151	1	37	4	541	1	2	14	30	71	54	6	0	0
Tetrahydrozoline, Nasal Preparations	25	25	18	0	1	4	0	2	0	24	0	0	1	10	8	2	0	0	0
Unknown Types of Nasal Preparation	11	10	1	0	0	5	0	4	0	10	0	0	0	0	1	5	0	0	0
Ophthalmic Preparations																			
Contact Lens Products	2,344	2,280	1,261	35	129	727	2	116	10	2,234	23	2	20	377	255	376	89	1	0
Glaucoma Medications	422	378	106	11	2	226	0	32	1	344	7	1	25	50	74	26	12	1	0

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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
Other Ophthalmic Sympathomimetics	1,193	1,137	718	35	61	249	0	68	6	976	41	88	26	212	404	80	10	1	0
Other Types of Ophthalmic Preparation	1,979	1,891	1,089	93	59	531	8	104	7	1,766	41	14	65	163	334	119	28	1	0
Tetrahydrozoline, Ophthalmic Preparations	1,125	1,095	776	24	39	201	2	47	6	983	42	62	5	234	428	75	14	1	0
Unknown Types of Ophthalmic Preparation	52	44	19	0	5	15	0	4	1	31	3	5	4	15	8	10	1	0	0
Otic Preparations																			
Combination Products	1,629	1,609	748	160	46	541	2	103	9	1,588	7	2	10	141	267	397	24	2	0
Other Types of Otic Preparation	2,108	2,078	751	84	61	986	3	178	15	2,042	8	3	25	246	207	584	44	0	0
Unknown Types of Otic Preparation	50	46	15	0	0	26	0	5	0	46	0	0	0	7	3	10	2	0	0
Throat Preparations																			
Other Types of Throat Preparation	546	522	148	57	67	202	1	43	4	462	39	0	20	54	108	42	3	1	0
Throat Lozenges with Local Anesthetics	354	316	137	24	36	96	0	22	1	283	19	0	13	19	67	22	1	0	0
Throat Lozenges without Local Anesthetics	1,017	939	763	63	22	71	0	19	1	877	44	0	17	23	174	28	2	0	0
Unknown Types of Throat Preparation	4	4	1	1	2	0	0	0	0	4	0	0	0	0	0	1	0	0	0
Category Total:	**17,299**	**16,378**	**8,591**	**954**	**697**	**5,049**	**23**	**983**	**81**	**15,357**	**368**	**196**	**427**	**1,846**	**3,167**	**2,145**	**270**	**10**	**0**
Gastrointestinal Preparations																			
Antacids																			
Antacids: Other Types	4,120	3,849	3,449	157	30	183	4	24	2	3,763	63	2	19	85	459	46	3	0	0
Antacids: Proton Pump Inhibitors	10,446	5,363	2,657	208	215	1,962	3	298	20	4,908	286	4	154	483	1,033	151	13	1	0
Antacids: Salicylate-Containing	2,580	2,321	1,822	185	44	229	2	36	3	2,148	107	1	62	178	503	67	10	1	0
Antidiarrheals																			
Antidiarrheals: Diphenoxylate and Atropine Containing	288	159	67	4	5	74	1	6	2	126	26	0	3	107	49	27	22	1	0
Antidiarrheals: Loperamide	1,230	887	407	40	31	354	0	47	8	632	190	2	55	311	292	86	34	12	2
Antidiarrheals: Non-Narcotic Containing (Excluding Salicyl Containing)	23	13	6	0	0	4	0	3	0	11	1	0	1	1	1	0	0	0	0
Antidiarrheals: Paregoric Containing	5	4	3	0	0	1	0	0	0	3	1	0	0	2	1	0	1	0	0
Antispasmodics																			
Antispasmodics: Anticholinergic Containing	2,755	1,325	577	100	104	481	1	56	6	1,022	221	1	67	456	387	193	110	4	0
Antispasmodics: Other Types	133	82	14	1	1	60	0	5	1	63	7	0	11	23	21	11	5	1	0
Miscellaneous Gastrointestinal Preparations																			
Laxatives	15,821	13,824	10,017	666	450	2,255	13	384	39	12,720	597	56	427	1,211	1,904	1,309	152	1	1
Other Types of Gastrointestinal Preparation	10,624	8,597	6,799	344	162	1,091	15	165	21	8,055	252	17	258	871	1,626	296	83	3	1
Unknown Types of Gastrointestinal Preparation	37	16	11	1	0	4	0	0	0	14	2	0	0	3	3	0	2	0	0
Category Total:	**48,062**	**36,440**	**25,829**	**1,706**	**1,042**	**6,698**	**39**	**1,024**	**102**	**33,465**	**1,753**	**83**	**1,057**	**3,731**	**6,279**	**2,186**	**435**	**24**	**4**

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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
Hormones and Hormone Antagonists																			
Miscellaneous Hormones and Hormone Antagonists																			
Androgens	564	485	136	18	19	257	0	49	6	372	56	3	50	113	68	55	26	7	1
Corticosteroids	11,599	9,557	4,439	822	345	3,356	20	529	46	8,889	171	12	470	653	1,234	382	72	4	1
Estrogens	1,330	908	557	25	51	235	2	33	5	834	42	2	28	56	157	39	3	0	0
nsulin	7,012	6,038	164	78	128	5,196	1	424	47	5,378	543	9	75	2,422	2,547	338	880	45	3
oral Contraceptives	4,765	3,958	2,753	161	375	557	2	96	14	3,405	477	4	65	315	552	146	7	0	0
Other Hormone Antagonists	594	454	150	28	16	223	1	34	2	419	23	0	11	58	83	17	5	0	0
Other Hormones	785	555	181	87	32	215	3	35	2	497	24	0	31	134	159	56	13	0	0
Progestins	1,338	1,120	650	49	55	291	1	65	9	997	33	0	86	111	197	40	7	0	0
Selective Estrogen Receptor Modulators	322	194	60	10	11	93	0	20	0	182	6	0	4	23	39	5	2	0	0
Thyroid Preparations (Including Synthetics and Extracts)	13,623	9,301	4,444	427	295	3,597	7	482	49	8,843	322	2	111	1,197	1,661	169	53	3	0
Unknown Hormones or Hormone Antagonists	17	13	5	1	1	4	0	2	0	9	0	1	3	2	1	1	0	0	0
Oral Hypoglycemic																			
Oral Hypoglycemics: Biguanides	8,412	3,793	769	110	285	2,387	5	221	16	3,069	596	3	110	1,011	894	319	196	35	7
Oral Hypoglycemics: Other or Unknown	1,252	574	198	11	13	325	1	23	3	520	28	1	22	170	234	24	27	1	0
Oral Hypoglycemics: Sulfonylureas	3,827	1,584	778	47	57	665	1	32	4	1,316	164	3	79	1,205	595	64	437	40	2
Oral Hypoglycemics: Thiazolidinediones	324	117	47	4	0	56	0	10	0	107	5	2	3	35	52	4	3	0	0
Category Total:	**55,764**	**38,651**	**15,331**	**1,878**	**1,683**	**17,457**	**44**	**2,055**	**203**	**34,837**	**2,490**	**42**	**1,148**	**7,505**	**8,473**	**1,659**	**1,731**	**135**	**14**
Miscellaneous Drugs																			
Other Miscellaneous Drugs																			
Allopurinol	875	311	154	16	4	121	0	16	0	293	7	1	10	48	88	9	5	1	0
Disulfiram	179	61	2	0	4	50	0	5	0	27	19	1	14	21	8	12	10	0	0
Ergot Alkaloids	65	49	21	4	3	16	1	4	0	41	4	0	4	25	14	4	5	2	0
Levo-Dopa and Related Drugs	1,256	681	156	6	3	480	0	35	1	618	41	0	16	173	140	96	41	4	0
Neuromuscular Blocking Agents (Succinylcholine, Curare, etc)	25	15	2	0	0	11	0	2	0	10	0	0	4	12	2	5	1	2	1
Nicotine Pharmaceuticals	1,335	1,250	755	106	29	311	0	39	10	1,060	72	26	86	229	381	199	29	3	0
Other Types of Miscellaneous Prescription or Over the Counter Drug	16,625	10,747	4,302	631	592	4,568	12	582	60	9,412	621	27	646	2,424	2,352	1,294	415	32	2
Category Total:	**20,360**	**13,114**	**5,392**	**763**	**635**	**5,557**	**13**	**683**	**71**	**11,461**	**764**	**55**	**780**	**2,932**	**2,985**	**1,619**	**506**	**44**	**3**
Muscle Relaxants																			
Miscellaneous Muscle Relaxants																			
Baclofen	3,916	1,681	237	46	136	1,194	1	51	16	595	918	13	100	1,231	208	380	463	175	0
Carisoprodol (Formulated Alone)	4,683	1,873	144	11	94	1,537	1	69	17	355	1,444	2	28	1,564	226	638	475	81	1
Cyclobenzaprine	10,299	4,388	1,192	261	432	2,319	0	154	30	2,262	1,973	4	89	2,683	1,048	1,013	732	63	2
Metaxalone	533	265	47	3	31	166	1	17	0	150	97	0	12	118	58	54	37	6	1
Methocarbamol	2,115	891	136	24	75	605	0	45	6	411	444	0	28	518	199	241	96	9	0
Other Types of Muscle Relaxant	987	411	63	12	35	284	0	13	4	172	207	6	22	270	89	102	76	14	0
Tizanidine	3,132	1,353	250	32	73	926	0	62	10	662	615	5	51	914	209	312	386	46	0
Unknown Types of Muscle Relaxant	230	43	9	0	7	26	0	1	0	11	31	0	0	38	10	12	10	1	0

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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:	**25,895**	**10,905**	**2,078**	**389**	**883**	**7,057**	**3**	**412**	**83**	**4,618**	**5,729**	**30**	**330**	**7,336**	**2,047**	**2,752**	**2,275**	**395**	**4**
Narcotic Antagonists																			
Miscellaneous Narcotic Antagonists																			
Miscellaneous Narcotic Antagonist	512	219	9	2	16	168	1	20	3	76	64	17	58	134	27	38	45	5	0
Category Total:	**512**	**219**	**9**	**2**	**16**	**168**	**1**	**20**	**3**	**76**	**64**	**17**	**58**	**134**	**27**	**38**	**45**	**5**	**0**
Radiopharmaceuticals																			
Miscellaneous Radiopharmaceutical																			
Specific Pharmaceutical Radionuclides	43	33	6	2	0	21	0	4	0	21	1	1	10	15	4	1	0	1	0
Category Total:	**43**	**33**	**6**	**2**	**0**	**21**	**0**	**4**	**0**	**21**	**1**	**1**	**10**	**15**	**4**	**1**	**0**	**1**	**0**
Sedative/Hypnotics/Antipsychotics																			
Barbiturates																			
Long Acting Barbiturates	1,880	1,115	273	46	38	705	2	47	4	806	226	9	43	426	238	163	118	38	0
Short or Intermediate Acting Barbiturates	171	83	8	4	5	55	0	11	0	49	25	2	1	42	14	17	14	4	1
Unknown Types of Barbiturate	33	12	0	0	1	8	0	2	1	1	7	0	0	11	0	3	2	0	0
Miscellaneous Sedative/Hypnotics/Antipsychotics																			
Atypical Antipsychotics	40,617	15,907	1,976	955	2,888	9,468	1	505	114	5,822	9,103	50	703	11,816	2,850	4,481	3,639	399	15
Benzodiazepines	74,182	27,060	5,044	687	2,840	17,022	15	1,150	302	8,999	16,923	298	403	19,390	5,342	8,803	3,413	370	18
Buspirone	4,074	1,155	195	41	171	695	2	41	10	474	622	2	45	701	324	288	101	5	0
Chloral Hydrate	24	16	3	3	2	5	0	3	0	6	4	1	5	12	0	5	5	0	0
Glutethimide	4	3	0	0	0	3	0	0	0	0	3	0	0	3	0	1	1	1	0
Meprobamate	24	11	1	0	1	8	0	1	0	2	8	0	0	9	1	1	4	3	0
Methaqualone	6	2	0	0	0	2	0	0	0	0	1	0	0	2	0	0	1	0	0
Other Types of Sedative/ Hypnotic/Anti-Anxiety or Anti-Psychotic Drug	17,536	7,551	921	416	699	5,074	5	363	73	2,849	4,335	29	213	5,017	1,143	2,713	981	68	6
Phenothiazines	4,633	1,806	225	60	157	1,263	2	82	17	774	804	7	184	1,248	327	414	463	41	1
Sleep Aids, Over the Counter Only (Excluding Diphenhydramine)	1,428	833	209	21	126	448	0	23	6	292	513	1	17	543	173	154	189	18	0
Unknown Types of Sedative/ Hypnotic/Anti-Anxiety or Anti-Psychotic Drug	309	99	10	3	23	49	0	11	3	18	72	2	1	82	10	25	20	1	0
Category Total:	**144,921**	**55,653**	**8,865**	**2,236**	**6,951**	**34,805**	**27**	**2,239**	**530**	**20,092**	**32,646**	**401**	**1,615**	**39,302**	**10,422**	**17,068**	**8,951**	**948**	**41**
Serums, Toxoids, Vaccines																			
Miscellaneous Serums, Toxoids, Vaccines																			
Miscellaneous Serums, Toxoids and Vaccines	1,801	1,588	343	105	99	821	10	191	19	1,208	6	1	364	440	157	259	64	3	1
Category Total:	**1,801**	**1,588**	**343**	**105**	**99**	**821**	**10**	**191**	**19**	**1,208**	**6**	**1**	**364**	**440**	**157**	**259**	**64**	**3**	**1**
Stimulants and Street Drugs																			
Cannabinoids and Analogs																			
eCigarettes: Marijuana Device Flavor Unknown	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marijuana	5,624	2,047	298	86	653	887	8	87	28	534	1,213	78	149	1,446	134	604	491	37	1
Tetrahydrocannabinol (THC) Homologs	3,681	2,799	28	30	1,044	1,541	3	111	42	120	2,449	114	28	2,505	95	745	1,132	227	5

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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
Tetrahydrocannabinol (THC) Pharmaceuticals	75	39	11	3	4	17	0	2	2	17	16	1	5	24	3	11	5	1	0
Diet Aids																			
Diet Aids: Phenylpropanolamine and Caffeine Combinations	11	11	5	0	2	4	0	0	0	7	2	0	2	4	3	2	0	0	0
Diet Aids: Phenylpropanolamine Only	7	5	2	0	1	1	0	1	0	3	1	0	1	3	0	2	0	0	0
Other Types of Diet Aid, Over the Counter Only	220	169	81	2	20	60	0	6	0	102	29	1	37	67	40	30	20	0	0
Other Types of Diet Aid, Prescription Only	33	24	11	1	2	9	0	0	1	12	6	0	5	16	5	3	4	0	0
Unknown Types of Diet Aid	78	51	27	2	3	18	0	1	0	32	8	1	10	18	13	7	4	0	0
Miscellaneous Stimulants and Street Drugs																			
Amphetamines and Related Compounds	15,522	9,813	3,543	1,849	1,721	2,409	9	231	51	6,775	2,509	47	331	4,954	2,508	1,741	1,513	85	6
Amyl or Butyl Nitrites (Street Drugs)	108	88	20	1	2	56	0	6	3	39	46	1	0	39	6	15	13	2	0
Caffeine	3,749	2,811	985	87	446	1,120	1	146	26	1,591	754	22	421	844	390	511	316	15	2
Cocaine	4,289	1,171	39	10	59	949	3	91	20	105	974	24	14	1,002	175	195	343	60	9
Ephedrine	173	123	60	2	11	43	0	6	1	87	31	0	5	35	27	13	10	1	0
gamma-Hydroxybutyric Acid including Analogs or Precursors	509	310	6	4	25	253	0	16	6	75	184	28	8	270	18	65	108	46	0
Hallucinogenic Amphetamines	2,305	1,309	18	4	451	742	2	63	29	77	1,166	38	8	1,107	42	235	549	89	12
Heroin	4,928	2,463	15	21	149	2,085	1	135	57	104	2,230	61	14	2,232	223	404	811	386	43
Lysergic acid diethylamide (LSD)	770	520	4	10	338	139	5	10	14	29	476	5	4	459	24	101	266	32	1
Mescaline/Peyote	73	56	14	0	7	33	0	1	1	34	19	1	1	23	2	16	8	3	0
Methamphetamines	4,926	2,781	223	77	202	1,894	17	290	78	665	1,928	85	25	2,236	319	447	790	146	30
Methylphenidate	9,726	6,695	1,583	2,694	1,352	960	6	86	14	5,321	1,163	18	138	2,231	1,712	1,014	700	24	1
Other Hallucinogens	106	66	2	0	18	42	0	3	1	2	62	1	1	60	1	6	45	5	1
Other Stimulants (Excluding Amphetamines)	509	330	119	4	26	170	0	8	3	207	82	2	33	149	90	63	53	8	0
Other Street Drugs	684	428	22	5	64	303	0	27	7	54	347	13	5	365	19	75	173	39	1
Phenylcyclohexylpiperidine (PCP)	742	375	13	3	40	289	0	20	10	35	256	8	6	337	23	63	132	24	1
Unknown Hallucinogens	17	12	0	0	5	6	0	0	1	0	11	0	0	12	0	0	9	2	0
Unknown Stimulants or Street Drugs	264	164	10	3	49	84	1	14	3	21	119	12	2	137	13	26	66	20	0
Category Total:	**59,130**	**34,660**	**7,139**	**4,898**	**6,694**	**14,114**	**56**	**1,361**	**398**	**16,048**	**16,081**	**561**	**1,253**	**20,575**	**5,885**	**6,394**	**7,561**	**1,252**	**113**
Topical Preparations																			
Miscellaneous Topical Preparations																			
Acne Preparations	2,640	2,525	1,440	134	340	514	6	80	11	2,336	59	12	117	190	461	255	29	0	0
Boric Acid or Borates (As Antiseptics, Excluding Insecticides)	79	74	22	5	2	39	0	4	2	68	2	2	1	9	14	7	2	0	0
Calamine (Including All Caladryl Type Products)	2,556	2,489	1,838	71	22	487	2	66	3	2,462	16	1	8	132	374	192	9	0	0
Camphor	11,084	10,920	9,204	235	183	1,070	14	197	17	10,695	138	15	64	1,063	2,967	1,185	71	10	1
Camphor and Methyl Salicylate Combinations	1,395	1,372	1,116	34	21	168	3	29	1	1,329	17	1	25	152	397	181	8	0	0

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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
Diaper Care and Rash Products	29,645	29,149	27,769	240	165	780	42	130	23	29,061	25	24	32	510	3,452	617	18	0	0
Hexachlorophene Containing Antiseptics	14	14	5	1	1	6	0	1	0	13	0	0	1	1	2	2	0	0	0
Hydrogen Peroxide 3%	8,163	7,829	2,759	361	375	3,775	5	514	40	7,531	200	40	43	554	884	1,184	49	1	0
odine or Iodide Containing Antiseptics	1,042	942	238	36	75	490	5	92	6	768	86	8	69	226	153	165	30	3	1
Mercury Containing Antiseptics	53	50	30	2	2	14	0	2	0	40	5	1	4	10	14	2	0	0	0
Methyl Salicylate	7,503	7,411	5,505	295	186	1,152	8	248	17	7,184	72	13	135	672	1,534	1,026	34	1	0
Minoxidil, Topical	145	135	40	5	3	76	0	10	1	117	4	0	13	32	36	13	8	1	0
Other Types of Rubefacient or Liniment (Excluding Camphor and Methyl Salicylate)	3,870	3,791	2,586	109	97	812	5	166	16	3,434	30	7	319	227	560	584	40	1	0
Other Types of Topical Antiseptic	2,322	2,233	1,323	114	89	581	3	121	2	2,116	64	13	37	233	412	208	21	2	0
Podophyllin	35	33	15	1	2	13	0	2	0	23	3	0	7	10	6	5	0	0	0
Silver Nitrate	107	93	15	5	28	37	0	8	0	74	2	1	16	24	7	17	5	0	0
Topical Steroids (Including Otic, Ophthalmic, and Dermal Preparations)	9,864	9,556	5,781	630	229	2,428	13	449	26	9,425	41	8	80	205	1,158	319	17	0	0
Topical Steroids in Combination with Antibiotics (Including Otic, Ophthalmic, and Dermal Preparations)	984	960	479	61	21	335	1	54	9	930	6	0	23	54	113	155	4	0	0
Wart Preparations and Other Keratolytics	1,195	1,170	739	97	35	246	2	48	3	1,113	19	3	34	189	243	187	39	3	0
Category Total:	**82,696**	**80,746**	**60,904**	**2,436**	**1,876**	**13,023**	**109**	**2,221**	**177**	**78,719**	**789**	**149**	**1,028**	**4,493**	**12,787**	**6,304**	**384**	**22**	**2**
Unknown Drug																			
Miscellaneous Unknown Drug																			
Miscellaneous Unknown Drugs	21,202	14,799	4,379	601	1,927	6,653	84	819	336	6,231	5,199	781	592	10,251	2,680	2,238	2,824	964	81
Category Total:	**21,202**	**14,799**	**4,379**	**601**	**1,927**	**6,653**	**84**	**819**	**336**	**6,231**	**5,199**	**781**	**592**	**10,251**	**2,680**	**2,238**	**2,824**	**964**	**81**
Veterinary Drugs																			
Miscellaneous Veterinary Drugs																			
Miscellaneous Veterinary Drugs without Human Equivalent	3,359	3,119	857	84	89	1,788	7	252	42	2,973	41	5	88	378	704	447	65	6	0
Category Total:	**3,359**	**3,119**	**857**	**84**	**89**	**1,788**	**7**	**252**	**42**	**2,973**	**41**	**5**	**88**	**378**	**704**	**447**	**65**	**6**	**0**
Vitamins																			
Miscellaneous Vitamins																			
Other Types of Vitamin	732	544	390	46	17	74	4	12	1	497	23	0	20	67	103	26	8	2	0
Unknown Types of Vitamin	751	552	392	60	27	44	8	17	4	502	29	0	18	79	97	17	6	0	0
Multiple Vitamin Liquids: Adult Formulations																			
Multiple Vitamin Liquids: Adult Formulations with Fluoride (No Iron)	5	5	3	1	0	1	0	0	0	5	0	0	0	1	1	1	0	0	0
Multiple Vitamin Liquids: Adult Formulations with Iron (No Fluoride)	155	125	56	10	9	41	0	9	0	104	9	2	10	16	13	11	0	0	0
Multiple Vitamin Liquids: Adult Formulations with Iron and Fluoride	5	3	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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 Vitamin Liquids: Adult Formulations without Iron or Fluoride	259	191	124	25	10	28	0	4	0	172	7	2	10	20	35	10	3	0	0
Multiple Vitamin Liquids: Pediatric Formulations																			
Multiple Vitamin Liquids: Pediatric Formulations with Fluoride (No Iron)	96	87	83	4	0	0	0	0	0	86	1	0	0	4	20	0	0	0	0
Multiple Vitamin Liquids: Pediatric Formulations with Iron (No Fluoride)	445	421	400	13	3	3	2	0	0	415	2	0	4	32	69	24	2	0	0
Multiple Vitamin Liquids: Pediatric Formulations with Iron and Fluoride	47	42	40	1	0	0	0	1	0	40	0	2	0	2	16	3	0	0	0
Multiple Vitamin Liquids: Pediatric Formulations without Iron or Fluoride	402	375	342	24	4	5	0	0	0	367	3	0	5	28	62	14	2	0	0
Multiple Vitamin Tablets: Adult Formulations																			
Multiple Vitamin Tablets: Adult Formulations with Fluoride (No Iron)	72	59	51	6	1	1	0	0	0	57	1	1	0	3	12	2	0	0	0
Multiple Vitamin Tablets: Adult Formulations with Iron (No Fluoride)	5,543	4,520	3,505	115	123	662	10	98	7	4,312	151	2	52	397	983	149	19	0	0
Multiple Vitamin Tablets: Adult Formulations with Iron and Fluoride	27	19	15	0	2	2	0	0	0	17	1	0	1	2	4	2	0	0	0
Multiple Vitamin Tablets: Adult Formulations with Iron Carbonyl (No Fluoride)	82	72	47	2	2	19	0	2	0	65	3	0	4	11	11	6	0	0	0
Multiple Vitamin Tablets: Adult Formulations without Iron or Fluoride	5,179	4,120	2,934	418	150	528	5	77	8	3,778	226	3	106	307	754	158	14	1	0
Multiple Vitamin Tablets: Pediatric Formulations																			
Multiple Vitamin Tablets: Pediatric Formulations with Fluoride (No Iron)	326	303	275	28	0	0	0	0	0	297	6	0	0	11	49	4	0	0	0
Multiple Vitamin Tablets: Pediatric Formulations with Iron (No Fluoride)	5,088	4,807	4,240	461	50	46	4	5	1	4,701	88	0	13	424	951	288	17	1	0
Multiple Vitamin Tablets: Pediatric Formulations with Iron and Fluoride	37	34	28	6	0	0	0	0	0	32	2	0	0	6	4	1	1	0	0
Multiple Vitamin Tablets: Pediatric Formulations with Iron Carbonyl (No Fluoride)	14	13	10	3	0	0	0	0	0	13	0	0	0	1	2	1	0	0	0
Multiple Vitamin Tablets: Pediatric Formulations without Iron or Fluoride	26,807	26,072	20,888	4,322	485	284	45	30	18	25,038	996	5	18	1,130	4,268	491	17	1	0

(continued)

Table 22B. Demographic profile of SINGLE SUBSTANCE Pharmaceuticals 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																			
Multiple Vitamins, Unspecified Adult Formulations with Fluoride (No Iron)	2	2	2	0	0	0	0	0	0	2	0	0	0	1	0	1	0	0	0
Multiple Vitamins, Unspecified Adult Formulations with Iron (No Fluoride)	1,531	1,050	759	36	41	165	1	47	1	993	43	0	13	118	189	27	2	0	0
Multiple Vitamins, Unspecified Adult Formulations with Iron and Fluoride	6	3	3	0	0	0	0	0	0	3	0	0	0	2	2	1	0	0	0
Multiple Vitamins, Unspecified Adult Formulations without Iron or Fluoride	165	137	95	17	8	15	1	1	0	120	13	1	3	7	25	3	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations																			
Multiple Vitamins, Unspecified Pediatric Formulations with Fluoride (No Iron)	19	19	18	1	0	0	0	0	0	19	0	0	0	1	2	2	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations with Iron (No Fluoride)	49	43	37	4	1	1	0	0	0	42	1	0	0	2	14	0	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations with Iron and Fluoride	9	9	9	0	0	0	0	0	0	9	0	0	0	1	4	2	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations without Iron or Fluoride	550	535	421	102	10	2	0	0	0	513	21	0	1	25	90	12	0	0	0
Other Vitamins																			
Other B Complex Vitamins	6,027	4,438	3,725	167	94	375	5	60	12	4,234	99	1	91	268	735	81	12	0	0
Vitamin A	528	445	275	21	15	104	1	28	1	392	26	1	25	48	65	24	5	0	0
Vitamin B3 (Niacin)	1,700	1,374	417	26	132	688	1	97	13	708	233	0	425	337	73	409	80	3	0
Vitamin B6 (Pyridoxine)	311	189	133	7	6	31	1	10	1	168	9	0	11	16	30	5	4	0	0
Vitamin C	1,671	1,136	846	136	34	87	2	27	4	1,051	62	1	19	55	184	56	8	0	0
Vitamin D	6,398	4,728	3,034	285	119	1,138	3	132	17	4,513	105	0	96	432	797	153	18	0	0
Vitamin E	695	466	376	22	10	47	1	10	0	442	13	2	7	21	64	14	1	0	0
Category Total:	**65,733**	**56,938**	**43,976**	**6,369**	**1,353**	**4,391**	**94**	**667**	**88**	**53,710**	**2,173**	**23**	**952**	**3,875**	**9,728**	**1,998**	**219**	**8**	**0**
Pharmaceuticals Total:	**1,451,094**	**925,845**	**447,037**	**60,774**	**82,420**	**299,961**	**1,007**	**29,994**	**4,652**	**694,658**	**189,953**	**3,336**	**29,483**	**285,760**	**190,975**	**109,701**	**62,831**	**8,681**	**620**
GRAND TOTAL (Nonpharmaceuticals + Pharmaceuticals):	**2,557,756**	**1,925,657**	**1,002,495**	**124,312**	**125,328**	**573,765**	**4,167**	**83,396**	**12,194**	**1,630,281**	**224,368**	**14,955**	**43,696**	**447,605**	**355,245**	**272,575**	**93,723**	**10,845**	**882**

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The Lead and Peer review of the 2014 fatalities was carried out by the 47 individuals listed here including 4 who reviewed the pediatric cases [Peds]. 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 frame.

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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, National Center for Environmental Health, Centers for Disease Control and Prevention (HSB/NCEH/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 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 each year at the North American Congress of Clinical Toxicology Annual meeting.

First Center to Complete all Cases (11-Dec 2014, last of their 12 cases)
Regional Poison Control Center – Children's Hospital (Birmingham)

Largest Number with Autopsy Reports (34 of 75 cases)
Carolinas Poison Center (Charlotte)

Highest Percentage with Autopsy Reports (90% of 10 cases)
Oklahoma Poison Control Center (Oklahoma City)

Largest Number of INDIRECT cases (146 of 276 total cases reported for 2014)
Oklahoma Poison Control Center (Oklahoma City)

Highest Overall Quality of Reports (12.4 of possible 22 for 18 cases)
Nebraska Regional Poison Center (Omaha)

Greatest improvement in Overall Quality of Reports (4.33 increase from last year)
Southeast Texas Poison Center (Galveston)

Most Abstracts Published 2013 Annual report (9 of the 76 published narratives)
Carolinas Poison Center (Charlotte)

Most Abstracts Published 2014 Annual report (6 of the 70 published narratives)
3 way tie
Carolinas Poison Center (Charlotte)
Florida Poison Information Center (Tampa)
Kentucky Regional Poison Center (Louisville)

Most Helpful Regional Poison Center Staff (based on survey of AAPCC review team)
New Jersey Poison Information and Education System (Newark)

Honorable mention:
Arizona Poison & Drug Information Center (Tucson)
Florida Poison Information Center (Tampa)
Illinois Poison Center (Chicago)

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 man-made contaminants.

Occupational: An exposure that occurs as a direct result of the person being on the job or in the workplace.

Therapeutic error: An unintentional deviation from a proper therapeutic regimen that results in the wrong dose, incorrect route of administration, administration to the wrong person, or administration of the wrong substance. Only exposures to medications or products 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 for reasons other than the pursuit of a psychotropic effect.

Intentional abuse: An exposure resulting from the intentional improper or incorrect use where the patient was likely attempting to gain a high, euphoric effect or some other psychotropic effect, including recreational use of a substance for any effect.

Contaminant/tampering: The patient is an unintentional victim of a substance that has been adulterated (either maliciously or unintentionally) by the introduction of an undesirable substance.

Malicious: Patients who are victims of another person's intent to harm them.

Withdrawal: Inquiry about or experiencing of symptoms from a decline in blood concentration of a pharmaceutical or other substance after discontinuing therapeutic use or abuse of that substance.

Adverse Reaction Drug: Unwanted effects due to an allergic, hypersensitivity, or idiosyncratic response to the active ingredient(s), inactive ingredient(s) or excipient of a drug, chemical, or other drug substance when the exposure involves the normal, prescribed, labeled or recommended use of the substance.

Adverse Reaction Food: Unwanted effects due to an allergic, hypersensitivity, or idiosyncratic response to a food substance.

Adverse Reaction Other: Unwanted effects due to an allergic, hypersensitivity, or idiosyncratic response to a substance other than drug or food.

Unknown Reason: Reason for the exposure cannot be determined or no other category is appropriate.

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 Case Review Team (CRT) includes the Author and Reviewer from the RPC, The AAPCC Lead Reviewer, Peer Reviewer and Manager.

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

Undoubtedly responsible – In the opinion of the CRT the Clinical Case Evidence establishes beyond a reasonable doubt that the SUBSTANCES actually caused the death.

Probably responsible – In the opinion of the CRT the Clinical Case Evidence suggests that the SUBSTANCES caused the death, but some reasonable doubt remained.

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.

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

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.

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 3-stage process consisting of qualifying, ranking and reading. Changes for the selection of the top 200 cases for the 2014 report: include all pregnant subjects, include all children (0–2 y/o) subjects, increase (double) the weight on the autopsy report, add a weighting for Age of subject (1/age in years), add a weighting for infrequency of substance category (Generic Code).

Qualifying cases were thus: Age 0–2 y/o, Pregnant, or RCF = 1-Undoubtedly Responsible, 2-Probably Responsible or 3-Contributory. Fatalities by Indirect report were excluded beginning with the 2008 annual report. The ranking was based on Final Case Weighting (FCW).

FCW = f [1/(num substances in this case), WCS, 1/Age (years), 1/(num cases in that generic code this year)]

Where

Weighted Case Score (WCS) = Hospital records * 8.8 + Postmortem * 15.2 + Blood levels * 6.9 + Quality/Completeness * 6.4 + Novelty/Educational value * 13.2

WCS Scores were normalized (z-score) within each AAPCC reviewer before the final weighting:

25% for each (1/NumSubstances, WCS, 1/Age, 1/NumCodes).

The WCS weighting factors were the averages of review team recommendations gathered in 2006.

The top ranked abstracts (200 + ties) were each read by individual reviewers who volunteered (See Appendix A) and the 2 managers (DAS and DEB). Each reader judged each abstract as ''publish'' or ''omit'' and all abstracts receiving 8 or more of 12 publish votes were selected, further edited, cross-reviewed by the 2 managers and JBM, and published in this report.

Abstracts

Abstracts of the cases were selected (see Selection of Abstracts for Publication, above) from the human fatalities judged related to be an exposure as reported to US PCs in 2014. 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 4. Acute methanol unknown: undoubtedly responsible.
Scenario/Substances: 19 y/o female presented to the ED with a one day history of vomiting and altered mental status.
Physical Exam: Initially the patient had a normal examination but became combative and required sedation. BP 125/71, HR 91, RR 18, O_2 sat 99% RA, T 35.5 °C. On re-evaluation she was unresponsive to verbal commands, pupils 3 mm and sluggishly responsive.
Laboratory Data: The initial head CT was normal. ECG showed sinus tachycardia, QRS 98 and QTc 451. Na 149, K 4.7, Cl 106, $CO_2 < 5$, Glu 269, BUN 9, Cr 0.9. On venous blood gas-pH 6.8/pCO_2 26/pO_2 105. COHb was 1.5, lactate 12.4 and serum osmolality 372. Acetaminophen and salicylate were not detected. An ''initial'' methanol was 130 mg/dL, a second level was 65. Ethylene glycol, acetone and isopropanol were not detected.
Clinical Course: Initially she was hyperventilating but ambulating and talking the in the ED. She became agitated and combative, and was uncooperative with interventions requiring sedation with lorazepam haloperidol and diphenhydramine. Approximately 15 minutes after receiving these medications she seized. She was then given more lorazepam, fosphenytoin, and intubated. She was alkalinized and treated with empiric doses of pyridoxine and fomepizole. She developed severe metabolic acidosis with elevated lactate, and was hemodialyzed. Her initial methanol concentration resulted after these interventions. A repeat head CT revealed diffuse cerebral edema. Her family opted for comfort measure. Several days later she died and her organs were donated.
Autopsy Findings: Cause of death: complications of methanol toxicity. Manner of death: suicide.

Case 20. Chronic methanol ingestion: undoubtedly responsible.
Scenario/Substances: A 34 y/o female had one week of progressive confusion and visual loss. Her family found an empty container of windshield washer fluid. EMS was called and transported her to the ED.
Past Medical History: Previous suicide attempts, ethanol abuse.
Physical Exam: She was confused but intermittently answered questions and moved all 4 extremities. Pupils 4–6 mm and reactive. BP 110/68,HR 110,RR 24,afebrile.
Laboratory Data: Na 145, K3.6, Cl 101, $CO_2 < 5$, Glu 175, BUN 8, Cr 1.35, albumin 5, bilirubin 0.4, Ca 8.4, AST 39, ALT 44, troponin I <0.01, CK 78,WBC 11.9, Hgb 15.4, Hct 46.5, platelets 278, PTT 24.8, INR 1.01. Serum acetaminophen, ethanol and salicylate were not detected. Serum osmolality 381, serum methanol 182 mg/dL. ABG (post-intubation)-pH 6.68/pCO_2 26.5/pO_2 331, lactate 6.3. UA: SG > 1.030, no crystals; UDS was negative. Head CT unremarkable, ECG: Sinus tachycardia at 107, QRS 90, QTc 488.
Clinical Course: The patient was intubated in the ED for progressive lethargy. There were several brief seizure-like episodes that responded to lorazepam. She received IVFs and sodium bicarbonate. In the ICU she was treated with a sodium bicarbonate infusion, fomepizole, folic acid and hemodialysis. Despite correction of her acidosis she remained unresponsive off sedation. Repeat head CT showed diffuse cerebral edema with loss of gray-white differentiation. Based on the prognosis, the family opted for institution of comfort measures and she died on Day 3.
Autopsy Findings: Not performed.

Case 85. Acute envenomation (Crotalid) bite: undoubtedly responsible.
Scenario/Substances: A 4 y/o boy was bitten on his forearm by a Canebrake rattlesnake while playing in his yard. He vomited and became unresponsive. He was intubated by EMS and given epinephrine, diphenhydramine, and methylprednisolone prior to transport.
Physical Exam: Intubated, edematous forearm; BP 99/57, HR 107.
Laboratory Data: PT16.8, PTT 54, platelets 250, fibrinogen 268, CK 164,000.
Clinical Course: He received IVFs and a 6 vial loading dose of antivenin (Crotalidae polyvalent immune Fab)in the ED, and then transferred to a tertiary care pediatric hospital. Additional antivenin was given for increased edema and a maintenance dose was given once edema was controlled. Antibiotics were given, and on Day 2 he went to the OR for a forearm fasciotomy and received additional antivenin. On Day 3 he remained intubated and unresponsive but hemodynamically stable. Repeat laboratory data showed platelets 227, PT 17.9, PTT 27.9 and fibrinogen 344. On Day 4 he was still unresponsive and there was a concern for brain injury. An MRI revealed cerebral edema. He developed hepatic injury (AST 300, ALT 650) with

hyperammonemia (156) and was treated with lactulose. He died on Day 8.
Autopsy Findings: Not available.

Case 89. Acute envenomation (Crotalid) bite: undoubtedly responsible.
Scenario/Substances: A 74 y/o female was bitten in her left hand by a snake reported to have been a Northern Pacific rattlesnake.
Physical Exam: Initial assessment showed significant edema in her left hand and arm; she was hypotensive.
Laboratory Data: Initial laboratory values: INR > 10, PTT > 200, platelets 90, Hgb 6.4, Hct 20.1, fibrinogen < 60 and D-Dimer > 10,000 mcg/L.
Clinical Course: In the ED she received 6 vials of antivenin (Crotalidae polyvalent immune Fab) and then transferred to a tertiary facility. She had a cardiac arrest upon arrival to the second facility but was intubated and resuscitated with IVFs and vasopressors. Blood was noted in the trachea and around the endotracheal tube. She remained hypotensive and had multiple cardiac arrests. She received a total of 36 vials of antivenin, vitamin K, and was transfused RBCs, cryoprecipitate and FFP. She remained unconscious with fixed and dilated pupils, and died approximately 28 hours after presentation.
Autopsy Findings: Not performed.

Case 95. Acute cyanide ingestion: undoubtedly responsible.
Scenario/Substances: A23 y/o male ingested sodium cyanide after fighting with his family. He rapidly collapsed; his family started CPR and called EMS.
Clinical Course: CPR was in progress upon his arrival to the ED. Cardiac monitor showed asystole. He was given 1 amp of sodium bicarbonate, epinephrine, and defibrillated twice. Resuscitation measures were unsuccessful.
Autopsy Findings: Cyanide concentration in postmortem blood was 166 mcg/mL.

Case 99. Acute ethylene glycol and ethanol ingestion: undoubtedly responsible.
Scenario/Substances: A 33 y/o male was seen to collapse by his father. EMS was called, he received naloxone and glucose with no improvement, and was transported to the ED.
Past Medical History: Manic depressive disorder. Medications included fluoxetine, chlorophyll liquid extract, colon cleanser, and several dietary supplements.
Physical Exam: Initial BP 170/100, HR in the 90's, afebrile, and intubated on the ventilator. His physical exam was otherwise unremarkable.
Laboratory Data: ABG-pH 6.77/$pCO_2$53/$pO_2$334/HCO_3 8/Lactate 1.9, Na 148, Cl 107, K 5.4, CO_2 7, BUN 17, Cr 1.5, Glu 222, Ca 10.5, EtOH 17 mg/dL, lipase 376, serum acetaminophen and salicylate were not detected, ketones negative, measured serum osmolality 643, head CT was unremarkable.
Clinical Course: In the ED, the patient was obtunded but had return of spontaneous respirations immediately after being intubated. He received a nicardipine infusion for hypertension, treatment for presumptive toxic alcohol ingestion (fomepizole, folate and pyridoxine), prophylactic antibiotics and sodium bicarbonate and hemodialysis for severe acidosis. Despite these interventions, neither his OG nor AG metabolic acidosis improved. He became hypotensive, tachycardic, and developed refractory seizures. On Day 3, he developed a ventricular arrhythmia and died despite cardioversion.
Autopsy Findings: The ME reported an ethylene glycol of 1,394 mg/dL and the death was ruled a suicide by ethylene glycol.

Case 102. Acute cyanide ingestion: undoubtedly responsible.
Scenario/Substances: A 34 y/o female presented to the ED, with a male companion, several hours after a motor vehicle collision, reporting dizziness.
Physical Exam: Initial BP 120/76,HR 89,RR 20, O_2sat 100%. She was alert and oriented x3. Examination was unremarkable.
Laboratory Data: Na 127, K 5.3, Cl 94, HCO_3 9, BUN 11, Cr 0.9, Glu 833, AG 24 mg/dL, AST 93, ALT 34, serum acetaminophen and salicylate were not detected, HCG negative, VBG-pH 7.05/pCO_2 27/pO_2, lactate 14.7 initially. Repeat VBG-pH 7.09/pCO_2 54/pO_2 79, lactate 23, CK 214, troponin < 0.01, cyanide 6.7 mcg/mL (pre-mortem). EKG Sinus rhythm 58, QRS 100, QT_C 402, RBBB.
Clinical Course: In the ED she was given meclizine to treat her dizziness and observed for 3.5 hours with normal repeat neurologic examination. Prior to being discharged both she and her companion were observed to have brief, self-limited, tonic/clonic convulsions. She was found to have a Glu of 17 immediately after the seizure and was treated with IV dextrose with no improvement in status. Shortly after, she became apneic and required intubation after which she had a cardiac arrest with PEA. ACLS was initiated with brief return of circulation, but she remained hypotensive and bradycardic despite norepinephrine and dobutamine infusion. She had another cardiac arrest with PEA several minutes later from which she could not be resuscitated. The patient was pronounced dead in the ED.
Autopsy Findings: The ME reported cause of death: acute cyanide poisoning. Pre-mortem blood cyanide concentration was 6.7 mcg/mL.

Case 113. Acute cyanide ingestion: undoubtedly responsible.
Scenario/Substances: A 52 y/o male threatened suicide during a court proceeding. He went to the restroom and was found unresponsive in PEA arrest.
Laboratory Data: His blood pH ranged from 6.9–7.25, lactate 18.2 mmol/L. Serum acetaminophen and salicylate were not detected.
Clinical Course: In the ED he remained unresponsive in cardiac arrest. He was intubated, received ACLS

interventions and hydroxocobalamin with ROSC. He experienced 3 more episodes of asystole. In the ICU, he received a second dose of hydroxocobalamin. Over the next 2 days he continued to be acidotic and required vasopressors for BP support. He died ~48 h after exposure.
Autopsy Findings: Hospital blood cyanide: 6.4 mcg/mL. Cause of death: cyanide poisoning, Manner of death: suicide.

Case 123. Chronic cobalt exposure: undoubtedly responsible.
Scenario/Substances: A 65 y/o female was found to have an elevated cobalt level after surgical revision of her prosthetic hip with a chromium-cobalt containing device.
Past Medical History: Right hip replacement with revision 9 years later, recent diagnosis of pulmonary emboli, new onset cardiomyopathy with LVEF 35–40%, anosmia, hearing loss, dysgeusia.
Physical Exam: Alert and oriented, decreased hearing.
Laboratory Data: Serum cobalt level was 817 mcg/L [normal < 1.8 mcg/L]; repeat serum cobalt (4 days later) was 642. 24-hour urine cobalt was 4831 mcg/L [<2 mcg/L]. Na 135, K 3.8, CO_2 17, BUN 31, Cr 0.78, Glu 244, TSH 1.46, WBC 14.6, Hgb 11.6, AST 32, ABG-pH 7.36/pCO_2 13/pO_2 107/HCO_3 7. Echocardiogram showed normal left ventricle size with severe global hypokinesis and a LVEF of 10–20%.
Clinical Course: The patient was started on n-acetylcysteine and chelated with succimer for cobalt toxicity. Her revised hip could not be removed due to her worsening cardiomyopathy. She became progressively hypotensive and weak. She was intubated and required vasopressors for cardiogenic shock. Hemodialysis was started for acidosis. She had a PEA arrest and did not respond to resuscitation efforts.
Autopsy Findings: Not available.

Case 130. Acute hydrofluoric acid ingestion and dermal: probably responsible.
Scenario/Substances: A female of unknown age, covered in white powder, was attacking shoppers in a flea market with a screwdriver. EMS brought her to the ED.
Physical Exam: HR 120, BP 116/53, O_2 sat of 100%. She had a red irritated rash on her face with blisters over the left cheek.
Laboratory Data: Na 139, K 3.8, Cl 102, CO_2 16, BUN 11, Cr 0.9, Glu 208, Calcium 5.2, lactate 6.9, Mg 0.8, Phos 3.4, troponin 0.07, Hgb 13.8, WBC 22.9, platelets 403. Serum acetaminophen and salicylate were not detected. UDS was positive for amphetamines and opiates.
Clinical Course: She was decontaminated outside the ED but then had a cardiac arrest (described as Torsades de pointes) immediately on arrival in the ED. She was intubated and defibrillated.. The fire department's HazMat team identified the powder as ammonium bifluoride. She was treated with calcium, but died after recurrent cardiac arrests shortly after arrival.
Autopsy Findings: Not available.

Case 133. Acute drain cleaner (alkali) ingestion: undoubtedly responsible.
Scenario/Substances: A25 y/o male was found unresponsive, with a suicide note, in a bathroom at home. EMS noted hematemesis, chemical burns to his lips and face and a half empty bottle of alkali drain cleaner. He was transported to the hospital, requiring copious suction en route.
Past Medical History: Prior suicide attempts.
Physical Exam: BP 170/109, HR 81, RR 24,O_2 sat 100% (intubated). Oropharyngeal burns were present with active emesis.
Laboratory Data: Na 142, K 4.0, Cl 104, CO_2 24, BUN 15, Cr 1.13, Glu 144, AST 44, ALT 23, Alk phos 86, Ca 9.8, lipase 85, ABG-pH 7.44/pCO_2 29/$pO_2$178/$HCO_3$20.2.WBC 10.4, Hgb 16.7, Hct 49.7, platelets 131, INR 1.1. Acetone, ethanol, isopropanol, methanol, barbiturates, benzodiazepine, cocaine, opiates, acetaminophen, ethylene glycol, salicylates were not detected.
Clinical Course: In the ED he was intubated with placement of a nasogastric tube. Head CT showed small intra-parenchymal hemorrhage. On Day 2 he developed chest pain and signs of pericarditis. Troponin I peaked at 30.0 and he later developed pleural effusions. He was subsequently extubated and started on small volume oral fluids. An esophagram on Day 14 confirmed scarring in the hypopharynx preventing epiglottis closure and narrowing of the lower esophagus. A feeding tube was placed on Day 15. On Day 22 bronchoscopy and esophagoscopy found a large tracheo-esophageal fistula. Attempts to place a stent were unsuccessful and the patient decompensated. Based on the prognosis, the family opted for institution of comfort measures and he died on Day 29.
Autopsy Findings: Cause of death: drain cleaner ingestion. Manner of death: suicide.

Case 147. Acute laundry detergent (pod) ingestion and aspiration: probably responsible.
Scenario/Substances: A 100 y/o female bit into a laundry detergent pod and started to cough.
Past Medical History: Dementia
Clinical Course: In the ED she had significant wheezing and an O_2 sat 59% on room air. She was admitted to the ICU with aspiration pneumonia and started on BiPAP and dopamine for hypotension. She abruptly became asystolic but was not resuscitated due to pre-existing DNR orders. She died about 18 h after exposure.
Autopsy Findings: Not performed.

Case 148. Acute hypochlorite dermal: undoubtedly responsible.
Scenario/Substances: A 17 m/o female removed bleach from under a sink and poured it on herself. Her mother found her crying in a puddle of bleach, and reported that the child's skin peeled off when she was cleaning her off with a wet towel.

Physical Exam: Diffuse 2nd degree burns to perineum and legs with minimal lower leg involvement. Extensive burns to the lower back and buttocks. No splash markings noted, no irregularities consistent with clothing were noted.
Clinical Course: The child developed *Pseudomonal* sepsis and died on Day 3.
Autopsy findings: Extensive excoriations on >30% of the abdomen, back, pelvis and lower extremities. Microscopically the tissue showed thermal burns with complete necrosis of the epidermis. Cause of death was *Pseudomonas aeruginosa* sepsis. The ME determined the manner of death to be accidental due to dermal bleach burns.

Case 154. Acute hydrogen peroxide ingestion: undoubtedly responsible.
Scenario/Substances: 75 y/o male reportedly ingested 6 ounces of 35% hydrogen peroxide that he had been using (at 6 drops per 6 ounces of water) for a toothache. He became confused and started vomiting.
Physical Exam: In the ED he was intubated for respiratory distress and then transferred to a tertiary care facility. At that facility his vital signs were: BP 106/65, HR 58, RR 31, T 36.2 °C. On examination he was sedated and ventilated; NG tube had bloody secretions. Abdomen was benign without distention.
Laboratory Data: VBG-pH 7.23/pCO_2 61/pO_2 54/HCO_3 25/BE −4.6. COHb 4%, MetHgb 1.1%. WBC 19.8, Hgb 19.5, Hct 60.4, platelets 194, Na 139, K 5, Cl 108, CO_2 22, BUN 16, Cr 1, Glu 170, AST 57, ALT 19, troponin I 1.73, PT 13.1, PTT 21.3. CxR showed bilateral lower lobe infiltrates; ECG showed sinus bradycardia.
Clinical Course: Prior to transfer the patient was noted to be in shock with respiratory failure and acute GI bleed. Eight h after arrival he developed severe acidosis, ARDS and worsening shock that required increased vasopressors. Endoscopy showed diffuse severe esophagitis, gastritis, and moderate duodenitis. Despite aggressive supportive management he died within 24 h of the exposure.
Autopsy Findings: Not performed.

Case 156. Acute peroxides ingestion: undoubtedly responsible.
Scenario/Substances: An 81 y/o male accidentally drank 8 ounces of 35% hydrogen peroxide which he normally used in small amounts as a homeopathic treatment for diabetes. Shortly after he started vomiting and had altered mentation.
Past Medical History: Coronary artery disease, diabetes mellitus, hypertension, deep vein thrombosis in his right leg.
Physical Exam: BP 191/83, HR 83, RR 18, O2 sat 99%, T 36.5 °C. He was diaphoretic, confused and ill-appearing, but intermittently followed commands. He had paralysis of the right arm and both legs. Cardiovascular and pulmonary examinations were normal, abdomen had mild diffuse tenderness.
Laboratory Data: Na 138, K 3.6, Cl 105, CO_2 21, Glu 256, BUN 16, Cr 1.29, WBC 9.3, Hgb 16.3, Hct 48.2, platelets 139, AST 30, ALT 26. ABG-pH 7.39/$pC0_2$ 34/$p0_2$ 59/HCO_3 20.4/BE −4.0. Troponin I 0.04, PT 11.3, PTT 23.4, CK 169. UDS was negative, salicylates were not detected.
Clinical Course: Upon ED arrival he had multiple episodes of hematemesis. CT of his abdomen revealed portal venous gas and pneumatosis of the distal esophagus and stomach. An MRI of the brain demonstrated acute infarction of the right frontal, left frontal and left parietal lobes. He was intubated for loss of airway reflexes and transferred to a tertiary facility for HBO. Upon arrival at that facility he was too unstable for HBO. He was started on antibiotics for aspiration pneumonitis. Based on the prognosis, the family opted for institution of comfort measures on Day 2 and he died on Day 3.
Autopsy Findings: Not performed.

Case 180. Acute helium inhalation: undoubtedly responsible.
Scenario/Substances: A 19 y/o man intentionally inhaled large quantities of helium gas to harm himself. His roommate found him ''hooked up'' to a helium tank. The patient had a cardiac arrest during EMS transport. He was intubated and had CPR performed with ROSC.
Laboratory Data: Serum acetaminophen and salicylate were not detected.
Clinical Course: In the ED his hypotension was treated with IVFs and vasopressors, and he was admitted to the ICU where a hypothermia protocol was initiated. His pupils were fixed and dilated. He became hypertensive and vasopressors were discontinued. On Day 2 he remained unresponsive with fixed and dilated pupils. He became hypotensive again and vasopressin was reinstituted. HR 88,BP 102/67 on vasopressin. On Day 4 the patient had another cardiac arrest and died.
Autopsy Findings: Cause of death was anoxic encephalopathy due to inhalation of helium. Microscopic examination of the brain revealed multiple hypereosinophilic and shrunken degenerative neurons and cortical rarefaction in the hippocampus. Toxicology report was negative for any drugs of abuse.

Case 206. Acute hydrogen sulfide inhalation: probably responsible.
Scenario/Substances: 47 y/o male was working above a tank of hydrogen sulfide in an oil field. He had a syncopal event and fell into the tank. EMS removed him from the tank about 20 min later. He was in cardiac arrest and CPR was started.
Physical Exam: Unresponsive, intubated with transient myoclonic activity in his extremities. Pupils were constricted and non-reactive; no gag or corneal reflexes. BP 167/111, HR 96, RR 29 (ventilated), O2 sat 97%.
Laboratory Data: Na 139, K 5.9, Cl 105, CO_2 20, Ca 7.9, BUN 12, Cr 1.1 AST 118, ALT 102, BNP 1,034, PT11.2, WBC 16, Hgb 15.6, Hct 47, COHb 3.0, Methemoglobin 0.3.
Clinical Course: He was intubated in the ED, started on a lidocaine infusion and transferred to a tertiary care center.

A hypothermia protocol was started and he received 2 doses of sodium nitrite. A head CT revealed diffuse hypoxic ischemic changes with loss of gray/white differentiation, deep gray nuclei infarctions and cerebral edema. He was started on desmopressin for oliguria, and norepinephrine and vasopressin for hypotension (87/48). On Day 3 an EEG showed no cerebral electrical activity and a brain flow study showed no blood flow. He died on Day 3.
Autopsy Findings: Not available.

Case 216. Acute chlorine gas inhalation: probably responsible.
Scenario/Substances: A 58 y/o male was pouring 55 gallons of liquid chlorine into heated water and was exposed to the vapors. He presented to the ED 24 hours later, ''felt lousy'' but had no respiratory problems and a normal CxR so he was released. Four days later he returned to the ED with weakness and shortness of breath.
Physical Exam: He was awake and alert, oxygen saturation on room air was 66%. His vital signs on BiPAP with 100% O_2 were: HR 118, BP 129/80, RR 18, O2 sat 92%.
Laboratory Data: His CxR showed bilateral multilobar pneumonia. K 6.4, CO_2 34, BUN 27, Cr 1.2, Glu 350, CK 704. On Day 11: T 40.5 °C. K 4.2, BUN 52, Cr 2.3, CO_2 32, WBC 16.6, platelets 80.
Clinical Course: The patient was treated with oxygen and albuterol nebulizers. He was initially afebrile but had ''Staph'' in a sputum culture. He continued to require oxygen, pulse oximetry dropping into the 80 s when his face mask was removed for eating. On Day 9 he was intubated for continued respiratory distress and developed AF (HR 114). He was treated with amiodarone and had a normal bronchoscopy. Breath sounds were diminished and coarse on the left. His clinical condition worsened. He became unresponsive off sedation, had continued respiratory distress, intermittent AF and a bowel ileus. Day 12 arterial pH 7.12, BUN 86, Cr 4.5, WBC 29.8. He died on Day 12.
Autopsy Findings: Not performed.

Case 248. Acute lamp oil ingestion: undoubtedly responsible.
Scenario/Substances: A 5 y/o male was found next to an empty bottle of lamp oil with his ''eyes rolled back in his head''. The product's MSDS listed contents as 100% C10–C13 isoalkanes.
Past Medical History: Developmentally delayed.
Physical Exam: The child presented to the ED, 30 min later, in respiratory distress. He was transferred to a tertiary care facility's PICU. His vital signs there: BP 83/40, HR 145 and T 36 °C.
Laboratory Data: His initial CxR revealed pulmonary edema.
Clinical Course: He was started on a norepinephrine drip and subsequently intubated and placed on an oscillating ventilator for progressive desaturation. His condition worsened and on Day 2 he was placed on ECMO and corticosteroids. A repeat CXR showed complete whiteout of his lungs. Pulse oximetry was 89%; and ABG-pH 7.3/pCO_2 38/pO_2 371/HCO_3 18. He developed leukopenia and hypokalemia. Two days later he had a CVA with herniation. He was taken off ECMO and died approximately 53 h after the exposure.
Autopsy Findings: Not available.

Case 249. Acute-on-chronic freon inhalation and chlorpheniramine/dextromethorphan ingestion: probably responsible.
Scenario/Substances: A 20 y/o male was found down at home, bystander CPR was initiated. There were many cans of air duster and boxes of over-the-counter cough and cold medications nearby.
Past Medical History: Depression, substance abuse (daily inhalant and dextromethorphan abuse), attention deficit disorder.
Physical Exam: The patient was in PEA upon ED arrival; there was no evidence of traumatic injury or asphyxiation.
Laboratory Data: Post-resuscitation: ABG-pH of 7.31/pCO_2 36.3/pO_2 139/HCO_3 18 on FiO2 70%. AST 475, ALT 189.
Clinical Course: After initial ROSC he required treatment for VF. In the ICU a head CT showed diffuse axonal injury consistent with hypoxia. Based on the prognosis, the family opted for institution of comfort measures and he died 24 hours after arrival. His organs were donated.
Autopsy Findings: Analysis of antemortem of whole blood: positive for caffeine; negative for ethanol, difluoroethane, dextromethorphan, chlorpheniramine, guaifenesin, and acetaminophen. Vitreous electrolytes: Na 180, K 8.8, Cl 171, Ca 1.7, Mg 0.72, Glu 62, lactate 12, BUN 20, Cr 0.80. Postmortem urine was positive for dextromethorphan and chlorpheniramine. A tissue sample was found to contain no difluoroethane. The cause of death: anoxic brain injury secondary to myocardial infarction due to complications of difluoroethane inhalation.

Case 263. Acute water ingestion: probably responsible.
Scenario/Substances: A 46 m/o female was at a family gathering where she drank between 80 and 128 ounces of either a dilute kool aid or lemonade type of beverage, within 2 hours, from other family members' cups. She had 3 episodes of projectile vomiting and then became unresponsive. She was driven by private vehicle to the ED.
Past Medical History: Failure to thrive, slow verbal development and abnormal eating behaviors (eat and drink to the point of vomiting).
Laboratory Data: Serum Na 124, K 2.7, Cl 94, CO_2 18, BUN 14, Cr 0.4, Glu 121, cortisol 40.4 mcg/dL, osmolality 252, WBC 8.4, Ca 8.5, CK 658, ammonia 30, AST 64, ALT 37, Alk phos 99, urine K 9.6. Serum acetaminophen, ethanol and salicylate were not detected, UDS was negative.
Clinical Course: She was obtunded and bradycardic with agonal respirations (RR 6) upon ED arrival. Her initial Na

was 122 and she received NS IVFs, was intubated and transferred to a tertiary care center's PICU. A repeat Na was 127 prior to transport. About 6 h later her pupils were fixed and dilated. She had no corneal, cough, gag pain responses; HR 100, RR 15. She was started on 3% saline at 3 ml/kg. Head CT showed ''reversal sign and obliteration of cisterns.'' An MRI showed ''diffuse injury involving the cortical ribbon and deep gray likely due to underlying hypoxic ischemic insult.'' Cerebral edema and increased intracranial pressure with mild transtentorial and tonsillar herniation were noted. She became hypotensive, developed diabetes insipidus for which she received vasopressin and IVFs but a normal body temperature was unable to be maintained. At PICU hour 18 her neurologic exam showed an absence of all detectable brain stem activity, diffuse hypotonia and areflexia. EEG showed ''little detectable activity.'' A comprehensive urine drug screen done by thin layer chromatography showed ''a small amount'' of substances consistent with diphenhydramine and on an immunoassay there was evidence of a benzodiazepine. At PICU hour 46 an apnea test was performed and she was pronounced brain dead.
Autopsy Findings: The pathologic diagnoses were: 1) acute water intoxication with hyponatremia, altered mental status and respiratory failure, 2) failure to thrive with height and weight less than 3rdpercentile for age. Cause of death was hyponatremia due to water intoxication. The manner of death was listed as homicide.

Case 265. Acute *Amanita phalloides* ingestion: probably responsible.
Scenario/Substances: A 31 y/o male living at residential mental health facility was found in the yard holding about one-half of a mushroom cap. The cap was described as being about 5 inches in diameter with white cap and white gills. The patient was referred to the ED for activated charcoal and mushroom identification.
Past Medical History: Schizophrenia.
Physical Exam: The patient presented with no symptoms; BP 129/60, HR 93, RR 16, T 36 °C, O_2 sat 97% on room air.
Laboratory Data: The patient refused all labs on initial presentation. On return to the ED 2 days later: Na 138, K 6.1, Cl 111, CO_2 10, BUN 63, Cr 2.96, PT 15.5, ALT 333, AST 306, lactate 5.6.
Clinical Course: During his first ED visit he denied ingesting the mushroom and refused activated charcoal and lab draws. He was medically cleared and the mushroom was discarded. The patient returned to the ED on Day 2 with vomiting and diarrhea. He was hypotensive (BP 60/30) and in acute renal failure. He was intubated, given IVFs, bicarbonate and norepinephrine. He also received n-acetylcysteine and octreotide. His hypotension persisted despite maximum doses of norepinephrine and phenylephrine. Liver enzymes continued to rise, peaking at ALT 3,519, AST 2,631, PT 55.8, Cr 3.24. The patient died on Day 5.While identification of the original mushroom was impossible, a mycologist identified similar-looking mushrooms, from the same area, as *Amanita phalloides*.
Autopsy Findings: Not available.

Case 266. Acute mushroom (cyclopeptides) ingestion: probably responsible.
Scenario/Substances: A 60 y/o male ate wild mushrooms that were picked by his sister. They were described as white, with white gills, growing under pine trees. After a delay of several hours he developed nausea, vomiting and diarrhea. He came to the ED ~ 4 days after ingestion.
Physical Exam: In the ED BP 80/47, HR 111, RR 24, T 37.6 °C, O_2 sat 100%. He was awake and oriented but complained of fatigue and shortness of breath. His abdomen was tender and distended.
Laboratory Data: Na 133, K 3.7, Cl 9 2, CO_2 10, BUN 53, Cr 5.9, Glu 93, AST 2,209, ALT 2,784, bilirubin 2.4, Lipase 2,746, INR 4.8, Hgb 13.9, Hct 41%, WBC 19.0.
Clinical Course: He was admitted and treated aggressively with IVF, FFP, and n-acetylcysteine. His transaminitis worsened (AST 4,700, ALT > 3,500) and he developed hypotension and diffuse bleeding. He died on Day 2.
Autopsy Findings: Not available.

Case 268. Acute mushroom (gastrointestinal), *Coprinus comatus, Coprinus atrametarius* ingestion: undoubtedly responsible.
Scenario/Substances: An 88 y/o female presented to the ED after an intentional ingestion of several mushrooms found growing in her yard. Within 30 minutes of ingestion she developed sweating, vomiting, diarrhea, abdominal pain, and respiratory distress. The mushroom was described as having a ''white cap with an umbrella.''
Past Medical History: Coronary artery disease.
Clinical Course: Within 7 h she had progressive encephalopathy and respiratory distress with pulmonary edema requiring ETT. Her husband provided pictures of the mushrooms, identified by a mycologist as *Clitocybe* species, *Coprinus comatus* and *Coprinus atrametarius.* She subsequently died.
Autopsy Findings: Death due to wild mushroom poisoning, (muscarinic, likely C*litocybe*). Ingested mushroom in stomach on autopsy morphologically consistent with same species. No definitive competing cause of death was identified. A forensic pathologist felt patient's presentation was consistent with muscarinic toxicity, likely from having ingested a muscarinic Clitocybe mushroom.

Case 276. Acute dinitrophenol ingestion: undoubtedly responsible.
Scenario/Substances: A 19 y/o male admitted to ingesting 3 g of dinitrophenol 4 h earlier.
Physical Exam: He was initially agitated but following commands; GCS 12, BP 142/62, RR 30–40, O2 sat 97%, T 39.3 °C. ECG showed QRS 98, elevated R wave in avR.
Laboratory Data: Venous BG-pH 7.38/pCO_2 52/HCO_3 31. Lactate 3.0, K 5.2, salicylate 22.4 [considered a false positive due to chromophore qualities of DNP].

Clinical Course: He was treated with oxygen and cooled with IVFs, wet sheets and ice packs. Despite these interventions his temperature was rising within 15 min. He was intubated and hyperventilated, and given activated charcoal. His heart rate fell to the 90 s and his QRS widened. He developed muscle rigidity and became pulseless and then asystolic. He was unsuccessfully coded for 45 minutes and died within 6 h of presentation.
Autopsy findings: Not available.

Case 279. Acute sulfuryl fluoride inhalation: probably responsible.
Scenario/Substances: A 30 y/o female was extricated by EMS from a residence that was fumigated with sulfuryl fluoride. The patient may have been in the home for up to 9 h. EMS found her anxious and complaining of shortness of breath with mottled skin and tachypnea that did not improve with supplemental oxygen.
Past Medical History: Substance abuse.
Physical Exam: In the ED she was apneic, pulseless, mottled and cyanotic. Pupils were fixed and dilated; IV track marks were noted.
Laboratory Data: Glu 217. Prehospital ECG showed sinus tachycardia. A post intubation CxR showed diffuse perihilar interstitial markings.
Clinical Course: She was intubated and resuscitated without ROSC.
Autopsy Findings: Not available.

Case 280. Acute rodenticide (anticoagulant) ingestion: undoubtedly responsible.
Scenario/Substances: A 45 y/o female presented to a hospital with complaints of ''not feeling well.''
Past Medical History: Depression, chronic back pain, alcohol and prescription opiate abuse.
Physical Exam: Large ecchymotic areas on her extremities.
Laboratory Data: Initial INR > 11, normal liver function tests. Factor 7 undetectable. Blood sent to a reference laboratory was positive for ''rat poison.''
Clinical Course: The patient received 4 units of FFP and vitamin K 50 mg daily. The INR decreased but fluctuated and required changes in vitamin K dosages. On Day 26 she was transferred to a rehabilitation facility with an INR of 10 and a vitamin K dose of 10 mg twice daily. On Day 50 she was discharged home with an INR of 1.33 and a vitamin K dose of 10 mg three times daily. She was readmitted to a different hospital, 4 days later, with bleeding and an INR of 29. She was treated again with FFP and vitamin K. Her INR at discharge was 1.59. At follow-up 7 days later her INR was 9.5. She was readmitted and treated. Concerns for self-harm via repeated/continued exposure were addressed. She had several repeated inpatient admissions for coagulopathy, anemia (transfused blood for hemoglobin of 7.4 and INR > 7), subdural hemorrhage and abdominal hematoma. On her final admission she was intubated for vomiting and suspected pulmonary hemorrhage, developed multiple organ failure and died 2 days later.
Autopsy Findings: Not available.

Case 281. Acute-on-chronic, brodifacoum ingestion: probably responsible.
Scenario/Substances: A 48 year-old female presented after ingesting an unknown quantity of long-acting anticoagulant rat poison.
Past Medical History: Multiple prior suicide attempts.
Physical Exam: She was intubated with ecchymotic areas all over her body. Initial vital signs on dopamine: BP 121/68, HR 123, RR 14, O_2 sat 100%, T 35.6 °C.
Laboratory Data: Her initial INR was too high to quantify, Hgb 10.2 and Hct 32. After vitamin K and FFP repeat testing showed the following: INR 3.3, PT 36.7, PTT 55. Serum Na 156, K 2.9, Cl 134, CO_2 15, BUN 6, Cr 0.57, Glu 266, lactic acid 0.7, Mg 1.9 and Phos < 1.
Clinical Course: She was found to have a right parietal intracranial hemorrhage. She was intubated, received vitamin K (5 mg) and 4 units of FFP before being transferred. At the second facility she was given more vitamin K and FFP as well as prothrombin complex (15 mg/kg). Her nadir INR was 1.3 but increased to 2.1. She developed anuric acute kidney injury, hypernatremia (Na 165) and hyperchloremia (Cl 146). Her Hgb and Hct decreased (8.6 and 25.7) and she required dopamine and then phenylephrine for hypotension. She developed a large intracranial hemorrhage with midline shift and died on Day 2.
Autopsy Findings: Not available.

Case 282. Acute glyphosate and cocaine ingestion: undoubtedly responsible.
Scenario/Substances: A 50 y/o male inadvertently drank an unknown herbicide stored in a refrigerated sports bottle. The liquid was subsequently determined to be 41% glyphosate. He developed diarrhea, increased secretions, dizziness, and a headache shortly after ingestion. EMS arrived and noted bradycardia and bigeminy.
Laboratory Data: Na 134, K 3.4, Cl 101, CO_2 23, BUN 11, Cr 0.9, Glu 104, AG 10, INR 1.02, CK 239. Laboratory tests that resulted after his death: benzoylecgonine > 299 ng/mL, RBC cholinesterase 13,211 [ref range 9,572 – 15,031], plasma cholinesterase 4,274 [ref range 3,334 – 7,031].
Clinical Course: In the ED he received atropine, pralidoxime and ondansetron, but continued to have diarrhea. Later that day he became confused and agitated. On Day 2 his confusion and diarrhea resolved but on Day 3 his Cr increased to 5.7, AST450, ALT 904.A bicarbonate drip was started. Later that day he developed delirium, cogwheel rigidity, tremors and increased tone on the right side; mental status remained intact. Serum Cr 6.1, Na 129, CO_2 15, AG 19. He was intubated and sedated, and hemodialysis was initiated. On Day 4 he became hypotensive and required multiple vasopressors. He became anuric and was switched to CRRT; antibiotics

were started for oral and esophageal burns. On Day 5 he was taken off sedation, but remained unresponsive and died on Day 6.
Autopsy Findings: The cause of death was complications of glyphosate ingestion notable for facial, oropharyngeal, respiratory, and esophageal corrosive effects and multi-organ failure. The manner of death was accident.

Case 283. Acute sodium fluoroacetate ingestion: probably responsible.
Scenario/Substances: A 55 y/o male was found unresponsive shortly after fighting with his family. When EMS arrived he was intubated. Initially he was tachycardic but then became bradycardic and went into PEA. He had ROSC with ACLS interventions.
Physical Exam: Intubated, unresponsive. Miotic pupils, diaphoresis, wet mucous membranes with white powder around nose and mouth. A Mexican rodenticide (active ingredient - sodium fluoroacetate) was found in his pocket. BP 104/61, HR 100, RR 22, T 35 °C. Clear lung sounds; abdomen benign.
Laboratory Data: Na 145, K 3.5, Cl 105, CO_2 18, BUN 19, Cr 1.3, Glu 318, AST 168, ALT 161, ammonia 71. CxR was normal. On ABG-pH 6.8 (prior to intubation) and 7.07 after. Acetaminophen, ethanol and salicylate were not detected. UDS was negative.
Clinical Course: He developed rapid AF that spontaneously resolved and had excessive secretions and diaphoresis that responded to atropine. Two bloody bowel movements were noted and he received antibiotics for a fever and suspected aspiration pneumonia. He remained unresponsive with fixed, pinpoint pupils. On Day 3 a brain MRI revealed a massive bilateral CVA (not reported if ischemic or hemorrhagic) and an EEG showed seizure activity. His K decreased to 2.6 and Phos 2.0. Based on the prognosis, the family opted for institution of comfort measures on Day 5 and was transferred to hospice where he subsequently died.
Autopsy Findings: Not Available.

Case 284. Acute organophosphate (chlorpyrifos) ingestion: undoubtedly responsible.
Scenario/Substances: A 57 y/o male presented to a hospital with abdominal pain, diarrhea and green-colored emesis. The patient stated that he had ingested a weed killer that he obtained from a farmer.
Past Medical History: Hypertension, diabetes mellitus.
Physical Exam: Slightly altered mentation in moderate distress and vomiting. BP 124/67, HR 66, O2 sat 100% on a non-rebreather mask.
Laboratory Data: Na 131, K 3.1, Cl 100, CO_2 16, BUN 8, Cr 1.0, AST 49. UDS was negative.
Clinical Course: On Day 2 the patient was awake with throat and abdominal pain. His vomiting and diarrhea had stopped, he had minimal urine output. Repeat labs showed a BUN 24, Cr 2.6, AST 169. His respiratory status declined and he became progressively more hypoxic. He was made DNR, developed bradycardia and died, following cardiac arrest 40 hours after arrival to the ED.
Autopsy Findings: Not performed. The Department of Pesticide Regulation tested the involved product and found chlorpyrifos (52%) and an unknown hydrocarbon.

Case 285. Acute phosphine inhalation/nasal: probably responsible.
Scenario/Substances: A 58-year-old female was vacuuming up aluminum phosphide pellets that a relative had spread through her home. The vacuum bag ruptured and spread the contents into the air. The patient developed malaise, shortness of breath and emesis several h later.
Past Medical History: Hypertension, tobacco use.
Physical Exam: BP 121/89, HR 139, RR 24. Lungs were clear to auscultation.
Laboratory Data: Na 135, K 2.9, BUN 20, Cr 1.1, Glu 334, WBC 12.8, Hgb 13.3 and Hct 38.5. On ABG-pH 7.38/pCO_2 15/pO_2 165 on room air. Troponin-I 0.07; EKG showed AF at 139, 1-mm ST elevations in aVL and diffuse, nonspecific ST-T changes. CxR was normal.
Clinical Course: Approximately 3 h after arrival she went into VF and then cardiac arrest. She was intubated and received ACLS interventions including CPR and defibrillation. Despite aggressive care she died approximately 5 hours after arrival.
Autopsy Findings: Not performed.

Case 287. Unknown, glyphosate ingestion: undoubtedly responsible.
Scenario/Substances: A 59 y/o female intentionally drank 5 ounces of a presumed glyphosate herbicide from a beverage bottle. The patient was disoriented, combative and vomiting. She was decontaminated and intubated by EMS prior to ED arrival.
Physical Exam: Unresponsive, intubated and cold to touch, bilateral rhonchi. BP 142/66, HR 74, RR 20 (ventilated), O_2 sat 100%.
Laboratory Data: Initial labs included a Na 142, K 4.1, Cl 112, CO_2 18, BUN 13, Cr 0.8, Glu 170, AG 12, Ca 8.5, AST 58. Serum acetaminophen and salicylate were not detected. ABG-pH 7.42/pCO_2 22/HCO_3 14. The ECG showed sinus rhythm with first degree AV block and QRS of 110. On Day 2 her AST was 148.
Clinical Course: She was given activated charcoal via NG tube, IVFs and pantoprazole. The patient had spontaneous movements off sedation. She had no seizures or signs of cholinergic symptoms. She developed a fever (T 38.9 °C) and hypotension, and only withdrew to pain. She was treated with dextrose, antibiotics, vasopressors and tube feeds. Brain MRI (Day 5) showed diffuse anoxic injury. On Day 11 family decided to withdraw life support and she died.
Autopsy Findings: The cause of death was acute respiratory failure with toxic metabolic encephalopathy, CVA and sepsis as contributory.

Case 288. Acute carbofuran ingestion: contributory.
Scenario/Substances: A 60 y/o female presented after ingestion carbofuran in a suicide attempt. She quickly became dyspneic with defecation, urination, lacrimation, spitting, drooling, and lip smacking.
Past Medical History: Graves' Disease, cervical fusion with chronic pain, cocaine and opiate abuse.
Physical Exam: BP 188/106, HR 92. She was diaphoretic and dyspneic with ''wet'' lungs.
Laboratory Data: Cholinesterase 1,507 [normal 2,673–6,592]
Clinical Course: The patient was intubated and treated with atropine and pralidoxime. After 2 days in the ICU she was extubated and doing well and then transferred to an inpatient psychiatric unit on Day 3.On Day 6 she developed dyspnea, wheezing and anxiety. She was given propranolol and trazodone. Her O_2 sats were 96 to 100%. Approximately3 hours later she was found in cardiac arrest and was resuscitated with ROSC. She was intubated but never regained consciousness. A brain blood flow study on Day 8 was consistent with brain death and she was pronounced dead.
Autopsy Findings: Not available.

Case 289. Acute paraquat ingestion: undoubtedly responsible.
Scenario/Substances: A 65 y/o male accidentally ingested a small amount of concentrated paraquat that had been stored in a refrigerated soda bottle. He was seen and released from an ED on the day of exposure but returned 3 days later with dyspnea and painful blisters in his mouth.
Physical Exam: In the ED he had oral blisters; neurological examination was unremarkable. BP 110/54, HR 90 and afebrile.
Laboratory Data: Na 135, K 4, Cl 103, CO_2 25, BUN 49, Cr 3.4, Glu 99, pH 7.36,AST 55,ALT 30,Alk phos 94,WBC 17.0,Hgb13.2,INR 1.1.
Clinical Course: CxR was consistent with chemical pneumonitis. He was placed on a nonrebreather mask for hypoxia (O_2 sat 87%) and started on antibiotics. He was admitted to ICU and started on cyclophosphamide and methylprednisolone. Patient and family did not wish the patient to be intubated so he was placed on BiPAP. Dexamethasone was added on Day 2. The patient remained alert; BiPAP was continued with 80% oxygen. Serum Cr increased to 4.0. On Day 4, BiPAP requirements had increased to 100% oxygen without improvement. Based on the prognosis, the family opted for institution of comfort measures and he died on Day 4.
Autopsy Findings: Not performed.

Case 294. Acute rodenticide (aldicarb) ingestion: undoubtedly responsible.
Scenario/Substances: An 85 y/o male ingested Tres Pasitos in a suicide attempt and was brought to the ED.
Physical Exam: BP170/80, O_2 sat 98%, vomiting.
Clinical Course: In the ED gastric lavage was performed, atropine and activated charcoal were given. He responded to initial treatment, was alert and stopped vomiting. At Hour 8 he became hypotensive (75/39) and tachycardic (123), with no cholinergic signs. At Hour 24 he was transferred to ICU, O_2 sat 96%, troponin 0.04, EKG showed AF with RBBB. At Hour 36 O_2 sat 93%, wheezing, BP 102/79,HR 114, no cholinergic effects. At Hour 46, he developed hypotension, tachycardia, bronchorrhea, sweating, with respiratory depression requiring intubation and ventilation. BP 99/65, HR 128, O_2 sat 100%. He received atropine, pralidoxime, and midazolam. On Day 7 the patient developed ARDS and hypotension requiring vasopressors. He failed to improve and died on Day 12.
Autopsy Findings: Not available.

Case 296. Acute *Aconitum napellus* ingestion: probably responsible.
Scenario/Substances: A 62 y/o male ingested an unknown amount of an *Aconitum napellus* (monkshood) decoction and presented to the ED with vomiting. The man was of Russian extraction and had purchased the monkshood preparation in Kazakhstan. The monkshood was brewed into a tea and was to be used as a topical poultice.
Physical Exam: In the ED he was alert and oriented.HR 127, BP 97/69, T 36.4 °C, O_2 sat 99% on a non-rebreather mask.
Clinical Course: He soon developed altered mental status with vomiting, and was intubated for airway protection. Initial ECG: Sinus tachycardia, QRS 132, QTc 529. He developed multiple episodes of VF and VT requiring CPR and defibrillation. He was treated with IVFs, sodium bicarbonate, magnesium, amiodarone, and lidocaine. He received a bolus and infusion of 20% intravenous lipid emulsion for persistent arrhythmias. He was admitted to the ICU and continued to have episodes of VF and PEA requiring CPR and defibrillation. He became hypotensive and was treated with epinephrine and norepinephrine. He continued to have episodes of ventricular arrhythmias and cardiac arrest, and died $\sim$13 h after presentation.
Autopsy Findings: Not available.

Case 304. Acute buprenorphine ingestion: undoubtedly responsible.
Scenario/Substances: A 2 y/o male had an acute cardiorespiratory arrest at home. Parents reported that he went to bed normally but they heard him gasp and found him apneic later in the night. It was reported that there was buprenorphine/naloxone in the home.
Physical Exam: Child presented in cardiac arrest.
Laboratory Data: UDS was negative.
Clinical Course: The patient was intubated and resuscitated with epinephrine, vasopressin dopamine, norepinephrine, IVF, insulin and antibiotics. The patient's initial ''brain study'' was abnormal. His pupils were fixed and dilated. BP, 80s/60s, HR 124, RR 18, O2 sat 95–98%, T 36.8 °C. He remained unresponsive with no purposeful movements. On Day 2 a brain flow study determined brain death. Based on the prognosis, the family opted for institution of comfort measures and he died on Day 3.

Autopsy findings: Cause of death was listed as complications of out of hospital cardiorespiratory arrest due to buprenorphine intoxication. A peripheral serum sample drawn on Day 2 found a buprenorphine concentration < 0.2 ng/ml. A buprenorphine tablet that was submitted as evidence and the mother was charged with murder.

Case 305. Acute methadone ingestion: undoubtedly responsible.
Scenario/Substances: A 4 y/o female was given a dose of liquid methadone for ''fussiness.'' She was found the following morning pulseless and apneic.
Laboratory Data: Initial ABG showed respiratory and metabolic acidosis. A methadone level, drawn 4 days post-exposure was 43 ng/ml. Daily methadone levels were drawn; the last positive level was 16 ng/mL on Day 11.
Clinical Course: The patient arrived in PEA and was resuscitated with ROSC. No evidence of physical trauma but she had suffered profound hypoxic/ischemic insult and developed a severe encephalopathy. The patient persisted in a vegetative state for 4 years, then died of pneumonia.
Autopsy Findings: Cause of death: complications of anoxic encephalopathy due to remote methadone intoxication. An ''other condition'' of basilar pneumonia was reported and the post-mortem exam was consistent with significant pneumonic process. Manner of death was ruled homicide.

Case 394. Unknown, fentanyl inhalation/nasal: undoubtedly responsible.
Scenario/Substances: A 33 y/o male was found snorting a powdery substance in a hospital bathroom. Soon thereafter, he went into cardiac arrest.
Physical Exam: Intubated, unresponsive. BP 160/70, HR 72 bpm.
Laboratory Data: ECG showing NSR with QRS 120 and QTc 588. UDS was negative.
Clinical Course: He was intubated and successfully resuscitated. He was placed on a hypothermia protocol, and received IVFs and dobutamine for hemodynamic support. On Day 2 he had multiple seizures and was treated with benzodiazepines, phenobarbital and levetiracetam. He was paralyzed due to continued agitation and difficulty with ventilation. He died on Day 4.
Autopsy Findings: The cause of death was reported as fentanyl toxicity; manner of death: accidental. An antemortem blood sample showed the following drug concentrations: fentanyl 3.64 ng/mL, diphenhydramine 0.061 mg/L and propofol.

Case 663. Acute tramadol ingestion: undoubtedly responsible.
Scenario/Substances: A 71 y/o male was found unresponsive at home with self-inflicted neck and wrist lacerations and an empty bottle of 60 tramadol 50 mg tablets. The patient had a seizure en route to the ED.
Past Medical History: Hodgkin's lymphoma, resected brain tumor, early Alzheimer's dementia and alcoholism.
Physical Exam: The patient was comatose; pupils 2 mm and sluggish. BP 124/58, HR 70, RR 14 (ventilated), O2 sat 94% on FiO_2 90%, T 36 °C.
Laboratory Data: Na 139, K 3.5, Cl 108, CO_2 19, BUN 14, Cr 1.3, Glu 153, AG 12, Ca 8.6, AST 73, CK 440, lactate 7.6. ABG-pH 7.25/pCO_2 45.7/pO_2 52.4 on 100% FiO_2. Serum acetaminophen, ethanol and salicylate were not detected. UDS was negative. ECG: sinus rhythm with LBBB. CxR was consistent with right lobe aspiration pneumonia. Head CT and EEG were unremarkable.
Clinical Course: The patient was intubated upon ED arrival and had no further seizures but became progressively more difficult to oxygenate. He remained hypotensive and acidotic, received IVFs, bicarbonate, antibiotics and norepinephrine. On Day 2 he was alert and following commands. He died 35 hours after hospital arrival.
Autopsy Findings: The cause of death was tramadol overdose. The manner of death was suicide. Sutured wounds on the neck and wrist were noted.

Case 688. Acute acetaminophen ingestion: probably responsible.
Scenario/Substances: A 90 y/o female filled an acetaminophen bottle with water and drank the contents. She was found unresponsive with emesis in her mouth. EMS reported a GCS of 4 and administered naloxone without response.
Past Medical History: Depression, breast cancer, hypertension and cerebral aneurysm.
Physical Exam: BP128/74, HR 144, RR 25, T 37 °C, O_2 sat, 95% on bag mask.
Laboratory Data: Na 133,K 3.7,Cl 105,CO_2 16, BUN 36, Cr 1.6, AST 16, ALT 8, lactate 5.1, INR 0.98. Serum acetaminophen 815 mcg/mL. Serum ethanol and salicylate were not detected. UDS was negative.
Clinical Course: Patient was intubated, given a dose of activated charcoal and started on n-acetylcysteine. In the ICU a repeat acetaminophen level was 477. She became progressively acidemic and hypotensive, and required vasopressors. Although her liver enzymes did not rise she did have an NSTEMI and died on Day 5 after an asystolic arrest.
Autopsy Findings: Cause of death: self-medication intoxication. Manner of death: undeterminable.

Case 691. Acute morphine unknown: undoubtedly responsible.
Scenario/Substances: A 15 m/o female, last seen in her normal state 8 hours prior, was found dead in her crib. A large amount of extended family was at home the day before she died. EMS was called, performed CPR, intubated her, and administered epinephrine via an interosseous line.
Past Medical History: Previously healthy; her mother was prescribed 30 mg morphine tablets.
Physical Exam: Apneic, cyanotic, no neurological function. Skin cool with posterior lividity. No signs of trauma

Laboratory Data (Postmortem): Na 139, K 23.6, Cl 108, BUN 13, Cr 0.5, Glu 127. Caffeine positive in blood. Serum methanol, isopropanol and salicylate, codeine and 6-monoacetylmorphine were not detected in blood or urine. Lung tissue culture positive for MRSA and normal upper respiratory flora, blood culture was positive for Coryneforms, CSF: WBCs but no organisms seen, culture no growth. Morphine (aortic blood) 1300 ng/mL, morphine (10 mL of stomach secretions) 2100 ng/mL.
Clinical Course: She was pronounced dead upon ED arrival, 1 h after being found.
Autopsy Findings: No signs of internal injury or disease and anatomically and microscopically normal. Toxicology showed elevated morphine levels with no detectable 6-monoacetylmorphine. Morphine level was consistent with fatal and nonfatal outcomes and ingestion of 3 or 4 3o mg tablets. Cause of death per the ME was acute morphine toxicity, and manner was homicide.

Case 692. Oxycodone, carisoprodol, clonazepam, alprazolam, ethanol, and cleaner (ammonia), laundry (prewash) cleaner (anionic/nonionic), balt salts ingestion: undoubtedly responsible.
Scenario/Substances: A 23 m/o male, playing with his 3 y/o sister, was found apneic by his grandmother on the floor with cleaners, detergents, and bath salts (for bathing).EMS began resuscitation efforts after they found him in cardiac arrest.
Clinical Course: The resuscitative measures continued in the ED but he died shortly after arrival without ROSC.
Autopsy Findings: Post mortem blood: clonazepam 9.2 ng/mL; alprazolam 15.1 ng/mL; oxycodone 838 ng/mL; oxymorphone 20.8 ng/mL; carisoprodol 27.5 mcg/mL; meprobamate 19.8 mcg/mL. The cause of death was acute mixed drug intoxication; ''prescription bottles were found at the scene.''

Case 695. Acute lidocaine ingestion: undoubtedly responsible.
Scenario/Substances: A 15 y/o female sent a suicidal text message and was then found seizing by her parent after a suspected ingestion of 2% viscous lidocaine. During EMS transport she became apneic and asystolic, and was intubated and treated with CPR and epinephrine.
Past Medical History: Depression, post-traumatic stress disorder, and aphthous ulcers; medications included sertraline, diphenhydramine and 2% viscous lidocaine.
Physical Exam: Intubated, in cardiac arrest with seizures. First measurable vital signs: BP 90/60, HR 160.
Laboratory Data: Na 145, K 3.5, Cl 107, HCO_3 6, AG 32,Glu 276, BUN 14, Cr 1.26, Ca 9.5, Ca (ionized) 1.15, bilirubin 4.3,Alk phos 76, ALT 128, AST 117, CK 337. VBG-pH 6.6/pCO_2 91.6.Serum acetaminophen, ethanol and salicylate were not detected. UDS was positive for tricyclic antidepressants. Serum lidocaine was 16.6 mcg/mL.
Clinical Course: Upon transfer to a tertiary medical center she was rigid and posturing. She received midazolam with improvement, and sodium bicarbonate for acidosis. ECG: sinus tachycardia, QRS 80, QTc 438, R-waves in aVR. Patient was placed on continuous EEG monitoring that showed occasional seizures when the midazolam infusion was weaned. At Hour 15 pupils were small and minimally reactive, patient became febrile (T 38 °C). On Day 2, head MRI showed evidence of anoxic injury. She failed extubation on Day 4. By Day 7, she was receiving clonidine for autonomic dysregulation, and baclofen and lorazepam for spasticity. On Day 11, CxR showed increased bibasilar pulmonary opacities and a head CT showed diffuse hypoxic ischemic change of the bilateral cerebral hemispheres and basilar cisterns. Based on the prognosis, the family opted for institution of comfort measures and she died on Day 11.
Autopsy Findings: Not performed.

Case 696. Acute methoxetamine: undoubtedly responsible.
Scenario/Substances: A 24 y/o male was found unresponsive, 12 hours after last being seen, with a package of methoxetamine in the room and a line of a white powder on his desk top. EMS performed CPR with ROSC. Family reported a history of methoxetamine abuse.
Past Medical History: Depression, taking duloxetine 60 mg daily.
Physical Exam: Unresponsive; BP 144/110 (then dropped to 79/41), HR 93, RR 25, T 35.6 °C.
Laboratory Data: K 8.9, Phos 10.6, Cr 3.04, ABG-pH 7.08/pCO_2 58/pO_2 41, CK 47,414, AST 649, ALT 811, Alk phos 166, lipase 83, lactate 9.6. Acetaminophen, ethanol and salicylate were not detected. UDS was positive for THC.
Clinical Course: The patient was intubated and received 4 L of IVFs and vasopressors. A head CT showed cerebellar edema and herniation. The patient received lorazepam for possible seizure activity and was then transferred to a tertiary care center. He developed multiorgan failure, cerebellar infarction and worsening herniation. Neurosurgery examination was consistent with brain death. Based on the prognosis, the family opted for institution of comfort measures and he died within 24 h of hospitalization.
Autopsy Findings: Cause of death: acute methoxetamine intoxication. Manner of death; accidental.

Case 699. Chronic fondaparinux ingestion: probably responsible.
Scenario/Substances: A 67 y/o male on fondaparinux presented with severe posterior epistaxis and hemoptysis.
Past Medical History: Glioblastoma multiforme treated with surgery, chemotherapy, and radiation therapy with progressive left hemiparesis, deep vein thrombosis, and vena cava filter placement. He also had diabetes mellitus and hypertension.
Physical Exam: BP 202/79, HR 150, RR 26, T 37 °C. He presented in respiratory distress, awake but nonverbal and not following commands. His left pupils was 3 mm and

reactive; right pupil was unreactive. Arterial bleeding was noted from his right nares with blood going down the posterior pharynx.
Laboratory Data: Na 140, K 4.3, Cl 102, CO_2 28, Ca 9, Mg 1.7, bilirubin 0.7, AST 60, ALT 116, Hgb 18, WBC 8.9, platelets 248. Coagulation studies were reported to be ''within normal limits.''
Clinical Course: He vomited a large amount of blood and was intubated for respiratory distress. He was given IVFs and had a posterior nasal packing placed on the right. He was administered factor VII and then a left sided nasal packing was placed. He developed T-wave inversions on his ECG and head CT showed a focal area of hemorrhage in the right thalamus. Extensive right hemispheric edema developed with brainstem compression. Based on the prognosis, comfort measures were instituted and he died.
Autopsy Findings: Not available

Case 709. Acute topiramate and ethanol ingestion: undoubtedly responsible.
Scenario/Substances: A 20 y/o female injected a substance called ''Yukon'' while at a party with friends. Friends reported it to be a ''heroin type drug.'' The patient texted a friend that evening stating she didn't feel well. The next day her mother noticed her to be very lethargic and, that evening, found her ''slumped over''. The following morning, the patient was unresponsive and EMS was called. On arrival, EMS thought she was seizing and gave her lorazepam. Her GCS was 3 and she was hypothermic.
Past Medical History: No known history of drug abuse.
Laboratory Data: Hepatic enzymes and bilirubin unremarkable, serum acetaminophen and salicylate were not detected, UDS obtained 2 days post exposure was negative. Another UDS repeated on Day 4 was also negative. Methanol, acetone, and isopropyl were not detected.
Clinical Course: The patient was transferred to a tertiary care center, but remained in metabolic acidosis and hypothermic. She developed hypotension that transiently required IVFs and a vasopressor. She was rewarmed but did not breath over the ventilator; her pupils remained fixed and dilated. Head CT showed diffuse cerebral edema with herniation. BP 108/48, RR 20, T 36.2 °C, O_2 sat 100%. She developed hemodynamic instability and had no blood flow to her brain. She was pronounced dead on Day 6; tissue and organs were donated.
Autopsy Findings: Post-mortem examination revealed severe cerebral edema. Antemortem blood (Day1): ethanol 32 mg/dL, topiramate 51,000 ng/mL (>10 times therapeutic and 2 days after reported injection). The final cause and manner of death were listed as: acute topiramate toxicity; suicide.

Case 754. Acute-on-chronic venlafaxine ingestion: probably responsible.
Scenario/Substances: A 31 y/o female was found confused by EMS after a suspected venlafaxine overdose. She had several pre-hospital seizures and seized again in the ED.
Past Medical History: Schizophrenia, epilepsy, depression, previous suicide attempts.
Physical Exam: She was agitated with mydriasis. In the ICU BP 120/80, HR 137, RR 8, O2 sat 98% on room air, T 37.6 °C.
Laboratory Data: Na 140, K 3.4, Cl 103, CO_2 25, BUN 9, Cr 0.92, Glu 59, AG 12, AST 19, Hgb 11.7, platelet 254,000, WBC 9.9. Serum acetaminophen, ethanol and salicylates were not detected. UDS was negative. An ECG showed normal sinus rhythm and intervals. Head CT and abdominal x-ray were normal. Hour 18 K 5.3, Cr 1.69, Glu 219, lactate 9.3, troponin 0.48. ABG-pH 7.26/pCO_2 28/pO_2 61/HCO_3 13.
Clinical Course: She received lorazepam and phenytoin for repeated seizures but developed VF and cardiac arrest. She was intubated and resuscitated, received norepinephrine and bicarbonate. A hypothermia protocol was initiated. Her post resuscitation rhythm was AF. She developed bradycardia, PEA cardiac arrest, and died 31 hours after ED arrival.
Autopsy Findings: The cause of death was venlafaxine poisoning. The manner of death was suicide.

Case 823. Acute-on-chronic bupropion (extended release) ingestion: undoubtedly responsible.
Scenario/Substances: A 68 y/o female told her husband that she had taken an overdose of her medication (bupropion 300 mg extended release tablets) and cut her wrists 1 hour earlier. A suicide note and empty bottle of bupropion were found.
Past Medical History: Depression with prior suicide attempts, chronic back pain, hypothyroidism.
Laboratory Data: Na 137, K 3.3, Cl 102, CO_2 22, liver and renal function tests were normal. Serum acetaminophen, ethanol and salicylates were not detected. Initial ABG-pH 7.35/pCO_2 39; later the pH was 7.19. ECG showed LBBB, QRS 170, QTc 722.
Clinical Course: On arrival she was responsive to verbal commands, moving all extremities. BP 113/65, HR 90, O2 sat 92%, T 36 °C. She received activated charcoal via nasogastric tube. She became progressively obtunded and hypotensive. She was intubated, resuscitated with 5 liters of IVFs and started on phenylephrine. She had multiple seizures that responded to lorazepam, and received sodium bicarbonate and a 20% intravenous lipid emulsion therapy. Her QRS initially appeared to respond but she developed elevated ST segments and continued widened QRS/QTc. An ECHO revealed a hyperdynamic left ventricular and right heart strain. She had a cardiac arrest that was successfully treated with a transvenous pacemaker. She had multiple cardiac arrests and died.
Autopsy Findings: Anatomic pathology revealed a pericardial effusion, pleural effusions, pulmonary edema and peritoneal effusion. Hospital blood sample (unknown time; thought to have been drawn before intravenous lipid emulsion was given) revealed a bupropion concentration of 285 mcg/L (hydroxybupropion was not checked). Cause of death: drug overdose of bupropion; manner of death: accidental.

Case 853. Acute rifampin ingestion: probably responsible.
Scenario/Substances: A 15 y/o female ingested an unknown amount of rifampin in a suicide attempt 8 h prior to EMS being called.
Physical Exam: Alert and oriented, asymptomatic upon ED arrival. BP 121/58, HR 113, RR 18, T 37.1 °C.
Laboratory Data: Her UDS was negative; acetaminophen and salicylate were not detected. The complete blood count and comprehensive metabolic profile were reportedly normal.
Clinical Course: After arrival she developed a headache, nausea and pruritus. She received IVFs, methylprednisolone, diphenhydramine and ondansetron. Her urine subsequently turned red but on Day 1 she again was asymptomatic with normal vital signs except for tachycardia. Approximately 42 h post-ingestion she was intubated for pulmonary edema. On Day 3 she developed metabolic acidosis and hypotension (systolic BP in the 40 s) that did not respond to epinephrine, milrinone and vasopressin infusions. Intravenous lipid emulsion therapy was given, and norepinephrine and sodium bicarbonate were started. Later that evening the patient went into ventricular tachycardia and received multiple cardioversions. Cardiac arrest continued and she died 64 h post-ingestion.
Autopsy Findings: Not available.

Case 858. Acute tilmicosin parenteral: undoubtedly responsible.
Scenario/Substances: A 57 y/o female was found unresponsive in a barn with a vial of injectable tilmicosin. She was intubated, defibrillated and had CPR performed by EMS prior to ED arrival.
Clinical Course: Future resuscitation efforts in the ED were unsuccessful.
Autopsy Findings: Her right arm had a puncture site with surrounding ecchymosis at the antecubital fossa and multiple small scars on the dorsal forearm. Postmortem examination revealed no evidence of trauma, and tilmicosin was confirmed on postmortem toxicological analysis. Hospital blood showed tilmicosin >100 ng/mL. The cause of death was acute tilmicosin toxicity; manner of death was suicide.

Case 866. Acute (possibly chronic) flecainide ingestion: undoubtedly responsible.
Scenario/Substances: An 18 y/o female intentional ingested 16 flecainide tablets (unknown strength). EMS found her in wide complex PEA, and performed CPR with ACLS during transport.
Clinical Course: In the ED resuscitation efforts continued. She was intubated, received sodium bicarbonate and taken to the catheterization lab for transvenous pacing and IABP placement. These interventions failed at Hour 8 and she had another cardiac arrest secondary to bradycardia. She received IVFs, intravenous lipid emulsion (bolus and maintenance infusion), vasopressors (epinephrine and dobutamine), sodium bicarbonate (infusion, and calcium. After ROSC, she was placed on ECMO and vasopressors continued for hypotension. At Hour 14 she had no neurologic activity and necrotic bowel secondary to abdominal compartment syndrome. She died at Hour 28 from a respiratory arrest.
Autopsy Findings: Not available.

Case 928. Acute-on-chronic amlodipine ingestion: undoubtedly responsible.
Scenario/Substances: A 53 y/o male admitted to taking 80 amlodipine 10 mg tablets in a suicide attempt.
Past Medical History: Depression, schizophrenia, hypertension.
Physical Exam: Awake and alert on arrival but became agitated and confused within 1 h. BP 70/40, HR 95, RR 15, O2 sat 98% on 10 L O_2, T 37 °C.
Laboratory Data: Na 138, K 3.3, Cl 104, HCO_3 22, BUN 15, Cr 1.3, Glu 164, AG 12, Ca 9.4, AST 95, ALT 75, albumin 3.3, Alk phos 135, total bilirubin 0.8, CK 287, lactate 1.4, troponin I 0.0, Hgb14.3, Hct 41.8, platelets 125, WBC 7.16, PT 10.5, PTT 26.3. VBG -pH 7.42/pCO_2 32/pO_2 51/HCO_3 20, COHb 0.4, MetHgb 0.5. Serum acetaminophen, ethanol and salicylates were not detected. Serum amlodipine 0.39 mg/L.
Clinical Course: In the ED, the patient received IVFs, calcium, norepinephrine, dopamine, insulin and intravenous lipid emulsion therapy. On Day 2, methylene blue, vasopressin and epinephrine were added. The patient had exchange transfusions, CRRT and ECMO was started. An ABG (on ECMO) showed a pH of 6.98. The patient was resuscitated after a cardiac arrest but based on the prognosis, the family opted for institution of comfort measures and he died 45 hours after arrival.
Autopsy Findings: Cause of death was anoxic encephalopathy following cardiac arrest due to amlodipine poisoning. The manner of death was suicide.

Case 934. Acute amlodipine ingestion: undoubtedly responsible.
Scenario/Substances: A 54 y/o female took 15 amlodipine tablets of unknown strength.
Physical Exam: Patient was asymptomatic 20 min following the ingestion.
Laboratory Data: Initial Glu 200. At 6 h later: K 3.2, Glu 443. At 14 h later: pH was 6.88/HCO_3 12. There was no AG; Cr 2.8. Her LVEF was 65%.
Clinical Course: Within 1 h of ED arrival her BP fell to 70/30 and then 66/32. Her mentation remained normal. She was resuscitated with calcium gluconate, 6 L of IVFs, norepinephrine, insulin infusion, dextrose and intravenous lipid emulsion therapy. She was intubated 6 h later. She required bicarbonate and increased vasopressors: norepinephrine, vasopressin, dopamine and phenylephrine. Methylene blue was also administered. On Day 2 an IABP was inserted without improvement. Based on the prognosis, the family opted for institution of comfort measures and she died 31 hours post ingestion.
Autopsy Findings: Not available.

Case 957. Acute propranolol ingestion: undoubtedly responsible.
Scenario/Substances: A 59 y/o female presented to the ED shortly after ingesting 55 of her propranolol 20 mg tablets. She received 25 g of activated charcoal by EMS.
Past Medical History: hypertension, diabetes mellitus, depression, prior suicide attempt 2 days earlier.
Physical Exam: BP 158/128, HR 70, RR 16, O_2 sat 98%. She was anxious and ill-appearing; diaphoretic and had delayed capillary refill.
Laboratory Data: Na 141, K 4.6, Cl 107, CO_2 22.8, BUN 11, Cr 1.4, Glu 210 Alk phos 102, AST 28, ALT 38, PT 14, CK 80, WBC 12.4, Hgb 11.8, HCT 38.6, platelets 399. Acetaminophen, ethanol and salicylate were not detected. ABG-pH 7.22/pCO_2 43/pO_2 55/HCO_3 18/BE −10. CxR showed cardiomegaly and a right upper lobe infiltrate. ECG showed sinus bradycardia at 33, QRS 102, QTc 375.
Clinical Course: She developed bradycardia and respiratory distress shortly after ED arrival. She was intubated and then had an unmeasurable blood pressure. A short course of CPR with epinephrine obtained ROSC with a HR in the 30 s. Despite 3 boluses of glucagon, and dopamine and epinephrine infusions, she remained hypotensive and bradycardic. She did not respond to transcutaneous pacing. The patient had >8 episodes of PEA/asystole which responded to resuscitation efforts. She was transferred to the catheterization lab for placement of a transvenous pacer when her HR dropped to the 20 s and BP blood pressure was unmeasurable. During CPR a ventricular pacing wire was placed with ventricular capture; however, there was no perfusion. Despite CPR and several rounds of epinephrine and atropine, she died within several hours of ED arrival.
Autopsy Findings: Patient died as a result of propranolol intoxication, by manner of suicide.

Case 1008. Acute propafenone ingestion: undoubtedly responsible.
Scenario/Substances: A 77 y/o male intentionally ingested 7 of his propafenone 150 mg tabs.
Past Medical History: Cardiac dysrhythmia.
Physical Exam: On arrival the patient was alert, oriented and asymptomatic. BP 120/76, HR 67, RR 12, O2 sat 95%, T 36.4 °C.
Laboratory Data: Initial ECG revealed a QRS of 96. Acetaminophen was not detected, electrolytes were described as normal. UDS was positive for opioids.
Clinical Course: Two h after arrival he had several episodes of diarrhea and a near syncopal episode. A repeat ECG showed a widened QRS at 156 and a sodium bicarbonate infusion was started. About 4 h after arrival he had a seizure, cardiac arrest (QRS 200) and died.
Autopsy Findings: Not available.

Case 1049. Acute benzonatate ingestion: undoubtedly responsible.
Scenario/Substances: A 12 y/o female was found unresponsive, pulseless and in VF after ingesting an unknown amount of benzonatate 100 mg tablets. The time of ingestion was estimated to be 1 h prior to ED arrival.
Past Medical History: Previous suicide attempt.
Physical Exam: Unresponsive and intubated. BP 110/74, HR 150, RR 22.
Laboratory Data: Na 127, AST 1,158, ALT 959, Alk phos 486. Acetaminophen was not detected. ECG showed tachycardia with non-specific ST changes, QRS 70, QTc 440. Head CT showed anoxic injury with cerebral edema. On Day 2 an ABG-pH 6.8/pCO_2 38/pO_2 204/HCO_3 7.5/BE −25.
Clinical Course: She was intubated and defibrillated for narrow complex PEA upon ED arrival. She received IVFs and intravenous lipid emulsion therapy with an initial and repeat (2 h later) boluses. Vital signs 10 h later: BP 154/98, HR 127, RR 22, T 35 °C. She remained unresponsive with occasional spontaneous breaths. She was started on dopamine and epinephrine for hypotension (72/43) and n-acetylcysteine for transaminitis. She had minimal urine output. A repeat brain CT showed multiple basal ganglia and cerebellar infarcts with worsening edema. She had another cardiac arrested and died 33 h after presentation.
Autopsy Findings: Not available.

Case 1050. Acute benzonatate ingestion: undoubtedly responsible.
Scenario/Substances: A 12 y/o female, in psychological distress for being bullied, took #100 tablets of 100 mg benzonatate capsules in a suicide attempt. Almost immediately after telling her mother what she had done, she collapsed and seized. EMS found her unresponsive and intubated her. She coded en route to the ED but regained a rhythm with cardioversion.
Physical Exam: In the ED: BP 124/90, HR 164, O_2 sat 87% (being bagged). Her skin was cold, T 37 °C.
Laboratory Data: Initial Glu 277, ABG-pH 6.9/pCO_2 14/BE −29.
Clinical Course: In the ED she was intubated and given activated charcoal via NG tube and then transferred to a tertiary care center's PICU. Approximately 12 hours after initial presentation: BP 129/99, HR 182, T 38.6 °C. She received IVF and calcium for hypocalcemia (Ca 6.6). Her pH normalized; AST 160, ALT 90, and CK 4,671. She remained unresponsive on the ventilator with midazolam for sedation. On Day 2 her systolic BP dropped into the 60's requiring norepinephrine and dopamine. She developed posturing and started coughing pink tinged sputum. On Day 3 she was started on levetiracetam and valproic acid for generalized myoclonic movements. Her neurologic exam revealed good brain stem function with suppressed cortical function. On Day 4, she was started on tube feedings, but was noted to have a Na of 166. EEG showed absent cortical function. She continued on fluids, anticonvulsants, and received sodium acetate and potassium phosphate. CxR showed increased left lower lobe atelectasis. On Day 5 she was suspected to have herniated. Her pupils were fixed and dilated, and she lost respiratory drive, gag and corneal reflexes. The

patient was pronounced dead and the family consented to organ donation.
Autopsy Findings: Not performed.

Case 1058. Acute energy product, other ingestion: undoubtedly responsible.
Scenario/Substances: A 22 y/o male presented to the ED 6 h after ingesting 800 mg of dinitrophenol as a body building supplement.
Physical Exam: He presented with diaphoresis, hyperthermia, hyperventilation and palpitations. BP 127/58, HR 130, RR 30, T 40.5 °C.
Laboratory Data: UDS was negative.
Clinical Course: The patient was given IVFs and active cooling. Several hours later BP 129/58, HR 103, RR 28 and T 37.2 °C. About 12 h after presentation he went into cardiac arrest and died.
Autopsy Findings: The cause of death was 2,4 dinitrophenol toxicity (63 mg/L from antemortem blood) complicated by pre-existing cardiomegaly. The manner of death was accidental.

Case 1060. Acute sodium ingestion: probably responsible.
Scenario/Substances: A 5 y/o male was brought to ED by his mother after he had seizure-like movements.
Past Medical History: Failure to thrive with gastric tube placement. The mother only had previously treated him with holistic medications. Six days PTA the patient had a T 40 °C, saw his pediatrician 4 days PTA and returned home without interventions being recommended. At 3 days PTA he was seen in an ED for twitching movements but had a normal head CT and EEG, and he was discharged home.
Clinical Course: His mother brought him to another ED for the abnormal movements where he was admitted. Initial laboratories were unremarkable. On Day 2 he seized while in the hospital, was intubated and received an anticonvulsant. Initial Na 144, K 3.2, Cl 114, $CO_2$21, BUN 6, Cr 0.37, Glu 120; at 5.9 hours Na 182, Cl 160, $CO_2$9, Glu 271; at 6.2 hours Na 178, Cl 155, $CO_2$12, Glu 246.He was transferred to a tertiary care center where over the next 2 days his metabolic status improved. On Day 3 he was awake and alert, and extubated, but shortly after he suddenly decompensated and was found to have brain herniation. On Day 4 he was declared brain dead. The case was the subject of a criminal investigation.
Autopsy Findings: Cause of death was determined to be sodium intoxication.

Case 1063. Acute on chronic loperamide ingestion: undoubtedly responsible.
Scenario/Substances: A 25 y/o female presented to the ED with a 1 day history of nausea, emesis and dizziness. She later admitted to abusing 30–60 loperamide tablets at time for 2 years for its opiate-like effects to help with withdrawal from oxycodone with acetaminophen.
Past Medical History: She had three admissions in the 3.5 months prior to this admission with symptoms ranging from chronic constipation and abdominal pain to bradycardia, syncope, hypotension, QT prolongation and VT. Echocardiography showed LVEF deteriorating from 50–54% to <20% with severe global LV and RV hypokinesis. Treatment from prior admissions included sodium bicarbonate, amiodarone, intravenous lipid emulsion and an implantable cardioverter-defibrillator. Loperamide use was confirmed on the last admission with a blood loperamide concentration of 35 ng/mL.
Clinical Course: On admission she was oriented and appropriate; BP 65/33. HR 72, RR 12, O2 sat 98% on room air, T 37 °C. Her examination was remarkable for horizontal nystagmus; abdomen was soft, non-tender with bowel sounds. Na 138, K 4.7, Cl 103, CO_2 25, BUN 18, Cr 2.0, Glu 117, Ca 9.3, Mg 2.0, phos 5.8, AST 21, ALT 13, Free T4 1.1 ng/dL, WBC 9.3, Lactate 3.1, brain natriuretic peptide 505 pg/mL. Serum acetaminophen, ethanol, ethylene glycol, methanol and salicylate were not detected. UDS was positive for benzodiazepines and opiates. She was given promethazine and became too drowsy to offer a reliable history. Her HR was in the 30's and she experienced refractory hypotension despite 2 liters of IV NS. She was intubated and a central line was placed. She received atropine, sodium bicarbonate and dopamine. At Hour 5: BP 65/48 on dopamine 20 mcg/kg/min and vasopressin at 2 u/min. She received 500 mL of 20% intravenous lipid emulsion without response. At Hour 15 she was placed on ECMO, but continued to be profoundly hypotensive. Based on the prognosis, the family opted for institution of comfort measures and she died 22 h after ED arrival.
Autopsy Findings: The forensic pathologist reported that death was due to complications of loperamide intoxication. The manner of death was accident.

Case 1065. Unknown, loperamide ingestion: undoubtedly responsible.
Scenario/Substances: 27 y/o male was found unresponsive at home by his wife. EMS found him in cardiac arrest; CPR was commenced with ROSC.
Past Medical History: Bipolar disorder, narcotic drug abuse, seizure disorder.
Laboratory Data: CO_2 17, Cr 2.3, Glu 38, AST 584, ALT 663, lactate 16.4, AG 23, OG 23, acetaminophen 4 mg/dL. Prior to intubation: ABG-pH 6.82/pCO_2 85/pO_2 100/HCO_3, 14. Repeat ABG (after intubation) pH 7.07/pCO_2 51/pO_2 117/HCO_3 14. UDS was positive for THC.
Clinical Course: In the ED he was intubated and received IVFs, norepinephrine, epinephrine and bicarbonate infusions. BP 99/76, HR 107, RR 26, O2 sat 100% (FiO_2 100%). Brain imaging revealed cerebral edema. On Day 2 his EEG was ''flat'' and the patient died.
Autopsy Findings: Antemortem blood (14 h after admission); loperamide 0.013 mg/L, liver 1.4 mg/kg). ME determined the cause of death to be due to loperamide toxicity; manner of death was accidental.

Case 1071. Chronic androgen unknown: contributory.
Scenario/Substances: A 35 y/o male body builder with a history of abusing anabolic steroids had increasing shortness of breath for two days. He was intubated by EMS for respiratory distress.
Physical Exam: Intubated and paralyzed. BP 211/79, HR 119, RR 14, O2 sat 91%, T 37 °C.
Laboratory Data: Na 128, K 8.0, Cr 1.26, AG 12, CK 7,969, Glu 264, AST 194, ALT 242, Hgb 19.4, Hct 57, lactate 3.9, UDS was negative. ABG-pH 7.30/pCO_2 46/pO_2 72. Serial CPKs eventually peaked at >50,000.
Clinical Course: The patient was found to have pulmonary edema and new heart failure with LVEF of 15%. Over the next 24 hours he developed bilateral upper extremity edema and blistering; pulses could not be detected with ultrasound. He developed rhabdomyolysis and acute kidney injury (Cr > 2). The patient was taken to surgery for bilateral upper extremity fasciotomies, and then developed shock (hypotension and tachycardia) requiring vasopressors. The patient's CK was trending up with worsening renal and respiratory failure. Hemodialysis was started and he returned to the OR for lower extremity fasciotomies and left hand amputation. The patient remained critical with CK continuing to trend up, progressive renal failure and ventilator requirements. Due to the extent of his injury, the surgical team suggested amputation of all 4 extremities. Based on the prognosis, the family opted for institution of comfort measures and he died on Day 3.
Autopsy Findings: Autopsy was not performed.

Case 1094. Acute glycine transvaginal: undoubtedly responsible.
Scenario/Substances: A 39 y/o female underwent elective hysteroscopy and myomectomy with general anesthesia. During the procedure, glycine 1.5% solution was used for irrigation transvaginally. The OR records documented 6 L of glycine irrigation in and out. There was no observed bradycardia, hypotension, hypoxia, or cyanosis. Immediately after the procedure she was alert and oriented but then became hypotensive, altered and developed hyponatremia.
Laboratory Data: Pre-op: Na 138, K 3.5, Cl 101, $CO_2$31, BUN 13, Cr 0.6. Post-op: Na 117, K 3,3, Cl 81, $CO_2$25, BUN 18, Glu 151,WBC 13.2, Hgb 13.6, Hct 39, platelets 194, ABG-pH 7.37/$pCO_2$44/$pO_2$74/$HCO_3$24. Head CT showed cerebral edema.
Clinical Course: Within 2 h she developed respiratory problems and was put on BiPAP and given furosemide. Soon after her mental status deteriorated, she developed nausea and vomiting, was intubated and started on mannitol. Her cardiovascular status worsened and she required norepinephrine. Following brain death testing she was declared brain dead on Day 12.
Autopsy Findings: Not performed.

Case 1095. Acute succinylcholine parenteral: undoubtedly responsible.
Scenario/Substances: A 43 y/o female nurse was found unresponsive and asystolic in her bedroom. She was last seen 30 min prior. Empty bottles of succinylcholine and a syringe labeled succinylcholine were found in her room. She was resuscitated by EMS for 45 min with ROSC.
Past Medical History: Depression.
Physical Exam: Comatose with no evidence of trauma. Her pupils were 5 mm and fixed; she had no oculocephalic, cough or gag response. There were fresh needle marks in her right arm.
Laboratory Data: ABG- pH 7.18/PCO_2 53/PO_2 72/HCO_3 19. Ethanol was 11 mg/dL; acetaminophen and salicylate were not detected. UDS was positive for benzodiazepines. Na 142, K 4.8, Cl 102, CO_2 20, BUN 11, Cr 1.4, Glu 345, AG 20, lactate 5.3, AST 865, ALT 624. An ECG showed sinus tachycardia with nonspecific abnormalities.
Clinical Course: In the ED she was hypotensive (systolic blood pressure in the 70 s) and bradycardic (weak HR in the 40 s), She received IVFs and norepinephrine. An extraglottic device was exchanged for an ETT. She had evidence of aspiration and was started on antibiotics. She remained comatose; a hypothermia protocol was initiated. Progressive worsening of gas exchange was consistent with ARDS. Follow-up neuroimaging revealed diffuse cerebral edema, global anoxic injury and uncal herniation. Transcutaneous Doppler revealed no cerebral blood flow. The patient was declared brain dead and died within 30 h of presentation.
Autopsy Findings: Not available. A police search of her home found several unmarked syringes and the following medications: phenylephrine, succinylcholine, cefazolin, lidocaine, propofol, neostigmine, ephedrine, rocuronium, midazolam, fentanyl, glycopyrrolate, promethazine, hydromorphone, citalopram, ketamine, bupivacaine, alprazolam, armodafinil and zolpidem.

Case 1111. Unknown, carisoprodol and paroxetine ingestion: undoubtedly responsible.
Scenario/Substances: A 55 y/o female was found unresponsive by her husband when she did not come to bed as expected. EMS was called and administered naloxone with no effect. They noted her husband's carisoprodol tablets lying near the patient.
Physical Exam: Unresponsive, hypertensive (systolic BP 163); tachycardic, seizure activity.
Laboratory Data: Serum acetaminophen, ethanol and salicylate were not detected.
Clinical Course: In the ED she received lorazepam for seizure activity. O_2 sat was 89% and she was intubated. HR 125; BP 146/89. She was transferred to the ICU where she developed hypotension requiring dopamine and norepinephrine. Based on the prognosis, comfort measures were instituted and she died 1 hour later (~36 Hours).
Autopsy Findings: An autopsy was not performed, but toxicology testing on admission blood showed carisoprodol 72.2 mcg/ml and meprobamate 7.29 mcg/ml.

Case 1158. Acute propofol parenteral: undoubtedly responsible.
Scenario/Substances: A 51 y/o male was found unresponsive with 4 empty vials of propofol, needles and syringes around him. EMS found him unresponsive with respiratory depression and considerable blood loss at the scene.
Laboratory Data: ABG-pH 6.66/$pCO_2$32/$pO_2$191, lactate 15.9. Subsequent VBG-pH 6.55/$pCO_2$68/$pO_2$20, lactate >20, Na 139, K 5.2, CL 108,CO_2 9, BUN 31,Cr 1.6, Glu 164, WBC 21.7, Hgb: 2.3, Hct 11.2, platelets 95, D-dimer: >20 mcg/ml, fibrinogen <60, PT > 90, INR > 11.0.
Clinical Course: On ED arrival he was bradycardic and then became asystolic. He was intubated and treated with CPR and ACLS including multiple rounds of epinephrine and bicarbonate. After nearly 1.5 hours, he had ROSC and was started on epinephrine infusion to maintain HR and BP. He remained unresponsive with fixed and dilated pupils, and was bleeding from all IV sites. He received IVFs and blood products without improvement. Approximately 3 hours ED arrival he developed PEA followed by asystole. Resuscitation efforts were unsuccessful; a bedside ultrasound showed no cardiac wall motion and he died.
Autopsy Findings: Serum propofol concentration (from hospital blood) was 0.61 mcg/mL. Cause of death: complications of propofol toxicity. Manner of death: accident.

Case 1200. Acute lysergic acid diethylamide (LSD) and methylenedioxymethamphetamine (MDMA) ingestion: probably responsible.
Scenario/Substances: A 17 y/o male reportedly took 30 hits of LSD and possibly MDMA while camping with friends. He was found vomiting blood and seized multiple times. His friends who also used the drugs were asymptomatic.
Physical Exam: He presented to the ED pulseless and apneic.
Laboratory Data: Na 139, K 5.0, Cl 106, CO_2 18, BUN 21, Cr 1.50, Glu 235, AG 15, AST 101, ALT 50. Serum acetaminophen and salicylate not detected. UDS positive for THC. Repeat labs: CO_2 14, BUN 33, Cr 2.7, Glu 478, Lactate 9.7, AST 881. ABG-pH 7.28/pCO_2 36.5/pO_2 68.4.
Clinical Course: CPR was performed for 25 minutes, a pulse and blood pressure was established after epinephrine was administered. He was intubated but had recurrent seizures. He received 8 mg of midazolam without noticeable improvement. After resuscitation his systolic BP improved from 78 to 172/81, HR 124. ECG showed peaked T-waves. He was transferred to a tertiary care center where a hypothermia protocol was initiated and sodium bicarbonate was infused. BP 120/80, HR 80, RR 24 (ventilated), O2 sat 100% (60% FIO_2), T 35.3 °C. A head CT revealed cerebral edema with poor brain perfusion. On Day 3 he remained unresponsive (off sedation) with slower wave forms on EEG, and required continued epinephrine. Later that evening he experienced brain herniation and died on Day 5. His organs were donated.
Autopsy Findings: Not available.

Case 1218. Acute-on-chronic, amphetamine (hallucinogenic) ingestion: undoubtedly responsible.
Scenario/Substances: A 20 y/o male collapsed at a rave and had a witnessed seizure. His sibling reported that he had taken ''Molly.''
Physical Exam: Intubated and unresponsive; pupils 5 mm and fixed bilaterally. Hypotensive, HR 160, T 45 °C.
Laboratory Data: K 6.9, Cr 2.4, CK 1,312. On ABG-pH 7.25/pCO_2 23/pO_2 138/BE −9.1; lactate 8.4, troponin-I 18.8, AST 37, ALT 23, Alk phos 41, PT 83.7, PTT 137.0. Acetaminophen, ethanol and salicylates not detected. UDS was negative.
Clinical Course: The patient received 15 mg of midazolam and was intubated. He received IVFs and multiple doses of diazepam and lorazepam, and then started on a midazolam infusion. The patient was cooled and became normothermic within 1 h. Norepinephrine was started for persistent hypotension; albuterol, insulin/dextrose, calcium and sodium bicarbonate were given for hyperkalemia. He started to bleed from his orogastric tube and was thought to be in DIC. He was transfused with RBCs, FFP, platelets and cryoprecipitate. His pH decreased to 7.1 and he developed wide complex tachycardia and PEA. Despite resuscitation efforts for 35 minutes he died less than 4 h after admission to the hospital.
Autopsy Findings: Not available.

Case 1223. Unknown, methamphetamine ingestion: undoubtedly responsible.
Scenario/Substances: A 21 y/o female abused an unknown amount of methamphetamine over several days before becoming unresponsive. Her boyfriend found her unconscious with reported seizure activity. EMS noted a GCS of 3 and dilated pupils. She received midazolam and was intubated prior to ED arrival.
Past Medical History: Depression, illicit drug abuse.
Physical Exam: Intubated and sedated; pupils 5 mm and sluggish. BP 113/54, HR 141, RR 30 and T 40 °C.
Laboratory Data: Initial ABG-pH 7.29/pCO_2 33/pO_2 316/HCO_3 16.2/BE −9; repeat ABG-pH 7.01/pCO_2 68/pO_2 59/HCO_3 16.3/BE −14.8. WBC 7.2, Hgb 13.9, Hct 41, platelets 62, CK 17,154 (and then 22,057), PT 16.5, PTT 25.8. Serum Na 148, K 4.0, Cl 120, CO_2 19, Glu 61 (then 31 and 145), AG 9, BUN 20, Cr 2.9 (and then 4.6), AST 491, ALT 87, lactate 2.5. At the second facility an EKG showed sinus tachycardia, and her UDS was positive for benzodiazepine, THC, methamphetamine and tricyclic antidepressants.
Clinical Course: The patient was sedated with propofol and lorazepam. She developed acute renal failure and remained anuric despite IVFs. The patient was transferred to a tertiary care center 6 h later where she became hypotensive and was started on vasopressors. She received

dextrose for hypoglycemia but had worsening metabolic acidosis and rhabdomyolysis. A bicarbonate infusion was started and hemodialysis was planned. A head CT was negative but her EEG showed ''severe encephalopathy.'' She became hypotensive (75/25) and tachycardic (156), and received norepinephrine, phenylephrine and vasopressin. Antibiotics were started for suspected aspiration pneumonia. At 14 h after presentation she went into PEA but was resuscitated with CPR and ACLS interventions. An epinephrine drip was added to her other vasopressors. Based on the prognosis, the family opted for institution of comfort measures. She had another cardiac arrest and died 17 h after presentation.
Autopsy Findings: Cause of death: toxic effects of methamphetamine. Serum methamphetamine concentration was 12.53 mg/L and amphetamine was 0.32 mg/L.

Case 1224. Acute methylenedioxymethamphetamine (MDMA) ingestion: undoubtedly responsible.
Scenario/Substances: A 21 y/o female concert goer took an unknown amount of ''Molly'' (MDMA) and alcohol and then reported a headache to her friend. She was altered on arrival to the medical tent, and then had a seizure.
Physical Exam: In the ED he continued to seize, pupils were unequal (left 7mm; right 4 mm) and sluggish. BP 132/56, HR 70, and later BP 93/50 and HR 115. Later her pupils were fixed and dilated; she had minimal response to painful stimuli.
Laboratory Data: Na 121, K 2.9, Cl 89, CO_2 20, BUN 7, Cr 0.6, Glu 174, Ca 8.0, Mg 1.3, ABG- pH 7.25/pCO_2 47.5/pO_2 298/HCO_3 20.8/BE 6, lactate 1.04, AST 27, ALT 20, serum Osm 262, Troponin negative, CK 236. Serum acetaminophen, ethanol and salicylate were not detected. UDS positive for benzodiazepines. Head CT showed diffuse cerebral edema with effacement of the cerebral sulci, subarachnoid cisterns and the 4th ventricle.
Clinical Course: The patient was given midazolam for clonic activity, intubated and admitted to the ICU. After hyponatremia (Na 121) was determined she was given hypertonic saline (250 mL bolus and an infusion). Sodium increased to 174 about 22 hours later. She remained unresponsive and required norepinephrine, phenylephrine and vasopressin for hypotension. Brainstem reflexes were absent, but patient had flexion of her upper and lower extremities to noxious stimulation. She was started on mannitol and taken to the OR for posterior fossa decompression, but showed no improvement in neurologic function. The patient had 2 brain death exams and was pronounced dead on Day 2.
Autopsy Findings: Blood MDMA was 460 ng/ml; 3, 4-methylenedioxyamphetamine (MDA) was 16 ng/ml; midazolam was 34 ng/ml. Patient ''died of complications of Ecstasy intoxication which included associated hyponatremia. The level of Ecstasy observed in the postmortem analysis is not considered within fatal limits, however the low sodium level can result in brain swelling producing coma and death.''

Case 1238. Acute methamphetamine and marijuana exposure: undoubtedly responsible.
Scenario/Substances: A 23 y/o male was taken to an ED after being found unresponsive at a friend's home.
Past Medical History: Drug abuse for the previous month.
Physical Exam: On arrival to the ED he was hyperthermic (rectal T41.7 °C) with seizure-like activity.
Laboratory Data: Na 146, K 6.5, Cr, 1.8, Glu 53, WBC 14.8, troponin 0.32, Serum acetaminophen and salicylate were not detected. UDS positive for THC and methamphetamine.
Clinical Course: He was transferred to a tertiary care center where he received naloxone, lorazepam and dantrolene for seizure activity. He then had a cardiac arrest and CPR was started. He received atropine, calcium, sodium bicarbonate, and epinephrine with ROSC. He then received 4 L of NS and was actively cooled with a cooling blanket and ice packs. He became hyperglycemic (Glu 500) and then died, 3.5 H, after a second cardiac arrest.
Autopsy Findings: Post mortem blood: methamphetamine 8,036 ng/ml; amphetamine 413 ng/ml; lorazepam 18.5 ng/ml; THC-COOH 6.9 ng/ml. Post mortem urine: methamphetamine >10,000 ng/ml; amphetamine >10,000 ng/ml; THC-COOH 62 ng/ml. Autopsy showed pulmonary edema/congestion and mild early cerebral edema. Cause of death was methamphetamine toxicity.

Case 1257. Acute amphetamine (hallucinogenic) ingestion: undoubtedly responsible.
Scenario/Substances: A 27 y/o male was found delirious at an amusement park and reported taking ''Molly powder.''
Physical Exam: He was anxious, tremulous and sweaty before he experienced a cardiac arrest. BP 155/96, HR 188, RR 26, O_2 sat 98%, T 42.5 °C. In the ICU, systolic BP 30 and HR 120.
Laboratory Data: Na 146, K 5, Cl 107, Glu 110, BUN 16, Cr 1.58, AST 27, CK 320, AG 15, lactate 9.5, WBC 12, Hgb 16.9, platelets 455. Serum acetaminophen, ethanol and salicylates were not detected. Hour 7: Na 160, K 8.0, Cl 99, CO_2 24, BUN 19, Cr 3.0, AST 3,273, ALT 3,359, CK > 20,000. CxR and ECHO were unremarkable. An EEG showed diffuse slowing but no seizure activity.
Clinical Course: He was intubated and sedated but remained hypotensive despite receiving dopamine, norepinephrine, epinephrine, phenylephrine and vasopressin. He was therapeutically cooled but had repeated cardiac arrests and died 8 hours after arrival.
Autopsy Findings: The cause of death was MDMA toxicity. The manner was accidental.

Case 1277. Acute amphetamine and benzodiazepine ingestion: undoubtedly responsible.
Scenario/Substances: A 31 y/o male was incarcerated for possession of drug paraphernalia and suspected to have swallowed a packet of methamphetamine. He was found 48 hours later unresponsive, sweating, and having a possible seizure. He was taken from jail to an ED.

Laboratory Data: ABG-pH 7.0/pCO_2 86/pO_2 118, Hgb 14, WBC 10.5, platelets 243, AST 1,297, ALT 49, CK 8,000, Cr 2.18. UDS positive for benzodiazepines and amphetamines.
Clinical Course: On arrival in the ED, the patient was in acute respiratory failure and asystolic arrest. Post resuscitation he was tachycardic (HR 130) and received the hospital's hypothermia protocol including fentanyl, midazolam and vecuronium. His pupils were 3 mm and poorly reactive. He was noted to have rhabdomyolysis and DIC. Repeat ABG-pH 7.46/pCO_2 22, lactate 4.1, Na 141, K 3.1, Cl 112, CO_2 20, Glu 121, BUN 27, Cr 1.5, Ca 7.2, Hgb 10, WBC 1.8, platelets 20, AST 1,945, ALT 347, CK 111,000. He received antibiotics, IVFs, dextrose, potassium, calcium, and a platelet infusion. At 18 Hours: BP 132/82, HR 98, O2 sat 100%. The rewarming protocol was completed at 48 Hours but the patient was not responsive and not moving off sedation. Urine output ceased and became edematous. The patient died at 72 Hours.
Autopsy Findings: Toxicology testing on hospital admission blood: methamphetamine 9,796 ng/ml; amphetamine 262 ng/ml. Methamphetamine was found in his jail cell and cellophane was found in the gastric lumen. Cause of death was acute methamphetamine intoxication.

Case 1330. Acute methamphetamine ingestion: undoubtedly responsible.
Scenario/Substances: A 46 y/o female and her husband were stopped by police while driving in their car. While in custody she became altered with ''shaking extremities'', and was transported to an ED 4 hours later. Her husband later disclosed that she ingested approximately 1 gram of methamphetamine immediately prior to the traffic stop.
Clinical Course: In the ED, she was uncooperative and difficult to examine. HR 148, BP 96/52, T 38.2 °C. Initial heart rhythm was VT, and cardiac arrest ensued shortly after arrival. She was intubated and given ACLS with ROSC. Cooling measures were not successful, and temperature rose to 39.4 °C.. Terminal cardiac arrest occurred at about11 h after ingestion.
Autopsy Findings: Antemortem blood: methamphetamine >4 mcg/L, amphetamine 0.14 mcg/L. Postmortem femoral blood: methamphetamine 6.7 mcg/L, amphetamine 0.29 mcg/L.

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's (13) or Dart (14).

$\sim$ = 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]
Base Excess	= [−2 to + 2 mmol/L]
ACLS	= advanced cardiac life support, protocol for the provision of cardiac resuscitation
ADHD	= attention deficit hyperactivity disorder
AF	= atrial fibrillation
AG	= anion gap Na – (Cl + HCO3) [12 ± 4 mEq/L or mmol/L]
AICD	= automatic implanted cardiodefibrillator
Alk phos	= alkaline phosphatase [13–100] U/L
ALT	= Alanine aminotransferase [7–41] U/L = (SGPT)
AMA	= against medical advice
Ammonia	= [25–80] mcg/dL = [15–47] mcmol/L
amp	= ampoule
APLS	= advanced pediatric life support, protocol for the provision of cardiac resuscitation
ARDS	= acute respiratory distress syndrome
AST	= Aspartate aminotransferase [12–38] U/L = (SGOT)
AV block	= atrio-ventricular block
BAL	= British anti-Lewisite
BE	= base excess, mmol/L
Bicarbonate	= [22–26] mmol/L
bili (direct)	= direct bilirubin [0.1, 0.4] mg/dL
bili (indirect)	= indirect bilirubin [0.2, 0.9] mg/dL
Bilirubin	= total [0.3–1.3] mg/dL, direct [0.1, 0.4] mg/dL, indirect [0.2, 0.9] mg/dL
BiPAP	= bilevel positive airway pressure, pressure support with 2 levels of continuous positive airway pressure
BLQ	= below the limit of quantitation
BMI	= body mass index
BP	= Blood Pressure, systolic/diastolic, (Torr)
BPH	= benign prostatic hypertrophy
BUN	= see Urea nitrogen
C	= degrees Centigrade
Ca (ionized)	= ionized calcium, [4.5–5.6] mg/dL
Ca	= calcium, [8.7–10.2] mg/dL
CABG	= coronary artery bypass graft
CAD	= coronary artery disease
Carbon Dioxide	= CO_2 [22–26] mmol/L
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] = 0–4.0%]

Fraction of total CK activity [0–0.04	
Cl	= chloride [102–109] mmol/L
CNS	= central nervous system
CO_2	= Carbon Dioxide Serum or Plasma [22–26] mmol/L
COHb	= carboxyhemoglobin (RR < 3%)
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
CxR	= chest radiograph, chest xray
D10W	= 10% dextrose in water
D50W	= 50% dextrose in water
D5NS	= 5% dextrose in normal saline
D5W	= 5% dextrose in water
Day	= when capitalized, Day = hospital day, i.e., days since admission to the initial hospital for this exposure
DIC	= disseminated intravascular coagulation
DNR	= do not resuscitate
Dx	= diagnosis
ECG	= electrocardiogram (EKG),
leads	= I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6
ECHO	= echocardiogram
ECMO	= extracorporeal membrane oxygenation
ED	= emergency department, in these abstracts refers to the initial health care facility
EDDP	= principal methadone metabolite, 2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine
EEG	= electroencephalogram
EF	= ejection fraction
ELISA	= enzyme-linked immunosorbent assay
EMS	= emergency medical services, paramedics, the first responders
ER	= extended release (sustained release)
ETT	= endotracheal tube
FFP	= fresh frozen plasma
FiO_2	= fraction of inspired oxygen
g	= grams
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
h	= hours
HBO	= hyperbaric oxygen treatment/ therapy
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	= hemoglobin [12.0–15.8] g/dL females, [13.3–16.2] g/dL males
HIV	= human immunodeficiency virus
Hour	= when capitalized, Hour = hours since admission to the ED/hospital
HR	= HR, beats per min
IABP	= intraaortic balloon pump
ICP	= intracranial pressure
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
IVF	= intravenous fluid(s)
K	= potassium, [3.5–5] mmol/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] $10^3/mm^3$
LVEF	= left ventricular ejection fraction
m/o	= months old
MAP	= mean arterial pressure
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, molly)
ME	= medical examiner
MetHgb	= methemoglobin (RR < 1%)
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
ml	= milliliter
mmol/L	= millmoles per Liter
mosm/kg	= milliosmoles per kilogram

mosm/L	= milliosmoles per Liter
MRI	= Magnetic Resonance Imaging
MRSA	= methicillin-resistant Staphylococcus aureus
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	
Laboratory Data: initial results, give units except for units given in abbreviations	
Clinical Course: concise narrative of HCF & beyond with outcome	
Autopsy Findings:	= medical examiner and/or autopsy results
Na	= sodium [136–146] mmol/L
NG	= nasogastric
ng/mL	= nanograms per milliliter
not detected	= analyte below the level of quantitation, negative
NPO	= nil per os, nothing by mouth
NS	= normal saline
NSTEMI	= non-ST segment elevation myocardial infarction
O_2 sat	= oxygen percent saturation [94–100]% at sea level
OG	= serum osmol gap = measured serum osmolality – calculated serum osmolality [0 ± 10 mOsmol/kg]
OR	= operating room
Osm	= osmole
PALS	= pediatric advanced life support
PC	= poison center (= PCC, or Poison Control Center)
PCC	= prothrombin complex concentrate
PCP	= primary care provider
PEA	= pulseless electrical activity
PEEP	= positive end expiratory pressure
PICU	= pediatric intensive care unit
Platelets	= platelet count [150–400] x10^9/L
PO	= per os (''by mouth'' in Latin)
Potassium	= [3.5–5] mmol/L
ppm	= parts per million
PR	= P-R interval [120–200] msec on the ECG
PRN	= as needed
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
PVC	= premature ventricular contraction
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)
ROSC	= return of spontaneous circulation
RPC	= regional poison center
RR	= respiratory rate, breaths per minute
s/p	= status post
sec	= seconds
SL	= sublingual
SVT	= supraventricular tachycardia
Synthetic Stimulant	= one or more of the products (6-APB, bath salts, plant food, Bliss, Ivory Wave, Purple Wave, Vanilla Sky, et al) or chemicals (3,4 methylenedioxypyrovalerone [MDPV], 6-(2-aminopropyl)benzofuran [6-APB], butylone, desoxypipradrol [2-DPMP], ethylone, flephedrone, naphyrone, mephedrone, methylenedioxypyrovalerone, methylone, methcathinone, et al)
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
t-bili	= total bilirubin
THC	= tetrahydrocannabinol
THC Homolog	= one or more of the products (Blaze, Dawn, herbal incense, K2, Red X, spice, et al) or chemicals (cannabicyclohexanol, CP-47,497, JWH-018, JWH-073, JWH-200, et al)
TPN	= total parenteral nutrition
Tprot	= total protein
Troponin I	= normal range [0–0.08] ng/mL, Cut-off for MI > 0.04 ng/mL
U	= units
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
VBG	= venous blood gasses
VF	= Ventricular fibrillation
VT	= Ventricular tachycardia
WBC	= white blood count, see leukocyte count
WNL	= within normal limits
y/o	= years old