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ABSTRACTS

2012 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS): 30th Annual Report

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Abstract

Background: This is the 30th Annual Report of the American Association of Poison Control Centers' (AAPCC) National Poison Data System (NPDS). As of July 1, 2012, 57 of the nation's poison centers (PCs) uploaded case data automatically to NPDS. The upload interval was 7.58 [6.30, 11.22] (median [25%, 75%]) min, 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 34 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 2012, 3,373,025 closed encounters were logged by NPDS: 2,275,141 human exposures, 66,440 animal exposures, 1,025,547 information calls, 5,679 human confirmed nonexposures, and 218 animal confirmed nonexposures. Total encounters showed a 6.9% decline from 2011, while healthcare facility (HCF) exposure calls increased by 1.2%. All information calls decreased by 14.8% and HCF information calls decreased by 1.7%, medication identification requests (Drug ID) decreased by 22.0%, and human exposures reported to US PCs decreased by 2.5%. Human exposures with less serious outcomes have decreased by 3.7% per year since 2008, while those with more serious outcomes (moderate, major, or death) have increased by 4.6% per year since 2000.

The top five substance classes most frequently involved in all human exposures were analgesics (11.6%), cosmetics/personal care products (7.9%), household cleaning substances (7.2%), sedatives/hypnotics/antipsychotics (6.1%), and foreign bodies/toys/miscellaneous (4.1%). Analgesic exposures as a class increased the most rapidly (8,780 calls/year) over the last 12 years. The top five most common exposures in children aged 5 years or less were cosmetics/ personal care products (13.9%), analgesics (9.9%), household cleaning substances (9.7%), foreign bodies/toys/miscellaneous (7.0%), and topical preparations (6.3%). Drug identification requests comprised 54.4% of all information calls. NPDS documented 2,937 human exposures resulting in death with 2,576 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 the more severe exposures, despite a decrease in calls involving less severe exposures. Unintentional and intentional exposures continue to be a significant cause of morbidity and mortality in the US. The near real-time, always current status of NPDS represents a national public health resource to collect and monitor US exposure cases and information calls. The continuing mission of NPDS is to provide a nationwide infrastructure for public health surveillance for all types of exposures, public health event identification, resilience response, and situational awareness tracking. NPDS is a model system for the nation and global public health.

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

Introduction

This is the 30th Annual Report of the American Association of Poison Control Centers' (AAPCC; http://www.aapcc.org) National Poison Data System (NPDS). (1) On January 1, 2012, 57 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 57 PCs. PCs 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. PCs respond to questions from the public, healthcare professionals, and public health agencies. The continuous staff dedication at the PCs is manifest as the number of exposure and information call encounters exceeds 3.3 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).

The NPDS Products Database

The NPDS products database contains over 400,000 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 1014 generic codes. These

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generic codes collapse into Nonpharmaceutical (558) and Pharmaceutical (456) groups. These two groups are divided into Major (68) and Minor (176) 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 19 generic codes were introduced in 2012:

Table: Generic Codes Added in 2012.

1	Laundry Detergents: Granules (Unit Dose)
2	Laundry Detergents: Liquids (Unit Dose)
3	Laundry Detergents: Granules with Liquids (Unit Dose)
4	Automatic Dishwasher Detergents: Granules (Unit Dose)
5	Automatic Dishwasher Detergents: Liquids (Unit Dose)
6	Automatic Dishwasher Detergents: Granules with Liquids (Unit Dose)
7	Fabric Softeners/Antistatic Agents: Dry or Powder (Unit Dose)
8	Fabric Softeners/Antistatic Agents: Liquid (Unit Dose)
9	Fabric Softeners/Antistatic Agents: Powder with Liquid (Unit Dose)
10	Levamisole
11	Fosphenytoin
12	Felbamate
13	Gabapentin
14	Lamotrigine
15	Topiramate
16	Levetiracetam
17	Oxcarbazepine
18	Zonisamide
19	Other Types of Gamma Aminobutyric Acid Anticonvulsant

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 of these categories require customized data retrieval until these categories have been in place for a year or more.

Methods

Characterization of Participating PCs and Population Served

Fifty-seven participating centers submitted data to AAPCC through December 31, 2012. Fifty-four centers (95%) were accredited by AAPCC as of July 1, 2012. 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 2012.(2,3)

The average number of human exposure cases managed per day by all US PCs was 6,216. Similar to other years, higher volumes were observed in the warmer months, with a mean of 6,576 cases per day in July compared with 5,583 per day in December. On average, US PCs received a call about an actual human exposure every 13.9 sec.

Call Management—Specialized Poison Exposure Emergency Providers

Most PC operations management, clinical education, and instruction are directed by Managing Directors (most are PharmDs and RNs with American Board of Applied Toxicology [ABAT] board certification). Medical direction is provided by Medical Directors who are board-certified physician medical toxicologists. At some PCs, the Managing and Medical Director positions are held by the same person.

Calls received at US PCs are managed by healthcare professionals who have received specialized training in toxicology and managing exposure emergencies. These providers include medical and clinical toxicologists, registered nurses, doctors of pharmacy, pharmacists, chemists, hazardous materials specialists, and epidemiologists. Specialists in Poison Information (SPIs) are primarily registered nurses, PharmDs, and pharmacists who direct the public to the most appropriate level of care while also providing the most up-to-date management recommendations to healthcare providers caring for exposed patients. They may work under the supervision of a Certified Specialist in Poison Information (CSPI). SPIs must log a minimum of 2,000 calls over a 12-month period to become eligible to take the CSPI examination for certification in poison information. Poison Information Providers are allied healthcare professionals. They manage information-type and low acuity (non-hospital) calls and work under the supervision of a CSPI. Of note is the fact that no nursing or pharmacy school offers a toxicology curriculum designed for PC work and SPIs must be trained in programs offered by their respective PC. PCs undergo a rigorous accreditation process administered by the AAPCC and must be reaccredited every 5 years.

NPDS—Near Real-time Data Capture

Launched on 12 April 2006, NPDS is the data repository for all of the US PCs. In 2012, all 57 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 time to upload data for all PCs is 7.58 [6.30, 11.22] (median [25%, 75%]) min creating a real-time national exposure database and surveillance system.

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

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changes and ensure consistent, reproducible reports. The 2012 database was locked on 24 October 2013 at 17:24 EDT.

Annual Report Case Inclusion Criteria

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 calls are "closed" within a few hours of the initial call. Some calls regarding complex hospitalized patients or cases resulting in death may remain open for weeks or months while data continues to be collected. Follow-up calls provide a proven mechanism for monitoring the appropriateness of management recommendations, augmenting patient guidelines, and providing poison prevention education, enabling continual updates of case information as well as obtaining final/known medical outcome status to make the data collected as accurate and complete as possible.

Statistical Methods

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

NPDS Surveillance

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

Surveillance definitions can be created to monitor a variety of volume parameters or case-based definitions 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 400,000 entries. Surveillance definitions may be constructed using volume or case-based definitions with a variety of mathematical options and historical baseline periods from 1 to 13 years. NPDS surveillance tools include the following:

- 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

Incoming data is monitored continuously and anomalous signals generate an automated email alert to the AAPCC's surveillance team or 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 via the NPDS surveillance correspondence system or phone as appropriate from reporting PCs. 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 unique 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 is described in Appendix C. For details of the AAPCC fatality review process, see the 2008 annual report.(1)

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Pediatric Fatality Case Review

A focused Pediatric Fatality Review team, comprised of four pediatric toxicologists, evaluated cases in patients under 18 years of age. The panel reviewed the documentation of all such cases, with specific focus on the conditions behind the poisoning exposure and on finding commonality which might inform efforts at prevention. 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. PCs are requested to heed these guidelines and the need for a more in-depth investigation of "causality."

RESULTS

Information Calls to PCs

Data from 1,025,547 information calls to PCs in 2012 (Table 1C) was transmitted to NPDS, including calls in optional reporting categories such as prevention/safety/education (28,019), administrative (28,638), and caller referral (52,061).

Figure 2 shows that All Drug ID calls decreased dramatically in mid 2009, again in late 2010 and late 2011 and continue to decrease in 2012. Law enforcement Drug ID Calls also showed a decline. The most frequent information call was for Drug ID, comprising 558,117 calls to PCs during the year. Of these, 328,858 (58.9%) 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 by 17.0% from 2011 (173,904 calls) to 2012 (144,267 calls), the distribution of these call types remained steady at 14.5% and 14.1%, respectively, of all information request calls. The most common drug information requests were in regards to therapeutic use and indications, followed by drug–drug interactions, questions about dosage, and inquiries of adverse effects. Environmental inquiries comprised 2.1% of all information calls. Of these environmental inquiries, questions related to cleanup of mercury (thermometers and other) remained the most common followed by questions involving pesticides.

Of all the information calls, poison information comprised 6.2% 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.

Table 1A. AAPCC Population Served and Reported Exposures (1983–2012).

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	2,491,049	8.1
2009	60	310.9	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
Total			**57,929,355**	

[a]As of July 1, 2010 there were 60 Participating Centers.
[b]AAPCC Total as of July 1, 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) (2, 3)
[c]As of July 1, 2011 there were 57 Participating Centers.

Exposure Calls to PCs

In 2012, the participating PCs logged 3,373,025 total encounters including 2,275,141 closed human exposure cases (Table 1A), 66,440 animal exposures (Table 1B), 1,025,547 information calls (Table 1C), 5,679 human confirmed non-exposures, and 218 animal confirmed non-exposures. An

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

Animal	N	%
Dog	60,083	90.43
Cat	5,644	8.49
Bird	187	0.28
Rodent/lagomorph	133	0.2
Horse	107	0.16
Sheep/goat	47	0.07
Cow	32	0.05
Aquatic	18	0.03
Other	189	0.28
Total	**66,440**	**100**

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Table 1C. Distribution of Information Calls.

Information call type	N	% of Info. calls
Drug identification		
Public inquiry: Drug sometimes involved in abuse	262,511	25.60
Public inquiry: Drug not known to be abused	116,480	11.36
Public inquiry: Unknown abuse potential	3,766	0.37
Public inquiry: Unable to identify	53,538	5.22
HCP inquiry: Drug sometimes involved in abuse	3,386	0.33
HCP inquiry: Drug not known to be abused	6,313	0.62
HCP inquiry: Unknown abuse potential	223	0.02
HCP inquiry: Unable to identify	2,586	0.25
Law Enf. Inquiry: Drug sometimes involved in abuse	62,961	6.14
Law Enf. Inquiry: Drug not known to be abused	33,410	3.26
Law Enf. Inquiry: Unknown abuse potential	1,154	0.11
Law Enf. Inquiry: Unable to identify	7,890	0.77
Other drug ID	3,899	0.38
Subtotal	**558,117**	**54.42**
Drug information		
Adverse effects (no known exposure)	10,296	1.00
Brand/generic name clarifications	2,914	0.28
Calculations	184	0.02
Compatibility of parenteral medications	256	0.02
Compounding	395	0.04
Contraindications	1,464	0.14
Dietary supplement, herbal, and homeopathic	643	0.06
Dosage	12,907	1.26
Dosage form/formulation	2,020	0.20
Drug use during breast-feeding	2,283	0.22
Drug–drug interactions	25,662	2.50
Drug–food interactions	1,588	0.15
Foreign drug	395	0.04
Generic substitution	641	0.06
Indications/therapeutic use	34,151	3.33
Medication administration	4,763	0.46
Medication availability	769	0.07
Medication disposal	3,796	0.37
Pharmacokinetics	2,252	0.22
Pharmacology	1,426	0.14
Regulatory	4,345	0.42
Stability/storage	2,795	0.27
Therapeutic drug monitoring	1,288	0.13
Other drug info	27,034	2.64
Subtotal	**144,267**	**14.07**
Environmental information		
Air quality	1,650	0.16
Carbon monoxide—no known patient(s)	673	0.07
Carbon monoxide alarm use	399	0.04
Chemical/bioterrorism/weapons (suspected or confirmed)	12	0.00
Clarification of media reports of environmental contamination	22	0.00
Clarification of substances involved in a HAZMAT incident—no known victim(s)	127	0.01
General questions about contamination of air and/or soil	478	0.05
HAZMAT planning	131	0.01
Lead—no known patient(s)	545	0.05
Mercury thermometer cleanup	1,825	0.18
Mercury (excluding thermometers) cleanup	3,269	0.32
Notification of a HAZMAT incident —no known patient(s)	498	0.05
Pesticide application by a professional pest control operator	853	0.08
Pesticides (other)	3,128	0.31
Potential toxicity of chemicals in the environment	1,314	0.13
Radiation	65	0.01
Safe disposal of chemicals	1,445	0.14
Water purity/contamination	697	0.07
Other environmental	4,547	0.44
Subtotal	**21,678**	**2.11**
Medical information		
Dental questions	194	0.02
Diagnostic or treatment recommendations for diseases or conditions—non-toxicology	8,723	0.85
Disease prevention	594	0.06
Explanation of disease states	1,639	0.16
General first-aid	1,104	0.11
Interpretation of non-toxicology laboratory reports	131	0.01
Medical terminology questions	60	0.01
Rabies—no known patient(s)	298	0.03
Sunburn management	64	0.01
Other medical	61,445	5.99
Subtotal	**74,252**	**7.24**
Occupational information		
Occupational treatment/first-aid guidelines—no known patient(s)	43	0.00
Information on chemicals in the workplace	113	0.01
MSDS interpretation	45	0.00
Occupational MSDS requests	790	0.08
Routine toxicity monitoring	28	0.00
Safe handling of workplace chemicals	94	0.01
Other occupational	190	0.02
Subtotal	**1,303**	**0.13**
Poison information		
Analytical toxicology	829	0.08
Carcinogenicity	76	0.01
Food poisoning—no known patient(s)	2,412	0.24
Food preparation/handling practices	7,070	0.69
General toxicity	26,717	2.61
Mutagenicity	46	0.00
Plant toxicity	2,918	0.28
Recalls of non-drug products (including food)	425	0.04
Safe use of household products	4,174	0.41
Toxicology information for legal use/litigation	171	0.02

(Continued)

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Table 1C. (*Continued*).

Information call type	N	% of Info. calls
Other poison	18,258	1.78
Subtotal	**63,096**	**6.15**
Prevention/Safety/Education		
Confirmation of poison center number	15,043	1.47
General (non-poison) injury prevention requests	463	0.05
Media requests	416	0.04
Poison prevention material requests	10,314	1.01
Poison prevention week date inquiries	46	0.00
Professional education presentation requests	331	0.03
Public education presentation requests	390	0.04
Other prevention	1,016	0.10
Subtotal	**28,019**	**2.73**
Teratogenicity information		
Teratogenicity	1,999	0.19
Subtotal	**1,999**	**0.19**
Other information		
Other	44,862	4.37
Subtotal	**44,862**	**4.37**
Substance Abuse		
Drug screen information	5,387	0.53
Effects of illicit substances—no known patient(s)	373	0.04
New trend information	431	0.04
Withdrawal from illicit substances—no known patient(s)	206	0.02
Other substance abuse	858	0.08
Subtotal	**7,255**	**0.71**
Administrative		
Expert witness requests	33	0.00
Faculty activities	51	0.00
Funding	42	0.00
Personnel issues	358	0.03
Poison center record request	160	0.02
Product replacement/malfunction (issues intended for the manufacturer)	2,249	0.22
Scheduling of poison center rotations	98	0.01
Other administration	25,647	2.50
Subtotal	**28,638**	**2.79**
Caller Referred		
Immediate referral—animal poison center or veterinarian	14,804	1.44
Immediate referral—drug identification	7,751	0.76
Immediate referral—drug information	223	0.02
Immediate referral—health department	6,840	0.67
Immediate referral—medical advice line	678	0.07
Immediate referral—pediatric triage service	81	0.01
Immediate referral—pesticide hotline	334	0.03
Immediate referral—pharmacy	1,196	0.12
Immediate referral—poison center	3,011	0.29
Immediate referral—private physician	2,477	0.24
Immediate referral—psychiatric crisis line	127	0.01
Immediate referral—teratology information program	117	0.01
Other call referral	14,422	1.41
Subtotal	**52,061**	**5.08**
Total	**1,025,547**	**100.00**

additional 574 calls were still open at the time of database lock. The cumulative AAPCC database now contains almost 58 million human exposure case records (Table 1A). A total of 15,586,479 information calls have been logged by NPDS since the year 2001.

Figure 1 shows the human exposures, information calls, and animal exposures by day since 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 Calls. Information Calls are declining more rapidly than the quadratic regression this year, best described by a smoothing spline fit, and Animal Exposure Calls have likewise been declining since mid-2005.

A hallmark of PC case management is the use of follow-up calls to monitor case progress and medical outcome. US PCs made 2,702,081 follow-up calls in 2012. Follow-up calls were done in 46.2% of human exposure cases. One follow-up call was made in 22.4% of human exposure cases, and multiple follow-up calls (range 2–80) were placed in 23.8% of cases.

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

Tables 22A (Nonpharmaceuticals) and 22B (Pharmaceuticals) provide summary demographic data on patient age, reason for exposure, medical outcome, and use of a HCF for all 2,275,141 human exposure cases, presented by substance categories.

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

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

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

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

Tables 22A and 22B restrict the breakdown columns to single-substance cases. Prior to 2007, when multi-substance

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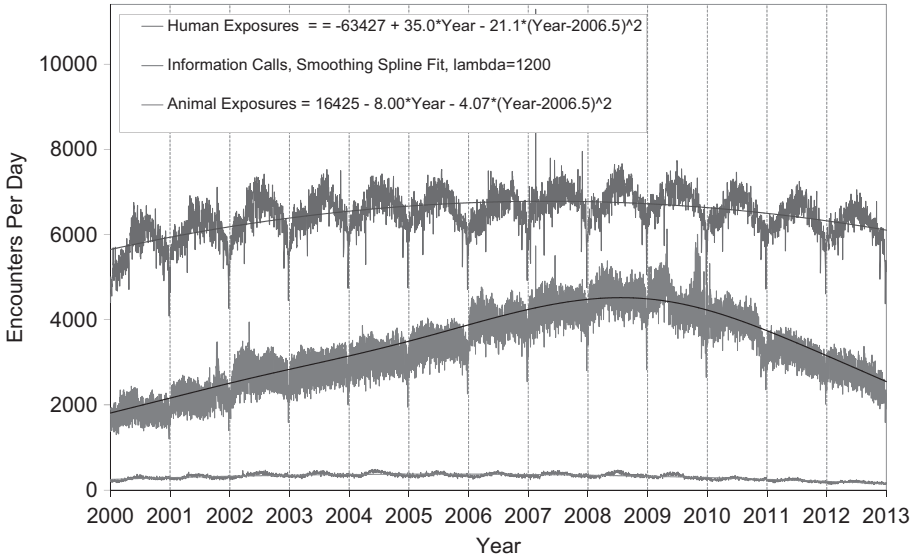

Fig. 1. Human Exposure Calls, Information Calls, and Animal Exposure Calls by Day since January 1, 2000 Regression lines show least-squares second order regression—both linear and second order (quadratic) terms were statistically significant for Human Exposures and Animal Exposures (colour version of this figure can be found in the online version at www.informahealthcare.com/ctx).

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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 (89.4%) of all exposures. In contrast, only 41.9% of fatalities are single-substance exposures (Table 5).

Tables 22A and 22B tabulate 2,662,456 substance-exposures, of which 2,032,956 were single-substance exposures, including 1,052,906 (51.8%) nonpharmaceuticals and 980,050 (48.2%) pharmaceuticals. In 19.2% of single-substance exposures that involved pharmaceutical substances, the reason for exposure was intentional, compared with only 3.7% when the exposure involved a nonpharmaceutical substance. Correspondingly, treatment in a HCF was provided in a higher percentage of exposures that involved pharmaceutical substances (29.3%) compared with nonpharmaceutical substances (15.7%). Exposures to pharmaceuticals also had more severe outcomes. Of single-substance exposure-related fatal cases, 761 (69.6%) were pharmaceuticals compared with 333 (30.4%) 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 35.7% of exposures and children younger

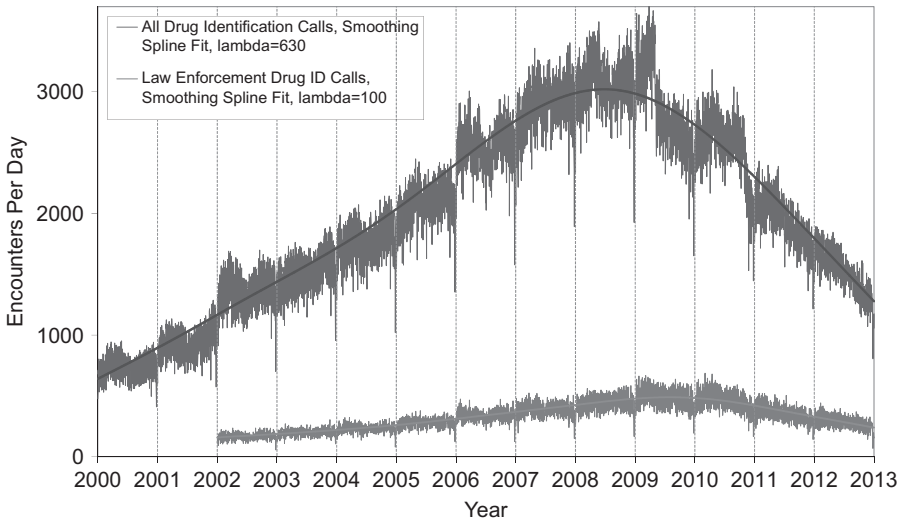

Fig. 2. All Drug Identification and Law Enforcement Drug Identification Calls by Day since January 1, 2000 Smoothing Spline Fits were better than 2nd order regressions, R-Square = 0.796 for All Drug Identification Calls, R-Square = 0.632 Law Enforcement Drug ID Calls (colour version of this figure can be found in the online version at www.informahealthcare.com/ctx).

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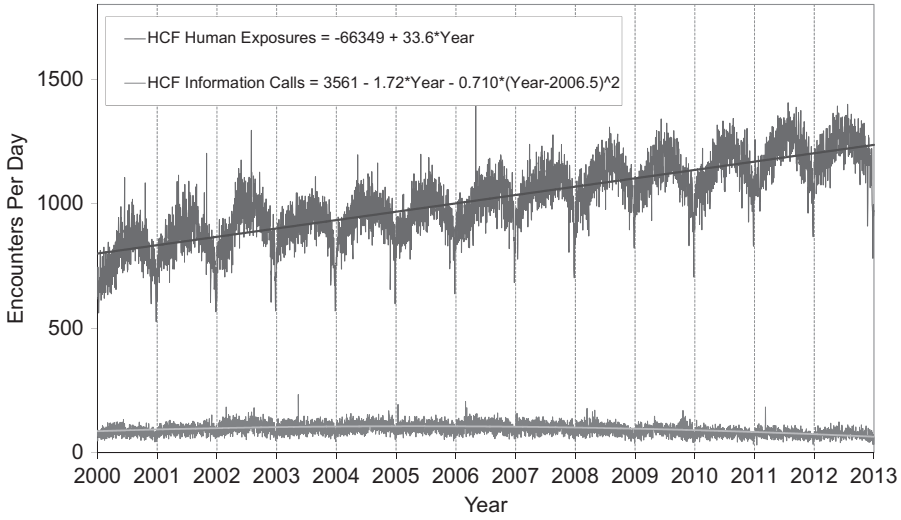

Fig. 3. HCF Exposure Calls and HCF Information Calls by Day since January 1, 2000 Regression lines show least-squares first and second order regressions—linear regression for HCF Exposure Calls (second order term was not statistically significant) and second order regression for HCF Information Calls. All terms shown were statistically significant for each of the two regressions (colour version of this figure can be found in the online version at www.informahealthcare.com/ctx).

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than 6 years accounted for approximately half of all human exposures (48.4%). 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 2,275,141 human exposures reported, 72.5% of calls originated from a residence (own or other) but 93.6% actually occurred at a residence (own or other). Another 19.5% of calls were made from a healthcare facility. Beyond residences, exposures occurred in the workplace in 1.6% of cases, schools (1.3%), healthcare facilities (0.3%), and restaurants or food services (0.2%).

Exposures in Pregnancy

Exposure during pregnancy occurred in 7,671 women (0.3% of all human exposures). Of those with known pregnancy duration (n = 7,149), 31.5% occurred in the first trimester, 37.1% in the second trimester, and 31.4% in the third trimester. Most of them (74.1%) were unintentional exposures and 19.5% were intentional exposures. There were four deaths in pregnant females in 2012.

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

	Site of caller		Site of exposure	
Site	**N**	**%**	**N**	**%**
Residence				
Own	1,614,433	70.96	2,074,514	91.18
Other	35,189	1.55	54,261	2.38
Workplace	24,787	1.09	35,973	1.58
Healthcare facility	443,719	19.50	7,132	0.31
School	10,396	0.46	28,578	1.26
Restaurant/food service	544	0.02	4,931	0.22
Public area	7,179	0.32	21,471	0.94
Other	131,215	5.77	24,447	1.07
Unknown	7,679	0.34	23,834	1.05

Chronicity

Most human exposures, 2,006,316 (88.2%) were acute cases (single, repeated, or continuous exposure occurring over 8 hours or less) compared with 559 acute cases of 2,937 fatalities (19.0%). Chronic exposures (continuous or repeated exposures occurring over > 8 hours) comprised 2.1% (47,407) 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 189,737 (8.3%).

Reason for Exposure

The reason category for most human exposures was unintentional (80.1%) with unintentional general (54.9%), therapeutic error (12.3%), and unintentional misuse (5.5%) of all exposures (Table 6A).

Scenarios

Of the total 296,666 therapeutic errors, the most common scenarios for all ages included inadvertent double-dosing (28.7%), wrong medication taken or given (15.7%), other incorrect dose (13.6%), doses given/taken too close together (9.7%), and inadvertent exposure to someone else's medication (8.3%). The types of therapeutic errors observed are different for each age group and are summarized in Table 6B.

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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	60,642	52.05	55,519	47.66	339	0.29	116,500	5.12	116,500	5.12
1	178,565	51.78	165,834	48.09	466	0.14	344,865	15.16	461,365	20.28
2	183,301	52.25	167,008	47.60	517	0.15	350,826	15.42	812,191	35.70
3	88,056	54.76	72,437	45.05	312	0.19	160,805	7.07	972,996	42.77
4	45,042	56.13	34,989	43.60	213	0.27	80,244	3.53	1,053,240	46.29
5	26,401	56.48	20,169	43.15	177	0.38	46,747	2.05	1,099,987	48.35
Unknown ≤5	1,036	44.66	923	39.78	361	15.56	2,320	0.10	1,102,307	48.45
Child 6–12	81,408	57.90	58,372	41.52	821	0.58	140,601	6.18	1,242,908	54.63
Teen 13–19	68,935	44.26	86,204	55.34	626	0.40	155,765	6.85	1,398,673	61.48
Unknown Child	1,603	37.59	1,492	34.99	1,169	27.42	4,264	0.19	1,402,937	61.66
Subtotal	**734,989**	**52.39**	**662,947**	**47.25**	**5,001**	**0.36**	**1,402,937**	**61.66**	**1,402,937**	**61.66**
Adults (≥20)										
20–29	92,103	46.73	104,786	53.16	216	0.11	197,105	8.66	1,600,042	70.33
30–39	64,997	43.39	84,676	56.53	111	0.07	149,784	6.58	1,749,826	76.91
40–49	56,117	41.53	78,918	58.41	83	0.06	135,118	5.94	1,884,944	82.85
50–59	47,086	39.89	70,879	60.05	61	0.05	118,026	5.19	2,002,970	88.04
60–69	29,657	38.20	47,959	61.77	30	0.04	77,646	3.41	2,080,616	91.45
70–79	16,596	35.90	29,618	64.06	20	0.04	46,234	2.03	2,126,850	93.48
80–89	9,539	33.38	19,025	66.58	12	0.04	28,576	1.26	2,155,426	94.74
≥90	1,789	30.33	4,105	69.59	5	0.08	5,899	0.26	2,161,325	95.00
Unknown adult	39,729	39.20	59,141	58.35	2,484	2.45	101,354	4.45	2,262,679	99.45
Subtotal	**357,613**	**41.60**	**499,107**	**58.05**	**3,022**	**0.35**	**859,742**	**37.79**	**2,262,679**	**99.45**
Other										
Unknown age	4,352	34.92	5,530	44.37	2,580	20.70	12,462	0.55	2,275,141	100.0
Total	**1,096,954**	**48.21**	**1,167,584**	**51.32**	**10,603**	**0.47**	**2,275,141**	**100.00**	**2,275,141**	**100.00**

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

Age Group	Exposures/100k population	Number of Exposures[a]	Population[c]
Children (<20)			
<1	2,916	116,500	3,994,515
1	8,550	344,865	4,033,463
2	8,701	350,826	4,031,876
3	3,986	160,805	4,034,392
4	1,926	80,244	4,165,994
5	1,117	46,747	4,186,660
Child 6–12	483	140,601	29,115,407
Teen 13–19	519	155,765	30,018,788
Subgroup	1,679	1,402,937	**83,581,095**
Adults (≥20			
20–29	442	197,105	44,555,279
30–39	366	149,784	40,926,211
40–49	312	135,118	43,274,963
50–59	269	118,026	43,917,310
60–69	241	77,646	32,205,760
70–79	261	46,234	17,725,883
≥80[b]	292	34,475	11,822,624
Subgroup	**367**	**859,742**	**234,428,029**
Overall Total	**715**	**2,275,141**	**318,009,124[d]**

[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]Census estimates were available only for 85 y/o and older, so exposures for 80–89 and ≥90 were combined for these analyses (4).
[c]Age-based census data were not available for include outside the US (OUS), so US data were scaled up (~1%) to AAPCC Total to include OUS service areas.
[d]AAPCC Total as of July 1, 2012 318,009,124 (see Table 1A) (2, 3).

Reason by Age

Intentional exposures accounted for 16.0% of human exposures. Suicidal intent was suspected in 9.9% of cases, intentional misuse in 2.6% and intentional abuse in 2.5%. 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 1,190 reported fatalities with RCF 1–3, the majority reason reported for children ≤5 years was unintentional, while most fatalities in adults (>20 years) were intentional (Table 8).

Route of Exposure

Ingestion was the route of exposure in 83.4% of cases (Table 9), followed in frequency by dermal (7.0%), inhalation/nasal (6.0%), and ocular routes (4.3%). For the 1,190 exposure-related fatalities, ingestion (84.5%), inhalation/nasal (8.6%), and parenteral (5.0%) 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

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

Age (y)	Male	Female	Unknown	Total (%)	Cumulative total (%)
< 1 year	7	0	1	8 (0.7%)	8 (0.7%)
1 year	1	0	1	2 (0.2%)	10 (0.8%)
2 years	1	2	0	3 (0.3%)	13 (1.1%)
3 years	1	1	0	2 (0.2%)	15 (1.3%)
4 years	0	1	1	2 (0.2%)	17 (1.4%)
5 years	2	2	0	4 (0.3%)	21 (1.8%)
Child 6–12 years	5	2	0	7 (0.6%)	28 (2.4%)
Teen 13–19 years	26	19	0	45 (3.8%)	73 (6.1%)
20–29 years	97	58	0	155 (13.0%)	228 (19.2%)
30–39 years	109	85	0	194 (16.3%)	422 (35.5%)
40–49 years	116	121	0	237 (19.9%)	659 (55.4%)
50–59 years	122	125	0	247 (20.8%)	906 (76.1%)
60–69 years	58	86	0	144 (12.1%)	1,050 (88.2%)
70–79 years	27	32	0	59 (5.0%)	1,109 (93.2%)
80–89 years	21	27	0	48 (4.0%)	1,157 (97.2%)
≥ 90 years	11	10	0	21 (1.8%)	1,178 (99.0%)
Unknown adult	7	2	0	9 (0.8%)	1,187 (99.8%)
Unknown age	3	0	0	3 (0.3%)	1,190 (100.0%)
Total	**614**	**573**	**3**	**1,190 (100.0%)**	**1,190 (100.0%)**

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

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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 841,775 (37.0%) cases (18.0% had 1 effect, 9.5% had 2 effects, 5.1% had 3 effects, 2.2% had 4 effects, 1.0% had 5 effects, and 1.2% had > 5 effects coded). Of clinical effects coded, 78.5% were deemed related to the exposure, 9.7% were considered not related, and 11.8% were coded as unknown if related.

Case Management Site

The majority of cases reported to PCs were managed in a nonHCF (69.2%), usually at the site of exposure, primarily the patient's own residence (Table 10). 1.6% of cases were referred to a HCF but refused referral. Treatment in a HCF was rendered in 27.0% of cases.

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

	Human exposures		Fatal exposures[a]	
No. of Substances	**N**	**%**	**N**	**%**
1	2,032,956	89.36	498	41.85
2	153,411	6.74	290	24.37
3	49,889	2.19	166	13.95
4	20,363	0.90	90	7.56
5	8,943	0.39	59	4.96
6	4,306	0.19	42	3.53
7	2,147	0.09	11	0.92
8	1,216	0.05	16	1.34
≥ 9	1,910	0.08	18	1.51
Total	**2,275,141**	**100.00**	**1,190**	**100.00**

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

Of the 613,412 cases managed in a healthcare facility, 291,414 (47.5%) were treated and released, 100,455 (16.4%) were admitted for critical care, and 67,847 (11.1%) were admitted to a noncritical care unit.

Table 6A. Reason for Human Exposure Cases.

Reason	N	% Human exposures
Unintentional		
Unintentional—General	1,248,506	54.9
Unintentional—Therapeutic error	280,269	12.3
Unintentional—Misuse	125,035	5.5
Unintentional—Bite/sting	59,132	2.6
Unintentional—Environmental	57,150	2.5
Unintentional—Occupational	25,637	1.1
Unintentional—Food poisoning	23,441	1.0
Unintentional—Unknown	3,845	0.2
Subtotal	**1,823,015**	**80.1**
Intentional		
Intentional—Suspected suicide	226,092	9.9
Intentional—Misuse	58,785	2.6
Intentional—Abuse	56,594	2.5
Intentional—Unknown	21,470	0.9
Subtotal	**362,941**	**16.0**
Adverse Reaction		
Adverse reaction—Drug	41,289	1.8
Adverse reaction—Other	11,455	0.5
Adverse reaction—Food	5,394	0.2
Subtotal	**58,138**	**2.6**
Unknown		
Unknown reason	15,679	0.7
Subtotal	**15,679**	**0.7**
Other		
Other—Malicious	7,363	0.3
Other—Contamination/tampering	6,340	0.3
Other—Withdrawal	1,665	0.1
Subtotal	**15,368**	**0.7**
Total	**2,275,141**	**100.0**

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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	85,047	17.51	12.87	5.94	57.20	0.06	6.19	0.23
Wrong medication taken/given	46,626	16.30	12.07	6.23	59.15	0.08	5.84	0.33
Other incorrect dose	40,461	32.48	11.99	6.86	44.12	0.07	4.28	0.20
Medication doses given/taken too close together	28,826	18.24	10.52	6.89	57.97	0.07	6.11	0.21
Inadvertently took/given someone else's medication	24,676	17.13	20.81	6.75	50.71	0.06	4.41	0.13
Other/unknown therapeutic error	16,461	21.09	11.57	7.06	52.54	0.23	7.05	0.46
Incorrect dosing route	16,129	7.97	4.02	3.35	72.28	0.13	11.68	0.58
Confused units of measure	10,298	57.99	18.51	4.12	17.54	0.08	1.68	0.09
Health professional/iatrogenic error (pharmacist/nurse/physician)	6,101	28.44	11.34	5.98	48.22	0.28	5.05	0.69
Incorrect formulation or concentration given	6,078	48.35	17.42	4.49	26.87	0.07	2.57	0.23
Dispensing cup error	5,929	65.69	19.78	2.97	10.49	0.08	0.84	0.13
More than one product containing same ingredient	5,153	13.43	15.72	14.34	49.19	0.08	7.06	0.17
Drug interaction	2,171	6.91	7.28	8.01	65.68	0.41	11.01	0.69
10-fold dosing error	1,340	61.27	8.51	2.84	24.70	0.00	2.46	0.22
Incorrect formulation or concentration dispensed	1,266	43.52	15.88	5.13	29.94	0.24	4.82	0.47
Exposure through breast milk	104	87.50	0.00	0.00	6.73	0.96	4.81	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. PCs in 2012, 420,321 (18.5%) 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	1,095,144	62.85	124,734	7.16	64,277	3.69	451,635	25.92	3,750	0.22	76,736	4.40	6,739	0.39	1,823,015	80.13
Intentional	1,348	0.39	10,770	3.09	83,669	23.98	249,451	71.50	210	0.06	13,867	3.97	3,626	1.04	362,941	15.95
Adverse reaction	3,983	7.81	2,880	5.65	4,181	8.20	38,975	76.46	131	0.26	7,030	13.79	958	1.88	58,138	2.56
Unknown	742	5.24	839	5.93	1,816	12.83	9,872	69.76	86	0.61	1,442	10.19	882	6.23	15,679	0.69
Other	1,090	8.38	1,378	10.60	1,822	14.01	8,455	65.03	87	0.67	2,279	17.53	257	1.98	15,368	0.68
Total	**1,102,307**	**50.81**	**140,601**	**6.48**	**155,765**	**7.18**	**758,388**	**34.96**	**4,264**	**0.20**	**101,354**	**4.67**	**12,462**	**0.57**	**2,275,141**	**100.00**

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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	11	0	1	23	0	0	0	35
Unintentional—Environmental	3	4	2	26	0	1	0	36
Unintentional—Occupational	0	0	0	5	0	1	0	6
Unintentional—Therapeutic error	1	1	0	15	0	1	0	18
Unintentional—Misuse	0	0	0	11	0	0	0	11
Unintentional—Bite/sting	0	0	0	3	0	0	0	3
Unintentional—Food poisoning	0	0	0	4	0	0	0	4
Unintentional—Unknown	0	0	0	3	0	0	0	3
Subtotal	15	5	3	90	0	3	0	116
Intentional								
Intentional—Suspected suicide	0	1	23	637	0	3	1	665
Intentional—Misuse	0	0	1	33	0	1	0	35
Intentional—Abuse	1	0	11	121	0	2	1	136
Intentional—Unknown	0	0	3	66	0	0	0	69
Subtotal	1	1	38	857	0	6	2	905
Other								
Other—Malicious	3	0	0	1	0	0	0	4
Other—Withdrawal	0	0	0	3	0	0	0	3
Subtotal	3	0	0	4	0	0	0	7
Adverse reaction								
Adverse reaction—Drug	0	0	0	42	0	0	0	42
Adverse reaction—Other	0	0	0	1	0	0	0	1
Subtotal	0	0	0	43	0	0	0	43
Unknown								
Unknown reason	2	1	4	111	0	0	1	119
Subtotal	2	1	4	111	0	0	1	119
Total	21	7	45	1,105	0	9	3	1,190

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

The percentage of patients treated in a HCF varied considerably with age. Only 11.6% of children ≤5 years and only 14.0% of children between 6 and 12 years were managed in a HCF compared with 51.2% of teenagers (13–19 years) and 37.9% of adults (age ≥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 severe 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 = 515,287; 22.6% of exposures). Table 13 demonstrates an increasing duration of the clinical effects observed with more severe outcomes.

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	1,897,156	79.39	83.39	1,006	77.15	84.54
Dermal	159,513	6.68	7.01	17	1.30	1.43
Inhalation/nasal	136,518	5.71	6.00	102	7.82	8.57
Ocular	98,408	4.12	4.33	2	0.15	0.17
Bite/sting	59,192	2.48	2.60	3	0.23	0.25
Parenteral	19,795	0.83	0.87	60	4.60	5.04
Unknown	10,911	0.46	0.48	87	6.67	7.31
Other	2,745	0.11	0.12	4	0.31	0.34
Otic	2,146	0.09	0.09	0	0.0	0
Aspiration (with ingestion)	1,346	0.06	0.06	23	1.76	1.93
Vaginal	953	0.04	0.04	0	0.0	0
Rectal	838	0.04	0.04	0	0.0	0
Total Number of Routes[b]	**2,389,521**	**100.00**	**105.03**	**1,304**	**100.00**	**109.58**

[a]Includes cases with RCF 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.

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Table 10. Management Site of Human Exposures.

Site of management	N	%
Managed on site, nonhealthcare facility	1,574,362	69.2
Managed in healthcare facility		
Treated/evaluated and released	291,414	12.8
Admitted to critical care unit	100,455	4.4
Patient lost to follow-up/left AMA	94,284	4.1
Admitted to noncritical care unit	67,847	3.0
Admitted to psychiatric facility	59,412	2.6
Subtotal (managed in HCF)	**613,412**	**27.0**
Other	28,269	1.2
Refused referral	36,369	1.6
Unknown	22,729	1.0
Total	**2,275,141**	**100.0**

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 telephonic data gathering.

Ipecac-induced emesis for poisoning continues to decline as shown in Tables 16A and 16B. Ipecac was administered in only 83 (0.01%) pediatric exposures in 2012. 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; 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 also recommended disposal of home ipecac stocks. (7) A decline was also observed since the early 1990s for reported use of activated charcoal. While not as dramatic as the decline in use of ipecac, reported use of activated charcoal decreased from 3.7% of pediatric cases in 1993 to just 1.0% in 2012.

Top Substances in Human Exposures

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

To better understand these relationships, we examined exposures per year over the last 12 years for the change over time for each of the 68 major generic categories via least squares linear regression. The exposure calls per year over this period were increasing for 37 and decreasing for 31 of the 68 categories. The change over time for the 12 yearly values was statistically significant ($p < 0.05$) for 53 of the 68 categories. Table 17B shows the 25 categories which were

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	264,416	23.99	24,924	17.73	25,921	16.64	93,191	12.29	642	15.06	8,995	8.87	959	7.7	419,048	18.42
Minor effect	91,318	8.28	21,317	15.16	40,536	26.02	176,735	23.30	392	9.19	13,902	13.72	1,638	13.1	345,838	15.20
Moderate effect	10,562	0.96	4,202	2.99	22,515	14.45	106,702	14.07	64	1.50	3,627	3.58	365	2.9	148,037	6.51
Major effect	899	0.08	230	0.16	2,347	1.51	17,676	2.33	2	0.05	225	0.22	33	0.3	21,412	0.94
Death	30	0.00	10	0.01	53	0.03	1,377	0.18	1	0.02	24	0.02	12	0.1	1,507	0.07
No follow-up, nontoxic	208,182	18.89	20,828	14.81	8,122	5.21	44,818	5.91	632	14.82	12,500	12.33	827	6.6	295,909	13.01
No follow-up, minimal toxicity	493,407	44.76	62,697	44.59	40,204	25.81	237,785	31.35	1,815	42.57	44,189	43.60	3,765	30.2	883,862	38.85
No follow-up, potentially toxic	18,933	1.72	3,284	2.34	11,903	7.64	48,326	6.37	590	13.84	13,878	13.69	4,529	36.3	101,443	4.46
Unrelated effect	14,544	1.32	3,107	2.21	4,125	2.65	30,421	4.01	126	2.95	4,005	3.95	327	2.6	56,655	2.49
Death (indirect report)	16	0.00	2	0.00	39	0.03	1,357	0.18	0	0.00	9	0.01	7	0.1	1,430	0.06
Total	**1,102,307**	**100.00**	**140,601**	**100.0**	**155,765**	**100.00**	**758,388**	**100.00**	**4,264**	**100.00**	**101,354**	**100.00**	**12,462**	**100.00**	**2,275,141**	**0.00**

[a]Total number of cases where Death was an outcome (1,507 + 1,430) is greater than the number of fatalities (1,190) judged to be exposure-related (RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).

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

	Unintentional		Intentional		Other		Adverse reaction		Unknown		Total	
Outcome	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
No effect	357,231	19.60	57,556	15.86	1,597	10.39	1,469	2.53	1,195	7.62	419,048	18.42
Minor effect	224,651	12.32	102,122	28.14	2,788	18.14	13,698	23.56	2,579	16.45	345,838	5.20
Moderate effect	44,852	2.46	90,618	24.97	1,234	8.03	7,904	13.60	3,429	21.87	148,037	6.51
Major effect	2,776	0.15	16,405	4.52	150	0.98	828	1.42	1,253	7.99	21,412	0.94
Death	148	0.01	1,057	0.29	12	0.08	62	0.11	228	1.45	1,507	0.07
No follow-up, nontoxic	289,067	15.86	4,641	1.28	993	6.46	925	1.59	283	1.80	295,909	13.01
No follow-up, minimal toxicity	819,236	44.94	36,655	10.10	5,440	35.40	20,486	35.24	2,045	13.04	883,862	38.85
No follow-up, potentially toxic	47,207	2.59	44,982	12.39	1,928	12.55	4,164	7.16	3,162	20.17	101,443	4.46
Unrelated effect	37,777	2.07	7,634	2.10	1,218	7.93	8,595	14.78	1,431	9.13	56,655	2.49
Death (indirect report)	70	0.00	1,271	0.35	8	0.05	7	0.01	74	0.47	1,430	0.06
Total	**1,823,015**	**100.00**	**362,941**	**100.00**	**15,368**	**100.00**	**58,138**	**100.00**	**15,679**	**100.00**	**2,275,141**	**100.00**

[a]Total number of cases where Death was an outcome (1,507 + 1,430) is greater than the number of fatalities (1,190) judged to be exposure-related (RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).

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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 2 of the 25 categories. Figure 5 shows the linear regressions for the top four increasing categories in Table 17B.

Tables 17C and 17D present exposure results for children and adults, respectively, and show the differences between substance categories involved in pediatric and adult exposures.

Table 17E reports the 25 categories of substances most frequently involved in pediatric (≤5 years) fatalities in 2012.

Table 17F reports the 25 Drug ID categories most frequently queried in 2012. Unknown is the 5th and Miscellaneous the 18th most often identified drug category. These categories include medications which could not be identified, indicating 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 healthcare 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 calls and 1,703,762 information calls. Total encounters decreased by 6.9% from 3,624,063 in 2011 to 3,373,025 in 2012. Information calls decreased by 14.8% from 1,203,282 calls in 2011 to 1,025,547 in 2012, with a 22.0% decrease in drug identification calls and a 1.7 % decrease in HCF information calls. Human exposures decreased by 2.5% from 2,334,004 to 2,275,141 cases.

Figure 4 shows the year-to-year change through 2000 as a percentage of year 2000 for human exposure calls 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

Table 13. Duration of Clinical Effects by Medical Outcome.

	Minor effect		Moderate effect		Major effect	
Duration of effect	**N**	**%**	**N**	**%**	**N**	**%**
≤2 hours	116,472	33.68	7,652	5.17	362	1.69
>2 hours, ≤8 hours	92,804	26.83	30,710	20.74	1,164	5.44
>8 hours, ≤24 hours	63,349	18.32	51,638	34.88	5,092	23.78
>24 hours, ≤3 days	22,486	6.50	28,445	19.21	7,057	32.96
>3 days, ≤1 week	4,986	1.44	7,690	5.19	3,808	17.78
>1 week, ≤1 month	1,293	0.37	1,707	1.15	1,193	5.57
>1 month	462	0.13	395	0.27	153	0.71
Anticipated permanent	393	0.11	184	0.12	408	1.91
Unknown	43,593	12.61	19,616	13.25	2,175	10.16
Total	**345,838**	**100.00**	**148,037**	**100.00**	**21,412**	**100.00**

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Table 14. Decontamination and Therapeutic Interventions.

Therapy	N	%
Decontamination Only	1,108,883	48.7
Therapeutic Intervention Only	251,298	11.1
Decontamination and Therapeutic Intervention	165,561	7.3
Not Coded	749,399	32.9
Total	**2,275,141**	**100.0**

serious outcomes have increased by + 4.6% (95% CI [4.2%, 5.1%]) per year from 108,148 cases in 2000 to 170,956 cases in 2012. However, cases with less serious outcomes have consistently decreased since 2008 by 3.7% (95% CI [−5.3%, −2.1%]) per year from 2,339,460 in 2008 to 2,102,755 cases in 2012. This has driven the overall decrease in human exposures since 2008.

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

Distribution of Suicides

Table 19A shows the modest variation in the distribution of suicides and pediatric deaths over the past 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 2012 reflects the large increase in death (indirect reports) this year. 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 = 49,374). The 25 most commonly involved plant species and categories account for 39.7% of all plant exposures reported. The top three categories in the Table are essentially synonymous for unknown plant and comprise 12.2% (6,018/49,374) of all plant exposures. For a variety of reasons it was not possible to make a precise identification in these three groups. The top most frequent plant exposures where a positive plant identification was made were (descending order): *Phytolacca americana* (L.) (Botanic name), *Spathiphyllum* species (Botanic name), *Ilex* species (Botanic name), *Philodendron* species (Species unspecified), and *Malus* species (Botanical name).

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 list all deaths, irrespective of the 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	1,190
5	Death only	1,2,3	1,190
8	Death only	1,2,3	1,190
9	Death only	1,2,3	1,190
11	Death and Death (indirect report)	All	2,937
12	Death and Death (indirect report)	All	2,937
17E	Pediatric Death and Death (indirect report)	All	46
18	Death only	1,2,3	1,190
19A	Death and Death (indirect report)	All	2,937
19B	Death and Death (indirect report)	All	2,937
21	Death and Death (indirect report)	1,2,3	2,576
22	Death and Death (indirect report)—Single-substance deaths only	All	1,094

There were 1,430 deaths (indirect) and 1,507 deaths. Of these 2,937 cases, 2,576 were judged exposure-related fatalities (RCF = 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory). The remaining 361 cases were judged as follows: 79 as RCF = 4-Probably not responsible, 36 as 5-Clearly not responsible, and 246 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 two or more substances as indistinguishable in terms of cause, for example, two substances which appear equally likely to have caused the death could have Substance Rank of 1,2 and Cause Rank of 1,1. Additional agents implicated are listed below the primary agent in the order of their contribution to the fatality.

As shown in Table 5, a single substance was implicated in 89.4% of reported human exposures, and 10.6% of patients were exposed to 2 or more drugs or products. The exposure-related fatalities involved a single substance in 498 cases (41.9%), 2 substances in 290 cases (24.4%), 3 in 166 cases (14.0%), 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 1,386, 53.8% of cases), p = prehospital cardiac and/or respiratory arrest (occurred in 423 of 2,576, 16.4% of cases), h = hospital records reviewed (occurred in 431, 16.7% of cases), a = autopsy report reviewed (occurred in 1,733, 67.3% of cases). The distribution of NPDS RCF was 1 = Undoubtedly responsible in 569 cases (22.1%), 2 = Probably responsible in 1,805 cases (70.1%), 3 = Contributory in 202 cases (7.8%). The denominator for these percentages in Table 21 is 2,576.

All fatalities—all ages

Table 4 presents the age and gender distribution for these 1,190 exposure-related fatalities (excluding death (indirect)).

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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	1,259	239	2,674	8,034	2	143	6	12,357
Charcoal, multiple doses	94	26	352	1,147	0	5	2	1,626
Charcoal, single dose	11,190	1,014	11,651	31,975	3	400	29	56,262
Dilute/irrigate/wash	542,472	56,286	33,008	194,975	1,135	33,817	2,480	864,173
Food/snack	139,407	12,174	6,188	30,634	157	5,151	204	193,915
Fresh air	6,642	4,705	4,936	40,657	604	10,943	939	69,426
Ipecac	83	23	26	57	0	4	0	193
Lavage	116	30	684	2,652	0	27	1	3,510
Other emetic	6,241	606	977	4,821	9	426	50	13,130
Whole bowel irrigation	101	22	317	1,378	0	16	4	1,838
Other Therapies								
2-PAM	4	3	5	43	0	0	0	55
Alkalinization	126	54	1,747	9,022	0	52	6	11,007
Amyl nitrite	0	0	0	8	0	0	0	8
Antiarrhythmic	13	7	130	963	0	8	1	1,122
Antibiotics	1,998	856	1,221	12,822	8	807	60	17,772
Anticonvulsants[a]	61	20	135	835	1	5	0	1,057
Antiemetics	1,109	433	4,489	11,627	2	114	16	17,790
Antihistamines	2,519	1,552	1,789	10,410	22	1,166	107	17,565
Antihypertensives	16	12	131	2,328	0	16	3	2,506
Antivenin (fab fragment)	253	227	184	1,480	1	21	4	2,170
Antivenin/antitoxin[b]	41	32	32	258	1	4	1	369
Atropine	97	33	86	1,194	0	8	1	1,419
BAL	5	0	2	18	0	0	0	25
Benzodiazepines	1,102	476	5,317	25,126	4	224	29	32,278
Bronchodilators	586	282	424	4,374	2	217	13	5,898
Calcium	8,970	584	288	2,370	3	100	3	12,318
Cardioversion	4	1	21	330	0	0	1	357
CPR	35	9	79	1,054	0	14	3	1,194
Deferoxamine	11	1	17	23	0	0	0	52
ECMO	3	0	2	10	0	0	0	15
EDTA	27	2	3	12	0	2	0	46
Ethanol	4	1	1	55	0	2	0	63
Extracorp. procedure (other)	2	0	1	26	0	0	0	29
Fab fragments	32	27	29	662	0	10	1	761
Fluids, IV	7,164	2,112	25,255	114,377	3	988	101	150,000
Flumazenil	102	17	154	1,505	0	12	2	1,792
Folate	7	2	38	1,211	0	3	1	1,262
Fomepizole	107	18	78	1,688	0	10	0	1,901
Glucagon	41	6	82	1,790	0	13	2	1,934
Glucose, >5%	352	34	260	3,077	0	22	1	3,746
Hemodialysis	9	5	104	2,201	0	5	0	2,324
Hemoperfusion	0	0	2	59	0	0	0	61
Hydroxocobalamin	2	1	3	56	0	3	0	65
Hyperbaric oxygen	27	25	32	301	0	12	2	399
Insulin	17	4	101	1,858	0	14	2	1,996
Intubation	589	108	1,556	18,340	0	140	27	20,760
Methylene blue	16	3	9	112	0	0	0	140
NAC, IV	220	112	3,529	13,830	1	84	12	17,788
NAC, PO	103	40	1,265	4,462	0	30	6	5,906
Nalmefene	2	0	2	11	0	0	0	15
Naloxone	1,128	150	1,545	16,503	1	190	19	19,536
Neuromuscular blocker	38	9	97	1,076	0	4	0	1,224
Octreotide	70	2	28	255	0	1	0	356
Other	46,911	9,479	13,625	86,117	165	5,750	725	162,772
Oxygen	1,677	725	3,654	42,186	7	505	68	48,822
Pacemaker	2	0	2	188	0	1	0	193
Penicillamine	0	0	0	5	0	0	0	5
Physostigmine	14	6	78	167	0	1	0	266
Phytonadione	27	5	55	721	0	3	1	812

(Continued)

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Table 15. (*Continued*).

Therapy	≤5 y	6–12 y	13–19 y	≥20 y	Unknown child	Unknown adult	Unknown age	Total
Pyridoxine	14	8	43	399	0	4	0	468
Sedation (other)	371	101	1,404	14,088	0	92	13	16,069
Sodium nitrite	0	1	2	21	0	0	0	24
Sodium thiosulfate	0	1	10	42	0	0	0	53
Steroids	738	386	457	4,561	6	417	41	6,606
Succimer	98	11	8	70	0	4	1	192
Transplantation	1	0	3	15	0	0	0	19
Vasopressors	77	46	287	5,138	0	35	7	5,590
Ventilator	535	100	1,424	16,870	0	128	25	19,082

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

The age distribution of reported fatalities is similar to that in past years with 73 (6.1%) of the fatalities in children (< 20 years old), 1,114 of 1,190 (93.6%) of fatal cases occurring in adults (age ≥ 20 years) and 3 (0.3%) of fatalities occurring in Unknown Age patients. Although children ≤ 5 years old were involved in the majority of exposures, the 21 fatalities comprised just 1.8% of the exposure-related fatalities. Most (70.0%) of the fatalities occurred in 20–59-year-old individuals.

Table 21 lists each of the 2,576 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

Table 16A. Decontamination Trends (1985–2012).

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)

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

Therapy	Human exposures N	Human exposures %	Exposures children ≤ 5 y N	Exposures children ≤ 5 y %
Activated charcoal administered	57,888	2.54	11,284	1.02
Cathartic	12,357	0.54	1,259	0.11
Ipecac administered	193	0.01	83	0.01
Lavage	3,510	0.15	116	0.01
Other Emetic	13,130	0.58	6,241	0.57
Whole Bowel Irrigation	1,838	0.08	101	0.01
Total	**88,916**	**3.91**	**19,084**	**1.73**

[a]Human exposures = 2,275,141; Pediatric exposures = 1,102,307.

of single-substance exposure fatalities for that category—miscellaneous sedative/hypnotics/antipsychotics, miscellaneous cardiovascular drugs, opioids, and acetaminophen combination products, lead this list followed by miscellaneous stimulants and street drugs, acetaminophen alone, miscellaneous alcohols, miscellaneous antidepressants, and selective serotonin reuptake inhibitors (SSRI). 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 2,142 (83.2%) of the 2,576 fatalities. These 2,142 first ranked pharmaceuticals included the following:

946 analgesics (178 methadone, 138 oxycodone, 133 acetaminophen/hydrocodone, 103 acetaminophen, 102 morphine, 53 fentanyl, 49 salicylate, 33 tramadol, and 24 acetaminophen/oxycodone)

559 stimulants/street drugs (325 heroin, 90 methamphetamine, 87 cocaine, and 14 amphetamines (hallucinogenic))

182 cardiovascular drugs (33 amlodipine, 21 metoprolol, 20 verapamil, 16 diltiazem (extended release), 13 diltiazem, 12 cardiac glycoside, and 10 atenolol)

149 antidepressants (38 amitriptyline, 19 bupropion, 14 citalopram, 12 bupropion (extended release), 11 doxepin, and 9 venlafaxine)

110 sedative/hypnotic/antipsychotics (35 quetiapine, 27 alprazolam, 9 benzodiazepine, 8 clonazepam, 7 diazepam, and 5 pentobarbital)

The exposure was acute in 1,467 (56.9%), A/C = acute on chronic in 260 (10.1%), C = chronic exposure in 87 (3.4%), and U = unknown in 762 (29.6%).

A total of 1,247 tissue concentrations for 1 or more related analytes were reported in 554 cases. Most of these (1,178) involved fatalities with RCF 1–3, and are listed in Table 21, while all tissue concentrations are available to the member centers through the NPDS Enterprise Reports. These 122 analytes included 212 acetaminophen, 93 ethanol, 82 salicylate, 35 morphine, 32 carboxyhemoglobin, 28 alprazolam, 28 diphenhydramine, 26 methadone, 24 ethylene glycol, 21 nordiazepam, 21 valproic acid, 20 bupropion, 20 diazepam, and 19 oxycodone.

Route of exposure was ingestion only in 1,511 cases (58.7%), parenteral in 104 cases (4.0%), and inhalation/

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

Substance (Major Generic Category)	All substances	%[a]	Single-substance exposures	%[b]
Analgesics	311,347	11.59	202,996	9.99
Cosmetics/Personal Care Products	211,314	7.87	204,110	10.04
Cleaning Substances (Household)	193,802	7.21	172,905	8.51
Sedative/Hypnotics/Antipsychotics	162,634	6.05	62,271	3.06
Foreign Bodies/Toys/Miscellaneous	110,070	4.10	107,067	5.27
Antidepressants	108,773	4.05	45,371	2.23
Cardiovascular Drugs	103,922	3.87	50,012	2.46
Antihistamines	96,997	3.61	69,241	3.41
Topical Preparations	96,431	3.59	94,276	4.64
Pesticides	88,694	3.30	82,916	4.08
Alcohols	74,858	2.79	26,964	1.33
Vitamins	68,168	2.54	59,028	2.90
Cold and Cough Preparations	68,144	2.54	49,547	2.44
Bites and Envenomations	64,787	2.41	63,993	3.15
Antimicrobials	62,426	2.32	51,750	2.55
Stimulants and Street Drugs	61,185	2.28	36,027	1.77
Hormones and Hormone Antagonists	59,449	2.21	40,874	2.01
Anticonvulsants	51,015	1.90	21,757	1.07
Plants	49,374	1.84	46,775	2.30
Gastrointestinal Preparations	49,035	1.83	37,626	1.85
Chemicals	39,571	1.47	33,784	1.66
Dietary Supplements/Herbals/Homeopathic	37,729	1.40	30,316	1.49
Hydrocarbons	36,356	1.35	34,178	1.68
Fumes/Gases/Vapors	32,258	1.20	29,338	1.44
Electrolytes and Minerals	31,937	1.19	26,287	1.29

[a]Percentages are based on the total number of substances reported in all exposures (N = 2,686,673).
[b]Percentages are based on the total number of single-substance exposures (N = 2,032,956).

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

Substance (Major Generic Category)	Increase in exposures per year[a] Mean	95% CI	All substances in 2012
Analgesics	8,780	[6201, 11359]	311,347
Sedative/Hypnotics/Antipsychotics	7,116	[5691, 8540]	162,634
Cardiovascular Drugs	4,614	[4278, 4949]	103,922
Antihistamines	3,406	[2902, 3909]	96,997
Vitamins	1,849	[1377, 2322]	68,168
Anticonvulsants	1,799	[1552, 2047]	51,015
Hormones and Hormone Antagonists	1,720	[1425, 2016]	59,449
Alcohols	1,647	[588, 2705]	74,858
Antidepressants	1,540	[839, 2241]	108,773
Gastrointestinal Preparations	1,482	[742, 2223]	49,035
Stimulants and Street Drugs	1,421	[628, 2214]	61,185
Other/Unknown Nondrug Substances	1,311	[741, 1882]	29,937
Dietary Supplements/Herbals/Homeopathic	1,215	[812, 1619]	37,729
Muscle Relaxants	1,039	[825, 1253]	27,471
Anticholinergic Drugs	983	[750, 1215]	11,911
Cosmetics/Personal Care Products	833	[−472, 2137]	211,314
Miscellaneous Drugs	822	[365, 1280]	21,678
Unknown Drug	687	[565, 810]	20,480
Essential Oils	607	[545, 669]	10,756
Topical Preparations	598	[−744, 1940]	96,431
Antimicrobials	515	[23, 1008]	62,426
Deodorizers	502	[265, 739]	23,119
Anticoagulants	453	[401, 505]	7,811
Eye/Ear/Nose/Throat Preparations	359	[140, 578]	18,936
Diuretics	347	[228, 465]	10,227

[a]Increase and confidence intervals are based on least squares linear regression of the number of calls per year for 2000–2012.

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nasal in 128 cases (5.0%). Most other routes were combination routes or unknown.

The Intentional exposure reason was suspected suicide in 786 cases (30.5%), abuse in 1,196 cases (46.4%), and misuse in 52 cases (2.0%). Unintentional exposure reason was environmental in 84 cases (3.3%), therapeutic error in 18 cases (0.7%), and misuse in 52 cases (2.0%). Adverse drug reaction was the reason in 45 (1.7%).

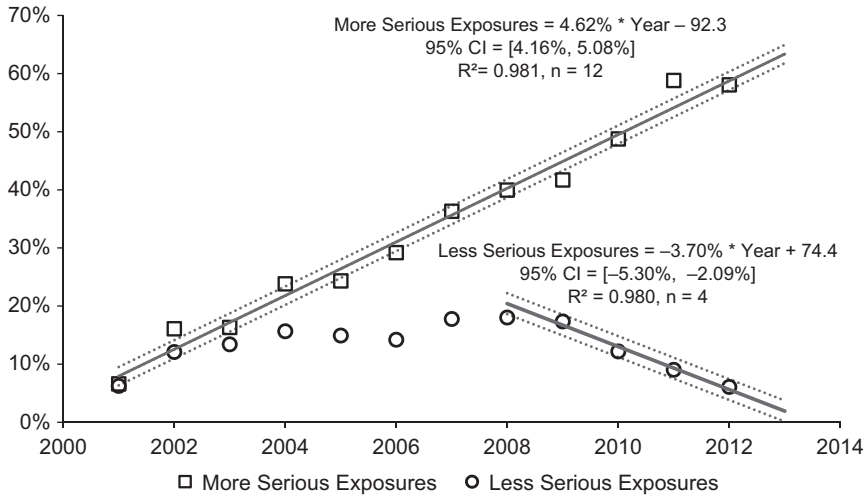

Fig. 4. Change in Encounters by Outcome from 2008 to 2012. The Figure shows the percent change from baseline for Human Exposure Calls divided among the 10 Medical Outcomes. The More Serious Exposures (Major, Moderate, and Death) increased. The Less Serious Exposures (no effect, minor effect, not followed (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 interval on the regression (colour version of this figure can be found in the online version at www.informahealthcare.com/ctx).

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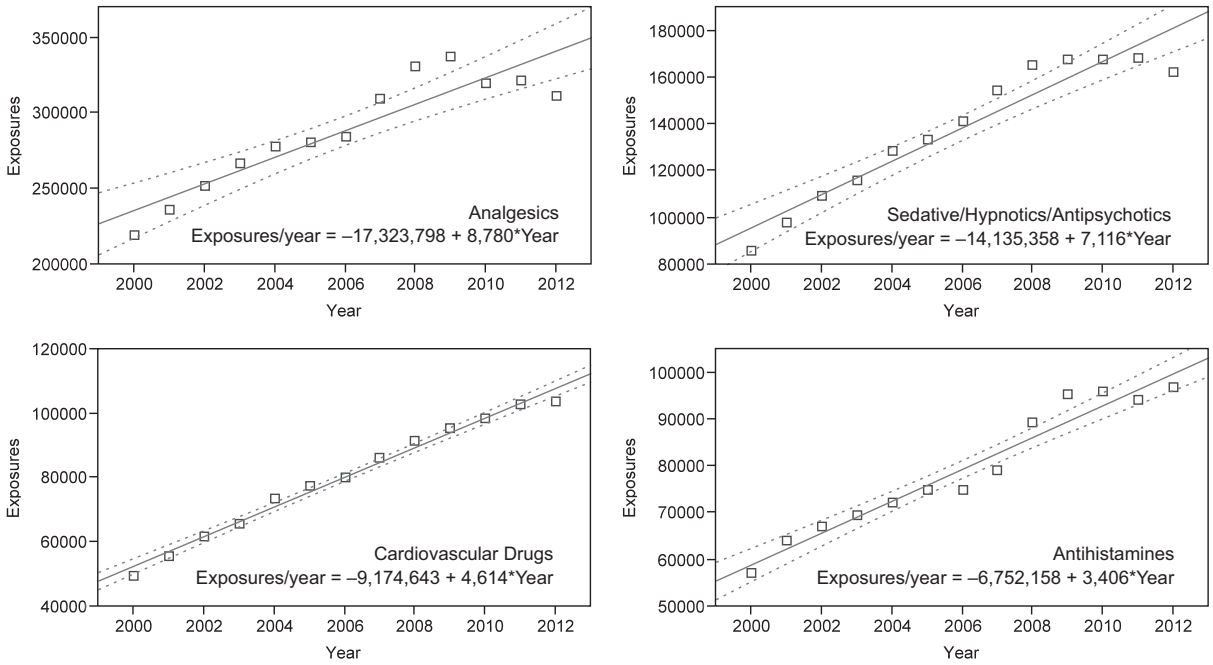

Fig. 5. Substance Categories with the Greatest Rate of Exposure Increase (Top 4). Solid lines show least-squares linear regressions for the Human Exposure Calls per year for that category (□). Broken lines show 95% confidence interval on the regression (colour version of this figure can be found in the online version at www.informahealthcare.com/ctx).

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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	159,970	13.94	156,623	14.63
Analgesics	113,975	9.93	104,389	9.75
Cleaning Substances (Household)	111,148	9.68	106,582	9.95
Foreign Bodies/Toys/Miscellaneous	79,738	6.95	77,905	7.28
Topical Preparations	72,638	6.33	71,386	6.67
Vitamins	49,086	4.28	44,666	4.17
Antihistamines	44,521	3.88	40,194	3.75
Pesticides	37,035	3.23	36,056	3.37
Plants	31,920	2.78	30,690	2.87
Antimicrobials	30,623	2.67	28,793	2.69
Gastrointestinal Preparations	29,946	2.61	27,264	2.55
Cold and Cough Preparations	28,837	2.51	26,488	2.47
Cardiovascular Drugs	25,025	2.18	16,560	1.55
Dietary Supplements/Herbals/Homeopathic	23,736	2.07	21,703	2.03
Hormones and Hormone Antagonists	22,147	1.93	17,223	1.61
Arts/Crafts/Office Supplies	21,721	1.89	21,146	1.98
Electrolytes and Minerals	21,558	1.88	19,604	1.83
Deodorizers	19,351	1.69	19,153	1.79
Other/Unknown Nondrug Substances	15,181	1.32	14,420	1.35
Sedative/Hypnotics/Antipsychotics	13,641	1.19	10,557	0.99
Antidepressants	12,299	1.07	8,926	0.83
Alcohols	11,726	1.02	11,443	1.07
Information Calls	11,195	0.98	10,547	0.99
Hydrocarbons	10,890	0.95	10,572	0.99
Asthma Therapies	10,863	0.95	9,908	0.93

[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 = 1,147,764).
[c]Percentages are based on the total number of single-substance pediatric exposures (N = 1,070,661).

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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	145,323	12.46	66,831	9.71
Sedative/Hypnotics/Antipsychotics	126,909	10.88	40,854	5.94
Antidepressants	75,867	6.50	26,074	3.79
Cardiovascular Drugs	67,774	5.81	26,603	3.87
Cleaning Substances (Household)	67,031	5.75	52,987	7.70
Alcohols	55,409	4.75	11,905	1.73
Pesticides	43,449	3.73	39,266	5.71
Bites and Envenomations	43,403	3.72	42,882	6.23
Anticonvulsants	36,786	3.15	13,402	1.95
Cosmetics/Personal Care Products	33,492	2.87	30,828	4.48
Antihistamines	32,797	2.81	16,125	2.34
Stimulants and Street Drugs	32,609	2.80	16,054	2.33
Hormones and Hormone Antagonists	31,897	2.73	19,830	2.88
Chemicals	23,717	2.03	19,499	2.83
Antimicrobials	23,361	2.00	16,732	2.43
Fumes/Gases/Vapors	22,373	1.92	20,258	2.94
Muscle Relaxants	21,820	1.87	7,650	1.11
Hydrocarbons	20,687	1.77	19,097	2.78
Cold and Cough Preparations	20,482	1.76	10,947	1.59
Topical Preparations	18,119	1.55	17,476	2.54
Gastrointestinal Preparations	15,139	1.30	7,731	1.12
Foreign Bodies/Toys/Miscellaneous	13,658	1.17	12,803	1.86
Information Calls	12,780	1.10	11,558	1.68
Miscellaneous Drugs	12,514	1.07	6,500	0.94
Unknown Drug	10,871	0.93	6,937	1.01

[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 = 1,166,330).
[c]Percentages are based on the total number of single-substance adult exposures (N = 687,948).

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Pediatric fatalities—age ≤5 years

Although children younger than 6 years were involved in the majority of exposures, they comprised 46 of 2,937 (1.6%) of fatalities. These numbers are similar to those reported since 1985 (Table 19A, all RCFs, and includes indirect deaths). Table 8 (RCF 1–3, excludes indirect deaths) shows the percentage fatalities in children ≤5 years related to total pediatric exposures was 21/1,102,307 = 0.00191%. By comparison, 1,114/859,742 = 0.13% of all adult exposures involved a fatality. Of these 21 pediatric fatalities, 15 (71.4%) were reported as unintentional and 3 (14.3%) were coded as resulting from malicious intent (Table 8).

The 34 fatalities in children ≤5 years old in Table 21 (includes death, indirect reports, and RCF 1–3) included 19 pharmaceuticals and 15 nonpharmaceuticals. The first ranked substances associated with these fatalities included smoke (7), antifreeze (ethylene glycol) (2), carbon monoxide (2), disc battery (2), lithium (2), morphine (2), and tramadol (2), and 15 other substances (1 each).

Pediatric fatalities—ages 6–12 years

In the age range 6–12 years, there were 7 reported fatalities, 4 of which were unintentional environmental, 1 was unintentional therapeutic error, 1 was intentional suspected suicide, and 1 unknown reason (Table 8). The 9 fatalities listed in Table 21 (includes death, indirect reports, and RCF 1–3) included 3 carbon monoxide, 1 acetaminophen, 1 methadone, and 1 salicylate.

Adolescent fatalities—ages 13–19 years

In the age range 13–19 years, there were 45 reported fatalities including 38 intentional, 3 unintentional, and 4 unknown reason (Table 8). The 81 fatalities listed in Table 21 (includes death, indirect reports, and RCF 1–3) included 71 pharmaceuticals and 10 nonpharmaceuticals. The first ranked pharmaceuticals associated with these fatalities included methadone (8 cases), heroin (6 cases), alprazolam (4 cases), oxycodone (4 cases), acetaminophen/hydrocodone (3 cases), morphine (3 cases), salicylate (3 cases), acetaminophen (2 cases), bupropion (2 cases), bupropion (extended release) (2 cases), drug unknown (2 cases), methamphetamine (2 cases), oxymorphone (2 cases), phenylethylamine (2 cases), quetiapine (2 cases), and the balance 1 substance each. The first ranked nonpharmaceuticals associated with these fatalities included carbon monoxide (3 cases), freon (2 cases), smoke (2 cases), ethanol (1 case), methanol (1 case), and selenous acid (1 case).

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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	16	24.62	4	12.90
Analgesics	10	15.38	5	16.13
Cold and Cough Preparations	4	6.15	4	12.90
Antihistamines	3	4.62	1	3.23
Automotive/Aircraft/Boat Products	3	4.62	0	0.00
Hormones and Hormone Antagonists	3	4.62	0	0.00
Sedative/Hypnotics/Antipsychotics	3	4.62	0	0.00
Stimulants and Street Drugs	3	4.62	1	3.23
Unknown Drug	3	4.62	2	6.45
Antidepressants	2	3.08	2	6.45
Batteries	2	3.08	2	6.45
Cardiovascular Drugs	2	3.08	1	3.23
Cleaning Substances (Household)	2	3.08	1	3.23
Alcohols	1	1.54	0	0.00
Anticonvulsants	1	1.54	1	3.23
Antimicrobials	1	1.54	1	3.23
Dietary Supplements/Herbals/ Homeopathic	1	1.54	1	3.23
Electrolytes and Minerals	1	1.54	1	3.23
Gastrointestinal Preparations	1	1.54	1	3.23
Hydrocarbons	1	1.54	1	3.23
Information Calls	1	1.54	1	3.23
Other/Unknown Nondrug Substances	1	1.54	1	3.23
Total	**65**	**100.00**	**31**	**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 = 65).
[c]Percentages are based on the total number of single-substance pediatric fatalities (N = 31).

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

Substance (Major Generic Category)	All substances	%[a]
Analgesics	289,786	28.26
Information Calls	130,853	12.76
Sedative/Hypnotics/Antipsychotics	116,392	11.35
Stimulants and Street Drugs	59,587	5.81
Unknown Drug	46,528	4.54
Muscle Relaxants	40,587	3.96
Cardiovascular Drugs	40,436	3.94
Invalid/Missing	40,358	3.94
Antidepressants	38,479	3.75
Antihistamines	33,683	3.28
Antimicrobials	29,520	2.88
Anticonvulsants	19,069	1.86
Hormones and Hormone Antagonists	18,528	1.81
Gastrointestinal Preparations	17,747	1.73
Pesticides	9,859	0.96
Cold and Cough Preparations	8,765	0.85
Diuretics	8,344	0.81
Miscellaneous Drugs	7,966	0.78
Foreign Bodies/Toys/Miscellaneous	6,634	0.65
Cleaning Substances (Household)	5,111	0.50
Plants	4,524	0.44
Bites and Envenomations	3,902	0.38
Chemicals	3,757	0.37
Other/Unknown Nondrug Substances	3,735	0.36
Cosmetics/Personal Care Products	3,497	0.34

[a]Percentages are based on the total number of substances reported in all drug identification calls (N = 1,025,575).

Pregnancy and Fatalities

A total of 30 deaths of pregnant women have been reported from the years 2000 through 2012. The majority (26 of 30) were intentional exposures (misuse, abuse, or suspected suicide). There were four deaths in pregnant women reported to NPDS in 2012.

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, 35 PCs utilize NPDS as part of their surveillance programs. Six state health departments plus CDC run surveillance definitions in NPDS. Since Surveillance Anomaly 1, generated at 2:00 pm EDT on 17 September 2006, over 210,000 anomalies have been detected. More than 1100 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, 354 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

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

Substance (Major Generic Category)	All substances	%[b]	Single-substance exposures	%[c]
Analgesics	1,054	12.08	639	9.24
Cleaning Substances (Household)	816	9.35	641	9.27
Pesticides	619	7.09	575	8.32
Fumes/Gases/Vapors	546	6.26	510	7.38
Bites and Envenomations	520	5.96	517	7.48
Sedative/Hypnotics/Antipsychotics	346	3.97	183	2.65
Vitamins	330	3.78	264	3.82
Foreign Bodies/Toys/Miscellaneous	286	3.28	270	3.91
Cosmetics/Personal Care Products	261	2.99	232	3.36
Antihistamines	249	2.85	158	2.29
Information Calls	243	2.78	226	3.27
Antidepressants	226	2.59	117	1.69
Antimicrobials	215	2.46	171	2.47
Chemicals	192	2.20	157	2.27
Hydrocarbons	191	2.19	177	2.56
Hormones and Hormone Antagonists	167	1.91	134	1.94
Cold and Cough Preparations	160	1.83	98	1.42
Cardiovascular Drugs	142	1.63	96	1.39
Stimulants and Street Drugs	140	1.60	80	1.16
Electrolytes and Minerals	135	1.55	108	1.56
Gastrointestinal Preparations	128	1.47	103	1.49
Infectious and Toxin-Mediated Diseases	124	1.42	121	1.75
Alcohols	124	1.42	37	0.54
Paints and Stripping Agents	119	1.36	106	1.53
Plants	119	1.36	113	1.63

[a]Includes all patients 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 = 8,726).
[c]Percentages are based on the total number of single-substance pregnant exposures (N = 6,914).

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	405	14.10	14	2.81
Miscellaneous Cardiovascular Drugs	350	12.18	49	9.84
Opioids	255	8.88	36	7.23
Acetaminophen Combinations	183	6.37	37	7.43
Miscellaneous Stimulants and Street Drugs	176	6.13	48	9.64
Acetaminophen Alone	159	5.53	57	11.45
Miscellaneous Alcohols	145	5.05	19	3.82
Miscellaneous Antidepressants	126	4.39	2	0.40
Selective Serotonin Reuptake Inhibitors	89	3.10	2	0.40
Miscellaneous Antihistamines	69	2.40	5	1.00
Tricyclic Antidepressants	69	2.40	17	3.41
Miscellaneous Fumes/Gases/Vapors	67	2.33	37	7.43
Acetylsalicylic Acid Alone	65	2.26	24	4.82
Miscellaneous Muscle Relaxants	57	1.98	5	1.00
Miscellaneous Anticonvulsants	56	1.95	1	0.20
Oral Hypoglycemic	56	1.95	8	1.61
Nonsteroidal Antiinflammatory Drugs	50	1.74	10	2.01
Miscellaneous Unknown Drug	44	1.53	11	2.21
Miscellaneous Chemicals	33	1.15	17	3.41
Miscellaneous Hormones and Hormone Antagonists	31	1.08	1	0.20
Anticonvulsants: Gamma Aminobutyric Acid and Analogs	29	1.01	0	0.00
Miscellaneous Anticoagulants	23	0.80	9	1.81
Miscellaneous Diuretics	23	0.80	0	0.00
Cannabinoids and Analogs	20	0.70	2	0.40
Miscellaneous Hydrocarbons	19	0.66	13	2.61

[a]Numbers represent total exposures associated with 1,190 fatalities (with RCF 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 = 2,873).
[c]Percentages are based on the total number of single-substance fatal exposures (N = 498).

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Table 19A. Comparisons of Death Data (1985–2012).[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

[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.

Environmental Hazards and Health Effects, National Center for Environmental Health, CDC.

Automated surveillance continues to remain controversial as a viable methodology to detect the index case of a public health event. Uniform evaluation algorithms are not available to determine the optimal methodologies.(8) Less controversial is the benefit to situational awareness that NPDS can provide.(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. In February 2012, manufacturers began commercial distribution of unit dose liquid laundry detergent packets in the US. On May 4, 2012, a PC medical director reported two cases of unusual toxicity in toddlers with unit dose liquid laundry detergent packets exposures. From May 15–18, 2012, a number of other PCs reported additional cases of unusual toxicity. On May 17, 2012, AAPCC issued a press release and activated a temporary code to better capture the number of unit dose liquid laundry detergent packet cases using NPDS. In a May 23, 2012, ABC national news story on unit dose liquid laundry detergent toxicity in children using PC data, the manufacturer of one of the products announced a new child-proof container was planned. The American Cleaning Institute then partnered with AAPCC in June 2012 on a national campaign on the safe use of unit dose liquid laundry detergent packets.

A dramatic and sustained increase in number of calls about children exposed to unit dose liquid laundry detergent packets as a single substance has been noted and continues into 2013, while calls concerning all other laundry detergents have dropped (Figure 6). The severity of exposures to unit dose liquid laundry detergent products as a single substance appears to be higher than older laundry formulations with, a 5-fold increase in major outcomes and a 2-fold increase in moderate outcomes. Some of the clinical effects showing increased frequency in these cases were esophageal injury, coma, respiratory depression, respiratory arrest, acidosis, dyspnea, and bronchospasm. Please note that the data for 2013 are considered preliminary because it is possible that a PC may update a case anytime during the year before the year is locked, if new information is obtained.

Table 19B. Comparisons of Direct and Indirect Death Data (2000–2012).[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

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

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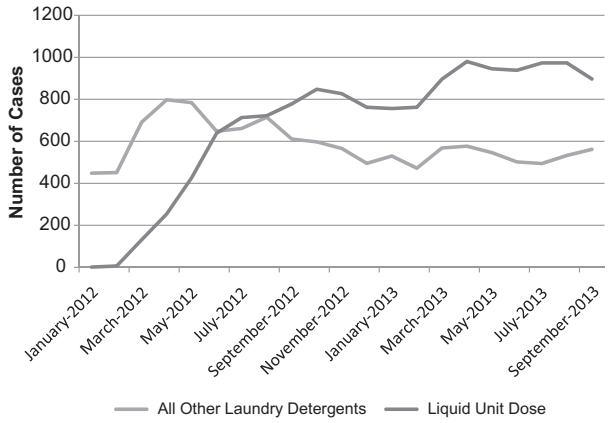

Fig. 6. Unit Dose Liquid Laundry Detergent Exposures, Jan 2012—Sep 2013. The Figure shows the number of calls received for single-substance human pediatric poison exposure calls to Unit Dose Liquid Laundry Detergents (—) and All Other Laundry Detergents (—) since the commercial distribution of the Unit Dose Liquid Laundry Detergents began in the US in February 2012 (colour version of this figure can be found in the online version at www.informahealthcare.com/ctx).

Discussion

The exposure cases and information requests reported by PCs in 2012 do not reflect the full extent of PC efforts which also include poison prevention activities and public and healthcare professional education programs.

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

NPDS 2000–2012 call volume data clearly demonstrate a continuing decrease in exposure calls. This decline has been apparent and increasing since mid-2007 and reflects the decreasing use of the PC for less severe exposures. However, in contrast, during this same period, exposures with a more severe outcome (death, major, and moderate) and HCF calls 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 increased 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 severe morbidity and mortality because of incorrect internet information or no telephone management. The net effect could be more severe 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.

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	2,530
2	Unknown Botanical Name	Unknown Toxic Types or Unknown if Toxic	1,912
3	BOTANICAL TERMS	Unknown Toxic Types or Unknown if Toxic	1,576
4	*Phytolacca americana* (L.)	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	1,527
5	*Spathiphyllum* spp.	Oxalates	1,232
6	*Ilex* spp. (not otherwise specified)	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	921
7	Cherry (not otherwise specified)	Amygdalin and/or Cyanogenic Glycosides	870
8	Plants—pokeweed	Other Toxic Types	769
9	*Philodendron* spp.	Oxalates	707
10	Plants—cardiac glycosides	Cardiac Glycosides (Excluding Drugs)	685
11	*Malus* spp.	Amygdalin and/or Cyanogenic Glycosides	618
12	Plants—poison ivy	Skin Irritants (Excluding Oxalate Containing Plants)	614
13	*Caladium* spp.	Oxalates	579
14	*Zantedeschia aethiopica*	Oxalates	545
15	*Euphorbia pulcherrima* (Willd.)	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	529
16	Berry (not otherwise specified)	Unknown Toxic Types or Unknown if Toxic	480
17	Mold (not otherwise specified)	Unknown Toxic Types or Unknown if Toxic	468
18	*Solanum dulcamara*	Solanine	425
19	Plants—toxicodendrol	Skin Irritants (Excluding Oxalate Containing Plants)	403
20	*Epipremnum areum*	Oxalates	397
21	Plants—oxalates	Oxalates	389
22	*Narcissus pseudonarcissus* (L.)	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	384
23	*Ilex opaca*	Other Toxic Types	367
24	*Solanum nigrum*	Solanine	343
25	*Quercus* spp.	Other Toxic Types	322

[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 = 49,374.

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One of the limitations of NPDS data has been the perceived lack of fatality case volume compared with 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 2012 shown in Figure 4 include the following:

- Total encounters (all exposure and information calls) decreased by 6.9%;
- All information calls decreased by 14.8%, Drug ID calls decreased by 22.0%, and human exposures decreased by 2.5%;
- HCF information calls decreased by 1.7%, while HCF exposures increased by 1.2%;
- Human exposures with less serious outcomes decreased by 2.7%, while those with more serious outcomes (minor, moderate, major, or death) decreased by 0.5% not withstanding an overall 4.6% yearly increase since 2000;
- The categories of substance exposures increasing most rapidly are analgesics, followed by sedative/hypnotics/antipsychotics, cardiovascular drugs, and antihistamines.

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 calls involving less severe exposures. PCs 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 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										
1p	19 y M				A	Ingst+ Unk	Unk	2		
		ethanol	1	1					ethanol	370 mg/dL In Blood (unspecified) @ 1 h (pe)
2	19 y M				A	Ingst	Int-S	2		
		methanol	1	1					methanol	29 mg/dL In Blood (unspecified) @ Unknown
3ai	20 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
		oxycodone	2	2						
4ai	21 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
5ai	21 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
6ai	22 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
7ai	23 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
		diphenhydramine	2	2						
8p	23 y M				A	Ingst	Int-S	2		
		ethanol	1	1					ethanol	262 mg/dL In Blood (unspecified) @ Unknown
		drug, unknown	2	2						
		acetaminophen	3	3					acetaminophen	4 mcg/mL In Serum @ Unknown
9ai	23 y F				A	Ingst	Int-A	2		
		ethanol	1	1						
10ai	24 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
11pha	27 y F				A/C	Ingst	Int-A	2		
		ethanol	1	1						
12ai	27 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
13pa	27 y M				A	Ingst+ Inhal	Int-U	1		
		ethanol	1	1						
		alprazolam	2	2						
		diazepam	3	3						
14ai	27 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
15ai	27 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
		hydroxyzine	2	2						
16ai	28 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
		fluoxetine	2	2						
		lorazepam	3	3						
17ai	28 y M				U	Ingst+ Aspir	Int-A	2		
		ethanol	1	1						
		trazodone	2	2						
		oxymorphone	3	3						
18ai	28 y F				A	Ingst	Int-A	2		
		ethanol	1	1						
19pi	28 y M				A	Ingst	Int-A	3		
		ethanol	1	1					ethanol	480 mg/dL In Serum @ Unknown
20ai	29 y M				A	Ingst+ Unk	Int-U	2		

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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
		ethanol	1	1						
		cocaine	2	2						
21ai	29 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
22ai	29 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
		acetaminophen/ hydrocodone	2	2						
23ai	30 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
24ai	30 y F				U	Ingst	Int-A	2		
		ethanol	1	1						
25ha	30 y M				A	Inhal	Int-A	1		
		methanol	1	1						
		methanol	2	2						
26ph	30 y F				A	Ingst	Int-S	2		
		ethanol	1	1						
		drug, unknown	2	2						
27ai	30 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
28ai	31 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
29ai	31 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
30ai	31 y F				U	Ingst	Int-A	2		
		ethanol	1	1						
31ai	32 y M				U	Ingst	Int-S	2		
		isopropanol	1	1						
		sertraline	2	2						
		diazepam	3	3						
32ha	32 y F				C	Ingst	Int-A	3		
		ethanol	1	1						
		acetaminophen	2	2					acetaminophen	7.2 mcg/mL In Unknown @ Unknown
33ph	32 y M				A/C	Unk	Int-S	2		
		ethanol	1	1					ethanol	9 mg/dL In Blood (unspecified) @ 1 h (pe)
		acetaminophen/ hydrocodone	2	2					acetaminophen	5 mcg/mL In Blood (unspecified) @ 1 h (pe)
34ai	33 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
35ai	33 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
36	34 y M				C	Ingst+ Derm	Int-A	2		
		ethanol	1	1						
		acetaminophen/ diphenhy-dramine	2	2						
		fluocinonide	3	3						
		substance (non-drug), unknown	4	4						
37ai	34 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
38pha	34 y M				C	Ingst	Unk	1		
		ethanol	1	1					ethanol	0.155 g/dL In Blood (unspecified) @ Autopsy
		ethanol	1	1					ethanol	0.217 g/dL In Vitreous @ Autopsy
		ethanol	1	1					ethanol	0.321 g/dL In Blood (unspecified) @ 10 m (pe)
		citalopram	2	2					citralopram	0.78 mg/L In Blood (unspecified) @ Autopsy
		zolpidem	3	3					zolpidem	0.55 mg/L In Blood (unspecified) @ Autopsy
		tramadol	4	4						
39ai	34 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
40pa	34 y M				A	Unk	Int-S	2		
		ethanol	1	1					ethanol	456 mg/dL In Whole Blood @ Autopsy
41ai	35 y F				U	Ingst	Int-A	2		

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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
		ethanol	1	1						
		diazepam	2	2						
42ai	35 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
		clonazepam	2	2						
		oxycodone	3	3						
43p	35 y M				U	Unk	Unk	3		
		alcohol, unknown	1	1					ethanol	122 mg/dL In Blood (unspecified) @ Unknown
44ai	36 y M				A	Ingst	Int-A	2		
		ethanol (non-beverage)	1	1						
		tramadol	2	2						
45pa	36 y M				A	Ingst	Int-A	3		
		ethanol	1	1					ethanol	0.16 % (wt/Vol) In Blood (unspecified) @ Unknown
		ethanol	1	1					ethanol	142 mg/dL In Blood (unspecified) @ Unknown
46	36 y F				U	Ingst	Int-A	3		
		ethanol	1	1						
		acetaminophen	2	2						
		prednisone	3	3						
47ai	38 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
		chlordiazepoxide	2	2						
48ai	38 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
		isopropanol	2	2						
49p	39 y F				A	Ingst	Int-S	1		
		methanol	1	1					methanol	67 mg/dL In Serum @ Unknown
		morphine	2	2						
		oxycodone (extended release)	3	3						
		pregabalin	4	4						
50pha	39 y M				U	Ingst	Int-S	3		
		ethanol	1	1					ethanol	157 mg/dL In Blood (unspecified) @ Unknown
		ethanol	1	1					ethanol	179.9 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen	2	2					acetaminophen	38.8 mcg/mL In Blood (unspecified) @ Unknown
		chlordiazepoxide	3	3					chlordiazepoxide	1380 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	4	4					alprazolam	9.4 ng/mL In Blood (unspecified) @ Unknown
		methadone	5	5					eddp (2-ethylidene-1, 5-dimethyl-3,3-di-phenyl pyrrolidine)	115 ng/mL In Urine (quantitative only) @ Unknown
		methadone	5	5					methadone	121 ng/mL In Urine (quantitative only) @ Unknown
		diphenhydramine	6	6					diphenhydramine	627 ng/mL In Urine (quantitative only) @ Unknown
		diphenhydramine	6	6					diphenhydramine	92 ng/mL In Blood (unspecified) @ Unknown
51ai	40 y F				A	Ingst	Int-A	2		
		ethanol	1	1						
52ai	40 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
		alprazolam	2	2						
		skeletal muscle relaxant	3	3						
53ai	40 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
54ai	40 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
		acetaminophen/ oxycodone	2	2						
55ai	40 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
		chlordiazepoxide	2	2						

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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
		diazepam	3	3						
56ai	41 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
[57ha]	41 y F				U	Ingst	Int-A	1		
		ethanol (non-beverage)	1	1					methanol	136 mg/dL In Unknown @ 1 d (pe)
		ethanol (non-beverage)	1	1					methanol	20 mg/dL In Unknown @ 3 d (pe)
		ethanol (non-beverage)	1	1					methanol	329 mg/dL In Unknown @ Unknown
58	41 y M				U	Ingst	Int-A	2		
		methanol	1	1						
		ethanol	2	2						
59ai	41 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
60ai	42 y F				A	Ingst	Int-A	2		
		ethanol	1	1						
61h	42 y F				A/C	Ingst	Int-S	2		
		ethanol	1	1						
		gabapentin	2	2						
		benzodiazepine	3	3						
		levothyroxine	4	4						
62ai	43 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
63ai	43 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
64ai	43 y M				A	Ingst	Int-U	2		
		ethanol	1	1						
		salicylate	2	2						
		diphenhydramine	3	3						
65ai	43 y F				C	Ingst	Int-A	2		
		ethanol	1	1						
66ai	43 y M				U	Ingst	Unk	2		
		ethanol	1	1						
67ai	43 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
68ai	43 y M				U	Ingst	Unk	2		
		ethanol	1	1						
69ai	43 y F				A	Ingst	Int-A	2		
		ethanol	1	1						
70ai	43 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
71ai	44 y F				A	Ingst	Int-A	2		
		ethanol	1	1						
		levamisole	2	2						
		zolpidem	3	3						
72ai	44 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
73ai	44 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
		lorazepam	2	2						
		buspirone	3	3						
74h	44 y F				C	Ingst	Int-A	3		
		ethanol	1	1					ethanol	204 mg/dL In Blood (unspecified) @ Unknown
75ai	44 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
76ai	44 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
77i	45 y F				C	Ingst	Int-A	3		
		ethanol	1	1					ethanol	17 mg/dL In Blood (unspecified) @ Unknown
78ai	45 y F				C	Ingst	Int-A	2		
		ethanol	1	1						
79ai	46 y F				A	Ingst	Int-A	2		
		ethanol	1	1						
80h	46 y M				C	Unk	Oth-W	3		
		ethanol	1	1						
		clonazepam	2	2						
		drug, unknown	3	3						
81ai	46 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
82ai	46 y M				A	Ingst	Int-A	2		

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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
		ethanol	1	1						
83ai	46 y F				U	Ingst	Int-A	2		
		ethanol	1	1						
		fluoxetine	2	2						
84ai	46 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
85ai	46 y M				U	Ingst+ Inhal	Int-A	2		
		ethanol	1	1						
		freon	2	2						
86ai	46 y F				U	Ingst	Int-A	2		
		ethanol	1	1						
87ai	46 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
88ai	47 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
		nortriptyline	2	2						
89ai	47 y F				U	Ingst	Int-A	2		
		ethanol	1	1						
		diazepam	2	2						
90ai	47 y M				U	Ingst	Unk	2		
		ethanol	1	1						
		diphenhydramine	2	2						
91ai	47 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
92h	48 y M				C	Ingst	Int-U	3		
		ethanol	1	1					ethanol	56 mg/dL In Blood (unspecified) @ Unknown
93ai	48 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
		diazepam	2	2						
		diphenhydramine	3	3						
94ai	48 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
95ai	48 y M				A	Ingst+ Unk	Int-A	2		
		ethanol	1	1						
		heroin	2	2						
		quinine	3	3						
		doxylamine	4	4						
		lidocaine	5	5						
96	48 y F				C	Ingst	Int-A	2		
		ethanol	1	1					ethanol	121 mg/dL In Serum @ Unknown
97ai	48 y M				A	Ingst+ Unk	Int-A	2		
		ethanol	1	1						
		oxycodone	2	2						
		phencyclidine	3	3						
		cyclobenzaprine	4	4						
98ai	48 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
99ai	49 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
100ai	49 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
101ai	49 y M				U	Ingst+ Unk	Int-A	2		
		ethanol	1	1						
		methamphetamine	2	2						
102ai	49 y F				U	Ingst	Int-A	2		
		ethanol	1	1						
103h	49 y F				A	Unk	Unk	1		
		methanol	1	1					methanol	47 mg/dL In Blood (unspecified) @ Unknown
104ai	49 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
105ai	49 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
106ai	50 y F				A	Ingst+ Unk	Int-A	2		
		ethanol (non-beverage)	1	1						

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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
		cocaine	2	2						
[107h]	50 y M				A	Ingst	Unk	1		
		methanol	1	1					methanol	110 mg/dL In Blood (unspecified) @ Unknown
		methanol	1	1					methanol	156 mg/dL In Blood (unspecified) @ Unknown
108ai	50 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
109ai	50 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
		trazodone	2	2						
110ai	51 y F				A	Ingst	Int-A	2		
		ethanol	1	1						
111ai	51 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
		acetaminophen/ hydrocodone	2	2						
112	51 y M				U	Ingst	Int-S	2		
		ethanol	1	1						
113ai	51 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
114	51 y M				A	Ingst	Int-U	2		
		ethanol	1	1						
115h	51 y M				U	Ingst	Int-S	2		
		ethanol	1	1						
116ai	51 y M				U	Ingst	Int-S	2		
		ethanol	1	1						
117ai	52 y F				A	Ingst	Int-A	2		
		ethanol (non-beverage)	1	1						
		diphenhydramine	2	2						
		cyclobenzaprine	3	3						
		acetaminophen	4	4						
118ai	52 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
		cyclobenzaprine	2	2						
119ai	52 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
		oxycodone	2	2						
		diazepam	3	3						
120ai	52 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
121ai	52 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
		diazepam	2	2						
		diphenhydramine	3	3						
122ai	52 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
123ai	52 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
124ai	53 y F				A	Ingst	Int-A	2		
		ethanol	1	1						
		drug, unknown	2	2						
125ai	53 y M				U	Ingst+ Unk	Int-A	2		
		ethanol	1	1						
		methamphet-amine	2	2						
126ai	53 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
127ai	53 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
		amitriptyline	2	2						
		diazepam	3	3						
		promethazine	4	4						
		trazodone	5	5						
		paroxetine	6	6						
		mirtazapine	7	7						
128	53 y F				U	Ingst	Int-S	2		
		ethanol	1	1					ethanol	166 mg/dL In Serum @ 3 h (pe)
		bupropion (extended release)	2	2						

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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
		venlafaxine	3	3						
129p	53 y M				A	Ingst	Int-U	3		
		ethanol	1	1						
130ai	53 y F				U	Ingst+ Unk	Unk	2		
		ethanol	1	1						
		acetaminophen	2	2						
		fentanyl	3	3						
		skeletal muscle relaxant	4	4						
		zolpidem	5	5						
		acetaminophen/ hydrocodone	6	6						
131ai	54 y M				A	Ingst+ Unk	Int-A	2		
		ethanol	1	1						
		cocaine	2	2						
132ai	54 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
133ai	54 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
		chlordiazepoxide	2	2						
134ai	54 y M				C	Ingst	Int-A	2		
		ethanol	1	1						
135ai	54 y F				U	Ingst	Int-A	2		
		ethanol	1	1						
136ai	55 y M				A	Ingst	Int-A	2		
		ethanol (non-beverage)	1	1						
		phenytoin	2	2						
137ai	55 y F				U	Ingst+ Unk	Int-A	2		
		ethanol	1	1						
		morphine	2	2						
		skeletal muscle relaxant	3	3						
138	55 y F				A/C	Ingst	Int-S	3		
		ethanol	1	1					ethanol	209 mg/dL In Blood (unspecified) @ Unknown
		cleaner (hydrocarbon)	2	2						
		glass cleaners	3	3						
139ai	55 y F				U	Ingst	Int-A	2		
		ethanol	1	1						
		cyclobenzaprine	2	2						
		sertraline	3	3						
140ai	56 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
		lorazepam	2	2						
		mirtazapine	3	3						
		citalopram	4	4						
141ai	56 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
142pa	56 y F				A	Ingst	Int-A	3		
		ethanol	1	1					ethanol	200 % (wt/Vol) In Blood (unspecified) @ Unknown
		methadone*	2	2						
		morphine (extended release)*	3	2						
143pa	56 y F				A	Ingst	Int-A	1		
		ethanol	1	1						
		citalopram	2	2						
		trazodone	3	3						
144h	56 y F				A	Ingst	Int-U	2		
		ethanol	1	1					ethanol	98 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	2	2					acetaminophen	118 mcg/mL In Blood (unspecified) @ Unknown
145ai	56 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
		sertraline	2	2						
		lamotrigine	3	3						
146p	56 y M				A	Ingst	Unk	2		
		ethanol	1	1						

(*Continued*)

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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
147	56 y F				U	Ingst	Unk	2		
		ethanol	1	1						
		opioid	2	2						
		benzodiazepine	3	3						
148ai	56 y F				A	Ingst	Int-A	2		
		ethanol	1	1						
149ai	57 y M				U	Ingst+ Unk	Int-A	2		
		ethanol	1	1						
		meperidine	2	2						
150ai	57 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
151ai	57 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
152ai	57 y M				A	Ingst	Int-A	2		
		ethanol (non-beverage)	1	1						
153ai	58 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
154ai	58 y M				U	Ingst	Unk	2		
		ethanol	1	1						
		diazepam	2	2						
155ai	59 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
		doxylamine	2	2						
		chlorpheniramine	3	3						
		dextromethorphan	4	4						
		acetaminophen	5	5						
		methadone	6	6						
156ai	59 y F				A	Ingst	Int-U	2		
		ethanol	1	1						
		clonazepam	2	2						
157ai	59 y F				U	Ingst	Unk	2		
		ethanol	1	1						
158ai	59 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
159	59 y M				U	Ingst	Unk	2		
		ethanol	1	1					ethanol	0.238 g/dL In Whole Blood @ Unknown
160ai	60 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
161ai	60 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
162ai	60 y M				C	Ingst	Int-A	2		
		ethanol	1	1						
163ai	60 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
164ai	61 y F				A	Ingst	Int-A	2		
		ethanol	1	1						
165ai	61 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
		doxepin	2	2						
166ai	61 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
167ai	61 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
168ai	61 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
169ai	62 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
170ai	62 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
171ai	63 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
172ai	64 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
173ai	64 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
174h	64 y M				A	Ingst	Int-U	1		
		methanol	1	1					methanol	84 mg/dL In Blood (unspecified) @ Unknown
175ai	64 y M				U	Ingst	Int-S	2		
		ethanol	1	1						

(*Continued*)

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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
		diphenhydramine	2	2						
		zolpidem	3	3						
176ai	64 y M				U	Ingst	Int-S	2		
		ethanol	1	1						
177ai	65 y F				C	Ingst	Int-A	2		
		ethanol	1	1						
178ai	68 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
179ai	69 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
180ai	70 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
181ai	72 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
182ai	75 y M				C	Ingst	Int-A	2		
		ethanol	1	1						
183ai	76 y M				A	Ingst	Int-A	2		
		ethanol	1	1						
184ai	81 y F				A	Ingst	Int-A	2		
		ethanol	1	1						
185ai	82 y M				U	Ingst	Int-A	2		
		ethanol	1	1						

See Also case 199, 206, 248, 249, 284, 293, 300, 305, 306, 316, 317, 319, 321, 327, 334, 335, 339, 342, 343, 357, 358, 359, 399, 426, 441, 452, 455, 468, 471, 477, 488, 491, 495, 503, 504, 519, 536, 571, 573, 589, 602, 603, 607, 612, 615, 620, 630, 632, 644, 652, 653, 666, 680, 683, 692, 698, 713, 715, 732, 735, 765, 768, 771, 773, 778, 781, 788, 796, 802, 812, 814, 823, 826, 840, 843, 852, 879, 884, 896, 912, 932, 937, 938, 947, 950, 969, 970, 986, 992, 1006, 1014, 1037, 1043, 1047, 1048, 1053, 1058, 1065, 1068, 1073, 1080, 1085, 1109, 1115, 1118, 1123, 1135, 1141, 1142, 1158, 1159, 1172, 1181, 1198, 1218, 1237, 1244, 1257, 1264, 1281, 1286, 1299, 1302, 1332, 1334, 1356, 1396, 1409, 1446, 1448, 1449, 1466, 1476, 1477, 1479, 1481, 1491, 1493, 1498, 1502, 1505, 1508, 1526, 1528, 1529, 1530, 1531, 1539, 1561, 1563, 1585, 1587, 1588, 1594, 1596, 1597, 1603, 1617, 1622, 1629, 1630, 1632, 1635, 1648, 1651, 1655, 1660, 1689, 1695, 1699, 1714, 1723, 1724, 1729, 1734, 1755, 1756, 1826, 1837, 1840, 1842, 1862, 1886, 1894, 1897, 1901, 1903, 1906, 1908, 1912, 1919, 1929, 1937, 1938, 1951, 1963, 1969, 1971, 1973, 2002, 2007, 2031, 2045, 2057, 2084, 2086, 2094, 2099, 2104, 2119, 2124, 2131, 2135, 2139, 2146, 2156, 2157, 2163, 2165, 2169, 2178, 2181, 2184, 2186, 2208, 2216, 2222, 2226, 2227, 2233, 2234, 2235, 2241, 2247, 2250, 2252, 2253, 2258, 2260, 2266, 2267, 2269, 2271, 2273, 2274, 2280, 2293, 2301, 2302, 2304, 2306, 2312, 2320, 2322, 2323, 2326, 2330, 2332, 2335, 2339, 2341, 2343, 2345, 2351, 2357, 2358, 2360, 2362, 2363, 2373, 2380, 2388, 2391, 2392, 2395, 2400, 2402, 2406, 2409, 2410, 2413, 2414, 2418, 2421, 2423, 2424, 2427, 2432, 2437, 2439, 2440, 2444, 2445, 2450, 2452, 2453, 2461, 2464, 2465, 2468, 2471, 2474, 2484, 2489, 2493, 2497, 2498, 2499, 2504, 2509, 2510, 2515, 2516, 2522, 2527, 2533, 2536, 2553, 2556, 2558, 2560, 2564

See Also case 3, 8, 17, 22, 32, 33, 36, 38, 42, 44, 46, 49, 50, 54, 64, 97, 111, 117, 119, 130, 137, 142, 144, 147, 149, 155, 193, 195, 209, 214, 216, 222, 294, 364, 369, 372, 377, 434, 1383, 1394, 1398, 1399, 1400, 1402, 1411, 1412, 1415, 1419, 1426, 1427, 1431, 1435, 1436, 1439, 1446, 1451, 1460, 1462, 1465, 1466, 1469, 1475, 1478, 1479, 1487, 1491, 1495, 1500, 1517, 1519, 1520, 1522, 1527, 1532, 1534, 1541, 1542, 1543, 1548, 1549, 1556, 1559, 1560, 1566, 1570, 1571, 1574, 1576, 1580, 1582, 1597, 1600, 1605, 1626, 1628, 1629, 1638, 1641, 1643, 1656, 1657, 1658, 1660, 1662, 1664, 1665, 1666, 1669, 1678, 1685, 1693, 1694, 1695, 1698, 1702, 1705, 1708, 1713, 1714, 1715, 1718, 1720, 1723, 1734, 1743, 1752, 1753, 1755, 1780, 1783, 1784, 1796, 1797, 1805, 1806, 1814, 1835, 1848, 1850, 1851, 1855, 1856, 1857, 1858, 1860, 1862, 1863, 1866, 1867, 1868, 1871, 1879, 1881, 1883, 1885, 1886, 1890, 1896, 1898, 1899, 1904, 1906, 1915, 1917, 1919, 1923, 1925, 1928, 1930, 1931, 1933, 1934, 1936, 1946, 1948, 1949, 1952, 1954, 1955, 1959, 1960, 1964, 1966, 1968, 1971, 1974, 1977, 1979, 1981, 1982, 1983, 1994, 2002, 2010, 2019, 2020, 2025, 2027, 2028, 2032, 2036, 2038, 2043, 2044, 2045, 2048, 2053, 2055, 2056, 2063, 2065, 2069, 2070, 2072, 2075, 2077, 2078, 2090, 2092, 2093, 2096, 2097, 2100, 2106, 2108, 2115, 2116, 2117, 2119, 2122, 2123, 2124, 2132, 2133, 2134, 2135, 2137, 2139, 2146, 2152, 2154, 2159, 2161, 2166, 2167, 2168, 2170, 2172, 2175, 2177, 2179, 2180, 2183, 2190, 2191, 2195, 2198, 2200, 2210, 2213, 2216, 2220, 2225, 2232, 2235, 2247, 2254, 2257, 2259, 2264, 2267, 2272, 2281, 2289, 2292, 2297, 2298, 2300, 2306, 2310, 2311, 2316, 2320, 2322, 2325, 2331, 2333, 2334, 2336, 2337, 2338, 2344, 2345, 2346, 2347, 2353, 2356, 2358, 2359, 2360, 2362, 2364, 2365, 2367, 2368, 2382, 2386, 2387, 2399, 2403, 2405, 2410, 2412, 2415, 2419, 2420, 2421, 2425, 2426, 2430, 2435, 2437, 2438, 2439, 2445, 2446, 2454, 2455, 2456, 2459, 2460, 2461, 2466, 2467, 2468, 2469, 2476, 2478, 2480, 2481, 2482, 2484, 2500, 2501, 2503, 2507, 2510, 2511, 2512, 2513, 2516, 2519, 2523, 2529, 2535, 2538, 2556, 2562, 2565, 2572

Automotive/Aircraft/Boat Products

186p	4 y U				A	Inhal+ Unk	Oth-M	1		
		antifreeze (ethylene glycol)*	1	1					ethylene glycol	50 mg/L In Blood (unspecified) @ Autopsy
		antifreeze (ethylene glycol)*	1	1					ethylene glycol	505.5 mg/kg In Gastric (stomach content) @ Autopsy
		methanol*	2	1						
		natural gas*	3	1						
187	24 y M				A	Ingst	Int-S	2		
		antifreeze (ethylene glycol)	1	1						
188	29 y M				A	Ingst	Int-S	2		
		antifreeze (ethylene glycol)	1	1						
		doxepin	2	2						
		hydroxyzine	3	3						
		paroxetine	4	4						
		risperidone	5	5						
189	30 y M				A	Ingst	Int-S	1		
		methanol	1	1						
[190ha]	31 y M				A	Ingst	Int-S	1		
		ethylene gylcol/ methanol	1	1						

(*Continued*)

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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
		steroid, topical	2	2						
191	32 y M				A	Ingst	Int-S	1		
		methanol	1	1						
192i	47 y M				A	Ingst	Int-S	2		
		antifreeze (ethylene glycol)	1	1						
193	49 y F				A	Ingst	Int-S	1		
		antifreeze (ethylene glycol)	1	1						
		acetaminophen/ oxycodone	2	2						
194a	49 y M				A	Ingst	Int-S	1		
		antifreeze (ethylene glycol)	1	1					ethylene glycol	3904 mg/dL In Serum @ Unknown
195ph	50 y M				A	Ingst	Int-S	2		
		antifreeze (ethylene glycol)	1	1						
		acetaminophen/ hydrocodone	2	2						
		cocaine	3	3						
		alprazolam	4	4						
196pha	54 y M				U	Ingst	Unk	2		
		antifreeze (ethylene glycol)	1	1					midazolam	0.12 mcg/mL In Blood (unspecified) @ Autopsy
		antifreeze (ethylene glycol)	1	1					diphenhydramine	0.15 mcg/mL In Blood (unspecified) @ Autopsy
		antifreeze (ethylene glycol)	1	1					ethylene glycol	17878 mcg/mL In Urine (quantitative only) @ Autopsy
		antifreeze (ethylene glycol)	1	1					ethylene glycol	2606 mcg/mL In Blood (unspecified) @ Unknown
		antifreeze (ethylene glycol)	1	1					ethylene glycol	4929 mcg/mL In Blood (unspecified) @ Autopsy
197pai	54 y F				A	Ingst	Int-S	2		
		antifreeze (ethylene glycol)	1	1						
198	57 y M				A	Ingst	Int-S	2		
		antifreeze (ethylene glycol)	1	1						
199p	3 m U				A	Inhal+ Unk	Oth-M	3		
		antifreeze (ethylene glycol)*	1	1					ethylene glycol	133.2 mg/L In Blood (unspecified) @ Autopsy
		antifreeze (ethylene glycol)*	1	1					ethylene glycol	477.1 mg/kg In Gastric (stomach content) @ Autopsy
		methanol*	2	1					methanol	0.14 % (wt/Vol) In Blood (unspecified) @ Autopsy
		methanol*	2	1					methanol	0.17 % (wt/Vol) In Vitreous @ Autopsy
		natural gas*	3	1						
200	93 y M				A	Ingst	Unt-G	2		
		antifreeze (ethylene glycol)	1	1						
[201ha]	80+ y M				A	Ingst	Int-S	1		
		antifreeze (ethylene glycol)	1	1						
202	Unknown adult (≥20 yrs) M				A	Ingst	Int-S	1		

(*Continued*)

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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
		antifreeze (ethylene glycol)	1	1						
See Also case 25, 699										
Batteries										
203a	2 y F				A	Ingst	Unt-G	1		
		disc battery, lithium	1	1						
204	13 m U				A	Ingst	Unt-G	1		
		disc battery, lithium	1	1						
Bites and Envenomations										
205h	44 y M				A	B-S	Unt-B	1		
		envenomation (crotalid)	1	1						
206h	50 y M				A	B-S	Unt-B	3		
		envenomation (agkistrodon)	1	1						
		ethanol	2	2						
207pai	70 y M				A	B-S	Unt-B	1		
		envenomation (Trimeresurus stejnegeri)	1	1						
Chemicals										
208h	22 y M				A	Ingst	Int-A	1		
		antifreeze (ethylene glycol)	1	1					ethylene glycol	16.2 mg/dL In Serum @ 12 h (pe)
		antifreeze (ethylene glycol)	1	1					ethylene glycol	322 mg/dL In Serum @ 30 m (pe)
		amphetamine (hallucinogenic)	2	2						
		THC homolog	3	3						
209ha	24 y M				U	Ingst	Int-S	1		
		antifreeze (ethylene glycol)	1	1					ethylene glycol	63 mg/dL In Blood (unspecified) @ Unknown
		dextromethorphan	2	2					chlorpheniramine	180 ng/mL In Blood (unspecified) @ Unknown
		dextromethorphan	2	2					dextromethorphan	190 ng/mL In Blood (unspecified) @ Unknown
		salicylate	3	3					salicylate	8.7 mg/dL In Blood (unspecified) @ Unknown
		amphetamine	4	4						
		vitamin B3 (niacin)	5	5						
210ph	30 y F				U	Ingst	Int-S	1		
		cyanide	1	1						
211a	30 y M				A	Ingst	Int-S	2		
		antifreeze (ethylene glycol)	1	1					ethylene glycol	802 mg/L In Serum @ Unknown
212ai	31 y M				A	Ingst	Int-S	2		
		antifreeze (ethylene glycol)	1	1						
		quetiapine	2	2						
213a	31 y M				U	Ingst	Unk	1		
		antifreeze (ethylene glycol)	1	1					ethylene glycol	23 mg/dL In Serum @ Unknown
		antifreeze (ethylene glycol)	1	1					ethylene glycol	400 mg/dL In Serum @ Unknown
214ha	38 y F				A	Ingst	Int-S	1		
		antifreeze (ethylene glycol)	1	1					ethylene glycol	10 mg/dL In Serum @ Unknown
		acetaminophen	2	2					acetaminophen	73 mcg/mL In Serum @ Unknown
215a	41 y M				A	Ingst	Unk	1		
		antifreeze (ethylene glycol)	1	1					ethylene glycol	37 mg/dL In Blood (unspecified) @ 8 h (pe)

(*Continued*)

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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
		cyclobenzaprine	2	2					cyclobenzaprine	0.02 mg/L In Blood (unspecified) @ Unknown
216h	42 y M				A	Unk	Int-S	3		
		antifreeze (ethylene glycol)	1	1						
		opioid	2	2						
217ha	42 y M				A	Unk	Int-S	1		
		antifreeze (ethylene glycol)	1	1					ethylene glycol	71 mg/dL In Serum @ Unknown
218a	42 y F				A	Ingst	Int-S	1		
		antifreeze (ethylene glycol)*	1	1						
		methyl salicylate/ menthol*	2	1						
219pi	42 y M				A	Ingst+ Inhal	Int-S	2		
		cyanide	1	1						
220	42 y M				A	Ingst	Int-U	1		
		antifreeze (ethylene glycol)	1	1					ethylene glycol	97 mg/dL In Blood (unspecified) @ Unknown
221h	44 y M				A	Ingst+ Aspir	Int-S	1		
		acid, unknown	1	1						
222	47 y M				U	Ingst	Int-A	2		
		antifreeze (ethylene glycol)	1	1						
		acetaminophen/ oxycodone	2	2						
223	50 y F				A	Ingst	Int-S	1		
		antifreeze (ethylene glycol)	1	1						
224	50 y M				A	Ingst	Int-S	1		
		hydrochlorice acid	1	1						
225pha	50 y F				A	Ingst	Int-S	1		
		antifreeze (ethylene glycol)	1	1					ethylene glycol	802 mg/dL In Serum @ Unknown
		antifreeze (ethylene glycol)	1	1					ethylene glycol	902.9 mg/dL In Serum @ Unknown
226	52 y M				A	Ingst	Int-S	2		
		antifreeze (ethylene glycol)	1	1						
227	54 y F				A	Ingst	Int-A	1		
		ethylene glycol	1	1						
228p	55 y M				A	Ingst	Int-S	1		
		cyanide	1	1						
229	55 y M				A	Ingst	Unt-G	1		
		antifreeze (ethylene glycol)	1	1						
230a	56 y M				A	Ingst	Int-S	1		
		antifreeze (ethylene glycol)	1	1					ethylene glycol	74 mg/dL In Blood (unspecified) @ Unknown
		aquarium product	2	2						
231pa	58 y M				A	Unk	Unk	1		
		cyanide	1	1						
232ai	63 y M				A	Ingst	Int-S	2		
		antifreeze (ethylene glycol)	1	1						
		diphenhydramine	2	2						
[233]	69 y F				A	Ingst	Int-S	1		
		hydrochloric acid	1	1						

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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
[234a]	85 y M				A	Ingst	Int-S	1		
		cyanide	1	1					cyanide	2.8 mg/L In Whole Blood @ Autopsy
[235ha]	87 y M				A	Ingst+ Derm	Unt-M	3		
		ammonia	1	1						
236h	88 y F				A	Ingst	Oth-M	1		
		antifreeze (ethylene glycol)	1	1					ethylene glycol	31 mg/dL In Blood (unspecified) @ Unknown
		antifreeze (ethylene glycol)	1	1					ethylene glycol	62 mg/dL In Blood (unspecified) @ Unknown
237	94 y M				A	Ingst	Int-S	1		
		sulfuric acid	1	1						
238p	Unknown adult (≥20 yrs) M				A	Unk	Int-S	2		
		cyanide	1	1						
239p	Unknown adult (≥20 yrs) M				A	Inhal	Unt-O	1		
		methylene chloride	1	1						
See Also case 289, 328, 374, 406, 878, 1090, 1407, 1437, 1710, 1852										
Cleaning Substances (Household)										
240h	29 y M				A	Ingst	Int-S	1		
		drain cleaner (enzyme detergents)	1	1						
241ai	30 y M				U	Ingst	Int-S	2		
		drain cleaner	1	1						
242	30 y F				A	Ingst	Int-S	2		
		ammonium hydroxide	1	1						
[243h]	32 y M				A	Ingst	Int-S	1		
		drain cleaner	1	1						
244pa	33 y F				A	Inhal	Int-A	1		
		freon	1	1					1,1-difluoroethane	79 mg/L In Blood (unspecified) @ Autopsy
245h	47 y F				A	Inhal	Unt-O	3		
		hypochlorite	1	1						
		cleaner (alkali)	2	2						
		ammonium hydroxide	3	3						
		potassium hydroxide	4	4						
246p	50 y M				A	Ingst	Int-S	2		
		drain cleaner (alkali)	1	1						
247	53 y F				A	Ingst+ Oc+ Derm	Unt-G	2		
		hypochlorite	1	1						
248	56 y F				A/C	Unk	Unk	2		
		cleaner (alkali)	1	1						
		ethanol	2	2						
249	58 y M				A	Ingst	Int-S	1		
		drain cleaner (alkali)	1	1						
		ethanol	2	2						
250h	65 y F				A	Ingst	Int-S	2		
		toilet bowl cleaner (alkali)	1	1						
251h	79 y M				A	Oc+ Derm	Unt-G	3		
		cleaner (household)	1	1						
		cleaner (anionic/nonionic)	2	2						
252	81 y F				A	Ingst	Unt-G	2		

(*Continued*)

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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
		laundry detergent	1	1						
253ai	85 y M				A	Ingst	Unt-G	2		
		cleaner (alkali)	1	1						
254h	85 y M				A	Ingst	Unt-M	1		
		drain cleaner (alkali)	1	1						
255	87 y F				A	Ingst	Unt-G	1		
		laundry detergent, liquid	1	1						
256	97 y M				A	Ingst	Unt-G	1		
		drain cleaner (acid)	1	1						
257pi	Unknown age M				C	Inhal	Int-A	1		
		freon	1	1						
See Also case 138, 1723, 1733										
Cosmetics/Personal Care Products										
258ai	54 y F				A	Ingst	Int-U	2		
		hydrogen peroxide	1	1						
259	64 y F				U	Ingst	Int-A	3		
		ethanol (non-beverage)	1	1						
[260h]	85 y M				A	Ingst	Unk	1		
		hydrogen peroxide	1	1						
See Also case 1438, 1723, 2307										
Deodorizers										
[261a]	50 y M				A	Ingst	Int-S	1		
		formaldehyde/ methanol	1	1						
Fumes/Gases/Vapors										
262ai	1 y M				A	Inhal	Unt-E	2		
		smoke	1	1						
		carbon monoxide	2	2						
263ai	2 y F				A	Inhal	Unt-E	2		
		smoke	1	1						
		carbon monoxide	2	2						
264p	3 y M				A	Inhal	Unt-E	1		
		smoke	1	1						
265ai	3 y F				A	Inhal	Unt-E	2		
		smoke	1	1						
		carbon monoxide	2	2						
266ai	4 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
267ai	4 y M				A	Inhal	Unt-E	2		
		smoke	1	1						
		carbon monoxide	2	2						
268pi	5 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
269pa	5 y M				A	Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	60 % In Blood (unspecified) @ Autopsy
270ai	7 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
271pa	7 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	60 % In Blood (unspecified) @ Autopsy
272ai	7 y F				A	Inhal	Unt-E	2		
		smoke	1	1						
		carbon monoxide	2	2						
273pa	7 y M				A	Inhal	Unt-E	2		
		smoke	1	1					carboxyhemoglobin	60 % In Blood (unspecified) @ Autopsy
274pa	8 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	60 % In Blood (unspecified) @ Autopsy
275pa	9 y M				A	Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	60 % In Blood (unspecified) @ Autopsy

(*Continued*)

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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
276ai	14 y M				A	Inhal	Unt-E	2		
		smoke	1	1						
277p	15 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
278ai	16 y M				A	Inhal	Unt-E	2		
		smoke	1	1						
		carbon monoxide	2	2						
279ph	18 y M				A	Inhal	Unt-G	1		
		carbon monoxide	1	1						
		smoke	2	2						
280pa	18 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	57 % In Blood (unspecified) @ Autopsy
281pa	20 y M				A	Inhal	Unt-O	1		
		asphyxiant, simple	1	1						
282p	21 y M				A	Inhal	Int-S	1		
		nitrogen gas	1	1						
283ai	22 y F				A	Ingst+ Inhal	Int-S	2		
		carbon monoxide	1	1						
		diphenhydramine	2	2						
284pa	25 y F				A	Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	60 % In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	220 mg/dL In Blood (unspecified) @ Autopsy
[285pha]	26 y M				A	Inhal+ Derm	Unt-O	1		
		hydrogen sulfide	1	1					thiosulfate	4.8 mg/L In Blood (unspecified) @ Autopsy
286ai	26 y F				U	Inhal	Int-A	2		
		hydrogen sulfide	1	1						
287pai	28 y M				A/C	Inhal	Int-S	1		
		carbon monoxide	1	1					carboxyhemoglobin	70 % In Blood (unspecified) @ Autopsy
		THC hololog	2	2						
288ai	29 y F				A	Ingst+ Inhal	Unt-E	2		
		carbon monoxide	1	1						
		skeletal muscle relaxant	2	2						
289p	30 y M				A	Inhal	Unt-G	3		
		smoke	1	1						
		cyanide	2	2						
290ai	30 y F				A	Ingst+ Inhal	Unt-E	2		
		smoke	1	1						
		carbon monoxide	2	2						
		clonazepam	3	3						
291ai	30 y M				A	Ingst+ Inhal	Int-S	2		
		carbon monoxide	1	1						
		citalopram	2	2						
292pha	31 y M				A	Inhal	Int-S	1		
		carbon monoxide	1	1						
293ai	32 y M				A	Ingst+ Inhal	Unt-E	2		
		carbon monoxide	1	1						
		skeletal muscle relaxant	2	2						
		ethanol	3	3						
294ai	33 y M				A	Ingst+ Inhal	Unt-E	2		
		carbon monoxide	1	1						
		tramadol	2	2						
295pi	33 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
296pha	34 y F				A	Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	27 % In Whole Blood @ Unknown
297ph	38 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	46 % In Blood (unspecified) @ Unknown

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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
298ai	40 y F				A	Inhal	Unt-E	2		
		smoke	1	1						
		carbon monoxide	2	2						
299h	40 y M				A	Inhal	Unt-E	3		
		smoke	1	1						
300ai	41 y F				A	Ingst+ Inhal	Int-S	2		
		carbon monoxide	1	1						
		ethanol	2	2						
301pi	42 y M				A	Inhal	Int-S	1		
		hydrogen sulfide	1	1						
[302pa]	42 y M				A	Inhal	Int-S	1		
		helium	1	1						
[303ha]	42 y M				A	Ingst+ Inhal	Int-S	1		
		hydrogen sulfide	1	1					ethanol	0.092 % In Blood (unspecified) @ Autopsy
		hydrogen sulfide	1	1					fentanyl	0.6 ng/mL In Blood (unspecified) @ Autopsy
		hydrogen sulfide	1	1					diphenhydramine	1540 ng/mL In Blood (unspecified) @ Autopsy
		hydrogen sulfide	1	1					7-aminoclonazepam	18.2 ng/mL In Blood (unspecified) @ Autopsy
		hydrogen sulfide	1	1					metoprolol	194 ng/mL In Blood (unspecified) @ Autopsy
304ai	42 y F				A	Ingst+ Inhal	Int-S	2		
		carbon monoxide	1	1						
		fluoxetine	2	2						
305ai	42 y M				A	Ingst+ Inhal	Int-S	2		
		carbon monoxide	1	1						
		clonazepam	2	2						
		fluoxetine	3	3						
		ethanol	4	4						
306ai	42 y M				A	Ingst+ Inhal	Unt-E	2		
		carbon monoxide	1	1						
		smoke	2	2						
		cocaine	3	3						
		phenobarbital	4	4						
		quetiapine	5	5						
		phenytoin	6	6						
		citalopram	7	7						
		mirtazapine	8	8						
		ethanol	9	9						
307ai	43 y F				A	Inhal	Unt-E	2		
		smoke	1	1						
		carbon monoxide	2	2						
[308pa]	43 y M				U	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	73.9 % In Blood (unspecified) @ Autopsy
309p	44 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
310ai	44 y F				A	Ingst+ Inhal	Int-S	2		
		helium	1	1						
		sertraline	2	2						
		fluoxetine	3	3						
311ai	44 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
312pi	44 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
313p	44 y M				A	Inhal	Unt-E	1		
		smoke	1	1						
314ai	45 y M				U	Inhal	Int-S	2		
		helium	1	1						
[315p]	45 y M				A	Inhal	Unt-O	1		
		nitrogen gas	1	1						
316pa	46 y M				A	Ingst+ Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
		ethanol	3	3						

(*Continued*)

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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
317ai	46 y M				A	Ingst+ Inhal+ Derm	Unt-E	2		
		smoke	1	1						
		phenobarbital	2	2						
		diazepam	3	3						
		ethanol	4	4						
318ph	46 y M				A	Inhal	Unt-M	3		
		chlorine gas	1	1						
319ai	47 y F				U	Ingst+ Inhal	Int-S	2		
		carbon monoxide	1	1						
		ethanol	2	2						
320pa	48 y M				A	Inhal	Unt-E	2		
		smoke	1	1						
321ai	48 y F				A	Ingst+ Inhal	Unt-E	2		
		smoke	1	1						
		ethanol	2	2						
322pai	48 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		hurricane related	2	2						
323ai	48 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
324ai	50 y M				U	Inhal	Int-S	2		
		helium	1	1						
325a	50 y M				A	Inhal	Unt-O	1		
		methane	1	1						
326p	50 y F				A	Inhal	Unt-E	1		
		smoke	1	1						
327ai	50 y M				A	Ingst+ Inhal	Unt-E	2		
		smoke	1	1						
		carbon monoxide	2	2						
		ethanol	3	3						
328ph	50 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	25.7 % In Serum @ Unknown
		cyanide	2	2						
329ai	51 y M				A	Inhal+ Unk	Unt-E	2		
		smoke	1	1						
		phencyclidine	2	2						
		quetiapine	3	3						
330ai	51 y M				A	Ingst+ Inhal	Unt-E	2		
		smoke	1	1						
		diazepam	2	2						
331ai	52 y M				U	Inhal	Int-A	2		
		carbon monoxide	1	1						
332p	53 y F				A	Inhal	Int-S	1		
		carbon monoxide	1	1					carboxyhemoglobin	42.4 % In Blood (unspecified) @ 45 m (pe)
333pa	53 y M				A	Inhal	Int-U	1		
		smoke	1	1					carboxyhemoglobin	32 % In Blood (unspecified) @ Autopsy
334ai	53 y M				A	Ingst+ Inhal	Int-S	2		
		carbon monoxide	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
335pa	54 y M				A	Inhal	Int-S	1		
		carbon monoxide	1	1					carboxyhemoglobin	60 % In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	110 mg/dL In Blood (unspecified) @ Autopsy
336ai	54 y M				A	Inhal	Oth-M	2		
		smoke	1	1						
337ai	54 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
338pi	54 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
339ai	54 y F				A	Ingst+ Inhal	Unt-E	2		
		smoke	1	1						

(*Continued*)

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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
		chlordiazepoxide	2	2						
		ethanol	3	3						
340ai	55 y M				U	Inhal+ Unk	Int-A	2		
		carbon monoxide	1	1						
		methamphetamine	2	2						
341ai	55 y F				A	Inhal	Unt-E	2		
		smoke	1	1						
342pa	55 y F				A	Ingst+ Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	50 % In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	200 mg/dL In Blood (unspecified) @ Autopsy
343ai	55 y F				A	Ingst+ Inhal	Unt-E	2		
		smoke	1	1						
		carbon monoxide	2	2						
		ethanol	3	3						
344pa	55 y M				A	Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	60 % In Blood (unspecified) @ Autopsy
345ph	56 y F				A	Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	47.9 % In Blood (unspecified) @ 50 m (pe)
346ai	57 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
		diphenhydramine	2	2						
347ai	57 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
348pi	57 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
349pi	57 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
350ai	59 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
351ai	60 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
352ai	60 y M				A	Ingst+ Inhal	Int-S	2		
		carbon monoxide	1	1						
		mirtazapine	2	2						
353p	60 y M				A	Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	35 % In Blood (unspecified) @ Unknown
354p	60 y M				A	Inhal	Unt-E	2		
		smoke	1	1						
355ai	61 y M				A	Ingst+ Inhal	Unt-E	2		
		carbon monoxide	1	1						
		chlorpheniramine	2	2						
356a	62 y F				A	Inhal	Unt-E	3		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
357pa	62 y F				A	Ingst+ Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	20 % In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	180 mg/dL In Blood (unspecified) @ Autopsy
358ai	62 y M				A	Ingst+ Inhal	Unt-E	2		
		smoke	1	1						
		carbon monoxide	2	2						
		ethanol	3	3						
359ai	63 y F				A	Ingst+ Inhal	Unt-E	2		
		smoke	1	1						
		carbon monoxide	2	2						
		ethanol	3	3						
360ai	63 y M				A	Inhal	Unt-O	2		
		carbon monoxide	1	1						
		doxylamine	2	2						

(*Continued*)

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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
361pa	63 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	60 % In Blood (unspecified) @ Autopsy
362phi	66 y M				A	Inhal	Unt-G	1		
		carbon monoxide	1	1						
		hurricane related	2	2						
363pai	67 y M				A	Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	34 % In Blood (unspecified) @ Autopsy
364ai	68 y M				A	Inhal+ Unk	Unt-E	2		
		smoke	1	1						
		carbon monoxide	2	2						
		heroin	3	3						
		codeine	4	4						
		quinine	5	5						
365pha	68 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	1.6 % In Unknown @ 11 h (pe)
		carbon monoxide	1	1					carboxyhemoglobin	48.5 % In Unknown @ Unknown
		carbon monoxide	2	2					cyanide	0.4 mg/L In Unknown @ Unknown
366ph	70 y F				A	Inhal	Unt-M	1		
		carbon monoxide	1	1					carboxyhemoglobin	24.5 % In Blood (unspecified) @ Unknown
367ph	71 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	40 % In Blood (unspecified) @ 1 h (pe)
		smoke	2	2						
368pa	74 y F				A	Inhal	Unt-G	2		
		smoke	1	1						
		carbon monoxide	2	2						
369pha	75 y M				A	Inhal	Int-S	1		
		carbon monoxide	1	1						
		morphine	2	2					morphine	4.775 mg/L In Blood (unspecified) @ Autopsy
370ha	76 y M				A	Inhal	Int-S	1		
		carbon monoxide	1	1					carboxyhemoglobin	27.9 % In Whole Blood @ Unknown
371pa	77 y M				A	Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	60 % In Blood (unspecified) @ Autopsy
372ai	80 y F				A	Ingst+ Inhal	Unt-E	2		
		smoke	1	1						
		carbon monoxide	2	2						
		tramadol	3	3						
		acetaminophen	4	4						
373p	81 y M				A	Inhal	Unt-E	1		
		smoke	1	1					carboxyhemoglobin	54 % In Blood (unspecified) @ Unknown
374p	81 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	32 % In Whole Blood @ Unknown
		cyanide	2	2						
375pi	86 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
		hurricane related	2	2						
376ai	88 y M				A	Inhal	Unt-E	2		
		smoke	1	1						
377ai	88 y F				A	Ingst+ Inhal	Unt-E	2		
		smoke	1	1						
		carbon monoxide	2	2						
		tramadol	3	3						
378pai	90 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		hurricane related	2	2						
379pi	91 y F				A	Inhal	Unt-G	1		
		carbon monoxide	1	1						
380p	95 y F				A	Inhal	Unt-E	1		
		smoke	1	1						
		carbon monoxide	2	2					carboxyhemoglobin	51 % In Blood (unspecified) @ Unknown

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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
381	13 m M				A	Inhal	Unt-E	3		
		smoke	1	1						
		carbon monoxide	2	2					carboxyhemoglobin	12.3 % In Serum @ 45 m (pe)
382p	Unknown adult (≥20 yrs) F				A	Inhal	Unt-E	2		
		smoke	1	1						
383p	Unknown age M				A	Inhal	Int-S	2		
		carbon monoxide	1	1						
See Also case 186, 199, 478, 736, 1366										
Heavy Metals										
[384ha]	53 y F				C	Ingst	Unt-E	1		
		lead	1	1						
385h	69 y F				A/C	Ingst	Int-S	2		
		potassium chloride	1	1						
		warfarin	2	2						
		glimepiride	3	3						
		atenolol	4	4						
		diazepam	5	5						
		citalopram	6	6						
See Also case 1622, 1749										
Hydrocarbons										
386h	5 y F				A	Ingst+ Aspir	Unt-G	1		
		lighter fluids, naphtha	1	1						
387ai	13 y M				U	Inhal	Int-A	2		
		freon	1	1						
388p	15 y F				A	Inhal	Int-A	2		
		freon	1	1						
389ai	20 y M				U	Inhal	Int-A	2		
		freon	1	1						
390ai	20 y M				U	Inhal	Int-A	2		
		freon	1	1						
391	24 y M				A	Inhal	Int-A	1		
		freon	1	1						
392	25 y F				C	Inhal+ Derm	Int-A	2		
		freon	1	1						
393h	29 y M				A	Inhal	Int-A	2		
		freon	1	1						
394p	31 y M				U	Inhal	Int-A	2		
		freon	1	1						
395p	31 y F				A	Inhal	Int-A	2		
		freon	1	1						
396pa	32 y M				A	Inhal	Int-A	1		
		freon	1	1						
397ai	32 y M				U	Inhal	Int-A	2		
		freon	1	1						
398	33 y M				A	Inhal	Int-A	2		
		freon	1	1						
399pa	35 y M				A	Ingst+ Aspir	Unk	1		
		gasoline	1	1						
		carbamazepine	2	2						
		ethanol	3	3						
400	36 y M				A	Inhal	Int-A	1		
		freon	1	1						
401h	37 y M				U	Inhal	Unt-M	2		
		aliphatic hydrocarbon	1	1						
[402a]	42 y M				A	Ingst	Int-A	1		
		freon	1	1					delta-9-thc	1.2 ng/mL In Blood (unspecified) @ Unknown
		freon	1	1					delta-9-carboxy-thc	19 ng/mL In Blood (unspecified) @ Unknown
		marijuana	2	2						
403	45 y M				A	Inhal	Int-A	3		
		freon	1	1						
404ai	46 y M				U	Ingst	Int-A	2		

(*Continued*)

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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
		toluene	1	1						
[405a]	47 y M				A	Inhal	Int-A	1		
		freon	1	1					1,1-difluoroethane	0.94 mg/L In Blood (unspecified) @ Autopsy
406ai	48 y F				U	Unk	Int-A	2		
		toluene	1	1						
		acetone	2	2						
407ai	50 y M				U	Inhal	Int-A	2		
		freon	1	1						
See Also case 85, 429, 452, 740, 879										
Industrial Cleaners										
408h	78 y M				A	Ingst	Unt-G	1		
		detergents (cationic)	1	1						
Infectious and Toxin-Mediated Diseases										
409	66 y F				A	Ingst	Unt-F	2		
		Salmonella (food borne)	1	1						
Information Calls										
410pa	5 y M				U	Ingst	Oth-M	2		
		acetic acid	1	1						
411	40 y F				A	Ingst+ Aspir	Int-S	3		
		acetic acid	1	1						
		mirtazapine	2	2						
		clonazepam	3	3						
		gabapentin	4	4						
412	50 y M				A	Ingst+ Inhal+ Aspir	Unt-M	1		
		rapeseed oil	1	1						
		zolpidem	2	2						
See Also case 1135										
Mushrooms										
[413a]	54 y F				A	Ingst	Unt-M	1		
		mushroom (cyclopeptides)	1	1						
414	61 y F				A	Ingst	Unt-M	1		
		mushroom (cyclopeptides)	1	1						
415h	66 y M				A	Ingst	Int-M	1		
		mushroom	1	1						
416a	73 y F				A	Ingst+ Aspir	Unt-F	1		
		mushroom	1	1						
[417a]	87 y F				A	Ingst	Unt-F	1		
		mushroom (cyclopeptides)	1	1						
[418a]	90 y M				A	Ingst	Unt-F	1		
		mushroom (cyclopeptides)	1	1						
Pesticides										
419	26 y M				A	Ingst+ Unk	Int-S	2		
		rodenticide (bromethalin)	1	1						
		methamphetamine	2	2						
		amphetamine	3	3						
420pa	40 y M				A	Inhal+ Derm	Unt-M	3		
		pyrethroids	1	1						
[421ph]	42 y M				A	Ingst	Int-S	3		
		malathion	1	1						
422	50 y M				A	Ingst	Int-S	1		
		glyphosate	1	1						

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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
423	60 y M				A	Ingst	Int-S	1		
		organophosphate*	1	1						
		pesticide, unknown*	2	1						
[424pha]	60 y F				A	Ingst	Int-S	1		
		borate	1	1						
425h	64 y M				A	Ingst	Int-S	3		
		aldicarb	1	1						
426h	66 y M				A	Ingst	Int-S	2		
		2,4-dichlorophenoxyacetic acid (2,4-D)	1	1						
		ethanol	2	2					ethanol	243 mg/dL In Blood (unspecified) @ Unknown
427	70 y M				U	Ingst	Unt-G	3		
		moth balls	1	1						
428	71 y M				A	Ingst	Int-S	2		
		carbamate	1	1						
429a	75 y M				A	Ingst	Int-S	1		
		glyphosate	1	1						
		mineral spirits	2	2						
430	93 y F				A	Ingst	Int-S	2		
		rodenticide, unknown	1	1						
		drug, unknown	2	2						
See Also case 1405, 2354										
Sporting Equipment										
[431ha]	17 y M				A	Ingst	Int-S	1		
		selenous acid	1	1					selenium	12000 mcg/L In Blood (unspecified) @ Autopsy
		selenous acid	1	1					selenium	3300 mg/L In Gastric (stomach content) @ Autopsy
Tobacco/Nicotine Products										
[432pha]	29 y M				A	Par	Int-S	1		
		nicotine	1	1						
433	86 y M				A	Ingst	Int-U	2		
		nicotine	1	1						
See Also case 8, 26, 80, 124, 430, 474, 478, 701, 807, 817, 851, 894, 948, 957, 1230, 1240, 1273, 1698, 1707, 1918, 1972, 1979, 2307										
Weapons of Mass Destruction										
434h	43 y F				A	Ingst+ Unk	Int-S	3		
		non-powder, unknown	1	1						
		acetaminophen	2	2						
Pharmaceutical Exposures										
Analgesics										
435pi	4 y M				A	Ingst	Unk	1		
		morphine	1	1					morphine	10000 ng/mL In Urine (quantitative only) @ Autopsy
		morphine	1	1					morphine	1127 ng/mL In Serum @ Autopsy
		morphine	2	2						
436a	5 y F				A	Ingst+ Unk	Unt-G	1		
		tramadol	1	1						
		morphine	2	2					morphine (total)	803 ng/mL In Blood (unspecified) @ Unknown
		diphenhydramine	3	3						
437pai	5 y M				A	Ingst	Unt-G	1		
		tramadol	1	1						
438ph	6 y M				A	Ingst	Unt-T	1		
		methadone	1	1					methadone metabolite	0.15 mg/L In Blood (unspecified) @ Autopsy
		methadone	1	1					methadone	0.29 mg/L In Serum @ Unknown
		methadone	1	1					methadone	0.44 mg/L In Blood (unspecified) @ Autopsy
439pha	7 y M				A	Ingst	Unk	3		
		salicylate	1	1						
[440a]	12 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1						

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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
441pi	14 y F				A	Ingst+ Inhal	Int-A	1		
		codeine/promethazine	1	1						
		ethanol	2	2						
		marijuana	3	3						
442ai	15 y M				A	Ingst+ Unk	Int-U	2		
		morphine	1	1						
		diphenhydramine	2	2						
		sertraline	3	3						
		clonazepam	4	4						
443ai	15 y F				U	Ingst	Int-A	2		
		methadone	1	1						
		cyclobenzaprine	2	2						
444	15 y M				U	Ingst	Int-S	2		
		salicylate	1	1					salicylate	60 mg/dL In Blood (unspecified) @ 1 m (pe)
		acetaminophen	2	2					acetaminophen	220 mcg/mL In Blood (unspecified) @ 1 m (pe)
445ai	16 y M				U	Unk	Int-A	2		
		fentanyl	1	1						
[446pha]	16 y M				A	Ingst	Int-S	1		
		acetaminophen/hydrocodone	1	1					acetaminophen	30 mcg/mL In Serum @ Autopsy
		alprazolam	2	2					alprazolam	176 ng/mL In Serum @ Autopsy
447pa	16 y M				A	Ingst	Int-A	1		
		methadone	1	1					methadone	0.19 mg/L In Blood (unspecified) @ 0.5 d (pe)
		alprazolam	2	2					alprazolam	0.036 mg/L In Blood (unspecified) @ 0.5 d (pe)
448ai	16 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		clonazepam	2	2						
		promethazine	3	3						
449h	17 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	125 mg/dL In Blood (unspecified) @ 7 h (pe)
450ph	17 y M				A	Ingst	Int-S	2		
		methadone	1	1						
		perphenazine*	2	2						
		propranolol*	3	2						
451p	17 y F				A	Ingst	Int-S	2		
		morphine	1	1						
		antidepressant (SSRI)	2	2						
		anticonvulsant	3	3						
		cough and cold preparation	4	4						
452p	17 y M				U	Ingst+ Inhal	Int-A	2		
		oxycodone	1	1						
		freon	2	2						
		ethanol	3	3						
453ai	18 y M				U	Unk	Int-A	2		
		morphine	1	1						
454ph	18 y M				U	Ingst	Int-S	2		
		opioid	1	1						
		oral hypoglycemics	2	2						
455ai	18 y F				A	Ingst+ Unk	Int-A	2		
		methadone	1	1						
		citalopram	2	2						
		diphenhydramine	3	3						
		fluoxetine	4	4						
		ethanol	5	5						
[456ha]	18 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	132 mg/dL In Blood (unspecified) @ 19 h (pe)
		salicylate	1	1					salicylate	654 mg/L In Blood (unspecified) @ Unknown
457ai	18 y M				U	Ingst+ Aspir	Int-A	2		

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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
		oxycodone	1	1						
		morphine	2	2						
		diazepam	3	3						
458ai	18 y M				A	Unk	Int-A	2		
		methadone	1	1						
		oxycodone	2	2						
459h	18 y F				A	Ingst+ Aspir	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
		acetaminophen/ phenylephrine	2	2						
460ai	19 y M				A	Ingst	Int-A	2		
		oxycodone	1	1						
		alprazolam	2	2						
461ai	19 y M				U	Ingst	Int-A	2		
		oxymorphone	1	1						
462	19 y F				A	Ingst	Int-U	2		
		acetaminophen	1	1						
463ai	19 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		oxymorphone	2	2						
		sertraline	3	3						
		cyclobenzaprine	4	4						
464ai	19 y M				U	Ingst	Int-A	2		
		oxymorphone	1	1						
465ai	19 y M				U	Ingst	Int-A	2		
		methadone	1	1						
466	19 y M				A/C	Ingst	Int-S	1		
		tramadol	1	1					tramadol	1349 ng/mL In Blood (unspecified) @ Autopsy
		sulfame- thoxazole/ trimethoprim	2	2						
467ai	19 y M				A	Unk	Int-A	2		
		methadone	1	1						
		alprazolam	2	2						
		diphenhydramine	3	3						
468h	19 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	193 mcg/mL In Unknown @ Unknown
		acetaminophen	1	1					acetaminophen	23 mcg/mL In Unknown @ 4 d (pe)
		ethanol	2	2					ethanol	40 mg/dL In Unknown @ Unknown
		salicylate	3	3					salicylate	6.6 mg/dL In Unknown @ 2 d (pe)
		salicylate	3	3					salicylate	8 mg/dL In Unknown @ Unknown
469pa	19 y F				A/C	Ingst+ Inhal	Int-A	1		
		oxycodone	1	1					oxycodone (free)	500 ng/mL In Blood (unspecified) @ Unknown
		hydrocodone	2	2					hydrocodone (free)	96 ng/mL In Blood (unspecified) @ Unknown
		bupropion	3	3					bupropion	19 ng/mL In Blood (unspecified) @ Unknown
		bupropion	3	3					hydroxybupropion	660 ng/mL In Blood (unspecified) @ Unknown
		diazepam	4	4					nordiazepam	510 ng/mL In Blood (unspecified) @ Unknown
		diazepam	4	4					diazepam	600 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	5	5					7-aminoclonazepam	29 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	5	5					clonazepam	8.7 ng/mL In Blood (unspecified) @ Unknown
		temazepam	6	6					temazepam	110 ng/mL In Blood (unspecified) @ Unknown
		pentazocine	7	7						
		trazodone	8	8						
470ai	20 y F				A	Unk	Int-A	2		
		fentanyl	1	1						

(*Continued*)

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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
		alprazolam	2	2						
471ai	20 y M				U	Ingst	Unk	2		
		acetaminophen/ hydrocodone	1	1						
		ethanol	2	2						
472pha	20 y M				U	Unk	Int-A	1		
		methadone	1	1					methadone	0.29 mg/L In Serum @ 30 m (pe)
		methadone	1	1					methadone	6 mg/kg In Liver @ Autopsy
473ai	20 y M				A	Unk	Int-A	2		
		methadone	1	1						
		oxycodone	2	2						
		morphine	3	3						
		clonazepam	4	4						
		cocaine	5	5						
		citalopram	6	6						
		diphenhydramine	7	7						
		acetaminophen	8	8						
474	20 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1						
475	20 y F				A/C	Ingst	Int-S	1		
		salicylate	1	1					salicylate	132.95 mg/dL In Serum @ 13 h (pe)
		acetaminophen	2	2						
476ai	20 y M				A	Unk	Int-A	2		
		methadone	1	1						
		heroin	2	2						
		doxylamine	3	3						
		dextrometho-rphan	4	4						
		sertraline	5	5						
		quinine	6	6						
477ai	21 y F				A	Ingst	Int-A	2		
		oxymorphone (extended release)	1	1						
		bupropion	2	2						
		clonazepam	3	3						
		ethanol	4	4						
478a	21 y F				A	Ingst+ Inhal	Int-S	1		
		acetaminophen	1	1						
		drug, unknown	2	2						
		carbon monoxide	3	3						
		cetirizine	4	4						
479ai	21 y M				A	Ingst	Int-A	2		
		oxycodone	1	1						
		oxymorphone	2	2						
480ph	21 y M				A	Ingst	Unk	1		
		methadone	1	1						
		oxycodone (extended release)	2	2						
		acetaminophen/ hydrocodone	3	3					acetaminophen	4 mcg/mL In Serum @ 14 h (pe)
		clonazepam	4	4						
		quetiapine	5	5						
		citalopram	6	6						
		venlafaxine (extended release)	7	7						
		aripirazole	8	8						
481ai	21 y M				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		oxycodone	2	2						
		cocaine	3	3						
482	21 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	75.6 mg/dL In Serum @ 2 h (pe)
		ibuprofen	2	2						
483ai	21 y M				U	Ingst+ Unk	Int-A	2		
		fentanyl	1	1						
		tramadol	2	2						
484p	21 y M				A	Ingst	Int-A	1		

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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
		methadone	1	1						
		alprazolam	2	2						
485ai	21 y M				U	Ingst+ Aspir	Int-A	2		
		oxycodone	1	1						
		citalopram	2	2						
486h	21 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
487a	22 y F				U	Ingst+ Aspir	Int-S	1		
		acetaminophen/ diphenhydramine	1	1					acetaminophen	48 mcg/mL In Blood (unspecified) @ Unknown
		gabapentin	2	2						
		naproxen	3	3						
488ai	22 y M				A	Ingst	Int-S	2		
		tramadol	1	1						
		alprazolam	2	2						
		acetaminophen/ propoxyphene	3	3						
		ethanol	4	4						
489pa	22 y F				U	Unk	Int-A	2		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.01 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	1	1					morphine (total)	0.04 mg/L In Blood (unspecified) @ Autopsy
490pha	22 y M				A	Ingst	Int-A	2		
		methadone	1	1					methadone	31 ng/mL In Serum @ 4 d (pe)
		marijuana	2	2						
491ai	22 y M				U	Ingst	Int-A	2		
		oxymorphone	1	1						
		ethanol	2	2						
492ai	22 y M				U	Ingst+ Aspir	Int-A	2		
		morphine	1	1						
		alprazolam	2	2						
		diazepam	3	3						
493ai	22 y M				A	Ingst	Int-A	2		
		oxycodone	1	1						
		oxymorphone	2	2						
		alprazolam	3	3						
494ha	22 y F				A/C	Ingst	Int-S	2		
		salicylate	1	1					salicylate	17.5 mg/dL In Bile @ Autopsy
		salicylate	1	1					salicylate	26.4 mg/dL In Blood (unspecified) @ Autopsy
		salicylate	1	1					salicylate	49 mg/dL In Blood (unspecified) @ Unknown
		quetiapine	2	2						
		hydralazine	3	3						
		lorazepam	4	4						
		lithium	5	5					lithium	0.66 mmol/L In Blood (unspecified) @ Autopsy
		lithium	5	5					lithium	1.8 mmol/L In Blood (unspecified) @ Unknown
		lithium	5	5					lithium	1.82 mmol/L In Bile @ Autopsy
		lithium	6	6						
495ai	22 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
		ethanol	2	2						
[496ha]	22 y M				U	Ingst	Int-S	1		
		salicylate	1	1						
		doxylamine	2	2					doxylamine	0.35 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen	3	3						
		ibuprofen	4	4						
497ai	22 y M				A	Ingst	Int-A	2		
		oxymorphone	1	1						
498pa	22 y M				A	Ingst	Int-A	1		
		acetaminophen/ oxycodone	1	1					oxycodone (free)	54 ng/mL In Blood (unspecified) @ Autopsy
		methadone	2	2					methadone	250 ng/mL In Blood (unspecified) @ Autopsy

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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
		acetaminophen/ hydrocodone	3	3					hydrocodone (free)	170 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	3	3					dihydrocodeine/hydrocodol (free)	61 ng/mL In Blood (unspecified) @ Autopsy
		sertraline	4	4					sertraline	110 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	5	5					nordiazepam	46 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	5	5					diazepam	57 ng/mL In Blood (unspecified) @ Autopsy
499	22 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1						
500	23 y F				A	Ingst	Int-S	2		
		salicylate	1	1					salicylate	106.8 mg/dL In Unknown @ 15 h (pe)
		salicylate	1	1					salicylate	77 mg/dL In Unknown @ 10 h (pe)
		salicylate	1	1					salicylate	95.5 mg/dL In Unknown @ 8 h (pe)
501ai	23 y M				U	Ingst+ Aspir	Int-A	2		
		methadone	1	1						
		acetaminophen/ hydrocodone	2	2						
502ai	23 y M				U	Ingst+ Aspir	Unk	2		
		oxymorphone	1	1						
503pa	23 y M				A	Ingst	Int-S	1		
		methadone	1	1					eddp (2-ethylidene-1,5-dimethyl-3,3-diphenyl pyrrolidine)	0.01 mg/L In Blood (unspecified) @ Autopsy
		methadone	1	1					methadone	0.22 mg/L In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.05 % (wt/Vol) In Blood (unspecified) @ Autopsy
504h	23 y M				A/C	Ingst	Int-S	1		
		salicylate	1	1					salicylate	52 mg/dL In Blood (unspecified) @ 7 h (pe)
		salicylate	1	1					salicylate	76 mg/dL In Blood (unspecified) @ 24 h (pe)
		salicylate	1	1					salicylate	96.8 mg/dL In Blood (unspecified) @ 20 h (pe)
		acetaminophen/diphenhydramine	2	2					acetaminophen	16 mcg/mL In Blood (unspecified) @ 24 h (pe)
		acetaminophen/ diphenhydramine	2	2					acetaminophen	29 mcg/mL In Blood (unspecified) @ 20 h (pe)
		acetaminophen/ diphenhydramine	2	2					acetaminophen	57 mcg/mL In Blood (unspecified) @ 7 h (pe)
		methotrexate	3	3						
		oxycodone	4	4						
		prednisone	5	5						
		ethanol	6	6						
505ai	23 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		oxycodone	2	2						
		citalopram	3	3						
		diphenhydramine	4	4						
506	23 y M				A	Ingst	Int-S	2		
		methadone	1	1						
		benzodiazepine	2	2						
507ai	23 y F				U	Ingst+ Unk	Int-A	2		
		fentanyl	1	1						
		skeletal muscle relaxant	2	2						
		diazepam	3	3						
508ha	23 y F				A/C	Ingst	Int-M	2		
		acetaminophen	1	1					acetaminophen	78 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen	90 mcg/mL In Blood (unspecified) @ Unknown
509ai	23 y M				U	Ingst	Int-A	2		

(*Continued*)

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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
		oxycodone	1	1						
		alprazolam	2	2						
510ai	23 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
		alprazolam	2	2						
511ai	23 y F				A	Ingst	Int-A	2		
		oxycodone	1	1						
		alprazolam	2	2						
512ai	23 y M				A	Unk	Int-A	2		
		methadone	1	1						
		diazepam	2	2						
513ai	24 y M				A	Unk	Int-A	2		
		methadone	1	1						
514p	24 y M				A/C	Ingst	Int-M	1		
		fentanyl (transdermal)	1	1						
		acetaminophen	2	2					acetaminophen	62 mcg/mL In Serum @ 10 m (pe)
515ai	24 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
516ai	24 y F				A	Inhal	Int-A	2		
		oxycodone	1	1						
		skeletal muscle relaxant	2	2						
		diazepam	3	3						
		cocaine	4	4						
		diphenhydramine	5	5						
		acetaminophen	6	6						
517	24 y F				A	Par	Int-A	3		
		oxycodone	1	1						
518	24 y F				A/C	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	9 mcg/mL In Blood (unspecified) @ 3 d (pe)
519ai	24 y M				A	Ingst	Int-U	2		
		oxycodone	1	1						
		diphenhydramine	2	2						
		olanzapine	3	3						
		ethanol	4	4						
520ai	24 y M				A	Unk	Int-A	2		
		methadone	1	1						
		oxycodone	2	2						
		benzodiazepine	3	3						
		phentermine	4	4						
521ai	24 y M				U	Ingst+ Unk	Int-A	2		
		oxycodone	1	1						
		oxymorphone	2	2						
		cocaine	3	3						
522ai	24 y F				A	Ingst+ Unk	Int-A	2		
		oxycodone	1	1						
		diazepam	2	2						
		phencyclidine	3	3						
		quetiapine	4	4						
		diphenhydramine	5	5						
523ai	24 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		oxycodone	2	2						
		clonazepam	3	3						
		diphenhydramine	4	4						
524h	24 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	32.8 mcg/mL In Serum @ 36 h (pe)
525	24 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
		diphenhydramine	2	2						
526ai	24 y F				A	Unk	Int-U	2		
		methadone	1	1						
		diazepam	2	2						
527ha	25 y F				A	Ingst	Int-S	1		
		acetaminophen/di-phenhydramine	1	1					acetaminophen	45 mcg/mL In Blood (unspecified) @ Unknown
528ai	25 y M				U	Ingst+ Aspir+ Unk	Int-A	2		

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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
		morphine	1	1						
529ai	25 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		alprazolam	2	2						
530ai	25 y F				A	Par	Int-U	2		
		hydrocodone	1	1						
		hydroxyzine	2	2						
		promethazine	3	3						
		topiramate	4	4						
		diphenhydramine	5	5						
531h	25 y F				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	123 mcg/mL In Blood (unspecified) @ Unknown
532h	25 y F				U	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	55.5 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					acetaminophen	76.6 mcg/mL In Blood (unspecified) @ Unknown
		alprazolam	2	2						
533ai	25 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		alprazolam	2	2						
534ai	25 y M				A	Unk	Int-A	2		
		methadone	1	1						
		diazepam	2	2						
		acetaminophen	3	3						
535p	25 y M				A	Par	Int-A	2		
		fentanyl	1	1						
536ai	26 y M				U	Ingst+ Unk	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		ethanol	2	2						
		heroin	3	3						
537ai	26 y M				A	Ingst	Int-U	2		
		methadone	1	1						
		alprazolam	2	2						
[538a]	26 y F-Pregnant				U	Ingst	Int-S	1		
		salicylate	1	1					salicylate	39 mg/dL In Blood (unspecified) @ Autopsy
		salicylate	1	1					salicylate	90 mg/dL In Serum @ Unknown
		alprazolam	2	2					alprazolam	0.008 mg/L In Blood (unspecified) @ Autopsy
539ai	26 y F				U	Ingst	Int-A	2		
		oxymorphone	1	1						
		alprazolam	2	2						
540ai	26 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		alprazolam	2	2						
		trazodone	3	3						
		promethazine	4	4						
541ai	26 y M				U	Ingst+ Aspir	Unk	2		
		acetaminophen	1	1						
		salicylate	2	2						
		quetiapine	3	3						
		fluoxetine	4	4						
		propranolol	5	5						
542ai	26 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		oxycodone	2	2						
		diazepam	3	3						
543ai	26 y M				A	Unk	Int-A	2		
		fentanyl	1	1						
		cocaine	2	2						
		amphetamine	3	3						
544ai	26 y F				U	Ingst+ Unk	Int-A	2		
		oxycodone	1	1						
		methamphet-amine	2	2						
		carisoprodol	3	3						
545	26 y F				A	Ingst	Int-S	2		

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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
		oxycodone	1	1						
546ai	26 y F				A	Unk	Int-A	2		
		oxycodone	1	1						
547ai	26 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		clonazepam	2	2						
548ai	26 y F				A	Ingst	Int-A	2		
		oxycodone	1	1						
		alprazolam	2	2						
		diphenhydramine	3	3						
549	26 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	126 mg/dL In Serum @ 9 h (pe)
		salicylate	1	1					salicylate	73 mg/dL In Serum @ 4 h (pe)
		salicylate	1	1					salicylate	91 mg/dL In Serum @ 6 h (pe)
550ai	27 y F				A	Unk	Int-A	2		
		fentanyl	1	1						
		oxycodone	2	2						
		clonazepam	3	3						
		trazodone	4	4						
		doxylamine	5	5						
		citalopram	6	6						
		dextromethorphan	7	7						
551	27 y F				C	Ingst	Int-U	3		
		acetaminophen	1	1					acetaminophen	55 mcg/mL In Serum @ Unknown
		methadone	2	2						
552ai	27 y F				A	Ingst+ Unk	Int-A	2		
		methadone	1	1						
		cocaine	2	2						
553ai	27 y M				A	Ingst	Int-U	2		
		methadone	1	1						
		promethazine	2	2						
		acetaminophen	3	3						
554h	27 y F				U	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	89 mcg/mL In Unknown @ Unknown
555ai	27 y F				U	Ingst	Unk	2		
		acetaminophen/ hydrocodone	1	1						
		skeletal muscle relaxant	2	2						
		butalbital	3	3						
556ai	27 y M				U	Ingst+ Unk	Int-A	2		
		opioid	1	1						
		benzodiazepine	2	2						
557ai	27 y M				A	Ingst	Int-A	2		
		oxycodone	1	1						
		cyclobenzaprine	2	2						
		diphenhydramine	3	3						
		amphetamine	4	4						
558ai	27 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		alprazolam	2	2						
559h	27 y F				A	Ingst	Int-U	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	17 mcg/mL In Serum @ Unknown
560ai	27 y M				A	Ingst	Int-M	2		
		methadone	1	1						
561ai	27 y M				U	Ingst	Int-S	2		
		oxycodone	1	1						
562pai	27 y F				U	Ingst+ Inhal	Int-S	1		
		methadone	1	1					eddp (2-ethylidene-1,5-dimethyl-3,3-diphenyl pyrrolidine)	70 ng/mL In Blood (unspecified) @ Autopsy
		methadone	1	1					methadone	960 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	42 ng/mL In Blood (unspecified) @ Autopsy
		amphetamine (hallucinogenic)	3	3					amphetamine	100 ng/mL In Blood (unspecified) @ Autopsy

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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
		THC homolog	4	4						
		citalopram	5	5					citralopram	31 ng/mL In Blood (unspecified) @ Autopsy
[563h]	27 y M				A	Ingst	Int-S	2		
		salicylate	1	1						
564h	27 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	108 mcg/mL In Blood (unspecified) @ Unknown
565pa	27 y M				A	Par	Int-A	2		
		fentanyl	1	1					norfentanyl	0.36 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	3.9 ng/mL In Blood (unspecified) @ Autopsy
566ai	28 y F				A	Ingst	Int-U	2		
		methadone	1	1						
		paroxetine	2	2						
567ai	28 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
568p	28 y M				U	Unk	Int-A	1		
		methadone	1	1					methadone	1 mg/L In Blood (unspecified) @ Autopsy
		heroin	2	2						
		alprazolam	3	3						
569ai	28 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		alprazolam	2	2						
570ai	28 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		alprazolam	2	2						
571ai	28 y M				U	Ingst+ Unk	Int-A	2		
		oxymorphone	1	1						
		ethanol	2	2						
		phencyclidine	3	3						
572ai	28 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		alprazolam	2	2						
		promethazine	3	3						
573ai	28 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		alprazolam	2	2						
		ethanol	3	3						
574ai	28 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		morphine	2	2						
		clonazepam	3	3						
		alprazolam	4	4						
		amphetamine	5	5						
575ai	28 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
576pha	28 y F				A/C	Ingst	Unk	1		
		methadone	1	1					methadone	1.91 mg/L In Whole Blood @ Unknown
		methamphet- amine	2	2					methamphetamine	0.86 mg/L In Blood (unspecified) @ Autopsy
577ai	28 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
		diphenhydramine	2	2						
		diazepam	3	3						
578ai	28 y M				U	Ingst+ Unk	Int-A	2		
		droperidol/ fentanyl	1	1						
		acetaminophen/ hydrocodone	2	2						
579p	28 y M				A/C	Ingst	Int-A	1		
		methadone	1	1					methadone	2200 ng/mL In Blood (unspecified) @ 3 d (pe)
		methadone	1	1					eddp (2-ethylidene-1,5-dimethyl-3,3-diphenyl pyrrolidine)	2300 ng/mL In Blood (unspecified) @ 3 d (pe)

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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
580ai	28 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
		codeine	2	2						
		diazepam	3	3						
581	28 y M				A	Ingst	Unk	1		
		salicylate	1	1						
582ai	28 y M				U	Ingst	Int-A	2		
		methadone	1	1						
583ai	29 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		alprazolam	2	2						
		olanzapine	3	3						
		trazodone	4	4						
584ai	29 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
		skeletal muscle relaxant	4	4						
		butalbital	5	5						
		acetaminophen	6	6						
		levetiracetam	7	7						
585a	29 y M				U	Par	Int-A	1		
		oxymorphone (extended release)	1	1						
		methamphet-amine	2	2						
		amphetamine	3	3						
586ai	29 y M				U	Ingst+ Unk	Unk	2		
		morphine	1	1						
		citalopram	2	2						
		hydromorphone	3	3						
587ai	29 y M				U	Unk	Int-A	2		
		morphine	1	1						
588ai	29 y M				A	Ingst	Int-M	2		
		oxycodone	1	1						
		hydroxyzine	2	2						
		fluoxetine	3	3						
589ai	29 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		clonazepam	2	2						
		ethanol	3	3						
590ph	29 y M				A	Ingst+ Par	Int-A	2		
		opioid	1	1						
591ph	29 y F				A/C	Ingst	Int-U	2		
		methadone	1	1						
		oxycodone	2	2						
		gabapentin	3	3						
		amphetamine/ dextroamphet-amine	4	4						
592ai	29 y M				A	Unk	Int-U	2		
		oxycodone	1	1						
		clonazepam	2	2						
		citalopram	3	3						
		diphenhydramine	4	4						
593ai	29 y M				A	Ingst	Int-A	2		
		methadone	1	1						
594ai	29 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		alprazolam	2	2						
		diazepam	3	3						
595ai	29 y M				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		alprazolam	2	2						
596ai	29 y F				A	Ingst	Int-A	2		
		morphine	1	1						
		oxycodone	2	2						
		lamotrigine	3	3						

(*Continued*)

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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
		sertraline	4	4						
		cyclobenzaprine	5	5						
597ai	29 y M				A	Unk	Int-U	2		
		oxycodone	1	1						
		alprazolam	2	2						
598ai	29 y F				A	Unk	Int-A	2		
		methadone	1	1						
		trazodone	2	2						
		citalopram	3	3						
599ai	29 y F				U	Ingst+ Aspir+ Unk	Int-A	2		
		oxymorphone	1	1						
		cocaine	2	2						
		diazepam	3	3						
		oxycodone	4	4						
600ai	29 y M				U	Ingst	Int-S	2		
		oxycodone	1	1						
		skeletal muscle relaxant	2	2						
		alprazolam	3	3						
		diphenhydramine	4	4						
601ai	30 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
602ai	30 y M				U	Ingst	Int-A	2		
		fentanyl	1	1						
		amitriptyline	2	2						
		diazepam	3	3						
		ethanol	4	4						
603h	30 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	100 mg/dL In Unknown @ 4 h (pe)
		salicylate	1	1					salicylate	65 mg/dL In Unknown @ Unknown
		ethanol	2	2					ethanol	101 Other (see abst) In Unknown @ Unknown
604ai	30 y M				U	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		skeletal muscle relaxant	2	2						
605ai	30 y M				A	Ingst	Int-A	2		
		oxycodone	1	1						
		tramadol	2	2						
		alprazolam	3	3						
		benztropine	4	4						
		hydroxyzine	5	5						
		trazodone	6	6						
606h	30 y F				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
607ai	30 y F				A	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		ethanol	2	2						
608ai	30 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		alprazolam	2	2						
		trazodone	3	3						
		citalopram	4	4						
609pa	30 y F				U	Ingst	Int-S	2		
		tramadol	1	1					tramadol	7.3 mcg/mL In Blood (unspecified) @ Unknown
		fluoxetine	2	2						
610ai	30 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
611ai	30 y F				U	Ingst	Int-A	2		
		tramadol	1	1						
		fluoxetine	2	2						
612ai	30 y M				U	Ingst	Int-A	2		
		oxymorphone	1	1						
		ethanol	2	2						
613p	30 y F				U	Unk	Int-U	2		
		opioid	1	1						

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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
614ai	30 y M				U	Ingst	Int-S	2		
		tramadol	1	1						
615ai	31 y M				A	Ingst	Int-A	2		
		oxycodone	1	1						
		cyclobenzaprine	2	2						
		alprazolam	3	3						
		cocaine	4	4						
		ethanol	5	5						
616p	31 y F				U	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen	61.8 mcg/mL In Blood (unspecified) @ 10 m (pe)
617ai	31 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
		doxylamine	2	2						
		citalopram	3	3						
618ha	31 y F				A	Ingst	Int-U	1		
		acetaminophen	1	1					acetaminophen	24 mcg/mL In Whole Blood @ Autopsy
		acetaminophen	1	1					acetaminophen	3000 mcg/mL In Serum @ Unknown
		ziprasidone	2	2					ziprasidone	0.25 mg/L In Whole Blood @ Autopsy
		paroxetine	3	3						
619ai	31 y M				A	Unk	Int-A	2		
		methadone	1	1						
620ha	31 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	205 mcg/mL In Serum @ 4 h (pe)
		ethanol	2	2					ethanol	120 mg/dL In Serum @ 2 h (pe)
621p	31 y M				A/C	Ingst	Int-S	2		
		oxycodone	1	1						
		alprazolam	2	2						
		quetiapine	3	3						
		citalopram	4	4						
		flecainide	5	5						
622ai	31 y F				U	Ingst+ Unk	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		methamphet-amine	2	2						
		skeletal muscle relaxant	3	3						
		duloxetine	4	4						
623pa	31 y M				U	Ingst+ Unk	Int-S	1		
		opioid	1	1					6-monoacetylmor-phine	0.02 mg/L In Urine (quantitative only) @ Unknown
		opioid	1	1					codeine (free)	0.284 mg/L In Urine (quantitative only) @ Unknown
		opioid	1	1					morphine (free)	4.053 mg/L In Urine (quantitative only) @ Unknown
		amphetamine (hallucino-genic)	2	2						
624ai	31 y M				U	Ingst+ Unk	Int-A	2		
		oxycodone	1	1						
		cocaine	2	2						
		oxymorphone	3	3						
		alprazolam	4	4						
625ai	31 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		clonazepam	2	2						
		citalopram	3	3						
626	31 y M				A	Ingst	Int-S	1		
		salicylate	1	1						
		fluoxetine	2	2						
		olanzapine	3	3						
		lurasidone	4	4						
627ai	31 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
		oxymorphone	2	2						
628ai	31 y F				U	Ingst	Int-A	2		
		methadone	1	1						

(*Continued*)

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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
		alprazolam	2	2						
[629ha]	31 y M				A	Ingst	Int-S	1		
		colchicine	1	1					colchicine	49 ng/mL In Blood (unspecified) @ Unknown
		omeprazole	2	2						
630p	31 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	242 mcg/mL In Blood (unspecified) @ 3 d (pe)
		acetaminophen	1	1					acetaminophen	293 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
		venlafaxine	3	3						
631ai	31 y F				A	Ingst+ Inhal	Int-A	2		
		oxycodone	1	1						
		cocaine	2	2						
632ai	31 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		tramadol	2	2						
		ethanol	3	3						
633	31 y F				A	Ingst	Int-S	3		
		acetaminophen	1	1						
634ai	32 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		doxylamine	2	2						
		fluoxetine	3	3						
635ai	32 y F				A	Unk	Int-A	2		
		fentanyl	1	1						
		clonazepam	2	2						
636a	32 y M				A	Ingst	Unt-G	1		
		acetaminophen	1	1						
637ai	32 y M				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		butalbital	2	2						
638ph	32 y M				A	Ingst+ Par	Int-S	2		
		opioid	1	1						
		cocaine	2	2						
		benzodiazepine	3	3						
639ha	32 y F				A	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1					acetaminophen	11.7 mcg/mL In Blood (unspecified) @ 32 h (pe)
		acetaminophen/ diphenhydramine	1	1					acetaminophen	22.2 mcg/mL In Blood (unspecified) @ 24 h (pe)
		acetaminophen/ diphenhydramine	1	1					acetaminophen	32 mcg/mL In Blood (unspecified) @ 12 h (pe)
		acetaminophen/ diphenhydramine	1	1					acetaminophen	64 mcg/mL In Blood (unspecified) @ 5 m (pe)
		lithium	2	2						
		quetiapine	3	3						
		zopiclone	4	4						
640ai	32 y M				U	Unk	Int-S	2		
		morphine	1	1						
641h	32 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1						
642ai	32 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
		alprazolam	2	2						
		diazepam	3	3						
		codeine	4	4						
643ha	32 y F				A	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1					acetaminophen	418 mcg/mL In Serum @ Unknown
644ai	32 y M				U	Ingst	Int-A	2		
		tramadol	1	1						
		ethanol	2	2						
		acetaminophen/ hydrocodone	3	3						
645ai	32 y M				U	Ingst	Int-A	2		
		tramadol	1	1						
646h	32 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	195 mg/L In Blood (unspecified) @ Unknown
647ai	32 y F				A	Ingst	Int-A	2		

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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
		methadone	1	1						
		clonazepam	2	2						
		meprobamate	3	3						
		cyclobenzaprine	4	4						
		oxcarbazepine	5	5						
		trazodone	6	6						
		oxycodone	7	7						
648	32 y F				A	Ingst	Int-S	2		
		salicylate	1	1						
		acetaminophen	2	2						
649ai	32 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		paroxetine	2	2						
		zolpidem	3	3						
		promethazine	4	4						
650ai	32 y M				U	Ingst	Int-A	2		
		methadone	1	1						
651a	33 y M				A/C	Ingst+ Aspir+ Unk	Int-A	1		
		methadone	1	1					methadone	0.1 mg/L In Blood (unspecified) @ Autopsy
		opioid	2	2						
		benzodiazepine	3	3						
		cocaine	4	4					benzoylecognine	2.2 mg/L In Blood (unspecified) @ Autopsy
		amphetamine	5	5						
652ai	33 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		promethazine	2	2						
		ethanol	3	3						
653ai	33 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		alprazolam	2	2						
		ethanol	3	3						
654ai	33 y F				A	Ingst	Int-S	2		
		methadone	1	1						
		diazepam	2	2						
		bupropion	3	3						
		amitriptyline	4	4						
		venlafaxine	5	5						
		citalopram	6	6						
655p	33 y F				U	Ingst	Int-A	2		
		methadone	1	1						
		alprazolam	2	2						
656ai	33 y M				A	Ingst	Int-A	2		
		oxycodone	1	1						
		alprazolam	2	2						
		trazodone	3	3						
		cocaine	4	4						
		clonazepam	5	5						
		tramadol	6	6						
		doxylamine	7	7						
657ai	33 y F				A	Ingst	Int-S	2		
		oxycodone	1	1						
		hydrocodone	2	2						
		topiramate	3	3						
		acetaminophen	4	4						
		phenytoin	5	5						
658ai	33 y M				A	Ingst+ Unk	Int-A	2		
		oxycodone	1	1						
		cocaine	2	2						
		sertraline	3	3						
659ai	33 y M				U	Ingst+ Unk	Int-A	2		
		oxycodone	1	1						
		carisoprodol	2	2						
		amphetamine	3	3						
660ai	33 y M				U	Unk	Int-A	2		
		fentanyl	1	1						
661ai	33 y M				A	Unk	Int-A	2		
		methadone	1	1						
		phencyclidine	2	2						
662h	33 y M				A	Ingst	Unk	1		

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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
		acetaminophen	1	1						
		tizanidine	2	2						
		benzodiazepine	3	3						
663pa	33 y M				U	Unk	Int-A	2		
		oxymorphone (extended release)	1	1					oxymorphone	0.07 mg/L In Blood (unspecified) @ Unknown
		oxycodone	2	2					oxycodone	0.68 mg/L In Blood (unspecified) @ Unknown
		quetiapine	3	3					quetiapine	0.1 mg/L In Blood (unspecified) @ Autopsy
		mirtazapine	4	4					mirtazapine	0.16 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	5	5					alprazolam	0.15 mg/L In Blood (unspecified) @ Autopsy
		diazepam	6	6					nordiazepam	0.04 mg/L In Blood (unspecified) @ Autopsy
664ai	33 y M				U	Ingst+ Derm	Int-A	2		
		fentanyl (transdermal)	1	1						
		temazepam	2	2						
665ai	33 y M				A	Unk	Int-A	2		
		methadone	1	1						
		clonazepam	2	2						
666ai	33 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
		ethanol	2	2						
		sertraline	3	3						
667ai	33 y M				U	Ingst	Int-A	2		
		methadone	1	1						
668a	33 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	22.6 mg/L In Blood (unspecified) @ Unknown
		diphenhydramine	2	2					diphenhydramine	0.33 mg/L In Blood (unspecified) @ Unknown
		promethazine	3	3					promethazine	0.05 mg/L In Blood (unspecified) @ Autopsy
		promethazine	3	3					promethazine	1.16 mg/L In Liver @ Autopsy
669	33 y F				U	Ingst	Unk	1		
		acetaminophen/ oxycodone	1	1						
		methadone	2	2						
670a	33 y M				A/C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen	31.2 mcg/mL In Serum @ 24 h (pe)
		acetaminophen	1	1					acetaminophen	74.5 mcg/mL In Serum @ Unknown
671ai	33 y M				A	Unk	Int-A	2		
		fentanyl	1	1						
672ai	33 y M				A	Ingst+ Unk	Int-A	2		
		fentanyl	1	1						
		skeletal muscle relaxant	2	2						
		oxycodone	3	3						
673	33 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		acetaminophen	2	2					acetaminophen	276 mcg/mL In Serum @ Unknown
674ai	33 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
675ai	34 y F				U	Unk	Int-A	2		
		fentanyl	1	1						
676ai	34 y M				A	Ingst	Int-A	2		
		oxycodone	1	1						
677ha	34 y F				A	Ingst+ Aspir	Int-U	1		
		methadone	1	1					methadone	0.35 mg/L In Blood (unspecified) @ Unknown
		oxycodone	2	2						
		trazodone	3	3						
		diphenhydramine	4	4						

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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
678pa	34 y F				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					hydromorphone	0.03 mg/dL In Blood (unspecified) @ 1 d (pe)
		acetaminophen/ hydrocodone	1	1					hydrocodone	1.5 mg/L In Serum @ 1 d (pe)
		alprazolam	2	2					alprazolam	0.1 mg/L In Serum @ 1 d (pe)
		olanzapine	3	3						
679ai	34 y F				A	Ingst	Int-S	2		
		oxycodone	1	1						
		clonazepam	2	2						
680ai	34 y F				A	Ingst	Int-M	2		
		methadone	1	1						
		morphine	2	2						
		alprazolam	3	3						
		diazepam	4	4						
		ethanol	5	5						
681ai	34 y M				A	Unk	Int-A	2		
		hydrocodone	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
		cyclobenzaprine	4	4						
		bupropion	5	5						
		dextromethorphan	6	6						
682ai	34 y F				A	Ingst+ Unk	Int-A	2		
		methadone	1	1						
		heroin	2	2						
		promethazine	3	3						
		topiramate	4	4						
		mirtazapine	5	5						
		diphenhydramine	6	6						
683ai	34 y M				A	Ingst+ Unk	Int-A	2		
		methadone	1	1						
		ethanol	2	2						
684ai	34 y M				A	Unk	Int-A	2		
		methadone	1	1						
685ai	34 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		oxycodone	2	2						
		skeletal muscle relaxant	3	3						
		alprazolam	4	4						
		diazepam	5	5						
686	34 y M				A	Ingst	Int-S	1		
		salicylate	1	1						
687ai	34 y M				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		tramadol	2	2						
688pa	34 y F				A	Ingst	Int-U	1		
		acetaminophen	1	1					morphine	0.02 mg/L In Whole Blood @ Autopsy
[689ha]	34 y F				A	Ingst	Int-S	1		
		ibuprofen	1	1					ibuprofen	262.1 mg/L In Blood (unspecified) @ Autopsy
690ai	34 y M				A	Par	Int-A	2		
		tapentadol	1	1						
		doxylamine	2	2						
691ai	34 y F				U	Ingst+ Unk	Int-A	2		
		carisoprodol/ salicylate	1	1						
		acetaminophen/ hydrocodone	2	2						
		morphine	3	3						
		sertraline	4	4						
		zolpidem	5	5						
692ai	35 y F				A	Ingst+ Unk	Int-U	2		
		morphine	1	1						
		ethanol	2	2						
693ai	35 y M				U	Ingst	Int-A	2		
		oxymorphone	1	1						
694ai	35 y M				A	Inhal+ Unk	Int-A	2		
		oxymorphone	1	1						

(*Continued*)

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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
		benztropine	2	2						
		fluoxetine	3	3						
		citalopram	4	4						
		paroxetine	5	5						
695ai	35 y F				U	Ingst+ Unk	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
696ai	35 y M				U	Ingst	Int-A	2		
		hydromorphone	1	1						
697ai	35 y F-Pregnant				A	Ingst	Int-A	2		
		methadone	1	1						
		tramadol	2	2						
698h	35 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1						
		salicylate	2	2					salicylate	12 mg/dL In Serum @ Unknown
		ethanol	3	3					ethanol	51 mg/dL In Serum @ Unknown
699ai	35 y F				U	Ingst+ Unk	Int-S	2		
		morphine	1	1						
		methanol	2	2						
		diazepam	3	3						
		hydromorphone	4	4						
700ph	35 y F				A	Ingst	AR-D	2		
		oxycodone	1	1						
		benzodiazepine	2	2						
		opioid	3	3						
		methamphet-amine	4	4						
		phencyclidine	5	5						
701ph	35 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
		drug, unknown	2	2						
702ai	35 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
703ai	35 y F				U	Ingst+ Unk	Int-A	2		
		fentanyl	1	1						
		alprazolam	2	2						
		chlorpromazine	3	3						
		diphenhydramine	4	4						
704ai	35 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		clonazepam	2	2						
705	36 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	168 mcg/mL In Blood (unspecified) @ Unknown
706ai	36 y M				A	Ingst+ Unk	Int-A	2		
		oxycodone	1	1						
		fentanyl	2	2						
		trazodone	3	3						
		diphenhydramine	4	4						
707p	36 y M				A	Ingst	Int-M	2		
		methadone	1	1						
708ai	36 y M				U	Ingst+ Unk	Int-A	2		
		fentanyl	1	1						
		alprazolam	2	2						
		cocaine	3	3						
		diazepam	4	4						
709ai	36 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		oxycodone	2	2						
		cyclobenzaprine	3	3						
[710pha]	36 y M				U	Ingst	Int-A	2		
		fentanyl (transdermal)	1	1						
711ai	36 y M				U	Ingst+ Unk	Int-A	2		
		fentanyl	1	1						
		acetaminophen/ hydrocodone	2	2						
		skeletal muscle relaxant	3	3						

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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
		promethazine	4	4						
		mirtazapine	5	5						
712ai	36 y F-Pregnant				A	Ingst	Int-A	2		
		methadone	1	1						
		promethazine	2	2						
		tramadol	3	3						
713p	37 y M				A	Ingst	Int-S	1		
		methadone	1	1						
		ethanol	2	2						
714ai	37 y M				A	Unk	Int-A	2		
		fentanyl	1	1						
		oxycodone	2	2						
		diazepam	3	3						
		diphenhydramine	4	4						
715ai	37 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
		methadone	2	2						
		ethanol	3	3						
		morphine	4	4						
		acetaminophen/ hydrocodone	5	5						
716h	37 y F				A	Ingst	Int-U	1		
		acetaminophen	1	1					acetaminophen	67 mcg/mL In Serum @ Unknown
717ai	37 y M				A	Ingst	Int-S	2		
		morphine	1	1						
		oxycodone	2	2						
		cyclobenzaprine	3	3						
		nortriptyline	4	4						
		diphenhydramine	5	5						
		acetaminophen	6	6						
718ai	37 y M				A	Ingst	Int-M	2		
		methadone	1	1						
		promethazine	2	2						
719ai	37 y M				U	Ingst	Int-A	2		
		methadone	1	1						
720ai	37 y M				A	Unk	Int-A	2		
		methadone	1	1						
		clonazepam	2	2						
		promethazine	3	3						
		cocaine	4	4						
721ai	37 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		diazepam	2	2						
		tapentadol	3	3						
722pai	37 y F				A	Ingst+ Unk	Int-M	1		
		morphine	1	1					morphine	150 ng/mL In Blood (unspecified) @ Autopsy
		citalopram	2	2						
		diazepam	3	3					diazepam	66 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	3	3					nordiazepam	70 ng/mL In Blood (unspecified) @ Autopsy
		lamotrigine	4	4					lamotrigine	0.38 mcg/mL In Blood (unspecified) @ Autopsy
		clonazepam	5	5					clonazepam	19 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	6	6					delta-9-carboxy-thc	35 ng/mL In Blood (unspecified) @ Autopsy
723ai	37 y M				A	Ingst	Int-A	2		
		morphine	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
		methylphenidate	4	4						
		acetaminophen	5	5						
724h	37 y M				A/C	Ingst	Int-S	1		
		acetaminophen/ oxycodone	1	1						
		hurricane related	2	2						
725ai	37 y M				A	Ingst	Int-A	2		
		tramadol	1	1						

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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
726ai	37 y M				U	Ingst	Int-A	2		
		fentanyl	1	1						
		alprazolam	2	2						
[727pha]	37 y M				A/C	Ingst+ Derm	Unt-T	1		
		fentanyl (transdermal)	1	1					fentanyl	64 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	2	2					diazepam	0.24 mg/L In Blood (unspecified) @ Autopsy
		diazepam	2	2					nordiazepam	0.35 mg/L In Blood (unspecified) @ Autopsy
		gabapentin	3	3					gabapentin	15 mg/kg In Blood (unspecified) @ Autopsy
728	37 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	110 mg/dL In Plasma @ 4 h (pe)
729ph	37 y M				A	Ingst	Int-S	2		
		morphine	1	1						
		baclofen	2	2						
		benzodiazepine	3	3						
730pha	38 y M				A/C	Par	Int-A	1		
		opioid	1	1						
731ai	38 y F				U	Ingst+ Unk	Int-A	2		
		oxycodone	1	1						
		acetaminophen/hydrocodone	2	2						
		methadone	3	3						
		alprazolam	4	4						
		diazepam	5	5						
		cocaine	6	6						
		citalopram	7	7						
732p	38 y M				A	Ingst	Int-U	2		
		methadone	1	1						
		methanol	2	2						
733ai	38 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
734ai	38 y F				A	Ingst	Int-A	2		
		morphine	1	1						
		oxycodone	2	2						
		diazepam	3	3						
		diphenhydramine	4	4						
735	38 y F				U	Ingst	Int-A	2		
		acetaminophen	1	1					acetaminophen	8 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	36 mg/dL In Blood (unspecified) @ Unknown
736ai	38 y M				U	Inhal+ Unk	Int-S	2		
		morphine	1	1						
		carbon monoxide	2	2						
737h	38 y F				A/C	Ingst	Unk	1		
		acetaminophen/oxycodone	1	1						
738ai	38 y F				U	Ingst	Int-A	2		
		acetaminophen/hydrocodone	1	1						
		phentermine	2	2						
739ai	38 y M				U	Ingst+ Unk	Int-A	2		
		fentanyl	1	1						
		clonazepam	2	2						
740pha	38 y F				A	Ingst+ Inhal	Int-A	2		
		acetaminophen/hydrocodone	1	1					acetaminophen	4.1 mcg/mL In Unknown @ Unknown
		hydrocarbon inhalation	2	2						
741	38 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	68.7 mcg/mL In Whole Blood @ 1 h (pe)
742ai	38 y M				A	Ingst+ Par	Int-A	2		
		oxycodone	1	1						
		hydromorphone	2	2						
		promethazine	3	3						
743	38 y F				U	Ingst	Int-S	1		

(*Continued*)

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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
		acetaminophen	1	1						
		benzodiazepine	2	2						
744a	38 y M				C	Ingst	Int-S	1		
		salicylate	1	1					salicylate	107 mg/dL In Blood (unspecified) @ 14.5 h (pe)
		salicylate	1	1					salicylate	53 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	89.5 mg/dL In Blood (unspecified) @ 9 h (pe)
745ai	38 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		diphenhydramine	2	2						
746ai	38 y F				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		alprazolam	2	2						
747ai	39 y M				A	Ingst	Int-A	2		
		morphine (extended release)	1	1						
		oxycodone	2	2						
		diazepam	3	3						
748	39 y M				A	Ingst	Int-S	1		
		tramadol	1	1						
		acetaminophen	2	2					acetaminophen	196.8 mcg/mL In Blood (unspecified) @ Unknown
		carbamazepine	3	3					carbamazepine	25.2 mg/L In Blood (unspecified) @ Unknown
749ai	39 y M				A	Ingst+ Unk	Int-A	2		
		fentanyl	1	1						
		diphenhydramine	2	2						
		clonazepam	3	3						
		hydrocodone	4	4						
		tramadol	5	5						
		sertraline	6	6						
750pa	39 y M				U	Ingst	Int-A	2		
		methadone	1	1					methadone	0.1 mg/L In Blood (unspecified) @ 1 m (pe)
		duloxetine	2	2					duloxetine	20 ng/mL In Blood (unspecified) @ 1 m (pe)
		diphenhydramine	3	3					diphenhydramine	0.074 mg/L In Blood (unspecified) @ 1 m (pe)
		alprazolam	4	4					alprazolam	0.04 mg/L In Blood (unspecified) @ 1 m (pe)
751ha	39 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	78 mcg/mL In Plasma @ Unknown
752	39 y F				A	Ingst	Int-A	2		
		acetaminophen/ oxycodone	1	1					acetaminophen	36.9 mcg/mL In Blood (unspecified) @ Unknown
753ai	39 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		tramadol	2	2						
		alprazolam	3	3						
754ai	39 y F				U	Ingst	Int-A	2		
		methadone	1	1						
755pha	39 y M				U	Ingst	Unk	1		
		methadone	1	1					eddp (2-ethylidene-1,5-dimethyl-3,3-diphenyl pyrrolidine)	30.7 ng/mL In Blood (unspecified) @ Autopsy
		methadone	1	1					methadone	348 ng/mL In Blood (unspecified) @ Autopsy
		morphine	2	2					morphine	60.9 ng/mL In Blood (unspecified) @ Autopsy
		promethazine	3	3						
		memantine	4	4						
756a	39 y F				A	Ingst	Int-S	2		
		acetaminophen/ oxycodone	1	1					oxymorphone	0.013 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen/ oxycodone	1	1					oxycodone	0.084 mg/L In Blood (unspecified) @ Autopsy
		gabapentin	2	2					gabapentin	29 mg/L In Blood (unspecified) @ Autopsy

(*Continued*)

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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
		citalopram	3	3					citalopram	0.26 mg/L In Blood (unspecified) @ Autopsy
757ph	39 y F				A/C	Ingst	Int-S	1		
		oxycodone	1	1						
		skeletal muscle relaxant	2	2						
		meloxicam	3	3						
		tramadol	4	4						
		diazepam	5	5						
758p	39 y M				A	Ingst	Int-U	2		
		methadone	1	1						
759pa	39 y F				U	Ingst	Unk	2		
		hydrocodone	1	1					hydromorphone	15.1 ng/mL In Blood (unspecified) @ Autopsy
		hydrocodone	1	1					hydrocodone	267 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	24.7 ng/mL In Blood (unspecified) @ Autopsy
760ai	39 y F				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		oxycodone	2	2						
761h	39 y F				U	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1						
		acetaminophen/ butalbital/ caffeine	2	2						
		bupropion	3	3						
		promethazine	4	4						
		carisoprodol	5	5						
		zolpidem	6	6						
762ai	39 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
		diazepam	2	2						
763ai	39 y M				A	Ingst	Int-S	2		
		methadone	1	1						
764	39 y F				A/C	Ingst	Int-U	2		
		acetaminophen/ hydrocodone*	2	1					acetaminophen	299 mcg/mL In Blood (unspecified) @ Unknown
		cyclobenzaprine*	1	1						
		venlafaxine	3	3						
765ai	39 y M				A	Ingst	Int-S	2		
		tramadol	1	1						
		cyclobenzaprine	2	2						
		ethanol	3	3						
766ai	39 y M				A	Ingst	Int-A	2		
		oxycodone	1	1						
		alprazolam	2	2						
767	39 y F				C	Ingst	Int-U	2		
		acetaminophen	1	1					acetaminophen	43 mg/L In Serum @ Unknown
768h	39 y F				U	Ingst	Unk	2		
		acetaminophen/ oxycodone	1	1					acetaminophen	93 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	14.9 mg/dL In Blood (unspecified) @ Unknown
769ai	40 y M				A	Ingst	Int-M	2		
		oxycodone	1	1						
		butalbital	2	2						
		promethazine	3	3						
		cyclobenzaprine	4	4						
		amitriptyline	5	5						
770h	40 y M				A/C	Ingst	Int-S	3		
		methadone	1	1						
771pa	40 y F				A/C	Ingst	Int-A	2		
		oxycodone	1	1						
		clonazepam	2	2						
		cyclobenzaprine	3	3						
		ethanol	4	4					ethanol	80 mg/dL In Blood (unspecified) @ 10 m (pe)
772ai	40 y F				A	Ingst+ Unk	Int-A	2		

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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
		methadone	1	1						
		cocaine	2	2						
		quinine	3	3						
773ai	40 y F				A	Ingst+ Derm	Int-A	2		
		fentanyl (transdermal)	1	1						
		oxycodone	2	2						
		diazepam	3	3						
		amitriptyline	4	4						
		diphenhydramine	5	5						
		ethanol	6	6						
774ai	40 y F				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
775a	40 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	12.7 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	51.8 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	52.9 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	56.6 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	56.8 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	6.4 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen	2	2					acetaminophen	139 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	2	2					acetaminophen	203 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	2	2					acetaminophen	23 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	2	2					acetaminophen	262 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	2	2					acetaminophen	308 mcg/mL In Blood (unspecified) @ Unknown
776	40 y F				C	Unk	Unk	3		
		acetaminophen/ hydrocodone	1	1					acetaminophen	0 mcg/mL In Serum @ Unknown
777ai	40 y F				U	Ingst+ Derm	Int-A	2		
		fentanyl	1	1						
		oxycodone	2	2						
778ai	40 y F				A	Ingst+ Derm	Int-A	2		
		fentanyl (transdermal)	1	1						
		tramadol	2	2						
		alprazolam	3	3						
		clonazepam	4	4						
		trazodone	5	5						
		amitriptyline	6	6						
		fluoxetine	7	7						
		ethanol	8	8						
779ai	40 y M				A	Unk	Int-A	2		
		methadone	1	1						
		clonazepam	2	2						
		alprazolam	3	3						
		tramadol	4	4						
		nortriptyline	5	5						
780	40 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	392 mg/L In Blood (unspecified) @ Unknown
		ibuprofen	2	2						
		trazodone	3	3						
781ai	40 y M				U	Ingst	Int-A	2		
		methadone	1	1						
		ethanol	2	2						
782	40 y M				A	Ingst	Int-S	1		
		salicylate	1	1						
783	40 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1						

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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
784ai	40 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
785ai	41 y M				U	Ingst	Int-A	2		
		tramadol	1	1						
		mirtazapine	2	2						
		naproxen	3	3						
		valproic acid	4	4						
786p	41 y F				A	Ingst	Int-U	1		
		oxycodone	1	1						
		carisoprodol	2	2						
787ai	41 y F				U	Ingst	Int-A	2		
		methadone	1	1						
		acetaminophen/ hydrocodone	2	2						
		duloxetine	3	3						
788ai	41 y F				U	Ingst	Int-A	2		
		tramadol	1	1						
		ethanol	2	2						
789ph	41 y F				A/C	Ingst	Int-S	2		
		morphine	1	1						
		acetaminophen/ oxycodone	2	2						
		zolpidem	3	3						
790	41 y F				U	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	78 mcg/mL In Blood (unspecified) @ Unknown
		quetiapine	2	2						
791ai	41 y F				A	Unk	Int-U	2		
		butorphanol	1	1						
		amitriptyline	2	2						
		diazepam	3	3						
792ai	41 y F				A	Unk	Int-A	2		
		methadone	1	1						
		promethazine	2	2						
		cocaine	3	3						
793ai	41 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		diazepam	2	2						
		clonazepam	3	3						
		cocaine	4	4						
		pseudoephedrine	5	5						
		phenylpropa- nolamine	6	6						
794	41 y M				C	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	52 mcg/mL In Serum @ Unknown
		quetiapine	2	2						
795	41 y M				A	Ingst	Unk	2		
		methadone	1	1						
796h	41 y M				C	Ingst	Int-M	2		
		acetaminophen	1	1						
		ethanol	2	2						
797ai	41 y F				A	Unk	Int-A	2		
		oxycodone	1	1						
		fentanyl	2	2						
		diazepam	3	3						
		carisoprodol	4	4						
		clonazepam	5	5						
		doxylamine	6	6						
798p	41 y M				A	Ingst+ Par	Int-S	1		
		hydromorphone	1	1						
		alprazolam	2	2						
		carisoprodol	3	3						
		acetaminophen/ oxycodone	4	4						
		benzodiazepine	5	5						
799ai	41 y M				A	Unk	Int-S	2		
		oxycodone	1	1						
		diazepam	2	2						
		olanzapine	3	3						
		quetiapine	4	4						
		mirtazapine	5	5						
		hydroxyzine	6	6						

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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
		levamisole	7	7						
800ai	41 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
801	41 y F				U	Ingst	Unk	2		
		acetaminophen/ diphenhydramine	1	1						
		bismuth subsalicylate	2	2						
802ai	42 y M				A	Ingst+ Unk	Int-A	2		
		oxycodone	1	1						
		ethanol	2	2						
		phencyclidine	3	3						
803ai	42 y F				A	Ingst	Int-A	2		
		morphine	1	1						
		diazepam	2	2						
		trazodone	3	3						
		diphenhydramine	4	4						
804ai	42 y F				U	Ingst	Int-S	2		
		oxymorphone	1	1						
805ai	42 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		alprazolam	2	2						
806ai	42 y M				A	Ingst+ Unk	Int-A	2		
		methadone	1	1						
		clonazepam	2	2						
807	42 y F				U	Ingst	Int-S	2		
		acetaminophen*	1	1						
		drug, unknown*	2	1						
808ai	42 y F				U	Ingst	Unk	2		
		propoxyphene	1	1						
		citalopram	2	2						
		butalbital	3	3						
809ai	42 y F				U	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		diphenhydramine	2	2						
		citalopram	3	3						
810ai	42 y F				U	Ingst+ Unk	Unk	2		
		fentanyl	1	1						
		tramadol	2	2						
		acetaminophen/ hydrocodone	3	3						
811ai	42 y M				U	Ingst+ Unk	Int-A	2		
		oxycodone	1	1						
		alprazolam	2	2						
		acetaminophen/ hydrocodone	3	3						
		hydromorphone	4	4						
		diazepam	5	5						
812	42 y M				C	Ingst	Int-A	3		
		acetaminophen/ oxycodone	1	1					acetaminophen	24.6 mcg/mL In Serum @ Unknown
		ethanol	2	2						
813ai	42 y M				U	Unk	Int-A	2		
		morphine	1	1						
		phencyclidine	2	2						
814ai	42 y F				A	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		ethanol (non-beverage)	2	2						
		amitriptyline	3	3						
815	42 y M				A	Unk	Unt-U	2		
		morphine	1	1						
		ceftriaxone	2	2						
816ai	42 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		trazodone	2	2						
		citalopram	3	3						
817	42 y F				U	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1						

(*Continued*)

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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
		drug, unknown	2	2						
818ha	42 y M				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	251.1 mcg/mL In Serum @ 6 h (pe)
		acetaminophen	1	1					acetaminophen	301.6 mcg/mL In Serum @ 1 h (pe)
		acetaminophen	1	1					acetaminophen	62.8 mcg/mL In Serum @ 40 h (pe)
		salicylate	2	2					salicylate	21.2 mg/dL In Serum @ 1 h (pe)
		salicylate	2	2					salicylate	9.4 mg/dL In Serum @ 6 h (pe)
		naproxen	3	3						
819	42 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	53 mg/dL In Serum @ 1 h (pe)
		acetaminophen	2	2						
		promethazine	3	3						
820p	42 y F				A	Ingst+ Derm	Int-S	2		
		fentanyl (transdermal)	1	1						
		citalopram	2	2						
		doxepin	3	3						
		morphine	4	4						
		hydromorphone	5	5						
		androgen	6	6						
		acetaminophen/ oxycodone	7	7						
		alprazolam	8	8						
		clonazepam	9	9						
		tapentadol (extended release)	10	10						
		levothyroxine	11	11						
		meloxicam	12	12						
821ai	42 y F				A	Ingst	Int-A	2		
		oxycodone	1	1						
		hydrocodone	2	2						
		cocaine	3	3						
		hydroxyzine	4	4						
		mirtazapine	5	5						
		acetaminophen	6	6						
822ha	42 y F				U	Ingst	Unk	3		
		acetaminophen	1	1					acetaminophen	77 mcg/mL In Blood (unspecified) @ Unknown
823ai	42 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		diazepam	2	2						
		ethanol	3	3						
824a	42 y F				U	Ingst	Int-S	2		
		acetaminophen	1	1						
		alprazolam	2	2						
		citalopram	3	3						
825p	43 y M				U	Unk	Int-U	2		
		oxycodone	1	1						
		clonidine	2	2						
		amitriptyline	3	3						
		buspirone	4	4						
		gabapentin	5	5						
		metoprolol	6	6						
		risperidone	7	7						
826ai	43 y M				U	Ingst	Int-A	2		
		opioid	1	1						
		ethanol	2	2						
[827ha]	43 y F				A	Ingst	Int-S	1		
		acetaminophen/ diphenhy-dramine	1	1					acetaminophen	0 mcg/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ diphenhy-dramine	1	1					diphenhydramine	0.86 mcg/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ diphenhydramine	1	1					acetaminophen	38.7 mcg/mL In Blood (unspecified) @ Unknown

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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
828ai	43 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		morphine	2	2						
		cyclobenzaprine	3	3						
		trazodone	4	4						
		venlafaxine	5	5						
829ai	43 y F				A	Ingst	Int-A	2		
		oxycodone	1	1						
		skeletal muscle relaxant	2	2						
		alprazolam	3	3						
		trazodone	4	4						
		zolpidem	5	5						
		acetaminophen	6	6						
830pa	43 y M				A	Ingst	Int-A	1		
		methadone	1	1					methadone	0.26 mg/L In Blood (unspecified) @ Unknown
		alprazolam	2	2					alprazolam	0.023 mg/L In Blood (unspecified) @ Unknown
		cocaine	3	3					benzoylecognine	0.22 mg/kg In Blood (unspecified) @ Unknown
831ai	43 y M				A	Ingst+ Inhal	Int-A	2		
		oxycodone	1	1						
		chlordiazepoxide	2	2						
		paroxetine	3	3						
		acetaminophen	4	4						
832ai	43 y F				U	Ingst	Int-A	2		
		methadone	1	1						
		acetaminophen/ hydrocodone	2	2						
		clonazepam	3	3						
833ai	43 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		alprazolam	2	2						
834ai	43 y F				U	Ingst+ Unk	Unk	2		
		morphine	1	1						
		tramadol	2	2						
		diazepam	3	3						
		clonazepam	4	4						
835	43 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	97 mg/dL In Blood (unspecified) @ Unknown
836ai	43 y F				U	Ingst+ Derm	Int-A	2		
		fentanyl (transdermal)	1	1						
		acetaminophen/ hydrocodone	2	2						
		fluoxetine	3	3						
837ai	43 y F				U	Ingst+ Derm	Int-A	2		
		fentanyl (transdermal)	1	1						
		alprazolam	2	2						
838ai	43 y F				U	Ingst+ Unk	Int-A	2		
		droperidol/ fentanyl	1	1						
		butalbital	2	2						
		carbamazepine	3	3						
839ai	43 y F				U	Ingst	Int-A	2		
		methadone	1	1						
		cyclobenzaprine	2	2						
840	43 y M				A	Ingst	Int-A	1		
		acetaminophen	1	1						
		ethanol	2	2						
841ai	43 y F				U	Ingst	Int-A	2		
		methadone	1	1						
		diazepam	2	2						
842ai	43 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		alprazolam	2	2						

(*Continued*)

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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
		sertraline	3	3						
		mirtazapine	4	4						
		oxcarbazepine	5	5						
843ai	43 y F				A	Ingst+ Unk	Int-A	2		
		methadone	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
		citalopram	4	4						
		ethanol	5	5						
844	43 y F				U	Ingst	Int-U	1		
		acetaminophen	1	1					acetaminophen	146 mcg/mL In Serum @ 30 m (pe)
845ai	43 y F				U	Ingst	Int-A	2		
		methadone	1	1						
846h	43 y F				U	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen	18 mcg/mL In Serum @ Unknown
847ai	43 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
848pai	44 y F				U	Ingst+ Derm	Int-M	1		
		fentanyl	1	1					fentanyl	0.017 mg/L In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	0.036 mg/L In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	0.088 mg/kg In Liver @ Autopsy
		diphenhydramine	2	2					diphenhydramine	0.5 mg/L In Blood (unspecified) @ Autopsy
		diphenhydramine	2	2					diphenhydramine	0.72 mg/L In Blood (unspecified) @ Autopsy
		venlafaxine	3	3					o-desmethylvenlafaxine	0.65 mg/L In Blood (unspecified) @ Autopsy
		venlafaxine	3	3					o-desmethylvenlafaxine	0.72 mg/L In Blood (unspecified) @ Autopsy
		venlafaxine	3	3					venlafaxine	2.1 mg/L In Blood (unspecified) @ Autopsy
		venlafaxine	3	3					venlafaxine	2.3 mg/L In Blood (unspecified) @ Autopsy
		venlafaxine	3	3					venlafaxine	6.7 mg/kg In Liver @ Autopsy
849ai	44 y M				A	Unk	Int-A	2		
		oxycodone	1	1						
		cocaine	2	2						
		sertraline	3	3						
		doxylamine	4	4						
		bupropion	5	5						
850ai	44 y F				A	Ingst+ Derm	Unk	2		
		fentanyl (transdermal)	1	1						
		phenobarbital	2	2						
		diphenhydramine	3	3						
		promethazine	4	4						
		amitriptyline	5	5						
		venlafaxine	6	6						
851h	44 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	3 mcg/mL In Serum @ Unknown
		drug, unknown	2	2						
852ai	44 y F				A	Ingst+ Derm	Int-U	2		
		fentanyl (transdermal)	1	1						
		amitriptyline	2	2						
		mirtazapine	3	3						
		ethanol	4	4						
853ai	44 y F				A	Ingst	Int-A	2		
		tramadol	1	1						
		cocaine	2	2						
		clonazepam	3	3						
854ai	44 y F				U	Ingst+ Unk	Int-A	2		
		fentanyl	1	1						
		alprazolam	2	2						

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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
855pa	44 y F				U	Unk	Int-U	3		
		fentanyl	1	1					fentanyl	4.6 ng/mL In Blood (unspecified) @ Autopsy
		morphine	2	2					morphine	10.9 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	3	3					alprazolam	99.9 ng/mL In Blood (unspecified) @ Autopsy
		baclofen	4	4						
856h	44 y F				U	Unk	Unk	3		
		methadone	1	1						
857ai	44 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		tramadol	2	2						
		oxycodone	3	3						
		hydrocodone	4	4						
		codeine	5	5						
		clonazepam	6	6						
		quetiapine	7	7						
		benztropine	8	8						
		acetaminophen	9	9						
858ai	44 y M				U	Ingst+ Unk	Int-A	2		
		fentanyl	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
		methadone	4	4						
859ai	44 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
		alprazolam	2	2						
860ha	44 y M				A	Unk	Int-A	3		
		morphine	1	1						
		codeine	2	2						
		methadone	3	3						
		methamphetamine	4	4						
861pha	44 y M				A/C	Ingst	Int-U	2		
		oxycodone (extended release)	1	1						
		acetaminophen/ oxycodone	2	2						
		alprazolam	3	3					benzodiazepines	540.65 ng/mL In Urine (quantitative only) @ Unknown
862h	44 y F				A	Ingst	Int-S	1		
		ibuprofen	1	1						
863ai	44 y M				A	Ingst+ Par	Int-A	2		
		methadone	1	1						
		zolpidem	2	2						
		diphenhydramine	3	3						
864	44 y F				C	Ingst	Int-M	2		
		acetaminophen	1	1						
		acetaminophen/ oxycodone	2	2						
865ai	44 y M				A	Par	Int-A	2		
		fentanyl (transdermal)	1	1						
866ai	44 y M				A	Ingst	Int-A	2		
		oxycodone	1	1						
		diphenhydramine	2	2						
		hydroxyzine	3	3						
867ha	44 y F				A/C	Ingst	Int-M	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	97.6 mcg/mL In Plasma @ Unknown
		trazodone	2	2						
		alprazolam	3	3					alprazolam	0.011 mg/L In Blood (unspecified) @ Unknown
868ai	44 y F				A	Ingst	Int-A	2		
		oxycodone	1	1						
		doxepin	2	2						
		cocaine	3	3						
		diphenhydramine	4	4						
		dextromethorphan	5	5						
869a	44 y F				A	Ingst	Int-A	2		

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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
		acetaminophen	1	1					acetaminophen	145 mcg/mL In Serum @ Unknown
870ai	45 y F				A	Unk	Int-A	2		
		methadone	1	1						
		cocaine	2	2						
871ai	45 y F				U	Ingst	Int-S	2		
		oxycodone	1	1						
		trazodone	2	2						
872a	45 y F				A	Ingst	Int-S	1		
		tramadol	1	1					tramadol	3.1 mg/L In Unknown @ Autopsy
		acetaminophen/ hydrocodone	2	2					hydrocodone	0.13 mg/L In Unknown @ Autopsy
		acetaminophen/ hydrocodone	2	2					acetaminophen	23 mg/L In Unknown @ Autopsy
		methamphetamine	3	3					methamphetamine	0.07 mg/L In Unknown @ Autopsy
873h	45 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
874ai	45 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		clonazepam	2	2						
		fluoxetine	3	3						
		mirtazapine	4	4						
875ai	45 y F				A	Ingst	Int-S	2		
		hydrocodone	1	1						
		alprazolam	2	2						
		diphenhydramine	3	3						
		bupropion	4	4						
		paroxetine	5	5						
		pseudoephedrine	6	6						
876ai	45 y M				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		oxycodone	2	2						
		trazodone	3	3						
877ai	45 y F				U	Ingst+ Unk	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		alprazolam	2	2						
		methamphetamine	3	3						
878a	45 y M				C	Ingst	Int-S	1		
		acetaminophen/ hydrocodone*	2	1						
		antifreeze (ethylene glycol)*	1	1					ethylene glycol	40 mg/dL In Blood (unspecified) @ Unknown
		fluoxetine	3	2						
879	45 y F				U	Ingst	Int-S	1		
		colchicine	1	1						
		hydroxyzine	2	2						
		hydrocarbons	3	3						
		ethanol	4	4						
880ai	45 y F				U	Ingst	Int-A	2		
		methadone	1	1						
881	45 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	1127 mg/L In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	874 mg/L In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	987 mg/L In Blood (unspecified) @ Unknown
882ai	45 y F				U	Ingst	Int-A	2		
		tramadol	1	1						
883ai	45 y M				U	Ingst+ Unk	Int-A	2		
		fentanyl	1	1						
		methamphet-amine	2	2						
		diazepam	3	3						
		alprazolam	4	4						
884ai	45 y M				A	Ingst	Int-S	2		
		tramadol	1	1						
		cyclobenzaprine	2	2						

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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
		ethanol	3	3						
885ai	45 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		oxycodone	2	2						
		diazepam	3	3						
		alprazolam	4	4						
886h	45 y F				A	Ingst	Int-S	3		
		acetaminophen/ opioid	1	1					acetaminophen	48 mg/L In Serum @ Unknown
887ai	45 y F				A	Ingst	Int-A	2		
		oxycodone	1	1						
		skeletal muscle relaxant	2	2						
888a	45 y F				U	Unk	Int-S	2		
		oxycodone	1	1						
		benzodiazepine	2	2					midazolam	100 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	2	2					diazepam	130 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	2	2					nordiazepam	170 ng/mL In Blood (unspecified) @ Unknown
		marijuana	3	3						
889ai	45 y M				A	Ingst	Int-A	2		
		fentanyl	1	1						
		oxycodone	2	2						
		methadone	3	3						
		acetaminophen	4	4						
890ai	45 y M				A	Unk	Int-A	2		
		methadone	1	1						
		trazodone	2	2						
891ai	45 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		clonazepam	2	2						
		quetiapine	3	3						
		trazodone	4	4						
		bupropion	5	5						
		mirtazapine	6	6						
892p	45 y F				A/C	Ingst	Int-S	1		
		morphine	1	1						
		lorazepam	2	2						
893ai	45 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		amphetamine	2	2						
		oxycodone	3	3						
		acetaminophen	4	4						
894a	45 y M				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	771 mg/L In Serum @ 20 h (pe)
		drug, unknown	2	2						
895ai	45 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
896h	45 y M				U	Ingst	Int-S	2		
		salicylate	1	1					salicylate	136.2 mg/dL In Blood (unspecified) @ Unknown
		ethanol	2	2						
897a	45 y F				A	Ingst	Unk	1		
		acetaminophen	1	1						
898ai	46 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
899ai	46 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		oxycodone	2	2						
		chlordiazepoxide	3	3						
		diazepam	4	4						
900p	46 y M				A	Ingst	Int-S	2		
		tramadol	1	1						
901ai	46 y F				U	Ingst+ Unk	Int-A	2		
		fentanyl	1	1						
		cyclobenzaprine	2	2						

(*Continued*)

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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
		gabapentin	3	3						
		diazepam	4	4						
		zolpidem	5	5						
902ai	46 y M				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		oxycodone	2	2						
		duloxetine	3	3						
903ai	46 y M				A	Ingst	Int-A	2		
		oxycodone	1	1						
		alprazolam	2	2						
		skeletal muscle relaxant	3	3						
		acetaminophen	4	4						
904ai	46 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		chlorpheniramine	2	2						
		trazodone	3	3						
		citalopram	4	4						
905ai	46 y M				U	Ingst+ Unk	Unk	2		
		fentanyl	1	1						
		morphine	2	2						
		alprazolam	3	3						
		diazepam	4	4						
906ai	46 y M				A	Ingst+ Derm	Int-A	2		
		fentanyl (transdermal)	1	1						
		oxycodone	2	2						
		methadone	3	3						
		skeletal muscle relaxant	4	4						
		diphenhydramine	5	5						
		amphetamine	6	6						
		fluoxetine	7	7						
		alprazolam	8	8						
907ai	46 y M				U	Ingst	Int-A	2		
		methadone	1	1						
		alprazolam	2	2						
908ai	46 y F				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		acetaminophen/ hydrocodone	2	2						
909ha	46 y M				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	14 mcg/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	1	1					acetaminophen	30 mcg/mL In Blood (unspecified) @ 1 d (pe)
		amitriptyline	2	2						
		desipramine	3	3						
		alprazolam	4	4						
		atenolol	5	5						
		methadone	6	6						
		paroxetine	7	7						
910a	46 y M				U	Derm	Unk	2		
		fentanyl	1	1					fentanyl	3.2 ng/mL In Serum @ Autopsy
		fentanyl	1	1					norfentanyl	98.6 ng/mL In Serum @ Autopsy
911h	46 y M				U	Ingst	Int-S	2		
		acetaminophen/ oxycodone	1	1						
		alprazolam	2	2						
912a	46 y M				A	Ingst	Int-S	2		
		salicylate	1	1					salicylate	150 mg/L In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	21.8 mg/dL In Blood (unspecified) @ Unknown
		lamotrigine	2	2					lamotrigine	13 mg/L In Blood (unspecified) @ Unknown
		clonazepam	3	3					7-aminoclonazepam	0.21 mg/L In Blood (unspecified) @ Unknown

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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
		clonazepam	3	3					clonazepam	0.64 mg/L In Blood (unspecified) @ Unknown
		ethanol	4	4					ethanol	0.04 % (wt/Vol) In Blood (unspecified) @ Unknown
		ethanol	4	4					ethanol	0.06 % (wt/Vol) In Blood (unspecified) @ Unknown
		sertraline	5	5					sertraline	0.36 mg/L In Blood (unspecified) @ Unknown
		docusate	6	6						
913	46 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		acetaminophen/ codeine	2	2						
914ha	46 y F				A	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1					acetaminophen	165 mcg/mL In Serum @ 2 d (pe)
		acetaminophen/ diphenhydramine	1	1					acetaminophen	229 mcg/mL In Serum @ 0.5 h (pe)
		acetaminophen/ diphenhydramine	1	1					acetaminophen	254 mcg/mL In Serum @ 1 d (pe)
		acetaminophen/ diphenhydramine	1	1					acetaminophen	260 mcg/mL In Serum @ 4 h (pe)
915h	46 y F				U	Ingst+ Unk	Int-S	2		
		acetaminophen	1	1					acetaminophen	197 mcg/mL In Blood (unspecified) @ Unknown
		cocaine	2	2						
		opioid	3	3						
		benzodiazepine	4	4						
916h	46 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
917ai	46 y F				U	Ingst	Int-A	2		
		fentanyl	1	1						
		alprazolam	2	2						
		temazepam	3	3						
918ai	46 y F				U	Ingst	Int-A	2		
		tramadol	1	1						
		acetaminophen/ hydrocodone	2	2						
919	47 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	277 mcg/mL In Serum @ 3 h (pe)
920ai	47 y M				U	Unk	Int-A	2		
		fentanyl	1	1						
		trazodone	2	2						
		olanzapine	3	3						
		citalopram	4	4						
		benztropine	5	5						
		hydroxyzine	6	6						
921ai	47 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		oxycodone	2	2						
		diazepam	3	3						
		doxylamine	4	4						
		amitriptyline	5	5						
		acetaminophen	6	6						
922p	47 y F				U	Ingst	Int-S	1		
		methadone	1	1						
		dicyclomine	2	2						
923ai	47 y M				A	Ingst	Int-U	2		
		methadone	1	1						
		alprazolam	2	2						
924ai	47 y F				A	Ingst	Int-U	2		
		methadone	1	1						
		alprazolam	2	2						
		verapamil	3	3						
		sertraline	4	4						
		doxepin	5	5						
925ph	47 y M				U	Ingst	Unk	1		
		oxycodone	1	1						
		diazepam	2	2						
926ai	47 y F				U	Ingst	Unk	2		
		oxycodone	1	1						

(*Continued*)

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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
		alprazolam	2	2						
		acetaminophen/ hydrocodone	3	3						
927ai	47 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
928ai	47 y M				A	Ingst	Int-A	2		
		oxycodone	1	1						
		alprazolam	2	2						
929ai	47 y F				U	Unk	Int-A	2		
		opioid	1	1						
930ai	47 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		hydromorphone	2	2						
		diazepam	3	3						
931ai	47 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
		diphenhydramine	2	2						
		temazepam	3	3						
		promethazine	4	4						
932ai	47 y M				U	Ingst+ Unk	Int-A	2		
		fentanyl	1	1						
		cyclobenzaprine	2	2						
		ethanol	3	3						
		venlafaxine	4	4						
933ai	47 y F				U	Ingst+ Unk	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		fentanyl	2	2						
934ai	47 y F				U	Ingst	Int-A	2		
		methadone	1	1						
		venlafaxine	2	2						
935ai	47 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
936ai	47 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		promethazine	2	2						
937ai	47 y F				A	Unk	Int-U	2		
		opioid	1	1						
		salicylate	2	2						
		ethanol	3	3						
938pha	47 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	61 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	2	2						
		ethanol (non-beverage)	3	3					ethanol	139 mg/dL In Blood (unspecified) @ Unknown
939ai	47 y F				A	Inhal+ Par	Int-A	2		
		methadone	1	1						
		cocaine	2	2						
		promethazine	3	3						
		sertraline	4	4						
940	47 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
		carisoprodol	2	2						
941ph	47 y M				U	Ingst	Unk	2		
		acetaminophen/ oxycodone	1	1						
		oxycodone	2	2						
		acetaminophen	3	3						
942	47 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1						
943	47 y F				A/C	Ingst	Unk	2		
		acetaminophen/ hydrocodone	1	1						
944ai	47 y F				U	Ingst+ Unk	Unk	2		
		fentanyl	1	1						
		acetaminophen/ hydrocodone	2	2						
945a	48 y M				A	Ingst+ Unk	Int-U	1		
		salicylate	1	1					salicylate	83.7 mg/dL In Blood (unspecified) @ Unknown

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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
		acetaminophen	2	2					acetaminophen	84.9 mcg/mL In Blood (unspecified) @ Unknown
		alprazolam	3	3						
[946h]	48 y M				A/C	Ingst	Int-S	1		
		colchicine	1	1						
947h	48 y F				C	Ingst	Int-M	2		
		acetaminophen	1	1					acetaminophen	2.2 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
948pha	48 y F				A	Ingst	Int-U	2		
		opioid	1	1						
		drug, unknown	2	2						
949	48 y M				A	Ingst	Int-S	2		
		salicylate	1	1					salicylate	10.4 mg/dL In Serum @ 6 h (pe)
		salicylate	1	1					salicylate	115 mg/dL In Serum @ 14 h (pe)
		salicylate	1	1					salicylate	12.9 mg/dL In Serum @ 9 h (pe)
950ai	48 y F				A	Ingst+ Unk	Int-A	2		
		methadone	1	1						
		oxycodone	2	2						
		morphine	3	3						
		cocaine	4	4						
		ethanol	5	5						
951	48 y M				A/C	Ingst	Int-U	1		
		colchicine	1	1						
952a	48 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	79.1 mg/dL In Serum @ Unknown
		cyclic antidepressant, unknown	2	2						
953	48 y M				A/C	Ingst	Int-S	2		
		morphine	1	1						
954	48 y M				U	Ingst	Int-S	1		
		acetaminophen	1	1						
955	48 y F				U	Unk	Int-U	2		
		methadone	1	1						
956ai	48 y F				U	Unk	Int-A	2		
		morphine	1	1						
		butalbital	2	2						
957p	48 y M				A	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen	133 mcg/mL In Blood (unspecified) @ Unknown
		drug, unknown	2	2					ethanol	60 mg/dL In Blood (unspecified) @ Unknown
[958ha]	48 y M				A	Ingst	Int-S	1		
		colchicine	1	1						
959ai	48 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		oxycodone	2	2						
		diazepam	3	3						
		cyclobenzaprine	4	4						
		quetiapine	5	5						
960ai	48 y F				A	Unk	Int-U	2		
		fentanyl	1	1						
		oxycodone	2	2						
		amitriptyline	3	3						
		promethazine	4	4						
		mirtazapine	5	5						
961ai	48 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		clonazepam	2	2						
		cocaine	3	3						
		diphenhydramine	4	4						
		citalopram	5	5						
		acetaminophen	6	6						
962pa	48 y F				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
		trazodone	2	2						
963ai	48 y F				A	Ingst	Int-S	2		
		hydrocodone	1	1						

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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
		acetaminophen	2	2						
964	48 y M				A/C	Ingst	Int-M	3		
		acetaminophen/ hydrocodone	1	1					acetaminophen	68 mcg/mL In Serum @ Unknown
965h	48 y M				A	Ingst	Int-S	1		
		colchicine	1	1						
		ibuprofen	2	2						
		indomethacin	3	3						
966ai	48 y F				U	Ingst+ Unk	Int-A	2		
		methadone	1	1						
		cocaine	2	2						
		fluoxetine	3	3						
967ai	48 y M				U	Ingst+ Unk	Int-A	2		
		methadone	1	1						
		methamphetamine	2	2						
968pa	48 y F				A	Ingst+ Aspir+ Unk	Int-S	1		
		morphine (extended release)	1	1					morphine (free)	480 mcg/L In Blood (unspecified) @ Autopsy
		methadone	2	2					methadone	0.1 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	3	3						
		alprazolam	4	4					alprazolam	0.05 mg/L In Blood (unspecified) @ Autopsy
		phentermine	5	5					phentermine	0.4 mg/L In Blood (unspecified) @ Autopsy
		citalopram	6	6					citalopram	0.2 mg/L In Blood (unspecified) @ Autopsy
969ha	48 y M				A	Ingst	Int-A	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	53 mcg/mL In Serum @ Unknown
		ethanol	2	2						
970ai	48 y M				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		ethanol	2	2						
971ph	49 y F				A	Ingst	Int-S	2		
		acetaminophen/ oxycodone	1	1						
		zolpidem	2	2						
		alprazolam	3	3						
		ziprasidone	4	4						
972ai	49 y F				U	Ingst+ Unk	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		fentanyl	2	2						
		citalopram	3	3						
		skeletal muscle relaxant	4	4						
		mirtazapine	5	5						
		promethazine	6	6						
		zolpidem	7	7						
973p	49 y F				C	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	50 mcg/mL In Blood (unspecified) @ Unknown
		alprazolam	2	2						
974ai	49 y M				A	Ingst+ Unk	Int-M	2		
		morphine	1	1						
		oxycodone	2	2						
		acetaminophen/ hydrocodone	3	3						
		cocaine	4	4						
		pseudoephedrine	5	5						
975ai	49 y F				U	Ingst	Int-A	2		
		methadone	1	1						
976ai	49 y F				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		oxycodone	2	2						
		carisoprodol/ salicylate	3	3						
977ph	49 y F				A	Ingst	Int-S	2		
		tramadol	1	1						

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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
		duloxetine	2	2						
978a	49 y F				A	Ingst	Int-S	2		
		acetaminophen/ codeine	1	1					acetaminophen	122 mcg/mL In Serum @ Unknown
		acetaminophen/ codeine	1	1					codeine	5.5 mg/L In Blood (unspecified) @ Unknown
		baclofen	2	2						
979ai	49 y F				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		paroxetine	2	2						
980ai	49 y F				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		oxycodone	2	2						
981ai	49 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
		diazepam	2	2						
982ai	49 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		oxycodone	2	2						
		clonazepam	3	3						
		cocaine	4	4						
		acetaminophen	5	5						
		dextromethorphan	6	6						
983ai	49 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
		trazodone	2	2						
984ai	49 y F				A	Unk	Int-M	2		
		methadone	1	1						
		oxycodone	2	2						
		salicylate	3	3						
985	49 y F				C	Ingst	Int-S	1		
		acetaminophen/ caffeine/ salicylate	1	1						
986ai	49 y M				A	Ingst	Int-A	2		
		oxycodone	1	1						
		diazepam	2	2						
		acetaminophen	3	3						
		ethanol	4	4						
987h	49 y F				A	Ingst	Unk	1		
		acetaminophen/ hydrocodone	1	1						
988ai	49 y F				A	Ingst	Int-U	2		
		oxycodone	1	1						
		lamotrigine	2	2						
		quetiapine	3	3						
989ai	49 y F				A	Unk	Int-U	2		
		morphine	1	1						
		cyclic antidepressant, unknown	2	2						
		citalopram	3	3						
		mirtazapine	4	4						
990p	49 y M				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	18 mcg/mL In Blood (unspecified) @ 19 h (pe)
		clonazepam	2	2						
991ai	49 y M				A	Unk	Int-A	2		
		hydromorphone	1	1						
		alprazolam	2	2						
		quinine	3	3						
992ai	49 y M				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		ethanol	2	2						
993ai	49 y M				A	Ingst	Int-A	2		
		oxycodone	1	1						
		quetiapine	2	2						
		dextromethorphan	3	3						
		codeine	4	4						
994ai	49 y F				A	Unk	Int-U	2		
		morphine	1	1						
		promethazine	2	2						

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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
995ai	49 y F				A	Ingst	Int-U	2		
		morphine	1	1						
		hydrocodone	2	2						
		oxycodone	3	3						
		acetaminophen	4	4						
		chlorpheniramine	5	5						
996ai	49 y F				A	Unk	Int-A	2		
		methadone	1	1						
		promethazine	2	2						
997	50 y F				A	Ingst	Int-S	3		
		opioid	1	1						
998ai	50 y M				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		acetaminophen/ hydrocodone	2	2						
		diazepam	3	3						
999ai	50 y F				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		skeletal muscle relaxant	2	2						
1000ai	50 y M				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		cocaine	2	2						
		temazepam	3	3						
1001ai	50 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		olanzapine	2	2						
		citalopram	3	3						
1002ai	50 y M				U	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		alprazolam	2	2						
		methylphenidate	3	3						
		temazepam	4	4						
1003ai	50 y F				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		tramadol	2	2						
		cyclobenzaprine	3	3						
		carbamazepine	4	4						
		diphenhydramine	5	5						
		metoclopramide	6	6						
		diazepam	7	7						
		quetiapine	8	8						
1004ai	50 y F				U	Derm	Unk	2		
		fentanyl (transdermal)	1	1						
1005ai	50 y F				A	Ingst	Int-A	2		
		morphine	1	1						
		cyclobenzaprine	2	2						
1006ai	50 y M				A	Ingst	Int-U	2		
		methadone	1	1						
		citalopram	2	2						
		diltiazem	3	3						
		nortriptyline	4	4						
		bupropion	5	5						
		ethanol	6	6						
1007pha	50 y M				U	Ingst	Unk	3		
		acetaminophen/ opioid	1	1						
		clonazepam	2	2						
1008ai	50 y M				A	Unk	Int-A	2		
		fentanyl	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
		citalopram	4	4						
		cocaine	5	5						
		quinine	6	6						
1009ai	50 y F				A	Ingst	Int-M	2		
		morphine	1	1						
		nortriptyline	2	2						
		cyclobenzaprine	3	3						
1010ai	50 y F				U	Ingst+ Unk	Int-A	2		

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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
		morphine	1	1						
		dextromethorphan	2	2						
		doxylamine	3	3						
		paroxetine	4	4						
		diphenhydramine	5	5						
1011ai	50 y F				U	Ingst+ Derm	Int-A	2		
		fentanyl	1	1						
		cyclobenzaprine	2	2						
1012ai	50 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		chlordiazepoxide	2	2						
		oxycodone	3	3						
		olanzapine	4	4						
		hydroxyzine	5	5						
		trazodone	6	6						
		metoprolol	7	7						
		acetaminophen	8	8						
1013ai	50 y M				A	Ingst	Int-M	2		
		tramadol	1	1						
		cyclobenzaprine	2	2						
1014ai	50 y F				A	Ingst+ Unk	Int-A	2		
		methadone	1	1						
		opioid	2	2						
		ethanol	3	3						
1015ai	50 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		methadone	2	2						
1016ai	50 y F				A	Ingst	Int-S	2		
		hydrocodone	1	1						
		oxycodone	2	2						
		morphine	3	3						
		benzodiazepine	4	4						
		amphetamine	5	5						
1017ph	50 y F				U	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen	10 mcg/mL In Unknown @ Unknown
1018ai	50 y M				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		acetaminophen/ hydrocodone	2	2						
1019ai	50 y M				U	Ingst	Int-A	2		
		methadone	1	1						
		promethazine	2	2						
1020h	50 y F				A/C	Unk	Int-S	1		
		morphine	1	1						
		acetaminophen	2	2						
1021h	50 y F				A/C	Ingst+ Derm+ Par	Int-M	1		
		fentanyl (transdermal)	1	1						
		hydromorphone	2	2						
		diazepam	3	3						
		acetaminophen/ oxycodone	4	4						
1022h	50 y F				U	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen	14 mcg/mL In Blood (unspecified) @ Unknown
1023	50 y F				C	Ingst	Unt-T	2		
		acetaminophen	1	1						
1024ai	50 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		oxycodone	2	2						
		hydrocodone	3	3						
		dextromethorphan	4	4						
		acetaminophen	5	5						
1025	50 y F				A/C	Ingst	Int-S	3		
		acetaminophen	1	1						
1026ai	50 y F				A	Unk	Int-U	2		
		morphine	1	1						

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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
		sertraline	2	2						
1027ai	50 y F				U	Ingst+ Unk	Int-A	2		
		tramadol	1	1						
		morphine	2	2						
		diazepam	3	3						
1028	50 y M				A	Ingst	Int-U	2		
		acetaminophen	1	1					acetaminophen	10 mg/L In Plasma @ Unknown
1029	51 y M				U	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	84 mcg/mL In Blood (unspecified) @ Unknown
		carisoprodol	2	2						
		acetaminophen/ oxycodone	3	3						
		morphine	4	4						
		alprazolam	5	5						
		cardiovascular drug, unknown	6	6						
1030ai	51 y F				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		mirtazapine	2	2						
		cyclobenzaprine	3	3						
		acetaminophen/ hydrocodone	4	4						
		zolpidem	5	5						
1031	51 y M				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
1032ai	51 y F				U	Ingst+ Unk	Unk	2		
		oxycodone	1	1						
		morphine	2	2						
		alprazolam	3	3						
		meperidine	4	4						
		skeletal muscle relaxant	5	5						
1033a	51 y M				A	Ingst	Int-S	1		
		oxycodone	1	1						
		diazepam*	3	2					diazepam	0.3 mg/L In Blood (unspecified) @ Autopsy
		morphine*	2	2						
		metaxalone	4	3					metaxalone	6.6 mg/L In Blood (unspecified) @ Autopsy
		duloxetine	5	4						
		omeprazole	6	5						
		baclofen	7	6						
		finasteride	8	7						
		gabapentin	9	8						
		vitamin B3 (niacin)	10	9						
1034ai	51 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
		alprazolam	2	2						
		temazepam	3	3						
1035	51 y F				A	Ingst	Int-S	1		
		acetaminophen/ oxycodone	1	1					acetaminophen	105 mcg/mL In Blood (unspecified) @ 8 h (pe)
		carisoprodol	2	2						
		alprazolam	3	3						
		chlorazepate	4	4						
1036ai	51 y M				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		amitriptyline	2	2						
		citalopram	3	3						
1037ai	51 y M				A	Ingst+ Unk	Int-A	2		
		methadone	1	1						
		cocaine	2	2						
		ethanol	3	3						
1038ai	51 y F				A	Unk	Int-U	2		
		morphine	1	1						
		amitriptyline	2	2						
		topiramate	3	3						
		oxycodone	4	4						

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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
		tramadol	5	5						
		diphenhydramine	6	6						
1039ai	51 y M				U	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		skeletal muscle relaxant	2	2						
		clonazepam	3	3						
1040ai	51 y M				U	Ingst+ Unk	Int-A	2		
		oxycodone	1	1						
		cocaine	2	2						
		flurazepam	3	3						
1041ai	51 y M				U	Unk	Int-A	2		
		fentanyl	1	1						
		diazepam	2	2						
		acetaminophen/ hydrocodone	3	3						
1042ai	51 y F				U	Ingst	Int-A	2		
		morphine	1	1						
		trazodone	2	2						
		tramadol	3	3						
		cyclobenzaprine	4	4						
1043ai	51 y F				U	Ingst+ Unk	Int-A	2		
		fentanyl	1	1						
		tramadol	2	2						
		ethanol	3	3						
		diazepam	4	4						
		diphenhydramine	5	5						
1044ai	51 y M				U	Ingst	Unk	2		
		oxycodone	1	1						
		clozapine	2	2						
		chlordiazepoxide	3	3						
		diazepam	4	4						
		fluoxetine	5	5						
1045p	51 y F				A	Ingst	Int-S	3		
		acetaminophen/ oxycodone	1	1						
		carisoprodol	2	2						
1046ai	51 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
1047ai	51 y F				A	Ingst	Int-A	2		
		morphine	1	1						
		fluoxetine	2	2						
		dextromethorphan	3	3						
		ethanol	4	4						
1048	51 y M				A/C	Ingst	Unt-U	2		
		acetaminophen/ diphenhydramine	1	1						
		ethanol	2	2						
1049ai	51 y M				U	Derm	Int-A	2		
		fentanyl	1	1						
		oxycodone	2	2						
1050ai	51 y F				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		diazepam	2	2						
		dextromethorphan	3	3						
		promethazine	4	4						
		paroxetine	5	5						
1051ai	51 y F				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		alprazolam	2	2						
		temazepam	3	3						
1052ai	51 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
1053	51 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	213.4 mcg/mL In Serum @ Unknown

(*Continued*)

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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
		acetaminophen	1	1					acetaminophen	264.1 mcg/mL In Serum @ Unknown
		carisoprodol	2	2						
		ethanol	3	3					ethanol	11 mg/dL In Serum @ Unknown
1054h	52 y F				A	Ingst	Int-U	1		
		acetaminophen	1	1					acetaminophen	256 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen	36 mcg/mL In Blood (unspecified) @ Unknown
1055a	52 y M				U	Ingst	Int-S	1		
		acetaminophen/ oxycodone	1	1					oxymorphone	0.028 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen/ oxycodone	1	1					oxycodone	0.081 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen/ oxycodone	1	1					acetaminophen	45 mcg/mL In Serum @ 1 h (pe)
		diazepam	2	2					diazepam	0.22 mg/L In Blood (unspecified) @ Autopsy
		diazepam	2	2					nordiazepam	0.31 mg/L In Blood (unspecified) @ Autopsy
1056ai	52 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		diphenhydramine	2	2						
1057	52 y M				A	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	14 mcg/mL In Blood (unspecified) @ 1 d (pe)
1058ai	52 y M				A	Ingst	Int-A	2		
		morphine	1	1						
		oxycodone	2	2						
		clonazepam	3	3						
		sertraline	4	4						
		ethanol	5	5						
1059ha	52 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	1.1 mg/dL In Serum @ 3 d (pe)
		salicylate	1	1					salicylate	31.7 mg/dL In Serum @ 1 h (pe)
		salicylate	1	1					salicylate	49.7 mg/dL In Serum @ 1 h (pe)
		salicylate	1	1					salicylate	92.7 mg/dL In Serum @ 1 d (pe)
		piperacillin/ tazobactam	2	2						
		diphenhydramine	3	3						
1060ai	52 y M				U	Unk	Int-A	2		
		fentanyl	1	1						
1061ai	52 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
		alprazolam	2	2						
1062ai	52 y F				U	Ingst	Int-A	2		
		methadone	1	1						
		tramadol	2	2						
		diphenhydramine	3	3						
		paroxetine	4	4						
1063ai	52 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
		diazepam	2	2						
1064ai	52 y M				U	Ingst	Int-A	2		
		tramadol	1	1						
		diazepam	2	2						
		acetaminophen/ hydrocodone	3	3						
		sertraline	4	4						
		cyclobenzaprine	5	5						
1065ai	52 y M				A	Ingst	Int-A	2		
		acetaminophen/ oxycodone	1	1						
		ethanol	2	2						
1066ai	52 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
1067ai	52 y F				U	Ingst	Int-A	2		
		fentanyl	1	1						

(*Continued*)

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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
		alprazolam	2	2						
		diphenhydramine	3	3						
		trazodone	4	4						
1068ai	52 y M				A	Ingst	Int-U	2		
		oxycodone	1	1						
		acetaminophen	2	2						
		ethanol (non-beverage)	3	3						
		pseudoephedrine	4	4						
1069ai	52 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
		diazepam	2	2						
1070	52 y M				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	51 mcg/mL In Blood (unspecified) @ 8 h (pe)
		acetaminophen/ hydrocodone	1	1					acetaminophen	76.6 mcg/mL In Blood (unspecified) @ 1 h (pe)
		carisoprodol	2	2						
		alprazolam	3	3						
		spironolactone	4	4						
1071ai	52 y M				A	Ingst	Int-S	2		
		oxymorphone	1	1						
		alprazolam	2	2						
		cyclobenzaprine	3	3						
		promethazine	4	4						
		mirtazapine	5	5						
1072ai	52 y F				U	Ingst	Unk	2		
		methadone	1	1						
1073h	52 y M				C	Ingst	Int-M	2		
		acetaminophen	1	1						
		ethanol	2	2						
1074ai	52 y M				U	Ingst	Int-A	2		
		methadone	1	1						
		amitriptyline	2	2						
		diazepam	3	3						
1075ai	52 y M				A	Ingst+ Unk	Int-A	2		
		oxycodone	1	1						
		alprazolam	2	2						
		cocaine	3	3						
1076ai	52 y F				U	Ingst+ Unk	Int-A	2		
		fentanyl	1	1						
		diphenhydramine	2	2						
1077ai	52 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		cocaine	2	2						
		trazodone	3	3						
		tramadol	4	4						
1078	52 y M				A	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1						
		alprazolam	2	2						
1079ha	52 y F				A/C	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1					acetaminophen	107.9 mcg/mL In Unknown @ Unknown
1080ai	52 y M				A	Ingst	Int-A	2		
		oxycodone	1	1						
		diazepam	2	2						
		trazodone	3	3						
		diltiazem	4	4						
		cocaine	5	5						
		ethanol	6	6						
		quinine	7	7						
1081pha	52 y F				U	Ingst	Int-U	3		
		acetaminophen/ hydrocodone	1	1					acetaminophen	14.8 mg/L In Blood (unspecified) @ 5 m (pe)
1082ai	52 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		tramadol	2	2						
		diazepam	3	3						
		amitriptyline	4	4						
		promethazine	5	5						
1083ai	52 y M				U	Ingst	Int-A	2		

(*Continued*)

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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
		acetaminophen/ hydrocodone	1	1						
		dextromethorphan	2	2						
		tramadol	3	3						
		cyclobenzaprine	4	4						
		sertraline	5	5						
1084ai	52 y M				U	Ingst	Int-A	2		
		methadone	1	1						
		oxycodone	2	2						
1085ai	53 y M				A	Ingst+ Unk	Int-A	2		
		methadone	1	1						
		ethanol	2	2						
1086a	53 y F				A/C	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	189.1 mcg/mL In Serum @ 2 d (pe)
		benzodiazepine	2	2						
1087ai	53 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		alprazolam	2	2						
		clonazepam	3	3						
		fluoxetine	4	4						
1088ha	53 y F				A	Ingst	Int-U	1		
		buprenorphine/ naloxone (film)	1	1						
		diazepam	2	2					diazepam	0.13 mg/L In Blood (unspecified) @ Autopsy
		diazepam	2	2					nordiazepam	0.25 mg/L In Blood (unspecified) @ Autopsy
		gabapentin	3	3					gabapentin	2.8 mg/L In Blood (unspecified) @ Autopsy
1089ai	53 y M				U	Ingst+ Unk	Int-A	2		
		fentanyl	1	1						
		skeletal muscle relaxant	2	2						
1090	53 y F				A	Ingst	Int-S	1		
		salicylate	1	1						
		antifreeze (ethylene glycol)	2	2						
1091ai	53 y M				U	Ingst+ Unk	Int-A	2		
		oxycodone	1	1						
		amphetamine	2	2						
		temazepam	3	3						
		bupropion	4	4						
		diphenhydramine	5	5						
1092ai	53 y M				U	Ingst+ Unk	Int-A	2		
		methadone	1	1						
		morphine	2	2						
		oxycodone	3	3						
1093ai	53 y M				A	Ingst+ Inhal	Unk	2		
		tramadol	1	1						
		zolpidem	2	2						
		opioid	3	3						
		marijuana	4	4						
1094ai	53 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		quetiapine	2	2						
		diphenhydramine	3	3						
		citalopram	4	4						
1095ai	53 y F				U	Ingst+ Unk	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		diazepam	2	2						
		clonazepam	3	3						
		hydromorphone	4	4						
1096ai	53 y F				A	Ingst	Int-S	2		
		hydrocodone	1	1						
		clonazepam	2	2						
		sertraline	3	3						
		acetaminophen	4	4						
1097ai	53 y F				A	Ingst	Int-A	2		

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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
		methadone	1	1						
		oxycodone	2	2						
		diazepam	3	3						
		alprazolam	4	4						
		amitriptyline	5	5						
1098ai	53 y F				A	Par+ Unk	Int-A	2		
		oxycodone	1	1						
		citalopram	2	2						
		trazodone	3	3						
1099ai	53 y F				U	Ingst	Unk	2		
		acetaminophen	1	1						
1100	53 y F				A/C	Ingst	Unt-T	3		
		acetaminophen/ butalbital/ caffeine/ codeine	1	1						
		temazepam	2	2						
1101h	53 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1						
1102p	53 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	32 mcg/mL In Blood (unspecified) @ 10 h (pe)
		clonazepam	2	2						
1103p	53 y M				U	Ingst+ Derm	Int-A	2		
		hydromorphone	1	1						
		fentanyl	2	2						
		acetaminophen/ oxycodone	3	3						
		zolpidem	4	4						
		diazepam	5	5						
1104	53 y M				U	Ingst	Unk	2		
		acetaminophen	1	1						
1105ai	53 y F				U	Ingst	Int-A	2		
		methadone	1	1						
		acetaminophen/ hydrocodone	2	2						
		diazepam	3	3						
1106a	53 y F				A	Ingst	Int-S	3		
		oxycodone	1	1					oxymorphone	0.09 mg/L In Blood (unspecified) @ Unknown
		oxycodone	1	1					oxycodone	1.2 mg/L In Blood (unspecified) @ Unknown
		temazepam	2	2					temazepam	1.2 mg/L In Blood (unspecified) @ Unknown
		alprazolam	3	3					alprazolam	0.04 mg/L In Blood (unspecified) @ Unknown
		skeletal muscle relaxant	4	4					carisoprodol	2.1 mg/L In Blood (unspecified) @ Unknown
		skeletal muscle relaxant	4	4					meprobamate	6.4 mg/L In Blood (unspecified) @ Unknown
		trazodone	5	5					trazodone	0.02 mg/L In Blood (unspecified) @ Unknown
1107ai	53 y F				A	Ingst	Int-A	2		
		tramadol	1	1						
		amitriptyline	2	2						
		citalopram	3	3						
1108ai	53 y F				A	Ingst	Int-A	2		
		oxycodone	1	1						
		morphine	2	2						
		skeletal muscle relaxant	3	3						
		clonazepam	4	4						
		trazodone	5	5						
		zolpidem	6	6						
		fluoxetine	7	7						
1109ai	53 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		cocaine	2	2						
		ethanol	3	3						
1110h	53 y M				C	Ingst	Int-M	3		
		ibuprofen	1	1						
1111ai	53 y F				U	Ingst	Unk	2		
		methadone	1	1						

(*Continued*)

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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
		acetaminophen/ hydrocodone	2	2						
		alprazolam	3	3						
1112ai	53 y M				A	Ingst+ Unk	Int-A	2		
		methadone	1	1						
		fentanyl	2	2						
		cocaine	3	3						
1113ai	53 y M				U	Unk	Int-A	2		
		morphine	1	1						
		skeletal muscle relaxant	2	2						
1114ai	53 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
1115p	53 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		ethanol	2	2						
		hydrochlorothiaz-ide/enalapril	3	3						
		acetaminophen	4	4					acetaminophen	28 mg/L In Serum @ Unknown
1116ai	53 y M				A	Unk	Int-A	2		
		methadone	1	1						
		fentanyl	2	2						
		cocaine	3	3						
1117	53 y F				C	Unk	Unk	2		
		acetaminophen	1	1						
1118ai	54 y F				A	Ingst	Int-A	2		
		oxymorphone	1	1						
		quetiapine	2	2						
		zolpidem	3	3						
		ethanol	4	4						
1119a	54 y M				A	Ingst+ Unk	Int-S	1		
		acetaminophen	1	1					acetaminophen	85 mcg/mL In Blood (unspecified) @ Unknown
		venlafaxine	2	2					norvenlafaxine	0.06 mg/L In Blood (unspecified) @ Autopsy
		venlafaxine	2	2					venlafaxine	0.11 mg/L In Blood (unspecified) @ Autopsy
		diphenhydramine	3	3					diphenhydramine	0.35 mg/L In Blood (unspecified) @ Unknown
		cocaine	4	4						
1120a	54 y M				A	Ingst	Int-U	2		
		salicylate	1	1					salicylate	30 mg/dL In Blood (unspecified) @ 6.25 h (pe)
		salicylate	1	1					salicylate	32 mg/dL In Blood (unspecified) @ 2.5 h (pe)
		benzodiazepine	2	2						
1121ai	54 y F				U	Ingst	Int-A	2		
		methadone	1	1						
		amantadine	2	2						
		fluoxetine	3	3						
		cyclobenzaprine	4	4						
		butalbital	5	5						
1122ai	54 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
1123ai	54 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
		ethanol	2	2						
1124ai	54 y M				A	Ingst	Int-U	2		
		morphine	1	1						
		dicyclomine	2	2						
		citalopram	3	3						
		diphenhydramine	4	4						
		olanzapine	5	5						
		metoprolol	6	6						
1125ai	54 y F				U	Ingst+ Unk	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		methadone	2	2						
		alprazolam	3	3						
		methamphetamine	4	4						

(*Continued*)

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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
1126h	54 y M				C	Ingst	Int-M	2		
		acetaminophen	1	1						
1127ai	54 y M				A	Ingst	Int-A	2		
		morphine	1	1						
		alprazolam	2	2						
		bupropion	3	3						
		amitriptyline	4	4						
		citalopram	5	5						
		quetiapine	6	6						
1128ai	54 y F				A	Ingst	Int-A	2		
		morphine	1	1						
		diazepam	2	2						
		meprobamate	3	3						
1129ai	54 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
		diazepam	2	2						
1130pa	54 y F				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.03 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					acetaminophen	42 mg/L In Blood (unspecified) @ Unknown
		skeletal muscle relaxant	2	2					meprobamate	14.5 mg/L In Blood (unspecified) @ Unknown
		skeletal muscle relaxant	2	2					carisoprodol	8.7 mg/L In Blood (unspecified) @ Unknown
		venlafaxine	3	3					o-desmethylvenla-faxine	0.81 mg/L In Blood (unspecified) @ Unknown
		venlafaxine	3	3					venlafaxine	3.7 mg/L In Blood (unspecified) @ Unknown
		morphine	4	4					morphine	0.02 mg/L In Blood (unspecified) @ Unknown
		diphenhydramine	5	5					diphenhydramine	0.67 mg/L In Blood (unspecified) @ Unknown
		quetiapine	6	6					quetiapine	0.49 mg/L In Blood (unspecified) @ Unknown
		alprazolam	7	7					alprazolam	0.02 mg/L In Blood (unspecified) @ Unknown
		lamotrigine	8	8						
		gabapentin	9	9					gabapentin	5.8 mg/L In Blood (unspecified) @ Unknown
1131ai	54 y F				U	Ingst	Int-A	2		
		methadone	1	1						
1132	54 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
1133h	54 y F				A	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen	4 mcg/mL In Blood (unspecified) @ Unknown
1134ai	54 y M				A	Unk	Int-A	2		
		methadone	1	1						
		chlorpheniramine	2	2						
1135h	54 y M				A	Ingst+ Aspir	Int-S	1		
		salicylate	1	1					salicylate	57 mg/dL In Serum @ Unknown
		metformin	2	2						
		cyclobenzaprine	3	3						
		ethanol	4	4						
		food, spoiled	5	5						
1136	54 y M				U	Ingst	Unk	3		
		salicylate	1	1					salicylate	37 mg/dL In Serum @ Unknown
		salicylate	1	1					salicylate	47.4 mg/dL In Serum @ Unknown
		salicylate	1	1					salicylate	79.8 mg/dL In Serum @ Unknown
1137ai	55 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
		skeletal muscle relaxant	2	2						
1138ai	55 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						

(*Continued*)

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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
		diazepam	2	2						
1139ai	55 y F				A	Unk	Int-A	2		
		oxycodone	1	1						
		diphenhydramine	2	2						
1140h	55 y F				A/C	Ingst	Unk	1		
		acetaminophen/ opioid	1	1						
		acetaminophen	2	2					acetaminophen	119 mcg/mL In Blood (unspecified) @ Unknown
		oxycodone	3	3					salicylate	4.9 mg/dL In Blood (unspecified) @ Unknown
		morphine	4	4						
1141ai	55 y F				A	Ingst	Int-A	2		
		oxycodone	1	1						
		ethanol	2	2						
1142ha	55 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		atenolol	2	2						
		amitriptyline	3	3						
		tramadol	4	4						
		isosorbide dinitrate	5	5						
		salicylate	6	6						
		chlorpromazine	7	7						
		diazepam	8	8						
		duloxetine	9	9						
		alcohol, unknown	10	10						
1143ai	55 y M				A	Ingst	Int-U	2		
		morphine	1	1						
		amphetamine	2	2						
1144	55 y F				C	Ingst	Unt-T	2		
		acetaminophen	1	1					acetaminophen	8 mcg/mL In Blood (unspecified) @ Unknown
1145pa	55 y F				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.277 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	1	1					acetaminophen	52.7 mcg/mL In Blood (unspecified) @ Unknown
		alprazolam	2	2						
		quetiapine	3	3						
		phenobarbital	4	4					phenobarbital	20.7 mcg/mL In Blood (unspecified) @ Unknown
1146ai	55 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
		tramadol	2	2						
1147ai	55 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		diazepam	2	2						
1148ai	55 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
1149ai	55 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
		diazepam	2	2						
1150ai	55 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		diazepam	2	2						
		cocaine	3	3						
		oxycodone	4	4						
1151ai	55 y M				U	Ingst	Int-A	2		
		methadone	1	1						
		alprazolam	2	2						
		fluoxetine	3	3						
		doxepin	4	4						
1152ai	55 y F				U	Unk	Int-A	2		
		morphine	1	1						
1153ai	55 y F				A	Ingst+ Unk	Int-U	2		
		fentanyl	1	1						
		morphine	2	2						
		oxycodone	3	3						
		diphenhydramine	4	4						
		metaxalone	5	5						

(*Continued*)

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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
		topiramate	6	6						
1154	55 y M				A	Ingst	Int-S	3		
		morphine	1	1						
		acetaminophen/ opioid	2	2						
1155ai	55 y M				U	Ingst	Int-A	2		
		methadone	1	1						
		diazepam	2	2						
1156ai	55 y F				U	Ingst+ Unk	Int-A	2		
		oxycodone	1	1						
		oxymorphone	2	2						
		cocaine	3	3						
1157ai	55 y M				U	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		methamphetamine	2	2						
1158ha	55 y M				A/C	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1					hydrocodone	1400 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					dihydrocodeine/hydrocodol (free)	150 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					acetaminophen	191 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					hydromorphone	31 ng/mL In Blood (unspecified) @ Unknown
		diazepam	2	2					diazepam	1300 ng/mL In Blood (unspecified) @ Unknown
		diazepam	2	2					nordiazepam	580 ng/mL In Blood (unspecified) @ Unknown
		belladonna alkaloids	3	3						
		phenobarbital	4	4					pentobarbital	2.1 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	5	5						
		methadone	6	6						
1159ai	55 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		ethanol	2	2						
1160ai	55 y F				A	Unk	Int-A	2		
		morphine	1	1						
		tramadol	2	2						
1161ai	55 y F				U	Ingst+ Unk	Int-A	2		
		fentanyl	1	1						
		acetaminophen/ hydrocodone	2	2						
1162a	56 y F				U	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1						
		clonazepam	2	2						
		zolpidem	3	3						
1163h	56 y F				A	Ingst	Int-S	3		
		acetaminophen	1	1						
		warfarin	2	2						
1164ai	56 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		alprazolam	2	2						
		diphenhydramine	3	3						
		sertraline	4	4						
1165	56 y M				A	Ingst	Int-S	2		
		colchicine	1	1						
		lorazepam	2	2						
1166	56 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		clonazepam	2	2						
		acetaminophen	3	3					acetaminophen	280.2 mcg/mL In Blood (unspecified) @ Unknown
1167ai	56 y M				A	Ingst	Int-M	2		
		morphine	1	1						
		diazepam	2	2						
		alprazolam	3	3						
		citalopram	4	4						
1168ai	56 y M				A	Ingst	Unk	2		

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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
		methadone	1	1						
		diazepam	2	2						
		promethazine	3	3						
1169	56 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ codeine	1	1					acetaminophen	13 mcg/mL In Serum @ Unknown
		acetaminophen/ codeine	1	1					acetaminophen	20 mcg/mL In Serum @ Unknown
		methadone	2	2						
1170	56 y F				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	277 mg/dL In Blood (unspecified) @ Unknown
		carisoprodol	2	2						
		naproxen	3	3						
1171ai	56 y F				A	Unk	Int-A	2		
		morphine	1	1						
		cocaine	2	2						
1172h	56 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
		ethanol	2	2						
1173	56 y F				U	Unk	Unk	2		
		acetaminophen/ hydrocodone	1	1						
		alprazolam	2	2						
1174ai	56 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
		cyclobenzaprine	2	2						
		butalbital	3	3						
		zopiclone	4	4						
		acetaminophen	5	5						
1175ai	56 y M				A	Unk	Int-A	2		
		methadone	1	1						
		oxycodone	2	2						
		clonazepam	3	3						
		amphetamine	4	4						
		metoprolol	5	5						
1176ai	56 y M				A	Ingst	Int-A	2		
		morphine	1	1						
		tramadol	2	2						
1177ha	56 y F				A/C	Ingst+ Par	Int-S	1		
		opioid	1	1					morphine (free)	0.062 mcg/mL In Serum @ Autopsy
		opioid	1	1					morphine (total)	0.14 mcg/mL In Serum @ Autopsy
		opioid	1	1					hydromorphone	0.5 mcg/mL In Serum @ Autopsy
		opioid	1	1					oxymorphone (total)	0.52 mcg/mL In Serum @ Autopsy
1178ai	56 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
		duloxetine	2	2						
1179ai	56 y M				U	Ingst+ Unk	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		oxycodone	2	2						
		fentanyl	3	3						
		pentazocine	4	4						
		butalbital	5	5						
		zolpidem	6	6						
		amitriptyline	7	7						
		dextromethorphan	8	8						
		propoxyphene	9	9						
		diphenhydramine	10	10						
1180h	56 y F				A/C	Ingst	Int-S	3		
		acetaminophen/ oxycodone	1	1					acetaminophen	336 mcg/mL In Serum @ 1 h (pe)
1181ai	57 y M				A	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		ethanol	2	2						
1182ai	57 y F				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						

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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
		diazepam	2	2						
1183h	57 y M				A/C	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen	56 mcg/mL In Blood (unspecified) @ Unknown
1184ai	57 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
		alprazolam	2	2						
1185	57 y F				U	Ingst	Int-S	1		
		salicylate	1	1					salicylate	64.7 mg/dL In Blood (unspecified) @ 30 m (pe)
1186h	57 y F				A/C	Ingst	Int-S	3		
		hydrocodone/ ibuprofen	1	1						
1187ai	57 y M				A	Ingst+ Derm	Int-A	2		
		fentanyl (transdermal)	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
		bupropion	4	4						
		acetaminophen	5	5						
1188	57 y F				U	Ingst	Unk	2		
		acetaminophen/ hydrocodone	1	1						
1189ai	57 y M				A	Ingst	Int-S	2		
		oxycodone	1	1						
		alprazolam	2	2						
		trazodone	3	3						
		acetaminophen	4	4						
		fluoxetine	5	5						
1190ai	57 y F				U	Ingst	Int-A	2		
		methadone	1	1						
		venlafaxine	2	2						
1191ai	57 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
		propoxyphene	2	2						
1192	57 y M				C	Ingst	Int-A	3		
		acetaminophen	1	1					acetaminophen	19 mcg/mL In Blood (unspecified) @ Unknown
1193ai	57 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		hydromorphone	2	2						
1194ai	57 y F				U	Ingst+ Derm	Int-A	2		
		fentanyl	1	1						
		diazepam	2	2						
		hydroxyzine	3	3						
		trazodone	4	4						
1195	57 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	103 mg/dL In Blood (unspecified) @ Unknown
1196ai	57 y M				A	Ingst+ Unk	Int-A	2		
		methadone	1	1						
		cocaine	2	2						
1197ha	57 y M				A	Ingst	Int-S	1		
		salicylate	1	1						
1198ai	57 y F				A	Ingst	Int-A	2		
		hydromorphone	1	1						
		alprazolam	2	2						
		diphenhydramine	3	3						
		ethanol	4	4						
1199ai	57 y M				A	Ingst	Int-A	2		
		morphine	1	1						
		benzodiazepine	2	2						
		citalopram	3	3						
1200h	57 y M				A	Ingst	Int-U	3		
		acetaminophen	1	1					acetaminophen	163 mcg/mL In Blood (unspecified) @ Unknown
1201ai	57 y M				A	Unk	Int-A	2		
		fentanyl	1	1						
		citalopram	2	2						

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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
1202ai	57 y M				U	Unk	Int-A	2		
		morphine	1	1						
1203ai	57 y F				A	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		methadone	2	2						
		caffeine	3	3						
		phenytoin	4	4						
1204ai	57 y M				A	Ingst	Int-A	2		
		morphine	1	1						
		diazepam	2	2						
		cyclobenzaprine	3	3						
		diphenhydramine	4	4						
		fluoxetine	5	5						
		zolpidem	6	6						
1205p	57 y F				A	Ingst	Int-S	2		
		acetaminophen/ butalbital/ caffeine	1	1						
		alprazolam	2	2						
1206ai	57 y M				U	Ingst+ Unk	Int-A	2		
		oxycodone	1	1						
		alprazolam	2	2						
		morphine	3	3						
1207ai	58 y M				A	Ingst	Int-A	2		
		morphine	1	1						
		amitriptyline	2	2						
		dextromethorphan	3	3						
		acetaminophen	4	4						
1208ai	58 y F				A	Inhal	Int-M	2		
		morphine	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
		cyclobenzaprine	4	4						
1209h	58 y F				A	Ingst	Int-U	2		
		acetaminophen/ hydrocodone	1	1						
		carisoprodol	2	2						
1210p	58 y F				U	Ingst	Int-S	2		
		acetaminophen/ caffeine/sali-cylate	1	1					salicylate	0.3 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen/ caffeine/ salicylate	1	1					acetaminophen	82.3 mcg/mL In Blood (unspecified) @ Unknown
		eszopiclone	2	2						
1211ai	58 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		diphenhydramine	2	2						
1212ai	58 y F				A	Ingst	Int-A	2		
		morphine	1	1						
		diphenhydramine	2	2						
1213ai	58 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
1214ai	58 y M				A	Unk	Int-U	2		
		morphine	1	1						
		diphenhydramine	2	2						
		citalopram	3	3						
1215	58 y M				A/C	Ingst	Int-S	2		
		oxymorphone (extended release)	1	1						
		zolpidem	2	2						
1216ai	58 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
		acetaminophen/ hydrocodone	2	2						
		alprazolam	3	3						
1217p	58 y F				A	Ingst	Int-S	3		
		acetaminophen	1	1						

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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
1218ai	58 y F				A	Ingst	Int-A	2		
		morphine	1	1						
		ethanol	2	2						
		amitriptyline	3	3						
1219h	58 y F				C	Ingst	Unk	3		
		tramadol	1	1						
		amitriptyline	2	2						
1220a	58 y F				A	Ingst	Int-S	1		
		acetaminophen/ opioid	1	1					acetaminophen	209 mcg/mL In Serum @ Unknown
		alprazolam	2	2						
1221ai	58 y M				A	Unk	Int-A	2		
		methadone	1	1						
		clonazepam	2	2						
		sertraline	3	3						
		amphetamine	4	4						
1222h	58 y M				C	Ingst	Int-M	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	244 mcg/mL In Serum @ 0 m (pe)
1223	58 y M				A	Ingst	Int-A	2		
		methadone	1	1						
1224	58 y F				U	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
		risperidone	2	2						
1225ai	59 y M				A	Ingst+ Unk	Int-A	2		
		fentanyl (transdermal)	1	1						
		promethazine	2	2						
		paroxetine	3	3						
1226p	59 y M				A	Ingst+ Aspir	Int-U	2		
		acetaminophen/ hydrocodone	1	1						
		alprazolam	2	2						
1227	59 y M				A/C	Ingst	AR-D	3		
		colchicine	1	1						
		amiodarone	2	2						
1228	59 y F				A/C	Ingst	Int-S	2		
		hydrocodone	1	1						
		acetaminophen/ hydrocodone	2	2						
		hydromorphone	3	3						
		clonazepam	4	4						
1229a	59 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	497 mg/L In Blood (unspecified) @ Unknown
1230ph	59 y F				U	Ingst	Int-S	2		
		acetaminophen	1	1						
		opioid	2	2						
		benzodiazepine	3	3						
		drug, unknown	4	4						
1231	59 y F				A	Ingst+ Aspir	Int-S	1		
		acetaminophen/ diphenhy-dramine	1	1						
1232ai	59 y M				A	Par+ Unk	Int-A	2		
		oxycodone	1	1						
		cocaine	2	2						
1233ai	59 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		alprazolam	2	2						
		lorazepam	3	3						
1234ai	59 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
1235ai	59 y F				A	Ingst	Int-A	2		
		oxycodone	1	1						
		alprazolam	2	2						
		skeletal muscle relaxant	3	3						
		lamotrigine	4	4						

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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
		acetaminophen	5	5						
1236ai	59 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		temazepam	2	2						
		milnacipran	3	3						
		amitriptyline	4	4						
		cyclobenzaprine	5	5						
1237ai	59 y F				A	Ingst	Int-A	2		
		oxymorphone	1	1						
		diazepam	2	2						
		ethanol	3	3						
1238	59 y M				A	Ingst	Int-S	3		
		methadone	1	1						
1239p	59 y F				A	Ingst	Int-S	2		
		opioid	1	1						
		amphetamine	2	2						
		acetaminophen	3	3						
1240h	59 y F				U	Ingst	Int-S	2		
		acetaminophen	1	1						
		drug, unknown	2	2						
1241p	59 y F				A/C	Ingst	Int-S	2		
		methadone	1	1						
		amphetamine	2	2						
		lorazepam	3	3						
		metoprolol	4	4						
		gabapentin	5	5						
		quetiapine	6	6						
1242	59 y F				A	Ingst	Int-M	3		
		naproxen	1	1						
		acetaminophen/ hydrocodone	2	2					acetaminophen	17.5 mcg/mL In Blood (unspecified) @ Unknown
		antidepressant (SSRI)	3	3						
		benzodiazepine	4	4						
		drug, unknown	5	5						
1243ai	59 y F				U	Ingst+ Aspir	Int-A	2		
		opioid	1	1						
		diazepam	2	2						
1244ai	60 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
1245p	60 y F				A	Ingst	Int-S	1		
		morphine (extended release)	1	1						
1246p	60 y F				A/C	Ingst	Int-S	2		
		tramadol	1	1						
[1247a]	60 y M				A	Ingst	Int-S	2		
		salicylate	1	1					nordiazepam	0.094 mcg/mL In Whole Blood @ Autopsy
		salicylate	1	1					salicylate	690 mcg/mL In Whole Blood @ Autopsy
1248ai	60 y F				U	Ingst	Int-A	2		
		codeine	1	1						
		temazepam	2	2						
1249ai	60 y M				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		oxycodone	2	2						
		diazepam	3	3						
1250ai	60 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		hydromorphone	2	2						
1251ai	60 y F				U	Ingst	Unk	2		
		acetaminophen/ hydrocodone	1	1						
		fluoxetine	2	2						
		diazepam	3	3						
1252ai	60 y F				A	Unk	Int-A	2		

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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
		methadone	1	1						
		tramadol	2	2						
1253ai	60 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		promethazine	2	2						
1254ai	60 y M				A	Unk	Int-A	2		
		methadone	1	1						
		morphine	2	2						
		promethazine	3	3						
1255	60 y M				A	Ingst	Int-S	3		
		ibuprofen	1	1						
1256a	60 y F				A/C	Ingst	Int-S	1		
		acetaminophen/ oxycodone	1	1					acetaminophen	132 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ oxycodone	1	1					acetaminophen	2.4 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ oxycodone	1	1					acetaminophen	24.3 mcg/mL In Blood (unspecified) @ Unknown
1257ai	60 y F				A	Ingst	Int-S	2		
		oxycodone	1	1						
		quetiapine	2	2						
		trazodone	3	3						
		ethanol	4	4						
1258	60 y F				A/C	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1						
		tramadol	2	2						
		citalopram	3	3						
1259ai	60 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		skeletal muscle relaxant	2	2						
		secobarbital	3	3						
		alprazolam	4	4						
1260p	60 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	142 mcg/mL In Serum @ Unknown
		zolpidem	2	2						
		alprazolam	3	3						
1261ai	60 y F				A	Ingst	Int-S	2		
		morphine	1	1						
		hydrocodone	2	2						
		oxycodone	3	3						
		bupropion	4	4						
		doxepin	5	5						
		trazodone	6	6						
		acetaminophen	7	7						
1262p	60 y F				A	Ingst	Int-A	1		
		fentanyl (transdermal)	1	1						
1263	60 y F				U	Ingst	Int-S	2		
		acetaminophen/ diphenhydramine	1	1					acetaminophen	189.7 mcg/mL In Serum @ Unknown
		acetaminophen/ diphenhydramine	1	1					acetaminophen	348.4 mcg/mL In Serum @ Unknown
1264ai	61 y M				A	Ingst	Int-A	2		
		morphine	1	1						
		doxepin	2	2						
		phenytoin	3	3						
		ethanol	4	4						
1265	61 y F				A/C	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1						
		amitriptyline	2	2						
		opioid	3	3						
		marijuana	4	4						
		benzodiazepine	5	5						
1266ai	61 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		alprazolam	2	2						
1267ha	61 y F				A	Ingst	Int-S	1		

(*Continued*)

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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
		acetaminophen/ hydrocodone	1	1					hydrocodone (free)	110 ng/mL In Blood (unspecified) @ 4 d (pe)
		acetaminophen/ hydrocodone	1	1					acetaminophen	57 mcg/mL In Blood (unspecified) @ 4 d (pe)
		cyclobenzaprine	2	2					cyclobenzaprine	32 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	3	3					diazepam	140 ng/mL In Blood (unspecified) @ Autopsy
		quinine	4	4						
1268pa	61 y F				A	Ingst	Int-S	3		
		salicylate	1	1					salicylate	52 mcg/mL In Blood (unspecified) @ Unknown
		metoprolol	2	2					metoprolol	296 ng/mL In Blood (unspecified) @ Autopsy
		propoxyphene	3	3					propoxyphene	1440 ng/mL In Blood (unspecified) @ Autopsy
		propoxyphene	3	3					norpropoxyphene	5467 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	4	4					7-aminoclonazepam	134 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	5	5					nordiazepam	321 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	5	5					diazepam	336 ng/mL In Blood (unspecified) @ Autopsy
		meprobamate	6	6					meprobamate	11.24 mcg/mL In Blood (unspecified) @ Autopsy
		gabapentin	7	7					gabapentin	6.8 mcg/mL In Blood (unspecified) @ Autopsy
		acetaminophen	8	8					acetaminophen	14 mcg/mL In Blood (unspecified) @ Unknown
1269ai	61 y M				U	Ingst	Int-A	2		
		oxycodone	1	1						
1270ai	61 y F				U	Ingst+ Unk	Int-A	2		
		morphine	1	1						
		alprazolam	2	2						
		tramadol	3	3						
		duloxetine	4	4						
		diltiazem	5	5						
1271ai	61 y M				A	Ingst	Int-U	2		
		tramadol	1	1						
1272	61 y F				A/C	Ingst	Int-A	2		
		acetaminophen/ oxycodone	1	1						
1273	62 y M				A	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen	63 mcg/mL In Blood (unspecified) @ Unknown
		drug, unknown	2	2						
1274a	62 y F				A	Ingst	Int-S	1		
		oxycodone (extended release)	1	1					oxymorphone	0.214 mg/L In Blood (unspecified) @ Unknown
		oxycodone (extended release)	1	1					oxycodone	0.75 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ oxycodone	2	2					oxymorphone	0.214 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ oxycodone	2	2					oxycodone	0.75 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ oxycodone	2	2					acetaminophen	29.6 mcg/mL In Blood (unspecified) @ Unknown
		hydromorphone	3	3					hydromorphone	0.117 mg/L In Blood (unspecified) @ Unknown
		diazepam	4	4					oxazepam	0.005 mg/L In Blood (unspecified) @ Unknown
		diazepam	4	4					temazepam	0.047 mg/L In Blood (unspecified) @ Unknown
		diazepam	4	4					nordiazepam	0.473 mg/L In Blood (unspecified) @ Unknown
		diazepam	4	4					diazepam	1.47 mg/L In Blood (unspecified) @ Unknown
1275pa	62 y F				U	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen	50 mcg/mL In Blood (unspecified) @ 1 h (pe)

(*Continued*)

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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
1276ai	62 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		diphenhydramine	2	2						
1277	62 y F				A/C	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1					acetaminophen	31.9 mcg/mL In Serum @ Unknown
		zolpidem	2	2						
1278ai	62 y M				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		doxylamine	2	2						
1279	62 y M				A/C	Ingst	Int-A	3		
		acetaminophen/ hydrocodone	1	1						
1280	62 y F				C	Ingst	Int-S	1		
		acetaminophen/ caffeine/ salicylate	1	1						
1281ai	62 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		tramadol	2	2						
		doxepin	3	3						
		clonazepam	4	4						
		mirtazapine	5	5						
		ethanol	6	6						
1282ai	63 y M				U	Unk	Unk	2		
		morphine	1	1						
1283ai	63 y F				A	Unk	Int-A	2		
		fentanyl	1	1						
		oxycodone	2	2						
		diazepam	3	3						
		doxylamine	4	4						
1284	63 y F				A	Par	Unt-T	3		
		morphine	1	1						
1285	63 y M				A	Ingst	Int-S	2		
		acetaminophen/ propoxyphene	1	1						
		nortriptyline	2	2						
		acetaminophen/ hydrocodone	3	3						
		flurazepam	4	4						
		zolpidem	5	5						
		diazepam	6	6						
		triazolam	7	7						
		temazepam	8	8						
1286ai	63 y F				U	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		ethanol	2	2						
1287	63 y F				A	Ingst+ Derm	Unk	3		
		acetaminophen/ butalbital/ caffeine	1	1					acetaminophen	187 mg/dL In Blood (unspecified) @ Unknown
		buprenorphine	2	2						
		acetaminophen/ codeine	3	3						
		acetaminophen	4	4						
		tramadol	5	5						
		clonazepam	6	6						
		orphenadrine	7	7						
		promethazine	8	8						
		gabapentin	9	9						
		hydroxyzine	10	10						
1288ai	63 y F				U	Ingst+ Unk	Int-A	2		
		oxycodone	1	1						
		morphine	2	2						
1289	63 y M				A/C	Ingst	Int-S	1		
		oxycodone	1	1						
		morphine	2	2						
1290ai	63 y M				A	Ingst	Int-A	2		

(*Continued*)

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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
		oxycodone	1	1						
		buspirone	2	2						
1291h	63 y F				A	Ingst	Int-S	1		
		acetaminophen/ oxycodone	1	1					acetaminophen	173 mcg/mL In Blood (unspecified) @ 30 m (pe)
1292ai	63 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
		oxymorphone	2	2						
1293	64 y F				A/C	Ingst	Int-M	3		
		fentanyl (transdermal)	1	1						
		morphine (extended release)	2	2						
		morphine	3	3						
		nitroglycerin	4	4						
1294ha	64 y M				A	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen	172 mg/L In Serum @ Unknown
1295a	64 y F				A/C	Ingst	Int-S	1		
		acetaminophen/ oxycodone	1	1					oxycodone	4.28 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ oxycodone	1	1					acetaminophen	75 mcg/mL In Blood (unspecified) @ Unknown
1296h	64 y F				A	Ingst	Int-S	1		
		methadone	1	1						
		cyclic antidepressant, unknown	2	2						
		chlordiazepoxide	3	3						
1297ai	64 y M				A	Ingst	Int-M	2		
		morphine	1	1						
		tramadol	2	2						
		amitriptyline	3	3						
1298	64 y M				A	Ingst	Int-S	1		
		salicylate	1	1						
1299ai	64 y F				U	Ingst	Int-A	2		
		oxycodone	1	1						
		ethanol	2	2						
		isopropanol	3	3						
1300ai	64 y M				U	Ingst	Int-A	2		
		tramadol	1	1						
		temazepam	2	2						
		clonazepam	3	3						
1301ai	64 y F				U	Ingst+ Unk	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
		tramadol	2	2						
		methamphetamine	3	3						
		cocaine	4	4						
1302ai	65 y M				A	Ingst+ Unk	Int-A	2		
		fentanyl	1	1						
		oxymorphone	2	2						
		tapentadol	3	3						
		oxycodone	4	4						
		ethanol	5	5						
1303ai	65 y M				U	Unk	Int-A	2		
		morphine	1	1						
1304a	65 y M				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		zolpidem	2	2						
1305ai	65 y F				U	Unk	Int-A	2		
		morphine	1	1						
1306a	65 y M				A	Ingst	Int-S	1		
		oxycodone	1	1						
		hydrocodone	2	2						
		alprazolam	3	3					alprazolam	45 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen	4	4					acetaminophen	39 mcg/mL In Serum @ Unknown
1307	65 y F				A/C	Ingst	Int-M	3		
		acetaminophen	1	1					acetaminophen	15 mcg/mL In Serum @ Unknown

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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
		warfarin	2	2						
1308a	65 y M				A	Ingst	Int-M	3		
		salicylate	1	1						
		isosorbide dinitrate	2	2						
1309i	65 y F				A	Ingst	Int-U	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	22.6 Other (see abst) In Blood (unspecified) @ Unknown
1310	66 y F				C	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
1311ai	66 y F				U	Ingst	Int-A	2		
		tramadol	1	1						
1312a	66 y M				A	Ingst	Int-M	3		
		buprenorphine/ naloxone (sublingual)	1	1						
		citalopram	2	2					citalopram	1.1 mg/L In Blood (unspecified) @ Autopsy
		methadone	3	3					methadone	0.67 mg/L In Blood (unspecified) @ Autopsy
		lorazepam	4	4						
		hydrocodone	5	5						
		naloxone	6	6						
		heroin	7	7						
		morphine	8	8						
		codeine	9	9						
1313	67 y M				A	Ingst	Unt-T	1		
		morphine	1	1						
1314	67 y M				A	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1						
1315	67 y M				C	Ingst+ Derm	Unk	3		
		fentanyl (transdermal)	1	1						
		morphine (extended release)	2	2						
1316ai	67 y M				U	Ingst	Int-A	2		
		hydromorphone	1	1						
		methadone	2	2						
1317ph	67 y F				U	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	217.4 mcg/mL In Serum @ 26 h (pe)
		acetaminophen/ hydrocodone	1	1					acetaminophen	58.8 mcg/mL In Serum @ 58 h (pe)
		clonazepam	2	2						
		caffeine/ salicylamide/ salicylate	3	3					salicylate	6.7 mg/dL In Serum @ 50 h (pe)
		ibuprofen	4	4						
1318	67 y M				A	Unk	Unk	3		
		acetaminophen	1	1					acetaminophen	66 mcg/mL In Blood (unspecified) @ 6 h (pe)
1319h	67 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ opioid	1	1					acetaminophen	268.7 mcg/mL In Serum @ Unknown
		morphine (extended release)	2	2						
1320ai	68 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
1321ph	68 y F				A	Ingst	Int-S	2		
		opioid	1	1						
		benzodiazepine	2	2						
1322ai	68 y F				U	Ingst	Int-A	2		
		morphine	1	1						
		oxycodone	2	2						
1323h	68 y F				U	Ingst	Unk	3		
		acetaminophen	1	1					acetaminophen	0 mcg/mL In Serum @ Unknown
1324a	69 y F				A	Ingst	Int-S	1		
		salicylate	1	1						

(*Continued*)

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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
1325h	69 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	57 mcg/mL In Blood (unspecified) @ Unknown
1326ai	69 y F				U	Ingst	Int-A	2		
		acetaminophen/ hydrocodone	1	1						
1327ai	69 y M				A	Ingst	Int-A	2		
		oxycodone	1	1						
		hydrocodone	2	2						
		citalopram	3	3						
		bupropion	4	4						
		metoprolol	5	5						
		dextrometho- rphan	6	6						
		acetaminophen	7	7						
1328h	69 y F				A	Ingst	Unk	3		
		acetaminophen	1	1					acetaminophen	120 mcg/mL In Unknown @ Unknown
1329p	69 y F				A	Ingst	Int-S	2		
		hydrocodone	1	1						
		baclofen	2	2						
		alprazolam	3	3						
1330ai	70 y M				U	Ingst	Unk	2		
		acetaminophen/ hydrocodone	1	1						
		alprazolam	2	2						
1331	70 y F				U	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen	353 mcg/mL In Blood (unspecified) @ Unknown
1332ai	71 y M				A	Ingst	Int-A	2		
		codeine	1	1						
		hydrocodone	2	2						
		tramadol	3	3						
		acetaminophen	4	4						
		ethanol	5	5						
1333	71 y F				A/C	Ingst	Int-S	3		
		tramadol	1	1						
		zolpidem	2	2						
1334ai	71 y M				A	Ingst	Int-S	2		
		tramadol	1	1						
		alprazolam	2	2						
		zolpidem	3	3						
		ethanol	4	4						
1335h	71 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	39.6 mcg/mL In Blood (unspecified) @ 2 d (pe)
1336i	71 y M				U	Ingst	Int-S	3		
		morphine	1	1						
		acetaminophen/ hydrocodone	2	2						
		zolpidem	3	3						
1337ai	72 y F				A	Ingst	Unt-M	2		
		acetaminophen	1	1						
1338ai	72 y F				A	Ingst	Int-A	2		
		oxycodone	1	1						
		diazepam	2	2						
		temazepam	3	3						
		citalopram	4	4						
1339ha	72 y F				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					hydrocodone	1384 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	1	1					acetaminophen	255.4 mcg/mL In Blood (unspecified) @ 17.25 h (pe)
		acetaminophen/ hydrocodone	1	1					acetaminophen	360.6 mcg/mL In Blood (unspecified) @ 6.25 h (pe)
		acetaminophen/ hydrocodone	1	1					acetaminophen	382.2 mcg/mL In Blood (unspecified) @ 1 h (pe)
		diazepam	2	2					diazepam	1991 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	2	2					nordiazepam	435 ng/mL In Blood (unspecified) @ Autopsy
		zolpidem	3	3					zolpidem	794 ng/mL In Blood (unspecified) @ Autopsy

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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
		topiramate	4	4					topiramate	6.2 mcg/mL In Blood (unspecified) @ Autopsy
		venlafaxine	5	5					norvenlafaxine	871 mcg/mL In Blood (unspecified) @ Autopsy
1340	73 y F				C	Ingst	AR-D	2		
		tapentadol	1	1						
1341ai	73 y F				A	Ingst	Int-S	2		
		oxycodone	1	1						
		alprazolam	2	2						
		acetaminophen	3	3						
1342	74 y F				A	Ingst	Int-S	1		
		salicylate	1	1						
		diphenhydramine	2	2						
1343	74 y M				A/C	Ingst	Unk	2		
		colchicine	1	1						
1344h	75 y M				A/C	Ingst	Int-S	1		
		acetaminophen/ codeine	1	1					acetaminophen	101 mcg/mL In Blood (unspecified) @ Unknown
		amitriptyline	2	2						
		morphine	3	3						
		olanzapine	4	4						
		quetiapine	5	5						
1345p	75 y F				A/C	Ingst	Int-S	3		
		acetaminophen	1	1						
		acetaminophen/ diphenhy-dramine	2	2						
1346	75 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	139.7 mcg/mL In Blood (unspecified) @ 1 d (pe)
		acetaminophen	1	1					acetaminophen	358 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen	63.8 mcg/mL In Blood (unspecified) @ 2 d (pe)
1347a	75 y F				A	Ingst	Int-S	1		
		acetaminophen/ oxycodone	1	1					oxycodone	0.279 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen/ oxycodone	1	1					acetaminophen	10.4 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	2	2					hydrocodone	0.13 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	2	2					acetaminophen	10.4 mcg/mL In Blood (unspecified) @ Unknown
		zolpidem	3	3						
1348	75 y M				A/C	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
		hydromorphone	2	2						
1349pa	75 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	86 mcg/mL In Blood (unspecified) @ Unknown
		diazepam	2	2					temazepam	0.1 mg/L In Blood (unspecified) @ Autopsy
		diazepam	2	2					diazepam	0.89 mg/L In Blood (unspecified) @ Autopsy
		diazepam	2	2					nordiazepam	2.19 mg/L In Blood (unspecified) @ Autopsy
		morphine	3	3					morphine	0.66 mg/L In Blood (unspecified) @ Autopsy
1350ha	76 y F				A	Ingst+ Unk	Int-S	1		
		acetaminophen/ hydrocodone	1	1					hydrocodone (free)	0.1 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.12 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					acetaminophen	14 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					acetaminophen	166 mcg/mL In Blood (unspecified) @ 14 h (pe)
		alprazolam	2	2					alprazolam	0.03 mg/L In Blood (unspecified) @ Unknown
1351pha	77 y M				A	Ingst	Int-S	1		
		acetaminophen/ oxycodone	1	1					oxymorphone	0.038 mg/L In Blood (unspecified) @ Autopsy

(*Continued*)

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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
		acetaminophen/ oxycodone	1	1					oxycodone	1.7 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen/ oxycodone	1	1					acetaminophen	267.5 mcg/mL In Serum @ 4 h (pe)
1352	78 y M				A	Ingst	Int-S	2		
		acetaminophen/ oxycodone	1	1						
		lorazepam	2	2						
		mirtazapine	3	3						
		mirtazapine	4	4						
1353	78 y F				U	Ingst+ Unk	AR-D	3		
		morphine	1	1						
1354a	78 y F				A/C	Ingst	Int-S	1		
		acetaminophen/ codeine*	1	1					codeine (free)	3100 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ codeine*	1	1					acetaminophen	42 mcg/mL In Blood (unspecified) @ Autopsy
		oxycodone*	2	1					oxycodone (free)	1200 ng/mL In Blood (unspecified) @ Autopsy
		lisinopril	3	3						
		tiotropiumtio- tropium	4	4						
		cyclobenzaprine	5	5					cyclobenzaprine	42 ng/mL In Blood (unspecified) @ Autopsy
1355	78 y F				A	Ingst	Unk	3		
		acetaminophen	1	1					acetaminophen	11.4 mcg/mL In Serum @ Unknown
1356	79 y M				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	77 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	0 mg/dL In Blood (unspecified) @ Unknown
		gabapentin	3	3						
		laxative (magnesium hydroxide)	4	4						
1357h	80 y M				A	Ingst	Unt-G	1		
		cholchicine	1	1						
1358h	80 y F				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	146 mg/L In Serum @ Unknown
		hydroxyzine	2	2						
1359h	81 y M				A/C	Ingst	Int-S	3		
		salicylate	1	1					salicylate	58 mg/dL In Blood (unspecified) @ 8.5 h (pe)
		salicylate	2	2						
		acetaminophen/ hydrocodone	3	3					acetaminophen	60 mcg/mL In Blood (unspecified) @ 8.5 h (pe)
		acetaminophen/ hydrocodone	4	4						
		naproxen	5	5						
1360h	82 y M				A/C	Ingst	Int-M	3		
		acetaminophen/ hydrocodone	1	1					acetaminophen	58.8 mcg/mL In Unknown @ Unknown
1361p	82 y F				A/C	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	377 mcg/mL In Blood (unspecified) @ Unknown
		amitriptyline	2	2						
		diphenhydramine	3	3						
		losartan	4	4						
		simvastatin	5	5						
1362h	85 y F				A/C	Ingst	Int-U	3		
		acetaminophen	1	1						
		acetaminophen/ oxycodone	2	2						
1363	85 y F				A/C	Ingst+ Aspir	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		trazodone	2	2						
1364	85 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	98 mg/dL In Blood (unspecified) @ Unknown

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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
1365a	85 y F				A	Ingst	Int-S	1		
		hydrocodone	1	1						
		alprazolam	2	2						
1366	85 y M				U	Ingst+ Inhal	Int-U	2		
		acetaminophen/ oxycodone	1	1						
		carbon monoxide	2	2						
1367	86 y F				U	Unk	Unk	1		
		acetaminophen	1	1					acetaminophen	329 mcg/mL In Blood (unspecified) @ 1 h (pe)
		quetiapine	2	2						
		bupropion	3	3						
		topiramate	4	4						
		dorzolamide/ timolol	5	5						
		simvastatin	6	6						
		amlodipine	7	7						
1368	86 y F				A/C	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
		isosorbide mononitrate	2	2						
		amlodipine	3	3						
		doxazosin	4	4						
		escitalopram	5	5						
		warfarin	6	6						
		furosemide	7	7						
		levothyroxine	8	8						
		potassium salts	9	9						
1369a	90 y M				U	Ingst	Unk	1		
		salicylate	1	1					salicylate	1100 mcg/mL In Blood (unspecified) @ Autopsy
1370	91 y M				A/C	Ingst	Int-S	2		
		salicylate	1	1					salicylate	28.6 mg/dL In Serum @ 23 h (pe)
		salicylate	1	1					salicylate	55.4 mg/dL In Serum @ 1 h (pe)
		nadolol	2	2						
		glyburide/ metformin	3	3						
		prednisone	4	4						
1371	93 y F				C	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen	250 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen	41 mcg/mL In Blood (unspecified) @ Unknown
1372ha	97 y F				A	Ingst	Int-S	1		
		acetaminophen/ codeine	1	1					morphine	0.29 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen/ codeine	1	1					codeine	1.7 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen/ codeine	1	1					acetaminophen	403 mg/L In Serum @ 5 h (pe)
		acetaminophen/ codeine	2	2						
1373h	8 m M				A	Ingst	Unt-G	1		
		opioid	1	1						
1374p	8 m M				A	Unk	Unk	1		
		morphine	1	1					morphine (total)	1000 ng/mL In Blood (unspecified) @ Autopsy
		morphine	1	1					morphine (free)	204 ng/mL In Blood (unspecified) @ Autopsy
		morphine	1	1					morphine (free)	230 ng/mL In Blood (unspecified) @ Autopsy
		morphine	1	1					morphine (free)	231 ng/mL In Blood (unspecified) @ Autopsy
		morphine	1	1					morphine	380 ng/mL In Gastric (stomach content) @ Autopsy
		morphine	1	1					morphine (free)	504 ng/mL In Liver @ Autopsy
		morphine	1	1					morphine	5549 ng/mL In Bile @ Autopsy

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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
1375p	10 m M				U	Ingst	Unk	2		
		oxycodone	1	1					oxycodone	0.7 mg/L In Blood (unspecified) @ Unknown
1376ai	16 m M				U	Ingst	Unk	2		
		acetaminophen/ hydrocodone	1	1						
		chlorpheniramine	2	2						
1377	6 d M				U	Ingst	Unt-G	2		
		methadone	1	1					methadone	51 ng/mL In Serum @ 6 d (pe)
1378ha	50+ y M				A	Ingst	Unk	1		
		acetaminophen	1	1						
		opioid	2	2						
		benzodiazepine	3	3						
1379hai	Unknown adult (≥20 yrs) F				U	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen	17.1 mcg/mL In Serum @ 19 h (pe)
1380p	Unknown adult (≥20 yrs) F				A	Par	Int-A	1		
		fentanyl	1	1						
See Also case 3, 8, 17, 22, 32, 33, 36, 38, 42, 44, 46, 49, 50, 54, 64, 97, 111, 117, 119, 130, 137, 142, 144, 147, 149, 155, 193, 195, 209, 214, 216, 222, 294, 364, 369, 372, 377, 434, 1383, 1394, 1398, 1399, 1400, 1402, 1411, 1412, 1415, 1419, 1426, 1427, 1431, 1435, 1436, 1439, 1446, 1451, 1460, 1462, 1465, 1466, 1469, 1475, 1478, 1479, 1487, 1491, 1495, 1500, 1517, 1519, 1520, 1522, 1527, 1532, 1534, 1541, 1542, 1543, 1548, 1549, 1556, 1559, 1560, 1566, 1570, 1571, 1574, 1576, 1580, 1582, 1597, 1600, 1605, 1626, 1628, 1629, 1638, 1641, 1643, 1656, 1657, 1658, 1660, 1662, 1664, 1665, 1666, 1669, 1678, 1685, 1693, 1694, 1695, 1698, 1702, 1705, 1708, 1713, 1714, 1715, 1718, 1720, 1723, 1734, 1743, 1752, 1753, 1755, 1780, 1783, 1784, 1796, 1797, 1805, 1806, 1814, 1835, 1848, 1850, 1851, 1855, 1856, 1857, 1858, 1860, 1862, 1863, 1866, 1867, 1868, 1871, 1879, 1881, 1883, 1885, 1886, 1890, 1896, 1898, 1899, 1904, 1906, 1915, 1917, 1919, 1923, 1925, 1928, 1930, 1931, 1933, 1934, 1936, 1946, 1948, 1949, 1952, 1954, 1955, 1959, 1960, 1964, 1966, 1968, 1971, 1974, 1977, 1979, 1981, 1982, 1983, 1994, 2002, 2010, 2019, 2020, 2025, 2027, 2028, 2032, 2036, 2038, 2043, 2044, 2045, 2048, 2053, 2055, 2056, 2063, 2065, 2069, 2070, 2072, 2075, 2077, 2078, 2090, 2092, 2093, 2096, 2097, 2100, 2106, 2108, 2115, 2116, 2117, 2119, 2122, 2123, 2124, 2132, 2133, 2134, 2135, 2137, 2139, 2146, 2152, 2154, 2159, 2161, 2166, 2167, 2168, 2170, 2172, 2175, 2177, 2179, 2180, 2183, 2190, 2191, 2195, 2198, 2200, 2210, 2213, 2216, 2220, 2225, 2232, 2235, 2247, 2254, 2257, 2259, 2264, 2267, 2272, 2281, 2289, 2292, 2297, 2298, 2300, 2306, 2310, 2311, 2316, 2320, 2322, 2325, 2331, 2333, 2334, 2336, 2337, 2338, 2344, 2345, 2346, 2347, 2353, 2356, 2358, 2359, 2360, 2362, 2364, 2365, 2367, 2368, 2382, 2386, 2387, 2399, 2403, 2405, 2410, 2412, 2415, 2419, 2420, 2421, 2425, 2426, 2430, 2435, 2437, 2438, 2439, 2445, 2446, 2454, 2455, 2456, 2459, 2460, 2461, 2466, 2467, 2468, 2469, 2476, 2478, 2480, 2481, 2482, 2484, 2500, 2501, 2503, 2507, 2510, 2511, 2512, 2513, 2516, 2519, 2523, 2529, 2535, 2538, 2556, 2562, 2565, 2572									
Anesthetics										
1381ai	27 y M				U	Par	Int-A	2		
		ketamine	1	1						
1382ph	51 y F				A	Par	AR-D	3		
		lidocaine	1	1						
		methylpredniso-lone	2	2						
		methylpredniso-lone	3	3						
1383p	51 y M				U	Ingst	Oth-W	1		
		propofol	1	1						
		naloxone	2	2						
		clonidine	3	3						
		buprenorphine/ naloxone (sublingual)	4	4						
1384h	63 y M				A	Oth	AR-D	1		
		lidocaine	1	1						
		midazolam	2	2						
See Also case 95, 2155, 2297										
Anticholinergic Drugs										
1385pai	Unknown adult (≥20 yrs) F				A	Ingst	Unk	1		
		atropine	1	1						
See Also case 605, 694, 857, 920, 1158, 1354, 1450, 1673, 1848, 2275, 2290, 2333, 2363										
Anticoagulants										
1386	42 y F				A/C	Ingst	Unk	3		
		dabigatran	1	1						
1387h	66 y M				C	Ingst	AR-D	2		
		dabigatran	1	1						

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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
1388	70 y F				C	Ingst	AR-D	3		
		dabigatran	1	1						
[1389]	77 y M				C	Ingst	AR-D	2		
		dabigatran	1	1						
1390	77 y F				C	Ingst	Unk	2		
		dabigatran	1	1						
1391h	78 y F				A/C	Ingst	AR-D	1		
		dabigatran	1	1						
1392	82 y F				A/C	Ingst	AR-D	3		
		dabigatran	1	1						
1393h	85 y M				C	Ingst	AR-D	2		
		dabigatran	1	1						
1394ph	90 y M				A/C	Ingst	AR-D	3		
		rivaroxaban	1	1						
		salicylate	2	2						
1395	91 y M				C	Par	AR-D	2		
		argatroban	1	1						
See Also case 385, 1163, 1307, 1368, 1510, 1626, 1640, 1645, 1722, 1741, 1743, 1745, 1766										
Anticonvulsants										
1396ai	19 y F				A	Ingst	Int-S	2		
		lamotrigine	1	1						
		citalopram	2	2						
		ethanol	3	3						
1397	22 y M				A	Ingst	Int-S	2		
		anticonvulsant	1	1						
		benzodiazepine	2	2						
1398p	22 y F				A/C	Ingst	Int-S	1		
		carbamazepine	1	1						
		acetaminophen/ hydrocodone	2	2						
		acetaminophen/ hydrocodone	3	3						
		diazepam	4	4						
		tramadol	5	5						
		alprazolam	6	6						
1399	24 y F				A/C	Ingst	Int-S	3		
		lamotrigine	1	1						
		acetaminophen	2	2					acetaminophen	35.9 mg/mL In Serum @ 1 h (pe)
1400p	26 y F				A/C	Ingst	Int-S	2		
		carbamazepine	1	1					carbamazepine	23.3 mg/L In Serum @ Unknown
		quetiapine	2	2						
		acetaminophen	3	3						
		ibuprofen	4	4						
1401pa	30 y M				A/C	Ingst	Int-S	1		
		topiramate	1	1					topiramate	38 mg/L In Blood (unspecified) @ Autopsy
		lacosamide	2	2						
		pregabalin	3	3						
		phenytoin	4	4						
		folic acid	5	5						
		azithromycin	6	6						
1402p	31 y F				A/C	Ingst	Int-S	2		
		lamotrigine	1	1						
		escitalopram	2	2						
		meloxicam	3	3						
1403	31 y F				A	Ingst	Int-S	2		
		lamotrigine	1	1						
		lisinopril	2	2						
		topiramate	3	3						
		clonazepam	4	4						
		citalopram	5	5						
1404	32 y F				A/C	Ingst	Int-S	3		
		carbamazepine	1	1					carbamazepine	28.4 mg/L In Serum @ Unknown
		carbamazepine	1	1					carbamazepine	31.4 mg/L In Serum @ 3 h (pe)
		carbamazepine	1	1					carbamazepine	40.1 mg/L In Serum @ Unknown
		activated charcoal	2	2						
1405h	34 y F				A/C	Ingst	Int-S	2		

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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
		carbamazepine	1	1						
		brodifacoum	2	2						
1406	35 y M				U	Ingst	AR-O	3		
		phenytoin	1	1					phenytoin	2.62 mg/L In Whole Blood @ Autopsy
		phenytoin	1	1					phenytoin	80 mcg/mL In Blood (unspecified) @ Unknown
1407ai	36 y F				U	Ingst	Int-S	2		
		carbamazepine	1	1						
		phenytoin	2	2						
		lorazepam	3	3						
		midazolam	4	4						
		acridine	5	5						
1408ai	36 y F				A	Ingst	Int-S	2		
		lamotrigine	1	1						
		sertraline	2	2						
		quetiapine	3	3						
1409a	37 y M				A/C	Ingst	Int-S	1		
		valproic acid (extended release)	1	1					valproic acid	1544 mcg/mL In Serum @ 18 h (pe)
		valproic acid (extended release)	1	1					valproic acid	18 mcg/mL In Serum @ 0.5 h (pe)
		valproic acid (extended release)	1	1					valproic acid	416 mcg/mL In Serum @ 36 h (pe)
		valproic acid (extended release)	1	1					valproic acid	721 mcg/mL In Serum @ 30 h (pe)
		valproic acid (extended release)	1	1					valproic acid	81 mcg/mL In Serum @ 3 d (pe)
		valproic acid (extended release)	1	1					valproic acid	906 mcg/mL In Serum @ 6 h (pe)
		valproic acid (extended release)	1	1					valproic acid	930 mcg/mL In Serum @ 24 h (pe)
		ethanol	2	2					ethanol	134 mg/dL In Serum @ 18 h (pe)
		ethanol	2	2					ethanol	356 mg/dL In Serum @ 0.5 h (pe)
1410h	37 y M				A	Oth	AR-D	2		
		valproic acid	1	1					valproic acid	13 mcg/mL In Blood (unspecified) @ Unknown
		lorazepam	2	2						
		clozapine	3	3						
		haloperidol	4	4						
		lorazepam	5	5					lorazepam	20 ng/mL In Blood (unspecified) @ Unknown
1411pha	40 y F				U	Ingst	Int-U	2		
		topiramate	1	1					topiramate	20 mg/L In Blood (unspecified) @ Autopsy
		zonisamide	2	2					zonisamide	20 mg/L In Blood (unspecified) @ Autopsy
		oxycodone (extended release)	3	3						
		butalbital	4	4						
		baclofen	5	5						
		diazepam	6	6					nordiazepam	0.07 mg/L In Lung @ Autopsy
		diazepam	6	6					diazepam	0.1 mg/L In Lung @ Autopsy
		diazepam	6	6					nordiazepam	0.18 mg/L In Blood (unspecified) @ Autopsy
		diazepam	6	6					diazepam	0.19 mg/L In Blood (unspecified) @ Autopsy
1412ha	42 y M				A/C	Ingst	Int-S	1		
		valproic acid	1	1					valproic acid	142 mcg/mL In Blood (unspecified) @ 10.5 h (pe)
		valproic acid	1	1					valproic acid	192 mcg/mL In Blood (unspecified) @ 3 d (pe)

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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
		valproic acid	1	1					valproic acid	200 mcg/mL In Blood (unspecified) @ 16 h (pe)
		valproic acid	1	1					valproic acid	200 mcg/mL In Blood (unspecified) @ 24.5 h (pe)
		valproic acid	1	1					valproic acid	245 mcg/mL In Blood (unspecified) @ 34.5 h (pe)
		valproic acid	1	1					valproic acid	91 mcg/mL In Blood (unspecified) @ 4.5 h (pe)
		quetiapine	2	2						
		acetaminophen/ hydrocodone	3	3						
		sertraline	4	4						
		trazodone	5	5						
1413	47 y F				A	Ingst	Unk	2		
		lamotrigine	1	1						
		sertraline	2	2						
		zolpidem	3	3						
1414p	47 y F				A/C	Ingst	Int-S	2		
		valproic acid (extended release)	1	1					valproic acid	1031 mcg/mL In Blood (unspecified) @ 16 h (pe)
1415ai	51 y F				A	Ingst	Int-S	2		
		gabapentin	1	1						
		diphenhydramine	2	2						
		promethazine	3	3						
		fluoxetine	4	4						
		tramadol	5	5						
		oxycodone	6	6						
		hydrocodone	7	7						
		clonazepam	8	8						
1416h	51 y F				A/C	Ingst	Int-S	3		
		lamotrigine	1	1						
		duloxetine	2	2						
		lamotrigine	3	3						
		alprazolam	4	4						
1417	52 y F				A	Ingst	Int-S	2		
		anticonvulsant	1	1						
		carbamazepine	2	2						
		drug, unknown	3	3						
		benzodiazepine	4	4						
[1418a]	59 y M				A/C	Ingst	Int-S	1		
		carbamazepine	1	1					carbamazepine	35.4 mcg/mL In Serum @ Unknown
		cyclic antidepressant, unknown	2	2					clomipramine	1600 ng/mL In Blood (unspecified) @ Unknown
1419	61 y F				A	Ingst	Int-S	1		
		primidone	1	1						
		oxycodone	2	2						
		hydromorphone	3	3						
		alprazolam	4	4						
1420ai	62 y F				A	Ingst	Int-U	2		
		carbamazepine	1	1						
1421	85 y F				C	Ingst+ Aspir	Unt-T	3		
		phenytoin	1	1					phenytoin	50 mcg/mL In Serum @ Unknown
1422ai	87 y F				U	Ingst	Int-A	2		
		phenytoin	1	1						

See Also case 49, 61, 71, 136, 145, 306, 399, 411, 451, 487, 530, 584, 591, 596, 647, 657, 682, 722, 727, 748, 756, 785, 799, 825, 838, 842, 901, 912, 988, 1003, 1033, 1038, 1088, 1130, 1153, 1203, 1235, 1241, 1264, 1268, 1287, 1339, 1356, 1367, 1431, 1432, 1436, 1447, 1452, 1460, 1480, 1481, 1483, 1495, 1501, 1510, 1517, 1527, 1532, 1535, 1538, 1539, 1558, 1576, 1578, 1593, 1605, 1617, 1626, 1634, 1647, 1648, 1655, 1682, 1685, 1714, 1719, 1720, 1752, 1804, 1806, 1827, 1833, 1868, 1872, 1879, 1889, 1903, 1910, 1921, 1928, 1932, 1948, 1966, 1976, 2049, 2161, 2207, 2249, 2259, 2277, 2294, 2299, 2325, 2367, 2441, 2469, 2476, 2510, 2542, 2555

Antidepressants

1423p	3 y F				A	Ingst	Unt-G	1		
		desipramine	1	1						
1424	15 y F				A	Ingst	Int-S	2		
		bupropion	1	1						
		hydroxyzine	2	2						
[1425pa]	17 y F				U	Ingst	Int-S	1		
		bupropion (extended release)	1	1					bupropion	0.21 mg/L In Blood (unspecified) @ Autopsy
		aripiprazole	2	2						

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Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures.

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1426	17 y F				A	Ingst	Int-S	1		
		bupropion (extended release)	1	1						
		amphetamine/ dextroamphetamine	2	2						
		ibuprofen	3	3						
1427pa	18 y M				U	Ingst	Unk	2		
		amitriptyline	1	1					amitriptyline	0.065 mcg/mL In Blood (unspecified) @ Autopsy
		oxycodone	2	2					oxycodone	0.1 mcg/mL In Blood (unspecified) @ Autopsy
		diazepam	3	3						
		fluoxetine	4	4						
1428ai	18 y M				A	Ingst	Unk	2		
		fluoxetine	1	1						
1429h	18 y M				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		fluoxetine	2	2						
1430	20 y F				A	Ingst	Int-S	1		
		amitriptyline	1	1						
1431	20 y M				A	Ingst	Int-S	2		
		bupropion	1	1					bupropion	3900 ng/mL In Blood (unspecified) @ Autopsy
		bupropion	1	1					hydroxybupropion	490 ng/mL In Blood (unspecified) @ Autopsy
		bupropion	1	1					bupropion	7.7 mg/mL In Gastric (stomach content) @ Autopsy
		acetaminophen	2	2					acetaminophen	23000 mcg/mL In Gastric (stomach content) @ Autopsy
		acetaminophen	2	2					acetaminophen	301 mcg/mL In Blood (unspecified) @ Autopsy
		acetaminophen	2	2					acetaminophen	360 mcg/mL In Blood (unspecified) @ Autopsy
		salicylate	3	3					salicylate	231 mcg/mL In Blood (unspecified) @ Autopsy
		salicylate	3	3					salicylate	29000 mcg/mL In Gastric (stomach content) @ Autopsy
		salicylate	3	3					salicylate	370 mcg/mL In Blood (unspecified) @ Autopsy
		caffeine	4	4					caffeine	100 mcg/mL In Blood (unspecified) @ Autopsy
		lamotrigine	5	5					lamotrigine	25 mcg/mL In Blood (unspecified) @ Autopsy
		aripiprazole	6	6						
		clonazepam	7	7					clonazepam	17 ng/mL In Blood (unspecified) @ Autopsy
		zolpidem	8	8						
1432ph	21 y F				A/C	Ingst	Unk	2		
		venlafaxine	1	1						
		lamotrigine	2	2						
		clonazepam	3	3						
		zolpidem	4	4						
		ziprasidone	5	5						
1433p	21 y F				A	Ingst	Int-S	1		
		bupropion (extended release)	1	1						
1434ha	22 y F				U	Ingst	Int-S	1		
		bupropion	1	1					bupropion	12000 ng/mL In Urine (quantitative only) @ Unknown
		bupropion	1	1					hydroxybupropion	19000 ng/mL In Urine (quantitative only) @ Unknown
		bupropion	1	1					hydroxybupropion	2900 ng/mL In Serum @ Unknown
		propranolol	2	2						
		aripiprazole	3	3						
1435a	24 y M				U	Ingst	Int-A	2		
		venlafaxine	1	1					venlafaxine	2918 Other (see abst) In Gastric (stomach content) @ Autopsy

(*Continued*)

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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
		venlafaxine	1	1					venlafaxine	31.6 mcg/mL In Blood (unspecified) @ Unknown
		oxycodone	2	2						
		opioid	3	3						
		diazepam	4	4						
		phencyclidine	5	5						
1436	24 y M				A	Ingst	Int-S	2		
		cyclic antidepressant, unknown	1	1						
		methadone	2	2						
		gabapentin	3	3						
[1437a]	24 y M				A/C	Ingst	Int-S	2		
		bupropion (extended release)	1	1					bupropion	1300 ng/mL In Blood (unspecified) @ Unknown
		bupropion (extended release)	1	1					hydroxybupropion	1300 ng/mL In Blood (unspecified) @ Unknown
		methylphenidate	2	2						
		polyethylene glycol	3	3						
1438a	25 y M				A	Ingst+ Aspir	Int-S	1		
		bupropion	1	1					bupropion	5.6 mg/L In Blood (unspecified) @ Autopsy
		diphenhydramine	2	2					diphenhydramine	1.5 mg/L In Blood (unspecified) @ Autopsy
		fluoxetine	3	3					fluoxetine	2.7 mg/L In Blood (unspecified) @ Autopsy
		ethanol (non-beverage)	4	4					ethanol	180 mg/dL In Serum @ Unknown
1439ai	25 y F				U	Ingst	Int-A	2		
		doxepin	1	1						
		tramadol	2	2						
		paroxetine	3	3						
1440ph	26 y F				A/C	Ingst	Int-S	1		
		amitriptyline	1	1						
		cyclobenzaprine	2	2						
		citalopram	3	3						
1441ai	27 y F				U	Ingst	Unk	2		
		amitriptyline	1	1						
		diazepam	2	2						
		quetiapine	3	3						
1442ai	28 y M				U	Ingst	Int-A	2		
		doxepin	1	1						
		diazepam	2	2						
1443p	28 y F				A/C	Ingst	Int-S	1		
		desipramine	1	1						
1444h	28 y M				A	Ingst	Int-S	1		
		nortyptyline	1	1						
1445	29 y M				A/C	Ingst	Int-S	2		
		bupropion (extended release)	1	1						
		sertraline	2	2						
1446pa	29 y F				A	Ingst	Unt-M	1		
		imipramine	1	1						
		cocaine	2	2					cocaine	150 ng/mL In Whole Blood @ Autopsy
		ethanol	3	3					ethanol	81 mg/dL In Whole Blood @ Autopsy
		lisdexamfetamine	4	4						
		risperidone	5	5						
		acetaminophen	6	6						
		vitamins (multiple)	7	7						
		cephalexin	8	8						
1447a	29 y M				A/C	Ingst	Int-S	1		
		doxepin	1	1						
		phenytoin	2	2						
		fluoxetine	3	3						
		ranitidine	4	4						
1448	29 y F				A	Ingst	Int-S	2		
		venlafaxine	1	1						
		ethanol	2	2						

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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
1449h	29 y M				A/C	Ingst	Int-S	3		
		venlafaxine (extended release)	1	1						
		clonazepam	2	2						
		ethanol	3	3						
1450p	30 y M				A	Ingst	Int-S	1		
		bupropion	1	1						
		ziprasidone	2	2						
		benztropine	3	3						
		mirtazapine	4	4						
1451	30 y M				U	Ingst	Unk	2		
		amitriptyline	1	1						
		oxycodone (extended release)	2	2						
		opioid	3	3						
1452pa	30 y M				A	Ingst	Int-S	1		
		amitriptyline	1	1					amitriptyline	4700 ng/mL In Blood (unspecified) @ Autopsy
		amitriptyline	1	1					nortriptyline	970 ng/mL In Blood (unspecified) @ Autopsy
		zolpidem	2	2						
		pregabalin	3	3						
1453	30 y F				U	Ingst	Int-S	2		
		amitriptyline	1	1						
1454	31 y F				A	Ingst	Int-S	2		
		citalopram	1	1						
1455p	31 y M				A	Ingst	Int-S	2		
		amitriptyline	1	1						
1456ai	32 y M				A	Ingst	Int-S	2		
		bupropion	1	1						
		diphenhydramine	2	2						
		doxylamine	3	3						
		dextromethorphan	4	4						
		citalopram	5	5						
1457	32 y M				A/C	Ingst	Int-S	3		
		venlafaxine	1	1						
		amphetamine	2	2						
1458p	33 y M				A	Ingst	Int-S	1		
		amitriptyline	1	1						
1459ph	34 y F				A	Ingst	Unk	3		
		cyclic antidepressant, unknown	1	1						
		benzodiazepine	2	2						
1460pa	35 y M				A	Ingst	Unk	2		
		paroxetine	1	1					paroxetine	0.75 mg/L In Blood (unspecified) @ Autopsy
		paroxetine	1	1					paroxetine	0.77 mg/L In Blood (unspecified) @ Autopsy
		paroxetine	1	1					paroxetine	18 mg/kg In Liver @ Autopsy
		morphine	2	2					morphine	0.14 mg/L In Blood (unspecified) @ Autopsy
		gabapentin	3	3					gabapentin	29 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	4	4					alprazolam	0.053 mg/L In Blood (unspecified) @ Autopsy
		hydroxyzine	5	5					hydroxyzine	0.31 mg/L In Blood (unspecified) @ Autopsy
		hydroxyzine	5	5					hydroxyzine	6.1 mg/kg In Liver @ Autopsy
		tramadol	6	6					tramadol	0.25 mg/L In Blood (unspecified) @ Autopsy
		omeprazole	7	7						
		lorazepam	8	8						
1461ai	35 y F				U	Ingst	Int-A	2		
		citalopram	1	1						
		metaxalone	2	2						
		diazepam	3	3						
1462ai	35 y F				U	Ingst	Int-A	2		
		citalopram	1	1						
		skeletal muscle relaxant	2	2						

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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
		acetaminophen/ hydrocodone	3	3						
		alprazolam	4	4						
1463pa	35 y F				A/C	Ingst	Int-S	1		
		sertraline	1	1					sertraline	0.61 mg/L In Blood (unspecified) @ Unknown
		sertraline	1	1					bupropion	2.1 mg/L In Blood (unspecified) @ Unknown
		bupropion (extended release)	2	2						
		bupropion	3	3						
1464ai	35 y M				A	Ingst	Int-U	2		
		paroxetine	1	1						
1465h	35 y F				A	Ingst	AR-D	3		
		citalopram	1	1						
		acetaminophen	2	2						
1466	35 y F				A/C	Ingst	Int-S	2		
		trazodone	1	1					trazodone	1.2 mg/L In Blood (unspecified) @ Autopsy
		citalopram	2	2					citralopram	1.3 mg/L In Blood (unspecified) @ 10 m (pe)
		clonazepam	3	3						
		hydroxyzine	4	4					hydroxyzine	0.79 mg/L In Blood (unspecified) @ 10 m (pe)
		fluoxetine	5	5					norfluoxetine	0.061 mg/L In Blood (unspecified) @ 10 m (pe)
		fluoxetine	5	5					fluoxetine	0.11 mg/L In Blood (unspecified) @ 10 m (pe)
		ibuprofen	6	6						
		valacyclovir	7	7						
		ethanol	8	8					ethanol	0.08 g/dL In Whole Blood @ Autopsy
1467ph	35 y F				A	Ingst	Int-S	3		
		nortriptyline	1	1						
		zolpidem	2	2						
1468	36 y F				U	Ingst	Int-S	2		
		doxepin	1	1						
1469	38 y M				A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
		venlafaxine	2	2						
		acetaminophen/ hydrocodone	3	3						
		temazepam	4	4						
		enalapril	5	5						
1470p	38 y F				A	Ingst	Int-S	2		
		amitriptyline	1	1						
1471pai	39 y M				A	Ingst	Int-S	1		
		amitriptyline	1	1						
		methamphetamine	2	2						
1472h	39 y F				U	Ingst+ Aspir	Int-S	2		
		doxepin	1	1						
1473ai	39 y F				U	Ingst	Int-A	2		
		citalopram	1	1						
		venlafaxine	2	2						
		diphenhydramine	3	3						
1474	39 y F				A	Ingst	Int-S	2		
		amitriptyline	1	1						
		trazodone	2	2						
1475ph	40 y F				A/C	Ingst	Int-S	3		
		citalopram	1	1						
		ibuprofen	2	2						
1476	40 y F				A/C	Ingst	Int-S	1		
		duloxetine	1	1						
		quetiapine (extended release)	2	2						
		lisinopril	3	3						
		amphetamine	4	4						
		alcohol, unknown	5	5						
1477h	40 y F				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		ethanol	2	2						

(*Continued*)

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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
		cyclic antidepressant, unknown	3	3						
1478ai	40 y F				A	Ingst+Derm	Int-M	2		
		amitriptyline	1	1						
		morphine	2	2						
		fentanyl (transdermal)	3	3						
		diazepam	4	4						
		promethazine	5	5						
		citalopram	6	6						
		diphenhydramine	7	7						
1479a	41 y F				A	Ingst	Int-S	1		
		amitriptyline	1	1						
		ethanol	2	2					ethanol	120 mg/dL In Blood (unspecified) @ Autopsy
		acetaminophen	3	3					acetaminophen	58 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	3	3					acetaminophen	71 mcg/mL In Blood (unspecified) @ 2 h (pe)
1480	41 y F				U	Ingst	Int-S	2		
		bupropion	1	1						
		risperidone	2	2						
		lamotrigine	3	3						
		citalopram	4	4						
		omeprazole	5	5						
1481ai	41 y M				A	Ingst	Int-S	2		
		nortriptyline	1	1						
		lamotrigine	2	2						
		zolpidem	3	3						
		ethanol	4	4						
1482	42 y F				U	Ingst	Unk	1		
		lithium	1	1						
1483ha	42 y M				A	Ingst	Int-S	1		
		nortriptyline	1	1					nortriptyline	3.02 mg/L In Blood (unspecified) @ Autopsy
		lamotrigine	2	2					lamotrigine	2.7 mg/L In Blood (unspecified) @ Autopsy
1484ai	42 y F				U	Ingst	Int-A	2		
		bupropion	1	1						
1485ai	42 y F				U	Ingst	Int-A	2		
		trazodone	1	1						
1486h	42 y M				A/C	Ingst	Int-S	2		
		venlafaxine	1	1						
		citalopram	2	2						
		cocaine	3	3						
1487ai	42 y M				U	Ingst	Int-S	2		
		doxepin	1	1						
		acetaminophen/hydrocodone	2	2						
1488ai	43 y F				U	Ingst	Int-S	2		
		citalopram	1	1						
1489	43 y F				A/C	Ingst	Int-S	3		
		amitriptyline	1	1						
1490ai	43 y F				A	Ingst	Int-S	2		
		nortriptyline	1	1						
		phenobarbital	2	2						
1491ai	43 y M				A	Ingst	Int-A	2		
		amitriptyline	1	1						
		acetaminophen/hydrocodone	2	2						
		alprazolam	3	3						
		ethanol	4	4						
1492ai	43 y F				U	Ingst	Int-A	2		
		amitriptyline	1	1						
		alprazolam	2	2						
		diazepam	3	3						
1493ai	44 y F				A	Ingst	Int-S	2		
		amitriptyline	1	1						
		diphenhydramine	2	2						
		doxylamine	3	3						
		ethanol	4	4						
1494a	44 y M				A/C	Ingst	Int-S	2		

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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
		bupropion (extended release)	1	1					bupropion	0.13 mg/L In Blood (unspecified) @ Unknown
		bupropion (extended release)	1	1					hydroxybupropion	1.5 mg/L In Blood (unspecified) @ Unknown
		methamphetamine	2	2					amphetamine	0.038 mg/L In Blood (unspecified) @ Unknown
		methamphetamine	2	2					methamphetamine	0.83 mg/L In Blood (unspecified) @ Unknown
1495h	44 y M				A	Ingst	Int-S	1		
		nortriptyline	1	1						
		venlafaxine	2	2						
		morphine	3	3						
		acetaminophen/ hydrocodone	4	4						
		gabapentin	5	5						
1496ai	44 y F				U	Ingst	Int-A	2		
		bupropion	1	1						
		diphenhydramine	2	2						
		quetiapine	3	3						
1497ai	45 y F				U	Ingst	Int-A	2		
		doxepin	1	1						
		fluoxetine	2	2						
		cyproheptadine	3	3						
1498pa	45 y M				A	Ingst	Int-S	2		
		bupropion (extended release)	1	1					bupropion	1 mcg/mL In Blood (unspecified) @ Unknown
		bupropion (extended release)	1	1					bupropion	3 mcg/mL In Whole Blood @ Autopsy
		amlodipine*	3	2						
		ethanol*	2	2					ethanol	0.07 % (wt/Vol) In Vitreous @ Autopsy
		ethanol*	2	2					ethanol	0.27 % (wt/Vol) In Whole Blood @ Unknown
		lisinopril	4	3						
		clonazepam	5	4						
1499ph	45 y F				A/C	Ingst	Int-S	2		
		escitalopram	1	1						
		alprazolam	2	2						
		zolpidem	3	3						
1500ai	45 y F				A	Unk	Int-U	2		
		amitriptyline	1	1						
		methadone	2	2						
		clonazepam	3	3						
1501ai	46 y F				A	Ingst	Int-S	2		
		doxepin	1	1						
		chlorpromazine	2	2						
		phenytoin	3	3						
1502ai	46 y M				A	Ingst	Int-A	2		
		doxepin	1	1						
		ethanol	2	2						
1503a	46 y M				A/C	Ingst+ Inhal	Int-S	2		
		amitriptyline	1	1						
		cocaine	2	2						
1504a	46 y F				A/C	Ingst	Int-S	1		
		duloxetine	1	1					duloxetine	3926 ng/mL In Blood (unspecified) @ Autopsy
		bupropion	2	2					bupropion	2264 ng/mL In Blood (unspecified) @ Autopsy
		diphenhydramine	3	3					diphenhydramine	1100 ng/mL In Blood (unspecified) @ Autopsy
		hydroxyzine	4	4					hydroxyzine	28.1 ng/mL In Blood (unspecified) @ Autopsy
1505ai	47 y F				A	Ingst	Int-U	2		
		paroxetine	1	1						
		chlordiazepoxide	2	2						
		ethanol	3	3						
1506h	47 y F				U	Ingst	Unk	2		

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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
		amitriptyline	1	1					amitriptyline	1700 Other (see abst) In Unknown @ Unknown
1507ha	47 y M				A	Ingst	Int-S	2		
		amitriptyline	1	1						
		methocarbamol	2	2						
1508	47 y M				A	Ingst	Int-S	2		
		bupropion	1	1						
		cyclobenzaprine	2	2						
		ethanol	3	3						
1509ai	47 y F				A	Ingst+ Unk	Int-S	2		
		bupropion	1	1						
		cocaine	2	2						
1510	48 y M				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		venlafaxine	2	2						
		prazosin	3	3						
		buspirone	4	4						
		gabapentin	5	5						
		antiplatelet drug	6	6						
1511	48 y F				A	Ingst	Unt-G	2		
		amitriptyline	1	1						
		trazodone	2	2						
1512ai	49 y F				U	Ingst	Int-A	2		
		fluoxetine	1	1						
		diazepam	2	2						
1513ai	49 y M				U	Ingst	Int-A	2		
		amitriptyline	1	1						
		alprazolam	2	2						
		diazepam	3	3						
1514ph	49 y F				A	Ingst	Int-S	1		
		amitriptyline	1	1						
1515ai	49 y F				U	Ingst	Int-A	2		
		amitriptyline	1	1						
1516h	50 y F				U	Ingst	Int-S	2		
		amitriptyline	1	1					nortriptyline	139 ng/mL In Serum @ Unknown
		amitriptyline	1	1					amitriptyline	974 ng/mL In Serum @ Unknown
1517p	50 y F				A/C	Ingst	Int-S	2		
		citalopram	1	1						
		acetaminophen/ hydrocodone	2	2					acetaminophen	30 mcg/mL In Serum @ Unknown
		lisinopril	3	3						
		pregabalin	4	4						
		tramadol	5	5						
		diclofenac (extended release)	6	6						
		conjugated estrogens	7	7						
1518h	50 y M				A/C	Ingst	Int-S	3		
		bupropion	1	1						
		propranolol	2	2						
		citalopram	3	3						
1519ph	50 y M				A/C	Ingst	Int-S	2		
		bupropion (extended release)	1	1						
		temazepam	2	2						
		acetaminophen/ hydrocodone	3	3						
		diazepam	4	4						
1520h	50 y F				A	Ingst	Int-S	2		
		bupropion (extended release)	1	1						
		ibuprofen	2	2						
		duloxetine	3	3						
		diphenhydramine	4	4						
1521	51 y F				A/C	Ingst	Int-U	3		
		amitriptyline	1	1						
		doxepin	2	2						
1522	51 y M				A/C	Ingst	Int-S	3		

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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
		venlafaxine	1	1						
		ibuprofen	2	2						
		folic acid	3	3						
1523p	52 y F				U	Ingst+ Aspir+ Unk	Int-S	2		
		bupropion	1	1						
		quetiapine	2	2						
		paroxetine	3	3						
1524	52 y F				A/C	Ingst	Int-S	2		
		venlafaxine	1	1						
1525ai	52 y M				U	Ingst	Int-A	2		
		trazodone	1	1						
1526ai	52 y M				A	Ingst	Int-U	2		
		sertraline	1	1						
		ethanol	2	2						
1527a	52 y F				A/C	Ingst	Int-S	2		
		lithium	1	1					lithium	2.1 mEq/L In Blood (unspecified) @ Unknown
		valproic acid	2	2					valproic acid	114 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	3	3					acetaminophen	113.2 mcg/mL In Blood (unspecified) @ Unknown
		codeine	4	4					codeine	3936 ng/mL In Blood (unspecified) @ Unknown
		zolpidem	5	5					zolpidem	352 ng/mL In Blood (unspecified) @ Unknown
1528ai	53 y M				A	Ingst	Int-U	2		
		citalopram	1	1						
		ethanol	2	2						
1529ai	53 y F				A	Ingst	Int-U	2		
		amitriptyline	1	1						
		fluoxetine	2	2						
		diazepam	3	3						
		ethanol	4	4						
1530ai	53 y F				A	Ingst	Int-M	2		
		citalopram	1	1						
		quetiapine	2	2						
		zolpidem	3	3						
		ethanol	4	4						
[1531ha]	53 y M				A	Ingst	Int-S	1		
		bupropion (extended release)	1	1					bupropion	416 ng/mL In Blood (unspecified) @ Unknown
		bupropion (extended release)	1	1					hydroxybupropion	514 ng/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	298 mg/mL In Blood (unspecified) @ Unknown
		venlafaxine	3	3					venlafaxine	258 ng/mL In Blood (unspecified) @ Unknown
		venlafaxine	3	3					norvenlafaxine	312 ng/mL In Blood (unspecified) @ Unknown
1532h	53 y F				A/C	Ingst	Int-S	3		
		venlafaxine	1	1						
		gabapentin	2	2						
		hydroxyzine	3	3						
		acetaminophen/ hydrocodone	4	4						
		hydromorphone	5	5						
		meclizine	6	6						
		lorazepam	7	7						
1533ai	53 y F				U	Ingst	Int-A	2		
		imipramine	1	1						
		diazepam	2	2						
1534ai	53 y F				A	Ingst	Int-S	2		
		doxepin	1	1						
		bupropion	2	2						
		skeletal muscle relaxant	3	3						
		hydromorphone	4	4						
		buspirone	5	5						
		alprazolam	6	6						
1535	53 y F				C	Ingst	Int-S	2		

(*Continued*)

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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
		citalopram	1	1						
		fluoxetine	2	2						
		pregabalin	3	3						
1536ai	54 y F				U	Ingst	Int-S	2		
		bupropion	1	1						
1537ai	54 y F				U	Ingst	Int-S	2		
		amitriptyline	1	1						
1538pha	54 y F				A/C	Ingst	Int-S	1		
		trimipramine	1	1					nortrimipramine	0.41 mg/L In Blood (unspecified) @ Autopsy
		trimipramine	1	1					trimipramine	270 mg/kg In Liver @ Autopsy
		trimipramine	1	1					trimipramine	3 mg/L In Blood (unspecified) @ Autopsy
		trimipramine	1	1					nortrimipramine	32 mg/kg In Liver @ Autopsy
		metoprolol (extended release)	2	2					metoprolol	4.1 mg/L In Blood (unspecified) @ Autopsy
		lamotrigine	3	3						
		trazodone	4	4					trazodone	1.1 mg/L In Blood (unspecified) @ Autopsy
		trazodone	4	4					trazodone	4.9 mg/kg In Liver @ Autopsy
		lorazepam	5	5					lorazepam	0.12 mg/L In Whole Blood @ Autopsy
		antidepressant	6	6					duloxetine	30 mg/L In Blood (unspecified) @ Autopsy
1539h	54 y F				A	Ingst	Int-S	2		
		trazodone	1	1						
		lamotrigine	2	2						
		fluoxetine	3	3						
		citalopram	4	4						
		ethanol	5	5						
1540ai	55 y M				U	Ingst	Int-A	2		
		amitriptyline	1	1						
1541ai	55 y F				A	Ingst	Int-U	2		
		amitriptyline	1	1						
		olanzapine	2	2						
		tramadol	3	3						
[1542pa]	55 y M				A/C	Ingst+ Aspir	Int-S	1		
		vilazodone	1	1						
		alprazolam	2	2						
		salicylate	3	3					salicylate	11 mg/dL In Blood (unspecified) @ Autopsy
		salicylate	3	3					salicylate	26 mg/dL In Serum @ 15 m (pe)
		escitalopram	4	4					citralopram	1200 ng/mL In Blood (unspecified) @ Autopsy
		duloxetine	5	5					duloxetine	930 ng/mL In Blood (unspecified) @ Autopsy
1543pa	55 y M				A/C	Ingst	Int-S	1		
		citalopram	1	1					citalopram	7.5 mg/L In Blood (unspecified) @ Autopsy
		escitalopram	2	2						
		acetaminophen/ diphenhydramine*	4	3					diphenhydramine	0.2 mg/L In Blood (unspecified) @ Autopsy
		bupropion*	3	3					bupropion	0.06 mg/L In Blood (unspecified) @ Autopsy
		clonazepam	5	4						
		tadanafil	6	5						
1544ai	56 y M				A	Ingst	Int-U	2		
		citalopram	1	1						
		nortriptyline	2	2						
		promethazine	3	3						
		metoprolol	4	4						
1545a	56 y M				A	Ingst	Int-S	1		
		amitriptyline	1	1					amitriptyline	10000 ng/mL In Serum @ Autopsy
		prednisone	2	2						
1546pha	57 y F				A/C	Ingst	Int-S	1		
		amitriptyline	1	1					amitriptyline	159 ng/mL In Plasma @ 5 m (pe)
		amitriptyline	1	1					nortriptyline	208 ng/mL In Plasma @ 5 m (pe)

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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
1547	57 y M				A/C	Ingst	Int-S	2		
		fluoxetine	1	1						
		olanzapine	2	2						
1548p	58 y F				A/C	Ingst	Int-S	1		
		amitriptyline	1	1						
		acetaminophen/ hydrocodone	2	2						
1549ph	58 y F				A/C	Ingst	Int-S	1		
		cyclic antidepressant, unknown	1	1						
		clonazepam	2	2						
		acetaminophen	3	3					acetaminophen	450 mcg/mL In Whole Blood @ Unknown
1550pa	59 y F				A	Ingst	Int-S	1		
		duloxetine	1	1					duloxetine	451 ng/mL In Blood (unspecified) @ Autopsy
		quetiapine	2	2					quetiapine	4450 ng/mL In Blood (unspecified) @ Autopsy
		oxybutynin	3	3						
		diazepam	4	4					nordiazepam	218 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	4	4					diazepam	513 ng/mL In Blood (unspecified) @ Autopsy
		zolpidem	5	5					zolpidem	190 ng/mL In Blood (unspecified) @ Autopsy
1551	60 y M				A/C	Ingst	Int-S	1		
		tranylcypromine	1	1						
		bupropion	2	2						
		clonazepam	3	3						
		lorazepam	4	4						
1552	60 y M				A	Ingst	Int-S	3		
		paroxetine	1	1						
1553	60 y F				A/C	Ingst	Int-S	1		
		amitriptyline	1	1						
1554ph	61 y F				U	Ingst	Unt-G	2		
		amitriptyline	1	1						
1555p	61 y F				U	Ingst	Int-S	1		
		bupropion	1	1					hydroxybupropion	2800 ng/mL In Blood (unspecified) @ Unknown
		bupropion	1	1					bupropion	8600 ng/mL In Blood (unspecified) @ Unknown
		amitriptyline	2	2					nortriptyline	170 ng/mL In Blood (unspecified) @ Unknown
		amitriptyline	2	2					amitriptyline	210 ng/mL In Blood (unspecified) @ Unknown
		antidepressant (SSRI)	3	3					citalopram	1000 ng/mL In Blood (unspecified) @ Unknown
1556	61 y F				A/C	Ingst	Int-S	3		
		fluoxetine	1	1						
		zolpidem (extended release)	2	2						
		acetaminophen	3	3						
1557h	61 y F				A/C	Ingst	Int-S	1		
		doxepin	1	1						
		benzodiazepine	2	2						
		cyclobenzaprine	3	3						
1558h	62 y M				A	Ingst	Int-S	2		
		bupropion (extended release)	1	1						
		gabapentin	2	2						
		furosemide	3	3						
		amlodipine	4	4						
1559	64 y F				A/C	Ingst	Int-S	2		
		imipramine	1	1						
		atropine/diphenoxylate	2	2						
		acetaminophen/ hydrocodone*	3	3						
		zolpidem (extended release)*	4	3						
1560	65 y F				A	Ingst	Int-S	1		
		citalopram	1	1						

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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
		bupropion	2	2						
		acetaminophen/ diphenhydramine	3	3						
1561pha	65 y M				U	Ingst	Int-S	1		
		cyclic antidepressant, unknown	1	1					clonazepam	146 ng/mL In Unknown @ Unknown
		cyclic antidepressant, unknown	1	1					mirtazapine	1595 ng/mL In Unknown @ Unknown
		cyclic antidepressant, unknown	1	1					nortriptyline	2076 ng/mL In Unknown @ Unknown
		cyclic antidepressant, unknown	1	1					trazodone	303 ng/mL In Unknown @ Unknown
		ethanol	2	2					ethanol	113 mg/dL In Unknown @ Unknown
1562ai	65 y F				A	Ingst	Int-U	2		
		venlafaxine	1	1						
		dextromethorphan	2	2						
		trazodone	3	3						
		fluoxetine	4	4						
1563ha	66 y F				A	Ingst	Int-S	1		
		bupropion (extended release)	1	1					bupropion	11 mcg/mL In Blood (unspecified) @ Autopsy
		bupropion (extended release)	1	1					hydroxybupropion	6 mcg/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.03 Other (see abst) In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.22 g/dL In Serum @ Unknown
1564ai	67 y F				A	Ingst	Int-U	2		
		paroxetine	1	1						
		zolpidem	2	2						
		trazodone	3	3						
1565	67 y M				C	Ingst	AR-D	3		
		lithium	1	1						
1566a	69 y F				C	Ingst	AR-D	3		
		lithium	1	1					lithium	0.18 mEq/L In Blood (unspecified) @ Unknown
		lithium	1	1					lithium	0.49 mEq/L In Blood (unspecified) @ Unknown
		lithium	1	1					lithium	0.84 mEq/L In Blood (unspecified) @ Unknown
		lithium	1	1					lithium	2 mEq/L In Blood (unspecified) @ Unknown
		lithium	1	1					lithium	2.51 mEq/L In Blood (unspecified) @ Unknown
		lithium	1	1					lithium	2.77 mEq/L In Blood (unspecified) @ Unknown
		lithium	1	1					lithium	3.21 mEq/L In Blood (unspecified) @ Unknown
		oxycodone	2	2						
1567ai	71 y F				A	Ingst	Int-S	2		
		paroxetine	1	1						
		nortriptyline	2	2						
		diazepam	3	3						
		dextromethorphan	4	4						
1568pha	73 y M				A/C	Ingst	Int-S	1		
		bupropion	1	1					bupropion	0.63 mcg/mL In Blood (unspecified) @ 10 m (pe)
		bupropion	1	1					bupropion	2.02 mcg/mL In Serum @ Autopsy
		bupropion (extended release)	2	2						
		clomipramine	3	3					clomipramine	0.78 mcg/mL In Serum @ 10 m (pe)
		clomipramine	3	3					clomipramine	2.21 mcg/mL In Serum @ Autopsy
		quetiapine	4	4					quetiapine	420 ng/mL In Serum @ 10 m (pe)
1569ai	79 y F				A	Ingst	Unt-U	2		
		imipramine	1	1						

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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
		fluoxetine	2	2						
1570h	85 y M				A/C	Ingst	Int-S	2		
		venlafaxine (extended release)	1	1						
		amlodipine	2	2						
		ibuprofen	3	3						
1571h	91 y M				A	Ingst	Int-S	3		
		trazodone	1	1						
		hydromorphone	2	2						
		acetaminophen	3	3						
See Also case 16, 17, 31, 38, 83, 88, 109, 127, 128, 139, 140, 143, 145, 165, 188, 291, 304, 305, 306, 310, 352, 385, 411, 442, 451, 455, 463, 469, 473, 476, 477, 480, 485, 494, 498, 505, 540, 541, 550, 562, 566, 583, 586, 588, 592, 596, 598, 602, 605, 608, 609, 611, 617, 618, 621, 622, 625, 626, 630, 634, 639, 647, 649, 654, 656, 658, 663, 666, 677, 681, 682, 691, 694, 706, 711, 717, 722, 731, 749, 750, 756, 761, 764, 769, 773, 778, 779, 780, 785, 787, 791, 799, 803, 808, 809, 814, 816, 820, 821, 824, 825, 828, 829, 831, 836, 842, 843, 848, 849, 850, 852, 867, 868, 871, 874, 875, 876, 878, 890, 891, 902, 904, 906, 909, 912, 920, 921, 924, 932, 934, 939, 952, 960, 961, 962, 966, 968, 972, 977, 979, 983, 989, 1001, 1006, 1008, 1009, 1010, 1012, 1026, 1030, 1033, 1036, 1038, 1042, 1044, 1047, 1050, 1058, 1062, 1064, 1067, 1071, 1074, 1077, 1080, 1082, 1083, 1087, 1091, 1094, 1096, 1097, 1098, 1106, 1107, 1108, 1119, 1121, 1124, 1127, 1130, 1142, 1151, 1164, 1167, 1178, 1179, 1187, 1189, 1190, 1194, 1199, 1201, 1204, 1207, 1214, 1218, 1219, 1221, 1225, 1236, 1242, 1251, 1257, 1258, 1261, 1264, 1265, 1270, 1281, 1285, 1296, 1297, 1312, 1327, 1338, 1339, 1344, 1352, 1361, 1363, 1367, 1368, 1396, 1402, 1403, 1408, 1412, 1413, 1415, 1416, 1418, 1573, 1578, 1581, 1582, 1592, 1601, 1604, 1622, 1626, 1629, 1634, 1639, 1647, 1651, 1654, 1655, 1657, 1660, 1666, 1669, 1671, 1673, 1680, 1682, 1685, 1689, 1695, 1701, 1704, 1706, 1714, 1718, 1719, 1720, 1729, 1731, 1735, 1737, 1740, 1743, 1745, 1751, 1752, 1755, 1756, 1758, 1764, 1781, 1782, 1783, 1786, 1792, 1796, 1804, 1808, 1825, 1830, 1833, 1853, 1859, 1862, 1886, 1890, 1891, 1909, 1912, 1924, 1925, 1926, 1927, 1931, 1935, 1943, 1948, 1949, 1952, 1954, 1965, 1966, 1978, 1985, 2002, 2003, 2010, 2043, 2062, 2070, 2111, 2130, 2145, 2152, 2153, 2160, 2161, 2162, 2164, 2174, 2177, 2183, 2195, 2199, 2200, 2212, 2213, 2214, 2215, 2231, 2233, 2247, 2249, 2250, 2259, 2263, 2264, 2275, 2278, 2281, 2286, 2290, 2297, 2299, 2315, 2319, 2336, 2338, 2339, 2341, 2359, 2363, 2367, 2372, 2373, 2383, 2389, 2391, 2392, 2401, 2407, 2410, 2417, 2421, 2436, 2437, 2439, 2441, 2454, 2456, 2464, 2476, 2479, 2481, 2482, 2495, 2497, 2501, 2502, 2503, 2507, 2515, 2523, 2525, 2538									
Antihistamines										
1572p	18 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1						
1573ai	20 y M				U	Ingst	Int-S	2		
		diphenhydramine	1	1						
		chlorpheniramine	2	2						
		fluoxetine	3	3						
		dextrometho-rphan	4	4						
1574pha	20 y M				A	Ingst+ B-S	Unt-B	1		
		diphenhydramine	1	1						
		meprobamate	2	2						
		oxycodone	3	3						
1575ai	21 y M				U	Ingst	Int-S	2		
		diphenhydramine	1	1						
1576pa	22 y F				U	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	3.3 mg/L In Blood (unspecified) @ Autopsy
		diphenhydramine	1	1					diphenhydramine	5 mg/L In Blood (unspecified) @ Autopsy
		ibuprofen	2	2						
		levamisole	3	3					levetiracetam	100 mg/L In Blood (unspecified) @ Autopsy
1577ai	23 y M				U	Ingst	Int-S	2		
		diphenhydramine	1	1						
1578ai	23 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
		lamotrigine	2	2						
		citalopram	3	3						
1579p	24 y M				A	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	25516 ng/mL In Blood (unspecified) @ Autopsy
		melatonin	2	2						
1580	25 y F				A	Ingst	Int-S	3		
		ranitidine	1	1						
		iron	2	2						
		diphenhydramine	3	3						
		loratadine	4	4						
		ibuprofen	5	5						
		acetaminophen	6	6						
1581ai	27 y M				A	Ingst	Int-S	2		
		hydroxyzine	1	1						
		chlordiazepoxide	2	2						
		clonazepam	3	3						
		phenobarbital	4	4						
		atomoxetine	5	5						
		mirtazapine	6	6						
1582ai	30 y F				A	Ingst	Int-U	2		

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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
		promethazine	1	1						
		hydrocodone	2	2						
		olanzapine	3	3						
		citalopram	4	4						
		alprazolam	5	5						
1583p	31 y M				A	Ingst+ Aspir	Int-U	2		
		diphenhydramine	1	1						
1584ai	31 y M				A	Ingst	Int-U	2		
		diphenhydramine	1	1						
1585ha	32 y M				A	Ingst	Int-S	2		
		diphenhydramine	1	1					diphenhydramine	2.7 mg/L In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	150 mg/dL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	237 mg/dL In Blood (unspecified) @ Unknown
1586pha	34 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1					diphenhydramine	29000 ng/mL In Whole Blood @ Autopsy
1587ai	39 y M				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
		ethanol	2	2						
1588pai	41 y F				A	Ingst	Int-S	1		
		hydroxyzine	1	1						
		ethanol	2	2					ethanol	262 mg/dL In Blood (unspecified) @ Unknown
1589ai	42 y M				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
1590pa	43 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1					ethanol	0.09 g/dL In Blood (unspecified) @ Autopsy
		diphenhydramine	1	1					dextromethorphan	2.8 mcg/mL In Blood (unspecified) @ Autopsy
		diphenhydramine	1	1					diphenhydramine	24 mcg/mL In Blood (unspecified) @ Autopsy
1591ai	43 y M				U	Ingst	Int-A	2		
		diphenhydramine	1	1						
		diazepam	2	2						
1592	47 y F				A/C	Ingst	Int-S	2		
		diphenhydramine*	2	1						
		lithium*	1	1						
		citalopram	3	2						
1593a	51 y M				A	Ingst	Int-S	2		
		hydroxyzine	1	1						
		olanzapine	2	2						
		valproic acid	3	3					valproic acid	69 mg/L In Serum @ Unknown
		valproic acid	3	3					valproic acid	99 mg/L In Serum @ Unknown
		ziprasidone	4	4						
		lisinopril	5	5						
		benzodiazepine	6	6						
1594pa	57 y M				A	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	25698 Other (see abst) In Liver @ Autopsy
		diphenhydramine	1	1					diphenhydramine	6240 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.023 % In Blood (unspecified) @ Autopsy
1595	58 y F				A	Ingst	Int-A	3		
		diphenhydramine	1	1						
1596ai	58 y F				A	Ingst	Int-A	2		
		diphenhydramine	1	1						
		ethanol	2	2						
1597p	59 y M				U	Ingst	Int-S	2		
		diphenhydramine	1	1						
		acetaminophen/ guifenesin/ phenylephrine	2	2						
		ethanol	3	3						
		salicylate	4	4						

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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
		diphenhydramine	5	5						
		ibuprofen	6	6						
1598ai	59 y M				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
		doxylamine	2	2						
1599ai	66 y F				U	Ingst	Unk	2		
		diphenhydramine	1	1						
1600ai	74 y F				U	Ingst	Int-S	2		
		diphenhydramine	1	1						
		amantadine	2	2						
		propoxyphene	3	3						
		zolpidem	4	4						
1601	74 y F				A	Ingst	Int-S	3		
		diphenhydramine	1	1						
		citalopram	2	2						
		angiotensin receptor blocker	3	3						
		chlorthalidone	4	4						
		rifaximin	5	5						
		pramipexole	6	6						
1602ai	5 m M				A	Ingst	Unk	3		
		diphenhydramine	1	1					diphenhydramine	158 ng/mL In Blood (unspecified) @ Autopsy
See Also case 7, 15, 50, 64, 90, 93, 117, 121, 127, 155, 175, 188, 232, 283, 334, 346, 355, 436, 442, 448, 455, 467, 473, 478, 505, 516, 519, 522, 523, 525, 530, 540, 548, 553, 557, 572, 577, 588, 592, 600, 605, 649, 652, 668, 677, 682, 703, 706, 711, 712, 714, 717, 718, 720, 734, 742, 745, 749, 750, 755, 761, 769, 773, 792, 799, 803, 809, 819, 821, 848, 850, 863, 866, 868, 875, 879, 904, 906, 920, 931, 936, 939, 960, 961, 972, 994, 995, 996, 1003, 1010, 1012, 1019, 1038, 1043, 1050, 1056, 1059, 1062, 1067, 1071, 1076, 1082, 1091, 1094, 1119, 1124, 1130, 1134, 1139, 1153, 1164, 1168, 1179, 1194, 1198, 1204, 1211, 1212, 1214, 1225, 1244, 1253, 1254, 1276, 1287, 1342, 1358, 1361, 1376, 1415, 1424, 1438, 1447, 1456, 1460, 1466, 1473, 1478, 1493, 1496, 1497, 1504, 1520, 1532, 1544, 1604, 1605, 1626, 1630, 1634, 1641, 1658, 1662, 1669, 1685, 1694, 1708, 1714, 1799, 1804, 1833, 1834, 1856, 1862, 1880, 1891, 1951, 1960, 1973, 1994, 2002, 2014, 2028, 2030, 2057, 2061, 2083, 2093, 2121, 2137, 2140, 2154, 2158, 2164, 2165, 2186, 2189, 2199, 2210, 2214, 2215, 2247, 2275, 2284, 2286, 2318, 2319, 2330, 2336, 2341, 2346, 2348, 2349, 2361, 2363, 2370, 2373, 2380, 2382, 2383, 2391, 2396, 2405, 2410, 2413, 2419, 2424, 2428, 2435, 2439, 2482, 2495, 2503, 2519, 2527, 2529, 2538, 2572										
Antimicrobials										
1603h	14 y F				U	Ingst	Int-S	1		
		hydroxychloroquine	1	1						
		ethanol	2	2					ethanol	220 mg/dL In Unknown @ Unknown
1604ai	25 y F				A	Ingst	Int-S	2		
		chloroquine	1	1						
		alprazolam	2	2						
		zolpidem	3	3						
		diphenhydramine	4	4						
		mirtazapine	5	5						
[1605ha]	33 y F				A	Ingst	Int-S	1		
		hydroxychloroquine	1	1						
		metformin	2	2					metformin	140 mcg/mL In Serum @ Unknown
		acetaminophen/diphenhydramine	3	3					acetaminophen	100 mcg/mL In Serum @ Unknown
		acetaminophen/diphenhydramine	3	3					diphenhydramine	2.45 mg/L In Serum @ Unknown
		hydroxyzine	4	4						
		cocaine	5	5					ecgonine methyl ester	0.013 mg/L In Serum @ Unknown
		cocaine	5	5					benzoylecognine	0.23 mg/L In Serum @ Unknown
		alprazolam	6	6					alprazolam	0.052 mg/L In Blood (unspecified) @ Unknown
		pregabalin	7	7					pregabalin	0.44 mcg/mL In Blood (unspecified) @ Unknown
1606h	36 y M				A	Ingst	Unk	3		
		dapsone	1	1						
		primaquine	2	2						
1607ai	72 y F				U	Ingst	Int-S	2		
		amantadine	1	1						
See Also case 95, 364, 466, 476, 772, 815, 991, 1008, 1059, 1080, 1121, 1267, 1401, 1446, 1466, 1600, 1601, 1630, 1694, 1708, 1994, 2007, 2009, 2032, 2042, 2056, 2057, 2065, 2079, 2082, 2094, 2104, 2122, 2123, 2129, 2130, 2148, 2170, 2173, 2178, 2180, 2189, 2192, 2217, 2226, 2228, 2248, 2258, 2277, 2283, 2286, 2289, 2293, 2302, 2309, 2318, 2320, 2326, 2330, 2341, 2346, 2347, 2348, 2349, 2358, 2362, 2363, 2365, 2366, 2382, 2392, 2393, 2397, 2401, 2405, 2409, 2410, 2421, 2431, 2433, 2436, 2438, 2452, 2456, 2462, 2463, 2468, 2469, 2471, 2501, 2502, 2538										

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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
Antineoplastics										
1608h	64 y F				A/C	Ingst	Unt-T	2		
		methotrexate	1	1						
1609	66 y F				C	Ingst	Int-M	1		
		methotrexate	1	1						
1610h	69 y M				A	Ingst	Unt-T	2		
		nilotinib	1	1						
		silymarin	2	2						
See Also case 504, 1611, 1965										
Asthma Therapies										
1611a	27 y M				C	Ingst+ Par	Int-M	2		
		clenbuterol	1	1						
		anastrazole	2	2						
		thyroid preparation	3	3						
		testosterone	4	4						
1612h	71 y M				A	Ingst	AR-D	3		
		theophylline	1	1						
1613	73 y F				A	Ingst	AR-D	2		
		theophylline	1	1					theophylline	51 mcg/mL In Blood (unspecified) @ Unknown
[1614p]	79 y F				A/C	Ingst	Unk	2		
		theophylline	1	1						
See Also case 1621, 1719, 1978										
Cardiovascular Drugs										
1615ph	16 y F				A	Ingst	Int-S	1		
		propranolol	1	1						
1616h	18 y F				A	Ingst+ Unk	Int-S	2		
		diltiazem (extended release)	1	1						
		potassium chloride	2	2						
		methamphetamine	3	3						
1617h	18 y M				A	Ingst	Int-S	1		
		amlodipine	1	1						
		quetiapine	2	2						
		aripiprazole	3	3						
		gabapentin	4	4						
		ethanol	5	5					ethanol	87 mg/dL In Unknown @ Unknown
1618p	19 y M				A/C	Ingst	Int-S	1		
		propafenone	1	1						
1619ha	22 y F				A	Ingst	Int-S	1		
		amlodipine	1	1						
1620ph	25 y M				A	Ingst	Int-S	2		
		metoprolol	1	1						
1621h	26 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		metoprolol (extended release)	2	2						
		lisinopril	3	3						
		angiotensin receptor blocker	4	4						
		albuterol	5	5						
[1622pha]	28 y M				A	Ingst	Int-S	1		
		flecainide	1	1					flecainide	2.6 mcg/mL In Blood (unspecified) @ Autopsy
		clonidine	2	2					clonidine	0.18 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	3	3						
		clonazepam	4	4						
		lisinopril	5	5						
		furosemide	6	6						
		potassium chloride	7	7						

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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
		cocaine	8	8						
		ethanol	9	9					ethanol	218 mg/dL In Blood (unspecified) @ 2 h (pe)
		lorazepam	10	10					lorazepam	74 ng/mL In Blood (unspecified) @ Autopsy
1623	29 y M				A/C	Ingst	Int-S	2		
		diltiazem (extended release)	1	1						
1624h	31 y F				C	Ingst	Int-S	1		
		diltiazem (extended release)	1	1						
		lisinopril	2	2						
1625ai	32 y M				U	Ingst+ Unk	Int-A	2		
		verapamil	1	1						
		methamphetamine	2	2						
1626p	34 y M				A	Ingst	Int-S	2		
		propranolol	1	1						
		carvedilol	2	2						
		lurasidone	3	3						
		ranolazine	4	4						
		milnacipran	5	5						
		mirtazapine	6	6						
		vilazodone	7	7						
		topiramate	8	8						
		clopidogrel	9	9						
		acetaminophen/hydrocodone	10	10						
		simvastatin	11	11						
		salicylate	12	12						
		alprazolam	13	13						
		hydroxyzine	14	14						
1627hi	34 y F				A/C	Ingst	Int-S	2		
		metoprolol	1	1						
		lisinopril	2	2						
1628	34 y F-Pregnant				A	Ingst	Int-S	3		
		verapamil	1	1						
		atenolol	2	2						
		opioid	3	3						
1629	36 y F				A/C	Ingst	Int-S	1		
		propranolol	1	1						
		quetiapine	2	2						
		trazodone	3	3						
		ethanol	4	4						
		tramadol	5	5						
1630pa	36 y M				U	Ingst	Int-S	2		
		losartan	1	1						
		amlodipine	2	2						
		metoprolol (extended release)	3	3						
		meclizine	4	4						
		quinine	5	5						
		isosorbide dinitrate	6	6						
		tamulosin	7	7						
		potassium chloride	8	8						
		finasteride	9	9						
		furosemide	10	10						
		ethanol	11	11					ethanol	204 mg/dL In Blood (unspecified) @ Autopsy
		ethanol	11	11					ethanol	244 mg/dL In Blood (unspecified) @ Unknown
		midazolam	12	12					midazolam	100 ng/mL In Blood (unspecified) @ Autopsy
		temazepam	13	13					temazepam	280 ng/mL In Blood (unspecified) @ Autopsy
1631a	36 y F				A	Ingst	Int-S	1		

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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
		propranolol	1	1					propranolol	8500 ng/mL In Blood (unspecified) @ Autopsy
1632pha	37 y M				A	Ingst	Int-S	1		
		amlodipine*	2	1						
		metoprolol*	1	1					metoprolol	7.1 mcg/mL In Blood (unspecified) @ 5.5 h (pe)
		ethanol	3	2					ethanol	0.29 g/dL In Blood (unspecified) @ 5.5 h (pe)
		ethanol	3	2					ethanol	0.388 g/dL In Plasma @ Unknown
		lisinopril	4	3						
		omeprazole	5	4						
		simvastatin	6	5						
1633a	38 y F				A/C	Ingst	Int-S	1		
		metoprolol	1	1						
1634	38 y F				A	Ingst	Int-S	1		
		atenolol*	2	1						
		duloxetine*	1	1					duloxetine	1256 ng/mL In Serum @ Unknown
		clonidine	3	2						
		lamotrigine	4	4						
		gabapentin	5	5					gabapentin	23.3 mcg/mL In Serum @ Autopsy
		clonazepam	6	6					7-aminoclonazepam	22 ng/mL In Serum @ Autopsy
		clonazepam	6	6					clonazepam	5.4 ng/mL In Serum @ Autopsy
		metaxalone	7	7					metaxalone	7.2 mcg/mL In Serum @ Autopsy
		citalopram	8	8					citralopram	143 ng/mL In Serum @ Autopsy
		hydroxyzine	9	9					hydroxyzine	73 ng/mL In Serum @ Autopsy
		caffeine	10	10						
1635a	38 y M				A/C	Ingst	Int-S	2		
		flecainide	1	1					flecainide	1.3 mg/L In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.2 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.25 % (wt/Vol) In Vitreous @ Unknown
1636	39 y M				U	Ingst+ Inhal	Int-S	2		
		metoprolol	1	1						
		amphetamine	2	2						
		isosorbide dinitrate	3	3						
[1637]	39 y F				A	Ingst	Int-S	1		
		verapamil	1	1						
1638p	40 y M				A	Ingst	Int-S	2		
		metoprolol	1	1						
		acetaminophen	2	2						
1639ai	40 y F				U	Ingst	Int-S	2		
		amlodipine	1	1						
		timethobenzamide	2	2						
		citalopram	3	3						
		bupropion	4	4						
1640ha	40 y M				A	Ingst	Int-S	2		
		sotalol	1	1						
		flecainide	2	2					flecainide	0.32 mg/L In Blood (unspecified) @ Autopsy
		warfarin	3	3						
		simvastatin	4	4						
1641ha	41 y F				A/C	Ingst+ Inhal	Int-S	1		
		diltiazem	1	1						
		clonazepam	2	2						
		diphenhydramine	3	3						
		cocaine	4	4						
		hydrochlorothiazide	5	5						

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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
		acetaminophen/ hydrocodone	6	6						
1642	41 y F				A	Ingst	Int-S	1		
		diltiazem (extended release)	1	1					diltiazem	29800 ng/mL In Blood (unspecified) @ Autopsy
1643	41 y F				U	Ingst	Int-S	2		
		verapamil	1	1						
		cyclobenzaprine	2	2						
		olanzapine	3	3						
		acetaminophen/ oxycodone	4	4					acetaminophen	130 mcg/mL In Blood (unspecified) @ Unknown
		alprazolam	5	5						
1644	42 y F				A	Ingst	Int-S	1		
		metoprolol	1	1						
		benzodiazepine	2	2						
1645h	42 y M				A/C	Ingst	Int-S	2		
		metoprolol	1	1						
		isosorbide mononitrate	2	2						
		clopidogrel	3	3						
1646ha	43 y F				A	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	4.87 mg/L In Blood (unspecified) @ Autopsy
		hydrochlorothi-azide	2	2						
1647	43 y F				A	Ingst	Int-S	2		
		metoprolol	1	1						
		bupropion	2	2						
		carisoprodol	3	3						
		diazepam	4	4						
		valproic acid (extended release)	5	5					valproic acid	135 mg/mL In Blood (unspecified) @ Unknown
1648a	43 y M				A/C	Ingst	Int-S	1		
		metoprolol (extended release)	1	1					metoprolol	5700 ng/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	301 mg/dL In Blood (unspecified) @ Unknown
		oxcarbazepine	3	3					10-hydroxycarba-zepine	1.8 mcg/mL In Blood (unspecified) @ Unknown
1649p	43 y F				A	Ingst	Int-S	2		
		propranolol	1	1						
1650	43 y M				A	Ingst	Unt-G	3		
		propranolol	1	1						
		amlodipine	2	2						
		clonazepam	3	3						
[1651pha]	43 y F				A	Ingst	Int-S	1		
		flecainide	1	1					flecainide	27 mg/L In Blood (unspecified) @ Autopsy
		bupropion (extended release)	2	2					threobupropion	11 mg/kg In Liver @ Autopsy
		bupropion (extended release)	2	2					threobupropion	2.1 mg/L In Blood (unspecified) @ Autopsy
		bupropion (extended release)	2	2					bupropion	2.5 mg/kg In Liver @ Autopsy
		bupropion (extended release)	2	2					bupropion	2.5 mg/L In Blood (unspecified) @ Autopsy
		ethanol	3	3						
1652	43 y F				A	Ingst+ Inhal	Unk	2		
		nifedipine	1	1						
		cocaine	2	2						
1653	43 y M				A/C	Ingst	Int-S	1		
		propafenone	1	1						
1654	44 y F				U	Ingst	Int-S	2		
		propranolol	1	1						
		trazodone	2	2						
1655	44 y F				U	Ingst	Int-S	2		

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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
		metoprolol	1	1						
		bupropion	2	2						
		lamotrigine	3	3						
		cocaine	4	4						
		ethanol	5	5						
1656a	44 y M				A	Ingst+ Par	Int-S	1		
		amlodipine	1	1						
		atenolol	2	2						
		insulin	3	3						
		salicylate	4	4						
		pravastatin	5	5						
		gemfibrozil	6	6						
1657h	45 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1						
		nortriptyline	2	2						
		acetaminophen/ hydrocodone	3	3						
		temazepam	4	4						
1658ai	45 y F				A	Ingst	Int-U	2		
		verapamil	1	1						
		methadone	2	2						
		diphenhydramine	3	3						
1659p	45 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		carvedilol	2	2						
		lisinopril	3	3						
1660a	46 y F				A	Ingst	Int-S	1		
		metoprolol	1	1					metoprolol	15 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	2	2					oxycodone	1.9 mg/L In Blood (unspecified) @ Autopsy
		clonazepam	3	3					clonazepam	0.016 mg/L In Blood (unspecified) @ Autopsy
		clonazepam	3	3					7-aminoclonazepam	0.2 mg/L In Blood (unspecified) @ Autopsy
		citalopram	4	4					citalopram	0.88 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen	5	5					acetaminophen	177 mg/L In Blood (unspecified) @ Unknown
		ethanol	6	6					ethanol	0 mg/dL In Blood (unspecified) @ Autopsy
		ethanol	6	6					ethanol	12 mg/dL In Blood (unspecified) @ Unknown
1661	46 y M				A	Ingst	Int-S	1		
		diltiazem (extended release)	1	1						
		sotalol	2	2						
		lisinopril	3	3						
1662	46 y M				A	Ingst	Int-S	1		
		amlodipine	1	1						
		metoprolol	2	2						
		metformin	3	3						
		carisoprodol	4	4						
		alprazolam	5	5						
		hydrocodone	6	6						
		glyburide	7	7						
		famotidine	8	8						
		gemfibrozil	9	9						
		pravastatin	10	10						
		allopurinol	11	11						
1663a	47 y F				A	Ingst	Int-U	2		
		nifedipine	1	1						
		metoprolol	2	2					metoprolol	410 ng/mL In Blood (unspecified) @ Autopsy
		propafenone	3	3						
		hydrochlorothi-azide	4	4						
1664	47 y M				A	Ingst	Int-S	1		
		atenolol	1	1						
		pioglitazone	2	2						
		diazepam	3	3						
		diclofenac	4	4						
		glibenclamide	5	5						

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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
		levothyroxine	6	6						
		metformin	7	7						
		amlodipine	8	8						
		benazepril	9	9						
1665pa	47 y M				A	Ingst	Int-S	3		
		amiodarone	1	1						
		carisoprodol	2	2					meprobamate	10.3 mg/L In Whole Blood @ Autopsy
		carisoprodol	2	2					carisoprodol	6.8 mg/L In Whole Blood @ Autopsy
		tramadol	3	3					tramadol	1.2 mg/L In Whole Blood @ Autopsy
1666p	47 y F				A	Ingst	Int-S	1		
		amlodipine	1	1						
		carvedilol	2	2						
		bupropion (extended release)	3	3						
		acetaminophen/ hydrocodone	4	4						
		citalopram	5	5						
		escitalopram	6	6						
		alprazolam	7	7						
1667	47 y M				A	Ingst	Int-S	1		
		verapamil	1	1						
		atenolol	2	2						
1668	48 y M				A	Ingst	Int-S	2		
		amlodipine	1	1						
1669	48 y M				A/C	Ingst	Int-S	3		
		calcium antagonist	1	1						
		nonsteroidal anti-inflammatory	2	2						
		antidepressant (SSRI)	3	3						
		antacid	4	4						
		hydroxyzine	5	5						
		vasodilator	6	6						
1670a	49 y M				A	Ingst	Int-S	1		
		nifedipine	1	1						
1671ai	49 y F				A	Ingst	Int-S	2		
		diltiazem	1	1						
		cyclobenzaprine	2	2						
		alprazolam	3	3						
		trazodone	4	4						
1672p	49 y M				A	Ingst	Int-S	2		
		beta blocker	1	1						
1673h	49 y M				A/C	Ingst+ Inhal	Int-S	3		
		amlodipine	1	1						
		cocaine	2	2						
		trazodone	3	3						
		risperidone	4	4						
		benztropine	5	5						
		benzonatate	6	6						
		lisinopril	7	7						
		chlorthalidone	8	8						
[1674ha]	50 y F				A	Ingst	Int-S	1		
		diltiazem (extended release)	1	1					diltiazem	1800 ng/mL In Blood (unspecified) @ Unknown
		amlodipine	2	2					amlodipine	290 ng/mL In Blood (unspecified) @ Unknown
1675a	50 y M				U	Ingst	Unk	1		
		beta blocker	1	1					hydrocodone	0.03 mcg/mL In Blood (unspecified) @ Autopsy
		beta blocker	1	1					zolpidem	0.73 mcg/mL In Blood (unspecified) @ Autopsy
		beta blocker	1	1					metoprolol	9100 ng/mL In Blood (unspecified) @ Autopsy
		angiotensin converting enzyme inhibitor	2	2						
1676	50 y M				A/C	Ingst	Int-S	2		

(*Continued*)

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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
		metoprolol	1	1						
1677	50 y M				U	Ingst	Int-S	1		
		diltiazem	1	1						
1678ha	50 y F				A/C	Ingst	Int-S	1		
		clonidine*	2	1						
		tramadol*	1	1					o-demethyl tramadol	1.1 mg/dL In Blood (unspecified) @ Autopsy
		tramadol*	1	1					tramadol	6.6 mg/dL In Blood (unspecified) @ Autopsy
		acetaminophen	3	2					acetaminophen	70.5 mcg/mL In Blood (unspecified) @ 15 h (pe)
		temazepam	4	3						
		hydrochlorothiazide	5	4						
1679a	50 y F				A/C	Ingst	Int-S	1		
		metoprolol	1	1						
		hydrochlorothiazide	2	2						
1680	50 y F				A	Ingst	Int-S	2		
		clonidine	1	1						
		labetalol	2	2						
		lisinopril	3	3						
		zolpidem	4	4						
		iron	5	5					iron	46 mcg/dL In Blood (unspecified) @ Unknown
		citalopram	6	6						
1681a	51 y M				A	Ingst	Int-S	1		
		metoprolol	1	1					metoprolol	9.9 mg/L In Blood (unspecified) @ Autopsy
		amlodipine/benazepril	2	2					amlodipine	0.4 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	3	3						
		zolpidem	4	4						
1682ha	51 y F				A	Ingst	Int-S	1		
		amlodipine	1	1						
		amlodipine	2	2						
		citalopram	3	3						
		lamotrigine	4	4						
		risperidone	5	5						
		naltrexone	6	6						
		levothyroxine	7	7						
		esomeprazole	8	8						
1683h	51 y M				A	Ingst	Int-S	1		
		propranolol	1	1						
		angiotensin receptor blocker	2	2						
		benzodiazepine	3	3						
1684a	51 y M				A/C	Ingst	Int-S	1		
		labetalol	1	1					labetalol	3200 ng/mL In Blood (unspecified) @ Unknown
		diltiazem	2	2					diltiazem	220 ng/mL In Blood (unspecified) @ Unknown
1685ha	51 y F				A/C	Ingst	Int-S	1		
		diltiazem (extended release)	1	1					diltiazem	11000 ng/mL In Blood (unspecified) @ Autopsy
		metoprolol (extended release)	2	2					metoprolol	8200 ng/mL In Blood (unspecified) @ Autopsy
		bupropion*	3	3					hydroxybupropion	1650 ng/mL In Blood (unspecified) @ Autopsy
		tramadol*	4	3					tramadol	13000 ng/mL In Blood (unspecified) @ Autopsy
		oxcarbazepine	5	4						
		trazodone	6	6					trazodone	210 ng/mL In Blood (unspecified) @ Autopsy
		topiramate	7	7					topiramate	40 ng/mL In Blood (unspecified) @ Autopsy
		diphenhydramine	8	8					diphenhydramine	170 ng/mL In Blood (unspecified) @ Autopsy
		gabapentin	9	9					gabapentin	5.9 mcg/mL In Blood (unspecified) @ Autopsy
1686h	51 y M				A	Ingst	Unt-T	2		
		flecainide	1	1						

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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
1687a	52 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1					verapamil	5.7 mg/L In Blood (unspecified) @ Unknown
		diazepam	2	2					diazepam	97 ng/mL In Blood (unspecified) @ Unknown
1688ph	52 y M				U	Ingst	Int-S	2		
		diltiazem	1	1						
1689	53 y F				A/C	Ingst	Int-S	2		
		diltiazem	1	1						
		fluoxetine	2	2						
		lisinopril	3	3						
		ethanol	4	4						
1690	53 y M				A/C	Ingst	Int-S	1		
		atenolol	1	1						
		clonidine	2	2						
1691	53 y F				A/C	Ingst	Int-S	2		
		diltiazem (extended release)	1	1						
1692	54 y M				C	Ingst	Int-S	2		
		metoprolol (extended release)	1	1						
1693a	54 y F				A/C	Ingst	Int-S	1		
		atenolol	1	1						
		fentanyl	2	2					fentanyl	0.001 mg/kg In Blood (unspecified) @ Autopsy
		fentanyl	2	2					fentanyl	0.012 mg/kg In Liver @ Autopsy
		metformin	3	3					metformin	290 mg/L In Blood (unspecified) @ 10 h (pe)
		fluoxetine/ olanzapine	4	4					olanzapine	0.21 mg/L In Blood (unspecified) @ 10 h (pe)
		fluoxetine/ olanzapine	4	4					norfluoxetine	0.37 mg/L In Blood (unspecified) @ 10 h (pe)
		fluoxetine/ olanzapine	4	4					norfluoxetine	0.58 mg/L In Blood (unspecified) @ Autopsy
		fluoxetine/ olanzapine	4	4					fluoxetine	0.61 mg/L In Blood (unspecified) @ 10 h (pe)
		fluoxetine/ olanzapine	4	4					fluoxetine	0.96 mg/L In Blood (unspecified) @ Autopsy
		fluoxetine/ olanzapine	4	4					norfluoxetine	23 mg/kg In Liver @ Autopsy
		fluoxetine/ olanzapine	4	4					fluoxetine	37 mg/kg In Liver @ Autopsy
		glipizide	5	5						
		gemfibrozil	6	6						
1694	54 y M				A/C	Ingst	Int-S	3		
		losartan	1	1						
		lorazepam	2	2						
		metformin	3	3						
		hydroxyzine	4	4						
		potassium chloride	5	5						
		famotidine	6	6						
		clindamycin	7	7						
		salicylate	8	8						
1695ha	54 y M				C	Ingst	Int-S	2		
		amlodipine	1	1						
		quetiapine	2	2						
		trazodone	3	3						
		ethanol	4	4					ethanol	180 mg/dL In Serum @ 1 h (pe)
		acetaminophen	5	5					acetaminophen	185 mcg/mL In Serum @ 1 h (pe)
		bupropion	6	6						
		lisinopril	7	7						
1696ha	54 y M				A	Ingst	Int-S	2		
		clonidine	1	1					clonidine	2 ng/mL In Serum @ 60 h (pe)
		nifedipine	2	2						
1697h	55 y M				A	Ingst+ Par	Unt-T	2		
		metoprolol	1	1						
1698h	55 y M				U	Ingst	Unk	2		

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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
		carvedilol*	2	1						
		drug, unknown*	1	1						
		acetaminophen/ oxycodone	3	2						
1699	55 y M				U	Ingst	Int-S	2		
		calcium antagonist	1	1						
		angiotensin converting enzyme inhibitor	2	2						
		ethanol	3	3						
1700p	55 y M				A/C	Ingst	Int-S	2		
		metoprolol	1	1						
		amlodipine	2	2						
		metformin	3	3						
1701h	56 y F				A/C	Ingst	Int-S	1		
		amlodipine/ benazepril	1	1						
		imipramine	2	2						
1702h	56 y F				U	Ingst	Unk	2		
		amlodipine	1	1						
		lisinopril	2	2						
		insulin	3	3						
		acetaminophen/ hydrocodone	4	4						
1703h	56 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		metformin	2	2						
		hydrochlorothi-azide	3	3						
1704ai	57 y F				A	Ingst	Int-S	2		
		verapamil	1	1						
		bupropion	2	2						
1705	57 y M				A/C	Ingst	Int-S	2		
		verapamil	1	1						
		opioid	2	2						
		acetaminophen	3	3						
		atenolol	4	4						
		carisoprodol	5	5						
1706ai	57 y F				A	Ingst	Int-S	2		
		metoprolol	1	1						
		amitriptyline	2	2						
		temazepam	3	3						
		trazodone	4	4						
1707	57 y F				A	Ingst	Unt-G	2		
		calcium antagonist	1	1						
		clonidine-displacing substance	2	2						
		atenolol	3	3						
		diuretic, unknown	4	4						
1708	57 y F				A/C	Ingst	Int-S	3		
		atenolol	1	1						
		nifedipine	2	2						
		efavirenz/ emtricitabine/ tenofovir	3	3						
		skeletal muscle relaxant	4	4						
		diphenhydramine	5	5						
		clonidine	6	6						
		furosemide	7	7						
		acetaminophen	8	8						
1709	57 y M				A	Ingst	Int-S	2		
		amlodipine/ benazepril	1	1						
1710	57 y M				A/C	Ingst	Int-S	1		
		beta blocker	1	1						
		enalapril	2	2						
		omeprazole	3	3						

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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
		furosemide	4	4						
		potassium, metal	5	5						
		sitagliptin	6	6						
1711ph	57 y M				A/C	Ingst	Int-S	2		
		atenolol/ chlorthalidone	1	1						
		amlodipine/ benazepril	2	2						
1712	58 y M				A	Ingst	Unt-G	1		
		beta blocker	1	1						
		calcium antagonist	2	2						
		angiotensin receptor blocker	3	3						
1713h	58 y M				U	Ingst	Int-S	1		
		trandolapril/ verapamil	1	1						
		sildenafil	2	2						
		fenofibric acid	3	3						
		alprazolam	4	4						
		naproxen	5	5						
		omeprazole	6	6						
1714ha	58 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		metoprolol	2	2					metoprolol	7356 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/ oxycodone	3	3						
		amitriptyline	4	4					amitriptyline	208 mg/mL In Blood (unspecified) @ Unknown
		gabapentin	5	5						
		temazepam	6	6						
		diphenhydramine	7	7					diphenhydramine	63 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	8	8					alprazolam	104 ng/mL In Blood (unspecified) @ Unknown
		ethanol	9	9					ethanol	35 mg/dL In Blood (unspecified) @ Unknown
1715	58 y M				A/C	Ingst	Int-S	1		
		metoprolol	1	1						
		metformin	2	2						
		salicylate	3	3					salicylate	23.7 mg/dL In Blood (unspecified) @ 6 h (pe)
1716p	58 y F				U	Ingst	Unk	3		
		cardiac glycoside	1	1					digoxin	14 ng/mL In Serum @ Unknown
1717h	59 y M				A	Ingst	Int-S	2		
		amlodipine	1	1						
		metformin	2	2						
		drug, unknown	3	3						
1718	59 y M				A	Ingst	Int-S	3		
		amlodipine	1	1						
		tramadol	2	2						
		zolpidem	3	3						
		fluoxetine	4	4						
1719ha	59 y F				A	Ingst	Int-S	1		
		verapamil	1	1					verapamil	1200 ng/mL In Blood (unspecified) @ Autopsy
		sertraline	2	2					sertraline	1000 ng/mL In Blood (unspecified) @ Autopsy
		nebivolol	3	3						
		gabapentin	4	4					gabapentin	4.5 mcg/mL In Blood (unspecified) @ Autopsy
		levetiracetam	5	5						
		danazol	6	6						
		pramipexole	7	7						
		albuterol/ ipatropium	8	8						
1720	60 y F				A/C	Ingst	Int-S	3		
		metoprolol	1	1						
		allopurinol	2	2						

(*Continued*)

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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
		acetaminophen/ hydrocodone	3	3						
		duloxetine	4	4						
		gabapentin	5	5						
		furosemide	6	6						
		alprazolam	7	7						
		zolpidem (extended release)	8	8						
1721	60 y M				A	Ingst	Int-S	2		
		diltiazem	1	1					diltiazem	17400 ng/mL In Unknown @ Autopsy
1722ha	60 y M				C	Ingst	AR-D	3		
		digoxin	1	1					digoxin	4.1 ng/mL In Serum @ 1 h (pe)
		amiodarone	2	2						
		metoprolol (extended release)	3	3						
		diltiazem	4	4						
		warfarin	5	5						
1723	60 y M				A	Ingst	Int-S	2		
		metoprolol (extended release)	1	1						
		hypochlorite	2	2						
		ethanol	3	3					ethanol	139 mcg/mL In Blood (unspecified) @ Unknown
		nail polish remover	4	4						
		cleaner (anionic/ nonionic)	5	5						
		indomethacin	6	6						
1724	61 y F				A	Ingst	Int-S	2		
		propanolol	1	1						
		quetiapine	2	2						
		ethanol	3	3						
1725	62 y F				C	Ingst	Int-M	1		
		diltiazem (extended release)	1	1						
1726a	62 y F				A	Ingst	Int-S	1		
		amlodipine	1	1						
		metoprolol	2	2						
		nitroglycerin	3	3						
1727	62 y F				U	Ingst	Int-S	1		
		diltiazem (extended release)	1	1						
1728	62 y F				A	Ingst	Int-S	2		
		verapamil	1	1						
		clonidine	2	2						
1729	62 y F				A	Ingst	Int-S	2		
		amlodipine	1	1						
		clonazepam	2	2						
		diltiazem	3	3						
		amphetamine	4	4						
		venlafaxine	5	5						
		nortriptyline	6	6						
		triamterene	7	7						
		ethanol	8	8						
1730	63 y F				A	Ingst	Int-S	1		
		amlodipine	1	1						
		benazepril	2	2						
[1731ha]	64 y F				A/C	Ingst	Int-S	1		
		diltiazem (extended release)	1	1						
		metoprolol (extended release)	2	2						
		sitagliptin	3	3						

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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
		citalopram	4	4						
		alprazolam	5	5						
1732h	64 y F				A/C	Ingst	Unt-T	3		
		carvedilol	1	1						
1733	64 y M				U	Ingst	Int-S	1		
		amlodipine	1	1						
		toilet bowl cleaner (acid)	2	2						
1734	64 y M				A	Ingst	Unt-G	2		
		diltiazem	1	1						
		prazosin	2	2						
		temazepam	3	3						
		ethanol	4	4						
		acetaminophen	5	5						
1735	64 y F				A	Ingst	Int-S	2		
		atenolol	1	1						
		quetiapine	2	2						
		aripiprazole	3	3						
		venlafaxine	4	4						
1736h	64 y M				A/C	Ingst	Int-S	2		
		verapamil	1	1						
		diazepam	2	2						
		temazepam	3	3						
1737p	64 y F				A/C	Ingst	Int-S	2		
		diltiazem	1	1						
		ziprasidone	2	2						
		trazodone	3	3						
1738	65 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1						
1739a	66 y M				A/C	Ingst	Int-S	1		
		diltiazem (extended release)	1	1					diazepam	1.9 mg/L In Blood (unspecified) @ Unknown
1740	67 y F				A	Ingst	Int-S	2		
		angiotensin converting enzyme inhibitor	1	1						
		doxepin	2	2						
		benzodiazepine	3	3						
		benzodiazepine	4	4						
		antihyperlipidemic	5	5						
1741h	67 y F				C	Ingst	AR-D	2		
		cardiac glycoside	1	1					digoxin	3.4 ng/mL In Unknown @ Unknown
		warfarin	2	2						
1742	67 y M				A/C	Ingst	Int-S	2		
		diltiazem	1	1						
1743	67 y M				A/C	Ingst	Int-S	2		
		benazepril	1	1						
		venlafaxine	2	2						
		citalopram	3	3						
		oxycodone	4	4						
		warfarin	5	5						
		acetaminophen/codeine	6	6						
1744	67 y M				U	Ingst	Int-S	1		
		calcium antagonist	1	1						
		alprazolam	2	2						
		beta blocker	3	3						
1745ha	67 y F				A/C	Ingst	Unk	1		
		diltiazem (extended release)	1	1					diltiazem	8400 ng/mL In Blood (unspecified) @ Autopsy
		carvedilol	2	2						
		sertraline	3	3					sertraline	1500 ng/mL In Blood (unspecified) @ Autopsy
		clopidogrel	4	4						
1746	68 y M				A	Ingst	Int-S	1		
		carvedilol	1	1						
1747	68 y M				A	Ingst	Int-S	2		

(*Continued*)

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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
		amlodipine	1	1						
		metoprolol	2	2						
		clonazepam	3	3						
		vitamin B3 (niacin)	4	4						
		fenofibrate	5	5						
1748ha	68 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1					verapamil	1.2 mg/L In Serum @ Unknown
		metoprolol	2	2						
1749h	69 y F				A/C	Ingst	Int-S	1		
		diltiazem	1	1						
		meclizine	2	2						
		potassium chloride	3	3						
		pioglitazone	4	4						
		atorvastain	5	5						
1750a	69 y M				A	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	0.07 mg/L In Blood (unspecified) @ Unknown
		atenolol	2	2						
		cyclobenzaprine	3	3					cyclobenzaprine	0.06 mg/L In Blood (unspecified) @ Unknown
1751	69 y M				A	Ingst+ Par	Int-S	1		
		amlodipine	1	1						
		lithium	2	2					lithium	0.7 mEq/L In Serum @ 6 h (pe)
		insulin	3	3						
		insulin	4	4						
		hydrochlorothiaz-ide/fosinopril	5	5						
		fosinopril	6	6						
		duloxetine	7	7						
		paroxetine	8	8						
		esomeprazole	9	9						
		atorvastatin	10	10						
1752	70 y M				C	Ingst+ Par	Int-S	1		
		metoprolol	1	1						
		bupropion	2	2						
		fosphenytoin*	3	3						
		tramadol*	4	3						
1753	71 y M				A	Ingst	Int-S	2		
		atenolol	1	1						
		temazepam	2	2						
		oxycodone	3	3					acetaminophen	76.8 mcg/mL In Blood (unspecified) @ Unknown
		levothyroxine	4	4						
		omeprazole	5	5						
		clonazepam	6	6						
1754h	71 y M				A	Ingst	Unk	2		
		verapamil	1	1						
		donepezil	2	2						
1755a	71 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	0.3 mg/L In Blood (unspecified) @ Autopsy
		nortriptyline	2	2					nortriptyline	2.1 mg/L In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	0.16 % (wt/Vol) In Blood (unspecified) @ Autopsy
		benazepril	4	4						
		ibuprofen	5	5						
1756ai	71 y M				A	Ingst	Int-S	2		
		amlodipine	1	1						
		nortriptyline	2	2						
		ethanol	3	3						
[1757h]	73 y F				C	Ingst	AR-D	2		
		cardiac glycoside	1	1					digoxin	4.7 ng/mL In Serum @ Unknown
1758a	74 y M				A/C	Ingst	Int-S	1		
		diltiazem (extended release)	1	1					diltiazem	9400 ng/mL In Blood (unspecified) @ Autopsy

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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
		atenolol	2	2						
		glipizide	3	3						
		fluoxetine	4	4					fluoxetine	1300 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	4	4					norfluoxetine	880 ng/mL In Blood (unspecified) @ Autopsy
		hydrochlorothiazide	5	5						
		lisinopril	6	6						
		metformin	7	7						
		omeprazole	8	8						
		pioglitazone	9	9						
		rovustatin	10	10						
1759	74 y F				A/C	Ingst	Int-S	2		
		verapamil	1	1						
		lisinopril	2	2						
		olanzapine	3	3						
1760	75 y M				A/C	Ingst	Unk	2		
		diltiazem	1	1						
		labetalol	2	2						
		clonidine	3	3						
1761	75 y F				C	Ingst	AR-D	2		
		flecainide	1	1						
1762ph	77 y F				A/C	Ingst	Int-S	2		
		verapamil	1	1						
1763h	78 y F				C	Ingst+ Par	AR-D	3		
		cardiac glycoside	1	1						
		vasopressors	2	2						
		metoprolol	3	3						
		lisinopril	4	4						
1764ai	79 y F				A	Ingst	Int-S	2		
		diltiazem	1	1						
		metoprolol	2	2						
		citalopram	3	3						
1765h	79 y M				A	Par	Unt-T	3		
		nitroprusside	1	1					cyanide	1.5 mcg/mL In Unknown @ Unknown
1766h	80 y M				A/C	Ingst	AR-D	3		
		digoxin	1	1					digoxin	4.83 ng/mL In Blood (unspecified) @ Unknown
		warfarin	2	2						
		metformin	3	3						
1767	81 y F				U	Ingst	Unt-G	3		
		cardiac glycoside	1	1						
1768	81 y M				C	Ingst	AR-D	3		
		cardiac glycoside	1	1					digoxin	2.4 ng/mL In Plasma @ Unknown
1769	81 y F				U	Ingst	AR-D	3		
		cardiac glycoside	1	1					digoxin	3.3 ng/mL In Blood (unspecified) @ Unknown
1770	82 y M				C	Ingst	AR-D	3		
		cardiac glycoside	1	1					digoxin	3.5 mcg/mL In Blood (unspecified) @ 1 h (pe)
1771	82 y M				A	Ingst	Unk	1		
		diltiazem (extended release)	1	1						
1772	84 y F				A	Ingst	Unt-T	2		
		verapamil	1	1						
		atenolol	2	2						
1773	84 y F				C	Ingst	AR-D	3		
		cardiac glycoside	1	1						
1774	84 y M				U	Par	Unk	3		
		cardiac glycoside	1	1					digoxin	5.2 ng/mL In Blood (unspecified) @ Unknown
		cardiac glycoside	1	1					digoxin	7.93 ng/mL In Blood (unspecified) @ Unknown
1775	84 y F				A	Ingst	Unk	3		
		carvedilol	1	1						
		amlodipine	2	2						
		losartan	3	3						
		clonazepam	4	4						
		furosemide	5	5						

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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
1776h	84 y M				A/C	Ingst	Int-S	2		
		verapamil	1	1						
		lisinopril	2	2						
1777	85 y F				A	Ingst	Int-S	1		
		atenolol	1	1						
		amlodipine	2	2						
1778h	86 y F				C	Ingst	AR-D	3		
		digoxin	1	1					digoxin	4.2 ng/mL In Unknown @ Unknown
1779a	86 y F				A/C	Ingst	Int-S	1		
		diltiazem	1	1					diltiazem	62 mcg/mL In Blood (unspecified) @ Autopsy
1780h	87 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		donepezil	2	2						
		acetaminophen/ hydrocodone	3	3						
		lorazepam	4	4						
		levothyroxine	5	5						
1781a	87 y F				A	Ingst+ Unk	Int-S	1		
		metoprolol	1	1					metoprolol	0.4 mg/L In Blood (unspecified) @ Autopsy
		amlodipine	2	2						
		mirtazapine	3	3						
1782ai	87 y F				A	Ingst	Int-S	2		
		metoprolol	1	1						
		amlodipine	2	2						
		mirtazapine	3	3						
1783	87 y F				A	Ingst	Unt-T	1		
		amlodipine	1	1						
		atenolol	2	2						
		tramadol	3	3						
		hydrochlorothiaz- ide/valsartan	4	4						
		sertraline	5	5						
		tryptophan	6	6						
		alprazolam	7	7						
		donepezil	8	8						
1784h	88 y F				A	Ingst	Int-U	1		
		atenolol	1	1						
		acetaminophen	2	2						
1785	89 y F				U	Ingst	Unk	1		
		carvedilol	1	1						
1786h	90 y F				A	Ingst	Unt-M	2		
		amlodipine	1	1						
		metoprolol	2	2						
		trazodone	3	3						
1787	90 y F				A/C	Ingst	Int-S	1		
		angiotensin re- ceptor blocker	1	1						
		metoprolol	2	2						
		amlodipine	3	3						
1788h	91 y F				A/C	Ingst	Int-S	2		
		diltiazem (ex- tended release)	1	1						
1789i	91 y F				A	Ingst	AR-D	3		
		cardiac glycoside	1	1						
1790	92 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		doxazosin	2	2						
		lisinopril	3	3						
		levothyroxine	4	4						
1791h	93 y F				C	Ingst	AR-D	1		
		cardiac glycoside	1	1					digoxin	9.2 ng/mL In Serum @ 1 h (pe)
1792a	93 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		escitalopram	2	2						
1793h	94 y F				A/C	Ingst	Int-S	1		
		atenolol	1	1						
		amlodipine	2	2						
1794h	96 y F				A/C	Ingst	Int-S	2		

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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
		amlodipine/ benazerpril	1	1						
[1795ph]	11 m M				A	Ingst	Unt-G	1		
		nifedipine	1	1					nifedipine	1000 ng/mL In Whole Blood @ Autopsy
1796	Unknown adult (≥20 yrs) M				A/C	Ingst	Int-S	2		
		propranolol	1	1						
		lithium	2	2						
		tramadol	3	3						
		methylphenidate	4	4						
		quetiapine	5	5						
See Also case 385, 450, 494, 541, 621, 825, 909, 924, 1006, 1012, 1029, 1080, 1115, 1124, 1142, 1175, 1227, 1241, 1268, 1270, 1293, 1308, 1327, 1354, 1361, 1367, 1368, 1370, 1372, 1383, 1403, 1434, 1469, 1476, 1498, 1510, 1517, 1518, 1538, 1543, 1544, 1558, 1570, 1593, 1601, 1804, 1820, 1827, 1832, 1841, 1842, 1843, 1852, 1904, 1948, 1969, 1975, 2032, 2090, 2094, 2121, 2127, 2165, 2173, 2177, 2198, 2213, 2277, 2289, 2293, 2311, 2318, 2325, 2335, 2337, 2356, 2363, 2365, 2366, 2370, 2396, 2406, 2412, 2417, 2437, 2479, 2480, 2486, 2497, 2501										
Cold and Cough Preparations										
1797ph	4 y F				A	Ingst	Unt-G	2		
		benzonatate	1	1						
1798ai	17 y M				U	Ingst	Unk	2		
		guaifenesin	1	1						
1799ai	17 y M				U	Ingst	Unk	2		
		dextromethorphan	1	1						
		alprazolam	2	2						
		chlorpheniramine	3	3						
1800ai	21 y M				A	Ingst	Int-A	2		
		dextromethorphan	1	1						
		methylphenidate	2	2						
1801pa	25 y M				U	Ingst	Int-A	2		
		dextromethorphan	1	1						
1802p	26 y M				A	Ingst	Int-A	2		
		cough and cold preparation	1	1						
1803p	36 y M				U	Ingst	Int-U	3		
		cough and cold preparation	1	1					pseudoephedrine	15701 ng/mL In Blood (unspecified) @ Autopsy
1804ai	50 y F				U	Ingst	Int-A	2		
		doxylamine	1	1						
		diphenhydramine	2	2						
		beta blocker	3	3						
		carbamazepine	4	4						
		antidepressant (SSRI)	5	5						
1805pha	50 y M				A	Ingst	Int-U	2		
		codeine/ promethazine	1	1						
		oxycodone	2	2					oxycodone	0 mg/mL In Blood (unspecified) @ Autopsy
		benzodiazepine	3	3					midazolam	196 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	4	4						
		fentanyl	5	5					norfentanyl	11 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	5	5					fentanyl	30 ng/mL In Blood (unspecified) @ Autopsy
		lorazepam	6	6						
1806ai	55 y M				A	Ingst	Int-S	2		
		doxylamine	1	1						
		lamotrigine	2	2						
		zolpidem	3	3						
		tramadol	4	4						
		salicylate	5	5						
		acetaminophen	6	6						
1807p	57 y F				A/C	Ingst	AR-D	3		
		acetaminophen/dextromethorphan/ doxylamine/ pseudoephedrine	1	1						
		dextromethorphan	2	2						
1808ha	62 y M				C	Ingst	Int-A	2		

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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
		acetaminophen/dextromethorphan/doxylamine	1	1					doxylamine	0.3 mcg/mL In Serum @ Autopsy
		acetaminophen/dextromethorphan/doxylamine	1	1					dextromethorphan	0.82 mcg/mL In Serum @ Autopsy
		sertraline	2	2					sertraline	0.47 mcg/mL In Serum @ Autopsy
1809ai	3 m F				U	Ingst	Unk	2		
		doxylamine	1	1						
1810ai	18 m U				A	Ingst	AR-D	2		
		antihistamine/opioid	1	1						
See Also case 95, 155, 209, 360, 451, 459, 476, 496, 550, 617, 634, 656, 681, 690, 793, 797, 849, 868, 875, 921, 974, 982, 993, 1010, 1024, 1047, 1050, 1068, 1083, 1179, 1207, 1278, 1283, 1327, 1456, 1493, 1532, 1562, 1567, 1573, 1597, 1598, 1673, 1749, 1880, 1886, 1954, 2002, 2003, 2006, 2025, 2030, 2037, 2039, 2048, 2061, 2072, 2076, 2084, 2108, 2140, 2145, 2169, 2175, 2180, 2192, 2195, 2220, 2246, 2271, 2274, 2280, 2282, 2285, 2286, 2309, 2315, 2318, 2324, 2325, 2348, 2353, 2363, 2365, 2367, 2368, 2381, 2393, 2410, 2428, 2444, 2470, 2486, 2559, 2572										
Diagnostic Agents										
1811	27 y F				A	Par	AR-D	2		
		diagnostic agent	1	1						
Dietary Supplements/Herbals/Homeopathic										
[1812pa]	48 y M				A	Ingst	Int-M	3		
		Yohimbe	1	1						
1813h	50 y M				A	Derm	Int-M	1		
		supplement, botanical	1	1					digoxin	2.1 ng/mL In Blood (unspecified) @ Unknown
		cocaine	2	2						
See Also case 1579, 1610, 1783, 1853, 1991										
Electrolytes and Minerals										
1814	26 y F				A	Ingst	Int-S	1		
		iron	1	1						
		naproxen	2	2						
[1815ha]	5 m M				A	Par	Unt-T	1		
		calcium	1	1						
See Also case 1356, 1368, 1580, 1616, 1630, 1680, 1694, 1843										
Gastrointestinal Preparations										
[1816h]	2 y F				A	Ingst	Unt-G	1		
		atropine/diphenoxylate	1	1					diphenoxylate	6.1 ng/mL In Blood (unspecified) @ 21.5 h (pe)
1817p	21 y M				C	Ingst	Int-A	3		
		loperamide	1	1						
1818pa	26 y M				U	Ingst	Unk	3		
		loperamide	1	1						
See Also case 629, 801, 912, 922, 1003, 1033, 1124, 1460, 1480, 1550, 1559, 1632, 1639, 1669, 1682, 1710, 1713, 1751, 1753, 1758, 1841, 1843, 1948, 2253, 2284										
Hormones and Hormone Antagonists										
1819	2 y M				A	Ingst	Unt-G	1		
		glyburide	1	1						
		metformin	2	2						
		thiazolidinedione	3	3						
1820p	20 y F				A	Ingst	Int-S	1		
		glimepiride	1	1						
		hydrochlorothiazide/lisinopril	2	2						
1821	22 y F				A	Ingst	Int-S	1		
		metformin	1	1						
		cyclobenzaprine	2	2						
1822ai	30 y F				U	Par	Int-S	2		
		insulin	1	1						
		alprazolam	2	2						
1823	34 y M				A/C	Ingst	Int-S	1		
		metformin	1	1						
[1824a]	38 y M				A	Ingst	Int-S	1		
		metformin	1	1						
1825p	40 y F				A/C	Ingst	Int-S	2		
		glipizide	1	1						
		trazodone	2	2						
1826a	41 y F				A/C	Ingst	Int-S	1		
		metformin	1	1					metformin	85 mcg/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	213 mg/dL In Serum @ Autopsy

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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
1827p	42 y F				A/C	Ingst+ Par	Int-S	1		
		insulin	1	1						
		beta blocker	2	2						
		nebivolol	3	3						
		zolpidem	4	4						
		triazolam	5	5						
		pregabalin	6	6						
1828	42 y M				A/C	Ingst	Int-S	2		
		metformin	1	1						
1829h	46 y M				A/C	Ingst	Int-S	1		
		glyburide/ metformin	1	1						
1830pa	47 y M				A	Ingst	Int-S	1		
		metformin	1	1					metformin	130 mcg/mL In Plasma @ 50 m (pe)
		paroxetine	2	2					paroxetine	52 mcg/mL In Plasma @ 50 m (pe)
1831ph	47 y F				U	Ingst+ Par	Int-S	3		
		insulin	1	1						
		insulin	2	2						
		zolpidem	3	3						
1832h	48 y M				A/C	Ingst	Int-S	1		
		metformin*	1	1						
		metoprolol*	2	1						
		sitagliptin	3	3						
		furosemide	4	4						
1833a	48 y M				A/C	Ingst	Int-S	3		
		metformin	1	1						
		trazodone	2	2						
		oxcarbazepine	3	3						
		hydroxyzine	4	4						
1834	52 y F				A	Ingst	Int-S	2		
		metformin	1	1						
		promethazine	2	2						
1835ph	52 y F				A	Ingst+ Par	Int-S	2		
		insulin	1	1						
		zolpidem	2	2						
		acetaminophen	3	3						
1836	53 y M				A	Unk	Unt-G	2		
		metformin	1	1						
1837	53 y M				U	Ingst	Unk	3		
		metformin	1	1						
		alcohol, unknown	2	2						
1838	54 y M				A/C	Par	Int-S	1		
		insulin	1	1						
1839ai	58 y F				U	Ingst	Int-S	2		
		metformin	1	1						
1840pha	59 y M				U	Ingst	Int-S	2		
		metformin	1	1						
		glipizide	2	2						
		ethanol	3	3					ethanol	270 mg/dL In Serum @ Unknown
1841ha	60 y F				C	Ingst	Int-S	2		
		metformin	1	1						
		atenolol	2	2						
		digoxin	3	3					digoxin	2.8 ng/mL In Blood (unspecified) @ Unknown
		hydrochlorothiazide/ lisinopril	4	4						
		ondansetron	5	5						
		pravastatin	6	6						
		zolpidem (extended release)	7	7						
1842a	60 y M				A	Ingst	Int-S	1		
		metformin	1	1						
		metoprolol	2	2						
		amlodipine/ valsartan	3	3						
		glimepiride	4	4						
		valdenafil	5	5						
		ethanol (non-beverage)	6	6						

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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
1843h	61 y M				A	Ingst+ Par	Int-S	2		
		insulin	1	1						
		bumetanide	2	2						
		cardiac glycoside	3	3					digoxin	2.8 ng/mL In Blood (unspecified) @ 6 h (pe)
		cardiac glycoside	3	3					digoxin	3.8 ng/mL In Blood (unspecified) @ 2 h (pe)
		iron	4	4					iron	225 mcg/dL In Blood (unspecified) @ 2 h (pe)
		folic acid	5	5						
		omeprazole	6	6						
1844h	66 y F				A/C	Ingst	Int-U	2		
		metformin	1	1						
		triazolam	2	2						
		zolpidem	3	3						
[1845ha]	66 y F				C	Ingst	Unk	3		
		metformin	1	1						
1846ai	67 y M				A	Par	Int-S	2		
		insulin	1	1						
1847h	67 y F				U	Ingst	Unt-U	2		
		metformin	1	1						
1848	67 y F				C	Ingst+ Par	AR-D	2		
		metformin	1	1						
		ketoralac	2	2						
		orphenadrine	3	3						
1849a	69 y M				A	Ingst	Int-S	1		
		metformin	1	1						
1850p	71 y M				A	Ingst	Int-S	1		
		metformin	1	1						
		acetaminophen	2	2					acetaminophen	109 mcg/mL In Blood (unspecified) @ Unknown
See Also case 46, 61, 385, 454, 504, 820, 1135, 1368, 1370, 1382, 1517, 1545, 1605, 1611, 1656, 1662, 1664, 1682, 1693, 1694, 1700, 1702, 1703, 1710, 1715, 1717, 1719, 1731, 1749, 1751, 1753, 1758, 1766, 1780, 1790, 1921, 1925, 1926, 1948, 2497										
Miscellaneous Drugs										
1851ph	33 y M				A	Ingst+ Par+ Unk	Int-S	1		
		succinylcholine	1	1						
		salicylate	2	2					salicylate	70 mg/dL In Blood (unspecified) @ 3 h (pe)
		methamphet-amine	3	3						
1852p	61 y M				U	Ingst	Int-U	1		
		ropinirole	1	1						
		antifreeze (ethylene glycol)	2	2						
		metoprolol	3	3					metoprolol	394 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	4	4					7-aminoclonazepam	295 ng/mL In Urine (quantitative only) @ Autopsy
		clonazepam	4	4					7-aminoclonazepam	55.2 ng/mL In Blood (unspecified) @ Autopsy
		lorazepam	5	5					lorazepam	409 ng/mL In Urine (quantitative only) @ Autopsy
1853h	66 y F				U	Ingst	AR-D	3		
		dextromethorphan/ quinidine	1	1						
		fluoxetine	2	2						
		melatonin	3	3						
1854	Unknown adult (≥20 yrs) M				A	Par	Unt-T	1		
		neostigmine	1	1						
See Also case 755, 1033, 1581, 1601, 1630, 1662, 1717, 1719, 1720, 1754, 1780, 1783, 1965										
Muscle Relaxants										
1855ai	23 y M				U	Ingst	Int-A	2		
		skeletal muscle relaxant	1	1						

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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
		acetaminophen/ hydrocodone	2	2						
		alprazolam	3	3						
1856ai	24 y F				U	Ingst	Unk	2		
		skeletal muscle relaxant	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
		diphenhydramine	4	4						
1857	33 y F				A	Ingst	Int-S	2		
		carisoprodol	1	1						
		acetaminophen/ oxycodone	2	2						
		alprazolam	3	3						
		clonazepam	4	4						
1858ai	34 y M				U	Ingst	Int-A	2		
		skeletal muscle relaxant	1	1						
		acetaminophen/ hydrocodone	2	2						
		alprazolam	3	3						
1859p	39 y F				A	Ingst	Int-S	2		
		tizanidine	1	1						
		clonazepam	2	2						
		zolpidem	3	3						
		methocarbamol	4	4						
		citalopram	5	5						
1860pha	41 y M				A	Ingst	Int-S	1		
		cyclobenzaprine	1	1					cyclobenzaprine	0.42 mg/L In Whole Blood @ Autopsy
		oxycodone	2	2					oxycodone	405 ng/mL In Whole Blood @ Autopsy
		alprazolam	3	3					alprazolam	53 ng/mL In Whole Blood @ Autopsy
1861ai	41 y M				U	Ingst	Int-A	2		
		carisoprodol	1	1						
1862phai	41 y F				U	Ingst+ Unk	Unt-G	1		
		skeletal muscle relaxant	1	1					carisoprodol (n-isopropyl meprobamate)	5.6 mg/L In Blood (unspecified) @ Unknown
		methadone	2	2					methadone	0.15 mg/L In Blood (unspecified) @ Unknown
		benzodiazepine	3	3					lorazepam	0.06 mg/L In Blood (unspecified) @ Unknown
		citalopram	4	4					citalopram	0.17 mg/L In Blood (unspecified) @ Unknown
		diphenhydramine	5	5					diphenhydramine	0.16 mg/L In Blood (unspecified) @ Unknown
		ethanol	6	6						
1863p	45 y F				A/C	Ingst	Int-S	2		
		cyclobenzaprine	1	1						
		methadone	2	2						
		clonazepam	3	3						
1864pa	45 y M				U	Ingst	Unk	2		
		baclofen	1	1						
		methamphetamine	2	2						
1865	45 y F				A/C	Ingst	Int-S	2		
		baclofen	1	1						
1866ai	47 y M				A	Ingst	Int-A	2		
		skeletal muscle relaxant	1	1						
		quetiapine	2	2						
		oxycodone	3	3						
1867ai	47 y F				U	Ingst	Int-A	2		
		skeletal muscle relaxant	1	1						
		oxycodone	2	2						
1868ph	47 y F				A/C	Ingst	Int-S	3		
		carisoprodol	1	1						
		pregabalin	2	2						
		oxycodone	3	3						
1869	55 y F				A/C	Ingst	Int-S	2		

(*Continued*)

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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
		baclofen	1	1						
1870ai	55 y M				U	Ingst	Int-A	2		
		skeletal muscle relaxant	1	1						
		alprazolam	2	2						
1871ph	56 y M				A	Ingst	Int-S	2		
		carisoprodol	1	1						
		methadone	2	2						
1872ai	57 y F				U	Ingst	Int-A	2		
		carisoprodol	1	1						
		anticonvulsant (pyrrolidinone)	2	2						
[1873a]	57 y M				A	Ingst	Int-S	1		
		baclofen	1	1						
1874ai	59 y M				A	Ingst	Int-S	2		
		carisoprodol	1	1						
		alprazolam	2	2						
1875ph	59 y F				U	Ingst	Int-S	2		
		carisoprodol	1	1						
1876ai	72 y F				U	Ingst	Int-A	2		
		cyclobenzaprine	1	1						
		zolpidem	2	2						
1877	74 y F				A/C	Ingst	AR-D	3		
		baclofen	1	1						
See Also case 52, 97, 117, 118, 130, 137, 139, 215, 288, 293, 443, 463, 507, 516, 544, 555, 557, 584, 596, 600, 604, 615, 622, 647, 659, 662, 672, 681, 685, 709, 711, 717, 729, 757, 761, 764, 765, 769, 771, 786, 797, 798, 828, 829, 839, 855, 884, 887, 901, 903, 906, 932, 940, 959, 972, 978, 999, 1003, 1005, 1009, 1011, 1013, 1029, 1030, 1032, 1033, 1035, 1039, 1042, 1045, 1053, 1064, 1070, 1071, 1083, 1089, 1106, 1108, 1113, 1121, 1130, 1135, 1137, 1153, 1170, 1174, 1204, 1208, 1209, 1235, 1236, 1259, 1267, 1287, 1329, 1354, 1411, 1440, 1461, 1462, 1507, 1508, 1534, 1557, 1634, 1643, 1647, 1662, 1665, 1671, 1705, 1708, 1750, 1821, 1904, 1916, 1930, 1947, 2025, 2043, 2167, 2200, 2212, 2232, 2247, 2320, 2380, 2406, 2425, 2428, 2495, 2513										
Sedative/Hypnotics/Antipsychotics										
1878	14 y F				A	Ingst	Unk	2		
		quetiapine	1	1						
1879h	17 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
		topiramate	2	2						
		opioid	3	3						
1880ai	17 y M				U	Ingst	Unk	2		
		alprazolam	1	1						
		dextrometho-rphan	2	2						
		chlorpheniramine	3	3						
1881ai	17 y M				U	Ingst	Int-A	2		
		alprazolam	1	1						
		acetaminophen/ hydrocodone	2	2						
		oxycodone	3	3						
1882ph	18 y M				A/C	Ingst	Int-U	2		
		alprazolam	1	1						
		lisdexamfetamine	2	2						
1883ai	18 y F				U	Ingst+ Unk	Unk	2		
		alprazolam	1	1						
		fentanyl	2	2						
1884i	19 y M				A	Ingst	Unt-G	3		
		clonazepam	1	1						
1885ai	22 y M				U	Ingst	Int-A	2		
		alprazolam	1	1						
		acetaminophen/ hydrocodone	2	2						
		oxymorphone	3	3						
1886pa	22 y F				U	Ingst	Int-S	1		
		quetiapine	1	1					quetiapine	1900 ng/mL In Blood (unspecified) @ Autopsy
		citalopram	2	2					citralopram	740 ng/mL In Blood (unspecified) @ Autopsy
		buprenorphine	3	3					buprenorphine	1.1 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	4	4					alprazolam	22 ng/mL In Whole Blood @ Autopsy
		ethanol	5	5					ethanol	0.16 g/dL In Whole Blood @ Autopsy
		amphetamine	6	6					amphetamine	45 ng/mL In Blood (unspecified) @ Autopsy

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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
		phenylpropanolamine	7	7						
1887pha	23 y M				A	Ingst	Unk	2		
		quetiapine	1	1					quetiapine	9.2 mcg/mL In Blood (unspecified) @ Unknown
1888ai	24 y M				U	Ingst	Unk	2		
		alprazolam	1	1						
		diazepam	2	2						
1889p	25 y F				A	Ingst	Int-S	2		
		benzodiazepine*	2	1					7-aminoclonazepam	244 ng/mL In Urine (quantitative only) @ Autopsy
		heroin*	1	1					morphine	10000 ng/mL In Urine (quantitative only) @ Autopsy
		heroin*	1	1					6-monoacetylmorphine	213 ng/mL In Urine (quantitative only) @ Autopsy
		heroin*	1	1					codeine	242 ng/mL In Urine (quantitative only) @ Autopsy
		heroin*	1	1					morphine	27 ng/mL In Blood (unspecified) @ Autopsy
		valproic acid	3	2						
1890ai	25 y M				U	Ingst	Int-A	2		
		alprazolam	1	1						
		acetaminophen/hydrocodone	2	2						
		citalopram	3	3						
1891ph	25 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
		diphenhydramine	2	2						
		bupropion	3	3						
1892	25 y M				A	Ingst	Int-S	2		
		quetiapine	1	1						
		methylenedioxymethamphetamine (MDMA)	2	2						
1893p	26 y M				A	Ingst	Int-S	3		
		quetiapine	1	1						
1894ai	27 y M				U	Ingst	Unk	2		
		benzodiazepine	1	1						
		ethanol	2	2						
1895p	27 y F				A	Par	AR-D	3		
		methohexital	1	1						
		foreign body	2	2						
1896phai	27 y M				A/C	Ingst	Int-S	1		
		quetiapine	1	1					quetiapine	0.21 mg/L In Blood (unspecified) @ Autopsy
		quetiapine	1	1					tramadol	11 mg/L In Blood (unspecified) @ Autopsy
		tramadol	2	2						
1897p	28 y F				A	Ingst	Int-S	1		
		diazepam	1	1						
		ethanol	2	2						
1898h	29 y F				A	Ingst	Int-S	3		
		benzodiazepine*	2	1						
		morphine*	1	1					morphine	85 ng/mL In Blood (unspecified) @ Unknown
		quetiapine (extended release)	3	3						
1899pha	29 y M				A/C	Ingst+ Unk	Int-U	1		
		alprazolam	1	1					midazolam	0.026 mg/L In Blood (unspecified) @ Unknown
		alprazolam	1	1					alprazolam	0.038 mg/L In Blood (unspecified) @ Unknown
		alprazolam	1	1					oxycodone	0.392 mg/L In Blood (unspecified) @ Unknown
		alprazolam	1	1					methadone	2.048 mg/L In Blood (unspecified) @ Unknown
		methadone	2	2						
		oxycodone	3	3						

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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
1900ai	29 y M				U	Ingst	Int-S	2		
		quetiapine	1	1						
1901p	30 y F				U	Ingst	Int-U	2		
		buspirone	1	1						
		ethanol	2	2						
1902	30 y F				U	Ingst	Int-S	2		
		clonazepam	1	1						
1903ai	30 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
		lamotrigine	2	2						
		ethanol	3	3						
1904p	30 y F				A	Ingst+ Aspir	Int-S	2		
		lorazepam	1	1						
		lisinopril	2	2						
		carisoprodol	3	3						
		acetaminophen/ hydrocodone	4	4					acetaminophen	10 mcg/mL In Blood (unspecified) @ 5 h (pe)
1905	30 y M				A	Ingst	Int-S	2		
		clonazepam	1	1						
1906a	32 y M				U	Ingst	Int-S	1		
		alprazolam	1	1					alprazolam	0.06 mg/L In Blood (unspecified) @ Autopsy
		methadone	2	2					methadone	0.5 mg/L In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	0.04 % (wt/Vol) In Blood (unspecified) @ Autopsy
1907p	32 y F				A	Ingst	Int-S	1		
		pentobarbital	1	1					pentobarbital	27.3 mg/L In Blood (unspecified) @ 6 d (pe)
		pentobarbital	1	1					pentobarbital	50 mg/L In Blood (unspecified) @ 3 d (pe)
1908ai	33 y M				U	Ingst	Int-A	2		
		alprazolam	1	1						
		ethanol	2	2						
1909ai	34 y F				U	Ingst	Int-A	2		
		quetiapine	1	1						
		mirtazapine	2	2						
		bupropion	3	3						
		citalopram	4	4						
1910ph	34 y F				C	Ingst	Unk	3		
		sedative/hpnotic/ anti-anxiety/ anti-psychotic	1	1						
		topiramate	2	2						
1911	34 y M				A	Ingst	Int-S	2		
		zolpidem	1	1						
		cocaine	2	2						
1912ai	34 y M				A	Ingst	Int-U	2		
		quetiapine	1	1						
		trazodone	2	2						
		ethanol	3	3						
1913ai	34 y F				U	Ingst+ Unk	Int-A	2		
		benzodiazepine	1	1						
		methamphet- amine	2	2						
1914h	34 y M				A/C	Ingst	Int-S	1		
		quetiapine	1	1						
1915ai	35 y M				A	Ingst	AR-D	2		
		quetiapine	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
		acetaminophen	4	4						
1916	35 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
		carisoprodol	2	2						
		alprazolam	3	3						
1917a	35 y F				A/C	Ingst	Int-S	1		
		quetiapine	1	1					quetiapine	2200 ng/mL In Blood (unspecified) @ Unknown
		ibuprofen	2	2					ibuprofen	76 mcg/mL In Blood (unspecified) @ Unknown

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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
		clonazepam	3	3					clonazepam	33 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	3	3					7-aminoclonazepam	8 ng/mL In Blood (unspecified) @ Unknown
1918p	36 y M				A	Ingst	Unk	1		
		benzodiazepine*	2	1						
		drug, unknown*	1	1						
1919pha	36 y F				A	Ingst	Unk	1		
		chlordiazepoxide	1	1						
		oxycodone	2	2						
		ethanol	3	3					ethanol	164 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen	4	4					acetaminophen	113 mg/L In Blood (unspecified) @ Unknown
1920ai	39 y M				A	Ingst	Int-U	2		
		quetiapine	1	1						
1921a	40 y F				U	Ingst	Int-S	3		
		risperidone	1	1						
		lamotrigine	2	2						
		buspirone	3	3						
		conjugated estrogens	4	4						
[1922ha]	40 y M				A/C	Ingst	Int-S	1		
		clozapine	1	1						
1923ai	40 y F				U	Ingst	Int-A	2		
		alprazolam	1	1						
		acetaminophen/ hydrocodone	2	2						
1924ph	42 y F				A	Ingst	Int-U	2		
		clonazepam	1	1						
		amitriptyline	2	2						
		paroxetine	3	3						
1925h	42 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		bupropion	2	2						
		fluoxetine	3	3						
		venlafaxine	4	4						
		clonazepam	5	5						
		levothyroxine	6	6						
		naproxen	7	7						
1926ph	42 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		venlafaxine	2	2						
		haloperidol	3	3						
		lorazepam	4	4						
		metformin	5	5						
1927pha	42 y M				A	Ingst	Int-S	1		
		quetiapine	1	1					quetiapine	50.5 mg/L In Blood (unspecified) @ Unknown
		venlafaxine	2	2						
1928ai	43 y F				A	Ingst	Int-A	2		
		quetiapine	1	1						
		chlorpromazine	2	2						
		hydromorphone	3	3						
		levamisole	4	4						
1929ai	43 y M				A	Ingst	Int-A	2		
		quetiapine	1	1						
		clonazepam	2	2						
		ethanol	3	3						
1930ai	44 y M				U	Ingst	Int-A	2		
		alprazolam	1	1						
		hydromorphone	2	2						
		skeletal muscle relaxant	3	3						
1931ai	44 y F				U	Ingst	Int-A	2		
		alprazolam	1	1						
		sertraline	2	2						
		acetaminophen/ hydrocodone	3	3						
1932ai	46 y F				U	Ingst	Int-A	2		
		alprazolam	1	1						
		lamotrigine	2	2						
1933p	46 y F				U	Ingst	Int-S	3		

(*Continued*)

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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
		quetiapine	1	1						
		acetaminophen	2	2						
1934	47 y F				A	Ingst	Int-S	3		
		benzodiazepine	1	1						
		acetaminophen	2	2					acetaminophen	9 mcg/mL In Blood (unspecified) @ Unknown
1935	47 y F				A	Ingst	Int-S	2		
		perphanazine	1	1						
		quetiapine	2	2						
		fluvoxamine	3	3						
		risperidone	4	4						
1936a	47 y F				U	Ingst	Int-S	3		
		clonazepam	1	1					clonazepam	6.8 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	1	1					7-aminoclonazepam	91 ng/mL In Blood (unspecified) @ Unknown
		diazepam	2	2					nordiazepam	51 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/ butalbital/ caffeine	3	3					butalbital	10 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ butalbital/ caffeine	3	3					caffeine	50 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	4	4					acetaminophen	68 mcg/mL In Blood (unspecified) @ Unknown
1937ai	48 y M				U	Ingst	Unk	2		
		quetiapine	1	1						
		ethanol	2	2						
1938h	48 y M				A	Ingst	Int-S	3		
		quetiapine	1	1						
		ethanol	2	2					ethanol	275 mg/dL In Serum @ Unknown
1939p	48 y F				A/C	Ingst	Int-S	1		
		alprazolam	1	1						
1940	48 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
		zolpidem	2	2						
		lorazepam	3	3						
1941h	49 y F				U	Ingst	Int-S	2		
		quetiapine	1	1						
		ziprasidone	2	2						
		eszopiclone	3	3						
		clonazepam	4	4						
1942ai	49 y M				U	Par	Int-U	2		
		pentobarbital	1	1						
1943	49 y F				A/C	Ingst	Int-S	2		
		alprazolam	1	1						
		amitriptyline	2	2						
1944p	50 y M				A	Ingst	Int-S	2		
		butalbital	1	1					butalbital	32.1 mcg/mL In Blood (unspecified) @ Autopsy
1945ai	50 y F				U	Ingst+ Unk	Int-A	2		
		benzodiazepine	1	1						
		cocaine	2	2						
1946h	50 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		acetaminophen/ hydrocodone	2	2						
1947ai	53 y F				U	Ingst	Int-A	2		
		alprazolam	1	1						
		skeletal muscle relaxant	2	2						
1948ha	53 y F				A/C	Ingst	Int-S	1		
		diazepam	1	1						
		bupropion	2	2						
		gabapentin	3	3						
		duloxetine	4	4						
		lisinopril	5	5						
		metformin	6	6						
		oxybutynin	7	7						
		mirtazapine	8	8						
		lovastatin	9	9						

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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
		valproic acid	10	10					valproic acid	196 mcg/mL In Serum @ 1 h (pe)
		acetaminophen	11	11					acetaminophen	178 mcg/mL In Serum @ 1 h (pe)
1949ai	53 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
		fentanyl	2	2						
		hydrocodone	3	3						
		diazepam	4	4						
		trazodone	5	5						
		zolpidem	6	6						
		cocaine	7	7						
		acetaminophen	8	8						
1950	54 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
1951ai	54 y F				A	Ingst	Int-S	2		
		clonazepam	1	1						
		diazepam	2	2						
		diphenhydramine	3	3						
		ethanol	4	4						
1952ai	55 y F				U	Ingst+ Unk	Int-A	2		
		alprazolam	1	1						
		morphine	2	2						
		paroxetine	3	3						
		hydromorphone	4	4						
1953pa	55 y M				A	Par	Int-S	1		
		pentobarbital	1	1					pentobarbital	18.115 mcg/L In Urine (quantitative only) @ Unknown
		tiletamine/ zolazepam	2	2						
1954h	56 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
		trazodone	2	2						
		acetaminophen/dextromethorphan/ doxylamine	3	3						
		acetaminophen/ codeine	4	4						
1955i	56 y F				A	Ingst	Int-S	3		
		diazepam	1	1						
		acetaminophen	2	2						
1956	56 y M				A/C	Ingst	Int-S	3		
		quetiapine (extended release)	1	1						
1957	56 y F				A	Ingst	Int-S	3		
		alprazolam	1	1						
1958ai	56 y F				A	Par	Int-S	2		
		pentobarbital	1	1						
1959ai	56 y M				A	Ingst	Int-S	2		
		quetiapine	1	1						
		oxycodone	2	2						
		diazepam	3	3						
		acetaminophen	4	4						
1960ai	57 y M				A	Ingst	Int-U	2		
		diazepam	1	1						
		buprenorphine	2	2						
		morphine	3	3						
		codeine	4	4						
		tramadol	5	5						
		zolpidem	6	6						
		chlorpheniramine	7	7						
1961ai	57 y M				U	Par	Unk	2		
		pentobarbital	1	1						
1962ai	58 y M				U	Ingst	Unk	2		
		alprazolam	1	1						
1963ai	58 y M				U	Ingst	Int-A	2		
		lorazepam	1	1						
		ethanol	2	2						
1964a	58 y M				C	Ingst	Int-S	1		
		benzodiazepine	1	1						
		acetaminophen/ hydrocodone	2	2					acetaminophen	154 mcg/mL In Blood (unspecified) @ Unknown

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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
		oxycodone	3	3						
1965	59 y M				A	Ingst	Int-S	3		
		alprazolam	1	1						
		zolpidem	2	2						
		duloxetine	3	3						
		tacrolimus	4	4						
		azathiorpine	5	5						
1966ph	60 y F				A	Ingst	Int-S	2		
		diazepam	1	1						
		acetaminophen	2	2						
		bupropion	3	3						
		gabapentin	4	4						
1967	62 y M				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
1968h	62 y F				A	Ingst	Int-S	2		
		clonazepam	1	1						
		acetaminophen	2	2						
		acetaminophen/ butalbital/ caffeine	3	3						
1969h	63 y M				C	Ingst	Int-S	2		
		alprazolam	1	1						
		ethanol	2	2					ethanol	189 mg/dL In Blood (unspecified) @ Unknown
		amphetamine	3	3						
		lisinopril	4	4						
1970ai	63 y F				U	Ingst	Int-S	2		
		clonazepam	1	1						
1971	63 y M				A	Ingst	Int-S	2		
		diazepam	1	1						
		oxycodone	2	2						
		ethanol	3	3						
1972h	64 y M				A	Par+ Unk	AR-D	3		
		ziprasidone	1	1						
		drug, unknown	2	2						
1973ai	64 y F				A	Ingst	Int-A	2		
		phenobarbital	1	1						
		ethanol	2	2						
		diphenhydramine	3	3						
1974h	65 y F				A/C	Ingst	Int-S	2		
		alprazolam	1	1						
		acetaminophen/ hydrocodone	2	2						
1975	65 y M				A/C	Ingst	Int-S	3		
		risperidone	1	1						
		clonazepam	2	2						
		lisinopril	3	3						
1976a	66 y M				A/C	Ingst	Int-S	2		
		quetiapine	1	1					quetiapine	7900 ng/mL In Blood (unspecified) @ Unknown
		carbamazepine*	3	2						
		lamotrigine*	2	2					lamotrigine	0.8 mcg/mL In Blood (unspecified) @ Unknown
1977h	67 y F				A	Ingst	Int-S	3		
		alprazolam	1	1					alprazolam	5 ng/mL In Blood (unspecified) @ Unknown
		morphine	2	2						
1978	67 y F				A	Ingst+ Par	AR-D	3		
		haloperidol	1	1						
		phenelzine	2	2						
		albuterol	3	3						
1979pha	67 y F				A/C	Ingst	Int-S	1		
		benzodiazepine	1	1						
		drug, unknown	2	2						
		acetaminophen	3	3					acetaminophen	26.4 mcg/mL In Serum @ Unknown
1980	69 y F				A	Ingst	Int-S	3		
		zolpidem	1	1						
1981ai	69 y M				U	Ingst	Int-S	2		
		alprazolam	1	1						
		tramadol	2	2						
1982a	70 y M				A	Ingst	Int-S	2		

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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
		zolpidem	1	1					zolpidem	2100 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen	2	2					acetaminophen	19.4 mcg/mL In Blood (unspecified) @ Unknown
1983	72 y M				A	Ingst	Unk	3		
		zolpidem	1	1						
		salicylate	2	2					salicylate	35 mg/dL In Blood (unspecified) @ Unknown
1984p	75 y F				A	Ingst	Int-S	3		
		alprazolam	1	1						
1985ai	80 y M				A	Ingst	Int-S	2		
		quetiapine	1	1						
		citalopram	2	2						
1986	82 y F				A	Ingst	Int-S	2		
		diazepam	1	1						
		lorazepam	2	2						
1987pai	Unknown adult (≥20 yrs) F				A	Ingst	Unk	3		
		alprazolam	1	1						

See Also case 13, 16, 31, 38, 41, 42, 47, 50, 52, 55, 61, 71, 73, 80, 89, 93, 119, 121, 127, 130, 133, 140, 147, 154, 156, 175, 188, 195, 212, 290, 305, 306, 317, 329, 330, 339, 385, 411, 412, 442, 446, 447, 448, 450, 457, 460, 467, 469, 470, 473, 477, 480, 484, 488, 492, 493, 494, 498, 506, 507, 509, 510, 511, 512, 516, 519, 520, 522, 523, 526, 529, 532, 533, 534, 537, 538, 539, 540, 541, 542, 547, 548, 550, 555, 556, 558, 562, 568, 569, 570, 572, 573, 574, 575, 577, 580, 583, 584, 589, 592, 594, 595, 597, 599, 600, 602, 605, 608, 615, 618, 621, 624, 625, 626, 628, 635, 637, 638, 639, 642, 647, 649, 651, 653, 654, 655, 656, 662, 663, 664, 665, 678, 679, 680, 681, 685, 691, 699, 700, 703, 704, 708, 714, 720, 721, 722, 723, 726, 727, 729, 731, 734, 739, 743, 746, 747, 749, 750, 753, 757, 759, 761, 762, 766, 769, 771, 773, 778, 779, 789, 790, 791, 793, 794, 797, 798, 799, 803, 805, 806, 808, 811, 820, 823, 824, 825, 829, 830, 831, 832, 833, 834, 837, 838, 841, 842, 843, 850, 853, 854, 855, 857, 858, 859, 861, 863, 867, 874, 875, 877, 883, 885, 888, 891, 892, 899, 901, 903, 905, 906, 907, 909, 911, 912, 915, 917, 920, 921, 923, 924, 925, 926, 928, 930, 931, 945, 956, 959, 961, 968, 971, 972, 973, 981, 982, 986, 988, 990, 991, 993, 998, 1000, 1001, 1002, 1003, 1007, 1008, 1012, 1016, 1021, 1027, 1029, 1030, 1032, 1033, 1034, 1035, 1039, 1040, 1041, 1043, 1044, 1050, 1051, 1052, 1055, 1058, 1061, 1063, 1064, 1067, 1069, 1070, 1071, 1074, 1075, 1078, 1080, 1082, 1086, 1087, 1088, 1091, 1093, 1094, 1095, 1096, 1097, 1100, 1102, 1103, 1105, 1106, 1108, 1111, 1118, 1120, 1121, 1124, 1125, 1127, 1128, 1129, 1130, 1138, 1142, 1145, 1147, 1149, 1150, 1151, 1155, 1158, 1162, 1164, 1165, 1166, 1167, 1168, 1173, 1174, 1175, 1179, 1182, 1184, 1187, 1189, 1194, 1198, 1199, 1204, 1205, 1206, 1208, 1210, 1215, 1216, 1220, 1221, 1224, 1226, 1228, 1230, 1233, 1235, 1236, 1237, 1241, 1242, 1243, 1248, 1249, 1251, 1257, 1259, 1260, 1265, 1266, 1267, 1268, 1270, 1274, 1277, 1281, 1283, 1285, 1287, 1290, 1296, 1300, 1304, 1306, 1312, 1317, 1321, 1329, 1330, 1333, 1334, 1336, 1338, 1339, 1341, 1344, 1347, 1349, 1350, 1352, 1365, 1367, 1378, 1384, 1397, 1398, 1400, 1403, 1407, 1408, 1410, 1411, 1412, 1413, 1415, 1416, 1417, 1419, 1425, 1427, 1431, 1432, 1434, 1435, 1441, 1442, 1446, 1449, 1450, 1452, 1459, 1460, 1461, 1462, 1466, 1467, 1469, 1476, 1478, 1480, 1481, 1490, 1491, 1492, 1496, 1498, 1499, 1500, 1501, 1505, 1510, 1512, 1513, 1519, 1523, 1527, 1529, 1530, 1532, 1533, 1534, 1538, 1541, 1542, 1543, 1547, 1549, 1550, 1551, 1556, 1557, 1559, 1564, 1567, 1568, 1574, 1581, 1582, 1591, 1593, 1600, 1604, 1605, 1617, 1622, 1626, 1629, 1630, 1634, 1641, 1643, 1644, 1647, 1650, 1657, 1660, 1662, 1664, 1666, 1671, 1673, 1678, 1680, 1681, 1682, 1683, 1687, 1693, 1694, 1695, 1706, 1713, 1714, 1718, 1720, 1724, 1729, 1731, 1734, 1735, 1736, 1737, 1740, 1744, 1747, 1753, 1759, 1775, 1780, 1783, 1796, 1799, 1805, 1806, 1822, 1827, 1831, 1835, 1841, 1844, 1852, 1855, 1856, 1857, 1858, 1859, 1860, 1862, 1863, 1866, 1870, 1874, 1876, 1996, 2002, 2019, 2020, 2025, 2026, 2028, 2036, 2043, 2044, 2055, 2057, 2070, 2083, 2092, 2096, 2100, 2101, 2105, 2106, 2110, 2111, 2114, 2122, 2127, 2136, 2138, 2141, 2142, 2148, 2154, 2159, 2161, 2162, 2164, 2165, 2167, 2170, 2179, 2187, 2192, 2194, 2195, 2207, 2208, 2210, 2213, 2214, 2228, 2231, 2232, 2236, 2243, 2259, 2271, 2275, 2283, 2284, 2287, 2289, 2292, 2295, 2310, 2315, 2316, 2318, 2323, 2325, 2330, 2333, 2344, 2347, 2348, 2349, 2351, 2364, 2365, 2367, 2368, 2372, 2390, 2406, 2415, 2419, 2421, 2434, 2436, 2437, 2446, 2453, 2456, 2459, 2462, 2464, 2467, 2468, 2473, 2478, 2479, 2480, 2495, 2500, 2501, 2502, 2507, 2512, 2515, 2523, 2525, 2531, 2538, 2547, 2559, 2565

Stimulants and Street Drugs

1988	15 y M				A	Unk	Int-A	3		
		4-acetoxy-N, N-dimethyl-tryptamine	1	1						
		amphetamine (hallucino-genic), 2C-P	2	2						
1989ai	16 y F				U	Ingst	Int-A	2		
		amphetamine (hallucinogenic)	1	1						
1990ai	17 y F				U	Unk	Unk	2		
		methamphetamine	1	1						
1991	17 y M				U	Inhal	Int-A	2		
		amphetamine (hallucinogenic)	1	1						
		supplement, botanical	2	2						
1992p	17 y M				A	Ingst	Int-A	1		
		phenylethylamine	1	1						
[1993a]	17 y M				U	Inhal	Int-A	2		
		amphetamine (hallucinogenic), 25i	1	1						
1994ai	18 y M				A	Unk	Int-A	2		
		heroin	1	1						
		diphenhydramine	2	2						
		acetaminophen	3	3						
		quinine	4	4						
1995p	18 y F				A/C	Ingst	Int-A	2		

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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
		drug, unknown	1	1						
1996ai	18 y M				A	Unk	Int-A	2		
		heroin	1	1						
		benzodiazepine	2	2						
1997ai	18 y M				A	Par	Int-S	2		
		heroin	1	1						
1998pi	18 y M				U	Inhal	Int-A	2		
		THC hololog	1	1						
1999	18 y F				A	Par+ Unk	Int-U	2		
		amphetamine	1	1						
		methamphetamine	2	2						
		heroin	3	3						
2000i	18 y M				A	Unk	Int-A	2		
		phenylethylamine	1	1						
2001pa	18 y M				U	Ingst	Int-M	1		
		methamphetamine	1	1						
2002ai	18 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		diazepam	2	2						
		diphenhydramine	3	3						
		dextromethorphan	4	4						
		citalopram	5	5						
		paroxetine	6	6						
		hydrocodone	7	7						
		doxepin	8	8						
		acetaminophen	9	9						
		codeine	10	10						
		ethanol	11	11						
2003ai	19 y M				A	Unk	Int-A	2		
		heroin	1	1						
		dextromethorphan	2	2						
		citalopram	3	3						
2004ai	19 y M				A	Unk	Int-A	2		
		heroin	1	1						
2005h	19 y M				A	Unk	Unk	2		
		street drug	1	1						
2006	19 y M				C	Ingst	Int-A	2		
		lysergic acid diethylamide (LSD)	1	1						
		chlorpheniramine/ dextrometho-rphan	2	2						
2007ai	20 y F				A	Ingst+ Unk	Int-U	2		
		heroin	1	1						
		cocaine	2	2						
		quinine	3	3						
		ethanol	4	4						
2008ai	20 y M				U	Unk	Int-A	2		
		cocaine	1	1						
2009ai	20 y M				A	Par	Int-A	2		
		heroin	1	1						
		quinine	2	2						
2010ai	20 y M				A	Unk	Int-A	2		
		heroin	1	1						
		sertraline	2	2						
		acetaminophen	3	3						
2011ai	20 y M				A	Unk	Unt-G	2		
		heroin	1	1						
		cocaine	2	2						
2012ai	21 y M				A	Par	Int-A	2		
		heroin	1	1						
2013ai	21 y M				U	Ingst	Int-A	2		
		methamphetamine	1	1						
[2014ha]	21 y M				C	Ingst+ Inhal	AR-D	2		
		cocaine	1	1					benzoylecognine	0.077 mg/L In Serum @ Unknown
		promethazine	2	2						
2015p	21 y M				A	Ingst+ Derm	Int-A	3		

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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
		lysergic acid diethylamide (LSD)	1	1						
		nondrug, unknown	2	2						
2016ai	21 y F				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
2017h	21 y M				A	Inhal	Int-U	3		
		marijuana	1	1						
2018ai	21 y M				A	Par	Int-A	2		
		heroin	1	1						
2019ai	21 y F				A	Par+ Unk	Unt-G	2		
		heroin	1	1						
		codeine	2	2						
		quetiapine	3	3						
		alprazolam	4	4						
2020ai	21 y M				A	Unk	Int-A	2		
		heroin	1	1						
		diazepam	2	2						
		methylene-dioxymetham-phetamine (MDMA)	3	3						
		codeine	4	4						
2021ai	21 y M				A	Unk	Int-A	2		
		heroin	1	1						
2022i	21 y M				U	Inhal	Int-A	1		
		amphetamine (hallucino-genic), 25i	1	1						
2023ai	22 y M				U	Ingst	Int-A	2		
		amphetamine (hallucino-genic)	1	1						
2024ai	22 y F				A	Unk	Int-A	2		
		heroin	1	1						
2025ai	22 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		hydrocodone	2	2						
		oxycodone	3	3						
		tramadol	4	4						
		alprazolam	5	5						
		cyclobenzaprine	6	6						
		doxylamine	7	7						
		phencyclidine	8	8						
		acetaminophen	9	9						
2026ai	22 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		clonazepam	2	2						
2027ai	22 y M				U	Ingst+ Aspir+ Unk	Int-A	2		
		heroin	1	1						
		codeine	2	2						
2028ai	22 y M				A	Unk	Int-A	2		
		heroin	1	1						
		codeine	2	2						
		alprazolam	3	3						
		diphenhydramine	4	4						
2029p	22 y M				A	Ingst	Int-M	2		
		cocaine	1	1						
2030ai	22 y M				A	Unk	Int-A	2		
		heroin	1	1						
		diphenhydramine	2	2						
		doxylamine	3	3						
		dextromethorphan	4	4						
2031p	22 y M				A	Ingst	Int-A	1		
		methylone	1	1						
		ethanol	2	2					ethanol	40 mg/dL In Blood (unspecified) @ Unknown
2032ai	22 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						

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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
		cocaine	2	2						
		codeine	3	3						
		quinine	4	4						
		diltiazem	5	5						
2033ai	23 y M				A	Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
2034a	23 y M				A	Ingst	Int-A	1		
		amphetamine (hallucinogenic)	1	1						
		amphetamine	2	2					amphetamine	90 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	3	3					delta-9-thc	4 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	3	3					delta-9-carboxy-thc	7.2 ng/mL In Blood (unspecified) @ Autopsy
2035	23 y M				A	Ingst	Int-A	2		
		methamphetamine	1	1						
2036pa	23 y F				U	Unk	Int-U	2		
		cocaine	1	1					benzoylecognine	0.124 mg/L In Blood (unspecified) @ 10 m (pe)
		methadone	2	2						
		benzodiazepine	3	3						
		opioid	4	4						
2037ai	23 y M				A	Unk	Int-U	2		
		heroin	1	1						
		dextromethorphan	2	2						
2038pha	23 y M				A	Ingst+ Par	Int-A	1		
		heroin	1	1					morphine	102 ng/mL In Blood (unspecified) @ Unknown
		oxycodone	2	2					codeine	9 ng/mL In Blood (unspecified) @ Unknown
2039ai	23 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		dextromethorphan	2	2						
[2040a]	23 y M				U	Inhal+ Unk	Int-A	1		
		THC homolog	1	1						
		marijuana	2	2						
2041ai	23 y M				A	Unk	Int-A	2		
		heroin	1	1						
2042ai	23 y F				A	Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		quinine	3	3						
2043ai	23 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		diazepam	2	2						
		trazodone	3	3						
		cyclobenzaprine	4	4						
		codeine	5	5						
2044ai	23 y M				U	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		alprazolam	2	2						
		acetaminophen/ hydrocodone	3	3						
		oxycodone	4	4						
		hydromorphone	5	5						
2045pa	23 y M				C	Ingst+ Par	Int-U	1		
		heroin	1	1						
		acetaminophen	2	2					acetaminophen	0 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	30 mg/dL In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	50 mg/dL In Blood (unspecified) @ Unknown
2046pai	23 y F				U	Par	Int-A	1		
		heroin	1	1					codeine	71 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					morphine	800 ng/mL In Blood (unspecified) @ Autopsy
2047ph	23 y M				A	Inhal	Int-A	1		

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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
		amphetamine (hallucinogenic)	1	1						
2048ai	24 y F				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		codeine	2	2						
		dextromethorphan	3	3						
		acetaminophen	4	4						
2049ai	24 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		levamisole	2	2						
2050p	24 y F				A/C	Par	Int-A	1		
		heroin	1	1						
2051pa	24 y M				A/C	Unk	Int-A	1		
		heroin	1	1					morphine (free)	0.22 mg/L In Blood (unspecified) @ 10 m (pe)
		heroin	1	1					morphine	0.55 mg/L In Blood (unspecified) @ 10 m (pe)
2052	24 y M				A/C	Ingst	Int-A	2		
		heroin	1	1						
2053ai	24 y F				U	Ingst+ Par	Int-A	2		
		cocaine	1	1						
		morphine	2	2						
		oxycodone	3	3						
		codeine	4	4						
		heroin	5	5						
2054h	24 y M				C	Par	Oth-W	2		
		heroin	1	1						
2055pa	24 y F				A/C	Ingst+ Unk	Int-A	1		
		heroin	1	1					6-monoacetylmorphine	0.039 mg/L In Urine (quantitative only) @ Autopsy
		heroin	1	1					morphine	0.055 mg/L In Blood (unspecified) @ Autopsy
		heroin	1	1					codeine	0.11 mg/L In Urine (quantitative only) @ Autopsy
		heroin	1	1					morphine	2 mg/L In Urine (quantitative only) @ Autopsy
		methadone	2	2					methadone	0.025 mg/L In Blood (unspecified) @ Autopsy
		methadone	2	2					methadone	0.6 mg/kg In Liver @ Autopsy
		oxycodone	3	3					oxycodone	0.09 mg/L In Urine (quantitative only) @ 28 d (pe)
		alprazolam	4	4						
		acetaminophen	5	5						
2056ai	24 y F				U	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		methadone	2	2						
		methamphetamine	3	3						
		levamisole	4	4						
2057ai	24 y F				A	Ingst+ Par+ Unk	Int-A	2		
		heroin	1	1						
		alprazolam	2	2						
		diphenhydramine	3	3						
		quinine	4	4						
		ethanol	5	5						
2058ai	24 y F				A	Unk	Int-A	2		
		methylone	1	1						
2059ph	24 y M				U	Ingst	Unk	2		
		amphetamine	1	1						
		cocaine	2	2						
2060ha	24 y M				A/C	Unk	Int-A	2		
		methamphetamine	1	1					amphetamine	0.26 mg/L In Blood (unspecified) @ Unknown
		methamphetamine	1	1					methamphetamine	8 mg/L In Blood (unspecified) @ Unknown
2061ai	24 y F				A	Par+ Unk	Int-A	2		
		heroin	1	1						

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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
		cocaine	2	2						
		dextromethorphan	3	3						
		hydroxyzine	4	4						
2062ai	24 y F				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		trazodone	2	2						
		bupropion	3	3						
		citalopram	4	4						
[2063ha]	24 y M				A	Ingst	Int-A	1		
		amphetamine (hallucinogenic)	1	1						
		morphine	2	2					morphine (total)	229 ng/mL In Blood (unspecified) @ Unknown
		morphine	2	2					morphine (free)	30.6 ng/mL In Blood (unspecified) @ Unknown
2064	24 y M				A	Ingst	Int-A	2		
		amphetamine (hallucinogenic)	1	1						
2065ai	24 y F				A	Par	Int-A	2		
		heroin	1	1						
		oxycodone	2	2						
		quinine	3	3						
2066ai	24 y M				A	Par	Int-A	2		
		heroin	1	1						
2067pha	24 y M				A	Par	Int-U	2		
		heroin	1	1					hydromorphone	0.05 mcg/mL In Urine (quantitative only) @ 2 d (pe)
		heroin	1	1					codeine	0.12 mcg/mL In Urine (quantitative only) @ 2 d (pe)
		heroin	1	1					6-monoacetylmorphine	0.2 mcg/mL In Urine (quantitative only) @ 2 d (pe)
		heroin	1	1					morphine (free)	0.27 mcg/mL In Blood (unspecified) @ 2 d (pe)
		heroin	1	1					morphine (total)	0.32 mcg/mL In Blood (unspecified) @ 2 d (pe)
		heroin	1	1					morphine	4 mcg/mL In Urine (quantitative only) @ 2 d (pe)
2068ai	24 y M				A	Par	Int-A	2		
		heroin	1	1						
2069ai	24 y M				A	Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		codeine	3	3						
2070ai	24 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		clonazepam	2	2						
		paroxetine	3	3						
		fluoxetine	4	4						
		cocaine	5	5						
		codeine	6	6						
2071pha	25 y M				U	Ingst	Int-A	1		
		methamphetamine	1	1					amphetamine	301 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	1	1					methamphetamine	46150 ng/mL In Blood (unspecified) @ Autopsy
2072ai	25 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		meperidine	2	2						
		dextromethorphan	3	3						
2073ai	25 y M				U	Unk	Int-A	2		
		cocaine	1	1						
2074pa	25 y M				U	Inhal	AR-D	2		
		THC homolog	1	1						
		THC homolog	2	2						
		THC hololog	3	3						
2075ai	25 y F				U	Ingst+ Unk	Int-S	2		
		methamphetamine	1	1						
		fentanyl	2	2						
		oxycodone	3	3						

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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
2076ai	25 y F				A	Unk	Int-A	2		
		heroin	1	1						
		doxylamine	2	2						
2077pha	25 y M				A	Ingst	Int-S	1		
		cocaine	1	1					cocaine	0.11 mcg/mL In Vitreous @ Autopsy
		cocaine	1	1					cocaine	0.46 mcg/mL In Urine (quantitative only) @ Autopsy
		cocaine	1	1					cocaine	0.9 mcg/mL In Blood (unspecified) @ Autopsy
		cocaine	1	1					benzoylecognine	1 mcg/mL In Vitreous @ Autopsy
		cocaine	1	1					benzoylecognine	1.7 mcg/mL In Blood (unspecified) @ Autopsy
		cocaine	1	1					benzoylecognine	12 mcg/mL In Urine (quantitative only) @ Autopsy
		buprenorphine/ naloxone (film)	2	2					buprenorphine	0 mg/mL In Blood (unspecified) @ Autopsy
2078ai	25 y M				U	Ingst+ Par	Int-A	2		
		heroin	1	1						
		codeine	2	2						
2079ai	26 y M				A	Par	Int-A	2		
		heroin	1	1						
		quinine	2	2						
2080ai	26 y M				A	Par	Int-A	2		
		heroin	1	1						
2081pa	26 y M				A	Par	Int-A	1		
		heroin	1	1					6-monoacetylmorphine	10.8 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					codeine	23.9 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					6-monoacetylmorphine	241 ng/mL In Urine (quantitative only) @ Autopsy
		heroin	1	1					morphine	279 ng/mL In Urine (quantitative only) @ Autopsy
		heroin	1	1					morphine	411 ng/mL In Blood (unspecified) @ Autopsy
2082ai	26 y M				A	Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		quinine	3	3						
2083ai	26 y F				A	Par+ Unk	Unt-G	2		
		heroin	1	1						
		diazepam	2	2						
		cocaine	3	3						
		clonazepam	4	4						
		diphenhydramine	5	5						
		promethazine	6	6						
2084ai	26 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		dextrometho-rphan	2	2						
		ethanol	3	3						
[2085ph]	26 y F				A	Unk	Int-A	1		
		amphetamine (hallucinogenic)	1	1						
2086ai	26 y M				U	Ingst+ Unk	Int-A	2		
		methamphet-amine	1	1						
		ethanol	2	2						
2087ph	26 y M				A	Unk	Unk	2		
		amphetamine (hallucinogenic)	1	1						
2088ai	26 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2089	26 y M				A	Ingst	Int-M	1		
		methamphetamine	1	1						
2090ai	26 y M				A	Par	Int-A	2		

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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
		heroin	1	1						
		diltiazem	2	2						
		codeine	3	3						
2091ai	26 y M				U	Par	Int-A	2		
		heroin	1	1						
2092ai	26 y F				U	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		methamphetamine	2	2						
		acetaminophen/ hydrocodone	3	3						
		diazepam	4	4						
		alprazolam	5	5						
2093ai	26 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		chlorpheniramine	2	2						
		acetaminophen	3	3						
		codeine	4	4						
2094ai	26 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		quinine	2	2						
		diltiazem	3	3						
		ethanol	4	4						
2095	26 y M				A	Inhal	Int-A	2		
		THC homolog	1	1						
2096ai	26 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		alprazolam	2	2						
		codeine	3	3						
2097ai	26 y M				A	Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		phencyclidine	3	3						
		hydrocodone	4	4						
		acetaminophen	5	5						
		codeine	6	6						
2098ai	26 y F				U	Unk	Unk	2		
		methamphetamine	1	1						
2099ai	27 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
2100ai	27 y F				U	Ingst+ Aspir+ Unk	Int-A	2		
		heroin	1	1						
		butalbital	2	2						
		codeine	3	3						
2101ai	27 y M				A	Par+ Unk	Int-U	2		
		heroin	1	1						
		cocaine	2	2						
		clonazepam	3	3						
2102ai	27 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2103ai	27 y F				U	Par	Int-A	2		
		methamphetamine	1	1						
2104ai	27 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		quinine	2	2						
		ethanol (non-beverage)	3	3						
2105p	27 y M				U	Unk	Unk	2		
		heroin	1	1						
		alprazolam	2	2						
		cocaine	3	3						
		amphetamine	4	4						
2106a	27 y M				A	Ingst	Int-A	1		
		methamphetamine	1	1					amphetamine	184 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	1	1					amphetamine	2500 ng/mL In Urine (quantitative only) @ Autopsy
		methamphetamine	1	1					methamphetamine	2500 ng/mL In Urine (quantitative only) @ Autopsy

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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
		methamphetamine	1	1					methamphetamine	4043 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	2	2					clonazepam	12.6 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	2	2					7-aminoclonazepam	2500 ng/mL In Urine (quantitative only) @ Autopsy
		clonazepam	2	2					7-aminoclonazepam	38.5 ng/mL In Blood (unspecified) @ Autopsy
		morphine	3	3					morphine	1307 ng/mL In Urine (quantitative only) @ Autopsy
		marijuana	4	4						
		amphetamine (hallucinogenic)	5	5						
2107ai	27 y M				U	Unk	Int-A	2		
		heroin	1	1						
2108ai	27 y M				A	Unk	Int-A	2		
		heroin	1	1						
		oxycodone	2	2						
		dextromethorphan	3	3						
2109a	27 y M				A	Ingst	Int-A	1		
		methamphetamine	1	1					methamphetamine	16000 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	1	1					amphetamine	180 ng/mL In Blood (unspecified) @ Autopsy
		amphetamine (hallucinogenic)	2	2						
2110ai	27 y F				A	Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		diazepam	3	3						
2111ph	27 y F				U	Ingst	Int-A	2		
		amphetamine	1	1						
		antidepressant (SSRI)	2	2						
		benzodiazepine	3	3						
2112pa	28 y M				A	Unk	Int-S	1		
		heroin	1	1						
2113h	28 y M				A	Ingst	Int-M	2		
		methamphetamine	1	1						
2114ai	28 y F				U	Ingst+ Par	Int-A	2		
		methamphetamine	1	1						
		diazepam	2	2						
2115ai	28 y F				A	Unk	Int-A	2		
		heroin	1	1						
		methadone	2	2						
		cocaine	3	3						
2116ai	28 y M				A	Unk	Int-A	2		
		heroin	1	1						
		methadone	2	2						
		oxycodone	3	3						
		codeine	4	4						
2117ai	28 y M				U	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		methadone	2	2						
2118ai	28 y M				A	Par	Int-A	2		
		heroin	1	1						
2119ai	28 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		codeine	2	2						
		ethanol	3	3						
2120ai	28 y M				A	Par	Int-A	2		
		heroin	1	1						
2121p	28 y M				A/C	Par	Int-S	1		
		heroin	1	1						
		diphenhydramine	2	2						
		epinephrine	3	3						
		naloxone	4	4						
2122ai	28 y M				A	Par	Int-A	2		
		heroin	1	1						
		diazepam	2	2						
		codeine	3	3						

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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
		quinine	4	4						
2123ai	28 y M				A	Par	Int-A	2		
		heroin	1	1						
		quinine	2	2						
		codeine	3	3						
2124ai	28 y M				U	Ingst+ Par	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
		codeine	3	3						
		hydromorphone	4	4						
2125ph	28 y M				A	Par	Int-A	1		
		heroin	1	1						
2126	29 y M				A	Ingst	Int-A	3		
		amphetamine	1	1						
2127ai	29 y M				A	Unk	Int-A	2		
		heroin	1	1						
		alprazolam	2	2						
		diltiazem	3	3						
2128ai	29 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2129ai	29 y F				A	Par	Int-A	2		
		heroin	1	1						
		quinine	2	2						
2130ai	29 y M				A	Unk	Int-A	2		
		heroin	1	1						
		citalopram	2	2						
		quinine	3	3						
2131ai	29 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
2132ai	29 y F				A	Par	Int-A	2		
		heroin	1	1						
		amphetamine	2	2						
		codeine	3	3						
2133ai	29 y M				A	Par	Int-A	2		
		heroin	1	1						
		codeine	2	2						
2134ai	29 y M				U	Ingst+ Aspir+ Unk	Int-A	2		
		cocaine	1	1						
		oxycodone	2	2						
2135ai	29 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
		codeine	3	3						
2136p	29 y M				U	Ingst+ Par	Int-A	1		
		heroin	1	1						
		benzodiazepine	2	2						
2137ai	29 y M				A	Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		codeine	3	3						
		diphenhydramine	4	4						
2138ai	30 y M				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		lorazepam	2	2						
2139ai	30 y M				U	Ingst+ Par	Int-A	2		
		methamphetamine	1	1						
		oxycodone	2	2						
		isopropanol	3	3						
2140ai	30 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		promethazine	3	3						
		pseudoephedrine	4	4						
2141ai	30 y M				U	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		alprazolam	2	2						

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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
2142ai	30 y M				A	Inhal+ Unk	Int-A	2		
		heroin	1	1						
		clonazepam	2	2						
		cocaine	3	3						
2143ph	30 y M				C	Unk	Unk	2		
		heroin	1	1						
		THC homolog	2	2						
2144p	30 y M				A	Unk	Unk	3		
		amphetamine (hallucinogenic), 2,5-Dimethoxy-4-chloroamphetamine	1	1						
2145ai	30 y F				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		amitriptyline	2	2						
		pseudoephedrine	3	3						
2146ai	30 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		methadone	2	2						
		ethanol	3	3						
2147	30 y M				A	Ingst	Unk	1		
		methamphetamine	1	1					amphetamine	42 ng/mL In Unknown @ Autopsy
		methamphetamine	1	1					methamphetamine	900 ng/mL In Unknown @ Autopsy
2148ai	30 y M				A	Par	Int-A	2		
		heroin	1	1						
		chlordiazepoxide	2	2						
		cocaine	3	3						
		quinine	4	4						
[2149ha]	30 y M				A	Unk	Int-A	1		
		methamphetamine	1	1						
2150pa	30 y M				A	Par	Int-U	1		
		heroin	1	1					morphine	0.041 mg/L In Blood (unspecified) @ Autopsy
2151	30 y M				A	Ingst	Unt-G	2		
		methamphetamine	1	1						
		methylenedioxymethamphetamine (MDMA)	2	2						
2152ai	31 y M				A	Unk	Int-A	2		
		heroin	1	1						
		methadone	2	2						
		doxepin	3	3						
2153ai	31 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		citalopram	2	2						
		fluoxetine	3	3						
2154ai	31 y M				A	Unk	Int-A	2		
		heroin	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
		cocaine	4	4						
		promethazine	5	5						
2155ai	31 y M				A	Inhal	Int-A	2		
		heroin	1	1						
		lidocaine	2	2						
2156ai	31 y M				A	Ingst+ Unk	Int-A	2		
		phencyclidine	1	1						
		ethanol	2	2						
2157ai	31 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		ethanol	3	3						
2158ai	31 y M				A	Inhal+ Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		diphenhydramine	3	3						
2159ai	31 y F				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						

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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
		acetaminophen/ hydrocodone	2	2						
		alprazolam	3	3						
2160ai	31 y M				A	Unk	Int-A	2		
		heroin	1	1						
		bupropion	2	2						
2161pa	31 y M				U	Ingst+ Par	Int-S	1		
		heroin	1	1					morphine	211 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					6-monoacetylmorphine	4 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					codeine	7.7 ng/mL In Blood (unspecified) @ Autopsy
		hydrocodone	2	2					hydrocodone	50.6 ng/mL In Blood (unspecified) @ Autopsy
		amphetamine/dextroamphetamine	3	3					amphetamine	180 ng/mL In Blood (unspecified) @ Autopsy
		citalopram	4	4						
		eszopiclone	5	5						
		lamotrigine	6	6						
2162ai	31 y F				A	Unk	Int-A	2		
		heroin	1	1						
		quetiapine	2	2						
		sertraline	3	3						
2163ai	32 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
2164ai	32 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		clonazepam	2	2						
		cocaine	3	3						
		citalopram	4	4						
		diphenhydramine	5	5						
2165ai	32 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		alprazolam	3	3						
		diltiazem	4	4						
		diphenhydramine	5	5						
		ethanol	6	6						
2166ai	32 y M				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		morphine	2	2						
		acetaminophen/ hydrocodone	3	3						
2167ai	32 y F				U	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		fentanyl	2	2						
		alprazolam	3	3						
		cyclobenzaprine	4	4						
		morphine	5	5						
2168ai	32 y M				U	Par	Int-A	2		
		methamphetamine	1	1						
		morphine	2	2						
2169ai	32 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		dextromethorphan	2	2						
		ethanol	3	3						
2170ai	32 y M				A	Unk	Int-A	2		
		heroin	1	1						
		methadone	2	2						
		oxycodone	3	3						
		clonazepam	4	4						
		meprobamate	5	5						
		quinine	6	6						
2171ai	32 y M				A	Par	Int-A	2		
		heroin	1	1						
2172h	32 y M				U	Ingst	Int-A	2		
		amphetamine (hallucinogenic)	1	1						
		cocaine	2	2						
		opioid	3	3						

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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
2173ph	32 y M				A	Ingst+ Unk	Int-A	1		
		cocaine	1	1						
		thiazide	2	2						
		labetolol	3	3						
		doxycycline	4	4						
2174ai	32 y M				A	Unk	Int-U	2		
		heroin	1	1						
		trazodone	2	2						
		citalopram	3	3						
2175ai	32 y M				A	Unk	Int-A	2		
		heroin	1	1						
		dextrometho-rphan	2	2						
		acetaminophen	3	3						
		codeine	4	4						
2176ai	32 y M				U	Unk	Int-A	2		
		methamphet-amine	1	1						
2177ai	32 y M				A	Unk	Int-A	2		
		heroin	1	1						
		sertraline	2	2						
		diltiazem	3	3						
		codeine	4	4						
2178ai	32 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		quinine	3	3						
		ethanol	4	4						
2179ai	32 y M				U	Ingst+ Par	Int-A	2		
		heroin	1	1						
		codeine	2	2						
		alprazolam	3	3						
		diazepam	4	4						
2180pa	32 y M				A	Unk	Int-A	2		
		cocaine	1	1					cocaine	0.09 mg/L In Blood (unspecified) @ Autopsy
		cocaine	1	1					benzoylecognine	0.68 mg/L In Blood (unspecified) @ Autopsy
		heroin	2	2						
		levamisole	3	3						
		dextromethorphan	4	4						
		codeine	5	5					codeine (free)	0.03 mg/L In Blood (unspecified) @ Autopsy
		codeine	5	5					morphine	0.21 mg/L In Blood (unspecified) @ Autopsy
2181ph	32 y M				A	Par	Int-A	1		
		heroin	1	1						
		ethanol	2	2					ethanol	80 mg/dL In Blood (unspecified) @ 2 h (pe)
2182	32 y M				A	Ingst	Int-A	1		
		amphetamine (hallucinogenic)	1	1						
2183ai	33 y M				A	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		methadone	2	2						
		trazodone	3	3						
2184ai	33 y M				U	Unk	Int-A	2		
		methamphet-amine	1	1						
		ethanol	2	2						
2185ai	33 y M				U	Unk	Int-A	2		
		methamphet-amine	1	1						
2186ai	33 y F				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
2187ai	33 y M				A	Unk	Int-A	2		
		heroin	1	1						
		meprobamate	2	2						
2188ai	33 y M				U	Unk	Int-A	2		
		cocaine	1	1						
2189ai	33 y M				A	Par	Int-A	2		

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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
		heroin	1	1						
		cocaine	2	2						
		diphenhydramine	3	3						
		quinine	4	4						
2190ai	33 y M				A	Unk	Int-A	2		
		heroin	1	1						
		methadone	2	2						
		cocaine	3	3						
2191ai	33 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		tramadol	3	3						
2192ai	33 y M				A	Par+ Unk	Int-U	2		
		heroin	1	1						
		alprazolam	2	2						
		cocaine	3	3						
		dextromethorphan	4	4						
		quinine	5	5						
2193a	33 y M				A	Par	Int-A	3		
		methamphetamine	1	1					amphetamine	0.02 mg/L In Blood (unspecified) @ Unknown
		methamphetamine	1	1					methamphetamine	0.28 mg/L In Blood (unspecified) @ Unknown
2194pa	33 y M				A	Unk	Int-A	1		
		cocaine	1	1						
		heroin	2	2						
		alprazolam	3	3						
2195ai	33 y M				A	Unk	Int-A	2		
		heroin	1	1						
		oxycodone	2	2						
		diazepam	3	3						
		cocaine	4	4						
		sertraline	5	5						
		dextromethorphan	6	6						
		codeine	7	7						
2196ai	33 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2197ai	33 y M				U	Unk	Int-S	2		
		methamphetamine	1	1						
2198ai	33 y M				A	Par	Int-A	2		
		heroin	1	1						
		oxycodone	2	2						
		codeine	3	3						
		diltiazem	4	4						
2199ai	33 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		trazodone	2	2						
		hydroxyzine	3	3						
2200ai	34 y F				A	Unk	Int-A	2		
		cocaine	1	1						
		oxycodone	2	2						
		cyclobenzaprine	3	3						
		sertraline	4	4						
2201	34 y F				A	Inhal	Int-A	2		
		amphetamine (hallucinogenic)	1	1						
2202phai	34 y F				U	Par	Unk	2		
		heroin	1	1					morphine	0.043 mg/L In Blood (unspecified) @ Autopsy
		heroin	1	1					methamphetamine	0.05 mg/L In Blood (unspecified) @ Autopsy
		heroin	1	1					cocaine	0.061 mg/L In Blood (unspecified) @ Autopsy
		heroin	1	1					codeine	0.235 mg/L In Urine (quantitative only) @ Autopsy
		heroin	1	1					6-monoacetylmorphine	0.453 mg/L In Urine (quantitative only) @ Autopsy
		heroin	1	1					ecgonine methyl ester	0.583 mg/L In Blood (unspecified) @ Autopsy

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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
		heroin	1	1					morphine	1.87 mg/L In Urine (quantitative only) @ Autopsy
		heroin	1	1					benzoylecognine	2.67 mg/L In Blood (unspecified) @ Autopsy
2203ai	34 y M				A	Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
2204a	34 y M				A	Ingst	Int-A	1		
		amphetamine (hallucinogenic)	1	1						
2205ai	34 y M				A	Unk	Int-A	2		
		heroin	1	1						
2206ai	34 y M				A	Par	Int-A	2		
		heroin	1	1						
2207pa	35 y M				U	Ingst+ Par	Int-U	2		
		heroin	1	1					6-monoacetylmorphine	121 ng/mL In Urine (quantitative only) @ Autopsy
		heroin	1	1					morphine	351 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					morphine	351 ng/mL In Urine (quantitative only) @ Autopsy
		heroin	1	1					6-monoacetylmorphine	7.4 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					codeine	7.7 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	220 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	2500 ng/mL In Urine (quantitative only) @ Autopsy
		alprazolam	2	2					alpha-oh-alprazolam	2500 ng/mL In Urine (quantitative only) @ Autopsy
		gabapentin	3	3						
		diazepam	4	4					oxazepam	1600 ng/mL In Urine (quantitative only) @ Autopsy
		diazepam	4	4					nordiazepam	178 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	4	4					nordiazepam	550 ng/mL In Urine (quantitative only) @ Autopsy
		diazepam	4	4					temazepam	569 ng/mL In Urine (quantitative only) @ Autopsy
2208ai	35 y F				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		meprobamate	2	2						
		ethanol	3	3						
2209ai	35 y M				U	Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		methamphetamine	3	3						
2210pa	35 y M				U	Ingst+ Par	Unk	1		
		heroin	1	1					codeine	24.1 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					morphine	386 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					6-monoacetylmorphine	5.1 ng/mL In Blood (unspecified) @ Autopsy
		hydrocodone	2	2					hydrocodone	108 ng/mL In Blood (unspecified) @ Autopsy
		hydrocodone	2	2					hydromorphone	23.5 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	3	3					alprazolam	73 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	4	4					oxymorphone	30.4 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	4	4					oxycodone	50.6 ng/mL In Blood (unspecified) @ Autopsy
		hydroxyzine	5	5						

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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
2211	35 y M				A	Unk	Int-S	2		
		cocaine	1	1						
2212ai	35 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		skeletal muscle relaxant	2	2						
		sertraline	3	3						
2213ai	35 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
		cocaine	4	4						
		doxepin	5	5						
		citalopram	6	6						
		verapamil	7	7						
2214ai	35 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		clonazepam	2	2						
		amitriptyline	3	3						
		citalopram	4	4						
		hydroxyzine	5	5						
		diphenhydramine	6	6						
2215ai	35 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		diphenhydramine	2	2						
		sertraline	3	3						
2216ai	35 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		codeine	2	2						
		ethanol	3	3						
2217ai	35 y M				A	Unk	Int-A	2		
		heroin	1	1						
		quinine	2	2						
2218ai	35 y M				A	Par	Int-A	2		
		heroin	1	1						
2219ai	35 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2220ai	35 y M				A	Unk	Int-A	2		
		heroin	1	1						
		codeine	2	2						
		dextromethorphan	3	3						
2221ha	35 y M				A	Inhal+ Unk	Int-A	2		
		THC homolog	1	1						
		amphetamine (hallucinogenic)	2	2						
2222pa	35 y M				A	Ingst	Int-A	1		
		heroin	1	1					morphine (free)	0.039 mg/L In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	110 mg/dL In Blood (unspecified) @ Unknown
2223	35 y M				A/C	Par	Int-S	1		
		heroin	1	1						
2224ai	35 y M				A	Par	Int-A	2		
		heroin	1	1						
2225ai	35 y M				A	Par	Int-A	2		
		heroin	1	1						
		codeine	2	2						
2226ai	36 y F				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
		quinine	3	3						
2227ai	36 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
2228ai	36 y M				A	Unk	Int-A	2		
		heroin	1	1						
		alprazolam	2	2						
		quinine	3	3						
2229ai	36 y M				A	Unk	Int-A	2		
		heroin	1	1						

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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
2230ai	36 y M				A	Unk	Int-A	2		
		phencyclidine	1	1						
2231ai	36 y M				A	Unk	Int-A	2		
		heroin	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
		nortriptyline	4	4						
		citalopram	5	5						
2232ai	36 y M				A	Par	Int-A	2		
		heroin	1	1						
		fentanyl	2	2						
		tramadol	3	3						
		cyclobenzaprine	4	4						
		quetiapine	5	5						
		codeine	6	6						
		acetaminophen	7	7						
2233ai	36 y F				A	Ingst+ Inhal	Int-A	2		
		heroin	1	1						
		trazodone	2	2						
		cocaine	3	3						
		venlafaxine	4	4						
		ethanol	5	5						
2234ai	36 y F				A	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		ethanol	2	2						
2235ai	37 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		oxycodone	2	2						
		acetaminophen/ hydrocodone	3	3						
		ethanol	4	4						
2236ai	37 y F				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		diazepam	2	2						
2237	37 y M				U	Unk	Int-A	1		
		cocaine	1	1						
2238ai	37 y F				A	Par	Int-A	2		
		heroin	1	1						
2239ai	37 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
[2240a]	37 y M				U	Ingst+ Inhal	Unk	1		
		cocaine	1	1					cocaine	0.3 mg/mL In Blood (unspecified) @ Unknown
		cocaine	1	1					benzoylecognine	1.2 mg/mL In Blood (unspecified) @ Unknown
2241ai	37 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
2242p	37 y M				U	Unk	Int-A	1		
		heroin	1	1						
2243ai	38 y M				A	Par	Int-A	2		
		amphetamine	1	1						
		buspirone	2	2						
2244ai	38 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2245pa	38 y M				U	Par	Int-A	1		
		heroin	1	1					codeine	0.01 mg/L In Blood (unspecified) @ Unknown
		heroin	1	1					morphine (total)	0.29 mg/L In Blood (unspecified) @ Unknown
2246pai	38 y M				U	Unk	Int-A	2		
		heroin	1	1						
		hydrocodone/ phenyltoloxamine	2	2						
		marijuana	3	3						
2247ai	38 y F				A	Ingst+ Unk	Int-A	2		
		phencyclidine	1	1						

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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
		diphenhydramine	2	2						
		cyclobenzaprine	3	3						
		acetaminophen	4	4						
		fluoxetine	5	5						
		ethanol	6	6						
2248ai	38 y M				A	Unk	Int-A	2		
		heroin	1	1						
		quinine	2	2						
2249ai	38 y M				A	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		heroin	2	2						
		topiramate	3	3						
		venlafaxine	4	4						
2250ai	38 y F				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		citalopram	2	2						
		ethanol	3	3						
2251ai	38 y M				U	Unk	Int-A	2		
		cocaine	1	1						
2252ai	38 y M				A	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		ethanol	2	2						
2253ai	38 y M				A	Ingst+ Inhal+ Par	Int-A	2		
		heroin	1	1						
		metoclopramide	2	2						
		ethanol	3	3						
2254ai	38 y M				A	Unk	Int-A	2		
		cocaine	1	1						
		acetaminophen	2	2						
2255ai	38 y M				A	Unk	Int-A	2		
		heroin	1	1						
2256pi	38 y F				A	Inhal	Int-A	1		
		THC homolog	1	1						
2257ai	39 y F				U	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		methadone	2	2						
2258ai	39 y M				A	Par	Int-A	2		
		heroin	1	1						
		quinine	2	2						
		ethanol	3	3						
2259ai	39 y F				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		morphine	2	2						
		oxycodone	3	3						
		alprazolam	4	4						
		fluoxetine	5	5						
		carbamazepine	6	6						
		diazepam	7	7						
2260ai	39 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		ethanol	3	3						
2261ai	39 y M				A	Unk	Int-A	2		
		heroin	1	1						
2262ai	39 y M				U	Inhal	Int-A	2		
		methamphetamine	1	1						
2263ai	39 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		venlafaxine	3	3						
		trazodone	4	4						
2264ai	39 y M				A	Inhal+ Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		bupropion	3	3						
		codeine	4	4						
2265ai	39 y M				A	Unk	Int-A	2		
		heroin	1	1						
2266p	39 y F				U	Ingst+ Inhal	Int-S	2		

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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
		cocaine	1	1						
		ethanol	2	2						
2267a	40 y M				A	Ingst	Int-U	2		
		cocaine	1	1						
		ethanol	2	2						
		acetaminophen	3	3						
2268ai	40 y M				U	Unk	Unk	2		
		phencyclidine	1	1						
2269ai	40 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		ethanol	3	3						
2270ai	40 y F				U	Unk	Int-A	2		
		cocaine	1	1						
2271ai	40 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
		zolpidem	3	3						
		dextromethorphan	4	4						
2272ai	40 y M				A	Par	Int-A	2		
		heroin	1	1						
		codeine	2	2						
2273pha	40 y M				A/C	Ingst	Int-A	1		
		heroin	1	1					morphine	28 ng/mL In Blood (unspecified) @ 4 h (pe)
		ethanol	2	2					ethanol	312 mg/dL In Blood (unspecified) @ 4 h (pe)
2274ai	40 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
		dextromethorphan	3	3						
		doxylamine	4	4						
2275pha	40 y M				A	Ingst	Int-S	1		
		heroin	1	1					morphine (free)	0 Other (see abst) In Vitreous @ Autopsy
		heroin	1	1					morphine (free)	120 ng/mL In Blood (unspecified) @ Unknown
		cocaine	2	2					cocaine	0 Other (see abst) In Blood (unspecified) @ Unknown
		cocaine	2	2					benzoylecognine	1000 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	3	3					7-aminoclonazepam	324 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	3	3					clonazepam	41 ng/mL In Blood (unspecified) @ Unknown
		diphenhydramine	4	4					diphenhydramine	100 ng/mL In Blood (unspecified) @ Autopsy
		doxepin	5	5						
		trihexyphenidyl	6	6						
2276ai	41 y M				U	Unk	Int-S	2		
		methamphet-amine	1	1						
2277ai	41 y M				A	Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		topiramate	3	3						
		diltiazem	4	4						
		quinine	5	5						
2278ai	41 y F				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		citalopram	2	2						
2279ai	41 y M				A	Inhal+ Par	Int-A	2		
		cocaine	1	1						
2280ai	41 y M				A	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		doxylamine	2	2						
		dextromethorphan	3	3						
		ethanol	4	4						
2281ai	41 y M				A	Ingst+ Inhal	Int-A	2		
		THC homolog	1	1						
		THC homolog	2	2						

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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
		hydromorphone	3	3						
		sertraline	4	4						
2282ai	41 y M				A	Unk	Int-A	2		
		heroin	1	1						
		dextromethorphan	2	2						
2283ai	41 y M				A	Par	Int-A	2		
		heroin	1	1						
		clonazepam	2	2						
		cocaine	3	3						
		quinine	4	4						
2284ai	41 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		clonazepam	2	2						
		promethazine	3	3						
		metoclopramide	4	4						
2285ai	41 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		dextromethorphan	2	2						
2286ai	41 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		promethazine	3	3						
		citalopram	4	4						
		dextromethorphan	5	5						
		quinine	6	6						
2287ai	41 y M				A	Unk	Int-A	2		
		heroin	1	1						
		chlordiazepoxide	2	2						
2288ai	41 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2289ai	41 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		methadone	2	2						
		oxycodone	3	3						
		cocaine	4	4						
		alprazolam	5	5						
		quinine	6	6						
		diltiazem	7	7						
2290ai	42 y M				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		doxepin	2	2						
		sertraline	3	3						
		benztropine	4	4						
		trazodone	5	5						
2291p	42 y M				A	Unk	Int-U	2		
		street drug	1	1						
2292ai	42 y M				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
		fentanyl	4	4						
		oxymorphone	5	5						
2293ai	42 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		diltiazem	3	3						
		quinine	4	4						
		ethanol	5	5						
2294ai	42 y M				A	Unk	Int-A	2		
		heroin	1	1						
		lamotrigine	2	2						
2295a	42 y F				U	Ingst+ Inhal	Int-A	2		
		THC homolog	1	1						
		cocaine	2	2						
		benzodiazepine	3	3						
2296ai	42 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
2297ai	42 y F				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		hydromorphone	2	2						

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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
		acetaminophen/ hydrocodone	3	3						
		tramadol	4	4						
		pentazocine	5	5						
		citalopram	6	6						
		lidocaine	7	7						
2298ai	42 y M				U	Ingst+ Par	Int-A	2		
		heroin	1	1						
		codeine	2	2						
2299ai	42 y F				A	Unk	Unt-G	2		
		heroin	1	1						
		carbamazepine	2	2						
		fluoxetine	3	3						
2300ai	42 y F				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		acetaminophen/ hydrocodone	2	2						
2301ai	43 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
2302ai	43 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		quinine	3	3						
		ethanol	4	4						
2303ai	43 y M				A	Par	Int-A	2		
		heroin	1	1						
2304ai	43 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		ethanol	3	3						
2305ai	43 y M				A	Inhal+ Unk	Int-A	2		
		cocaine	1	1						
		marijuana	2	2						
2306ai	43 y F				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		tramadol	2	2						
		cocaine	3	3						
		ethanol	4	4						
2307	43 y M				U	Unk	Int-A	2		
		cocaine	1	1						
		hair spray	2	2						
		drug, unknown	3	3						
		marijuana	4	4						
2308ai	43 y M				A	Unk	Int-A	2		
		cocaine	1	1						
2309ai	43 y F				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		dextromethorphan	3	3						
		quinine	4	4						
2310ai	43 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
		codeine	4	4						
2311ai	43 y M				A	Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		codeine	3	3						
		diltiazem	4	4						
2312ai	44 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
		cocaine	2	2						
		ethanol	3	3						
2313ai	44 y M				A	Unk	Int-A	2		
		heroin	1	1						
2314	44 y F				A	Ingst	Int-S	2		
		amphetamine/dex- troamphetamine	1	1						
2315ai	44 y M				A	Unk	Int-A	2		
		heroin	1	1						

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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
		cocaine	2	2						
		phencyclidine	3	3						
		clonazepam	4	4						
		doxylamine	5	5						
		trazodone	6	6						
2316ai	44 y F				U	Ingst+ Unk	Int-A	2		
		amphetamine	1	1						
		alprazolam	2	2						
		acetaminophen/ hydrocodone	3	3						
		oxycodone	4	4						
		diazepam	5	5						
2317ai	44 y M				A	Unk	Int-A	2		
		heroin	1	1						
2318ai	44 y M				A	Unk	Int-A	2		
		heroin	1	1						
		alprazolam	2	2						
		diphenhydramine	3	3						
		dextrometho- rphan	4	4						
		diltiazem	5	5						
		quinine	6	6						
2319ai	44 y F				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		promethazine	3	3						
		trazodone	4	4						
2320ai	44 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		tramadol	2	2						
		cyclobenzaprine	3	3						
		quinine	4	4						
		ethanol	5	5						
2321ai	44 y M				U	Unk	Int-A	2		
		cocaine	1	1						
2322ai	44 y M				A	Ingst+ Inhal	Int-A	2		
		heroin	1	1						
		tramadol	2	2						
		codeine	3	3						
		ethanol	4	4						
2323ai	44 y F				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		alprazolam	2	2						
		ethanol	3	3						
2324ai	44 y M				A	Unk	Int-A	2		
		cocaine	1	1						
		heroin	2	2						
		dextrometho- rphan	3	3						
2325ai	44 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		methadone	2	2						
		cocaine	3	3						
		dextrometho- rphan	4	4						
		topiramate	5	5						
		olanzapine	6	6						
		diltiazem	7	7						
		codeine	8	8						
2326ai	44 y M				A	Par	Int-A	2		
		heroin	1	1						
		quinine	2	2						
		ethanol	3	3						
2327ai	45 y M				A	Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
2328ai	45 y M				U	Unk	Int-A	2		
		cocaine	1	1						
2329ai	45 y F				A	Unk	Int-A	2		
		cocaine	1	1						
2330ai	45 y M				A	Ingst+ Unk	Int-A	2		

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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
		heroin	1	1						
		alprazolam	2	2						
		diphenhydramine	3	3						
		quinine	4	4						
		ethanol	5	5						
2331ai	45 y M				A	Unk	Int-A	2		
		heroin	1	1						
		oxycodone	2	2						
		cocaine	3	3						
2332ai	45 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
2333ai	45 y M				A	Ingst+ Inhal	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		haloperidol	3	3						
		benztropine	4	4						
		codeine	5	5						
2334ai	45 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		oxycodone	2	2						
		cocaine	3	3						
		codeine	4	4						
2335ai	45 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		diltiazem	2	2						
		ethanol	3	3						
2336ai	45 y F				A	Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		diphenhydramine	3	3						
		citalopram	4	4						
		acetaminophen	5	5						
2337ai	45 y M				A	Inhal+ Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		codeine	3	3						
		diltiazem	4	4						
2338p	45 y F				U	Ingst	Int-U	1		
		ephedrine	1	1						
		venlafaxine	2	2					venlafaxine	508 ng/mL In Blood (unspecified) @ Unknown
		venlafaxine	2	2					norvenlafaxine	664 ng/mL In Blood (unspecified) @ Unknown
		hydrocodone	3	3					hydrocodone	14.4 ng/mL In Blood (unspecified) @ Unknown
		duloxetine	4	4						
2339ai	46 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		amitriptyline	3	3						
		ethanol	4	4						
2340p	46 y F				A	Unk	Int-A	1		
		heroin	1	1						
2341ai	46 y F				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		citalopram	2	2						
		diphenhydramine	3	3						
		quinine	4	4						
		ethanol	5	5						
2342ai	46 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2343ai	46 y M				U	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
2344ai	46 y F				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		oxycodone	2	2						
		diazepam	3	3						
		alprazolam	4	4						
2345ai	46 y M				U	Ingst+ Unk	Int-A	2		

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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
		cocaine	1	1						
		oxycodone	2	2						
		ethanol	3	3						
2346ai	46 y M				A	Unk	Int-A	2		
		heroin	1	1						
		promethazine	2	2						
		codeine	3	3						
		quinine	4	4						
2347ai	46 y M				A	Unk	Int-A	2		
		heroin	1	1						
		clonazepam	2	2						
		cocaine	3	3						
		codeine	4	4						
		quinine	5	5						
2348pa	47 y M				A	Ingst+ Aspir	Int-S	1		
		heroin	1	1						
		alprazolam	2	2						
		cocaine	3	3						
		hydroxyzine	4	4						
		dextromethorphan	5	5						
		quinine	6	6						
2349ai	47 y M				A	Unk	Int-A	2		
		heroin	1	1						
		alprazolam	2	2						
		hydroxyzine	3	3						
		cocaine	4	4						
		quinine	5	5						
2350ai	47 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2351ai	47 y M				A	Ingst+ Inhal	Int-A	2		
		heroin	1	1						
		clonazepam	2	2						
		quetiapine	3	3						
		cocaine	4	4						
		ethanol	5	5						
2352ai	47 y M				A	Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
2353ai	47 y M				A	Unk	Int-A	2		
		heroin	1	1						
		hydrocodone	2	2						
		cocaine	3	3						
		dextromethorphan	4	4						
2354ai	47 y M				U	Unk	Unk	2		
		methamphetamine	1	1						
		strychnine	2	2						
2355ai	47 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
2356ai	47 y M				A	Unk	Int-U	2		
		cocaine	1	1						
		morphine	2	2						
		diltiazem	3	3						
2357ai	47 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		ethanol	3	3						
2358ai	47 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		tramadol	2	2						
		quinine	3	3						
		ethanol	4	4						
2359ai	47 y F				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		acetaminophen/ hydrocodone	2	2						
		venlafaxine	3	3						
2360ai	47 y M				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		oxycodone	2	2						
		ethanol	3	3						

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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
2361ai	47 y M				A	Inhal+ Par+ Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		diphenhydramine	3	3						
2362ai	47 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		tramadol	2	2						
		methadone	3	3						
		quinine	4	4						
		ethanol	5	5						
2363ai	47 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		fluoxetine	2	2						
		diphenhydramine	3	3						
		bupropion	4	4						
		dextromethorphan	5	5						
		benztropine	6	6						
		quinine	7	7						
		diltiazem	8	8						
		ethanol	9	9						
2364ai	47 y M				A	Par	Int-A	2		
		heroin	1	1						
		tapentadol	2	2						
		oxycodone	3	3						
		alprazolam	4	4						
		codeine	5	5						
2365ai	47 y F				A	Unk	Int-A	2		
		heroin	1	1						
		quetiapine	2	2						
		dextromethorphan	3	3						
		alprazolam	4	4						
		quinine	5	5						
		diltiazem	6	6						
		codeine	7	7						
2366ai	47 y F				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		quinine	3	3						
		verapamil	4	4						
2367ai	47 y F				U	Ingst+ Unk	Unk	2		
		methamphetamine	1	1						
		acetaminophen/ hydrocodone	2	2						
		alprazolam	3	3						
		citalopram	4	4						
		bupropion	5	5						
		venlafaxine	6	6						
		carbamazepine	7	7						
		doxylamine	8	8						
		tramadol	9	9						
2368ai	47 y M				U	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		acetaminophen/ hydrocodone	2	2						
		dextromethorphan	3	3						
		alprazolam	4	4						
		diazepam	5	5						
2369ai	48 y M				A	Par	Int-A	2		
		heroin	1	1						
2370ai	48 y F				A	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		verapamil	2	2						
		diphenhydramine	3	3						
2371ai	48 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
2372ai	48 y F				U	Ingst+ Unk	Int-S	2		
		methamphetamine	1	1						
		doxepin	2	2						
		diazepam	3	3						
2373ai	48 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						

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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
		hydroxyzine	2	2						
		trazodone	3	3						
		cocaine	4	4						
		ethanol	5	5						
2374ai	48 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
2375ai	48 y M				A	Unk	Int-A	2		
		heroin	1	1						
2376a	48 y M				A	Ingst	Int-M	1		
		methamphetamine	1	1					amphetamine	0.1 mg/L In Blood (unspecified) @ Unknown
		methamphetamine	1	1					methamphetamine	3.2 mg/L In Blood (unspecified) @ Unknown
2377ai	48 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2378ai	48 y M				A	Par	Int-A	2		
		heroin	1	1						
2379ai	48 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
2380ai	48 y F				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		promethazine	2	2						
		cyclobenzaprine	3	3						
		ethanol	4	4						
2381ai	48 y M				A	Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		dextromethorphan	3	3						
2382ai	48 y M				A	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		methadone	2	2						
		promethazine	3	3						
		quinine	4	4						
2383ai	48 y F				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		citalopram	2	2						
		chlorpheniramine	3	3						
		diphenhydramine	4	4						
2384ai	48 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2385ai	48 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2386ai	49 y M				A	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		acetaminophen	2	2						
2387ai	49 y M				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		morphine	2	2						
		acetaminophen/ hydrocodone	3	3						
2388ai	49 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
2389ai	49 y F				A	Par	Int-A	2		
		heroin	1	1						
		citalopram	2	2						
2390ai	49 y F				A	Unk	Int-A	2		
		cocaine	1	1						
		chlordiazepoxide	2	2						
2391ai	49 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		amitriptyline	2	2						
		diphenhydramine	3	3						
		ethanol	4	4						
2392ai	49 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		bupropion	3	3						
		trazodone	4	4						
		quinine	5	5						
		ethanol	6	6						
2393ai	49 y M				A	Unk	Int-A	2		
		heroin	1	1						

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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
		dextromethorphan	2	2						
		quinine	3	3						
2394ai	49 y F				U	Unk	Unk	2		
		methamphetamine	1	1						
2395ai	49 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
2396ai	49 y M				A	Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		diphenhydramine	3	3						
		metoprolol	4	4						
2397ai	49 y M				A	Par	Int-A	2		
		heroin	1	1						
		quinine	2	2						
2398ai	49 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2399ai	49 y F				A	Ingst+ Unk	Int-U	2		
		heroin	1	1						
		methadone	2	2						
2400ai	49 y M				A	Unk	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
2401ai	49 y F				A	Par	Int-A	2		
		heroin	1	1						
		citalopram	2	2						
		quinine	3	3						
2402p	49 y M				A/C	Ingst	Int-A	2		
		heroin	1	1						
		ethanol	2	2					ethanol	390 mg/dL In Blood (unspecified) @ Unknown
2403pha	49 y F				A	Unk	Unk	1		
		cocaine	1	1					ecgonine methyl ester	0.04 mg/L In Serum @ Autopsy
		cocaine	1	1					benzoylecognine	0.31 mg/L In Serum @ Autopsy
		morphine	2	2						
		oxycodone	3	3					oxycodone	3 ng/mL In Serum @ Autopsy
2404ai	50 y M				A	Inhal+ Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
2405ai	50 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		diphenhydramine	2	2						
		codeine	3	3						
		acetaminophen	4	4						
		quinine	5	5						
2406ai	50 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		diazepam	2	2						
		cyclobenzaprine	3	3						
		diltiazem	4	4						
		ethanol	5	5						
2407ai	50 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		doxepin	2	2						
		citalopram	3	3						
2408ha	50 y F				U	Ingst	Unt-G	2		
		cocaine	1	1						
		substance (non-drug), unknown	2	2						
2409ai	50 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		quinine	2	2						
		ethanol	3	3						
2410ai	50 y F				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		tramadol	3	3						
		dextromethorphan	4	4						
		diphenhydramine	5	5						

(*Continued*)

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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
		citalopram	6	6						
		hydroxyzine	7	7						
		quinine	8	8						
		ethanol	9	9						
2411ai	50 y M				A	Par	Int-A	2		
		heroin	1	1						
2412pa	50 y F				A	Ingst+ Unk	Int-S	2		
		cocaine	1	1						
		hydromorphone	2	2					hydromorphone	79 ng/mL In Blood (unspecified) @ Unknown
		atenolol	3	3						
2413ai	50 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		phencyclidine	3	3						
		diphenhydramine	4	4						
		ethanol	5	5						
2414ai	50 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		ethanol	3	3						
2415ai	50 y M				U	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		methadone	2	2						
		diazepam	3	3						
2416ai	50 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2417ai	50 y M				A	Unk	Int-A	2		
		cocaine	1	1						
		bupropion	2	2						
		trazodone	3	3						
		metoprolol	4	4						
		sertraline	5	5						
2418ai	50 y M				A	Ingst+ Inhal	Int-A	2		
		cocaine	1	1						
		ethanol	2	2						
2419ai	50 y F				A	Par	Int-A	2		
		heroin	1	1						
		methadone	2	2						
		cocaine	3	3						
		promethazine	4	4						
		quetiapine	5	5						
		diphenhydramine	6	6						
2420ai	50 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		acetaminophen/ hydrocodone	2	2						
2421ai	50 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		diazepam	2	2						
		cocaine	3	3						
		olanzapine	4	4						
		fluoxetine	5	5						
		quinine	6	6						
		codeine	7	7						
		isopropanol	8	8						
		ethanol	9	9						
2422ai	51 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
2423ai	51 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
2424ai	51 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
2425ai	51 y M				A	Unk	Int-A	2		
		cocaine	1	1						
		oxycodone	2	2						
		hydromorphone	3	3						

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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
		cyclobenzaprine	4	4						
2426ai	51 y F				U	Par	Int-A	2		
		methamphetamine	1	1						
		heroin	2	2						
		codeine	3	3						
2427ai	51 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
2428ai	51 y F				A	Unk	Int-A	2		
		cocaine	1	1						
		diphenhydramine	2	2						
		doxylamine	3	3						
		dextromethorphan	4	4						
		cyclobenzaprine	5	5						
2429ai	51 y M				A	Inhal	Int-A	2		
		phencyclidine	1	1						
		cocaine	2	2						
2430ai	51 y M				A	Unk	Int-A	2		
		heroin	1	1						
		methadone	2	2						
2431ai	51 y F				A	Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		quinine	3	3						
2432ai	51 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		ethanol	3	3						
2433ai	51 y M				A	Par	Int-A	2		
		heroin	1	1						
		quinine	2	2						
2434ai	51 y M				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		alprazolam	2	2						
2435ai	51 y M				A	Inhal+ Par	Int-A	2		
		heroin	1	1						
		codeine	2	2						
		diphenhydramine	3	3						
2436ai	51 y M				A	Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		quetiapine	3	3						
		citalopram	4	4						
		quinine	5	5						
2437ai	51 y M				A	Ingst+ Par	Int-S	2		
		heroin	1	1						
		chlordiazepoxide	2	2						
		metoprolol	3	3						
		fluoxetine	4	4						
		mirtazapine	5	5						
		codeine	6	6						
		ethanol	7	7						
2438ai	51 y M				A	Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		quinine	3	3						
		codeine	4	4						
2439ai	52 y M				A	Ingst+ Unk	Int-A	2		
		phencyclidine	1	1						
		cocaine	2	2						
		trazodone	3	3						
		methadone	4	4						
		promethazine	5	5						
		ethanol	6	6						
2440ai	52 y F				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		ethanol	3	3						
2441ai	52 y F				A	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		citalopram	2	2						
		lamotrigine	3	3						

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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
		topiramate	4	4						
2442ai	52 y F				A	Unk	Int-A	2		
		cocaine	1	1						
		phencyclidine	2	2						
2443ph	52 y M				A	Unk	Int-A	2		
		heroin	1	1						
2444ai	52 y F				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		dextromethorphan	2	2						
		ethanol	3	3						
2445ai	52 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		oxycodone	2	2						
		cocaine	3	3						
		codeine	4	4						
		ethanol	5	5						
2446ai	52 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		diazepam	2	2						
		cocaine	3	3						
		oxycodone	4	4						
		tramadol	5	5						
2447ai	52 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2448ai	52 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2449ai	52 y F				A	Unk	Int-A	2		
		heroin	1	1						
2450ai	52 y M				U	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		ethanol	2	2						
2451ai	52 y M				A	Unk	Int-A	2		
		cocaine	1	1						
2452ai	53 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
		quinine	3	3						
2453ai	53 y M				A	Ingst+ Inhal+ Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		diazepam	3	3						
		ethanol	4	4						
2454ai	53 y F				A	Unk	Int-A	2		
		heroin	1	1						
		tramadol	2	2						
		bupropion	3	3						
2455ai	53 y M				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		acetaminophen/ hydrocodone	2	2						
2456ai	53 y M				A	Unk	Int-A	2		
		heroin	1	1						
		methadone	2	2						
		fentanyl	3	3						
		clonazepam	4	4						
		trazodone	5	5						
		quinine	6	6						
		meprobamate	7	7						
2457ai	53 y F				A	Unk	Int-A	2		
		phencyclidine	1	1						
2458ai	53 y M				A	Par	Int-A	2		
		heroin	1	1						
2459pha	53 y F				U	Ingst	Unk	3		
		phentermine	1	1					phentermine	76 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	2	2					diazepam	170 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	2	2					temazepam	28 ng/mL In Blood (unspecified) @ Autopsy

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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
		diazepam	2	2					oxazepam	34 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	2	2					nordiazepam	340 ng/mL In Blood (unspecified) @ Autopsy
		oxymorphone	3	3					oxymorphone	89 ng/mL In Blood (unspecified) @ Autopsy
2460ai	53 y M				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		oxycodone	2	2						
2461ai	53 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		codeine	2	2						
		ethanol	3	3						
2462ai	53 y M				A	Unk	Int-A	2		
		heroin	1	1						
		alprazolam	2	2						
		quinine	3	3						
2463ai	53 y M				A	Par	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		quinine	3	3						
2464ai	53 y M				A	Ingst+ Unk	Unt-G	2		
		heroin	1	1						
		diazepam	2	2						
		citalopram	3	3						
		ethanol	4	4						
2465ai	53 y M				A	Ingst+ Par	Int-A	2		
		cocaine	1	1						
		ethanol	2	2						
2466ai	53 y M				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		methadone	2	2						
2467ai	54 y F				A	Unk	Int-A	2		
		heroin	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
		cocaine	4	4						
2468ai	54 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		methadone	2	2						
		alprazolam	3	3						
		quinine	4	4						
		ethanol	5	5						
2469ai	54 y M				A	Unk	Int-U	2		
		heroin	1	1						
		oxycodone	2	2						
		quinine	3	3						
		levamisole	4	4						
2470ai	54 y F				A	Par	Int-A	2		
		heroin	1	1						
		dextromethorphan	2	2						
2471ai	54 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		quinine	2	2						
		ethanol	3	3						
2472ai	54 y M				U	Unk	Int-A	2		
		cocaine	1	1						
2473ai	54 y M				A	Unk	Int-A	2		
		heroin	1	1						
		diazepam	2	2						
2474ai	54 y M				A	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		ethanol	2	2						
2475ai	55 y M				A	Unk	Int-A	2		
		cocaine	1	1						
2476ai	55 y F				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		oxycodone	2	2						
		cocaine	3	3						
		sertraline	4	4						
		lamotrigine	5	5						
		acetaminophen	6	6						

(*Continued*)

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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
2477ai	55 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2478ai	55 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		clonazepam	2	2						
		butalbital	3	3						
		acetaminophen	4	4						
2479ai	55 y M				A	Unk	Int-A	2		
		heroin	1	1						
		quetiapine	2	2						
		verapamil	3	3						
		citalopram	4	4						
2480ai	55 y M				A	Ingst+ Inhal	Int-A	2		
		heroin	1	1						
		alprazolam	2	2						
		diltiazem	3	3						
		codeine	4	4						
2481ai	55 y F				A	Ingst+ Unk	Unt-G	2		
		heroin	1	1						
		tramadol	2	2						
		cocaine	3	3						
		citalopram	4	4						
2482ai	55 y F				A	Unk	Int-A	2		
		cocaine	1	1						
		sertraline	2	2						
		tramadol	3	3						
		bupropion	4	4						
		diphenhydramine	5	5						
2483ai	56 y M				A	Unk	Int-A	2		
		cocaine	1	1						
2484ai	56 y M				A	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		acetaminophen/ codeine	2	2						
		ethanol	3	3						
2485ai	56 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2486ai	56 y M				A	Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		diltiazem	3	3						
		dextromethorphan	4	4						
2487ai	56 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2488ai	57 y F				A	Inhal	Int-A	2		
		cocaine	1	1						
2489ai	57 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
2490pa	57 y M				A	Unk	Int-A	1		
		amphetamine	1	1					amphetamine	0.549 mg/L In Blood (unspecified) @ Unknown
2491ai	57 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2492ai	57 y M				U	Unk	Int-A	2		
		cocaine	1	1						
2493ai	57 y M				A	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		ethanol	2	2						
2494ai	57 y M				A	Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
2495ai	57 y F				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		alprazolam	2	2						
		cocaine	3	3						
		quetiapine	4	4						
		diphenhydramine	5	5						
		cyclobenzaprine	6	6						
		sertraline	7	7						
2496ai	57 y M				A	Unk	Int-A	2		
		heroin	1	1						

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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
2497ha	57 y F				U	Ingst+ Unk	Unk	2		
		cocaine	1	1					cocaine	10000 ng/mL In Urine (quantitative only) @ Unknown
		cocaine	1	1					benzoylecognine	1282 ng/mL In Urine (quantitative only) @ Autopsy
		metformin	2	2						
		ethanol	3	3						
		atenolol	4	4						
		lisinopril	5	5						
		duloxetine	6	6						
2498ai	58 y F				U	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		ethanol	2	2						
2499ai	58 y M				A	Ingst+ Inhal	Int-A	2		
		cocaine	1	1						
		ethanol	2	2						
2500ai	58 y F				A	Unk	Int-A	2		
		cocaine	1	1						
		alprazolam	2	2						
		methadone	3	3						
2501ai	58 y M				A	Inhal+ Unk	Int-A	2		
		heroin	1	1						
		oxycodone	2	2						
		cocaine	3	3						
		trazodone	4	4						
		verapamil	5	5						
		quetiapine	6	6						
		acetaminophen	7	7						
		quinine	8	8						
2502ai	58 y M				A	Unk	Int-A	2		
		heroin	1	1						
		cocaine	2	2						
		clonazepam	3	3						
		sertraline	4	4						
		venlafaxine	5	5						
		quinine	6	6						
2503ai	58 y F				U	Ingst	Int-A	2		
		cocaine	1	1						
		meperidine	2	2						
		paroxetine	3	3						
		promethazine	4	4						
2504ai	58 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
2505ai	58 y M				A	Par	Unt-G	2		
		heroin	1	1						
[2506h]	58 y M				A/C	Inhal	Int-A	2		
		methamphetamine	1	1						
2507ai	58 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		trazodone	2	2						
		sertraline	3	3						
		zolpidem	4	4						
		mirtazapine	5	5						
		codeine	6	6						
2508ai	58 y M				A	Unk	Int-A	2		
		phencyclidine	1	1						
2509ai	58 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
2510ai	59 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		tramadol	2	2						
		levamisole	3	3						
		ethanol	4	4						
2511ai	59 y F				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		fentanyl	2	2						
		methylphenidate	3	3						

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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
2512ai	59 y F				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		morphine	2	2						
		diazepam	3	3						
2513ai	59 y M				U	Ingst+ Unk	Int-A	2		
		methamphetamine	1	1						
		cyclobenzaprine	2	2						
		acetaminophen/ hydrocodone	3	3						
2514ai	59 y F				A	Unk	Int-A	2		
		cocaine	1	1						
2515ai	60 y M				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		quetiapine	2	2						
		citalopram	3	3						
		doxepin	4	4						
		ethanol	5	5						
2516ai	60 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		tramadol	2	2						
		cocaine	3	3						
		ethanol	4	4						
2517ai	60 y F				U	Unk	Int-A	2		
		cocaine	1	1						
2518ai	61 y M				U	Unk	Int-A	2		
		cocaine	1	1						
2519ai	61 y M				A	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		oxycodone	2	2						
		chlorpheniramine	3	3						
		acetaminophen	4	4						
2520ai	61 y M				U	Unk	Int-A	2		
		cocaine	1	1						
2521ai	61 y M				A	Unk	Int-A	2		
		cocaine	1	1						
2522ai	62 y M				A	Ingst+ Unk	Int-M	2		
		cocaine	1	1						
		ethanol	2	2						
2523ai	62 y M				A	Ingst+ Inhal	Int-A	2		
		cocaine	1	1						
		phencyclidine	2	2						
		tramadol	3	3						
		sertraline	4	4						
		zolpidem	5	5						
2524ai	62 y M				A	Par	Int-A	2		
		heroin	1	1						
2525ai	62 y M				A	Par	Int-A	2		
		heroin	1	1						
		fluoxetine	2	2						
		quetiapine	3	3						
		alprazolam	4	4						
2526ai	62 y F				U	Unk	Int-A	2		
		cocaine	1	1						
2527ai	63 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
2528ai	63 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
2529ai	64 y M				A	Par+ Unk	Int-A	2		
		heroin	1	1						
		methadone	2	2						
		promethazine	3	3						
2530	64 y F				A/C	Ingst	Int-S	2		
		phentermine	1	1						
2531ai	64 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		alprazolam	2	2						
2532ai	65 y M				A	Unk	Int-A	2		
		cocaine	1	1						

(*Continued*)

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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
2533ai	65 y M				A	Ingst+ Inhal	Int-A	2		
		cocaine	1	1						
		ethanol	2	2						
2534pha	66 y F				A	Inhal+ Par	Int-A	2		
		cocaine	1	1						
		methamphetamine	2	2						
2535ai	67 y M				U	Ingst+ Unk	Int-A	2		
		cocaine	1	1						
		acetaminophen/ hydrocodone	2	2						
		tramadol	3	3						
2536ai	67 y M				A	Ingst+ Par	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
2537ai	67 y F				A	Unk	Int-A	2		
		heroin	1	1						
2538ai	68 y F				A	Ingst+ Unk	Int-A	2		
		heroin	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
		hydroxyzine	4	4						
		trazodone	5	5						
		citalopram	6	6						
		quinine	7	7						
2539ai	78 y M				U	Unk	Int-A	2		
		cocaine	1	1						
2540ha	1 d M				U	Oth	Int-A	1		
		amphetamine	1	1						
		methamphetamine	2	2						
2541ai	1 d F				U	Oth	Unk	2		
		phencyclidine	1	1						
[2542ha]	20+ y M				U	Unk	Int-A	1		
		amphetamine (hallucinogenic)	1	1						
		cocaine	2	2						
		marijuana	3	3					delta-9-thc	4.1 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	3	3					delta-9-carboxy-thc	53 ng/mL In Blood (unspecified) @ Autopsy
		gabapentin	4	4						
2543pa	Unknown adult (≥20 yrs) M				A	Unk	Int-A	1		
		heroin	1	1					morphine	11.7 ng/mL In Serum @ Unknown
		cocaine	2	2					benzoylecognine	148 ng/mL In Serum @ Unknown
2544	Unknown adult (≥20 yrs) M				A	Derm	Int-M	3		
		methamphetamine	1	1						
2545ph	Unknown age M				U	Par	Int-A	2		
		heroin	1	1						
2546ai	Unknown age M				U	Unk	Int-A	2		
		methamphetamine	1	1						

See Also case 20, 95, 97, 101, 106, 125, 131, 195, 208, 209, 287, 306, 329, 340, 364, 402, 419, 441, 473, 476, 481, 490, 516, 520, 521, 522, 536, 543, 544, 552, 557, 562, 568, 571, 574, 576, 585, 591, 599, 615, 622, 623, 624, 631, 638, 651, 656, 658, 659, 661, 682, 700, 708, 720, 722, 723, 731, 738, 772, 792, 793, 802, 813, 821, 830, 849, 853, 858, 860, 868, 870, 872, 877, 883, 888, 893, 906, 915, 939, 950, 961, 966, 967, 968, 974, 982, 1000, 1002, 1008, 1016, 1037, 1040, 1075, 1077, 1080, 1091, 1093, 1109, 1112, 1116, 1119, 1125, 1143, 1150, 1156, 1157, 1171, 1175, 1196, 1203, 1221, 1232, 1239, 1241, 1265, 1301, 1312, 1426, 1431, 1435, 1437, 1446, 1457, 1471, 1476, 1486, 1494, 1503, 1509, 1605, 1616, 1622, 1625, 1634, 1636, 1641, 1652, 1655, 1673, 1729, 1796, 1800, 1805, 1813, 1851, 1864, 1882, 1886, 1889, 1892, 1911, 1913, 1945, 1949, 1969, 2551

Unknown Drug

2547pha	15 y M				A	Oth+ Unk	Int-A	3		
		drug, unknown	1	1						
		alprazolam	2	2						
2548ha	26 y M				A	Ingst	Int-S	2		
		drug, unknown	1	1						
2549pha	28 y M				C	Unk	Int-A	2		
		drug, unknown	1	1						

(*Continued*)

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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
2550p	29 y M				A	Ingst	Int-S	2		
		drug, unknown	1	1						
2551pha	32 y M				U	Inhal	Unk	2		
		drug, unknown	1	1						
		phencyclidine	2	2					phencyclidine	0.083 mg/L In Blood (unspecified) @ Unknown
		phencyclidine	2	2					phencyclidine	0.118 mg/L In Urine (quantitative only) @ Autopsy
		phencyclidine	2	2					phencyclidine	0.304 mg/L In Lung @ Autopsy
2552ai	35 y F				U	Unk	Int-S	2		
		drug, unknown	1	1						
2553pa	37 y M				A	Par	Unk	2		
		drug, unknown*	1	1						
		ethanol*	2	1					ethanol	260 mg/dL In Blood (unspecified) @ Unknown
2554ph	37 y F				A/C	Unk	Unk	1		
		drug, unknown	1	1						
2555	39 y M				A	Ingst+ Inhal	Int-S	3		
		drug, unknown	1	1						
		valproic acid	2	2					valproic acid	66.3 mg/L In Serum @ 24 h (pe)
2556pa	42 y M				U	Ingst	Int-U	2		
		drug, unknown	1	1						
		ethanol	2	2						
		opioid	3	3						
2557ai	42 y M				U	Unk	Unk	2		
		drug, unknown	1	1						
2558a	45 y F				U	Ingst	Int-U	2		
		drug, unknown	1	1						
		ethanol	2	2					ethanol	299 mg/dL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	466 mg/dL In Blood (unspecified) @ Unknown
2559a	46 y M				A	Ingst	Unk	3		
		drug, unknown	1	1						
		antihistamine	2	2						
		olanzapine	3	3						
		haloperidol	4	4						
		lorazepam	5	5						
		ziprasidone	6	6						
2560ph	48 y M				A	Ingst	Int-A	3		
		drug, unknown	1	1						
		alcohol, unknown	2	2						
2561ph	49 y F				A	Ingst	Int-S	2		
		drug, unknown	1	1						
2562	50 y M				A	Par	Int-U	2		
		drug, unknown	1	1						
		opioid	2	2						
2563ph	51 y M				A	Unk	Int-U	2		
		drug, unknown	1	1						
2564pa	52 y F				A	Ingst	Unk	1		
		drug, unknown	1	1					morphine (free)	0.327 mg/L In Blood (unspecified) @ Autopsy
		drug, unknown	1	1					morphine (total)	2 mg/L In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	44 mg/dL In Blood (unspecified) @ 1 h (pe)
2565ph	53 y F				U	Ingst+ Unk	Unk	2		
		drug, unknown	1	1						
		opioid	2	2						
		benzodiazepine	3	3						
		acetaminophen	4	4					acetaminophen	15.3 mcg/mL In Blood (unspecified) @ Unknown
2566ha	54 y M				U	Ingst	Unk	2		
		drug, unknown	1	1						
2567ai	55 y F				U	Unk	Int-A	2		
		drug, unknown	1	1						
2568ai	55 y F				U	Ingst+ Aspir	Int-A	2		
		drug, unknown	1	1						

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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
2569a	57 y F				U	Ingst	Unk	2		
		drug, unknown	1	1					duloxetine	460 ng/mL In Blood (unspecified) @ Unknown
2570ph	60 y F				A	Ingst	Int-S	2		
		drug, unknown	1	1						
2571ai	68 y F				U	Unk	Unk	2		
		drug, unknown	1	1						
2572	71 y F				A	Ingst	Int-U	2		
		drug, unknown	1	1						
		acetaminophen	2	2						
		ibuprofen	3	3						
		pseudoephedrine	4	4						
		fexofenadine	5	5						
2573i	78 y M				A	Ingst	Unk	2		
		drug, unknown	1	1						
2574ph	30+ y M				A	Par	Int-A	2		
		drug, unknown	1	1						
2575i	Unknown adult (≥20 yrs) F				U	Ingst	Int-S	2		
		drug, unknown	1	1						
2576	Unknown age M				A	Ingst	Unk	2		
		drug, unknown	1	1						

See Also case 8, 26, 80, 124, 430, 474, 478, 701, 807, 817, 851, 894, 948, 957, 1230, 1240, 1273, 1698, 1707, 1918, 1972, 1979, 2307

Listing of 2,576 (1,190 Direct + 1,386 Indirect) fatalities classified as RCF 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.

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

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Nonpharmaceuticals																			
Adhesives/Glues																			
Miscellaneous Adhesives/Glues																			
Cyanoacrylates (Superglues, etc.)	6,579	6,517	3,060	513	413	2,000	19	471	41	6,235	201	37	32	1,551	866	1,232	196	2	0
Epoxy	533	485	179	14	19	219	0	53	1	452	16	4	10	130	104	91	31	2	0
Non-Toxic Adhesives/ Glues (White Glue, Paper Glue, etc.)	1,153	1,084	722	207	59	75	5	15	1	1,026	49	5	1	37	124	49	2	0	0
Toluene/Xylene (Adhesives Only)	321	309	173	19	12	84	1	18	2	293	10	2	3	54	59	61	7	0	0
Unknown Types of Adhesives	3,690	3,517	1,729	310	193	1,010	14	232	29	3,306	114	23	63	646	611	542	109	4	1
Category Total:	**12,276**	**11,912**	**5,863**	**1,063**	**696**	**3,388**	**39**	**789**	**74**	**11,312**	**390**	**71**	**109**	**2,418**	**1,764**	**1,975**	**345**	**8**	**1**
Alcohols																			
Miscellaneous Alcohols																			
Ethanol (Beverages)	54,445	9,753	1,349	154	1,776	5,424	11	823	216	2,363	6,738	272	193	3,900	694	1,567	1,221	220	111
Ethanol (Non-Beverage, Non-Rubbing)	4,997	4,096	2,900	214	145	703	6	120	8	3,734	303	28	17	382	819	262	57	14	3
Higher Alcohols (Butanol, Amyl Alcohol, Propanols, etc.)	176	128	52	4	3	39	0	30	0	120	8	0	0	35	27	21	8	1	0
Isopropanol (Excluding Rubbing Alcohols and Cleaning Agents)	3,130	2,688	1,276	107	130	1,026	3	127	19	2,122	515	19	11	682	564	457	191	25	0
Methanol (Excluding Automotive Products and Cleaning Agents)	637	492	110	15	30	270	1	63	3	389	54	32	1	249	98	73	31	17	4
Other Types of Alcohols	353	333	220	16	12	73	0	12	0	321	9	1	1	37	88	34	5	0	0
Unknown Types of Alcohols	388	202	50	6	23	100	1	21	1	110	70	5	5	83	22	19	34	10	2
Rubbing Alcohols																			
Rubbing Alcohols: Ethanol with Methyl Salicylate	6	5	3	1	0	1	0	0	0	5	0	0	0	2	2	1	0	0	0
Rubbing Alcohols: Ethanol without Methyl Salicylate	195	186	123	8	6	45	0	4	0	165	17	1	1	21	52	22	5	0	0
Rubbing Alcohols: Isopropanol with Methyl Salicylate	267	255	172	7	6	66	0	4	0	241	12	1	0	50	79	35	5	1	0
Rubbing Alcohols: Isopropanol without Methyl Salicylate	9,566	8,773	5,166	276	350	2,557	8	370	46	7,519	1,139	57	16	1,658	1,942	1,314	327	39	1
Rubbing Alcohols: Unknown	58	53	22	1	3	18	0	9	0	43	8	1	0	14	21	6	3	0	0
Category Total:	**74,218**	**26,964**	**11,443**	**809**	**2,484**	**10,322**	**30**	**1,583**	**293**	**17,132**	**8,873**	**417**	**245**	**7,113**	**4,408**	**3,811**	**1,887**	**327**	**121**
Arts/Crafts/Office Supplies																			
Miscellaneous Arts/Crafts/Office Supplies																			
Artist Paints (Non-Water Color)	2,991	2,900	2,179	218	103	329	3	63	5	2,835	46	3	11	86	429	132	5	1	0
Artist Paints (Water Color)	1,059	1,040	899	66	25	37	7	6	0	1,017	18	3	1	14	149	9	2	0	0

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

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Chalks	1,444	1,419	1,300	49	21	39	3	4	3	1,393	24	0	1	33	204	48	3	0	0
Clays	1,930	1,891	1,539	164	58	109	4	15	2	1,847	28	6	9	58	206	78	5	0	0
Crayons	2,023	1,962	1,687	122	43	85	8	16	1	1,938	21	3	0	60	216	47	0	0	0
Glazes	109	102	38	20	16	21	3	4	0	96	4	1	1	13	8	14	2	0	0
Office Supplies: Miscellaneous	130	123	63	7	5	39	0	9	0	120	2	1	0	12	25	9	2	0	0
Other Types of Arts/Crafts/Writing Products	5,451	5,152	3,802	522	173	502	18	126	9	4,977	135	19	15	219	747	233	23	1	0
Pencils	1,534	1,487	715	558	103	72	7	29	3	1,372	75	30	0	95	135	98	3	1	0
Pens or Inks	11,848	11,569	8,158	1,876	922	434	23	131	25	11,057	376	42	71	322	1,534	300	22	1	0
Typewriter Correction Fluids	996	979	699	110	62	81	2	24	1	913	57	5	1	75	199	75	6	0	0
Unknown Types of Arts/Crafts/Writing Products	99	93	67	16	4	4	1	1	0	86	7	0	0	7	17	3	1	0	0
Category Total:	**29,614**	**28,717**	**21,146**	**3,728**	**1,535**	**1,752**	**79**	**428**	**49**	**27,651**	**793**	**113**	**110**	**994**	**3,869**	**1,046**	**74**	**4**	**0**
Automotive/Aircraft/Boat Products																			
Automotive Products																			
Automotive Products: Brake Fluids	950	902	259	18	58	474	2	84	7	843	38	12	3	318	194	236	35	7	0
Automotive Products: Ethylene Glycol (Including Antifreeze)	5,784	5,303	431	142	396	3,722	7	544	61	4,405	743	93	12	2,070	991	864	385	134	11
Automotive Products: Glycol and Methanol Mixtures	162	148	41	8	10	78	0	11	0	130	12	0	0	51	41	30	5	3	0
Automotive Products: Hydrocarbons (Transmission Fluids, Power Steering Fluids, etc.)	2,318	2,176	806	102	137	944	4	170	13	2,029	109	18	14	705	434	674	111	5	0
Automotive Products: Methanol (Dry Gas, Windshield Washing Solutions, etc.)	1,171	1,094	211	49	98	631	1	99	5	993	81	11	1	407	266	256	54	9	2
Automotive Products: Other Glycols	197	184	86	16	8	57	1	16	0	173	5	2	2	49	36	37	6	0	0
Miscellaneous Automotive/Aircraft/Boat Products																			
Automotive/Aircraft/Boat Products: Non-Toxic	12	12	10	0	0	1	0	0	1	12	0	0	0	1	4	1	0	0	0
Automotive/Aircraft/Boat Products: Other	1,548	1,479	570	94	68	628	1	112	6	1,430	24	12	6	421	308	442	75	3	0
Automotive/Aircraft/Boat Products: Unknown	196	184	45	4	14	98	1	20	2	173	9	0	0	88	35	60	12	2	0
Category Total:	**12,338**	**11,482**	**2,459**	**433**	**789**	**6,633**	**17**	**1,056**	**95**	**10,188**	**1,021**	**148**	**38**	**4,110**	**2,309**	**2,600**	**683**	**163**	**13**
Batteries																			
Disc Batteries																			
Disc Batteries: Alkaline (MNO_2)	344	342	240	49	8	34	1	9	1	330	8	3	0	267	197	34	7	1	0
Disc Batteries: Lithium	152	120	69	17	4	28	0	2	0	98	10	0	8	107	45	26	17	9	2
Disc Batteries: Mercuric Oxide	4	4	2	0	0	2	0	0	0	3	1	0	0	2	1	1	0	0	0

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

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Disc Batteries: Nickel Cadmium	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0
Disc Batteries: Other	24	24	6	3	0	3	0	2	10	24	0	0	0	9	19	0	0	0	0
Disc Batteries: Silver Oxide	47	47	23	5	0	17	0	2	0	46	1	0	0	30	36	0	0	0	0
Disc Batteries: Unknown	2,937	2,893	1,928	449	53	402	11	46	4	2,797	71	11	3	2,189	1,426	185	43	5	0
Disc Batteries: Zinc–Air	91	83	34	5	2	41	0	1	0	79	4	0	0	48	50	9	0	1	0
Miscellaneous Batteries																			
Automotive/Aircraft/Boat Batteries	656	641	52	13	35	427	0	109	5	627	8	3	3	188	58	170	52	1	0
Other Types of Batteries	208	195	48	13	14	80	1	34	5	180	13	1	0	40	32	41	8	0	0
Penlight/Flashlight/Dry Cell Batteries	5,014	4,911	2,698	575	326	1,016	8	270	18	4,458	377	35	12	936	1,270	587	91	4	0
Unknown Types of Batteries	57	55	16	8	3	24	0	4	0	52	2	0	0	6	8	15	1	0	0
Category Total:	**9,535**	**9,316**	**5,116**	**1,137**	**445**	**2,075**	**21**	**479**	**43**	**8,695**	**495**	**53**	**26**	**3,822**	**3,143**	**1,068**	**219**	**21**	**2**
Bites and Envenomations																			
Aquatic																			
Fish Stings	787	779	23	50	73	566	0	53	14	768	4	1	5	331	5	260	121	2	0
Jellyfish and Other Coelenterate Stings	294	289	36	73	53	94	7	18	8	282	6	1	0	77	3	76	35	1	0
Other or Unknown Marine Animal Bites and/or Envenomations	370	363	189	21	19	100	1	30	3	344	13	4	2	56	40	43	19	0	0
Exotic Snakes																			
Exotic Snake: Unknown If Poisonous	6	6	0	1	1	3	0	0	1	6	0	0	0	6	1	1	1	0	0
Exotic Snakes: Non-Poisonous	69	69	3	10	13	38	0	5	0	69	0	0	0	35	0	29	8	0	0
Exotic Snakes: Poisonous	35	32	5	0	1	24	0	1	1	32	0	0	0	29	0	6	10	4	1
Insects																			
Ant or Fire Ant Bites	1,107	1,057	343	89	45	462	4	99	15	1,034	3	16	3	130	33	266	66	1	0
Bee, Wasp, or Hornet Stings	5,444	5,336	1,062	583	298	2,805	15	515	58	5,327	2	2	4	712	37	1,889	322	15	0
Caterpillars	1,162	1,157	325	173	117	460	3	75	4	1,137	13	1	5	160	27	377	52	2	0
Centipede or Millipede Bites	941	938	154	70	78	532	1	96	7	933	1	1	2	96	22	302	47	1	0
Mosquito Bites	226	197	47	20	9	91	2	25	3	197	0	0	0	25	3	44	6	1	0
Other Insect Bites and/or Stings	7,485	7,312	1,474	510	492	3,750	30	975	81	7,151	23	90	26	1,266	234	1,571	437	6	0
Scorpion Stings	19,262	19,224	1,876	1,970	1,700	12,322	18	1,247	91	19,212	8	0	1	1,538	88	10,978	691	6	0
Tick Bites	1,470	1,431	319	144	68	685	6	199	10	1,428	0	0	0	279	44	244	34	0	0
Mammals																			
Bat Bites	626	614	83	51	58	300	11	96	15	603	2	0	1	365	69	72	7	0	0
Cat Bites	936	928	71	90	67	560	3	126	11	925	1	0	2	525	5	215	52	0	0
Dog Bites	2,237	2,228	292	438	229	1,038	11	188	32	2,226	1	0	1	1,585	19	540	153	7	0
Fox Bites	15	15	1	3	1	8	0	2	0	15	0	0	0	12	3	0	0	0	0
Human Bites	42	42	7	4	2	23	0	6	0	37	0	4	0	23	2	19	3	0	0
Other Mammal Bites	906	896	96	111	90	450	12	98	39	870	6	2	11	480	71	141	16	0	0
Raccoon Bites	135	132	6	7	16	75	0	23	5	120	3	1	3	75	11	32	3	0	0

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

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Rodent or Lagomorph Bites (Squirrels, Rats, Mice, Gerbils, Hamsters, Rabbits, etc.)	1,137	1,117	253	208	118	392	6	118	22	1,072	6	30	5	351	64	258	24	1	0
Skunk Bites	28	28	0	3	4	16	0	4	1	26	0	0	1	13	1	5	0	0	0
Miscellaneous Bites and Envenomations																			
Other or Unknown Animal Bites	340	340	46	30	24	191	1	45	3	334	2	0	1	130	10	95	38	1	0
Other or Unknown Reptile Bites	443	436	159	103	26	114	1	25	8	427	2	0	7	99	27	113	17	0	0
Unknown Types of Insect or Spider Bites and/or Envenomations	3,114	3,058	593	202	221	1,711	7	277	47	3,025	3	17	5	456	48	756	99	3	0
Miscellaneous Snake Bites and Envenomations																			
Unknown or Known Non-Poisonous Snake Bites	1,059	1,052	83	158	189	562	0	54	6	1,045	2	1	4	505	49	497	50	2	0
Unknown Types of Snake Envenomations	1,611	1,587	102	182	223	995	2	64	19	1,583	0	0	1	1,252	56	662	414	19	0
Snakes																			
Copperhead Envenomations	1,766	1,736	83	135	164	1,301	0	49	4	1,727	5	1	1	1,653	11	502	983	60	0
Coral Envenomations	87	85	1	4	13	62	0	5	0	85	0	0	0	73	5	36	22	3	0
Cottonmouth Envenomations	250	245	8	17	28	182	1	7	2	243	2	0	0	221	3	82	110	9	0
Rattlesnake Envenomations	1,366	1,346	78	89	104	1,026	1	39	9	1,334	6	1	2	1,260	19	332	690	95	1
Unknown Crotalid Envenomations	670	663	38	95	78	437	0	13	2	662	1	0	0	614	14	229	334	19	0
Spiders																			
Black Widow Spider Bites and/or Envenomations	2,246	2,227	164	123	171	1,610	3	147	9	2,222	0	1	1	1,018	95	721	407	21	0
Brown Recluse Spider Bites and/or Envenomations	1,365	1,342	100	54	119	842	2	205	20	1,333	6	1	0	510	26	304	215	11	0
Other Necrotizing Spider Bites and/or Envenomations	150	148	22	9	13	88	0	14	2	147	0	0	0	40	3	36	19	0	0
Other Spider Bites and/or Envenomations	5,515	5,474	628	373	448	3,373	6	607	39	5,461	0	3	4	1,069	79	1,356	329	3	1
Tarantula Bites and/or Envenomations	67	64	7	4	9	34	0	10	0	60	0	0	4	21	2	24	4	0	0
Category Total:	**64,769**	**63,993**	**8,777**	**6,207**	**5,382**	**37,322**	**154**	**5,560**	**591**	**63,502**	**121**	**178**	**102**	**17,090**	**1,229**	**23,113**	**5,838**	**293**	**3**
Building and Construction Products																			
Insulation																			
Asbestos	330	274	43	8	13	143	4	60	3	269	2	1	1	42	30	24	6	0	0
Fiberglass	608	582	263	59	35	187	0	37	1	563	4	8	6	84	63	105	15	0	0
Other Types of Insulations	93	90	38	1	4	38	0	9	0	89	0	0	1	19	9	14	4	0	0
Unknown Types of Insulations	394	371	222	19	9	91	2	23	5	362	3	0	2	42	53	46	9	3	0
Urea or Formaldehyde Insulations	9	8	2	0	1	4	0	1	0	7	1	0	0	4	2	0	2	0	0

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

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Miscellaneous Building and Construction Products																			
Caulking Compounds and Construction Putties	2,469	2,401	1,771	85	39	384	4	101	17	2,353	24	6	16	201	456	148	37	1	0
Cement or Concrete (Excluding Glues)	1,054	1,010	310	26	31	543	1	95	4	985	10	3	8	391	131	225	173	5	0
Other Types of Building or Construction Products	2,349	2,202	1,208	79	73	631	12	188	11	2,131	26	10	28	407	366	353	112	6	0
Soldering Flux	146	142	43	5	14	68	0	11	1	136	2	0	4	53	22	41	13	0	0
Unknown Types of Building or Construction Products	77	73	23	2	0	37	0	10	1	70	1	0	1	24	8	14	9	0	0
Category Total:	**7,529**	**7,153**	**3,923**	**284**	**219**	**2,126**	**23**	**535**	**43**	**6,965**	**73**	**28**	**67**	**1,267**	**1,140**	**970**	**380**	**15**	**0**
Chemicals																			
Acids																			
Hydrochloric Acid	2,049	1,676	88	56	222	1,087	2	196	25	1,594	48	13	13	682	137	559	195	15	2
Hydrofluoric Acid	619	513	20	3	18	423	0	45	4	498	4	3	3	403	52	177	127	7	1
Other Types of Acids	4,683	4,101	557	242	349	2,450	5	465	33	3,870	129	29	48	1,567	414	1,282	529	26	2
Unknown Types of Acids	183	153	12	5	11	108	0	14	3	138	5	5	2	85	10	40	24	2	1
Miscellaneous Chemicals																			
Acetone (Excluding Nail Polish Removers)	1,137	982	284	46	84	473	1	89	5	887	56	17	9	272	150	256	40	5	0
Alkalis (Excluding Cleaning Agents, Bleaches, Batteries, and Detergents)	3,805	3,278	548	122	339	1,876	5	349	39	3,112	84	29	26	1,682	307	1,013	583	50	0
Ammonia (Excluding Cleaning Agents)	3,358	2,340	607	139	149	1,185	6	227	27	2,181	78	38	25	802	282	709	232	9	1
Borates or Boric Acid (Excluding Topicals and Pesticides)	3,197	2,929	1,446	207	107	923	9	215	22	2,725	114	35	38	456	596	272	57	2	1
Chlorates (Excluding Matches and Fireworks)	27	22	6	1	7	8	0	0	0	20	2	0	0	10	4	3	2	0	1
Cyanides (Excluding Rodenticides)	202	148	6	2	9	99	0	27	5	103	22	12	2	85	33	21	14	4	7
Dioxins	8	6	3	1	0	1	0	1	0	6	0	0	0	0	3	1	0	0	0
Ethylene Glycol (Excluding Automotive, Aircraft, or Boat Products)	757	566	48	14	42	407	0	53	2	341	171	11	3	353	98	81	77	71	12
Formaldehyde or Formalin	700	609	62	22	86	326	1	105	7	556	24	9	15	242	71	173	35	2	0
Ketones	376	333	78	1	8	209	1	31	5	319	5	3	5	170	46	130	36	3	0
Methylene Chloride (Excluding Paint Strippers)	203	182	32	5	13	110	0	22	0	177	3	0	2	78	31	48	21	0	1
Nitrates and Nitrites (Excluding Medications and Substances of Abuse)	1,151	1,051	362	245	114	268	3	53	6	884	128	10	21	225	233	145	22	2	0
Other Chemicals	11,365	10,001	3,818	778	581	3,823	78	809	114	9,157	340	140	301	2,335	1,493	1,894	520	27	1
Other Glycols (Excluding Automotive, Aircraft, or Boat Products)	699	544	215	23	31	214	1	58	2	474	28	6	32	163	94	106	19	4	0

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	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Phenol or Creosotes (Excluding Disinfectants)	334	284	24	9	11	179	3	57	1	270	7	1	5	125	43	82	30	1	0
Strychnine (Excluding Rodenticides)	25	21	9	2	0	9	0	0	1	16	1	0	3	7	5	1	1	0	0
Toluene Diisocyanate	505	464	120	26	16	242	0	55	5	446	10	3	4	122	46	83	31	0	0
Unknown Chemicals	3,881	3,581	870	211	237	1,684	14	524	41	2,901	116	349	104	1,247	431	766	258	14	1
Category Total:	**39,264**	**33,784**	**9,215**	**2,160**	**2,434**	**16,104**	**129**	**3,395**	**347**	**30,675**	**1,375**	**713**	**661**	**11,111**	**4,579**	**7,842**	**2,853**	**244**	**31**
Cleaning Substances (Household)																			
Automatic Dishwasher Detergents																			
Automatic Dishwasher Detergents: Granules (Unit Dose)	76	76	71	0	0	4	0	1	0	76	0	0	0	3	17	13	1	0	0
Automatic Dishwasher Detergents: Granules (Various Containers)	3,058	3,009	2,633	43	33	233	2	55	10	2,975	16	13	3	140	668	462	16	0	0
Automatic Dishwasher Detergents: Granules with Liquids (Unit Dose)	146	144	135	1	3	4	0	1	0	144	0	0	0	7	41	22	1	0	0
Automatic Dishwasher Detergents: Liquids (Unit Dose)	21	21	20	0	0	1	0	0	0	21	0	0	0	3	4	3	0	0	0
Automatic Dishwasher Detergents: Liquids (Various Containers)	2,147	2,099	1,752	30	26	243	0	44	4	2,065	16	15	3	137	516	266	27	0	0
Automatic Dishwasher Detergents: Tablets	2,009	2,000	1,888	19	9	70	2	11	1	1,986	4	10	0	91	500	306	3	0	0
Automatic Dishwasher Rinse Agents	835	810	670	17	10	97	1	13	2	800	8	1	1	83	148	141	15	0	0
Other or Unknown Types of Automatic Dishwasher Detergents	8,432	8,368	7,801	63	72	348	9	70	5	8,318	19	23	6	308	1,953	1,358	32	1	1
Bleaches																			
Bleaches: Borates	205	155	63	4	11	66	0	11	0	139	15	1	0	38	33	22	4	2	0
Bleaches: Hypochlorite (Liquid and Dry)	43,518	36,815	14,995	1,382	2,200	15,274	63	2,601	300	33,860	1,992	465	332	8,179	5,392	9,580	1,166	29	1
Bleaches: Non-Hypochlorite	412	338	147	10	19	138	1	19	4	312	8	7	8	66	47	94	13	0	0
Bleaches: Other or Unknown (Household)	431	350	128	15	21	160	0	23	3	318	15	12	1	94	63	83	9	0	1
Cleansers																			
Anionic or Nonionic Cleansers	1,803	1,665	1,257	36	48	270	1	47	6	1,609	32	12	9	130	389	204	10	0	0
Other or Unknown Types of Household Cleansers	2,679	2,369	1,521	73	85	583	4	92	11	2,233	72	35	19	424	485	348	59	3	0
Disinfectants																			
Disinfectants: Hypochlorite (Non-Bleach Products)	5,885	4,855	1,887	190	299	2,013	8	417	41	4,474	241	61	60	1,135	677	1,268	222	9	0

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	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Disinfectants: Other or Unknown	5,892	5,539	3,369	357	222	1,260	13	279	39	5,249	170	63	44	600	1,079	992	108	0	0
Disinfectants: Phenol	1,033	997	650	89	55	151	2	42	8	932	37	17	7	88	264	128	9	0	0
Disinfectants: Pine Oil	4,838	4,316	2,751	112	166	1,087	5	165	30	4,044	207	29	21	777	1,271	783	66	8	1
Drain Cleaners																			
Drain Cleaners: Acids	78	57	6	3	1	40	0	7	0	52	5	0	0	21	2	18	6	2	0
Drain Cleaners: Alkalis	3,199	2,725	441	78	101	1,743	3	331	28	2,516	149	29	21	856	366	724	313	41	3
Drain Cleaners: Hydrochloric Acid	132	56	6	1	9	36	1	2	1	44	7	0	4	20	19	18	5	0	0
Drain Cleaners: Other or Unknown	813	644	98	24	23	402	5	82	10	596	39	5	4	180	86	157	49	2	3
Drain Cleaners: Sulfuric Acid	454	366	41	8	7	260	4	45	1	352	4	5	5	141	27	111	69	5	0
Fabric Softeners/Antistatic Agents																			
Fabric Softener/Antistatic Agent: Other or Unknown	15	15	10	3	0	2	0	0	0	13	0	2	0	3	3	1	0	0	0
Fabric Softeners/Antistatic Agents: Aerosol or Spray	124	117	103	0	2	9	1	1	1	116	0	0	0	9	24	11	0	0	0
Fabric Softeners/Antistatic Agents: Dry or Powder (Unit Dose)	1	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
Fabric Softeners/Antistatic Agents: Dry or Powder (Various Containers)	95	94	86	2	1	5	0	0	0	93	0	0	1	3	23	10	1	0	0
Fabric Softeners/Antistatic Agents: Liquid (Unit Dose)	3	3	3	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0
Fabric Softeners/Antistatic Agents: Liquid (Various Containers)	820	772	609	29	13	105	2	14	0	740	12	7	11	92	185	94	3	0	0
Fabric Softeners/Antistatic Agents: Solid or Sheet	515	490	406	12	12	43	0	15	2	464	14	5	6	15	81	21	2	0	0
Glass Cleaners																			
Glass Cleaners: Ammonia Containing	2,278	2,060	1,676	72	59	200	1	47	5	1,976	66	12	3	165	505	241	12	0	0
Glass Cleaners: Anionics or Nonionics	84	77	58	3	3	8	0	5	0	75	2	0	0	7	17	7	0	0	0
Glass Cleaners: Isopropanol	1,922	1,733	1,232	76	61	300	2	57	5	1,643	68	15	4	176	368	223	10	1	0
Glass Cleaners: Other or Unknown Types of Households	1,714	1,561	1,171	45	70	233	2	34	6	1,480	63	12	2	175	362	198	11	0	0
Hand Dishwashing																			
Anionic or Nonionic Hand Dishwashing Detergents	4,777	4,233	2,665	186	96	1,096	6	175	9	4,032	82	77	29	292	537	742	43	2	1
Other or Unknown Types of Household Hand Dishwashing Detergents	2,223	1,985	1,178	83	52	565	3	98	6	1,885	35	52	12	121	240	261	10	1	0

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			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Laundry Additives																			
Enzyme and/or Microbiological Laundry Additives	77	67	40	3	1	18	0	5	0	64	1	0	2	20	9	18	3	0	0
Laundry Bluing and/or Brightening Agents (without Detergent)	20	13	8	1	1	2	0	1	0	13	0	0	0	3	2	2	1	0	0
Laundry Detergent Boosters	448	418	345	14	9	39	0	8	3	414	2	0	2	69	87	109	15	0	0
Other or Unknown Laundry Additives or Miscellaneous Products	1,568	1,476	1,145	103	40	158	3	26	1	1,393	62	14	6	144	284	215	19	0	0
Water Softeners	49	49	24	6	6	10	0	3	0	45	1	0	0	9	4	8	2	0	0
Laundry Detergents																			
Laundry Detergents: Granules (Unit Dose)	11	11	9	1	0	1	0	0	0	11	0	0	0	2	4	3	0	0	0
Laundry Detergents: Granules (Various Containers)	3,580	3,423	2,709	87	91	446	5	81	4	3,298	81	6	31	591	646	767	91	3	1
Laundry Detergents: Granules with Liquids (Unit Dose)	5	5	5	0	0	0	0	0	0	5	0	0	0	4	1	3	0	0	0
Laundry Detergents: Liquids (Unit Dose)	839	824	758	44	3	15	1	1	2	816	7	0	1	394	118	438	87	13	0
Laundry Detergents: Liquids (Various Containers)	8,653	8,224	6,678	271	150	965	18	127	15	8,037	131	25	19	2,219	1,343	2,777	326	26	1
Laundry Detergents: Other or Unknown Types of Household Laundry Detergents and/or Fabric Cleaners	713	639	571	21	5	33	2	7	0	632	3	1	3	202	76	230	38	1	0
Laundry Detergents: Soaps	143	128	93	5	3	18	0	9	0	123	3	1	1	14	26	22	2	0	0
Laundry Prewash/Stain Removers																			
Laundry Prewash/Stain Removers: Aerosol or Spray, Solvent-Based	167	161	140	1	3	13	0	4	0	159	0	1	1	23	31	30	4	0	0
Laundry Prewash/Stain Removers: Aerosol or Spray, Surfactant-Based	207	200	179	2	1	14	1	2	1	198	0	1	1	15	34	32	4	0	0
Laundry Prewash/ Stain Removers: Dry, Solvent-Based	6	6	3	0	0	3	0	0	0	6	0	0	0	2	0	5	0	0	0
Laundry Prewash/ Stain Removers: Dry, Surfactant-Based	97	96	85	2	2	7	0	0	0	95	0	1	0	6	17	10	2	0	0
Laundry Prewash/Stain Removers: Liquid, Solvent-Based	771	732	577	16	9	109	1	19	1	713	10	4	5	119	224	108	16	0	0
Laundry Prewash/Stain Removers: Liquid, Surfactant-Based	1,520	1,469	1,254	25	15	129	1	35	10	1,424	19	6	20	151	271	243	22	0	0

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

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Laundry Prewash/Stain Removers: Other or Unknown	2,052	1,952	1,479	40	39	316	3	54	21	1,891	21	4	33	208	395	404	30	0	0
Laundry Prewash/Stain Removers: Other or Unknown, Solvent-Based	44	38	34	1	0	3	0	0	0	38	0	0	0	4	9	6	0	0	0
Laundry Prewash/Stain Removers: Other or Unknown, Surfactant-Based	57	53	41	4	2	5	0	1	0	52	1	0	0	5	11	15	0	0	0
Miscellaneous Cleaners																			
Miscellaneous Cleaning Agents: Acids	1,449	1,275	648	28	38	469	0	83	9	1,208	28	19	15	268	316	278	57	4	0
Miscellaneous Cleaning Agents: Alkalis	7,715	6,853	4,230	198	259	1,846	10	284	26	6,544	210	58	34	1,311	1,418	1,190	236	7	0
Miscellaneous Cleaning Agents: Anionics or Nonionics	5,307	4,819	3,299	166	141	982	11	201	19	4,595	129	39	41	614	872	748	79	2	0
Miscellaneous Cleaning Agents: Cationics	2,465	2,300	1,228	106	120	692	5	136	13	2,123	124	30	18	535	453	468	93	7	0
Miscellaneous Cleaning Agents: Ethanol (Excluding Automotive Products)	548	528	369	39	14	91	1	13	1	504	8	13	3	33	111	67	5	0	0
Miscellaneous Cleaning Agents: Glycols (Excluding Automotive Products)	503	461	277	26	28	114	0	15	1	436	14	5	5	82	103	94	12	0	0
Miscellaneous Cleaning Agents: Isopropanol (Excluding Automotive Products and Glass)	1,794	1,696	1,122	148	63	285	2	73	3	1,620	51	12	9	127	344	216	24	0	0
Miscellaneous Cleaning Agents: Methanol (Excluding Automotive Products)	24	21	11	1	0	9	0	0	0	21	0	0	0	4	4	4	0	0	0
Miscellaneous Cleaning Agents: Other or Unknown Household Cleaning Agents	4,050	3,623	1,897	261	213	1,017	9	204	22	3,300	203	66	24	738	766	670	136	11	2
Miscellaneous Cleaning Agents: Phenol (Excluding Disinfectants)	5	5	0	0	1	4	0	0	0	4	0	1	0	2	1	3	0	0	0
Miscellaneous Cleaning Substances (Household)																			
Ammonia Cleaners (All Purpose)	989	701	269	39	33	301	0	53	6	657	26	12	5	144	125	177	26	0	0
Carpet, Upholstery, Leather, or Vinyl Cleaners	3,746	3,491	2,526	111	71	645	13	116	9	3,381	50	25	28	489	676	579	61	3	0
Hydrofluoric Acid or Bifluoride Wheel Cleaners	60	58	15	0	5	34	0	4	0	56	1	1	0	41	10	22	11	1	0
Starches, Fabric Finishes, or Sizing	294	287	236	6	3	31	0	10	1	278	6	1	2	12	45	25	0	0	0

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

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Oven Cleaners																			
Oven Cleaners: Acids	12	11	4	0	0	6	0	1	0	10	1	0	0	2	1	2	1	0	0
Oven Cleaners: Alkalis	2,031	1,947	317	86	149	1,136	9	235	15	1,827	33	45	37	678	233	549	230	11	0
Oven Cleaners: Detergent Types	10	10	3	0	1	4	0	2	0	10	0	0	0	2	4	1	0	0	0
Oven Cleaners: Other or Unknown	384	362	87	11	21	191	0	42	10	332	9	12	8	121	37	77	42	2	0
Rust Removers																			
Rust Removers: Acids Other Than Hydrofluoric Acid Types	453	398	131	11	12	218	1	21	4	371	18	4	3	100	84	119	27	0	0
Rust Removers: Alkalis	14	12	3	0	1	8	0	0	0	11	0	0	0	4	1	3	2	0	0
Rust Removers: Anionics or Nonionics	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Rust Removers: Hydrofluoric Acid	341	322	53	3	12	229	0	21	4	308	6	2	6	141	88	132	38	1	0
Rust Removers: Other or Unknown	219	199	28	1	4	150	0	16	0	186	6	2	5	42	20	69	14	1	0
Spot Removers/Dry Cleaning Agents																			
Spot Removers/Dry Cleaning Agents: Anionics or Nonionics	101	96	77	2	1	13	0	2	1	94	1	1	0	17	28	12	2	0	0
Spot Removers/Dry Cleaning Agents: Glycols	122	114	74	1	0	35	0	4	0	110	2	1	1	18	26	18	2	0	0
Spot Removers/Dry Cleaning Agents: Isopropanol	35	35	29	2	0	3	0	1	0	35	0	0	0	2	10	6	0	0	0
Spot Removers/Dry Cleaning Agents: Other Halogenated Hydrocarbon Containing Products	18	18	9	1	0	7	0	1	0	18	0	0	0	2	2	2	2	0	0
Spot Removers/Dry Cleaning Agents: Other Hydrocarbon and/or Non-Halogenated Containing	436	415	207	13	18	151	0	24	2	389	11	6	9	93	85	96	17	1	0
Spot Removers/Dry Cleaning Agents: Other or Unknown	95	88	60	4	2	21	0	1	0	86	0	0	2	9	15	16	1	0	0
Spot Removers/Dry Cleaning Agents: Perchloroethylene	8	8	3	0	2	3	0	0	0	8	0	0	0	4	2	3	0	0	0
Toilet Bowl Cleaners																			
Toilet Bowl Cleaners: Acids	4,483	3,054	1,224	103	175	1,328	2	193	29	2,870	133	6	34	659	658	1,055	181	13	0
Toilet Bowl Cleaners: Alkalis	3,541	3,147	2,280	51	71	613	5	116	11	3,063	60	4	15	476	875	555	56	2	1
Toilet Bowl Cleaners: Other or Unknown	4,014	3,775	3,250	64	56	318	13	64	10	3,722	37	4	10	302	996	315	25	0	0

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

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Wall/Floor/Tile Cleaners																			
Wall/Floor/Tile/All-Purpose Cleaning Agents: Acids	2,023	1,724	1,082	57	58	425	0	96	6	1,642	44	9	29	338	409	363	53	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Alkalis	8,068	7,136	4,801	188	216	1,572	7	326	26	6,812	201	44	64	1,229	1,455	1,346	209	5	2
Wall/Floor/Tile/All-Purpose Cleaning Agents: Anionics or Nonionics	8,285	7,568	5,217	230	231	1,638	5	235	12	7,241	228	58	30	1,232	1,716	1,073	112	3	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Cationics	2,455	2,162	1,343	89	80	523	3	113	11	2,039	80	26	14	290	429	357	38	1	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Ethanol	564	512	403	23	11	53	0	15	7	485	10	3	14	20	139	69	2	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Glycols	920	803	606	21	21	130	1	24	0	779	15	5	4	90	178	114	5	1	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Isopropanol	534	489	392	14	9	59	0	9	6	467	11	3	6	37	106	68	0	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Methanol	2	2	0	0	0	2	0	0	0	2	0	0	0	0	1	1	0	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Other or Unknown	1,631	1,480	1,067	39	29	289	3	47	6	1,418	32	13	15	235	344	227	17	2	0
Category Total:	**193,443**	**172,905**	**106,582**	**5,856**	**6,338**	**44,999**	**276**	**7,988**	**866**	**164,126**	**5,528**	**1,579**	**1,231**	**29,326**	**33,174**	**35,544**	**4,773**	**227**	**18**
Cosmetics/Personal Care Products																			
Dental Care Products																			
False-Teeth Cleaning Agents	2,403	2,375	371	41	44	1,707	0	202	10	2,309	32	4	22	141	452	196	17	0	0
Other Dental Care Products (Excluding Fluoride Supplements)	2,708	2,619	1,033	193	185	997	4	189	18	2,397	71	5	134	194	381	282	29	0	0
Toothpastes (with Fluoride)	20,306	19,773	17,456	539	346	1,178	19	205	30	19,218	237	38	274	332	3,572	1,002	26	0	0
Toothpastes (without Fluoride)	2,129	2,044	1,766	39	44	158	2	32	3	1,974	17	6	47	28	308	90	2	0	0
Hair Care Products																			
Curl Activators	50	46	38	0	2	4	0	2	0	46	0	0	0	13	12	13	1	0	0
Hair Coloring Agents (Excluding Peroxides)	2,408	2,321	1,038	48	166	885	1	170	13	1,963	28	6	320	447	390	473	112	1	0
Hair Oils	409	393	342	5	7	37	0	1	1	389	2	0	1	60	94	33	9	0	0
Hair Relaxers (with Other Alkalines)	422	410	322	4	12	62	1	9	0	403	1	0	6	216	86	137	50	1	0
Hair Relaxers (with Other Non-Alkalines)	74	72	57	1	0	10	1	3	0	71	0	0	1	22	21	16	1	0	0

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

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Hair Relaxers (with Sodium Hydroxide)	571	565	400	7	21	113	0	22	2	540	5	0	20	272	121	159	72	3	0
Hair Rinses, Conditioners, and Relaxers	2,143	2,010	1,662	88	49	178	1	29	3	1,932	45	4	28	172	386	219	20	0	0
Hair Sprays	1,484	1,306	836	68	95	258	1	45	3	1,103	180	10	11	243	267	203	26	2	0
Other Hair Care Products (Excluding Peroxides)	3,075	2,926	2,147	85	125	442	4	112	11	2,757	42	9	114	403	584	369	71	1	0
Permanent Wave Solutions	227	219	124	1	7	65	0	21	1	200	3	2	13	86	56	51	18	0	0
Shampoos	5,703	5,392	4,171	217	170	689	8	117	20	5,079	183	12	106	373	716	874	55	1	0
Hand Sanitizers																			
Hand Sanitizers: Ethanol-Based	18,843	18,449	14,670	1,398	538	1,574	14	236	19	17,228	930	243	13	1,229	4,955	1,425	140	7	0
Hand Sanitizers: Isopropanol-Based	171	166	135	14	3	12	0	2	0	155	8	2	0	12	60	11	0	0	0
Hand Sanitizers: Non-Alcohol-Based	1,584	1,548	1,240	112	49	117	2	25	3	1,487	50	7	2	65	284	95	8	0	0
Hand Sanitizers: Unknown	438	421	269	66	29	47	2	7	1	364	43	11	2	50	93	47	5	0	0
Miscellaneous Cosmetics/Personal Care Products																			
Baby Oils	1,977	1,909	1,748	24	27	83	6	18	3	1,886	16	4	3	143	434	166	8	2	0
Bath Oils and/or Bubble Baths	2,849	2,774	2,473	121	31	117	3	28	1	2,703	50	2	18	138	449	267	19	0	0
Creams, Lotions, and Make-Ups	23,814	23,002	19,318	630	376	2,087	40	417	134	22,063	235	48	640	755	3,350	1,222	98	4	0
Deodorants	20,707	20,457	18,619	427	511	745	22	115	18	19,983	220	68	166	550	2,897	1,311	57	2	0
Depilatories	814	792	279	29	88	321	2	70	3	544	51	5	190	170	105	176	66	2	0
Douches	85	82	63	2	2	12	1	2	0	75	3	0	4	5	23	6	0	0	0
Eye Products	1,544	1,453	1,254	16	41	109	2	23	8	1,387	13	3	48	56	215	87	16	0	0
Lipsticks and Lip Balms (with Camphor)	879	858	757	29	22	34	1	9	6	825	11	2	18	27	166	59	3	0	0
Lipsticks and Lip Balms (without Camphor)	3,732	3,587	3,124	105	51	197	6	51	53	3,307	29	4	244	91	503	287	13	0	0
Perfumes, Colognes, and Aftershaves	11,118	10,780	8,952	535	424	733	14	110	12	10,317	310	105	23	909	2,326	1,983	69	3	0
Peroxides	7,761	7,375	2,687	344	401	3,233	12	656	42	6,861	227	48	208	915	1,012	1,357	173	11	2
Powders Made of Materials Other Than Talc	1,896	1,840	1,679	33	26	75	3	23	1	1,805	19	9	7	114	296	328	12	0	0
Powders Made of Talc	2,403	2,329	1,975	65	77	153	5	48	6	2,255	49	11	12	267	415	475	39	0	0
Soaps (Bar, Hand, or Complexion)	14,175	13,504	9,927	683	418	2,088	23	327	38	12,865	301	90	225	728	1,834	1,650	86	2	0
Suntan and/or Sunscreen Products	10,900	10,731	9,545	425	167	479	6	93	16	10,535	47	12	129	380	1,450	1,199	33	0	0
Mouthwashes																			
Mouthwashes: Ethanol Containing	7,897	7,285	2,237	658	551	3,256	5	547	31	6,125	1,070	25	29	1,053	1,155	692	219	13	2
Mouthwashes: Fluoride Containing	6,629	6,545	4,452	1,258	126	600	4	101	4	6,445	69	3	23	94	1,172	181	8	0	0
Mouthwashes: Non-Ethanol Containing	1,189	1,152	444	107	62	461	1	73	4	1,070	66	0	13	55	227	47	5	0	0
Mouthwashes: Unknown	456	424	257	45	16	78	0	28	0	396	20	1	6	29	68	32	3	0	0

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	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Nail Products																			
Acrylic Nail Adhesives	1,065	1,048	490	160	96	244	1	54	3	1,025	16	1	4	365	147	264	52	0	0
Acrylic Nail Primers	279	269	223	4	10	29	0	3	0	265	1	1	2	96	61	48	18	1	0
Acrylic Nail Removers	17	16	9	1	1	4	0	1	0	15	0	0	1	2	4	5	1	0	0
Miscellaneous Nail Products	874	844	557	35	24	189	0	37	2	824	9	2	9	153	162	166	22	0	0
Nail Polish Removers (Acetone Containing)	2,492	2,424	1,770	104	129	367	1	52	1	2,340	64	14	4	262	542	429	23	0	0
Nail Polishes	9,848	9,597	8,581	344	172	394	16	83	7	9,475	83	24	10	580	1,724	1,045	29	0	0
Other Nail Polish Removers	1,181	1,158	880	54	49	149	2	24	0	1,117	23	5	8	122	289	164	7	0	0
Unknown Nail Polish Removers	9,151	8,820	6,246	395	507	1,407	9	229	27	8,508	215	65	14	1,009	1,812	1,289	51	2	0
Category Total:	**210,880**	**204,110**	**156,623**	**9,559**	**6,297**	**26,177**	**245**	**4,651**	**558**	**194,631**	**5,094**	**911**	**3,172**	**13,426**	**35,676**	**20,630**	**1,792**	**58**	**4**
Deodorizers																			
Air Freshener																			
Air Fresheners: Aerosols	2,273	2,224	1,618	166	87	300	1	47	5	2,117	53	30	20	192	404	404	24	0	0
Air Fresheners: Liquids	9,408	9,310	8,316	250	118	516	3	101	6	9,190	56	51	10	733	1,978	1,392	56	3	0
Air Fresheners: Solids	4,909	4,869	4,349	96	62	303	12	42	5	4,805	46	11	6	340	984	440	26	0	0
Air Fresheners: Unknown Form	1,781	1,760	1,459	86	28	144	3	33	7	1,736	12	3	8	160	402	225	13	1	0
Miscellaneous Deodorizers																			
Diaper Pail Deodorizers (Excluding Moth Repellants)	18	18	16	0	0	1	0	1	0	17	1	0	0	2	3	3	1	0	0
Other Types of Deodorizers (Not For Personal Use)	4,117	3,964	2,900	148	96	673	7	127	13	3,835	75	24	27	396	874	520	41	3	1
Toilet Bowl Deodorizers	507	490	434	9	3	30	0	12	2	487	3	0	0	32	146	25	1	0	0
Unknown Types of Deodorizers (Not for Personal Use)	91	88	61	4	1	18	0	4	0	85	2	1	0	25	16	16	4	0	0
Category Total:	**23,104**	**22,723**	**19,153**	**759**	**395**	**1,985**	**26**	**367**	**38**	**22,272**	**248**	**120**	**71**	**1,880**	**4,807**	**3,025**	**166**	**7**	**1**
Dyes																			
Miscellaneous Dyes																			
Dyes: Fabrics	409	396	297	38	9	44	1	5	2	385	6	0	5	29	120	20	0	0	0
Dyes: Foods (Including Easter Egg)	1,432	1,375	1,200	85	28	48	5	7	2	1,329	27	2	11	32	228	40	2	0	0
Dyes: Leathers	55	54	36	3	2	11	0	2	0	54	0	0	0	1	12	2	0	0	0
Dyes: Other	434	395	153	67	94	56	3	22	0	360	22	1	11	30	75	29	5	0	0
Dyes: Unknown	52	44	26	11	1	6	0	0	0	40	2	0	2	4	9	5	0	0	0
Category Total:	**2,382**	**2,264**	**1,712**	**204**	**134**	**165**	**9**	**36**	**4**	**2,168**	**57**	**3**	**29**	**96**	**444**	**96**	**7**	**0**	**0**
Essential Oils																			
Miscellaneous Essential Oil																			
Cinnamon Oil	890	831	318	142	252	92	0	21	6	466	327	9	25	156	80	258	33	2	0
Clove Oil	474	451	300	13	3	107	1	25	2	415	14	3	18	88	94	104	9	1	0
Eucalyptus Oil	533	506	297	23	12	149	0	25	0	482	14	1	7	116	133	101	15	2	0
Miscellaneous Essential Oils	7,167	6,975	5,531	220	114	893	14	192	11	6,706	106	39	118	677	1,587	1,275	92	3	0
Pennyroyal Oil	28	25	7	1	1	13	0	2	1	20	4	0	1	6	3	3	1	0	0
Tea Tree Oil	1,637	1,564	993	68	37	386	0	77	3	1,439	52	5	64	210	382	229	22	0	0
Category Total:	**10,729**	**10,352**	**7,446**	**467**	**419**	**1,640**	**15**	**342**	**23**	**9,528**	**517**	**57**	**233**	**1,253**	**2,279**	**1,970**	**172**	**8**	**0**

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	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Fertilizers																			
Miscellaneous Fertilizers																			
Household Plant Foods (Generally for Indoor Plants)	1,654	1,595	888	167	53	398	3	81	5	1,561	18	10	4	67	327	66	5	1	0
Other Types of Fertilizers	1,410	1,275	772	105	34	284	3	65	12	1,227	23	6	15	89	286	85	12	0	0
Outdoor Fertilizers	2,165	2,090	1,326	161	64	438	4	89	8	2,036	33	3	16	118	456	138	13	0	0
Plant Hormones	46	42	15	0	0	25	0	2	0	41	1	0	0	6	10	6	1	0	0
Unknown Types of Fertilizers	106	100	53	8	5	30	0	4	0	94	2	0	2	17	18	14	2	1	0
Category Total:	**5,381**	**5,102**	**3,054**	**441**	**156**	**1,175**	**10**	**241**	**25**	**4,959**	**77**	**19**	**37**	**297**	**1,097**	**309**	**33**	**2**	**0**
Fire Extinguishers																			
Miscellaneous Fire Extinguisher																			
Miscellaneous Fire Extinguishers	2,536	2,469	245	344	356	1,136	45	285	58	2,228	100	112	16	651	472	651	131	1	0
Category Total:	**2,536**	**2,469**	**245**	**344**	**356**	**1,136**	**45**	**285**	**58**	**2,228**	**100**	**112**	**16**	**651**	**472**	**651**	**131**	**1**	**0**
Foreign Bodies/Toys/Miscellaneous																			
Miscellaneous Foreign Bodies/Toys/Miscellaneous																			
Ashes	370	342	286	7	4	37	0	6	2	337	3	2	0	13	42	28	3	0	0
Bubble Blowing Solutions	3,746	3,698	3,430	144	32	66	10	16	0	3,663	21	11	2	128	427	552	8	0	0
Charcoals	517	426	352	12	10	28	2	21	1	405	12	2	7	20	72	16	1	0	0
Christmas ornaments	373	370	291	20	2	43	1	13	0	366	3	0	1	37	74	20	4	0	0
Coins	4,511	4,399	3,641	619	35	70	15	15	4	4,317	67	7	4	1,551	1,113	483	34	4	0
Desiccants	28,006	27,849	24,259	1,565	391	1,211	81	302	40	27,469	263	96	11	1,281	3,358	217	11	0	0
Feces/Urine	5,920	5,170	4,096	188	126	545	16	184	15	4,991	27	129	8	170	741	118	11	0	0
Glass	6,371	6,271	1,465	495	371	2,564	92	1,155	129	6,144	33	71	15	406	983	297	28	1	0
Glow Products	23,466	23,422	17,394	4,730	628	440	72	129	29	23,094	286	16	9	977	2,519	4,302	59	0	0
Incense (Punk)	272	262	207	4	15	28	0	8	0	240	16	2	4	35	56	26	8	0	0
Other Types of Foreign Bodies, Toys, or Miscellaneous Substances	23,308	22,150	14,335	2,677	952	3,043	154	867	122	21,171	566	211	148	2,297	3,810	1,076	124	5	0
Soil	1,906	1,654	1,239	95	30	213	7	66	4	1,601	26	4	21	75	233	91	11	0	0
Toys	7,067	7,004	5,438	1,170	162	155	22	53	4	6,836	115	27	20	467	1,038	415	17	1	0
Unknown Types of Foreign Bodies, Toys, or Miscellaneous Substances	737	721	478	122	22	68	5	24	2	685	13	15	4	77	128	68	9	0	0
Thermometers																			
Thermometers: Mercury	1,932	1,922	450	359	121	612	38	314	28	1,880	25	11	2	161	430	19	4	0	0
Thermometers: Other	1,162	1,153	465	177	64	228	30	158	31	1,112	22	12	7	52	213	41	3	0	0
Thermometers: Unknown	257	254	79	42	4	84	4	37	4	254	0	0	0	21	13	3	0	0	0
Category Total:	**109,921**	**107,067**	**77,905**	**12,426**	**2,969**	**9,435**	**549**	**3,368**	**415**	**104,565**	**1,498**	**616**	**263**	**7,768**	**15,250**	**7,772**	**335**	**11**	**0**
Fumes/Gases/Vapors																			
Miscellaneous Fumes/Gases/Vapors																			
Carbon Dioxide	395	381	37	51	67	180	2	36	8	348	24	2	3	90	47	85	28	2	0
Carbon Monoxide	13,038	11,538	1,374	1,291	763	5,901	178	1,802	229	11,151	267	19	21	4,920	3,006	2,721	1,082	143	54
Chloramine Gas	906	853	29	10	46	648	7	98	15	815	36	0	2	172	88	239	101	1	0
Chlorine Gas	4,094	3,879	296	281	296	2,458	26	487	35	3,694	122	15	41	1,106	249	1,471	559	5	0
Chlorine Gas (When Household Acid is Mixed with Hypochlorite)	1,857	1,758	83	78	106	1,272	8	195	16	1,702	52	0	2	516	130	749	214	6	1

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

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Hydrogen Sulfide (Sewer Gas)	912	809	62	41	46	510	16	117	17	797	4	2	5	338	121	218	100	13	5
Methane and Natural Gas	5,764	5,385	974	686	515	2,421	38	704	47	5,345	19	6	13	833	1,923	1,029	131	5	2
Other Types of Fumes, Gases, or Vapors	1,438	1,293	142	58	98	699	39	238	19	1,191	61	7	23	322	224	247	102	9	0
Polymer Fume Fever	4	4	0	0	1	2	0	1	0	3	0	0	1	0	0	1	0	0	0
Simple Asphyxiants	2,118	1,915	194	192	196	1,026	4	277	26	1,703	177	10	13	570	296	432	180	13	6
Unknown Types of Fumes, Gases, or Vapors	1,587	1,523	118	62	80	793	16	393	61	1,434	11	40	10	377	130	292	131	4	0
Category Total:	**32,113**	**29,338**	**3,309**	**2,750**	**2,214**	**15,910**	**334**	**4,348**	**473**	**28,183**	**773**	**101**	**134**	**9,244**	**6,214**	**7,484**	**2,628**	**201**	**68**
Heavy Metals																			
Miscellaneous Heavy Metals																			
Aluminum	904	841	469	45	28	239	0	57	3	815	7	5	6	67	117	46	5	0	0
Arsenic (Excluding Pesticides)	733	647	133	24	17	366	4	94	9	399	11	123	14	305	94	37	20	2	2
Barium, Soluble Salts	32	26	2	2	8	14	0	0	0	21	3	0	1	11	5	9	0	0	0
Cadmium	56	36	3	1	1	25	0	6	0	27	0	1	0	20	3	3	2	0	0
Copper	649	512	79	64	116	183	5	61	4	450	28	8	14	157	66	142	18	1	0
Fireplace Flame Colors	20	20	12	2	1	1	0	3	1	19	1	0	0	2	2	3	0	0	0
Gold	1	1	0	0	0	1	0	0	0	1	0	0	0	1	1	0	0	0	0
Lead	2,190	2,062	1,001	157	113	583	69	123	16	1,900	50	36	10	914	536	148	56	5	1
Manganese	63	33	4	0	5	20	0	4	0	27	2	1	2	17	2	9	1	1	0
Mercury (Other)	129	121	19	7	7	66	0	19	3	90	8	4	16	30	23	13	6	0	0
Mercury, Elemental (Excluding Thermometer)	1,361	1,301	108	99	137	642	8	264	43	1,131	53	37	38	365	324	53	24	8	1
Metal Fume Fever	460	415	29	17	46	281	0	41	1	378	24	7	4	140	25	112	55	1	0
Other Types of Heavy Metals	2,653	1,817	645	103	92	777	3	178	19	1,505	124	30	136	377	256	203	51	9	0
Thallium	27	23	4	0	0	15	0	3	1	18	0	1	1	9	1	1	0	0	0
Unknown Types of Heavy Metals	67	55	6	5	3	31	0	10	0	38	1	7	3	27	5	4	1	0	0
Category Total:	**9,345**	**7,910**	**2,514**	**526**	**574**	**3,244**	**89**	**863**	**100**	**6,819**	**312**	**260**	**245**	**2,442**	**1,460**	**783**	**239**	**27**	**4**
Hydrocarbons																			
Miscellaneous Hydrocarbons																			
Benzene	116	84	10	2	4	60	0	8	0	80	2	1	1	53	17	20	7	0	0
Carbon Tetrachloride	44	40	0	6	2	24	0	6	2	40	0	0	0	10	16	5	1	0	0
Diesel Fuels	858	801	136	12	48	490	2	100	13	734	55	8	0	192	102	220	36	3	0
Freon and Other Propellants	5,751	5,492	406	295	647	3,397	17	672	58	4,228	1,136	63	34	1,941	909	1,223	613	48	16
Gasolines	13,086	12,562	2,425	706	1,190	6,896	20	1,245	80	11,417	991	80	23	2,264	1,623	4,102	345	12	0
Kerosenes	882	821	378	46	38	303	1	52	3	763	39	9	7	262	157	197	59	3	0
Lamp Oils	1,505	1,479	1,002	52	45	324	4	48	4	1,420	43	7	4	462	370	356	115	25	0
Lighter Fluids and/or Naphtha	2,511	2,380	1,282	68	157	700	6	155	12	2,199	107	45	18	822	496	654	143	13	1
Lubricating Oils and/or Motor Oils	3,712	3,453	2,050	107	135	898	7	229	27	3,323	66	48	10	582	993	544	76	5	0
Mineral Seal Oil	21	19	10	1	1	5	0	2	0	19	0	0	0	5	5	2	0	0	0
Mineral Spirits	1,742	1,569	528	57	96	748	3	130	7	1,423	99	30	11	558	277	424	111	12	0
Other Types of Halogenated Hydrocarbons	243	209	55	7	13	116	0	17	1	190	10	4	4	87	29	62	20	1	0

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

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Other Types of Hydrocarbons	4,253	3,906	1,951	159	170	1,331	5	266	24	3,696	129	44	25	1,008	844	850	201	10	0
Toluene and/or Xylene (Excluding Adhesives)	688	578	88	15	27	371	0	73	4	530	30	4	8	287	64	223	55	8	2
Turpentine	390	340	88	10	22	178	2	29	11	289	35	10	2	113	59	78	27	1	0
Unknown Types of Hydrocarbons	499	445	163	24	28	183	1	41	5	394	44	4	0	160	98	111	38	7	1
Category Total:	**36,301**	**34,178**	**10,572**	**1,567**	**2,623**	**16,024**	**68**	**3,073**	**251**	**30,745**	**2,786**	**357**	**147**	**8,806**	**6,059**	**9,071**	**1,847**	**148**	**20**
Industrial Cleaners																			
Miscellaneous Industrial Cleaners																			
Industrial Cleaners: Disinfectants	3,234	3,040	203	87	226	2,079	5	422	18	2,804	188	29	13	925	299	899	308	4	1
Industrial Cleaners: Other or Unknown	1,568	1,445	442	43	93	728	4	131	4	1,330	58	41	11	606	192	440	123	5	0
Industrial Cleaners: Acids	1,418	1,217	329	38	57	662	4	124	3	1,156	29	16	12	379	222	333	102	8	0
Industrial Cleaners: Alkalis	2,483	2,311	567	76	143	1,307	1	205	12	2,191	66	31	14	1,118	244	729	322	25	0
Industrial Cleaners: Anionics or Nonionics	668	579	258	30	23	225	0	42	1	538	27	7	5	125	99	114	25	1	0
Industrial Cleaners: Cationics	795	749	114	32	54	457	2	85	5	679	50	10	5	309	88	260	52	1	0
Category Total:	**10,166**	**9,341**	**1,913**	**306**	**596**	**5,458**	**16**	**1,009**	**43**	**8,698**	**418**	**134**	**60**	**3,462**	**1,144**	**2,775**	**932**	**44**	**1**
Infectious and Toxin-Mediated Diseases																			
Botulinum Toxins																			
Botulism	137	126	26	2	2	84	0	11	1	109	7	1	8	35	20	7	5	9	0
Ichthyosarcotoxins																			
Ciguatera Poisoning	115	106	1	5	3	81	0	16	0	91	0	1	14	58	1	24	31	3	0
Clupeotoxic Fish Poisoning	14	12	1	0	0	10	0	1	0	6	0	0	6	1	0	3	0	0	0
Other Types of Seafood Poisonings	181	172	12	13	9	109	1	25	3	132	5	2	33	58	8	51	22	2	0
Paralytic Shellfish Poisoning	146	142	9	8	10	98	0	14	3	109	1	1	30	42	12	39	18	0	0
Scombroid Fish Poisoning	177	172	4	2	7	128	1	28	2	122	0	3	47	50	4	41	40	0	0
Tetrodon Poisoning	121	120	25	26	11	41	2	14	1	109	4	1	6	19	15	19	9	0	0
Infectious Diseases																			
Other Types of Bacterial Food Poisonings (Salmonella, Shigella, Vibrio, Staphylococcus, Streptococcus, etc.)	569	560	159	44	34	255	1	63	4	539	3	6	11	60	74	62	20	0	1
Unknown Types of Bacterial Food Poisonings	6,596	6,457	932	473	432	3,629	50	855	86	6,064	13	83	274	680	417	1,177	344	5	0
Unknown Types of Suspected Food Poisonings	6,976	6,850	825	408	441	4,244	25	818	89	6,577	8	76	170	799	193	1,219	381	6	0
Category Total:	**15,032**	**14,717**	**1,994**	**981**	**949**	**8,679**	**80**	**1,845**	**189**	**13,858**	**41**	**174**	**599**	**1,802**	**744**	**2,642**	**870**	**25**	**1**

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

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Information Calls																			
Food Information Calls																			
Information Calls About Food Products, Additives, or Supplements	12,871	11,150	6,340	853	524	2,640	45	619	129	9,142	484	479	984	961	1,481	1,091	205	12	1
Information Calls About Possibly Spoiled Foods	15,554	15,148	4,207	1,429	1,001	6,651	68	1,648	144	14,086	65	446	523	685	1,793	952	150	3	0
Category Total:	**28,425**	**26,298**	**10,547**	**2,282**	**1,525**	**9,291**	**113**	**2,267**	**273**	**23,228**	**549**	**925**	**1,507**	**1,646**	**3,274**	**2,043**	**355**	**15**	**1**
Lacrimators																			
Miscellaneous Lacrimators																			
Lacrimators: Capsicum Defense Sprays	3,346	3,298	706	595	522	1,089	39	280	67	2,523	173	440	55	610	71	1,538	123	2	0
Lacrimators: CN (Chloroacetophenone)	680	658	164	88	89	238	3	64	12	475	23	120	8	115	20	295	25	1	0
Lacrimators: CR (Dibenz-(b,f)-1,4-Oxazepine)	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Lacrimators: CS (O-Chlorobenzylidene Malonitrile)	54	52	2	6	27	14	1	2	0	50	0	2	0	11	3	39	0	1	0
Lacrimators: Other	66	44	1	1	2	38	0	2	0	41	0	2	1	22	3	14	6	0	0
Lacrimators: Unknown	168	153	23	20	30	52	0	21	7	90	13	37	3	30	17	58	4	0	0
Category Total:	**4,315**	**4,206**	**896**	**710**	**670**	**1,432**	**43**	**369**	**86**	**3,180**	**209**	**601**	**67**	**788**	**114**	**1,944**	**158**	**4**	**0**
Matches/Fireworks/Explosives																			
Miscellaneous Matches/Fireworks/Explosives																			
Explosives	216	203	96	24	25	47	0	9	2	176	18	9	0	55	42	34	10	0	0
Fireworks	714	705	590	48	23	28	5	11	0	679	17	3	4	80	209	53	13	0	1
Matches	616	611	551	12	7	36	0	5	0	593	12	5	1	21	135	7	4	0	0
Other Types of Matches, Fireworks, or Explosives	65	63	38	3	6	13	0	2	1	60	1	0	0	11	12	8	6	0	0
Unknown Types of Matches, Fireworks, or Explosives	12	11	5	1	0	1	0	2	2	11	0	0	0	2	3	1	0	0	0
Category Total:	**1,623**	**1,593**	**1,280**	**88**	**61**	**125**	**5**	**29**	**5**	**1,519**	**48**	**17**	**5**	**169**	**401**	**103**	**33**	**0**	**1**
Miscellaneous Foods																			
Foods																			
Capsicum Peppers	3,869	3,793	630	346	487	1,824	12	447	47	2,941	165	44	637	245	66	1,515	128	0	0
Monosodium Glutamate	51	45	4	2	3	27	1	5	3	16	1	0	26	9	2	10	2	0	0
Other Adverse Reactions to Food	1,828	1,706	421	156	125	756	4	214	30	640	49	98	907	314	98	416	120	8	0
Category Total:	**5,748**	**5,544**	**1,055**	**504**	**615**	**2,607**	**17**	**666**	**80**	**3,597**	**215**	**142**	**1,570**	**568**	**166**	**1,941**	**250**	**8**	**0**
Mushrooms																			
Miscellaneous Mushrooms																			
Group 1 Mushrooms: Cyclopeptides	44	38	5	1	3	29	0	0	0	26	8	1	3	31	8	6	5	7	4
Group 1A Mushrooms: Orellanine	1	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0
Group 2 Mushrooms: Muscimol (Ibotenic Acid)	36	32	8	3	5	15	0	1	0	19	12	1	0	24	7	6	8	1	0

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

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Group 3 Mushrooms: Monomethylhydrazine	21	21	0	1	1	16	0	1	2	18	2	0	1	9	3	9	1	1	0
Group 4 Mushrooms: Muscarine and Histamine	36	35	3	0	1	30	0	1	0	23	5	0	7	20	3	19	10	0	0
Group 5 Mushrooms: Coprine	10	8	3	0	1	4	0	0	0	6	1	0	1	5	1	2	1	0	0
Group 6 Mushrooms: Hallucinogenics (Psilocybin and Psilocin)	593	409	21	5	192	176	1	12	2	44	350	7	2	308	24	69	180	8	1
Group 7 Mushrooms: Gastrointestinal Irritants	183	169	84	9	5	66	0	4	1	136	23	0	8	69	47	55	21	1	0
Mushrooms: Miscellaneous, Non-Toxic	76	68	31	5	3	21	0	8	0	59	2	0	7	27	19	6	2	0	0
Mushrooms: Other Potentially Toxic	139	126	47	12	4	56	0	7	0	93	4	0	28	31	36	25	10	0	0
Mushrooms: Unknown	5,461	5,314	3,498	483	307	894	8	105	19	4,545	610	13	122	1,709	2,157	649	256	17	2
Category Total:	**6,600**	**6,221**	**3,700**	**519**	**522**	**1,307**	**9**	**140**	**24**	**4,970**	**1,017**	**22**	**179**	**2,233**	**2,306**	**846**	**494**	**35**	**7**
Other/Unknown Nondrug Substances																			
Miscellaneous Other/Unknown Nondrug Substances																			
Other Non-Drug Substances	24,623	22,434	13,186	1,986	858	4,854	100	1,211	239	20,389	726	552	540	4,031	4,668	4,665	658	56	2
Unknown Substances Unlikely to be Drug Products	5,194	4,900	1,234	329	285	2,197	37	689	129	3,250	185	802	239	1,527	418	634	281	41	13
Category Total:	**29,817**	**27,334**	**14,420**	**2,315**	**1,143**	**7,051**	**137**	**1,900**	**368**	**23,639**	**911**	**1,354**	**779**	**5,558**	**5,086**	**5,299**	**939**	**97**	**15**
Paints and Stripping Agents																			
Miscellaneous Paints and Stripping Agents																			
Other Types of Paints, Varnishes, or Lacquers	518	478	218	15	22	148	2	49	24	468	1	4	5	94	55	62	23	1	0
Unknown Types of Paints, Varnishes, or Lacquers	5,819	5,488	3,611	236	190	1,118	10	300	23	5,337	83	20	38	673	945	451	83	4	0
Varnishes and Lacquers	1,072	945	269	37	48	434	5	141	11	907	8	11	17	161	120	200	48	1	0
Paints																			
Anti-Algae Paints	22	22	0	0	1	15	0	6	0	21	0	0	1	4	5	4	2	0	0
Anti-Corrosion Paints	43	43	9	1	1	30	0	2	0	39	3	0	1	17	9	9	4	0	0
Oil-Based Paints	2,047	1,921	557	216	168	768	11	174	27	1,772	99	8	37	379	235	454	92	2	0
Water-Based Paints (Acrylic, Latex, etc.)	2,882	2,803	2,131	130	78	384	6	68	6	2,751	23	5	21	213	535	179	28	3	0
Wood stains	611	573	246	26	29	214	5	50	3	555	6	1	11	79	117	106	10	0	0
Stripping Agents																			
Methylene Chloride Stripping Agents	327	313	41	10	19	202	0	39	2	300	9	0	4	123	18	119	40	2	0
Other Types of Stripping Agents	497	471	100	11	36	285	1	35	3	449	10	2	10	189	48	148	77	1	0
Unknown Types of Stripping Agents	75	67	10	2	2	45	0	8	0	63	2	0	2	34	4	22	11	0	0
Category Total:	**13,913**	**13,124**	**7,192**	**684**	**594**	**3,643**	**40**	**872**	**99**	**12,662**	**244**	**51**	**147**	**1,966**	**2,091**	**1,754**	**418**	**14**	**0**

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

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Pesticides																			
Fumigants																			
Aluminum Phosphide	75	57	1	1	1	38	0	6	10	55	1	0	1	30	6	19	1	0	0
Methyl Bromide	3	1	0	0	0	1	0	0	0	1	0	0	0	1	1	0	0	0	0
Other Fumigants	59	52	9	1	1	35	0	5	1	50	1	0	1	14	9	7	5	0	0
Sulfuryl Fluoride	237	205	37	13	12	109	0	27	7	190	1	9	5	34	20	23	10	0	0
Unknown Fumigants	92	88	10	5	3	56	0	12	2	76	7	1	1	29	5	34	3	0	0
Fungicides (Non-medicinal)																			
Carbamate Fungicides	90	64	18	1	2	31	0	10	2	61	1	2	0	12	9	9	4	1	0
Copper Compound Fungicides	91	84	8	3	0	58	0	15	0	82	0	0	2	9	13	18	0	0	0
Other Types of Non-Medicinal Fungicides	588	488	115	24	8	257	2	75	7	474	4	1	7	93	90	101	21	0	0
Phthalimide Fungicides	47	36	10	4	1	14	0	7	0	35	0	0	1	11	7	7	2	0	0
Unknown Types of Non-Medicinal Fungicides	55	42	12	3	2	23	0	2	0	40	0	2	0	6	5	6	1	0	0
Wood Preservatives	147	138	14	6	4	89	0	24	1	129	0	0	9	26	25	24	8	0	0
Herbicides (Including Algaecides, Defoliants, Desiccants, Plant Growth Regulators)																			
Carbamate Herbicides (Excluding Metam Sodium)	8	5	0	0	0	5	0	0	0	4	1	0	0	3	0	2	2	0	0
Chlorophenoxy Herbicides	2,152	1,894	456	93	52	1,107	10	166	10	1,805	37	10	36	341	435	424	49	0	0
Diquat	348	312	64	8	4	199	1	34	2	303	2	2	5	56	61	66	8	1	0
Glyphosate	3,779	3,464	875	124	117	1,949	16	367	16	3,257	50	17	131	556	752	850	81	2	2
Other Types of Herbicides	1,282	1,025	251	29	26	589	2	117	11	981	14	3	22	203	213	230	33	1	0
Paraquat	86	73	4	1	4	53	0	11	0	65	5	1	1	44	11	16	8	2	1
Triazine Herbicides	294	241	58	6	5	147	0	23	2	234	3	1	2	50	42	60	13	0	0
Unknown Types of Herbicides	430	361	86	22	11	195	1	43	3	330	13	6	6	93	42	72	24	0	1
Urea Herbicides	51	39	17	2	1	18	0	1	0	38	0	0	1	8	6	8	0	0	0
Insecticides (Including Insect Growth Regulators, Molluscicides, Nematicides)																			
Carbamate Insecticides Alone	1,792	1,637	600	86	54	695	3	185	14	1,503	79	26	26	329	320	259	62	9	2
Carbamate Insecticides in Combination with Other Insecticides	243	235	60	11	5	124	0	32	3	222	3	3	5	32	33	52	4	0	0
Chlorinated Hydrocarbon Insecticides Alone	283	260	64	9	9	139	0	35	4	228	18	1	13	71	67	36	17	0	0
Chlorinated Hydrocarbon Insecticides in Combination with Other Insecticides	206	195	58	15	13	86	0	20	3	178	7	2	8	32	22	48	7	1	0
Insect Growth Regulators	189	111	62	3	4	36	0	6	0	103	1	1	5	15	20	13	2	0	0
Metaldehyde	94	92	30	2	1	53	0	6	0	89	1	2	0	22	14	10	0	0	0
Nicotine (Excluding Tobacco Products)	30	24	5	2	2	11	0	3	1	19	4	1	0	6	2	2	3	0	0
Organophosphate Insecticides Alone	2,754	2,513	769	140	90	1,250	11	231	22	2,312	87	20	76	653	551	510	118	22	1
Organophosphate Insecticides in Combination with Carbamate Insecticides	38	36	11	1	2	20	0	2	0	34	1	0	1	5	8	5	2	0	0

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

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Organophosphate Insecticides in Combination with Non-Carbamate Insecticides	677	630	94	21	31	395	0	86	3	588	23	4	14	140	71	153	32	3	0
Other Types of Insecticides	8,852	8,276	3,997	338	200	2,988	9	651	93	7,951	112	24	176	757	1,651	975	109	0	1
Pyrethrins	5,896	5,522	1,719	436	232	2,563	17	521	34	5,062	163	17	261	1,030	710	1,317	229	6	0
Pyrethroids	25,124	23,853	5,836	1,157	994	13,172	62	2,405	227	22,157	692	167	761	3,765	3,719	6,009	748	23	2
Rotenone	56	54	13	3	1	30	0	7	0	51	1	0	2	5	6	8	2	0	0
Unknown Types of Insecticides	4,562	4,176	1,014	204	211	2,050	29	616	52	3,756	124	103	150	1,137	493	794	182	16	0
Miscellaneous Pesticides																			
Arsenic Pesticides	47	41	23	1	1	15	0	1	0	38	2	1	0	5	10	1	1	0	0
Borates and/or Boric Acid Pesticides (Excluding Other Uses)	5,368	5,296	4,551	113	65	457	4	86	20	5,207	55	15	16	407	1,275	149	28	2	1
Metam Sodium	2	2	1	0	0	0	0	1	0	2	0	0	0	1	0	0	0	0	0
Repellents																			
Animal Repellents	406	396	116	31	18	175	0	53	3	372	9	5	9	42	52	96	8	0	0
Insect Repellents with DEET	4,158	4,075	2,316	537	209	829	3	169	12	3,759	72	29	207	450	576	1,176	83	3	2
Insect Repellents without DEET	1,356	1,319	953	128	24	171	2	32	9	1,266	21	4	26	74	188	243	13	0	0
Naphthalene Moth Repellants (Excluding Deodorizing Products)	1,273	1,237	836	54	15	231	4	87	10	1,193	32	7	4	221	363	95	12	0	0
Other Types of Moth Repellants	3	2	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Paradichlorobenzene Moth Repellants (Excluding Deodorizing Products)	146	143	91	3	3	39	0	6	1	137	4	1	1	13	45	11	0	0	0
Unknown Types of Insect Repellents	58	56	30	5	3	17	0	0	1	51	0	2	2	6	11	9	2	0	0
Unknown Types of Moth Repellants	2,320	2,262	1,082	132	49	722	15	237	25	2,132	67	26	22	376	514	216	44	4	1
Rodenticides																			
ANTU (1-naphthalenylthiourea)	1	1	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0
Bromethalin Rodenticides	488	466	326	12	7	88	3	27	3	412	40	7	3	176	157	17	1	0	0
Cholecalciferol Rodenticides	3	3	2	0	0	1	0	0	0	2	1	0	0	1	0	0	0	0	0
Long-Acting Anticoagulant Rodenticides	9,555	9,299	7,965	177	130	805	22	159	41	8,887	310	70	17	2,532	2,598	104	33	16	1
Other Types of Rodenticides	414	402	289	11	10	74	8	10	0	375	20	1	1	65	83	26	6	4	0
PNU (n-3-pyridylmethyl-n1-p-nitrophenyl urea)	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0
Sodium Monofluoroacetate	3	3	1	0	0	2	0	0	0	3	0	0	0	2	2	0	0	0	0
Strychnine Rodenticides	73	55	5	1	1	44	0	3	1	29	9	15	0	30	13	5	4	0	0

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

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Unknown Types of Rodenticides	1,370	1,263	878	29	33	246	3	58	16	1,073	101	68	5	500	359	47	21	1	1
Warfarin Type Anticoagulant Rodenticides	241	235	196	4	2	22	0	9	2	219	10	5	0	81	75	2	2	0	0
Zinc Phosphide Rodenticides	82	76	15	3	2	40	0	14	2	66	7	1	2	29	19	7	2	1	0
Category Total:	**88,078**	**82,916**	**36,056**	**4,016**	**2,675**	**32,563**	**227**	**6,703**	**676**	**77,690**	**2,216**	**683**	**2,044**	**14,629**	**15,779**	**14,373**	**2,050**	**118**	**16**
Photographic Products																			
Miscellaneous Photographic Products																			
Developers, Fixing Baths, Stop Baths	129	110	21	4	45	34	0	5	1	107	0	1	2	33	18	34	4	0	0
Other Types of Photographic Products	130	119	66	6	9	28	0	10	0	115	1	2	1	13	17	6	4	0	0
Unknown Types of Photographic Products	1	1	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0
Category Total:	**260**	**230**	**87**	**10**	**55**	**62**	**0**	**15**	**1**	**223**	**1**	**3**	**3**	**47**	**35**	**40**	**8**	**0**	**0**
Plants																			
Miscellaneous Plants																			
Plants: Amygdalin and/or Cyanogenic Glycosides	3,451	3,379	2,021	476	105	599	16	156	6	3,136	118	14	108	168	732	155	14	0	0
Plants: Anticholinergics	762	695	339	50	121	147	7	26	5	484	184	4	17	250	151	53	137	7	0
Plants: Cardiac Glycosides (Excluding Drugs)	1,543	1,480	789	217	49	350	5	64	6	1,335	97	8	33	224	368	98	24	2	1
Plants: Colchicine	17	17	16	1	0	0	0	0	0	17	0	0	0	1	2	2	0	0	0
Plants: Depressants	161	132	72	10	12	35	0	3	0	95	29	2	4	26	35	10	4	0	0
Plants: Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	7,671	7,400	5,425	714	162	903	19	155	22	6,914	240	13	212	561	1,493	644	82	4	0
Plants: Hallucinogenics (Code as Street Drug Unless Plant Part Involved)	483	429	137	43	94	134	0	18	3	232	152	5	37	170	83	63	57	4	0
Plants: Nicotine (Excluding Tobacco Products)	135	128	41	27	10	43	0	7	0	113	8	2	4	38	22	29	18	0	0
Plants: Non-Toxic	5,827	5,414	3,790	665	118	630	18	172	21	4,886	177	15	318	293	659	364	50	3	0
Plants: Other Toxic Types	4,768	4,486	3,081	524	132	610	16	109	14	4,030	254	16	181	494	1,029	335	108	9	0
Plants: Oxalates	5,688	5,572	4,242	557	127	529	10	88	19	5,229	260	9	69	407	1,080	1,037	52	1	0
Plants: Skin Irritants (Excluding Oxalate Containing Plants)	5,837	5,461	2,532	568	213	1,699	20	399	30	4,940	140	32	334	766	665	752	251	7	0
Plants: Solanine	1,522	1,484	968	115	19	289	4	85	4	1,355	49	7	69	124	357	117	18	1	1
Plants: Stimulants	220	205	55	24	12	94	0	20	0	171	22	0	11	54	52	27	6	2	0
Plants: Toxalbumins	190	176	53	22	10	75	0	10	6	131	31	4	7	73	36	36	8	2	0
Plants: Unknown Toxic Types or Unknown if Toxic	10,851	10,317	7,129	1,448	225	1,179	55	253	28	9,674	388	30	195	844	2,049	772	118	9	0
Category Total:	**49,126**	**46,775**	**30,690**	**5,461**	**1,409**	**7,316**	**170**	**1,565**	**164**	**42,742**	**2,149**	**161**	**1,599**	**4,493**	**8,813**	**4,494**	**947**	**51**	**2**

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

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Polishes and Waxes																			
Miscellaneous Polishes and Waxes																			
Floor Waxes, Polishes, or Sealers	428	407	264	8	12	100	0	21	2	394	4	4	5	57	105	67	3	0	0
Furniture Polishes	1,820	1,764	1,446	48	33	198	3	34	2	1,715	35	6	7	182	562	222	20	2	0
Miscellaneous Polishes and Waxes (Excluding Mineral Seal Oils)	2,210	2,120	1,604	69	66	305	1	65	10	2,057	35	9	17	254	487	287	36	3	0
Category Total:	**4,458**	**4,291**	**3,314**	**125**	**111**	**603**	**4**	**120**	**14**	**4,166**	**74**	**19**	**29**	**493**	**1,154**	**576**	**59**	**5**	**0**
Radiation																			
Ionizing Radiation																			
Alpha Radiation	4	1	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0
Beta Radiation	2	2	0	0	0	2	0	0	0	1	1	0	0	1	0	1	0	0	0
Gamma Radiation	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
Ionizing Radiation: Type Unknown	27	27	1	0	0	21	0	5	0	22	0	1	4	12	7	2	0	0	0
Radon	77	56	7	4	2	23	0	18	2	54	0	1	0	11	10	3	0	0	0
Specific Nonpharmaceutical Radionuclides	54	43	3	4	2	20	0	14	0	37	1	2	0	24	10	2	0	0	0
Xray Radiation	18	18	0	0	0	10	0	8	0	9	0	0	8	5	2	0	0	0	0
Miscellaneous Radiation																			
Nonpharmaceutical Radiation: Type Unknown	26	25	2	2	4	11	0	6	0	22	0	1	1	6	1	0	2	0	0
Non-ionizing Radiation																			
Extremely Low-frequency Radiation	6	6	1	0	0	4	0	1	0	5	0	0	1	4	1	1	0	0	0
Infrared Radiation	8	8	0	1	0	4	0	3	0	7	1	0	0	1	1	0	0	0	0
Microwave Radiation	24	23	1	0	1	15	0	6	0	21	0	1	1	3	3	2	0	0	0
Non-ionizing Radiation: Type Unknown	4	4	0	0	0	1	1	2	0	4	0	0	0	1	0	0	1	0	0
Radio Frequency Radiation	8	8	0	1	0	4	0	3	0	8	0	0	0	2	0	0	0	0	0
Ultraviolet Radiation	12	10	0	0	1	5	1	2	1	9	0	0	0	4	0	3	1	0	0
Visible Light Radiation (Lasers)	9	9	1	0	1	5	0	2	0	8	1	0	0	1	0	1	1	0	0
Category Total:	**280**	**241**	**16**	**12**	**11**	**126**	**2**	**71**	**3**	**207**	**4**	**7**	**16**	**76**	**35**	**15**	**5**	**0**	**0**
Sporting Equipment																			
Miscellaneous Sporting Equipment																			
Fishing Baits	60	60	44	5	5	3	1	2	0	55	5	0	0	0	12	2	0	0	0
Fishing Products, Miscellaneous	23	23	15	2	0	5	0	1	0	23	0	0	0	1	3	2	0	0	0
Golf Balls (Including Liquid Center of Golf Balls)	5	5	0	2	1	2	0	0	0	4	1	0	0	1	0	2	1	0	0
Gun Bluing Compounds	42	39	14	1	2	17	0	5	0	32	5	0	2	23	7	16	0	0	1
Hunting Products, Miscellaneous	292	282	144	26	22	75	0	14	1	248	16	9	7	100	68	27	8	1	0
Other Types of Sporting Equipment	17	17	12	2	1	2	0	0	0	16	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	0	0	0	0	0
Category Total:	**440**	**427**	**230**	**38**	**31**	**104**	**1**	**22**	**1**	**379**	**27**	**9**	**9**	**126**	**93**	**50**	**9**	**1**	**1**

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	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Swimming Pool/Aquarium																			
Miscellaneous Swimming Pool/Aquarium																			
Algicides	1,612	1,545	565	184	58	599	5	123	11	1,500	22	5	13	314	191	420	121	6	0
Aquarium Products, Miscellaneous	1,329	1,240	970	57	37	141	2	28	5	1,207	20	8	4	97	332	82	4	0	0
Bromine Shock Treatments	83	74	25	3	6	36	0	4	0	73	0	0	1	14	12	26	3	1	0
Chlorine Shock Treatments	3,301	3,156	554	429	232	1,629	17	282	13	3,035	54	5	53	889	182	1,251	374	12	0
Other Types of Swimming Pool or Aquarium Products	1,751	1,644	429	258	115	738	7	92	5	1,573	27	4	38	350	172	648	119	2	0
Swimming Pool and Aquarium Test Kits	124	103	70	7	2	21	0	3	0	103	0	0	0	10	32	9	2	1	0
Category Total:	**8,200**	**7,762**	**2,613**	**938**	**450**	**3,164**	**31**	**532**	**34**	**7,491**	**123**	**22**	**109**	**1,674**	**921**	**2,436**	**623**	**22**	**0**
Tobacco/Nicotine Products																			
Miscellaneous Tobacco Products																			
Chewing Tobacco	1,001	981	869	13	26	64	1	8	0	942	25	7	5	237	283	292	27	0	0
Cigarettes	5,881	5,700	5,313	43	49	242	8	40	5	5,559	78	25	30	860	1,854	998	68	2	1
Cigars	102	95	59	3	7	21	0	5	0	75	8	0	12	19	21	26	4	0	0
Dissolvable Tobacco	4	4	4	0	0	0	0	0	0	4	0	0	0	1	2	1	0	0	0
Filter Tips Only (i.e. Butts)	51	49	43	0	1	4	0	1	0	49	0	0	0	6	17	6	0	0	0
Other Types of Tobacco Products	120	109	48	1	14	32	0	10	4	77	21	0	10	31	21	17	8	1	0
Snuff	426	415	332	10	21	46	1	5	0	392	15	3	4	105	106	131	11	1	0
Unknown Types of Tobacco Products	1,063	1,013	640	19	41	246	3	56	8	866	70	5	60	255	237	220	40	1	0
Nicotine Containing (Excluding Tobacco Products)																			
Electronic Cigarettes: Device and/or Cartridge Containing Nicotine	447	427	168	11	16	188	0	41	3	337	27	1	59	107	83	102	18	1	1
Electronic Cigarettes: Nicotine Liquid	12	11	4	1	1	4	0	1	0	10	0	0	1	5	2	3	2	0	0
Category Total:	**9,107**	**8,804**	**7,480**	**101**	**176**	**847**	**13**	**167**	**20**	**8,311**	**244**	**41**	**181**	**1,626**	**2,626**	**1,796**	**178**	**6**	**2**
Waterproofers/Sealants																			
Miscellaneous Waterproofers/Sealants																			
Waterproofers/sealants: aerosols	284	268	120	19	20	92	1	15	1	250	9	0	9	98	42	71	37	1	0
Waterproofers/sealants: liquids	89	82	43	11	3	19	0	6	0	78	1	1	2	21	18	16	8	1	0
Waterproofers/sealants: solids	4	4	2	0	0	1	0	1	0	4	0	0	0	0	0	1	0	0	0
Waterproofers/sealants: unknown form	38	38	15	1	2	16	0	3	1	36	1	0	0	14	10	3	4	0	0
Category Total:	**415**	**392**	**180**	**31**	**25**	**128**	**1**	**25**	**2**	**368**	**11**	**1**	**11**	**133**	**70**	**91**	**49**	**2**	**0**
Weapons of Mass Destruction																			
Miscellaneous Weapons of Mass Destruction																			
Anthrax	12	10	0	0	0	4	0	6	0	6	0	4	0	6	0	0	0	0	0
Nerve Gases	2	2	0	0	0	2	0	0	0	1	0	1	0	1	1	0	0	0	0

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

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Other Biological Weapcons	26	25	4	5	0	13	0	3	0	21	0	2	2	5	5	1	1	0	0
Other Chemical Weapons	88	59	2	0	1	48	0	8	0	57	0	1	0	36	9	12	8	0	0
Other Suspicious Powders	82	80	16	5	3	39	0	15	2	58	4	15	0	26	14	18	3	0	0
Other Suspicious Substances (Non-Powder)	796	734	171	39	52	331	4	112	25	468	34	137	15	282	75	134	61	12	0
Suspicious Powders in Envelope or Package	42	41	6	0	4	17	0	14	0	22	2	16	0	18	4	5	4	1	0
Category Total:	**1,048**	**951**	**199**	**49**	**60**	**454**	**4**	**158**	**27**	**633**	**40**	**176**	**17**	**374**	**108**	**170**	**77**	**13**	**0**
Nonpharmaceuticals Total:	**1,162,729**	**1,052,906**	**580,919**	**69,890**	**48,137**	**286,572**	**3,071**	**57,862**	**6,455**	**983,905**	**38,672**	**10,398**	**15,867**	**164,977**	**174,333**	**173,148**	**32,856**	**2,225**	**333**

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Pharmaceuticals																			
Analgesics																			
Acetaminophen Alone																			
Acetaminophen Alone, Adult	33,065	21,707	6,745	944	4,267	8,861	15	726	149	11,996	9,201	7	265	11,631	5,801	2,472	1,522	443	49
Acetaminophen Alone, Pediatric	31,201	29,087	27,186	1,537	118	190	30	11	15	28,697	239	8	122	3,894	6,437	319	49	9	0
Acetaminophen Alone, Unknown if Adult or Pediatric	7,500	4,680	1,853	194	739	1,714	7	133	40	2,689	1,814	3	47	2,504	1,413	507	383	128	19
Acetaminophen Combinations																			
Acetaminophen in Combination with Other Drugs, Adult Formulations	14,819	8,730	2,035	188	1,741	4,417	3	288	58	3,413	5,005	9	211	5,435	1,966	1,913	1,279	163	6
Acetaminophen in Combination with Other Drugs, Pediatric Formulations	91	75	64	9	0	1	1	0	0	74	0	0	1	13	20	4	1	1	0
Acetaminophen with Codeine	4,017	2,119	573	156	317	963	1	98	11	1,127	807	4	161	1,043	558	429	142	18	0
Acetaminophen with Diphenhydramine	902	564	98	12	102	334	1	15	2	203	353	0	4	347	118	99	89	9	1
Acetaminophen with Hydrocodone	27,138	11,838	2,017	318	1,231	7,444	14	707	107	5,111	5,722	39	751	6,332	2,691	2,326	1,001	252	35
Acetaminophen with Other Narcotics or Narcotic Analogs	703	319	46	7	35	219	0	11	1	127	156	1	28	187	66	68	46	13	1
Acetaminophen with Oxycodone	10,012	4,556	825	106	345	2,921	5	318	36	2,153	1,961	25	336	2,353	1,027	874	474	81	10
Acetaminophen with Propoxyphene	362	142	32	1	21	82	0	6	0	62	72	0	5	87	40	37	11	4	0
Acetylsalicylic Acid Alone																			
Acetylsalicylic Acid Alone, Adult Formulations	7,238	4,247	1,772	185	751	1,408	2	113	16	2,341	1,755	5	116	2,160	1,111	509	571	70	7
Acetylsalicylic Acid Alone, Pediatric Formulations	729	439	328	30	29	49	0	3	0	378	54	0	7	114	140	20	15	1	0

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Acetylsalicylic Acid Alone, Unknown if Adult or Pediatric Formulations	10,982	5,756	1,825	236	1,055	2,435	5	159	41	2,653	2,770	6	173	3,548	1,220	903	1,130	149	20
Acetylsalicylic Acid Combinations																			
Acetylsalicylic Acid in Combination with Other Drugs, Adult Formulations	1,450	904	287	44	57	473	2	39	2	556	270	0	66	372	163	142	103	21	0
Acetylsalicylic Acid with Carisoprodol	23	7	0	0	1	6	0	0	0	1	5	0	0	7	2	4	1	0	0
Acetylsalicylic Acid with Codeine	95	46	8	0	5	30	0	3	0	15	30	0	1	29	7	14	9	1	0
Acetylsalicylic Acid with Other Narcotics or Narcotic Analogs	21	7	3	0	0	4	0	0	0	3	3	0	1	5	2	0	2	1	0
Acetylsalicylic Acid with Oxycodone	23	16	2	1	1	11	0	0	1	7	7	0	0	7	6	1	1	0	0
Acetylsalicylic Acid with Propoxyphene	2	2	1	0	0	1	0	0	0	2	0	0	0	0	1	0	0	0	0
Miscellaneous Analgesics																			
Non-Aspirin Salicylates (Excluding Topicals and/or Gastrointestinal Drugs)	293	227	155	9	12	43	0	7	1	197	24	0	5	58	51	20	13	0	0
Other Analgesics	400	316	174	18	22	83	0	18	1	269	17	1	27	37	64	53	7	3	0
Phenacetin	2	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
Phenazopyridine	1,271	1,052	755	18	34	220	0	23	2	931	54	0	64	234	353	91	27	3	0
Salicylamide	5	4	2	0	1	1	0	0	0	3	1	0	0	1	2	1	0	0	0
Unknown Analgesics	192	74	17	1	18	30	0	7	1	25	37	0	8	40	13	15	5	1	0
Nonsteroidal Antiinflammatory Drugs																			
Colchicine	373	262	62	6	5	176	0	13	0	188	38	0	33	140	65	51	36	9	6
Cyclooxygenase-2 Inhibitors	909	498	182	17	21	233	0	41	4	418	49	0	30	87	110	24	7	0	0
Ibuprofen	83,608	66,143	45,909	3,421	6,460	9,169	46	937	201	54,745	10,531	30	672	12,701	15,188	3,559	890	69	4
Ibuprofen with Diphenhydramine	106	74	20	1	11	41	0	1	0	39	34	0	0	37	9	17	7	1	0
Ibuprofen with Hydrocodone	264	143	25	7	15	81	0	13	2	74	55	1	13	60	35	26	13	1	1

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Indomethacin	541	291	83	18	20	155	0	13	2	189	57	1	44	85	68	36	10	1	0
Ketoprofen	71	39	17	3	3	13	0	3	0	29	7	0	3	8	16	2	0	1	0
Naproxen	13,611	8,409	2,875	298	1,605	3,209	8	357	57	5,230	2,627	2	502	2,861	2,021	1,019	204	11	0
Other Types of Nonsteroidal Antiinflammatory Drugs	6,796	3,995	1,625	179	222	1,705	3	241	20	3,328	487	1	168	820	989	343	53	4	1
Unknown Types of Nonsteroidal Antiinflammatory Drugs	22	10	3	0	1	5	0	1	0	6	4	0	0	4	1	3	0	0	0
Opioids																			
Alfentanil	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buprenorphine	3,578	2,304	1,012	50	113	936	5	161	27	1,341	653	78	188	1,602	337	649	430	46	0
Butorphanol	101	62	8	5	1	43	0	5	0	43	11	1	6	30	11	17	4	0	0
Codeine	1,953	1,467	676	204	91	429	0	55	12	1,215	163	4	76	324	389	177	33	1	0
Dihydrocodeine	1	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0
Fentanyl	1,632	899	38	6	34	739	0	63	19	181	571	10	111	624	68	187	233	102	14
Hydrocodone Alone or in Combination (Excluding Combination Products with Acetaminophen, Acetylsalicylic Acid, or Ibuprofen)	1,989	1,065	263	82	94	517	3	80	26	698	247	4	100	367	203	215	51	3	0
Hydromorphone	1,753	737	75	16	32	532	1	71	10	346	310	6	64	381	125	150	86	15	1
Levorphanol	4	2	0	0	0	1	0	1	0	2	0	0	0	0	0	1	0	0	0
Meperidine	211	96	13	9	8	60	0	6	0	55	27	1	10	51	15	16	17	3	1
Methadone	4,490	1,844	263	34	126	1,253	0	139	29	673	907	61	121	1,336	194	341	448	160	30
Morphine	4,047	1,884	296	20	109	1,272	2	163	22	996	696	28	111	1,075	333	369	259	78	19
Nalbuphine	24	14	0	0	0	9	0	5	0	6	0	1	6	14	0	4	6	0	0
Other or Unknown Narcotics	1,614	447	73	7	24	307	1	24	11	113	227	56	15	386	40	82	149	56	10
Oxycodone Alone or in Combination (Excluding Combination Products with Acetaminophen or Acetylsalicylic Acid)	8,460	3,644	613	105	248	2,307	4	322	45	1,820	1,449	44	242	1,914	657	673	409	105	26
Oxymorphone	754	350	41	3	38	241	0	25	2	134	191	3	17	213	31	84	76	20	6
Pentazocine	81	48	5	0	6	33	0	2	2	20	22	0	6	29	6	11	8	1	0
Propoxyphene	40	12	0	0	5	7	0	0	0	1	9	0	1	10	1	4	5	0	0
Remifentanil	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sufentanil	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tapentadol	478	285	33	4	8	207	1	30	2	156	81	5	35	156	47	64	43	9	1
Tramadol	13,067	6,589	1,282	184	721	4,064	2	282	54	2,820	3,216	66	402	4,103	1,572	1,420	1,028	184	9

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Other Acetaminophen and Acetylsalicylic Acid Combinations																			
Acetaminophen and Acetylsalicylic Acid with Other Ingredients	6,214	4,287	2,009	116	810	1,198	3	127	24	2,707	1,398	10	153	1,776	1,184	620	289	16	1
Acetaminophen and Acetylsalicylic Acid without Other Ingredients	286	180	83	1	13	78	0	5	0	112	62	0	6	84	45	19	26	2	1
Category Total: Anesthetics	**309,618**	**202,996**	**104,389**	**8,810**	**21,746**	**60,960**	**165**	**5,871**	**1,055**	**140,719**	**54,486**	**521**	**5,535**	**71,717**	**47,033**	**21,004**	**11,702**	**2,269**	**279**
Inhalation Anesthetics																			
Nitrous Oxide	172	127	24	21	18	53	0	11	0	57	42	3	23	57	9	18	16	3	0
Other Types of Inhalation Anesthetics	99	78	5	0	3	58	0	10	2	65	6	1	5	41	15	26	7	0	0
Unknown Types of Inhalation Anesthetics	3	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	0
Local and/or Topical Anesthetics																			
Dibucaine	29	27	18	1	0	6	0	2	0	25	1	0	1	5	8	3	0	0	0
Lidocaine	1,566	1,355	509	79	106	561	3	87	10	1,107	95	11	138	317	304	190	60	17	0
Other or Unknown Local and/or Topical Anesthetics	4,550	4,302	2,839	182	169	932	4	161	15	3,894	126	18	256	600	1,312	484	97	14	1
Miscellaneous Anesthetics																			
Ketamine and Analogs	308	176	9	4	40	103	0	12	8	32	126	5	10	150	13	47	61	5	1
Other Types of Anesthetics	30	23	14	0	1	8	0	0	0	20	1	0	2	7	3	3	2	1	0
Unknown Types of Anesthetics	14	12	5	1	0	4	1	1	0	6	0	1	5	5	0	1	1	1	0
Category Total: Anticholinergic Drugs	**6,771**	**6,101**	**3,423**	**288**	**337**	**1,726**	**8**	**284**	**35**	**5,206**	**398**	**39**	**440**	**1,183**	**1,664**	**772**	**245**	**41**	**2**
Miscellaneous Anticholinergic Drugs																			
Anticholinergic Drugs (Excluding Cough and Cold Preparations, and Plants)	11,890	9,331	385	86	94	7,522	13	1,174	57	8,815	336	12	145	747	1,362	249	199	19	3
Category Total: Anticoagulants	**11,890**	**9,331**	**385**	**86**	**94**	**7,522**	**13**	**1,174**	**57**	**8,815**	**336**	**12**	**145**	**747**	**1,362**	**249**	**199**	**19**	**3**
Miscellaneous Anticoagulants																			
Glycoprotein IIIa/IIb Inhibitors	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Heparins	299	241	35	7	5	164	0	29	1	184	26	2	28	88	52	19	21	3	0
Other Antiplatelets	2,752	1,088	251	18	12	718	0	87	2	1,010	34	0	40	151	229	13	18	0	0
Other Types of Anticoagulants	920	663	61	8	3	510	0	77	4	554	13	0	90	183	109	28	30	29	9
Unknown Types of Anticoagulants	21	16	7	0	0	7	0	1	1	9	4	0	0	5	3	0	1	1	0
Warfarin (Excluding Rodenticides)	3,777	2,022	455	29	35	1,361	2	129	11	1,698	242	6	61	643	423	67	143	16	0
Category Total: Anticonvulsants	**7,770**	**4,031**	**809**	**62**	**55**	**2,761**	**2**	**323**	**19**	**3,456**	**319**	**8**	**219**	**1,071**	**816**	**127**	**213**	**49**	**9**
Anticonvulsants: Carbamazepine and Analogs																			
Carbamazepine	4,149	2,162	389	83	181	1,422	0	71	16	964	899	2	216	1,532	366	562	491	90	1
Oxcarbazepine	1,561	768	222	118	146	262	0	16	4	505	233	1	21	376	172	192	73	10	0
Anticonvulsants: Gamma Aminobutyric Acid and Analogs																			
Gabapentin	5,889	2,141	351	46	118	1,464	1	148	13	1,088	924	6	95	1,083	531	417	178	18	1
Other Types of Gamma Aminobutyric Acid Anticonvulsants	1,402	547	153	13	37	316	0	26	2	305	207	2	26	279	135	123	50	12	0
Anticonvulsants: Hydantoins																			
Fosphenytoin	5	4	3	0	0	1	0	0	0	3	0	0	0	4	2	1	0	0	0
Phenytoin	3,032	1,904	173	13	48	1,582	0	76	12	783	479	2	517	1,503	278	523	521	57	3
Miscellaneous Anticonvulsants																			
Felbamate	22	8	4	1	0	3	0	0	0	8	0	0	0	2	5	1	0	0	0
Lamotrigine	4,038	1,598	293	82	278	866	0	74	5	934	575	2	74	861	316	367	238	29	2
Levetiracetam	1,795	963	399	94	84	353	0	29	4	809	127	0	22	244	262	113	20	1	0
Other Types of Anticonvulsants (Excluding Barbiturates)	17,235	7,464	1,899	486	888	3,760	0	391	40	4,667	2,331	19	379	3,387	1,913	1,442	644	77	1
Primidone	338	136	20	2	6	102	0	6	0	104	13	0	14	58	32	37	8	1	0
Succinimides	162	128	78	31	11	8	0	0	0	121	6	0	1	27	49	18	1	0	0
Topiramate	2,063	859	255	72	136	366	0	28	2	544	262	1	47	407	242	173	67	5	0
Unknown Types of Anticonvulsants (Excluding Barbiturates)	74	30	6	5	4	10	0	5	0	21	8	0	1	15	7	1	5	1	0
Valproic Acid	7,757	2,948	420	152	388	1,843	1	118	26	1,332	1,178	7	325	1,864	668	630	438	64	1
Zonisamide	205	97	21	12	8	52	0	4	0	73	21	0	2	35	31	14	3	1	0
Category Total: Antidepressants	**49,727**	**21,757**	**4,686**	**1,210**	**2,333**	**12,410**	**2**	**992**	**124**	**12,261**	**7,263**	**42**	**1,740**	**11,677**	**5,009**	**4,614**	**2,737**	**366**	**9**
Lithium Salts																			
Lithium	6,663	3,443	133	92	356	2,705	0	138	19	950	1,171	6	1,081	2,839	521	718	1,140	185	2
Miscellaneous Antidepressants																			
Antidepressants: Type Unknown to Consumer	92	25	2	0	2	15	1	2	3	5	17	2	1	17	4	5	4	1	0
Bupropion	27	3	0	0	1	2	0	0	0	2	1	0	0	2	0	0	0	1	0
Other Types of Antidepressants	25,025	10,766	2,396	373	1,345	6,051	7	515	79	6,204	3,957	49	478	6,046	2,762	1,835	1,560	318	4
Trazodone	17,112	6,333	607	219	1,075	4,107	6	265	54	1,816	4,322	10	128	4,697	1,353	1,989	1,035	46	2

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Monoamine Oxidase Inhibitors (MAOI)																			
Other Types of MAOI	239	97	15	0	3	68	1	10	0	60	10	1	23	41	20	11	21	1	0
Selective Serotonin Reuptake Inhibitors (SSRI)																			
Citalopram	58	1	0	0	1	0	0	0	0	0	1	0	0	1	0	0	1	0	0
Escitalopram	6	3	0	0	1	2	0	0	0	2	1	0	0	2	1	0	1	0	0
Fluoxetine	30	2	0	0	1	1	0	0	0	0	1	0	0	2	0	1	0	0	1
Fluvoxamine	1	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	0
Other Types of SSRI	46,975	20,081	5,111	1,226	4,576	8,252	18	755	143	10,563	8,535	49	779	10,522	5,973	3,545	1,722	152	4
Paroxetine	8	3	0	0	0	2	0	1	0	2	1	0	0	0	0	0	0	0	1
Sertraline	37	7	2	0	1	4	0	0	0	4	3	0	0	4	2	2	0	0	0
Serotonin Norepinephrine Reuptake Inhibitors																			
Duloxetine	2	1	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0
Venlafaxine	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tetracyclic Antidepressants																			
Maprotiline	7	3	1	0	1	1	0	0	0	2	1	0	0	3	2	1	0	0	0
Mirtazapine	18	2	0	0	0	2	0	0	0	1	1	0	0	1	0	1	0	0	0
Tricyclic Antidepressants (TCA)																			
Amitriptyline	6,305	2,849	430	107	364	1,821	0	105	22	1,036	1,647	5	92	2,098	475	610	743	231	17
Amoxapine	23	9	0	0	1	8	0	0	0	1	7	0	1	7	2	4	1	1	0
Desipramine	98	42	10	0	0	31	0	1	0	23	11	1	7	25	6	11	8	2	2
Doxepin	1,499	564	54	16	33	429	0	23	9	176	339	5	31	427	75	128	153	52	2
Imipramine	399	202	38	36	31	83	0	14	0	118	67	1	12	107	44	39	32	11	0
Nortriptyline	1,063	428	51	16	52	275	0	31	3	208	178	0	29	246	78	81	65	17	2
Other Types of TCA	1,056	459	69	17	51	307	0	14	1	211	206	2	19	310	77	94	120	41	1
Protriptyline	9	2	0	0	0	2	0	0	0	1	1	0	0	2	1	0	0	0	0
TCA Formulated with a Benzodiazepine	23	8	1	0	1	6	0	0	0	4	3	0	0	4	1	3	2	0	0
TCA Formulated with a Phenothiazine	52	31	5	2	4	19	0	1	0	14	15	0	1	22	9	5	6	2	0
TCA: Type Unknown to Consumer	22	6	0	1	0	5	0	0	0	1	4	0	0	5	1	1	3	1	0
Category Total: Antihistamines	**106,857**	**45,371**	**8,926**	**2,105**	**7,900**	**24,199**	**33**	**1,875**	**333**	**21,405**	**20,501**	**131**	**2,682**	**27,432**	**11,408**	**9,084**	**6,618**	**1,062**	**38**
Miscellaneous Antihistamines																			
Cimetidine and Other Histamine-2 Blockers	8,189	6,154	4,825	239	120	816	8	134	12	5,857	209	2	77	520	1,483	189	15	0	1
Diphenhydramine Alone (Over the Counter)	6,236	5,088	3,663	319	266	756	12	59	13	4,273	725	1	74	1,362	1,189	648	290	19	2
Diphenhydramine Alone (Prescription)	29	21	14	0	1	6	0	0	0	18	3	0	0	8	7	2	1	0	0

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Diphenhydramine Alone (Unknown if Over the Counter or Prescription)	31,805	21,925	11,212	1,521	2,459	6,151	10	483	89	14,921	6,407	13	430	8,361	4,639	3,377	2,532	265	9
Other Antihistamines Alone (Excluding Cough and Cold Preparations)	49,494	36,053	20,480	5,157	2,580	6,846	31	874	85	31,971	3,414	22	532	5,994	8,822	2,398	768	46	0
Category Total:	**95,753**	**69,241**	**40,194**	**7,236**	**5,426**	**14,575**	**61**	**1,550**	**199**	**57,040**	**10,758**	**38**	**1,113**	**16,245**	**16,140**	**6,614**	**3,606**	**330**	**12**
Antimicrobials																			
Anthelmintics																			
Diethylcarbamazine	55	53	14	0	2	29	1	5	2	51	0	2	0	3	9	3	0	0	0
Levamisole	8	3	0	0	0	3	0	0	0	2	0	1	0	2	0	0	1	0	0
Other Types of Anthelmintics	1,730	1,608	884	101	47	468	8	91	9	1,505	48	6	47	175	398	98	11	2	1
Piperazine	267	255	191	17	4	33	0	9	1	239	14	0	2	28	86	12	0	0	0
Unknown Types of Anthelmintics	10	10	6	0	0	4	0	0	0	10	0	0	0	1	3	0	0	0	0
Antibiotics																			
Systemic Antibiotic Preparations (Oral, Intravenous, Intramuscular)	35,306	29,052	14,505	2,723	1,484	8,736	52	1,446	106	24,578	1,159	13	3,235	3,465	4,668	2,144	468	29	0
Topical Antibiotic Preparations (Dermal, Otic, Ophthalmic, Nasal)	6,643	6,356	4,509	325	165	1,091	8	233	25	6,099	80	11	161	210	966	296	18	2	0
Unknown Types of Antibiotic Preparations	349	245	106	23	18	80	1	15	2	192	19	1	33	34	28	26	6	0	0
Antifungals																			
Systemic Antifungal Preparations (Oral, Intravenous, Intramuscular)	1,521	1,240	658	86	34	366	2	90	4	1,098	22	1	116	162	248	77	26	1	1
Topical Antifungal Preparations (Dermal, Otic, Ophthalmic, Nasal)	9,360	8,972	6,579	258	116	1,664	16	316	23	8,694	73	16	180	593	1,446	562	61	0	0
Unknown Types of Antifungal Preparations	13	12	10	0	0	1	0	1	0	11	0	0	1	1	2	2	0	0	0
Antiparasitics																			
Antimalarials	853	459	127	29	34	234	2	33	0	385	38	0	36	166	128	35	32	7	0
Metronidazole	1,264	801	239	20	59	401	0	78	4	607	60	0	134	137	131	82	19	0	0

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	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Other Types of Antiparasitics	29	24	10	3	1	5	0	4	1	22	1	0	1	4	5	1	1	0	0
Antituberculars																			
Isoniazid	237	168	42	17	43	63	0	3	0	86	47	0	28	108	44	10	33	32	0
Other Types of Antituberculars	21	7	0	0	0	5	0	2	0	6	0	0	1	1	2	1	0	0	0
Rifampin	88	51	20	3	3	21	0	4	0	40	4	1	6	14	11	8	2	1	0
Unknown Types of Antituberculars	2	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	0
Antivirals																			
Amantadine	198	68	20	5	8	33	0	2	0	49	8	0	10	31	12	5	9	4	1
Antiretrovirals	618	327	84	4	16	191	0	31	1	259	50	0	15	102	74	30	11	1	0
Other Anti-Influenza Agents	477	438	188	129	34	75	3	8	1	390	2	0	45	40	75	32	4	0	0
Systemic Antiviral Preparations (Oral, Intravenous, Intramuscular)	1,372	1,013	307	29	44	542	1	88	2	888	64	1	56	161	221	54	19	3	1
Topical Antiviral Preparations (Dermal, Otic, Ophthalmic, Nasal)	168	163	79	10	5	52	0	15	2	148	6	0	9	8	32	11	0	0	0
Unknown Types of Antiviral Preparations	446	278	109	13	23	111	1	19	2	231	22	0	24	48	58	15	7	0	0
Miscellaneous Antimicrobials																			
Other Types of Antimicrobials	158	140	102	5	3	23	1	6	0	130	2	0	8	14	33	14	1	0	0
Unknown Types of Antimicrobials	12	6	4	0	1	1	0	0	0	5	1	0	0	1	1	2	0	0	0
Category Total: Antineoplastics	**61,205**	**51,750**	**28,793**	**3,800**	**2,144**	**14,233**	**96**	**2,499**	**185**	**45,725**	**1,721**	**53**	**4,148**	**5,510**	**8,681**	**3,520**	**730**	**82**	**4**
Miscellaneous Antineoplastics																			
Antineoplastic Drugs	1,920	1,440	272	47	44	917	1	147	12	1,290	39	2	101	466	321	149	48	18	3
Category Total: Asthma Therapies	**1,920**	**1,440**	**272**	**47**	**44**	**917**	**1**	**147**	**12**	**1,290**	**39**	**2**	**101**	**466**	**321**	**149**	**48**	**18**	**3**
Miscellaneous Asthma Therapies																			
Albuterol	5,646	5,064	3,677	607	188	514	7	62	9	4,585	320	6	140	594	1,163	514	204	3	0
Aminophylline or Theophylline	218	142	12	4	8	114	0	3	1	85	18	0	32	80	16	21	39	4	3
Leukotriene Antagonist or Inhibitor	8,489	6,995	5,294	1,118	172	337	4	61	9	6,783	172	0	33	658	1,552	125	3	0	0
Non-Selective Beta Agonists	1,015	988	387	251	55	260	1	30	4	949	21	0	16	264	81	446	83	0	0
Other Asthma Therapeutic Agents	286	199	59	8	6	109	1	16	0	145	21	0	27	77	53	24	24	6	0

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Terbutaline and Other Beta-2 Agonists	1,823	1,564	477	183	61	733	1	103	6	1,404	100	1	53	177	321	114	69	3	0
Unknown Asthma Therapeutic Agents	8	4	2	1	0	1	0	0	0	3	0	0	1	2	0	0	0	0	0
Category Total:	**17,485**	**14,956**	**9,908**	**2,172**	**490**	**2,068**	**14**	**275**	**29**	**13,954**	**652**	**7**	**302**	**1,852**	**3,186**	**1,244**	**422**	**16**	**3**
Cardiovascular Drugs																			
Miscellaneous Cardiovascular Drugs																			
Alpha Blockers	2,968	1,064	225	13	48	710	0	63	5	829	161	3	62	349	292	111	87	5	0
Angiotensin Converting Enzyme Inhibitors	17,505	7,927	3,292	472	215	3,590	3	334	21	6,997	803	3	109	2,261	2,778	328	239	12	1
Angiotensin Receptor Blockers	6,856	3,253	726	103	87	2,136	1	195	5	3,020	167	0	61	638	1,043	146	77	2	0
Antiarrhythmics	1,787	1,108	140	11	15	876	0	63	3	1,024	39	0	41	390	397	67	63	12	6
Antihyperlipidemics	12,559	5,281	2,225	192	107	2,425	2	310	20	4,912	224	2	134	592	1,015	109	29	0	0
Antihypertensives (Excluding Diuretics)	4,918	2,932	956	1,105	332	493	2	42	2	2,529	297	3	94	1,431	1,008	487	341	16	1
Beta Blockers (Including All Propranolol Cases)	24,465	10,691	3,137	390	345	6,314	4	468	33	8,954	1,463	9	200	4,306	4,079	566	839	70	13
Calcium Antagonists	11,910	5,076	1,240	129	141	3,295	2	252	17	4,450	460	5	130	2,286	1,976	305	420	68	24
Cardiac Glycosides	2,525	1,652	148	14	9	1,446	0	33	2	755	77	2	731	1,273	229	147	636	154	18
Clonidine	8,936	5,047	2,050	1,229	540	1,126	2	89	11	3,754	1,094	16	126	3,373	996	1,163	1,337	155	0
Hydralazine	829	330	100	8	14	193	0	15	0	282	36	0	11	130	107	38	25	0	0
Long-Acting Nitrates	944	311	75	6	4	210	0	16	0	280	23	0	8	84	107	35	21	1	0
Nitroglycerin	1,252	859	556	23	12	230	1	31	6	741	88	1	23	319	423	48	25	1	0
Nitroprusside	39	27	1	0	3	21	0	2	0	9	0	0	18	24	5	3	5	2	1
Other Types of Cardiovascular Drugs	489	205	58	6	3	122	0	14	2	180	10	0	14	50	49	11	10	2	0
Other Types of Vasodilators	1,225	883	329	37	28	408	0	74	7	667	108	11	91	317	239	114	36	3	0
Unknown Types of Cardiovascular Drugs	72	35	12	0	1	16	0	5	1	21	10	0	4	23	7	0	1	1	0
Unknown Types of Vasodilators	10	4	1	0	0	3	0	0	0	4	0	0	0	2	1	0	0	0	0
Vasopressors	3,614	3,327	1,289	837	199	851	5	132	14	3,200	92	3	28	955	271	1,429	313	1	0
Category Total:	**102,903**	**50,012**	**16,560**	**4,575**	**2,103**	**24,465**	**22**	**2,138**	**149**	**42,608**	**5,152**	**58**	**1,885**	**18,803**	**15,022**	**5,107**	**4,504**	**505**	**64**

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Cold and Cough Preparations																			
Acetaminophen and Acetylsalicylic Acid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine																			
Acetaminophen and Acetylsalicylic Acid with Decongestant and/or Antihistamine Combinations without Phenylpropanolamine or Opioids	65	41	27	1	1	12	0	0	0	29	8	0	4	16	13	6	0	1	0
Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	118	87	59	13	4	11	0	0	0	77	7	0	3	23	16	15	2	0	0
Acetaminophen, Acetylsalicylic Acid, and Opioid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	17	13	5	2	3	3	0	0	0	9	3	0	0	5	2	1	0	0	0
Acetaminophen and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine																			
Acetaminophen and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	124	85	50	8	11	15	0	1	0	63	18	2	2	32	19	15	6	0	0
Acetaminophen, Phenylpropanolamine, and Codeine Combinations with Decongestant and/or Antihistamine	2	1	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0

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	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Acetaminophen, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	401	309	232	26	21	27	0	3	0	275	27	1	5	65	100	33	8	0	0
Acetaminophen, Phenylpropanolamine, and Other Opioid Combinations with Decongestant and/or Antihistamine	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acetaminophen Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine																			
Acetaminophen and Codeine Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	29	17	10	2	1	4	0	0	0	11	5	0	1	5	3	3	0	0	0
Acetaminophen and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	12,703	7,673	4,076	600	1,061	1,754	2	155	25	5,621	1,736	7	263	2,251	1,762	956	366	15	1
Acetaminophen and Other Opioid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	16	10	6	0	4	0	0	0	0	6	4	0	0	4	3	3	0	0	0
Acetaminophen with Decongestant and/or Antihistamine Combinations without Phenylpropanolamine or Opioids	3,275	2,117	1,089	124	368	482	2	47	5	1,446	575	2	83	695	481	247	194	12	0

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	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Acetaminophen, Acetylsalicylic Acid, and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine																			
Acetaminophen, Acetylsalicylic Acid, and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	19	14	7	1	0	5	0	1	0	11	2	0	1	4	1	2	1	0	0
Acetaminophen, Acetylsalicylic Acid, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	93	75	51	5	8	11	0	0	0	64	8	0	3	14	15	12	1	0	0
Acetaminophen, Acetylsalicylic Acid, Phenylpropanolamine, and Opioid Combinations with Decongestant and/or Antihistamine	5	2	2	0	0	0	0	0	0	2	0	0	0	1	2	0	0	0	0
Acetylsalicylic Acid and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine																			
Acetylsalicylic Acid and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	42	28	17	3	3	5	0	0	0	24	1	0	3	4	8	2	0	0	0
Acetylsalicylic Acid, Phenylpropanolamine, and Codeine Combinations with Decongestant and/or Antihistamine	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0

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			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Acetylsalicylic Acid, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	17	13	2	2	0	8	0	1	0	7	1	0	5	3	3	2	1	0	0
Acetylsalicylic Acid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine																			
Acetylsalicylic Acid and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	38	33	16	3	10	3	0	1	0	23	3	0	7	8	9	4	1	0	0
Acetylsalicylic Acid and Other Opioid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	3	3	0	0	1	1	0	1	0	1	1	0	1	1	0	1	0	0	0
Acetylsalicylic Acid with Decongestant and/or Antihistamine Combinations without Phenylpropanolamine or Opioids	65	43	27	1	4	10	0	1	0	31	8	0	4	8	8	6	1	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine																			
Antihistamine and/or Decongestant with Phenylpropanolamine and Codeine	21	20	8	4	4	3	0	1	0	14	4	0	1	10	8	5	2	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine and Dextromethorphan	513	430	274	52	45	54	0	4	1	350	64	0	12	105	115	52	33	3	0

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Antihistamine and/or Decongestant with Phenylpropanolamine and Other Opioid	11	10	6	1	0	2	0	1	0	9	0	0	1	2	4	1	0	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine without Opioid	289	225	166	26	14	19	0	0	0	203	16	0	4	46	55	20	12	0	0
Antihistamine and/or Decongestant without Phenylpropanolamine																			
Antihistamine and/or Decongestant with Codeine without Phenylpropanolamine	1,155	920	391	138	70	298	0	22	1	761	131	0	21	221	242	143	29	4	0
Antihistamine and/or Decongestant with Dextromethorphan without Phenylpropanolamine	12,502	10,264	5,595	923	2,116	1,528	9	78	15	6,972	3,105	11	135	3,887	2,135	1,658	1,425	51	0
Antihistamine and/or Decongestant with Other Opioid without Phenylpropanolamine	778	635	218	81	42	268	0	24	2	522	86	0	22	177	160	144	24	0	1
Antihistamine and/or Decongestant without Phenylpropanolamine and Opioid	13,679	10,592	6,793	1,127	646	1,800	10	198	18	9,702	614	4	241	1,701	2,792	954	228	15	1
Miscellaneous Cold and Cough Preparations																			
Acetaminophen in Combination with Dextromethorphan (Without Decongestants or Antihistamines)	334	270	217	30	10	10	0	3	0	254	10	0	6	59	79	20	3	1	0
Acetylsalicylic Acid in Combination with Dextromethorphan	2	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0
Expectorants or Antitussives (Without Narcotics or Narcotic Analogs)	3,183	2,289	1,047	183	202	736	1	113	7	1,917	241	1	124	488	505	185	47	7	2

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Non-Acetylsalicylic Acid Salicylates in Combination with Dextromethorphan	15	14	11	1	2	0	0	0	0	13	1	0	0	2	6	1	0	0	0
Other Dextromethorphan Preparations	13,905	10,745	4,508	1,409	2,074	2,514	10	193	37	7,330	3,036	14	301	3,608	1,881	1,712	1,208	36	2
Other Phenylpropanolamine Preparations (Excluding Street Drugs and Diet Aids)	190	162	53	4	2	93	0	9	1	159	2	1	0	13	43	7	1	0	0
Other Types of Cough and Cold Preparation (Excluding Phenylpropanolamine, Dextromethorphan, Acetaminophen, and Acetylsalicylic Acid)	1,912	1,598	1,238	102	73	155	2	27	1	1,488	64	0	43	191	395	116	28	0	1
Unknown Types of Cough and Cold Preparations	1,573	789	269	33	239	207	5	24	12	349	391	3	29	478	136	161	113	8	1
Non-Acetylsalicylic Acid Salicylates and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine																			
Non-Acetylsalicylic Acid Salicylates and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	3	3	3	0	0	0	0	0	0	3	0	0	0	0	2	0	0	0	0
Non-Acetylsalicylic Acid Salicylates, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	3	1	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Non-Acetylsalicylic Acid Salicylates with Decongestant and/or Antihistamine without Phenylpropanolamine																			
Non-Acetylsalicylic Acid Salicylates and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	11	10	8	1	1	0	0	0	0	10	0	0	0	1	3	2	0	0	0
Non-Acetylsalicylic Acid Salicylates with Decongestant and/or Antihistamine without Phenylpropanolamine and Opioid	7	4	4	0	0	0	0	0	0	4	0	0	0	1	0	1	0	0	0
Category Total:	**67,121**	**49,547**	**26,488**	**4,906**	**7,040**	**10,039**	**41**	**908**	**125**	**37,764**	**10,172**	**46**	**1,325**	**14,131**	**11,008**	**6,490**	**3,734**	**153**	**9**
Diagnostic Agents																			
Miscellaneous Diagnostic Agents																			
Diagnostic Tablets for Glucose or Ketones	2	1	0	0	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0
Other Types of Diagnostic Agents	401	355	62	7	15	204	0	54	13	298	5	0	51	155	49	71	19	1	1
Unknown Types of Diagnostic Agents	9	9	3	0	0	4	0	2	0	6	1	0	2	3	0	0	1	0	0
Category Total:	**412**	**365**	**65**	**7**	**15**	**209**	**0**	**56**	**13**	**305**	**6**	**0**	**53**	**159**	**49**	**72**	**20**	**1**	**1**
Dietary Supplements/Herbals/Homeopathic																			
Amino Acids																			
Creatine	225	166	97	6	37	23	0	3	0	120	19	1	25	50	32	16	8	2	0
Other Amino Acid Dietary Supplements	726	540	311	25	38	144	0	19	3	404	54	1	77	126	92	54	22	3	0
Botanical Products																			
Citrus Aurantium (Single Ingredient)	4	2	1	0	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0
Echinacea	183	141	116	11	2	10	0	2	0	133	3	1	4	9	29	13	0	0	0
Ginkgo Biloba	102	63	36	1	3	20	0	3	0	53	2	0	7	8	12	5	1	0	0
Ginseng	104	61	33	3	3	20	0	2	0	40	9	0	12	9	8	8	3	0	0
Kava Kava	65	41	6	5	4	21	0	4	1	18	13	0	7	22	9	13	3	0	0
Ma Huang/Ephedra (Single Ingredient)	43	32	8	0	9	14	0	1	0	15	6	0	10	13	3	7	9	0	0

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Multi-Botanicals with Citrus Aurantium	95	78	44	2	7	24	0	1	0	53	11	0	12	27	25	10	7	2	0
Multi-Botanicals with Ma Huang	155	117	46	0	21	48	0	2	0	61	36	0	19	58	24	20	22	2	0
Multi-Botanicals without Ma Huang or Citrus Aurantium	2,475	1,995	1,141	46	142	606	3	50	7	1,381	275	4	320	665	410	270	176	8	0
Other Single Ingredient Botanicals	2,221	1,713	982	65	58	517	1	82	8	1,398	100	5	199	253	286	160	50	4	0
St. John's Wort	186	124	71	5	10	30	0	8	0	94	18	1	11	24	23	13	1	1	0
Valerian	267	131	53	6	6	56	0	9	1	76	27	1	27	45	32	14	10	0	0
Yohimbe	200	153	32	1	9	100	0	9	2	52	25	0	75	91	16	23	39	2	1
Cultural Medicines																			
Asian Medicines	107	92	44	10	6	27	0	5	0	61	11	0	20	35	27	15	3	0	0
Ayurvedic Medicines	20	17	6	0	2	9	0	0	0	9	2	0	6	12	7	4	2	0	0
Hispanic Medicines	12	8	5	0	0	3	0	0	0	5	1	0	2	4	0	2	2	0	0
Other Cultural Medicines	47	38	12	5	1	16	1	3	0	22	5	0	8	17	4	2	4	4	0
Energy Products																			
Energy Drinks: Caffeine Containing (From Any Source Including Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc.)	957	699	306	99	126	151	0	13	4	422	155	8	112	176	135	138	83	1	0
Energy Drinks: Caffeine Only (Without Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc.)	1,369	936	522	72	134	177	0	28	3	666	168	1	98	169	179	148	72	0	0
Energy Drinks: Ethanol and Caffeine Containing (From Any Source Including Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc.)	218	84	12	2	38	28	0	4	0	23	50	1	10	50	6	20	21	3	0

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Energy Drinks: Ethanol and Caffeine Only (Without Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc.)	2	2	0	0	0	2	0	0	0	1	1	0	0	0	0	1	1	0	0
Energy Drinks: Ethanol Containing Without Caffeine (From Any Source)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy Drinks: No Caffeine (From Any Source)	25	22	8	3	4	5	0	2	0	17	0	0	5	6	5	5	0	0	0
Energy Drinks: Unknown	663	443	164	60	88	115	0	13	3	270	103	4	65	114	68	83	49	1	0
Energy Products: Other	368	296	106	25	38	117	1	9	0	164	57	0	75	112	54	64	47	2	0
Hormonal Products																			
Androgen or Androgen Precursor Dietary Supplements	131	98	66	3	1	27	0	1	0	75	4	0	19	22	21	5	8	0	0
Glandular Dietary Supplements	63	50	39	2	0	9	0	0	0	46	1	0	3	3	14	1	0	0	0
Melatonin	11,279	9,091	6,584	1,087	671	635	11	87	16	7,888	1,046	7	111	1,348	2,077	985	42	1	0
Phytoestrogen Dietary Supplements	52	39	20	1	4	12	0	2	0	25	6	0	8	9	11	6	0	0	0
Miscellaneous Dietary Supplements/Herbals/Homeopathic																			
Homeopathic Agents	10,311	9,704	8,788	303	88	419	20	80	6	9,343	111	3	236	697	1,830	265	47	3	1
Unknown Dietary Supplements or Homeopathic Agents	2,111	1,682	935	100	105	483	2	49	8	1,217	157	4	287	503	341	186	116	6	0
Other Dietary Supplements																			
Blue-Green Algae	217	199	63	33	27	56	0	18	2	189	1	1	7	32	18	44	5	2	0
Glucosamine (with or without Chondroitin)	601	412	300	9	4	82	0	16	1	383	8	1	19	26	72	11	1	0	0
Other Single Ingredient Non-Botanical Dietary Supplements	1,819	1,047	746	64	19	174	5	36	3	913	39	5	88	97	206	41	12	2	0
Category Total:	**37,424**	**30,316**	**21,703**	**2,054**	**1,705**	**4,181**	**44**	**561**	**68**	**25,638**	**2,524**	**49**	**1,985**	**4,832**	**6,076**	**2,653**	**866**	**49**	**2**

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Diuretics																			
Miscellaneous Diuretics																			
Furosemide	3,243	1,138	507	48	35	499	0	46	3	1,024	75	2	29	295	259	134	44	0	0
Other Types of Diuretics	2,106	878	369	59	31	373	1	43	2	771	60	1	42	194	249	68	16	1	0
Thiazide	4,579	1,759	749	93	70	757	0	89	1	1,564	152	2	40	366	456	96	29	0	0
Unknown Types of Diuretics	256	108	46	8	6	37	0	10	1	87	16	0	5	33	23	6	0	0	0
Category Total:	**10,184**	**3,883**	**1,671**	**208**	**142**	**1,666**	**1**	**188**	**7**	**3,446**	**303**	**5**	**116**	**888**	**987**	**304**	**89**	**1**	**0**
Electrolytes and Minerals																			
Miscellaneous Electrolytes and Minerals																			
Calcium and Calcium Salts	15,393	13,739	12,360	569	150	517	19	110	14	13,462	195	7	71	374	2,244	216	30	0	2
Chromium, Trivalent	273	233	105	13	12	76	2	22	3	221	5	4	3	30	51	12	4	0	0
Colloidal Silver	98	78	26	2	2	40	0	7	1	50	9	0	18	30	6	11	4	2	0
Fluoride (Excluding Vitamins, Hydrofluoric Acid, and Mouthwashes)	2,166	2,048	1,716	176	30	94	5	24	3	1,954	25	0	65	118	342	122	7	0	0
Germanium and Germanium Salts	1	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
Iron and Iron Salts (Excluding Vitamins with Iron)	5,174	3,778	2,165	133	285	1,029	2	144	20	3,131	410	3	226	1,063	906	401	108	7	0
Magnesium and Magnesium Salts	1,444	1,126	409	67	58	521	0	64	7	888	126	8	97	189	166	168	22	1	1
Multi-Mineral and Multi-Herbal Dietary Supplement	964	769	475	17	78	174	0	22	3	555	126	0	84	294	234	98	58	1	1
Multi-Mineral Dietary Supplements	175	124	76	4	6	32	1	5	0	104	6	0	13	19	18	16	2	0	0
Other Types of Electrolytes or Minerals	51	42	18	3	1	15	0	5	0	37	1	1	3	8	9	9	1	0	0
Potassium and Potassium Salts	1,496	586	214	19	11	293	0	45	4	492	66	0	23	119	139	25	14	3	0
Selenium and Selenium Salts	95	62	15	5	3	31	0	7	1	43	6	0	11	19	10	7	1	0	0
Sodium and Sodium Salts	3,305	2,660	1,438	294	172	617	8	110	21	2,251	300	20	76	395	478	360	35	2	0
Unknown Types of Electrolytes or Minerals	15	13	4	1	1	6	0	1	0	9	3	1	0	4	2	2	1	0	0

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Vanadium and Vanadium Salts	2	2	1	0	0	1	0	0	0	1	1	0	0	1	0	1	0	0	0
Zinc and Zinc Salts	1,212	1,026	581	43	27	316	1	53	5	876	42	1	104	96	111	94	14	0	0
Category Total:	**31,864**	**26,287**	**19,604**	**1,346**	**836**	**3,762**	**38**	**619**	**82**	**24,075**	**1,321**	**45**	**794**	**2,759**	**4,717**	**1,542**	**301**	**16**	**4**
Eye/Ear/Nose/Throat Preparations																			
Miscellaneous Eye/Ear/Nose/Throat Preparations																			
Topical Steroids For Eye/Nose/Throat	1,891	1,527	865	288	32	278	1	61	2	1,448	46	3	27	55	269	105	8	0	0
Nasal Preparations																			
Other Nasal Decongestants or Sympathomimetics (Excluding Tetrahydrazoline)	2,380	2,253	1,007	126	137	835	1	135	12	2,060	49	15	127	253	599	227	39	2	0
Other Types of Nasal Preparations	594	570	353	19	12	150	1	30	5	545	8	1	16	31	91	61	1	1	0
Tetrahydrozoline, Nasal Preparations	32	31	23	0	0	7	0	1	0	26	2	1	2	12	12	5	3	0	0
Unknown Types of Nasal Preparations	10	8	2	0	1	4	0	1	0	7	1	0	0	1	1	1	0	0	0
Ophthalmic Preparations																			
Contact Lens Products	2,785	2,712	1,581	48	151	790	3	125	14	2,645	28	15	22	393	298	420	92	2	0
Glaucoma Medications	359	311	92	7	3	173	0	36	0	282	6	2	20	44	66	24	15	2	0
Other Ophthalmic Sympathomimetics	1,237	1,166	685	40	83	284	1	67	6	979	46	95	37	256	394	102	27	1	0
Other Types of Ophthalmic Preparations	2,071	1,967	1,119	83	79	555	2	120	9	1,832	43	25	60	212	381	126	36	2	0
Tetrahydrozoline, Ophthalmic Preparations	1,238	1,202	837	39	59	215	2	47	3	1,054	36	98	9	292	476	84	24	0	0
Unknown Types of Ophthalmic Preparations	56	48	13	1	6	18	1	8	1	33	3	8	3	11	8	6	0	0	0
Otic Preparations																			
Combination Products	2,097	2,055	997	221	75	629	4	121	8	2,033	5	2	14	173	330	533	32	0	0
Other Types of Otic Preparations	2,166	2,137	915	106	65	879	2	160	10	2,102	8	2	24	216	249	594	41	1	0
Unknown Types of Otic Preparations	45	42	16	2	2	15	0	6	1	40	1	0	1	3	5	13	0	0	0

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			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Throat Preparations																			
Other Types of Throat Preparations	475	437	154	63	54	138	0	27	1	389	33	1	11	48	103	40	4	0	0
Throat Lozenges with Local Anesthetics	283	259	120	28	23	70	0	16	2	229	16	1	13	24	65	14	2	0	0
Throat Lozenges without Local Anesthetics	1,161	1,089	913	71	29	67	0	7	2	1,025	42	0	20	48	167	41	3	0	0
Unknown Types of Throat Preparations	3	3	1	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0
Category Total:	**18,883**	**17,817**	**9,693**	**1,142**	**811**	**5,109**	**18**	**968**	**76**	**16,732**	**373**	**269**	**406**	**2,072**	**3,514**	**2,396**	**327**	**11**	**0**
Gastrointestinal Preparations																			
Antacids																			
Antacids: Other Types	4,756	4,411	3,970	162	29	204	2	41	3	4,307	66	4	31	129	645	66	0	0	0
Antacids: Proton Pump Inhibitors	10,872	5,940	3,059	197	185	2,107	7	368	17	5,497	231	4	193	531	1,162	198	30	2	0
Antacids: Salicylate-Containing	2,625	2,352	1,884	176	38	219	2	29	4	2,178	80	1	83	225	614	66	12	0	0
Antidiarrheals																			
Antidiarrheals: Diphenoxylate and Atropine Containing	340	192	81	10	11	85	0	5	0	139	44	0	6	116	51	37	20	0	1
Antidiarrheals: Loperamide	1,207	921	531	29	19	299	0	37	6	744	129	6	36	312	342	77	22	8	2
Antidiarrheals: Non-Narcotic Containing (Excluding Salicyl Containing)	17	10	10	0	0	0	0	0	0	10	0	0	0	1	1	2	0	0	0
Antidiarrheals: Other Narcotic Containing	1	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0
Antidiarrheals: Paregoric Containing	3	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Antispasmodics																			
Antispasmodics: Anticholinergic Containing	2,975	1,475	673	104	80	543	2	62	11	1,173	192	4	89	491	425	199	107	7	0
Antispasmodics: Other Types	31	20	7	0	2	10	0	1	0	14	5	0	1	7	7	5	1	0	0
Miscellaneous Gastrointestinal Preparations																			
Laxatives	15,610	13,746	10,043	615	449	2,222	11	364	42	12,704	524	76	414	1,211	2,012	1,316	143	4	0
Other Types of Gastrointestinal Preparations	10,174	8,538	6,990	263	129	977	9	155	15	8,036	216	7	264	804	1,558	309	75	11	0

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Unknown Types of Gastrointestinal Preparations	36	19	16	0	1	2	0	0	0	17	1	0	0	3	1	0	1	0	0
Category Total:	**48,647**	**37,626**	**27,264**	**1,557**	**943**	**6,669**	**33**	**1,062**	**98**	**34,821**	**1,488**	**102**	**1,117**	**3,830**	**6,818**	**2,275**	**412**	**32**	**3**
Hormones and Hormone Antagonists																			
Miscellaneous Hormones and Hormone Antagonists																			
Androgens	538	441	110	20	23	227	0	49	12	322	53	5	57	102	56	65	27	3	0
Corticosteroids	11,877	9,872	4,484	847	302	3,359	12	824	44	8,649	149	489	561	845	1,399	347	82	7	6
Estrogens	1,702	1,124	714	48	46	271	0	37	8	1,032	41	3	47	67	180	48	3	0	0
Insulin	6,714	5,812	181	84	111	4,946	4	445	41	5,285	415	13	79	2,194	2,361	325	775	43	2
Oral Contraceptives	6,400	5,293	3,889	215	442	582	12	140	13	4,676	517	6	86	425	805	173	17	0	0
Other Hormone Antagonists	546	434	157	24	8	214	0	28	3	407	14	0	13	49	90	8	2	2	0
Other Hormones	817	603	225	83	45	219	1	29	1	518	40	3	40	168	186	59	20	0	0
Progestins	1,568	1,337	758	67	62	376	2	67	5	1,173	47	2	111	144	221	50	9	2	0
Selective Estrogen Receptor Modulators	346	204	65	9	5	109	0	15	1	194	8	0	2	28	54	6	2	0	0
Thyroid Preparations (Including Synthetics and Extracts)	13,807	9,564	4,752	419	265	3,614	8	476	30	9,139	312	2	93	1,201	1,791	140	68	2	0
Unknown Hormones or Hormone Antagonists	18	12	5	0	1	5	0	1	0	7	0	1	4	2	1	1	0	0	0
Oral Hypoglycemic																			
Oral Hypoglycemics: Biguanides	8,053	3,743	795	118	255	2,338	2	228	7	3,076	532	5	112	932	940	260	164	25	9
Oral Hypoglycemics: Other or Unknown	1,153	513	166	13	8	292	0	34	0	467	22	0	22	133	187	17	17	3	0
Oral Hypoglycemics: Sulfonylureas	4,206	1,753	850	36	38	759	2	60	8	1,449	211	3	66	1,291	688	70	439	43	1
Oral Hypoglycemics: Thiazolidinediones	503	169	72	8	3	78	0	8	0	155	10	0	4	61	71	5	4	1	0
Category Total:	**58,248**	**40,874**	**17,223**	**1,991**	**1,614**	**17,389**	**43**	**2,441**	**173**	**36,549**	**2,371**	**532**	**1,297**	**7,642**	**9,030**	**1,574**	**1,629**	**131**	**18**
Miscellaneous Drugs																			
Other Miscellaneous Drugs																			
Allopurinol	854	316	146	8	8	133	0	18	3	291	13	0	11	46	101	10	3	0	0
Disulfiram	226	72	5	1	1	55	0	7	3	23	27	1	20	39	9	14	12	2	0
Ergot Alkaloids	128	94	49	3	3	35	0	4	0	72	8	0	12	36	28	13	7	0	0
Levo-Dopa and Related Drugs	1,125	578	132	9	3	399	1	32	2	520	35	2	17	145	136	80	32	2	0

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Neuromuscular Blocking Agents (Succinylcholine, Curare, etc.)	33	19	3	0	0	13	0	1	2	14	2	0	2	13	4	2	2	3	0
Nicotine Pharmaceuticals	1,386	1,272	672	129	45	352	1	68	5	1,041	104	5	118	273	372	232	34	2	0
Other Types of Miscellaneous Prescriptions or Over-the-Counter Drugs	17,106	11,358	4,571	647	689	4,738	13	645	55	9,778	724	22	790	2,653	2,652	1,350	499	35	2
Category Total:	**20,858**	**13,709**	**5,578**	**797**	**749**	**5,725**	**15**	**775**	**70**	**11,739**	**913**	**30**	**970**	**3,205**	**3,302**	**1,701**	**589**	**44**	**2**
Muscle Relaxants																			
Miscellaneous Muscle Relaxants																			
Carisoprodol (Formulated Alone)	6,440	2,551	183	16	162	2,056	0	108	26	489	1,950	9	31	2,107	293	846	654	102	2
Cyclobenzaprine	10,974	4,655	1,413	243	364	2,418	3	184	30	2,506	1,991	2	97	2,796	1,206	1,077	684	82	1
Methocarbamol	1,592	647	114	15	53	427	0	33	5	327	288	3	17	360	153	162	62	7	2
Other Types of Muscle Relaxants	8,131	3,480	692	83	267	2,266	2	134	36	1,542	1,705	18	148	2,317	559	785	844	177	6
Unknown Types of Muscle Relaxants	209	43	11	0	7	20	1	4	0	16	25	0	1	29	11	8	4	0	0
Category Total:	**27,346**	**11,376**	**2,413**	**357**	**853**	**7,187**	**6**	**463**	**97**	**4,880**	**5,959**	**32**	**294**	**7,609**	**2,222**	**2,878**	**2,248**	**368**	**11**
Narcotic Antagonists																			
Miscellaneous Narcotic Antagonists																			
Miscellaneous Narcotic Antagonists	432	187	6	3	9	143	0	24	2	63	48	14	58	106	12	41	43	5	0
Category Total:	**432**	**187**	**6**	**3**	**9**	**143**	**0**	**24**	**2**	**63**	**48**	**14**	**58**	**106**	**12**	**41**	**43**	**5**	**0**
Radiopharmaceuticals																			
Miscellaneous Radiopharmaceuticals																			
Specific Pharmaceutical Radionuclides	46	40	6	1	4	22	0	7	0	24	0	0	14	13	2	10	1	1	0
Category Total:	**46**	**40**	**6**	**1**	**4**	**22**	**0**	**7**	**0**	**24**	**0**	**0**	**14**	**13**	**2**	**10**	**1**	**1**	**0**
Sedative/Hypnotics/Antipsychotics																			
Barbiturates																			
Long-Acting Barbiturates	2,041	1,235	288	45	57	777	1	63	4	863	289	9	43	487	250	206	132	47	0
Short- or Intermediate-Acting Barbiturates	228	107	7	2	6	72	1	18	1	65	27	2	8	47	20	33	6	4	5
Unknown Types of Barbiturates	26	7	1	1	0	3	0	2	0	2	5	0	0	5	0	1	3	0	0
Miscellaneous Sedatives/Hypnotics/Antipsychotics																			
Atypical Antipsychotics	40,435	16,629	2,514	1,183	2,985	9,195	10	625	117	6,633	8,889	58	789	11,957	2,994	4,826	3,385	452	15
Benzodiazepines	79,989	29,554	5,840	834	2,807	18,109	17	1,559	388	10,377	17,897	275	511	20,388	5,799	9,388	3,450	306	17

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Buspirone	3,313	1,037	187	36	114	640	0	50	10	453	533	0	42	624	327	235	83	8	0
Chloral Hydrate	68	36	16	2	1	17	0	0	0	16	11	1	6	30	6	11	9	2	0
Ethchlorvynol	2	2	0	0	0	1	0	1	0	0	1	0	1	1	0	0	2	0	0
Glutethimide	2	2	0	0	0	1	0	1	0	0	2	0	0	2	0	0	2	0	0
Meprobamate	41	16	4	1	3	8	0	0	0	8	8	0	0	13	5	4	3	0	0
Methaqualone	4	1	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0
Other Types of Sedative/ Hypnotic/ Anti-Anxiety or Anti-Psychotic Drugs	23,253	10,680	1,267	587	1,062	7,046	5	595	118	4,180	6,046	35	256	6,720	1,571	3,583	1,300	94	3
Phenothiazines	4,952	1,961	244	53	201	1,336	0	110	17	832	886	8	205	1,349	363	442	485	41	0
Sleep Aids, Over the Counter Only (Excluding Diphenhydramine)	1,529	900	184	20	127	509	0	44	16	280	577	4	23	606	154	185	213	20	0
Unknown Types of Sedative/ Hypnotic/ Anti-Anxiety or Anti-Psychotic Drugs	281	104	5	2	21	60	0	11	5	16	75	3	5	84	13	20	20	1	0
Category Total:	**156,164**	**62,271**	**10,557**	**2,766**	**7,384**	**37,774**	**34**	**3,080**	**676**	**23,725**	**35,247**	**395**	**1,889**	**42,314**	**11,502**	**18,934**	**9,093**	**975**	**40**
Serums, Toxoids, Vaccines																			
Miscellaneous Serums, Toxoids, Vaccines																			
Miscellaneous Serums, Toxoids and Vaccines	2,049	1,834	343	126	101	988	10	247	19	1,394	10	0	423	590	156	359	79	7	0
Category Total:	**2,049**	**1,834**	**343**	**126**	**101**	**988**	**10**	**247**	**19**	**1,394**	**10**	**0**	**423**	**590**	**156**	**359**	**79**	**7**	**0**
Stimulants and Street Drugs																			
Cannabinoids and Analogs																			
Marijuana	4,930	1,440	210	44	478	582	3	99	24	394	875	68	71	934	135	352	297	17	2
Tetrahydrocannabinol (THC) Homologs	5,225	3,989	20	60	1,816	1,897	5	144	47	202	3,645	80	30	3,417	170	1,237	1,480	150	6
THC Pharmaceuticals	99	67	15	0	16	30	0	4	2	25	34	0	7	43	9	21	13	0	0
Diet Aids																			
Diet Aids: Phenylpropanolamine and Caffeine Combinations	14	11	4	0	2	5	0	0	0	8	2	0	1	4	2	3	2	0	0
Diet Aids: Phenylpropanolamine Only	18	12	6	0	1	5	0	0	0	9	2	0	1	5	2	3	1	0	0
Other Types of Diet Aids: Over the Counter Only	273	234	125	3	29	68	1	5	3	150	36	0	46	104	67	32	20	2	0

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Other Types of Diet Aids: Prescription Only	55	41	23	0	4	13	0	0	1	28	3	0	10	26	13	8	7	1	0
Unknown Types of Diet Aids	89	54	27	2	5	19	0	0	1	32	12	0	10	31	14	9	10	0	0
Miscellaneous Stimulants and Street Drugs																			
Amphetamines and Related Compounds	16,000	10,498	3,787	1,921	1,820	2,653	11	247	59	7,240	2,636	53	448	5,186	2,647	1,788	1,560	95	8
Amyl or Butyl Nitrites (Street Drugs)	103	76	15	1	4	47	1	8	0	33	40	2	1	38	8	13	9	6	0
Caffeine	3,401	2,466	925	105	377	915	4	120	20	1,420	671	13	339	810	398	460	304	3	1
Cocaine	4,850	1,345	54	6	83	1,055	2	106	39	140	1,133	28	9	1,131	191	219	372	70	28
Ephedrine	243	190	83	8	11	80	0	8	0	121	49	0	15	60	37	23	19	4	0
Gamma-Hydroxybutyric Acid including Analogs or Precursors	458	310	7	0	22	257	0	19	5	55	192	40	11	253	11	67	106	45	0
Hallucinogenic Amphetamines	2,067	1,201	15	6	364	702	3	85	26	75	1,057	41	13	986	67	225	481	66	7
Heroin	3,978	1,929	15	2	168	1,491	2	181	70	90	1,693	76	36	1,688	167	312	536	267	59
Lysergic acid diethylamide	528	315	4	2	158	128	1	14	8	27	272	9	3	263	7	47	164	24	0
Mescaline/Peyote	106	87	11	10	23	36	0	7	0	46	37	1	3	43	5	15	22	2	0
Methamphetamines	3,847	2,207	213	87	145	1,462	4	231	65	624	1,457	48	28	1,724	319	293	545	112	51
Methylphenidate	9,787	6,738	1,514	2,671	1,375	1,082	6	72	18	5,302	1,175	14	189	2,252	1,609	1,009	662	33	0
Other Hallucinogens	134	89	0	0	42	44	1	2	0	4	84	1	0	81	5	17	48	3	0
Other Stimulants (Excluding Amphetamines)	346	231	37	2	27	150	0	10	5	123	76	0	29	100	37	49	41	1	0
Other Street Drugs	2,788	1,893	46	12	266	1,430	1	102	36	133	1,695	24	8	1,652	59	367	843	137	8
Phenylcyclohexylpiperidine	791	407	14	2	56	307	0	19	9	57	307	8	7	348	21	89	149	29	5
Unknown Hallucinogens	20	17	0	0	13	4	0	0	0	1	13	0	0	12	0	2	10	0	0
Unknown Stimulants or Street Drugs	279	180	4	4	61	103	0	6	2	17	134	8	9	155	15	33	65	14	1
Category Total:	**60,429**	**36,027**	**7,174**	**4,948**	**7,366**	**14,565**	**45**	**1,489**	**440**	**16,356**	**17,330**	**514**	**1,324**	**21,346**	**6,015**	**6,693**	**7,766**	**1,081**	**176**
Topical Preparations																			
Miscellaneous Topical Preparations																			
Acne Preparations	3,215	3,070	1,816	173	375	557	4	131	14	2,854	66	6	141	187	529	341	24	1	0
Boric Acid or Borates (As Antiseptics, Excluding Insecticides)	80	75	28	0	2	37	0	8	0	69	5	0	1	6	13	9	0	0	0

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Calamine (Including All Caladryl-Type Products)	2,932	2,855	2,161	65	41	515	3	64	6	2,822	23	2	5	155	481	177	7	0	0
Camphor	11,010	10,806	8,872	290	216	1,218	15	186	9	10,548	173	11	64	1,090	2,896	1,259	78	8	0
Camphor and Methyl Salicylate Combinations	1,665	1,646	1,356	48	22	182	2	36	0	1,599	19	1	27	163	485	213	11	0	0
Diaper Care and Rash Products	36,451	35,955	34,268	330	204	949	44	140	20	35,865	39	12	33	590	4,860	743	23	1	0
Hexachlorophene-Containing Antiseptics	19	18	10	2	1	4	0	1	0	16	0	0	1	4	3	2	0	0	0
Hydrogen Peroxide 3%	11,214	10,878	3,966	562	523	4,960	8	826	33	10,492	250	40	81	674	1,240	1,560	55	1	0
Iodine or Iodide-Containing Antiseptics	1,091	985	324	50	82	441	0	81	7	837	77	12	54	211	228	140	28	1	0
Mercury-Containing Antiseptics	70	63	40	3	0	14	0	4	2	55	1	1	6	13	10	6	1	0	0
Methyl Salicylate	8,601	8,510	6,377	326	239	1,299	11	235	23	8,268	79	13	140	663	1,722	1,301	46	2	0
Minoxidil, Topical	165	161	62	5	1	82	1	9	1	146	3	0	12	47	37	19	11	1	0
Other Types of Rubefacients or Liniments (Excluding Camphor and Methyl Salicylate)	3,542	3,463	2,365	88	81	767	6	150	6	3,138	27	8	284	173	566	553	27	1	0
Other Types of Topical Antiseptics	2,592	2,525	1,636	114	104	556	4	101	10	2,422	47	15	36	241	479	230	18	0	0
Podophyllin	55	55	13	2	2	30	1	5	2	34	6	0	15	19	6	9	7	0	0
Silver Nitrate	118	104	22	2	36	32	0	9	3	85	6	0	13	28	6	23	9	2	0
Topical Steroids (Including Otic, Ophthalmic, and Dermal Preparations)	10,892	10,596	6,648	640	194	2,533	15	536	30	10,434	68	6	85	229	1,417	360	17	1	0
Topical Steroids in Combination with Antibiotics (Including Otic, Ophthalmic, and Dermal Preparations)	1,245	1,203	611	82	40	372	1	94	3	1,180	3	0	19	59	171	214	6	0	0
Wart Preparations and Other Keratolytics	1,337	1,308	811	119	60	275	4	37	2	1,225	29	1	51	225	287	202	33	0	0
Category Total:	**96,294**	**94,276**	**71,386**	**2,901**	**2,223**	**14,823**	**119**	**2,653**	**171**	**92,089**	**921**	**128**	**1,068**	**4,777**	**15,436**	**7,361**	**401**	**19**	**0**

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Unknown Drug																			
Miscellaneous Unknown Drug																			
Miscellaneous Unknown Drugs	20,375	14,644	4,747	674	1,876	6,058	91	879	319	6,823	4,750	779	598	9,593	2,822	2,167	2,473	781	68
Category Total:	**20,375**	**14,644**	**4,747**	**674**	**1,876**	**6,058**	**91**	**879**	**319**	**6,823**	**4,750**	**779**	**598**	**9,593**	**2,822**	**2,167**	**2,473**	**781**	**68**
Veterinary Drugs																			
Miscellaneous Veterinary Drugs																			
Miscellaneous Veterinary Drugs without Human Equivalent	3,167	2,957	810	93	92	1,641	7	292	22	2,824	39	8	78	397	667	500	77	1	0
Category Total:	**3,167**	**2,957**	**810**	**93**	**92**	**1,641**	**7**	**292**	**22**	**2,824**	**39**	**8**	**78**	**397**	**667**	**500**	**77**	**1**	**0**
Vitamins																			
Miscellaneous Vitamins																			
Other Types of Vitamins	686	545	391	32	23	88	0	9	2	486	22	2	34	75	118	35	7	0	0
Unknown Types of Vitamins	680	484	332	56	24	50	4	12	6	431	31	1	15	56	90	22	2	0	0
Multiple Vitamin Liquids: Adult Formulations																			
Multiple Vitamin Liquids: Adult Formulations with Fluoride (No Iron)	8	6	4	1	0	1	0	0	0	5	0	0	1	0	1	1	0	0	0
Multiple Vitamin Liquids: Adult Formulations with Iron (No Fluoride)	161	138	72	5	5	42	0	13	1	120	7	0	11	20	20	4	2	0	0
Multiple Vitamin Liquids: Adult Formulations with Iron and Fluoride	5	4	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
Multiple Vitamin Liquids: Adult Formulations without Iron or Fluoride	262	172	100	16	11	40	0	5	0	135	24	0	13	28	20	17	10	0	0
Multiple Vitamin Liquids: Pediatric Formulations																			
Multiple Vitamin Liquids: Pediatric Formulations with Fluoride (No Iron)	179	171	167	3	0	0	1	0	0	169	1	0	1	7	34	2	0	0	0
Multiple Vitamin Liquids: Pediatric Formulations with Iron (No Fluoride)	491	468	447	17	1	3	0	0	0	455	5	0	8	42	103	22	2	0	0

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Multiple Vitamin Liquids: Pediatric Formulations with Iron and Fluoride	69	68	66	1	0	1	0	0	0	67	0	0	1	5	20	1	0	0	0
Multiple Vitamin Liquids: Pediatric Formulations without Iron or Fluoride	422	391	365	22	1	2	0	1	0	380	7	0	4	18	63	10	2	0	0
Multiple Vitamin Tablets: Adult Formulations																			
Multiple Vitamin Tablets: Adult Formulations with Fluoride (No Iron)	67	57	48	5	2	1	0	1	0	53	3	0	1	5	12	1	0	0	0
Multiple Vitamin Tablets: Adult Formulations with Iron (No Fluoride)	6,085	4,934	3,686	111	170	831	5	122	9	4,642	192	1	94	473	1,094	159	16	1	0
Multiple Vitamin Tablets: Adult Formulations with Iron and Fluoride	54	38	25	2	2	3	0	6	0	35	2	0	1	7	6	0	3	0	0
Multiple Vitamin Tablets: Adult Formulations with Iron Carbonyl (No Fluoride)	92	84	66	3	2	13	0	0	0	79	3	0	2	11	25	6	0	0	0
Multiple Vitamin Tablets: Adult Formulations without Iron or Fluoride	4,272	3,227	2,204	289	126	542	7	52	7	2,862	225	5	126	278	650	155	37	3	0
Multiple Vitamin Tablets: Pediatric Formulations																			
Multiple Vitamin Tablets: Pediatric Formulations with Fluoride (No Iron)	513	471	432	32	3	2	0	1	1	465	4	0	2	14	105	4	0	0	0
Multiple Vitamin Tablets: Pediatric Formulations with Iron (No Fluoride)	6,340	5,987	5,216	596	91	71	4	5	4	5,840	126	1	16	464	1,274	255	9	0	0

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Multiple Vitamin Tablets: Pediatric Formulations with Iron and Fluoride	40	36	33	3	0	0	0	0	0	35	1	0	0	6	7	2	0	0	0
Multiple Vitamin Tablets: Pediatric Formulations with Iron Carbonyl (No Fluoride)	9	8	6	2	0	0	0	0	0	8	0	0	0	1	1	3	0	0	0
Multiple Vitamin Tablets: Pediatric Formulations without Iron or Fluoride	27,277	26,484	20,701	4,815	617	280	28	37	6	25,326	1,102	9	17	954	4,734	410	12	0	0
Multiple Vitamins, Unspecified Adult Formulations																			
Multiple Vitamins, Unspecified Adult Formulations with Fluoride (No Iron)	4	3	2	0	0	0	0	0	1	2	0	0	0	0	1	0	0	0	0
Multiple Vitamins, Unspecified Adult Formulations with Iron (No Fluoride)	1,616	1,077	755	39	46	191	3	42	1	1,010	41	0	25	96	221	39	3	0	0
Multiple Vitamins, Unspecified Adult Formulations with Iron and Fluoride	6	5	2	0	1	1	0	1	0	4	0	0	0	1	1	0	0	0	0
Multiple Vitamins, Unspecified Adult Formulations without Iron or Fluoride	87	74	47	12	6	9	0	0	0	67	6	0	1	6	13	3	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations																			
Multiple Vitamins, Unspecified Pediatric Formulations with Fluoride (No Iron)	36	31	26	4	1	0	0	0	0	28	3	0	0	1	7	1	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations with Iron (No Fluoride)	65	61	50	8	3	0	0	0	0	58	3	0	0	3	11	1	0	0	0

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

			Age							Reason				Treated in Health Care Facility	Outcome				
	No. of Case Mentions	No. of Single Exposures	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Multiple Vitamins, Unspecified Pediatric Formulations with Iron and Fluoride	2	2	1	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations without Iron or Fluoride	753	735	608	109	13	2	3	0	0	700	35	0	0	27	150	10	1	0	0
Other Vitamins																			
Other B Complex Vitamins	5,861	4,459	3,757	133	86	394	3	77	9	4,250	86	1	108	287	825	89	15	0	1
Vitamin A	528	443	311	23	9	87	0	12	1	410	14	0	18	26	57	16	2	1	0
Vitamin B3 (Niacin)	2,400	1,902	536	26	206	977	3	144	10	940	317	1	639	445	152	609	117	6	0
Vitamin B6 (Pyridoxine)	344	220	167	12	4	34	0	2	1	204	4	0	11	13	44	5	1	0	0
Vitamin C	1,766	1,215	898	109	42	140	0	24	2	1,102	73	2	35	62	190	63	2	1	0
Vitamin D	5,922	4,494	2,715	220	85	1,273	11	175	15	4,249	80	2	159	438	767	137	19	0	0
Vitamin E	769	534	426	25	13	54	0	15	1	512	16	0	6	26	89	18	1	0	0
Category Total:	**67,871**	**59,028**	**44,666**	**6,731**	**1,594**	**5,132**	**72**	**756**	**77**	**55,135**	**2,433**	**25**	**1,349**	**3,895**	**10,905**	**2,100**	**263**	**12**	**1**
Pharmaceuticals Total:	**1,499,713**	**980,050**	**489,742**	**62,999**	**78,029**	**308,918**	**1,034**	**34,596**	**4,732**	**746,861**	**187,833**	**3,884**	**33,468**	**286,861**	**205,882**	**112,534**	**61,435**	**8,445**	**761**
GRAND TOTAL (Nonpharmaceuticals + Pharmaceuticals):	**2,662,456**	**2,032,956**	**1,070,661**	**132,889**	**126,166**	**595,490**	**4,105**	**92,458**	**11,187**	**1,730,766**	**226,505**	**14,282**	**49,335**	**451,838**	**380,215**	**285,682**	**94,291**	**10,670**	**1,094**

Grand Totals include 14 exposure cases (0 single exposures cases) did not include a valid pharmaceutical or nonpharmaceutical product code (invalid generic codes).

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Appendix A—Acknowledgments

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Poison Centers

We gratefully acknowledge the extensive contributions of each participating PC and the assistance of the many healthcare providers who provided comprehensive data to the PCs for inclusion in this database. We especially acknowledge the dedicated efforts of the SPIs who meticulously coded 3,373,025 calls made to US PCs in 2012.

As in previous years, the initial review of reported fatalities and development of the abstracts and case data for NPDS was the responsibility of the staff at the 57 participating PCs. Many individuals at each center participated in the fatality case preparation. These toxicology professionals and their centers are the following:

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The Lead and Peer review of the 2012 fatalities was carried out by the 34 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.

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

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AAPCC Surveillance Team

NPDS surveillance anomalies are analyzed daily by a team of ten medical and clinical toxicologists working across the country in a distributed system. These dedicated professionals interface with the 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 at the October 2013, North American Congress of Clinical Toxicology meeting in Atlanta, GA.

First Center to Complete all Cases (December 15, 2012, last of their 16 cases) Nebraska Regional Poison Center (Omaha)
Largest Number with Autopsy Reports (57 of 79 cases) Carolinas Poison Center (Charlotte)
Highest Percentage with Autopsy Reports (80% of 15 cases) Central Ohio Poison Center (Columbus)
Largest Number of INDIRECT cases (759 of 1409 total cases reported for 2012) Maryland Poison Center (Baltimore)
Highest Overall Quality of Reports (12.5 of possible 22 for 16 cases) University of Kansas Hospital Poison Control Center (Kansas City)
Greatest improvement in Overall Quality of Reports (2.81 increase from last year) University of Kansas Hospital Poison Control Center (Kansas City)
Most Abstracts Published in last year's Annual report (9 of the 68 published narratives) Maryland Poison Center (Baltimore)
Most Helpful Regional Poison Center Staff (based on survey of AAPCC review team) Missouri Regional Poison Center (St. Louis)
Honorable mention
Carolinas Poison Center (Charlotte)

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).

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SPIs coded the reasons for exposure reported by callers to PCs according to the following definitions:

Unintentional general: All unintentional exposures not otherwise defined below.

Environmental: Any passive, non-occupational exposure that results from contamination of air, water, or soil. Environmental exposures are usually caused by manmade contaminants.

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

Therapeutic error: An unintentional deviation from a proper therapeutic regimen that results in the wrong dose, incorrect route of administration, administration to the wrong person, or administration of the wrong substance. Only exposures to medications or products used as medications are included. Drug interactions resulting from unintentional administration of drugs or foods which are known to interact are also included.

Unintentional misuse: Unintentional improper or incorrect use of a nonpharmaceutical substance. Unintentional misuse differs from intentional misuse in that the exposure was unplanned or not foreseen by the patient.

Bite/sting: All animal bites and stings, with or without envenomation, are included.

Food poisoning: Suspected or confirmed food poisoning; ingestion of food contaminated with microorganisms is included.

Unintentional unknown: An exposure determined to be unintentional, but the exact reason is unknown.

Suspected suicidal: An exposure resulting from the inappropriate use of a substance for reasons that are suspected to be self-destructive or manipulative.

Intentional misuse: An exposure resulting from the intentional improper or incorrect use.

Intentional abuse: An exposure resulting from the intentional improper or incorrect use of a substance 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.

Intentional unknown: An exposure that is determined to be intentional but the specific motive is unknown.

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

Malicious: 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

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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

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

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

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 2012. 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 57. Ethanol (non-beverage) ingestion: undoubtedly responsible.

Scenario/Substances: A 41 y/o female had been abusing ethanol, her partner confronted her about it, and she stated she drank denatured alcohol. She became unresponsive and was brought to the ED.

Physical Exam: Not provided

Laboratory Data: ABG-pH 6.5, Na 144, Cl 106, $HCO_3 < 10$, methanol 329 mg/dL.

Clinical Course: The patient was unresponsive upon arrival to ED, BP 62/45, HR 42, pupils fixed and dilated. She was intubated, given sodium bicarbonate boluses, started on dopamine and norepinephrine which resulted in BP 80/60 and HR 110. Fomepizole was started and folate 50 mg q 4 hrs was given. Due to hypotension, patient started on CRRT rather than hemodialysis. The patient was able to be weaned off dopamine and norepinephrine, but her neurologic exam remained unimproved. Follow-up laboratory data: ABG-pH 7.31/pCO_2 21/pO_2 189/HCO_3 11/BE -19, she continued on a sodium bicarbonate drip. CRRT was discontinued on Day 2 due to hypotension, and she sustained three episodes of cardiac arrest. Repeat methanol was 136 mg/dL. By Day 3, methanol level was less than 20 mg/dL and fomepizole was discontinued, but she continued on multiple vasopressors and mechanical ventilation. She continued to be unresponsive. Based on the prognosis, the family opted for institution of comfort measures and she expired on Day 5.

Autopsy Findings: Final cause of death: 1) methanol, 2) Chronic ETOH. Manner of death: Accidental.

Case 107. Acute methanol ingestion: undoubtedly responsible.

Scenario/Substances: A 50 y/o male was found unresponsive in his home with numerous empty bottles of ethanol. EMS noted RR 4, intubation was performed before transport. The patient also received NS and 1 ampule of bicarbonate for peaked T waves. History from the scene was significant for possible methanol ingestion.

Past Medical History: Hypertension, depression, anxiety, prior myocardial infarction, and stent placement, history of seizure thought to be alcohol-related, 60 + pack-year smoking history, medications**:** lisinopril, bupropion, nitroglycerin, and alprazolam.

Physical Exam: Unresponsive, intubated, BP 116/65, HR 92, RR 22, T 36°C.

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Laboratory Data: pH 6.53, Na 142, K 8.2, Cl 104, BUN 17, Cr 1.4, Ca 6.8, serum osmolarity 518 mosm/kg: serum lactate 8.7 mmol/L, UDS negative.
Clinical Course: Shortly after arrival to the ED, the patient had a generalized seizure and hypotension. Two amps of bicarbonate were given by IV push. Fomepizole and bicarbonate were administered, follow-up pH 7.3. Hemodialysis was attempted but the filter repeatedly clogged with blood clots. The patient had a myocardial infarction early in the hospitalization. Methanol was measured at 110, but unclear when the sample was obtained, Na was 172 and the patient was placed on DDAVP. Hemodialysis was repeated.

Post dialysis the patient was non-responsive, CT head showed massive brain swelling and edema throughout the cerebral hemispheres, cerebellum, and brainstem, with virtually complete effacement of the basilar cisterns and sulci. Brain blood flow was assessed as absent and consistent with brain dealth on Day 3. Organs were harvested for donation and life-support was withdrawn.
Autopsy Findings: External examination only.

Case 190. Acute methanol ingestion: undoubtedly responsible.
Scenario/Substances: A 31 y/o male consumed 32 ounces of windshield washer fluid. The patient complained to EMS of visual disturbance.
Past Medical History: Alcoholism
Physical Exam: Prehospital BP 120/84, HR 65, RR 18 and shallow, O_2 sat 91%. Initially the patient was confused with slurred speech, but became progressively unresponsive, GCS 3.
Laboratory Data: Intial ABG-pH 6.8/pCO_2 56/pO_2 138/HCO_3 6, Na 143, K 6.7, Cl 108, AST 59, ALT 70, Glu 487, lactate 11, anion gap 40, osm gap 164, methanol 91 mg/dL. Serum acetaminophen, ethanol, ethylene glycol, and salicylate were not detected. After the initial dialysis the ABG-pH 7.33/pCO_2 39/HCO_3 20, pO_2 68. On Day 2 Ca, Mg, and phosphorus were normal; troponin T 0.05, CKMB 6.2, serum osm 293, and methanol 47 mg/dL. After the second 4-hour dialysis, methanol: 16 mg/dL.
Clinical Course: Upon arrival to the ED the patient was noted to be unresponsive with periods of apnea. Pupils were dilated and unreactive, he was endotracheally intubated. At 12 hrs after arrival he was opening eyes to voice. Right-sided motor paralysis was noted. At 24 hrs, T 35.4°C, BP 138/93, HR 81, O_2 sat 97% with spontaneous respiratory effort, sedated, intubated on a ventilator, pupillary response normal, able to follow commands moving left side. On Day 2 the patient desaturated into the 80s% with increasing airway pressures. Post intubation the patient became hypotensive and was treated with dopamine, but progressed to PEA arrest lasting 30 min with wide QRS complexes. During the arrest, the patient received 4 mg epinephrine, bicarbonate, Mg, and vasopressin with return of spontaneous circulation. A post-arrest cooling protocol was initiated. In the ICU, the patient completed the 24-hour post-arrest cooling protocol while paralyzed and intubated. Vasopressors including dopamine, norepinephrine, insulin, and vasopressin were weaned. The patient received folate and fomepizole and was dialyzed. The patient was sedated with propofol, fentanyl, and midazolam. Approximately 36 hrs after arrival the patient experienced oxygen desaturations requiring increased ventilatory support. A bronchoscopy-obtained sputum specimen revealed no bacteria, but the patient was treated with vancomycin. A head CT performed on Day 3 showed bilateral basal ganglia infarcts with hemorrhage on the left. The patient was given furosemide and an inferior vena cava filter was placed. He became progressively more difficult to ventilate and expired on Day 6.

Na 135	Cl 97	BUN 17	Glu 286
K 5.6	HCO_3 6	Cr 1.3	

Autopsy Findings: Results not available.

Case 201. Acute antifreeze (ethylene glycol) ingestion: undoubtedly responsible.
Scenario/Substances: A male in his 80s was found down by family members. He was last seen 7 hrs before being found. The family suspected antifreeze may have been ingested as they found an open bottle in the kitchen. Police on the scene found two glasses that contained residual antifreeze.
Physical Exam: Unresponsive male. VS: BP 190/94, HR 85. Pupils 3 mm, slowly reactive.
Laboratory Data: ABG-pH 6.86 / pCO_2 61/pO_2 47, Serum Osmolality 473 mOsm/kg, lactate 3.6, albumin 4.7, alk phos 115, ALT 17, AST 25, direct bili 0.1, INR 1.2, PTT 48.6. Ethylene glycol 829 mg/dL.

At 3 hrs post presentation, ABG-pH 6.93/pCO_2 13/pO_2 141, at 6 hrs post presentation pH 7.2.
Clinical Course: The patient was intubated in the ED, received a dose of fomepizole, was admitted to the ICU, and started on dialysis. At 12 hrs post presentation the patient completed 6 hrs of dialysis, but had hemoptysis. Based on the prognosis, the family opted for comfort measures only and the patient expired approximately 19 hrs post presentation.
Autopsy Findings: No autopsy performed.

Case 233. Acute hydrochloric acid ingestion: undoubtedly responsible.
Scenario/Substances: A 69 y/o female intentionally ingested a glass of muriatic acid. She was found by her husband and brought to the ED.
Clinical Course: In the ED she had difficulty speaking and reported mild stomach pain. BP 112/78, HR 78, O_2 sats 96% on nasal cannula. She was given IV ranitidine and pantoprazole. Over the next 20 hrs, the patient developed hypotension requiring multiple vasopressors, elevation of BUN and Cr. Chest and abdominal xrays showed no perforation. She had increasing respiratory difficulty and required intubation. Dialysis was begun after K increased to 7.0 and urine output was minimal. The patient developed multiorgan failure. Based on the prognosis, the family opted for institution of comfort measures and she expired.
Autopsy Findings: Not performed.

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Case 234. Acute cyanide ingestion: undoubtedly responsible
Scenario/Substances: An 85 y/o male presented to the ED hypotensive with agonal respirations. He was a chemist by profession, and was noted to have medication bottles in his bedroom labeled KCN.
Past Medical History: The patient had been seen in the ED on the day prior to presentation for a urinary tract infection.
Laboratory Data: Initial ABG-pH 7.191 / pCO_2 51.7 / pO_2 45.7 / HCO_3 19.3, COHb 12.3%.
Clinical Course: In the ED he was unresponsive and hypotensive. Systolic BP was 70, later decreased to 40, corneal reflexes absent. Patient smelled of ammonia. He was noted to be acidemic on laboratory workup. His code status was determined to be DNR. He did not receive cyanide antidotal therapy. The patient expired shortly after arrival to the ED.
Autopsy Findings: Marked coronary artery atherosclerosis, hypertensive cardiovascular disease, remote and resolving myocardial infarcts, and remote strokes. Toxicology results: cyanide 2.8 mg/L. Cause of death: suicide by cyanide toxicity.

Case 235. Acute ammonia ingestion and dermal: contributory.
Scenario/Substances: An 87 y/o male had a syncopal episode at home. Wife tried to revive him with ammonia and spilled some of the ammonia on his face and into his mouth.
Physical Exam: Pharyngeal edema, drooling, no reported respiratory distress. BP 146/83, HR 104, RR 21, T 36°C, O_2 sat 95% (on face mask),
Clinical Course: Patient treated with oxygen, steroids, and albuterol treatments. His respiratory status declined over the next 24 hrs. He reportedly developed copious amounts of secretions and had upper airway sloughing. His underlying pulmonary function was unknown. He suffered respiratory distress and asystolic arrest within 36 hrs of admission, unresponsive to CPR efforts.
Autopsy Findings: ME death abstract included the following: Multifactorial cardiovascular disease, ammonia gas exposure was a contributory factor.

Case 243. Acute drain cleaner ingestion: undoubtedly responsible.
Scenario/Substances: A 32 y/o male was brought to the ED by EMS a few minutes after ingesting an unknown quantity of industrial strength drain cleaner at home. The patient was vomiting copious amounts of blood during transport and in the ED.
Past Medical History: Seizure disorder, permanent dysarthria, and ataxia after a previous bupropion overdose. He had been treated and discharged home following an aspirin overdose 2 days prior to this admission.
Physical Exam: BP 115/70, HR 75, afebrile, erythematous oral mucosa with bloody secretions. First and second degree cutaneous burns to lips, tongue, soft palate, hands, and buttocks.
Laboratory Data: ABG-pH 7.35 / pCO_2 37 / HCO_3 20, Na 137, K 3.9, Cr 1.1, Hgb 15, Hct 45.8, AST 22, ALT 31, salicylate 23.2 mg/L.
Clinical Course: The patient complained of difficulty swallowing and breathing and abdominal pain. No decontamination was performed. He was intubated for airway protection and admitted to the ICU. An esophagogastro-duodenoscopy was attempted, but was stopped before visualization of the complete esophagus due to severely necrotic tissue. The patient became increasingly agitated and self-extubated on Day 6. For the first 9 days of hospitalization the patient's CxR showed no evidence of perforation. Treatments included prophylactic antibiotics, IV proton pump inhibitor drip, benzodiazepines, and fentanyl. On Day 7 the patient developed intermittent atrial fibrillation and atrial flutter, which was controlled on an amiodarone drip. An esophagram was attempted on Day 7 without complete visualization of the esophagus. A CT scan on Day 13 revealed a fistula between the esophagus and proximal left main bronchus. He was reintubated, but surgical repair of the fistula was judged unlikely to be successful. Based on the prognosis, the family opted for institution of comfort measures and he expired on Day 15. Cause of death was respiratory failure, secondary to tracheoesophageal fistula secondary to caustic ingestion.
Autopsy Findings: Not performed.

Case 260. Acute hydrogen peroxide ingestion: undoubtedly responsible
Scenario/Substances: An 85 y/o male who regularly used 35% hydrogen peroxide for oxygen therapy, had been in his usual state of good health prior to the evening of admission. His wife noted he was in the bathroom taking his diluted hydrogen peroxide. She heard a crash, found him sitting on a chair, pale and diaphoretic with an altered mental status. She brought him to the bed, went to go get help from a neighbor, returned to find him unresponsive with vomitus next to him. EMS was summoned and transported him to the ED.
Past Medical History: AF controlled with metoprolol, left eye blindness, reflux esophagitis, dementia, questionable history of necrotic bowel.
Physical Exam: Unresponsive, abdominal distention, in AF with a regular ventricular rhythm, HR 140s.
Laboratory Data: WBC 103, lactate 2.3, troponin 0.05, hepatic enzymes unremarkable.
Clinical Course: He was intubated, converted to sinus tachycardia with diltiazem. A chest, abdominal, and pelvic CT showed pneumomediastinum, air around the esophagus, portal air in the liver, and scant amount of pneumoperitoneum, along with pneumomobilia and aspiration pneumonitis. He transferred to a tertiary care hospital. The patient remained unresponsive—no cough during suctioning and no response to nail bed pressure. Babinski reflex was positive, GCS 5, coarse crackles throughout his lungs. HR 67, BP 132/52, RR 17, O_2 sat 99%, and T 36°C. MRI showed multiple cerebral infarcts. Neurology felt his prognosis for neurologic recovery was very poor. Based on the prognosis, comfort measures were instituted and he expired on Day 3.
Autopsy Findings: Not done.

Case 261. Acute formaldehyde/methanol ingestion: undoubtedly responsible.
Scenario/Substances: A 52 y/o male tried to commit suicide by first cutting his left wrist and then drinking an 8 oz bottle of a holding tank deodorant containing 11% methanol and 35%. formaldehyde. EMS started an IV and placed him on

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high flow oxygen. He vomited multiple times during transport and required suction en route to the ED.
Past Medical History: Hypertension, prior suicide attempt 2 weeks earlier. He had mentioned several times that he wanted to kill himself.
Laboratory Data: Hgb 16.6, Hct 49.7, WBC 27.8,

Na 138	Cl 105	BUN 1-	Glu 194
K 5.2	HCO_3 12	Cr 1.4	

AST 75, ALT 45, bilirubin 0.5, platelets 260, UDS was negative for ethanol, acetaminophen, and salicylates.
Clinical Course: In the ED, BP 97/49, HR 92, RR 24, O_2 sat 96% on room air. He had no oral burns. He became hypertensive, agitated, and began thrashing around. They were preparing to intubate him when he became cyanotic and bradycardic. He was resuscitated with sodium bicarbonate, atropine, and epinephrine. CPR was continued for 25 min, but he expired.
Autopsy Findings: Cause of death: Acute formaldehyde and formic acid toxicity. Blood samples from post-mortem femoral blood: formaldehyde 3.1 mg/L, formic acid 433 mg/L; vitreous humor: formaldehyde 3.97 mg/L, humor formic acid 690 mg/L; urine: formaldehyde 4.59 mg/L, formic acid 5501 mg/L; focal hepatocellular steatosis, corrosive fixation of the enteric mucosa, pulmonary edema and congestion, congestive brain swelling, global. Other results included incised wounds and nick abrasions to the left forearm and wrist, focal necrotizing granulomatous Coccidioides immitis pneumonitis, hypertensive cardiovascular disease and cardiomegaly.

Case 285. Acute hydrogen sulfide inhalation/nasal, dermal: undoubtedly responsible.
Scenario/substance: A 26 y/o male was monitoring the filling of a tanker with liquid sludge from a hog processing plant. He was standing on a catwalk on top of the tanker. The unusable pork by-product had been treated with chemicals to compact the product prior to disposal. He was noted earlier to have been wearing his hardhat and harness. Just before the accident the tanker driver observed him to have removed his helmet and harness and hold his head. He collapsed into the port on top of the tanker trailer that was being filled. He was discovered unresponsive, wedged waist deep head first in the hole. The estimated exposure time was 10—15 min. Of note, 1-year prior there was a report of a "blast of gas" occurring when workers opened the valve to start this process and a worker had been temporarily overcome, but recovered.
Past Medical History: No medical history, no medications or recent illnesses.
Physical Exam: Unresponsive male in asystole cardiac arrest. He was pronounced in the field but resuscitation was continued upon ED arrival.
Clinical Course: The patient was intubated and CPR performed for 40 min. IV fluids were given. In the ED, the patient was decontaminated for hydrogen sulfide with clothing removal and sterile washing of the body. He expired approximately 1 hour after exposure.
Autopsy findings: Dark purplish colored skin discoloration about the upper chest, neck, and face along with some pinkish red discoloration. Petechial hemorrhages were noted on the eyelids and sclera of both eyes. An unusual dark reddish discoloration was noted in the upper airway mucosa (uvula, epiglottis, larynx, trachea, and bronchi). No color change was noted on the brain beyond slight edema. No trauma was noted.
Cause of death: The result of thiosulfate (hydrogen sulfide) toxicity due to closed space exposure to animal processing by-products. Post-mortem heart blood thiosulfate 4.8 mg/L.

Case 302. Acute helium inhalation/nasal: undoubtedly responsible.
Scenario/Substances: A 42 y/o male was found down by family near a hose connected to 2 unmarked tanks, later identified as containing helium.
Past Medical History: Obesity.
Laboratory Data: Post-mortem blood and UDS were negative.
Autopsy Findings: Patient succumbed to asphyxia due to suffocation by plastic bag and inhalation of helium. Post-mortem testing was unremarkable.

Case 303. Acute hydrogen sulfide inhalation: undoubtedly responsible.
Scenario/Substances: A 42 y/o male was found passed out in his car with the windows rolled up and the engine running. Open on the passenger seat were lime sulfur, liquid sulfur, bleach, and toilet bowl cleaner. EMS got high readings for hydrogen sulfide outside and inside the car. He was intubated and EMS noted burns of his mouth and throat. He was decontaminated at the scene and transported to the ED. He had also taken multiple tablets of clonazepam.
Past Medical History: The patient had a history of ethanol abuse, depression, and prior suicide attempts. He was not compliant with his medications. At the time of his death he was going through alcohol withdrawal. The patient's girlfriend reported he had read an article in the newspaper regarding suicide using a mixture of chemicals that had the same effect as carbon monoxide but was more rapid.
Physical Exam: Unresponsive, pupils fixed and dilated, HR 92, BP 160/108, RR 23, O_2 sat 100%, T 35.5°C.
Laboratory Data: Glu 138, HCO_3 10, BUN 9, Cr 0.8, lactate 5.9, ammonia < 10, ethanol 285, serum acetaminophen and salicylate were not detected. Head CT showed decreased attenuation throughout the brain, most severe throughout the cerebral cortex, in the caudate nuclei, the putamen and the globus pallidus bilaterally, as well as in the posteromedial thalami bilaterally. This was consistent with a severe global anoxic injury. There was also subarachnoid hemorrhage seen in the inferior portions of both sylvan fissures, as well as in the perimesencephalic cistern.
Clinical Course: The patient was unresponsive and intubated, but was breathing on his own. His HR was progressively rising. His lactate was 16 and he was given several amps of bicarbonate. He then went into VT, then VF and could not be resuscitated.
Autopsy Findings: Cause of Death: Polydrug intoxication combined with inhalation of toxic chemical mixture. Manner of Death: Suicide. Subclavical blood: 7-Aminoclonazepam

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18.2 ng/mL, fentanyl 0.6 ng/mL (therapeutic 1–3), ethanol 0.092% (w/v), diphenhydramine 1540 ng/mL (therapeutic 30–300), metoprolol 194 ng/mL (30–350), caffeine positive.

Case 308. Carbon monoxide inhalation: undoubtedly responsible.
Scenario/Substances: A 43 y/o male, last seen in the morning, was found by his girlfriend when she returned in the afternoon and called EMS. The carbon monoxide detector alarm was sounding, a gas-powered generator was running in a wood-working area in the basement of the home, and the patient was seated in a chair with a suicide note, a family photograph, and other personal belongings nearby. When EMS arrived, the female was also overcome by carbon monoxide and was transported to ED. Firefighters measured a carbon monoxide concentration over 900 ppm in the upstairs of the home.
Autopsy Findings: Pink discoloration of skin consistent with carboxyhemoglobinemia was noted. Carboxyhemoglobin concentration in cardiac blood was 73.9%. Citalopram and caffeine were also detected but quantitative assays were not performed. Cause of death was carbon monoxide poisoning and the ME ruled manner of death suicide.

Case 315. Acute nitrogen gas inhalation: undoubtedly responsible
Scenario/Substances: A 45 y/o male working at a chemical company as a sandblaster was inadvertently hooked up to a nitrogen tank instead of an oxygen tank. He was later found in cardiac arrest 2 hrs after the mistake was made. EMS initiated CPR and intubated the patient. The patient received a paralytic, but it is not clear if he received it before or after the intubation.
Physical Exam: The patient was comatose, HR 70–90s, BP 92/56, RR 12 (on ventilator), T 33.1°C.
Laboratory Data: ABG-pH 7.19/pCO_2 23/pO_2 518/HCO_3 8.5, Na 135, K 3.7, Cl 100, Ca 7.6, Glu 335, BUN 10, Cr 1.3, methemoglobin 15.3%, troponin 0.46 ng/mL.
Clinical Course: In the ED, the patient began to waken and breathe over the ventilator so he was placed on a midazolam drip. ECG showed AF treated with a diltiazem infusion, which was soon discontinued. He was admitted to the ICU where he was cooled, paralyzed, and sedated with midazolam and fentanyl per the post-cardiac arrest hypothermia protocol, IV bicarbonate infusion was given for his metabolic acidosis. Head CT was negative, EEG showed possible seizure activity so he was given a loading dose of levetiracetam. He continued to have seizures treated with phenobarbital and propofol. AF continued and diltiazem was administered then discontinued. His neurologic condition deteriorated and he developed fixed and dilated pupils. Norepinephrine was required to maintain his BP. On Day 4 an MRI documented anoxic brain injury. On Day 7 he was declared brain dead and expired the same day.
Autopsy Findings: Not available. The Occupational Safety and Hazard Administration completed an investigation and fined the company citing multiple workplace safety violations.

Case 384. Chronic lead ingestion: undoubtedly responsible.
Scenario/Substances: A 53 y/o female presented to ED complaining of generalized weakness and paralysis.
Past Medical History: End stage renal disease on hemodialysis, hypertension, poly-substance abuse, pica, and hepatitis C. Meds**:** amlodipine, epogen, hydralazine, neurontin, fosrenal, lisinopril, metoprolol, naprosyn, and omeprazole.
Physical Exam: Paralysis and loss of sensation in arms and legs.
Laboratory Data: Blood lead 113 mcg/dL, Hgb 10.5.
Clinical Course: Patient was admitted to the medicine service and continued on hemodialysis. EMG showed peripheral neuropathy with moderate axonal damage. Neurology opined her symptoms were toxicology related. Blood lead 113 mcg/dL reported on Day 4. Exposure source was unclear. BAL was administered IM q 4 hrs. Abdominal xray showed fragments of radio-dense material mixed with stool. Patient developed bowel incontinence of foul-smelling loose stool. Whole bowel irrigation initiated. Lead decreased to 54 mcg/dL; zinc protoporphyrin >300 mcg/dL. Succimer initiation was delayed due to radio-dense material on KUB. Additional history during admission revealed a history of pica. She had eaten dirt around her home for years, but she recently moved across state lines. Patient was started on oral succimer 500 mg q 8 hrs, but it was held due to radio-dense material reappearing on abdominal xray. She developed respiratory failure and was intubated, continued to decline, and died, reportedly secondary to complications from septic shock and possible aspiration. It was later discovered that the patient had dirt with her in the hospital and had continued to ingest it during admission.
Autopsy Findings: Autopsy declined by family.

Case 402. Acute freon and marijuana exposure: undoubtedly responsible.
Scenario/Substances: A 42 y/o male with altered mental status was found in a big box store near five empty cans of freon-powered duster. He had been seen in the ED for the same exposure 2 days prior.
Laboratory Data: Initial labs included elevated BUN, Cr, and liver enzymes, Ca 5.3, K 3.9.
Past Medical History: Alcoholism, illicit drug use, huffing.
Clinical Course: In the ED the patient was anxious and, tremulous, HR 120. About 80 min after arrival the patient experienced a witnessed VF arrest that deteriorated into asystole. Resuscitative efforts were continued for 40 min but were unsuccessful.
Autopsy Findings: Not available, Antemortem blood 1, 1-difluoroethane 2.8 mcg/mL, acetone 1.5 mg/dL, delta-9 THC 1.2 ng/mL, delta-9 carboxy THC 19 ng/mL.

Case 405. Acute Freon inhalation/nasal: undoubtedly responsible.
Scenario/Substances: A 47 y/o male developed dyspnea after huffing five cans of keyboard duster containing 1, 1 difluoroethane over a 5-hour period. He was brought into the ED by EMS.
Past Medical History: Depression, ethanol abuse, narcotic abuse, and chronic huffing.

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Laboratory Data: ECG sinus tachycardia.
Clinical Course: Anxious male, BP 90/54, HR 132–155, RR 34–36, T 36.6 C, and O_2 sat 94%. Skin: cool, mouth was dry. The patient developed ventricular fibrillation that did not respond to resuscitation. The patient expired 1 hour after presentation.
Autopsy Findings: Medical Examiner determined the cause of death to be due to 1, 1 difluoroethane toxicity. Other significant conditions include severe atherosclerotic coronary disease, bilateral pulmonary emphysema with pulmonary hypertension, and a fibroblastic meningioma. Post-mortem heart blood level of 1, 1 difluoroethane was 0.94 mg/L. Blood ethanol was negative. No other toxicologic anaylsis was performed.

Case 413. Acute mushroom (cyclopeptides) ingestion: undoubtedly responsible.
Scenario/Substances: A 54 y/o female ingested suspected amanita mushrooms that she had foraged herself. She developed vomiting and diarrhea 12 hrs after the ingestion which lasted for 2 days. On the second day she became obtunded and was transported to the ED.
Laboratory Data: Na 141, Cl 116, K 6.2, HCO_3 18, Hgb 21, Cr 3.0, BUN, 54, Ca 7.4, AST 513, ALT 435, bilirubin 1.6, INR 1.8. Day 2: platelets 61, INR 3.9, AST 1583, ALT 1901, bilirubin 3.5, anion gap 14, BUN 49 Cr 2.46, Ca 6.2, CK 4635 CKMB 95.9, troponin 1.65. Day 3: AST 5186, ALT 2489, bilirubin 5.3, INR 3.0. Day 9: INR 2.2 (down from a peak of 9.9) after 6 units of plasma, AST 223, ALT 609, phosphorus 3.7.
Clinical Course: In the ED, the patient was unresponsive. Her pupils were dilated and her respirations were agonal. She was intubated, sedated, and ventilated. IV fluids with bicarbonate and activated charcoal were administered, and she was admitted to ICU. HR 65, BP 86/52. That evening her gallbladder was aspirated. The patient was transferred to a tertiary care facility, admitted to the ICU, and administered silibinin and N-acetylcysteine. On Day 2, HR 120–130, urine output decreased, and she was started on CVVHD, hypotension required maximum doses of three vasopressors. She received IV antibiotics, calcium gluconate, and magnesium. She received FFP on Day 5. On Day 9, she was responsive to pain only, CxR showed pneumonia, she was in AF. She was added to the transplant list. On Day 13, no liver had become available and the patient expired.
Autopsy Findings: External exam performed. Cause of death was liver failure secondary to ingestion of toxic mushrooms. Manner of death was accidental.

Case 417. Acute mushroom (cyclopeptides) ingestion: undoubtedly responsible.
Scenario/Substances: A housekeeper at a Board and Care Home for elderly dementia patients collected and cooked wild (Amanita) mushrooms into a sauce for consumption by herself and six residents of the home. Three days later, one of these residents, an 87 y/o female was brought to the ED with lethargy, able to open her eyes and communicate with her daughter.
Past Medical History: Dementia patient with living will/Do Not Resuscitate status.

Na 139	Cl 94	BUN 68
K 3.5	HCO_3 24	Cr 3.3

Physical Exam: BP 107/51, HR 99, T 36°C, O_2 sat 97% on 2 L O_2.
Laboratory Data: AST 6365, ALT 3855, biirubin 4.9, alk phos 141, CK 47, Ca 9.6, PTT 54.4, INR 5.8.
Clinical Course: She was admitted and given IV fluids and initially received comfort care only. The patient's family requested more aggressive treatment and the patient received IV N-acetylcysteine. Modest output amber colored urine was observed. The patient expired later on the day of admission.
Autopsy Findings: Cause of death: fulminant hepatic failure due to ingestion of poisonous mushrooms. Other significant conditions included dementia, acute esophagitis, and atherosclerotic cardiovascular disease. Specific autopsy findings: Massive hepatic necrosis, spot-like hemorrhages involving serosal surfaces and mesentery, hemopericardium, hemorrhagic erosive esophagitis, atherosclerosis of the aorta and coronary arteries, calcification of the mitral valve, mild pulmonary congestion and edema with atelectasis, CNS changes suggestive of Alzheimers disease.

Case 418. Acute mushroom (cyclopeptides) ingestion: undoubtedly responsible.
Scenario/Substances: A housekeeper at a Board and Care Home for elderly dementia patients collected and cooked wild (Amanita) mushrooms into a sauce that she consumed with six residents of the home. Three days later, one of the residents, a 90 y/o male was brought to the ED with lethargy, nausea, vomiting, and diarrhea.
Past Medical History: Alzheimer's disease/dementia, renal failure, BPH, anemia, anxiety, and a history of urinary tract infections.
Physical Exam: Awake, alert, and responsive. BP 113/58, HR 123, O_2 sat 95% on room air.
Laboratory Data: AST 360, ALT 329, t-bili 0.7, alk phos 63, urine was dark amber in color. Day 2: AST 5300, ALT 4400, t-bili 1.7, alk phos 87, and ammonia 34.
Clinical Course: N-acetylcysteine was started IV (IV NAC) for 21 hrs then discontinued. Day 2 AF occurred and was treated with metoprolol, which was stopped due to hypotension. IV NAC was restarted. Follow-up laboratory data:

Na 140	Cl 112	BUN 91
K 5.1	HCO_3 20	Cr 2.14

WBC 8.4, Hgb 13.9, platelets 83K, Ca 8.3, INR 2.5, AST/ALT $>$ 5000, and ALT peaked on Day 3 at 6200. On Day 7, platelets 9, T. bili 4.2, the patient developed C. diff infection and antibiotics were given, IV NAC continued. The patient's conservator decided to change to comfort care. On Day 8 the patient was transferred to a skilled nursing facility where he expired the following day.
Autopsy Findings: Autopsy cause of death as fulminant hepatic failure due to toxic mushroom poisoning. No other information provided.

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Case 421. Acute malathione ingestion: contributory.
Scenario/substance: A 42 y/o male ingested 32 oz malathion, was decontaminated at the scene, became unresponsive during transport to the ED, and was intubated by EMS.
Past Medical History: Disruptive and paranoid behavior, family history of schizophrenia and Huntington's Chorea.
Physical Exam: Intubated, mechanically ventilated, and sedated with midazolam. BP 101/79, HR 97, RR 16, T 36°C, O_2 sat 85% on 100% FiO2. Pupils were pinpoint, equal, and reactive to light, Oral cavity with large amount of secretions, Lungs clear.

Na 144	Cl 112	BUN 16	Glu 75
K 3.8	HCO_3 22	Cr 1.6	

Laboratory Data: ABG-pH 7.4 / pCO_2 36 / pO_2 548
UDS negative; acetaminophen and salicylates were not detected.
Clinical Course: Atropine, pralidoxime, and diazepam were administered in the ED. One liter of gastric contents were obtained via NG tube. The patient was admitted to the ICU and had severe diarrhea. The patient was treated with IV infusions of atropine and pralidoxime. On Day 3 he was extubated but continued to have periods of agitation and severe hypertension treated with haloperidol and multiple antihypertensive medications, his body fluids continued to have the odor of pesticide. On Day 4 the patient had a cardiac arrest and was re-intubated. Atropine was restarted for increased oral secretions and loose stools. The patient continued to have periods of restlessness and agitation, secretions diminished markedly and breath sounds were clear. On Day 10 fever and pulmonary infiltrate coincided with random jerking movements that were not seizure activity by EEG. On Day 17 Comfort measures were instituted and he expired on Day 20.
Autopsy Findings: Autopsy not performed.

Case 424. Acute borate ingestion: undoubtedly responsible.
Scenario/Substances: A 60 y/o female ingested roach tablets in an apparent suicide attempt. The patient sent an e-mail to a relative that stated she was planning to commit suicide using roach poison. The relative called a neighbor who found the patient unresponsive with shallow breathing and bluish emesis. A box containing boric acid from which an estimated 30–40 tablets were missing was found near the patient. Endotracheal intubation for airway support was performed prior to transport.
Physical Exam: Unresponsive, agitated female mechanically ventilated. BP 68/40, HR 116, RR 16, T 34.9 C. Poor distal perfusion, tachycardia with irregular heartbeat. Lungs with clear breath sounds. Skin warm, flushed, and dry with a pressure ulcer noted on her back. Sloughing of eyelids noted.
Laboratory Data: ABG-pH 7.09/pCO_2 37.1/pO_2 432. WBC 10.5, Hgb 11.5, Hct 34.7, platelets 178,

Na 136	Cl 99	BUN 61	Glu 355
K 4.8	HCO_3 9	Cr 6.2	

Ca 8, total protein 5.4, albumin 2.5, t-bili 0.3, alk phos 60, AST 51, ALT 35, serum osmolality 314. UDS positive for benzodiazepines. Ethanol, acetaminophen, Li, and salicylate were not detected. PT 25.7, INR 2.41, PTT 64.9, CK 7533, troponin 0.01, CKMB 61.3, and CKMB index 0.8.
Clinical Course: In the ICU, bloody stool and excoriated skin was noted. The patient had pulseless electrical activity and resuscitation with CPR, epinephrine, and sodium bicarbonate was applied with success. Subsequent episodes of hypotension continued. Based on the prognosis, the family opted for institution of comfort measures and the patient expired approximately 12 hrs after admission.
Autopsy Findings: Cause of Death: Boric acid ingestion. Antimortem blood: caffeine positive, lidocaine positive, diazepam 240 ng/mL, nordiazepam 240ng/mL, oxazepam 22ng/mL, temazepam 24ng/mL, zolpidem 4.2 ng/mL, and boron 79,000 mcg/L.

Case 431. Acute selenous acid ingestion: undoubtedly responsible.
Scenario/Substances: 17 y/o male presented to the ED after ingestion of instant gun blueing agent.
Clinical Course: Intubated, unresponsive, vomiting, and incontinence of stool and urine. BP 80/20, HR 122. Patient remained hypotensive without evidence of peritonitis or gastrointestinal perforation. Within 2 hrs of presentation, the patient had asystole. Resuscitation attempts were unsuccessful and the patient expired.
Autopsy Findings: Cause of death : acute selenium toxicity. Stomach contents and lung parenchyma had a metallic odor, there was denuding of the mucosa of the larynx, epiglottis, esophagus, stomach, and duodenum. Lungs showed severe pulmonary congestion. There were effusions of multiple body cavities.

Case 432. Acute nicotine parenteral: undoubtedly responsible.
Scenario/Substances: A 29 y/o male was found by EMS to be in cardiopulmonary arrest with a suicide note indicating that he had intravenously injected himself with eLiquid.
Past Medical History: Depression
Laboratory Data: K 2.4, Glu 401, Cr 2.0, WBC 21.8, CK 977, troponin 0.34, and lactate 7.2. UDS was positive for amphetamine.
Serum acetaminophen, ethanol, ethylene glycol, methanol, and salicylate were not detected.
Clinical Course: He was intubated and resuscitated in the ED, with a GCS 3, but developed seizures resistant to treatment with lorazepam, phenobarbital, phenytoin, and levetiracetam. Head CT was unremarkable. He was transferred to a tertiary care hospital where the seizures were controlled with propofol. Therapeutic hypothermia was initiated, but he never regained consciousness. He was diagnosed with anoxic encephalopathy and declared brain dead on Day 5.

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Autopsy Findings: An autopsy was not performed as he was an organ donor. Comprehensive serum drug testing done on specimens collected on presentation detected only lidocaine, which he received during his resuscitation, nicotine 2000 ng/mL, and nicotine's primary metabolite, cotinine 2100 ng/mL.

Case 440. Acetaminophen ingestion: undoubtedly responsible.
Scenario/Substances: A 10 y/o female with a decreased level of consciousness, agitation, and dehydration was transported to the ED by family members. Reasons for symptoms unknown. An empty acetaminophen bottle was found at her bedside.
Laboratory Data: On admission acetaminophen 102 mcg/mL (time of ingestion unknown), AST 700, ALT 1100. 18 hrs post arrival**:** AST 3900, ALT 6000.
Clinical Course: Intravenous NAC was initiated and patient was transported via helicopter to a pediatric ICU. Upon arrival she was intubated and placed on a ventilator. Head CT results were inconclusive. At 18 hrs after initial presentation the patient's ammonia level was elevated and liver enzymes continued to rise, she was placed on the liver transplant list. Her condition continued to deteriorate over the next 12 hrs at which time brain death studies were performed, she was taken off the ventilator and expired shortly thereafter.
Autopsy Findings: Complete autopsy shows subacute large duodenal ulcer and liver necrosis compatible with toxic hepatitis due to acetaminophen. Postmortem toxicological studies including hospital blood samples obtained, confirm the toxic levels of acetaminophen. No other drugs were detected. Cause of death: acute hepatic failure due to massive hepatic necrosis from acute acetaminophen intoxication. The underlying natural disease of large duodenal ulcer would be a participating factor to her death. The manner of death was ruled to be an accident.

Case 446. Acute acetaminophen/hydrocodone, alprazolam ingestion: undoubtedly responsible.
Scenario/Substances: A 16 y/o male posted on social media that he wanted to hurt himself. He was last seen awake when his mom awoke and found him crouching by her bed, near her medications, which were acetaminophen/hydrocodone and alprazolam. When mom awoke the next morning she noted that 26 of the acetaminophen/hydrocodone and 29 of the alprazolam were missing. She awoke the patient and asked him about this, but he denied taking any medications. She noted that his speech was slurred. He went back to sleep. About 13.5 hrs post-ingestion mom noted his hand looked white and he was not breathing. EMS was called and found him to be asystolic. CPR was started and he received epinephrine, atropine, vasopressin, and sodium bicarbonate. He was transported to the ED.
Past Medical History: Attention deficit hyperactivity disorder, not currently on any medications, depression with suicidal ideation and previous suicide attempts, marijuana and tobacco use.
Physical Exam: At the initial hospital the patient was intubated, received IV fluids, and had a CT of his brain. The CT showed diffuse cerebral edema and loss of gray–white differentiation. The patient was then transferred to a tertiary care facility.
Laboratory Data: ABG-pH 7.08 / pCO_2 75 / pO_2 335/ BE 9.
Clinical Course: The patient had not received any pain or sedation medications. At 17.5 hrs a brain death exam showed no brain reflexes, including no corneal reflexes. His pupils were 6 mm, dilated, and nonreactive bilaterally. He also had negative doll's eyes, negative cold caloric exam, and negative gag. An arterial line and a central venous line were placed. He initially had significant hypertension (BP 170/110), then had precipitous drops in his BP. He was treated with milrinone and low-dose dopamine. His CxR showed a right upper lobe collapse and a right lower lobe effusion. He required high ventilator settings to maintain oxygenation. He developed lactatic acidosis, shock liver, and prerenal dehydration. An excessive urine output was treated with vasopressin. Based on the prognosis, the family opted for institution of comfort measures and he expired on Day 2.
Autopsy Findings: No autopsy was performed. Coroner's cause of death: cerebral anoxia due to polydrug intoxication. Post-mortem drug levels: serum alprazolam 176 ng/mL (therapeutic range: 10–40), THC 1.1 ng/mL, THC-COOH 26.4 ng/mL, hydrocodone 249 ng/mL (therapeutic range: 10–40), acetaminophen 30 mcg/mL (therapeutic range 10–30), caffeine positive; Urine concentrations: alprazolam 1420 ng/mL, a-OH-alprazolam $>$ 2500 ng/mL, hydrocodone $>$ 10, 000 ng/mL, hydromorphone 1839 ng/mL, carboxy-THC 139 ng/mL.

Case 456. Acute salicylate ingestion: undoubtedly responsible.
Scenario/Substances: An 18 y/o female ingested 500 salicylate 325 mg tablets 6 hrs before arrival to the ED in an attempted suicide. Prior to arrival to the ED, the patient complained of ringing in her ears, vomited without pill fragments in the emesis.
Past Medical History: Bipolar disorder, schizoaffective disorder, ADHD, history of multiple suicide attempts.
Physical Exam: Awake, alert, and oriented. BP 138/74, HR 151, RR 24, T 37.7°C, O_2 sat 99% on room air. Lungs clear, skin warm and dry.
Laboratory Data: ABG-pH 7.41 / pCO_2 26 / pO_2 130.

Na 141	Cl 117	BUN 11	Glu 139
K 3.9	HCO_3 18	Cr 1.0	

Salicylate 90 mg/dL, lactate 4.5 mmol/L, acetaminophen and ethanol were not detected. HCG and UDS negative. AG 6.0, AST 16, ALT 18, INR 2.1.
Clinical Course: The patient received a bolus then continuous infusion of sodium bicarbonate and was admitted to the ICU. Her lethargy and confusion worsened, follow-up salicylate 94.3 mg/dL. Hemodialysis was performed 12 hrs after arrival to the hospital, salicylate 67 mg/dL. At 8 hrs post dialysis the patient has respiratory distress and becomes

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unresponsive, is intubated and mechanically ventilated, salicylate 132 mg/dL. The patient has a cardiac arrest, resuscitation efforts are unsuccessful and the patient expired < 24 hrs after admission to the hospital.
Autopsy Findings: Cause of death was salicylate intoxication. The manner of death is suicide. The liver showed vascular congestion in the midzonal region. Antemortem blood showed salicylic acid 654 mg/L, salicylic acid was positive in urine.

Case 496. Unknown, salicylate, doxylamine, acetaminophen, ibuprofen ingestion: undoubtedly responsible.
Scenario/substance: A 22 y/o male presented with altered mental status, weakness, hearing impairment, and fever. He admitted taking aspirin and ibuprofen in an apparent suicide attempt.
Physical Exam: Diaphoretic, BP 123/71, HR 120, RR 30, T 38.8°C (rectal).
Laboratory Data: ABG-pH 7.53/pCO_2 19.4/pO_2 107.4, K 5.0, HCO_3 14, Cr 1.6, glucose 130. Salicylate 111 mg/dL, acetaminophen 12.6 mcg/mL, INR 1.9. A later ABG after intubation but just before or around the time of his arrest demonstrated a pH 7.24 / pCO_2 52, / pO_2 152.
Clinical Course: He initially did not provide a history of drug overdose, was evaluated for possible sepsis, and given antibiotics and IV fluids. When the salicylate level became known a bicarb drip was started and he was transferred to tertiary hospital for dialysis. At the second HCF he was obtunded and was intubated and allowed to maintain a high minute ventilation of > 20 L/min), but was sedated with propofol. A dialysis catheter was placed; shortly after transfer to ICU he became hypotensive and bradycardic progressing to cardiac arrest with ventricular tachycardia, ventricular fibrillation then asystole. Resuscitation was unsuccessful and the patient expired.
Autopsy Findings: The medical examiner determined the cause of death to be due to salicylate toxicity. Post-mortem iliac vein blood demonstrated doxylamine 0.35 mg/L. Liver demonstrated doxylamine at less than 2.0 mg/kg; benzodiazepines, cocaine metabolite, ethanol, and gabapentin/pregabalin were not detected.

Case 538. Unknown, salicylate, alprazolam ingestion: undoubtedly responsible.
Scenario: A 26 y/o pregnant female was discovered at home with altered mental status and agitation. A nearly empty bottle of aspirin was found next to her. Naloxone 0.4 mg and D50 were given prior to transport without effect.
Past Medical History: Depression, substance abuse (crack and methadone), and prior suicidal overdoses.
Physical Exam: Groaning, agitated female with fixed stare to her right. BP 152/73, HR 140, RR 48, O_2 sat 99% on 80% FiO_2.
Laboratory Data: ABG-pH 7.03/pCO_2 70/pO_2 213

Na 146	Cl 112	BUN 21	Glu 196
K 4.0	HCO_3 11	Cr 1.9	

WBC 23.1, Ca 8, Salicylate level, 90 mg/dL, UDS positive for benzodiazepines, barbiturates, and THC. Acetaminophen was not detected. Urine pregnancy test positive.
Clinical Course: Because of her focal neurological findings, initial diagnostic studies were done to rule out an intracranial event and were negative. When the salicylate returned, alkaline therapy was started and hyperventilation was implemented by changing ventilator settings. Emergent dialysis was planned, fetal ultrasound was performed prior to attempting dialysis. During dialysis catheter placement, sudden hypotension and cardiac arrest occurred. Resuscitation attempts were unsuccessful and the patient expired 90 min after arrival.
Autopsy Findings: Medical examiner determined the cause of death as salicylate toxicity. Post-mortem vena cava blood showed alprazolam 0.008 mg/L, lorazepam 0.026mg/L, and salicylates 39 mg/dL. The following substances were not detected: cocaine metabolite, ethanol, gabapentin/pregabalin, opiates/opioids, and organic acids; organic bases or organic neutrals were detected in aortic blood. Autopsy findings included moderate pulmonary congestion and an intrauterine pregnancy.

Case 563. Acute salicylate ingestion: probably responsible.
Scenario/Substances: A 27 y/o male came to the ED stating he took ~60 aspirin to see what would happen. He arrived ~5 hrs post ingestion awake and alert. He complained of difficulty breathing. He denied suicidal ideation, headache, lightheadedness, dizziness, and visual or auditory hallucinations.
Past Medical History: Depression treated with aripiprazole.
Physical Exam: BP 136/84, HR 111, RR 16, O_2 sat 98% on room air. Patient was diaphoretic, alert, and oriented x 3.
Laboratory Data: ABG-pH 7.34 / pCO_2 28 / pO_2 130, Na 137, K 4.1, Cl 107,Glu 146, Cr 1.45, BUN 19, Ca 8.5, INR 1.2, PTT 23, ECG sinus tachycardia QRS 86, and QTc 408. Serum ethanol and acetaminophen were not detected, salicylate > 100 mg/dL.
Clinical Course: In the ED he received a bolus of NS along with 1 ampule of sodium bicarbonate, activated charcoal with sorbitol. Prior to admission to ICU the patient became acutely psychotic, aggressive with staff, biting, and staring off into space. Intubation was attempted after 1 amp of bicarb given prior to rapid sequence intubation along with versed. The patient became hypoxic and bradycardic, received ACLS meds and CPR, the rhythm was restored and patient intubated. After admission to ICU, the patient's HR was in the 180s with a wide complex, treated with adenosine. At 6 hrs after admission, the patient became febrile to 40.5°C. He developed asystole, ACLS failed to restore circulation and he died.
Autopsy Findings: Not done.

Case 629. Acute colchicine and omeprazole ingestion: undoubtedly responsible.
Scenario/Substances: A 31 y/o male intentionally ingested 160 tablets of colchicine 0.6 mg and 30 tablets of omeprazole 20 mg. He immediately reported the ingestion

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and was transported to the ED with 1 episode of emesis prehospital.
Past Medical History: Asthma, depression, pericarditis, previous overdoses including in the last 6 months.
Laboratory Data: WBC 2.8, INR 1.0, AST 25, ALT 61

Na 140	Cl 106	BUN 8	Glu 98
K 3.6	HCO_3 25	Cr 0.8	

alk phos 60; serum acetaminophen, ethanol, and salicylate were not detected.
Clinical Course: On arrival to the ED, he was awake, alert, and oriented, BP 125/76, HR 75, RR 16, O_2 sat 99% on room air, T 37°C, pupils 3–4 mm, equal, and reactive. Heart and lungs unremarkable, bowel sounds present. He received 50 g activated charcoal without sorbitol for the estimated 1.3 mg/kg ingestion of colchicine. On Day 1 he remained awake and alert with frequent nausea and vomiting despite ondansetron and metoclopramide. WBC count rose over the first day to a peak of 32. ALT 4216, AST 4435. The patient's status deteriorated over the next 3 days with progressive worsening of hemodynamic status. The WBC count began to decrease at ~48 hrs after ingestion to 15.7. Multi-system organ failure with renal toxicity and hepatotoxicity ensued, The patient became unresponsive and expired on Day 3.
Autopsy Findings: Final Pathologic Diagnoses: 1) acute centrilobular necrosis, 2) acute renal failure, 3) pericardial effusion, 4) pleural effusions bilaterally, 5) no evidence of pericarditis, 6) GI System: 120 mL of brown thick partially digested food with 2 round tan-blue pills seen. Colchicine (hospital blood) 49 ng/mL. Cause of Death: Complications of acute colchicine intoxication. Manner of Death: Suicide.

Case 689. Acute ibuprofen ingestion: undoubtedly responsible.
Scenario/Substances: A 34 y/o female, last seen 11 hrs earlier, was found unresponsive and incontinent of urine. A suicide note dated the previous day was later found.
Past Medical History: The patient had been treated for poison ivy with steroids and another medication.
Physical Exam: HR 120–130, systolic BP 102, ECG sinus tachycardia, otherwise normal intervals.
Laboratory Data: ABG-pH 7.1 / HCO_3 9.9

Na 143	Cl 106	Glu 150
K 4.6	HCO_3 10	

Clinical Course: The patient arrived to the ED with pink residue on her mouth. A nasal trumpet was placed. A few hrs later the patient was still unresponsive and was intubated with propofol. Systolic BP was 105. A half-empty 1000-tablet bottle of ibuprofen was found. Serum acetaminophen, salicylate, and ethanol were not detected. UDS was negative, lactate 6.7, BUN 18, Glu 126, and serum osmolality 302. She had received a 200 mEq bolus + 150 mEq of sodium bicarbonate in 2L D5W. Her systolic BP was in the 100s, pH 6.83 / pCO_2 25, lactate 10.8, CKMB < 0.5, Cr 1.8. A hemodialysis catheter and NG tube were placed; the NG yielded 350 ml of pink pasty material. Hemodialysis was started, but stopped after 1.25 hrs due to persistent hypotension despite fluid boluses and phenylephrine. She had scant urine output. She remained unresponsive, pupils 2–3 mm and non-reactive, BP 70/20, HR 80s. ECG showed inverted P waves and ST depression. Her NG tube drained 500 ml of fluid. ABG- pH 7.14/pCO_2 27/pO_2 252/HCO_3 10.6/BE 18.4, Na 147, K 4.1, Cl 104/HCO_3 12, and CK 285. Her condition declined over the next few hrs, systolic BP 50–70 on maximum doses of phenylephrine, she tolerated only an additional 30 min of hemodialysis, ABG-pH 6.8/HCO_3 2, lactate 26.4. Based on the prognosis, the family opted for institution of comfort measures and she expired ~24 hrs post-arrival.
Autopsy Findings: The anatomical diagnosis included severe pulmonary edema, pale kidneys, gastric contents consisting of brown-thin liquid with white settling particles. The final cause of death was complications of ibuprofen toxicity, with manner suicide. Qualitative toxicological findings included cardiac blood positive for ibuprofen, ibuprofen-related compounds, pramoxine, and opiates. Toxicological findings: cardiac blood ibuprofen 262 mg/L, morphine (free) 860 ng/mL, vitreous morphine (free) 170 ng/mL. The post-mortem ibuprofen concentration > 24 hrs after ingestion was > 10 times the expected peak therapeutic concentration for ibuprofen.

Case 710. Fentanyl (transdermal) ingestion: probably responsible.
Scenario/substance: A 36 y/o male was found unresponsive by a friend in a car. A short time before he had chewed and swallowed a 25 mcg fentanyl patch. He was pulseless and apneic. CPR was initiated and EMS called. He was successfully resuscitated.
Past Medical History: COPD, drug abuse, Hepatitis C, status post cholecystectomy.
Physical Exam: BP 117/68, HR 103, RR 22 rpm, O_2 sat 100% on 100% FiO_2. GCS 3, flaccid, pupils non-reactive. Lungs: clear, Abdomen: not distended.
Laboratory Data: ABG-pH 7.01 / pCO_2 51 / pO_2 172,

Na 141	Cl 104	BUN	Glu 33
K 5.4	HCO_3 12	Cr	

CK 14,012, ALT 670, AST 826, INR 1.3, phos 8.2, troponin peak 8.59. Ethanol 102 mg/dL, salicylate and acetaminophen were not detected. Toxic alcohol screen was negative. Abdominal xray was negative for the patch. Initial lactate was 10.5, falling to 2.5 in 4 hours.
Clinical Course: The patient was intubated and given epinepherine and vasopressin. Naloxone infusion was started without response. Albuterol nebulizer was given at the first HCF. The patient received D50 for hypoglycemia and a single dose of activated charcoal. The patient was treated with the hypothermia protocol due to the cardiac arrest and transferred to tertiary care hospital where he was sedated with propofol and fentanyl infusions. Follow-up laboratory

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data showed ALT 1616, AST 1868, CK 23, 167, INR 1.3, phosphorus 8.2 mg/dL, peak troponin level 8.59 on Day 2. N-acetyl cysteine infusion was started following an oral loading dose. One dose of fomepazole was administered empirically based on the patient's metabolic acidosis. On Day 4, 10 mg naloxone was given without response. The patient had acute renal failure with diabetes insipitus and pulmonary atalectasis. Over the next 7 days he demonstrated severe anoxic brain injury and brain herniation determined by neuro exam and CT of the head. Comfort care was instituted, the patient expired on Day 7.

Autopsy Findings: Post-mortem toxicology was not performed for fentanyl due to its use therapeutically during the hospital course. No autopsy was performed. Medical examiner determined the cause of death to be due to anoxic brain injury due to presumed fentanyl overdose.

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Case 727. Acute-on-chronic fentanyl (transdermal), diazepam, gabapentin ingestion, dermal: undoubtedly responsible.

Scenario/substance: A 37 y/o male was found unresponsive by his daughter. When EMS arrived, a 100 mcg/hr fentanyl patch was removed from his skin. HR 114, BP 138/95, RR 5, and GCS 3. He was given 1 mg naloxone IV by EMS and was alert and oriented on arrival to the ED.

Past Medical History: Multiple surgeries and chronic pain following a motor vehicle collision. Medications: diazepam, gabapentin, cyanocobalamin, calcium with vitamin D, methadone, acetaminophen/hydrocodone, and transdermal fentanyl. His fentanyl dose had been increased from 75 mcg/hr to 100 mcg/hr within the last 48 hrs.

Physical Exam: He had a 2 cm hematoma to the right frontal scalp.

Laboratory Data: Serum acetaminophen, ethanol, and salicylate were not detected. Head CT was unremarkable.

Na 144	Cl 110	BUN 10	Glu 43
K 4.9	HCO_3 25	Cr 1.43	

Clinical Course: He was fed and observed until 4 hrs after initially being found. He was then sent home, with a 50 mcg/hr fentanyl patch placed 10 min prior to discharge. At this time his RR 13. He was found dead by his family on his bathroom floor $<$ 12 hrs after discharge.

Autopsy Findings: A full autopsy was not performed. Post-mortem subclavian blood: fentanyl 64 ng/mL, diazepam 0.24 mg/L, nordiazepam 035 mg/L, gabapentin 15 mg/kg. The toxicology screen did not analyze for methadone. Cause of death: asphyxia due to hypoventilation from combined fentanyl and diazepam toxicity.

Case 827. Acute acetaminophen/diphenhydramine ingestion: undoubtedly responsible

Scenario/Substances: EMS brought a 43 y/o female to the ED after an ingestion of 96 tablets of acetaminophen/diphenhydramine in a suicide attempt earlier that day. A suicide note was found at the scene. She denied co-ingestants. She was reportedly drowsy en route to the hospital and given 1 dose of naloxone with questionable improvement. Her blood glucose level was also checked en route and found to be 17. She was given 25 grams of dextrose, after which she became more alert.

Past Medical History: Anxiety, depression, previous suicide attempt, and breast implants. Medications: citalopram.

Physical Exam: BP 86/34, HR 96, RR16. Her temperature could not be obtained initially as patient was screaming. Later she was awake, but not oriented with diffuse abdominal tenderness, no jaundice noted.

Laboratory Data: PT 67.5, INR 8.66, platelets 259, WBC 15.2, Hgb 10.6, acetaminophen 38.7 mcg/mL, salicylates were not detected, Glu 89, BUN 19, Cr 2.2, Ca 8.3, Na 135, K 3.6, Cl 97, HCO_3 18, anion gap 23, UDS positive for opiates only, albumin 3.6, bilirubin 3.4 (total) 1.8 (direct), alk phos 112, ALT 12,275, AST 15,309, Lactate 6.

Clinical Course: She arrived at the ED agitated. BP was 121/41 after a fluid bolus. She was admitted to the hospital, but due to worsening mental status and abnormal laboratory studies, she was transferred to a tertiary care facility on Day 2. Shortly after transfer she exhibited worsening mental status and increasing agitation. She was started on IV N-acetylcysteine. She was tachypneic (RR 30–50), was intubated, placed on a ventilator. Head CT showed cerebral edema. She had hematuria and hemorrhage from both orbits. Propofol and midazolam infusions were started due to persistent tachypnea and tachycardia, presumed related to pain. Repeat head CT on Day 3 that showed increasing cerebral edema with mass effect, INR 9.2, Cr 4.56, HCO_3 12, ALT 4,876, AST 4,912, ammonia 186. She was given vitamin K, FFP, and prothrombin complex concentrates. On Day 4 the patient continued to do poorly, CVVHD was started. A subarachnoid bolt was placed and her ICPs were noted to increase to 60 cm H_2O throughout the evening, during which time she was noted to lose all reflexes. Her ICP was unresponsive with intermittent rapid shallow breathing. INR was reduced to 2.5 AST 3,038, ALT 3,334, Cr 3.5, ammonia 141 after lactulose. On Day 5 she remained unresponsive with no reflexes and intermittent rapid shallow breathing. On Day 6 the patient continued to do poorly with ICPs in the 50–60 cm H_2O range, for which she was given 3% saline. Based on the prognosis, the family opted for institution of comfort measures and she expired on Day 8.

Autopsy Findings: Cause of death: diffuse centrilobular liver necrosis due to intoxication by acetaminophen. Manner of death: suicide. Other findings included cerebral edema, cerebellar tonsillar herniation, and pulmonary edema. There was no detectable acetaminophen in post-mortem femoral blood.

Case 946. Acute-on-chronic, colchicine ingestion: undoubtedly responsible.

Scenario/Substances: A 48 y/o depressed male with history of gout took an overdose of his colchicine.

Past Medical History: Gout, alcoholism, colchicine overdose.

Laboratory Data: Ca $<$ 5 mg/dL, Glu 497, Cr 5, bilirubin 4.1, alk phos 275, AST 791, ALT 142, ABG-pH 7.26 / pO_2 68, ammonia 51 mmol/L.

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Clinical Course: In the ED, HR 130, BP 97/60, RR 20, O_2 sat 93% on room air. Hypotension was treated with IV fluids and vasopressors. He was found to have pancreatitis and pancytopenia due to the colchicine. He required ventilatory support, enteral nutrition, antibiotics, and bicarbonate drip due to renal insufficiency. The patient's condition continued to deteriorate, requiring more vasopressors. He developed oliguria, Cr 5. Based on the prognosis, the family opted for institution of comfort measures and he expired on Day 7.
Autopsy Findings: Autopsy was not performed, cause of death: toxic overdose of colchicine, manner of death: suicide.

Case 958. Acute colchicine ingestion: undoubtedly responsible.
Scenario/Substances: A 48 y/o male took 58 tablets of colchicine 0.6 mg with suicidal intent. About 1 hour later he developed abdominal pain and subsequently had many episodes of vomiting and diarrhea. He presented to the hospital approximately 13 hrs post ingestion.
Past Medical History: Gout, hypothyroidism, thyroid goiter, sleep apnea, severe obesity, and recurrent major depression, rare alcohol use. Medications: levothyroxine, aripiprazole, fluoxetine, allopurinol, and colchicine 0.6 mg twice a day.
Physical Exam: BP125/97, HR 103, RR 22, T 37°C. Alert, chronically ill appearing, disheveled, anxious, in mild distress, complaining of 9/10 abdominal pain and some nausea. Abdomen: mild, diffuse abdominal tenderness.
Laboratory Data: ABG-pH 7.37 / pCO_2 32 / pO_2 88,

Na 139	Cl 104	BUN 17
K 3.6	HCO_3 19	Cr 1.4

AST 119, ALT 58,, alk phos 170, CK 555, troponin 0.07, WBC 18, Hgb 16.2, platelets 290, salicylate, acetaminophen, and ethanol were not detected, CxR normal, ECG showed normal sinus rhythm.
Clinical Course: The patient was given a fluid bolus, transferred to the ICU and placed on oxygen. Abdominal pain, vomiting, and diarrhea continued. He developed a fever, worsening metabolic acidosis, and deteriorating renal function, and required intubation due to worsening hypoxia. On Day 2, he had a cardiac arrest, was resuscitated with recovery of HR and BP but remained hypotensive despite vasopressors. Hemodialysis was attempted but terminated due to hypotension. Based on the prognosis, the family opted for comfort measures only and the patient expired on Day 3.
Autopsy Findings: No autopsy was performed.

Case 1247. Acute salicylate ingestion: probably responsible.
Scenario/Substances: A 60 y/o male ingested 400 tablets of aspirin in the morning and presented to the ED at mid-day.
Past Medical History: Hypertension, on losartan; depression and bipolar disorder on duloxetine, trazadone, lamotrigine; prior suicide attempts.
Physical Exam: BP 159/90, HR 124, RR 39, complaining of tinnitus, and exhibiting some tremor.
Laboratory Data: Na 150, BUN 13, Cr 1.4. ABG- pH 7.46/ pCO_2 30/pO_2 71. UDS positive for benzodiazepines. Serum salicylate 79.7 mcg/mL @ ~1.5 and 128 mcg/mL @ ~7.7 hrs after admission.
Clinical Course: Patient was treated with IV bicarbonate, but expired prior to transfer to a facility where dialysis was available.
Autopsy Findings: ME report showed post-mortem salicylate 690 mcg/mL, nordiazepam 0.094 mcg/mL; diazepam, trazadone, and lamotrigine were present.

Case 1389. Chronic dabigatran ingestion: probably responsible.
Scenario/Substances: A 77 y/o male was admitted to the hospital ICU with acute GI bleeding and hypotension. He was on dabigatran etexilate mesylate and had recently had his dose lowered from 150 mg/day to 75 mg/day.
Past Medical History: Atrial fibrillation.
Physical Exam: This patient had bleeding from several sites, including oozing from his triple-lumen internal jugular central IV site and bright red blood per rectum.
Laboratory Data. PTT > 200, PT 148, Cr 2.8, ABG-pH 7.0.
Clinical Course: He was endotracheally intubated and placed on mechanical ventilation. He remained hypotensive despite vasopressors with metabolic acidosis and oliguria. He received 4 units of FFP and 4 units of packed RBCs and was started on hemodialysis. The patient died on Day 2. The cause of death was acute GI bleeding with hypovolemic shock.
Autopsy Findings: Not performed.

Case 1418. Acute-on-chronic, carbamazepine, cyclic antidepressant, unknown ingestion: undoubtedly responsible.
Scenario/Substances: A 50 y/o male ingested 24 grams of carbamazepine and 13.5 grams of clomipramine in a suicide attempt.
Past Medical History: Seizure disorder, depression. Medications: carbamazepine and clomipramine.
Physical Exam: Obtunded, not responsive to stimuli, BP 120/80, HR 77.
Laboratory Data:

Na 135	Cl 102	BUN 14	Glu 116
K 4.0	HCO_3 24	Cr 1.0	

Ca 8.6, lactate 1.4, CK < 0.05, AST 27, ALT 43. Serum acetaminophen, ethanol, and salicylate were not detected. Blood clomipramine 1600 ng/mL, norclomipramine 1046 ng/mL. ECG**:** PR 160, QRS 110, QTc 471, HR 81.
Clinical Course: Upon arrival to the ED, the patient was intubated with sedation and paralyzed with vecuronium. Within the next 5 hrs, he had a seizure and was hypotensive, treated with phenylephrine then vasopressin and norepinephrine were added. He was initially given 1 ampule of sodium bicarbonate. At that time ABG-pH of 7.17 / pCO_2 69. In the subsequent 5 hrs, he was able to be weaned off phenylephrine, remaining on vasopressin, norepinephrine, and sodium

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bicarbonate. At that time his pupils were fixed and dilated. Serum carbamazepine 35.4 mcg/mL (upon arrival), 32.1 (12 h after arrival), 18.2 (15 hr later), 26.8 (24 hr later), 22.6 (8 hr later), 23.7 (16 hr later), 23.6 (11 hr later)

The patient received multi-dose activated charcoal for ~3 days. Hypoactive bowel sounds were noted, and WBI was not performed. He expired on Day 8.

Autopsy Findings: A hospital autopsy findings: pulmonary edema, acute cerebral infarct in the left posterior cerebral artery, and evidence of a 6 cm drug bezoar in the stomach, with diffuse pill fragments surrounding it. Charcoal was found in the stomach, duodenum, proximal jejunum, skipping the rest of small intestine until the terminal ileum and continuing to the transverse colon, with nothing in the remainder. No charcoal stools were noted during the hospital course. Cause of death was mixed drug intoxication via suicide.

Case 1425. Bupropion (extended release), aripiprazole ingestion: undoubtedly responsible.

Scenario/Substances: A 17 y/o female reported to her parents that she had overdosed on bupropion. EMS was called, but she denied the ingestion to them and refused transport. She had a seizure 3 hrs after initial EMS call followed by cardiac arrest. She was transported to the ED.

Past Medical History: Depression

Physical Exam: HR 100, BP 116/56 (on norepinephrine), Pupils 5–6 mm and non-reactive, no response to painful stimuli.

Laboratory Data: ABG-pH 7.28 / pCO_2 53, serum acetaminophen and salicylates were not detected.

Clinical Course: The patient presented to the ED in cardiac arrest following witnessed seizure activity. She was intubated, had return of spontaneous circulation, and was started on a norepinephrine infusion for hypotension. Acidemia was treated with a sodium bicarbonate infusion. A therapeutic hypothermia protocol was initiated. Head CT showed massive cerebral edema. The patient was transported to the PICU at a tertiary care facility. She received intralipid, but her BP continued to decline and she required dopamine infusion in addition to norepinephrine. She had no evidence of brain activity and was ultimately declared brain dead.

Autopsy Findings: Toxicology revealed a bupropion level of 0.21 mg/L. Cause of death: hypoxic encephalopathy due to acute bupropion toxicity.

Case 1437. Acute-on-chronic bupropion (extended release), methylphenidate, polyethylene glycol ingestion: probably responsible.

Scenario/Substances: A 24 y/o male had two witnessed grand mal seizures at home and was brought to the ED with the history from family members of a recent social media posting stating that he ingested 90 bupropion 300 mg extended release tablets and 10 methylphenidate tablets to get attention. The patient was dazed and tremulous. Lorazepam 2 mg was given, IV fluids were started and he received another 2 mg lorazepam.

Past Medical History: ADHD, Tourette syndrome, development delay, depression, anxiety, and previous suicide attempts.

Physical Exam: HR 160s. pupils dilated.

Clinical Course: The patient was given 4 mg lorazepam and admitted to ICU. After lorazepam, BP 131/89, HR 110. The patient remained agitated and confused. An NG tube was placed, whole bowel irrigation was administered, the patient vomited and possibly aspirated. Two hrs later, another seizure occurred and he had a cardiac arrest and could not be resuscitated.

Autopsy Findings: Death was attributed to acute bupropion and methylphenidate ingestion. Blood concentrations from ante-mortem hospital samples showed bupropion 1300 ng/mL, hydroxybupropion 1300 ng/mL, methylphenidate 47 ng/ml, ritalinic acid 1000 ng/mL, and qualitative caffeine positive.

Case 1531. Acute bupropion (extended release), ethanol, venlafaxine ingestion: undoubtedly responsible.

Scenario/Substances: A 53 y/o male arrived to the ED late in the evening with the police after he reported that he ingested 20–30 bupropion extended-release 300 mg tabs and police reported he had had at least 9 large beers.

Past Medical History: Alcoholism, depression, and bipolar disorder. Medications**:** bupropion, valproic acid, and gabapentin.

Physical Exam: BP 124/80, HR 80, RR 24, T 37°C, O_2 sat 100% on room air. The patient was alert and complained of nausea.

Laboratory Data: Na 137, K 3.9, Cl 102, HCO_3 21, BUN 6, Cr 0.9, ethanol 350 mg/dL; serum valproate, acetaminophen, and salicylate were not detected. ECG and QRS were unremarkable.

Clinical Course: He received ondansetron and IV crystalloid for nausea. A few hrs after admission (early in the morning of Day 2, still in the ED) the patient developed status epilepticus and was intubated and ventilated with oxygen. He was placed on a propofol infusion and the seizures stopped. Neurology was consulted and started the patient on phenytoin and levetiracetam. On Day 2 the patient deteriorated further, he was responsive only to painful stimuli. He was requiring norepinephrine, epinephrine, and vasopressin for hypotension. Continuous EEG monitoring confirmed seizure activity had stopped. Propofol was discontinued in light of hypotension. On Day 8, the patient was no longer responsive to painful stimuli. EEG showed no further seizure activity and the patent remained on three vasopressors and no sedatives. On Day 9, based on prognosis, comfort measures were instituted and he expired.

Autopsy Findings: Cause of death: acute multiple drug intoxication from bupropion, venlafaxine, and ethanol. Manner of death: suicide. A total of 8–12 tablet remnants were recovered from the patient's small bowel. Also noted was diffuse softening of the brain due to anoxic/ischemic encephalopathy, and signs of fluid overload**:** diffuse pulmonary edema, ascites (750 mL), and bilateral pleural effusions (350 mL each). GC/MS Basic UDS obtained by

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the Coroner's office was positive for bupropion, bupropion metabolite, nicotine, norvenlafaxine, and venlafaxine. Hospital blood was sent by the coroner and showed a bupropion level of 416 ng/mL, a hydroxybupropion level of 514 ng/mL, norvenlafaxine level of 312 ng/mL, and venlafaxine level of 258 ng/mL. Hospital blood samples also showed the blood ethanol level was 298 gm%. No post-mortem blood samples were analyzed.

Case 1542. Acute-on-chronic vilazodone, alprazolam, salicylate, escitalopram, and duloxetine ingestion: undoubtedly responsible.
Scenario/Substances: A 55 y/o male was found unresponsive, unknown down time, with empty bottles of vilazodone 10 mg (21 missing), and alprazolam 0.5 mg (100 missing), prescribed for him the day before. He was despondent over a pending divorce.
Past Medical History: Depression, past suicide attempts, alcohol abuse. Medications: escitalopram, aripiprazole, and clonazepam on previous admission.
Physical Exam: BP 70/30, HR 38, atrial flutter, RR 5–6, T 40°C, pupils 5 mm, emesis in mouth and pharynx, nystagmus, extremities mottled, mild tremor in feet and rigidity in lower extremities, diaphoresis, O_2 sat 84% on 100% oxygen.
Laboratory Data:

Na 145	Cl 110	BUN 43
K 5.5	HCO_3 16	Cr 4.5

Lactate 4.5, AST 56, ALT 184, CK 7736, CxR**:** hazy infiltrates. Serum acetaminophen and ethanol were not detected, salicylates 26 mg/dL.
Clinical Course: He was intubated and given paralytics to control hyperthermia (T 42.5°C) 1 hour after arrival. He also received 1 dose of activated charcoal and 2 mg of naloxone. Dysrhythmias were treated with lidocaine and amiodarone, hypotension with norepinephrine, epinephrine, and dopamine, and bradycardia with atropine. Repeat CK 8,000. En route to transfer to a tertiary care center, he had a cardiorespiratory arrest, was given CPR, and had vomited around the tube with coffee-ground emesis. His HR after resuscitation was 60 paced, QRS 152, QT 430. Serum pH was 7.09. He shortly thereafter went into VT, could not be resuscitated and expired within 4 hrs of arrival to the ED.
Autopsy Findings: Autopsy found heart blood levels of salicylate 11 mg/dL, duloxetine 930 ng/mL, and citalopram/escitalopram 1200 ng/mL, pulmonary edema and listed cause of death as drug overdose via suicide. There was no cerebral edema.

Case 1605. Acute hydroxychloroquine, metformin, acetaminophen/diphenhydramine, hydroxyzine, cocaine, alprazolam, and pregabalin ingestion: undoubtedly responsible.
Scenario/Substances: A 33 y/o female was brought to the ED unresponsive, with depressed respirations, bradycardic, and hypotensive. Naloxone was given in the field with no response. Her list of medications and empty pill bottles included hydroxychloroquine sulfate 200 mg, metformin 500 mg, pregabalin 150 mg, acetaminophen/diphenhydramine, and naproxen 375 mg. Her family provided additional history that the patient was prescribed pregabalin, but had not taken it for at least a day, no naproxen was taken but the patient did crack cocaine sometime earlier that day.
Past Medical History: Polycystic ovarian syndrome, previous suicide attempts, polydrug user including oxymorphone, fentanyl, and other opioids.
Physical Exam: Unresponsive, BP 40, HR 40, pupils dilated.
Laboratory Data: K 2.5, acetaminophen 100 mcg/ml, UDS positive for benzodiazepines, cocaine, opiates, and propoxyphene. ECG: QRS 150, QTc 478. 3 hrs after presentation to the ED: pH 7.0 then 5 hrs later: pH 6.96, K 1.4, and lactate 7.4. At 11.5 hrs after presentation, K 2.4, pH 6.8, INR 1.8, and lactate 21.5.
Clinical Course: Patient was intubated and given norepinephrine, diazepam, and sodium bicarbonate in the ED. HR increased to the 80s and BP increased to 80s systolic. She was minimally responsive to painful stimuli, pupils remained dilated and nonreactive. Sodium bicarbonate constant infusion and NAC was started. She continued to receive epinephrine and norepinephrine, BP 100s, HR90s. At 7 hrs after presentation, her condition declined. Antibiotics were started for a suspected aspiration. At 9 hrs after presentation, left bundle branch block developed, a hemodialysis catheter was placed, and hemodialysis started approximately 12 hrs after presentation to ED. At that time of dialysis the patient was awake, alert, able to see. After 6 hrs of dialysis, and while receiving sodium bicarbonate and hyperventilation, her condition deteriorated. The patient expired approximately 24 hrs after presentation to the ED.
Autopsy Findings: Cause of Death: Acute diphenhydramine, metformin, cocaine, alprazolam, and pregabalin intoxication. Manner of Death: Suicide (administered overdose of drugs) Antemortem blood alprazolam 0.052 mg/L, cocaine metabolite (benzoylecgonine) 0.230 mg/L: cocaine metabolite (ecgonine methyl ester) 0.013 mg/L, diphenhydramine 2.45 mg/L, serum pregabalin 0.44 mcg/mL, and metformin 140 mcg/mL.

Case 1614. Acute-on-chronic theophylline ingestion: probably responsible.
Scenario: A 79 y/o female presented to the ED from a nursing home with seizures, AF, tachycardia, hypotension, and agonal respirations.
Past Medical History: COPD and respiratory insufficiency.
Laboratory Data: Na 123, K 2.6, Mg 1.6, theophylline 40 mcg/mL.
Clinical Course: Female patient actively seizing with agonal respirations. BP 80, HR 210 (AF). The patient had attempted chemical and electrical cardioversion without success. BP continued to deteriorate and amiodarone and norepinephrine were given, followed by phenylephrine. The patient was intubated and received activated charcoal via nasogastric tube and lorazepam and levetiracetam for seizure activity. Hypertonic saline was given for hyponatremia and hemodialysis

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was initiated. Follow-up theophylline 29 mcg/mL, unclear when the sample was obtained with respect to hemodialysis. Based on the prognosis, the family opted for institution of comfort measures and the patient expired approximately 10 hrs after admission.
Autopsy: Not performed.

Case 1622. Acute flecainide, clonidine, fluoxetine, potassium chloride, ethanol, lorazepam, cocaine, clonazepam, lisinopril, and furosemide ingestion: undoubtedly responsible.
Scenario/Substances: A 28 y/o male in an apparent suicide attempt ingested his mother's medications after attacking her. He was later found collapsed and unresponsive by his mother, who reported he may have been down for as long as 40 min. She called EMS, who found the patient in cardiac arrest. They began CPR, gave two doses of naloxone and two doses of epinephrine. This patient had access to flecainide 100 mg, clonidine 0.1mg, fluoxetine 10 mg, potassium 10 mg, clonazepam 0.5 mg, lisinopril 40 mg, and furosemide 20 mg (number taken unknown).
Past Medical History: Depression, personality disorder, polysubstance abuse, previous suicide attempt.
Physical Exam: Comatose, no spontaneous circulation.
Laboratory Data: Na 136, K 3.4, HCO_3 23, Glu 231, BUN 6, Cr 1.32, ABG-pH 7.33 / pCO_2 31 / pO_2 440, ethanol 218 g/L, UDS positive for cocaine.
Clinical Course: CPR was performed for over 1 hour in the ED, the patient was put on a ventilator with oxygen. The patient was placed on cardiopulmonary bypass. He developed status epilepticus treated with benzodiazepines. After seizures were controlled he exhibited posturing. He failed to improve with a hypothermia protocol and with sodium bicarbonate. His course was complicated by cardiogenic shock, repeated arrhythmias and a compartment syndrome of his left lower extremity upon removal of a cardiopulmonary catheter treated with emergency fasciotomy on the day of admission. Brain death was declared on Day 3.
Autopsy Findings: The death in this case was the end result of acute intoxication by flecainide and was suicidal in nature.

Case 1637. Acute verapamil ingestion: undoubtedly responsible.
Scenario/Substances: A 39 y/o female ingested 90 tablets of verapamil 240 mg in an apparent suicide attempt. She called EMS approximately 2 hrs later and was transported to the ED.
Past Medical History: Depression, hypertension. Medications: clonazepam, amphetamine, dextroamphetamine, verapamil, lamotrigine, duloxetine, and aripiprazole.
Physical Exam: Awake, alert, and oriented. BP 75/39, HR 59. Respirations and bowel sounds described as normal.
Laboratory Data:

Na 137	Cl 104	Glu 102
K 3.2	HCO_3 22	

Ca 9.4. Ethanol, acetaminophen, and salicylates were not detected.
Clinical Course: The patient became less responsive shortly after arrival in the ED and was intubated. Activated charcoal was administered via NG tube and she was given 100 units of insulin to initiate the hyperinsulinemia euglycemia protocol. Calcium gluconate was given IV. Norepinephrine infusion was started just prior to air transport to a tertiary care facility. Upon arrival BP 91/47, HR 30 with a junctional rhythm. Glucose 240 treated with insulin by infusion. The patient received several grams of calcium chloride. Bradycardia and hypotension continued. Intralipid 20% bolus and infusion was initiated and the patient was transferred to the ICU. On Day 2 progressive heart block was treated by pacemaker placement. Follow-up laboratory showed ionized Ca 1.9 and pH 7.18. Calcium gluconate and sodium bicarbonate separate infusions were initiated. Whole bowel irrigation was started 24 hrs post ingestion, but was discontinued due to 3 L gastric residuals. BP support with pressors increased late in the day, CxR showed volume overload. Insulin was increased and another bolus of 20% Intralipid was given with poor response. The patient's condition worsened and she was placed on ECMO, CVVH was being planned. Due to further decline in respiratory status and her overall prognosis, her family opted for comfort measures, and she expired 48 hrs after ingestion.
Autopsy Findings: Not available.

Case 1651. Acute flecainide, bupropion (extended release), and ethanol ingestion: undoubtedly responsible.
Scenario/Substances: A 43 y/o female intentionally ingested unknown amounts of flecainide and buporprion. EMS noted evidence of copious emesis and the patient was in cardiac arrest. Paramedics resuscitated for 30 min.
Past Medical History: Bipolar disorder, polysubstance abuse, hypertension, arthritis, pacemaker, and previous intentional overdoses.
Clinical Course: During the resuscitation the patient demonstrated VT, VF, and PEA (HR 20–30). Her resuscitation included intermittent CPR, intubation, epinephrine, magnesium, bicarbonate, and lipid rescue. The patient died ~45 min after ED arrival.
Autopsy Findings: Autopsy demonstrated pulmonary vascular congestion and stomach contents with numerous partially dissolved white round pills. Post-mortem aortic blood: positive for atropine, benzodiazepines, caffeine, and other organic bases as present, ethanol 220 mg/dL and doxylamine < 0.25 mg/L. Post-mortem iliac vein blood: bupropion, 2.5 mg/L, diazepam 0.034 mg/L, flecainide 27 mg/L, nordiazepam 0.027 mg/L, threobupropion 2.1 mg/L. Post-mortem liver: bupropion 2.5 mg/kg, threobupropion 11 mg/kg. Cause of death: bupropion, flecainide, and ethanol toxicity.

Case 1674. Acute diltiazem (extended release) and amlodipine ingestion: undoubtedly responsible.
Scenario/Substances: A 50 y/o female was found retching and poorly responsive by her spouse. She told her husband that she had taken an overdose of 14 diltiazem 180 mg extended

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release and 14 amlodipine (unknown strength) about 1.5 hrs before in an apparent suicide attempt. EMS found the patient minimally responsive, hypotensive, and bradycardic with evidence of vomiting. En route to ED she became unresponsive, was given 0.5 mg atropine and IV fluids.
Past Medical History: Depression, cardiac disease, angina, high cholesterol, prior cerebral aneurism rupture with right hemiparesis complicated by cardiac arrest. Medications: diltiazem, amlodipine, simvastatin, conjugated estrogens. Current smoker 0.5 pack per day for 1 year.
Physical Exam: In the ED the patient was, bradycardic (HR 31), BP 52/35, had agonal breathing, and was unresponsive with sluggishly reactive pupils.
Laboratory Data: Na 137, K 5.3, Cl 101, HCO3 17, BUN 90, Cr 1.6, glucose 201, WBC 21.9. AST 52, ALT 60, CK 61, CKMB 1.7. Serum acetaminophen, ethanol, and salicylate were not detected. UDS was positive only for methadone.
Clinical Course: In the ED she was intubated, given IV fluids, glucagon, calcium gluconate, and norepinephrine. An external pacemaker was placed. Gastric lavage was performed and activated charcoal was given. Upon admission to the ICU, the patient was paced, but remained hypotensive. In addition to norepinephrine and glucagon, she was given 10 U insulin IV followed by 6 U/hr and a single dose of sodium bicarbonate (44 mEq). The patient developed hyperkalemia and was given sodium polystyrene sulfonate via NG tube and IV sodium bicarbonate. Repeat Na 142, K 8.6, Cl 108, total CO_2 10, BUN 16, Cr 2.07, Glucose 87–> 299, Ca 12.6, albumin 3.3–> 1.5. Echocardiogram showed poor LV function. There was no clinical response to maximal vasopressors (dopamine, epinephrine, and norepinephrine) nor to 20% lipid emulsion (bolus and infusion). Her systolic BP remained in the 40–50 range. The patient expired approximately 15 hrs after the reported overdose.
Autopsy Findings: There was no autopsy. Antemortem hospital blood (time not specified) amlodipine 230 ng/mL (therapeutic reference range 3–11 ng/mL) and diltiazem 1800 ng/mL (therapeutic reference range 50–200 ng/mL).

Case 1731. Acute-on-chronic sitagliptin, citalopram, alprazolam, diltiazem (extended release), metoprolol (extended release) ingestion: undoubtedly responsible.
Scenario/substance: A 64 y/o female ingested diltiazem (240 mg, #11), metoprolol (50 mg, #18), sitagliptin (25 mg #6), citalopram (#20), and alprazolam. The patient left a suicide note that listed the medications and the amounts she took in an apparent suicide attempt. Patient was found unresponsive at her home and brought to the ED.
Past Medical History: Depression, hypertension, chronic renal insufficiency on dialysis. Ingested medications were the patient's current medications.
Physical Exam: Alert and oriented on arrival. BP 142/84, HR 83.
Laboratory Data: ECG: NSR at 63, normal intervals. Acetaminophen, salicylate, and ethanol were not detected. UDS positive for benzodiazepines.
Clinical Course: IV fluids were started and the patient received activated charcoal. Approximately 1 hour after ED arrival, BP 53 systolic, HR 40 with a junctional rhythm. One milligram IV glucagon and IV calcium gluconate was administered, with improvement in BP to 96 systolic. Recurrent hypotension was treated with dopamine and she was transferred to a tertiary care center. At the second HCF, HR was 30–40, systolic BP was 80–110. IV fat emulsion (400 ml of 20%) was given and she was intubated and a glucagon infusion was started as was norepinephrine while dopamine continued. The patient also received a sodium bicarbonate infusion and IV high dose insulin with IV D10. Continuous renal replacement therapy dialysis was initiated, BP improved to 127/66 with a HR of 51 (junctional rhythm) with occasional PVCs. Pupils were dilated and unresponsive. Acidemia developed and she became anuric. Thrombocytopenia was noted (platelets 70). On Day 3 insulin/glucose therapy stopped. On Day 5 tachycardia, hypertension, and AF were noted, pressor therapy was discontinued. Poor perfusion of her feet was noted, amputation was considered. On Day 6 The patient was agitated, and moving all extremities. Neurological consultation noted poor prognosis. The patient expired on Day 12.
Autopsy Findings: Cause of death was suicide involving mixed drug (diltiazem, metoprolol, sitagliptin, citalopram) toxicity.

Case 1757. Chronic cardiac glycoside ingestion: probably responsible.
Scenario/Substances: A 73 y/o female with a high digoxin level presented to the ED with nausea, vomiting, and AF. She underwent scheduled hemodialysis one day prior to ED presentation.
Past Medical History: AF, congestive heart failure, renal failure, and remote history of left mastectomy.
Physical Exam: BP 142/88, HR 121.
Laboratory Data: K 4.5, digoxin 4.7 ng/mL.
Clinical Course: She was given promethazine for nausea. Four vials of digoxin antibodies were given 14 hrs later in the CCU, the patient became hypotensive and was given norepinephrine infusion. On pressors: BP 137/105, HR 111, RR 31, O_2 sat 94%. Follow-up laboratory:

Na 136	Cl 92	BUN 31	Glu 94
K 4.5		Cr 2.8	

The patient expired approximately 26 hours after admission.
Autopsy Findings: Not performed.

Case 1795. Acute nifedipin ingestion: undoubtedly responsible.
Scenario/Substances: An 11 m/o male was found playing with opened bottle of grandparent's nifedipine 10 mg capsules. Up to 60 pills were missing.
Physical Exam: Unresponsive, HR of 30 which improved to 50 with bagging.
Clinical Course: The patient was in respiratory arrest upon presentation to the ED, was intubated and shortly afterwards went into full cardiac arrest. Resuscitation efforts were unsuccessful.

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Autopsy Findings: Postmortem Examination: Acute nifedipine intoxication, No gross injury or natural disease at autopsy. Cause of Death**:** (Forensic Pathologist) acute nifedipine intoxication. Toxicology Laboratory Report: GC/MS Acidic Drug screen: Post-mortem blood, heart 1000 ng/mL.

Case 1812. Acute yohimbine ingestion: contributory.
Scenario/substance: A 48 y/o male took an entire bottle of a multi-botanical male enhancement product containing yohimbine, tribus, Korean ginseng, cnidium monnier, eluthercoccus, xanthroparmelia scarbosa, horny goat weed, velvet deer title, damian, muira puama, pumpkin seed, stinging nettle root, astragalus root, licorice root, L-arginine, ho shou wu extract, boron, foliate, zinc, DHEA, pregnanolone, black pepper, piper longum, and ginger. He collapsed later during the filming of an intimate encounter between himself and others. A participant called EMS, but CPR was not performed during the ~10 min which elapsed before EMS arrived.
Past Medical History: Remote history of left lower extremity amputation, diabetes, and unspecified vascular disease.
Physical Exam: Male in cardiac arrest wearing a buprenorphine patch.
Laboratory Data: pH 7.33, Na 133, K 3.4, Mg 1.7. AST 42, ALT 22, INR 1.0, Troponin 1.34 (peak 4.58), and CK 27.8. Acetaminophen was not detected.
Clinical Course: The patient arrived in cardiac arrest wearing a buprenorphine patch, was resuscitated, intubated, placed on therapeutic hypothermic protocol, and an intra-aortic balloon pump was placed. Cardiac catheterization showed multivessel disease (100% left anterior descending artery and 85% right coronary artery occlusions) and an echocardiogram showed an ejection fraction of 25%. Post resuscitation, BP 130/80, HR 108, O_2 sat 99%. The patient was sedated with midazolam and fentanyl and paralyzed with cisatracurium and given an insulin drip. His pupils were 5 mm, his urine output was 15–23 mL/hr, and he was experiencing decorticate posturing. Day 3: the patient was re-warmed and demonstrated status epilepticus and was given levatiracetam, propofol as well as benzodiazepines. He became bradycardic and hypotensive with continued seizures. Based on the prognosis, the family opted for institution of comfort measures on Day 5 and the patient expired later that day.
Autopsy Findings: ME initially determined the probable cause of death to be due to herbal stimulant overdose, further review suggested it was due to hypertension and atherosclerotic disease. Ante mortem toxicology of serum (peripheral specimen) demonstrated no ethanol and no yohimbine.

Case 1815. Acute calcium parenteral: undoubtedly responsible.
Scenario/Substances: A 5-month-old male with multiple medical problems received 10 times the therapeutic dose of IV calcium chloride while preparing for a transfer to another tertiary care hospital for a heart transplant.
Past Medical History: Included congenital hypoplastic left heart syndrome, mitral stenosis, and aortic atresia; s/p median sternotomy with placement of pulmonary artery bands and pulmonary artery catheter; s/p Norwood procedure with Blalock–Taussig shunt; s/p left parieto–occipital hemorrhage with posterior third ventricle extension; renal failure requiring peritoneal dialysis.
Physical Exam: The patient was an edematous, intubated white male with a Grade II/VI systolic murmur, bilateral rhonchi and rales, and hepatosplenomegaly.
Laboratory Data: Serum ionized calcium levels during patient's hospital course ranged from 0.9 to 1.49 and was 1.16 ~3 hrs prior to receiving the calcium chloride infusion. The ionized Ca was 3.68 immediately post calcium chloride infusion.
Clinical Course: At time of planned transfer, the patient developed respiratory distress and hypotension to 50s/40s and received 1 gram of calcium chloride intravenously. The child's weight was 5 kg and the order was for 20 mg/kg, that is 100 mg. However, the patient received 10 mL of 10% calcium chloride. The patient became bradycardic and hypoxic shortly after this with subsequent atrio–ventricular dissociation. VF developed ~5 to 10 min after calcium chloride infusion. Resuscitation efforts were unsuccessful and patient died ~1.5 hrs after the calcium chloride infusion.
Autopsy Findings: An autopsy was performed and concluded that death was due to acute hypercalcemia in the setting of a patient with complications of hypoplastic left heart syndrome. Post-mortem examination of the heart revealed no signs of surgical complications. Multiple splenic infarcts were present. Post-mortem neuropathology revealed acute and chronic subdural hemorrhages, chronic hematoma of supracerebellar cisternae, and microscopic infarcts of right frontal cortical white matter and left thalamus.

Case 1816. Acute atropine/diphenoxylate ingestion: undoubtedly responsible.
Scenario/Substances: A 2 y/o female was found with a bottle of grandmother's atropine/diphenoxylate. Family removed 16 tablets from her mouth—they did not know how many pills were swallowed.
Past Medical History: Normal, healthy child.
Clinical Course: In the ED she was a normal appearing 2 y/o, HR 135, BP 103/45. She remained normal during 4 hours of observation and was discharged home. The following morning the child's mother found her unarousable and foaming at the mouth with yellow secretions. She called their pediatrician, then brought her to the ED ~2 hours after finding that she would not awaken. In the ED she was intubated with succinocholine and etomidate for agonal respirations and acute mental status changes. Systolic BP 50, head CT showed no bleeding, but low attenuation in both cerebellar hemispheres suggestive of infarction. She was transported by helicopter to a tertiary care pediatric hospital. During flight she was sedated with versed and fentanyl and received an albuterol treatment for wheezing. She remained unresponsive to painful stimuli, pinpoint pupils, over breathing the ventilator, GCS 3, T 37.3°C, HR 139, BP 103/70, RR 24, Biox 99%, AST 119, ALT 36, and ammonia 29.

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Na 145	Cl 122	BUN 21	Glu 54
K 2.6	HCO_3 12	Cr 0.43	

Hypocalcemia was treated with calcium gluconate 50 mg/kg. CxR suggested aspiration, cultures were done, and she was started on piperacillin and tazobactam. EEG showed severe diffuse slowing, no epileptiform discharges, and no electrographic seizures; MRI was suggestive of anoxic injury in the watershed areas. During the early AM of Day 2 the patient developed fixed and dilated pupils. She had briefly withdrawn to painful stimuli, but that reaction stopped. She did not gag when she was suctioned and her cranial nerve reflexes were absent. She was suspected to have diffuse cerebral edema with beginnings of hydrocephalus due to obstruction of the 4th ventricle and there was concern for impending herniation. She was on dopamine at 12 mcg/kg/min, and received 2 NS boluses, but her hypotension was refractory to dopamine. She had a significant urine output, consistent with diabetes insipidus. She was started on vasopressin at 0.5 milliunits/kg/h and a 0.45 NS fluid replacement. Labs at ~21.5 hrs post-ingestion showed urine diphenoxylate negative and blood diphenoxylate 6.1 ng/mL. Comprehensive UDS was positive for fentanyl, normeperidine, cotinine, caffeine, and theobromine. The patient expired on Day 3, ~31 hours post ingestion.
Autopsy Findings: Not performed.

Case 1824. Acute metformin ingestion: undoubtedly responsible.
Scenario/Substances: A 38 y/o male presented to the ED 3 hrs after a self-reported ingestion of 120 metformin 500 mg tablets with suicidal intent.
Past Medical History: Depression, bipolar disorder, and diabetes mellitus.
Physical Exam: The patient presented awake, alert, and oriented, BP 103/37, HR 77, O_2 sat 96% on room air.
Laboratory Data: Glu 344, BUN 21, Cr 3.5, PT 35.6, INR 3.82, lactate 26, total bilirubin 0.6, AST 1682, ALT 1980, acetaminophen and ethanol were not detected, ABG-pH 6.9/pCO_2 63/CO_2 12.
Clinical Course: At ~8 hrs after the ingestion, the patient reported nausea and abdominal and back spasms. At 12 hrs post-ingestion, he developed lactic acidosis and had a cardiopulmonary arrest. He was endotracheally intubated and placed on a ventilator, while ACLS resuscitation measures were applied. He arrested twice during transport to a tertiary care center. At 22 hrs post-ingestion, he was unresponsive, receiving vasopressin, norepinephrine, and epinephrine, while on CRRT. At 25 hrs, based on the prognosis, the family opted for institution of comfort measures and he expired.
Autopsy Findings: Antemortem blood metformin 310 μg/mL, post-mortem metformin 160 μg/mL. Cause of death: 1) Complications of metformin toxicity, self-reported history of consumption of a large amount of metformin, elevated metformin concentration in antemortem blood, clinical history of severe lactateosis, agitation, and bowel incontinence, clinical history of multiple episodes of cardiopulmonary arrest, subsequent development of anoxic encephalopathy and multisystem organ failure, moderate bilateral pulmonary edema, and acute bronchopneumonia. Atherosclerotic cardiovascular disease, moderate atherosclerosis of coronary arteries and aorta, cardiomegaly (510 g), moderate fatty liver.

Case 1845. Chronic metformin ingestion: contributory.
Scenario/Substances: A 66 y/o female patient presented to the ED with nausea, vomiting, and diarrhea.
Past Medical History: Diabetes. Medications**:** metformin.
Physical Exam: Initially normal vital signs, mild abdominal tenderness to palpation. On later examination, marked tachypnea and hyperpnea, benign abdomen.
Laboratory Data: Anion gap 16, UA 2 + glucose.

Na 139	Cl 105	BUN 12	Glu 401
K 4.7	HCO_3 17	Cr 1.0	

Follow-up laboratory data: Cr 1.4, anion gap 22, glucose 318, lactate 13.2 mmol/L, salicylate 2.1 mg/dL, venous BG-pH 7.0 / pCO_2 29 / pO_2 46 / HCO_3 7 / BE -25, UDS negative, beta hydroxybutyrate 21.9, blood culture x2 negative, urine culture positive for Klebsiella pneumoniae.
Clinical Course: Initial mild anion gap metabolic acidosis was thought due to gastroenteritis and dehydration. However, after IV fluid hydration with 4 liters of NS, repeat labs showed worsening acidosis and anion gap. Patient had no history of acute ingestion of metformin, although the possibility was raised she had taken additional doses with her GI symptoms. She had no complaints of abdominal pain in ED, CT scan with contrast done after initial lactate of 13.2 mmol/L. Repeat labs showed Cr 1.4, lactate 19 mmol/L, worsening acidosis (pH 6.98), low salicylate, negative ethylene glycol/methanol. She was given supportive care with IV fluids and started on insulin (0.1 unit/kg/hr) on arrival to the ICU. Sodium bicarbonate infusion and CVVH were started while a dialysis catheter was placed. The patient maintained BP and HR until shortly prior to starting CVVH. She had a VF/VT cardiac arrest ~11 min after starting CVVH treated with epinephrine, defibrillation, and amiodarone bolus with conversion to PEA arrest. She then received epinephrine ×3, sodium bicarbonate ×4 with brief return of spontaneous circulation followed rapidly by return of nonperfusing VF/VT. She could not be resuscitated and expired on Day 1.
Autopsy Findings: Cause of death: complications of severe lactatic acidosis, possibly due to metformin. Contributory conditions: diabetes mellitus, coronary artery sclerosis, urinary tract infection. No metformin levels performed.

Case 1873. Acute baclofen ingestion: undoubtedly responsible.
Scenario/Substances: A 57 y/o male was found unresponsive in his vehicle with a prescription bottle missing 120 tablets of baclofen, 20 mg.
Past Medical History: Multiple sclerosis, confined to a wheelchair.
Physical Exam: Unresponsive, shaking male. Systolic BP 177, HR 60.

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Laboratory Data: Acetaminophen was not detected.
Clinical Course: The patient was intubated soon after arrival and transferred to a tertiary care facility, admitted to the ICU on propofol with intermittent doses of benzodiazepines. Seven hrs after admission to the ICU, the patient had a 35 min generalized tonic–clonic seizure treated with benzodiazepines. He subsequently had repeated episodes of seizures and was given valproic acid. Hypotension with systolic BP 50–60 was treated with dopamine. Intermittent seizures continued for 72 hrs and progressed to continuous subclinical seizures on EEG. Hypotension required treatment with epinephrine, dopamine, and phenylephrine. Supportive care only was instituted on Day 5 and the patient expired.
Autopsy Findings: Baclofen overdose, Post-mortem baclofen blood concentration 8.7 mcg/mL (timing of sample not provided).

Case 1922. Acute-on-chronic clozapine ingestion: undoubtedly responsible.

Scenario/Substances: A 40 y/o male took approximately 30 tabs of his clozapine, 100 mg in an apparent suicide attempt. He called EMS who noted a seizure and bradycardia during transport.
Past Medical History: Schizophrenia, bipolar disorder, anxiety.
Laboratory Data: ABG-pH 7.10 / pCO_2 30 / pO_2 285. UDS positive for benzodiazepines, ethanol, lithium, salicylates, and acetaminophen were not detected. ECG showed QT prolongation.
Clinical Course: Agitated, diaphoretic, poorly responsive GCS 6, BP 114/73, 112 RR 36, T 36.2°C, O_2 sat 96% on room air. Pupils were equal and reactive to light bilaterally. One amp of sodium bicarbonate was given with improvement of the QTc. Intubation was performed for respiratory distress. Systolic BP declined to 60s treated with norepinephrine. Gastric lavage was performed and activated charcoal administered. ARDS ensued and antibiotics were given. Bronchial alveolar lavage showed few oral flora, blood cultures negative. Day 2 K 2.4. On Day 3 two generalized seizures occurred, treated effectively with lorazepam and a loading dose of fosphenytoin. On Days 4, 5, and 6 intermittent seizures continued. On Day 7 Norepinephrine weaned off with adequate BP. On Day 8 fever continued, intermittent seizure activity, baclofen was administered. On Day 9 the patient was febrile and hypotensive with systolic BP 70. Based on the prognosis, the family opted for institution of comfort measures and the patient expired shortly thereafter.
Autopsy Findings: Findings: Death as a result of clozapine intoxication due to intentional overdose.

Manner of Death: Suicide

Case 1993. Hallucinogenic amphetamine ingestion: probably responsible.
Scenario/substance: A 17 y/o male was found seizing in woods after ingesting two doses of a psychopharmaceutical that was reported to be LSD. Soon afterwards his friends noted that he was exhibiting bizarre behavior.
Past Medical history: Healthy, on no medications.
Physical Exam: BP 120/80, HR 160, T 40–40.6°C, O_2 sat, 100% on ventilator. Not rigid.
Laboratory Data: Initial pH 6.8, after resuscitation, venous blood pH 7.26 / pCO_2, 45 / pO_2, 40 / HCO_3 20, lactate, 1.91, CK > 50, CKMB > 300, troponin 2.3, AST 1419, ALT 324, anion gap 9, Glu 290, Ca 7.5, Mg 3.7, serum acetaminophen, ethanol, and salicylate were not detected, PT 11.7, INR 1.21, UDS positive for THC and benzodiazepines. Head CT showed cerebral edema.
Clinical Course: Patient seized for 30–45 min in the woods, then seized for 20 min en route to hospital and continued to have tonic–clonic seizures for an additional 1.5 hrs in the HCF. He was intubated and administered lorazepam 16 milligrams, midazolam 10 milligrams, and fosphenytoin. Seizures were slowed when he received phenobarbital 15 mg/kg. He was given antibiotics. IV fluids were NS with 3 amps of sodium bicarbonate. He developed hypertension treated with a nitroprusside infusion. He was sedated with propofol. On Day 3, Cr 8, BUN 49 K 6.9. He became anuric and hemodialysis was performed. MRI showed anoxic injury with hyperintensity with restricted perfusion and brain damage. Pupils became pinpoint and minimally responsive. Patient remained minimally responsive, herniated, and expired on Day 7.
Autopsy Findings: Based on his clinical course and similar cases elsewhere, the most likely substance was 2C-I-NBOMe. The case was discussed with medical examiner, no samples from early in his hospitalization were available for analysis.

Case 2014. Chronic cocaine, promethazine ingestion, inhalation/nasal: probably responsible.
Scenario/Substances: A 21 y/o male had a 2-day history of symptoms consistent with a viral illness, including nausea and vomiting. He self-medicated with 2 doses of oral promethazine approximately 4 hrs apart. Two hours after the second promethazine dose, he became agitated and was thrashing, and became unresponsive. A bag of white powder found at his house later and was presumptive positive for cocaine by law enforcement.
Physical Exam: Comatose male. BP 127/59, HR 94, RR 40, afebrile with O_2 sat of 100%. Skin showed rash on his chest.
Laboratory Data: ABG-7.43 / pCO_2 < 20 / pO_2 115.

Na 151		BUN 25	Glu 70
K 4.1	HCO_3 12	Cr 1.8	

UDS positive for cocaine and marijuana. Acetaminophen and ethanol were not detected. Head CT normal. WBC elevated.
Clinical Course: The patient became hypotensive, was started on vasopressors, and transferred by air to a tertiary care facility. En route, he became agitated and combative with a further drop in his BP necessitating intubation. At the second HCF ECG showed sinus tachycardia with possible right bundle branch block. He remained intubated and sedated. Follow-up ammonia 362 mmol/L, HCO3 19, and Cr 1.8. BP deteriorated and during central line placement

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the patient had cardiac arrest with successful resuscitation. Multiple cardiac arrests over the next 12 hrs occurred which responded to CPR, defibrillation, and ACLS medications. He developed bradydysrhythmias and hyperkalemia with K 7.0 with anuria. CRRT was initiated. He continued to decline with prolonged resuscitation and expired approximately 24 hrs after initial presentation.
Autopsy Findings: Severe hepatic microvesicular steatosis, no significant inflamation involves the portal triads. Focal sinusoidal hemorrhage not associated with inflamation was present, moderate cerebral edema, and early bronchopneumonia. Negative postmortem viral and bacterial cultures. Cause of death listed as Reye's syndrome following a presumed viral gastroenteritis and not an illness triggered by cocaine. Writer's note: cocaine has been associated with acute liver failure with a clinical picture including pathological changes similar to that observed here (Silva, 1991, Balaguer, 2005) supporting "probably responsable".

Case 2040. THC homolog inhalation, unknown: undoubtedly responsible.
Scenario/Substances: A 23 y/o male was the driver of a car involved in a motor vehicle collision. He was found by police at the scene in an agitated and incoherent state. He fled the scene on foot, assaulted police, was captured, and restrained. As EMS arrived and as he was transferred, he became unresponsive. Restraints were removed and CPR was started. Subsequent history from a relative was the patient had been using K2, a synthetic stimulant, for 2 days.
Physical Exam: Intubated on ventilator. BP 169/80, HR 54, RR 15, T normal, O_2 sat 99%.
Laboratory Data: pH 7.2, K 2.8, BUN 19, Cr 3.1, CK 32,000, repeat CK 146,000, UDS positive for THC only,
Clinical Course: The patient was given fentanyl and benzodiazepines for sedation, sodium bicarbonate, and placed on post arrest hypothermia protocol. Patient remained unresponsive after therapeutic hypothermia was stopped and was hypertensive, which required nitroglycerin and nicardipine. Repeat labs on Day 2: BUN 171, Cr 6.9 mg, CVVHD was started. On Day 3 the patient was determined to have no brain activity and he expired.
Autopsy Findings: Multiple small abrasions were noted on face and extremities. Hypoxic-ischemic encephalopathy with severe edema and herniation of the cerebellar tonsils was noted. Microscopic: renal tubular necrosis, focal pericardial and interstitial cardiac hemorrhages, cardiac contraction band necrosis. Pre-mortem blood: positive for JHW-210. Cause of death: Agitated delirium associated with synthetic marijuana use following police restraint and arrest procedure. Manner of death: could not be determined.

Case 2063. Acute amphetamine (hallucinogenic), morphine ingestion: undoubtedly responsible.
Scenario/Substances: A 24 y/o male and his female friend used special K or "Molly" (synthetic stimulants) at a party, 30 min later he had a tonic–clonic seizure. EMS was called approximately 1 hr later and found him seizing, febrile, and sweating.
Past Medical History: Opiate abuse.
Clinical Course: Upon arrival at the ED he was unresponsive, diaphoretic, with ongoing seizures. BP 60/27, HR 144, T 41.1°C. He had perioral cyanosis. He received 4 mg of lorazepam, but was still seizing, following intubation he was given a neuromuscular blocker, had gastric lavage, and was given activated charcoal. The patient was given ice packs and sent for CT scan, upon return to the ED BP 82/45, HR 192. Active cooling which was begun with cooling blankets, ice packs to the groin and axilla, cold irrigation to his bladder and stomach, and a cool airflow. Acetaminophen and dantrolene were administered, as well as calcium, insulin, and glucose. Neurological assessment showed intact brainstem reflexes. Bedside EEG was suspicious for epileptiform activity. He was transferred to the ICU. DIC was suspected with INR 28, he was given FFP, cryoprecipitate, vitamin K, and platelets. He developed acute renal failure and shock liver with persistent hypoglycemia. No brain activity was detected; life support was withdrawn and the patient expired.
Autopsy Findings: Cerebral edema with cerebellar tonsillar herniation, severe diffuse pulmonary edema with bilateral effusions, congenital absence of right kidney, chronic passive congestion of the liver, multiple infarctions of papillary musculature of left ventricle. Toxicology testing showed morphine total 229 ng/mL and free morphine 30.6 ng/mL. Testing for stimulants was incomplete.

Case 2085. Acute amphetamine (hallucinogenic) unknown: undoubtedly responsible.
Scenario/Substances: A 26 y/o female was found unresponsive after using synthetic stimulants. EMS found the patient in asystole. CPR was initiated and direct cardioconversion was performed twice in the field.
Past Medical History: Alcohol and heroin abuse.
Laboratory Data: pH 7.15 / pCO_2 57, WBC 20.3, K 2.9, glucose 353, CK 204, CKMB 9.2, troponin 0.23, UDS positive for benzodiazepines, cocaine, and opiates.
Clinical Course: In ED BP 168/122, HR 135, RR 14, T 34°C, O_2 sat, 68%. Diffuse, coarse breath sounds with bilateral crackles.The patient was admitted to the ICU, sedated, and intubated with sinus tachycardia at 135. Clonic seizure-like activity was noted, continuous EEG monitoring was instituted and midazolam infusion up to 32 mg/hour was given as well as IV fluids and norepinephrine to support BP. Therapeutic hypothermia was instituted to maintain 33 C. After warming, the patient displayed refractory status epilepticus and a pentobarbital coma was initiated resulting in burst suppression. When the pentobarbital was subsequently discontinued status epilepticus returned. Based on the prognosis, the family opted for institution of comfort measures and the patient expired on Day 12.
Autopsy Findings: Not available.

Case 2149. Acute methamphetamine exposure: undoubtedly responsible.
Scenario/Substances: A 30 y/o male was stopped by the police on a routine traffic stop. Drug sniffing dogs detected a scent but could not locate any drugs. He was then taken to

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a hospital where a UDS was positive for methamphetamine, THC, and opiates. He was then released to home. Three hours later he called his brother, stating that he was dying and complaining of chest pain, shortness of breath, funny heartbeats, and he was pounding on his chest. He then had a seizure. EMS was called and took him to the ED. It was later reported by friends that he had ingested 2.5 grams of crystal meth.

Past Medical History: Substance abuse (methamphetamines, marijuana), hepatitis C, peptic ulcer disease with massive GI bleed.

Clinical Course: In the ED he was seizing, systolic BP in the 90s, T 40.6°C. He was intubated and given 2 L IV fluids. Lumbar puncture showed Glu 57, protein 53 mg/dL. Head CT was unremarkable. He was transferred to a tertiary care hospital where his blood glucose was found to be 20 and he was given D50W 25 grams. HR 120s, BP normotensive, T 38.9°C, anuric. He had a complicated course over the next 5 days including the development and treatment of rhabdomyolysis (CK to 98,643), sepsis, acute renal failure, ARDS, DIC, and hepatic failure (AST 4482, ALT 3163, bilirubin 16.1). On Day 6 the patient had a brain hemorrhage, herniated, and expired.

Autopsy Findings: Autopsy not performed. Coroner's cause of death: multi-system organ failure and acute intraparenchymal hemorrhage due to polydrug intoxication. Contributing factors were hepatitis C and polysubstance abuse.

Case 2240. Cocaine ingestion, inhalation/nasal: undoubtedly responsible.

Scenario/Substances: A 37 y/o male was taken into police custody after exhibiting erratic and crude behavior. Bystanders reported he had used drugs earlier in the day (took some pills, smoked something). He became unresponsive in police custody and was taken to the ED. He received 25 g dextrose and atropine for bradycardia (HR in the 40s) prior to ED arrival.

Past Medical History: Hypertension, lymphoma, cocaine abuse.

Laboratory Data: ABG-pH 6.5 / pCO_2 49.5 / HCO_3 6

Na 147	Cl 99	BUN 14	Glu 269
K 4.8	HCO_3 3	Cr 2.0	

Serum acetaminophen, ethanol, and salicylate were not detected. AST 127, ALT 103, alk phos 119, ammonia > 1,000, lactate 38.4.

Clinical Course: The patient was intubated using etomidate and rocuronium on arrival in the ED. His initial HR was in the 150s (after atropine), systolic BP in the 120s, afebrile, O_2 sat normal, pupils small and reactive. After 100 mEq of sodium bicarbonate ABG-pH 7.1 / pCO_2 29 / HCO_3 10. ECG: sinus rhythm rate in the 150s, QRS 94, QTc 444. Head CT unremarkable. N-acetylcysteine and fomepizole therapy were initiated in the ED, and he was admitted to the ICU. Follow-up laboratory data: ABG-pH 7.23 / PCO_2 15.5, anion gap 30.2, ammonia 278, magnesium 7.2. He became hypotensive, unresponsive to 3 vasopressors. Based on the prognosis, the family opted for institution of comfort measures and he expired ~20 hrs after ED arrival.

Autopsy Findings: Midline cerebellar hemorrhagic infarct with focal 4th ventricle hemorrhage and cerebellar subarachnoid acute hemorrhage. There was no evidence of cerebral contusion, skull fracture, vascular trauma, cerebral aneurysms, arteriovenous malformations, or subdural hemorrhage. Mild cardiomegaly and microscopic changes consistent with hypertension. Hospital blood cocaine 0.30 mg/L, benzoylecgonine 0.5 mg/L. Ethanol, methanol, acetone, isopropanol, opiates, methamphetamine, MDMA, phencyclidine, and methadone were not detected. The cause of death was ruled accidental due to acute hemorrhagic cerebellar infarct, due to cocaine toxicity, in addition to multisytem organ failure, cerebral hypoxia, and hypertension.

Case 2506. Acute-on-chronic methamphetamine inhalation: probably responsible.

Scenario/Substances: A 58 y/o male with history of substance abuse presented to the ED ~1 hr after smoking methamphetamine.

Past Medical History: Previous CVA and MI, methamphetamine abuse, reportedly non-compliant with medications.

Physical Exam: Male with tonic–clonic seizure and rigidity of his left greater than right side, hyperthermia, and unresponsiveness.

Laboratory Data: ABG-pH 7.47 / pCO_2 37 / PO_2 90,

Na 136	Cl 101	BUN 22	Glu 47
K 3.7	HCO_3 25	Cr 1.27	

Hct 33.8, platelets 281, CK 1478, UDS positive for methamphetamine.

Clinical Course: On ED arrival patient was seizing and was intubated for airway protection. Within the next several hours he developed hyperthermia (43.3°C) and rigidity of both upper and lower extremities (left > right). A propofol infusion, benzodiazepines, and a cooling blanket lowered his body temperature to normal. Head CT showed cerebral edema without focal abnormalities. While in the ICU he continued to have persistent thermal dysregulation requiring cooling blankets to maintain a normal temperature although he maintained a BP of 130/60 and a HR in the 50s without vasopressors. On Day 2 he exhibited nonreactive pupils, decerebrate posturing of the upper extremities and decorticate posturing of the lower extremities. Based on the prognosis, comfort measures were instituted and he expired on Day 4.

Autopsy Findings: Autopsy results not available.

Case 2542. Hallucinogenic amphetamine, cocaine, marijuana, gabapentin exposure: undoubtedly responsible.

Scenario/Substances: Police brought a 27 y/o male to the ED in handcuffs after he tried to break into a home without

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any pants on. The patient was out of control and agitated en route.

Physical Exam: HR 185, RR 32. The patient was toxic appearing, screaming, spitting, and frothing at mouth (rusty colored sputum), unclothed from the waist down. Skin appeared cyanotic, pupils were dilated.

Laboratory Data: ECG showed a wide complex tachycardia ABG-pH 6.94 / pCO_2 44 / pO_2 242 / HCO_3 9 / BE 24.9, lactate 20, K 7.8, Cl 91, HCO3 13, BUN 23, Cr 3.93, phosphate 9.3, Mg 3.7, Ca 13.2. bilirubin 1.8 (total) 0.4 (direct), albumin 5.8, alk phos 57, ALT 44, AST 80, amylase 145, lipase 74, troponin 1.23, CK 2876, PT 16.6, INR 1.3, PTT 33, WBC 14.5, Hct 44, Hgb 15.1, platelets 321.

Clinical Course: On arrival at the receiving ED, the patient was screaming "I smoked crystal meth, I admit it!" and that his genitalia were "on fire". His agitation continued despite two doses of haloperidol, two doses of midazolam and ketamine, and six security guards were at the bedside. He then became cyanotic, and vomited coffee ground material. He received etomidate and rocuronium and was intubated in rapid sequence and was placed on a ventilator. HR 180, systolic BP 70 (palpation), stool was guaiac positive, and ECG showed wide complex tachycardia. Cardioversion was unsuccessful X 2, the rhythm deteriorated to VF and he was defibrillated several times. Bladder temperature 42.4°C at this time and ice packs were applied to his groin and axillae and he was given a dose of dantrolene. He received standard ACLS and 5 ampules of sodium bicarbonate, 2 ampules of calcium chloride, and a total of 6 mg of epinephrine. Resuscitation for 45 min but was unsuccessful.

Autopsy Findings: The cause of death was ruled excited delirium due to acute intoxication by cocaine. Pertinent findings included cardiomegaly, post-mortem blood was positive (qualitative) for pyrovalerone, benzoylecognine, methylecognine (negative for cocaine), caffeine, nicotine, cotinine, lidocaine, and etomidate. Blood delta-9-THC 4.1 ng/mL, 11-OH-delta-9-THC 1.1 ng/mL, 11-nor-9-carboxy-delta-9-THC 53 ng/mL, gabapentin 3.1 mcg/mL. Post-mortem blood testing was negative for ethanol, levamisole, amphetamine, methamphetamine, mephedrone, methylenedioxypyrovalerone, and methylone. Post-mortem urine was positive (qualitative) for cocaine, levamisole, caffeine, nicotine, cotinine, lidocaine metabolite, gabapentin, and pyrovalerone. In her ruling, the coroner blamed cocaine and ignored the presence of bath salts in blood and urine. The reviewers agree cocaine contributed, but feel the pyrovalerone played a stronger role in the victim's toxidrome and death.

Abbreviations and 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 (10), Goldfrank (11) or Dart.(12)

Serum electrolyte summary table

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

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

~ = approximately

ABG-pH / pCO_2 / pO_2 / HCO_3 /BE

ABG	= arterial blood gases
ABG-pCO_2	= partial pressure of carbon dioxide [38–42]
ABG-pH	= hydrogen ion concentration [7.38–7.42]
ABG-pO_2	= partial pressure of oxygen [90–100]
Base Excess	= [− 2 to + 2 mEq/L]
ACLS	= advanced cardiac life support, protocol for the provision of cardiac resuscitation
ADHD	= attention deficit hyperactivity disorder
AF	= atrial fibrillation
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)
AVblock	= atrio–ventricular block
BAL	= British anti-Lewisite
BE	= base excess, mmol/L
Bicarbonate	= [22–26] mEq/L
Bilirubin	= total [0.3–1.3] mg/dL, direct [0.1, 0.4] mg/dL, indirect [0.2, 0.9] mg/dL
BLQ	= below the limit of quantitation
BMI	= body–mass index
BP	= Blood Pressure, systolic / diastolic, (Torr)
BPH	= benign prostatic hypertrophy
BUN	= see Urea nitrogen
C	= degrees Centigrade
Ca	= calcium, [8.7–10.2] mg/dL
CABG	= coronary artery bypass graft
CAD	= coronary artery disease
CIWA	= Clinical Institute Withdrawal Assessment for Alcohol
CK	= creatinine kinase (CPK), total: [39–238] U/L females, [51–294] U/L males
CKMB	= MB fraction of CK [0.0–5.5 mcg/L = 0.0–5.5 ng/mL] Fraction of total CK activity [0–0.04 = 0–4.0%]
Cl	= chloride [102–109] mEq/L

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CNS	= central nervous system
COHb	= carboxyhemoglobin
COPD	= chronic obstructive pulmonary disease
CPR	= cardio pulmonary resuscitation
Cr	= creatinine [0.5–0.9] mg/dL females, [0.6–1.2] males,
CRRT	= continuous renal replacement therapy
CSF	= cerebrospinal fluid
CT	= computed tomography (CAT scan)
CVA	= cerebrovascular accident
CVVHD	= continuous venovenous hemodiafiltration
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,that is, days since admission
DIC	= disseminated intravascular coagulation
Dx	= diagnosis
ECG	= electrocardiogram (EKG), leads = I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6
ECMO	= extracorporeal membrane oxygenation
ED	= emergency department, in these abstracts refers to the initial healthcare 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)
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
HCF	= healthcare 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 immunodefficiency virus
Hour	= when capitalized, Hour = hours since admission
HR	= Heart rate, beats per min
hrs	= hours
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
K	= potassium, [3.5–5] mEq/L
kg	= kilogram
L	= Liter
Lactate	= lactic acid [4.5–14.4] mg/dL arterial, [4.5–19.8] mg/dL venous
LBBB	= left bundle branch block on ECG
Leukocyte count	= white blood count [3.54–9.06] $10^3/mm^3$
m/o	= months old
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)
ME	= medical examiner
mEq	= milliequivalents
mEq/L	= milliequivalents per Liter
Mg	= magnesium [1.5–2.3] mg/dL
mg	= milligrams
mg/dL	= milligrams per deciliter
mg/kg	= milligrams per kilogram
mg/L	= milligrams per Liter
min	= minutes
ml	= milliliter
mmol/L	= millmoles per Liter
mosm/kg	= milliosmoles per kilogram
mosm/L	= milliosmoles per Liter
MRI	= Magnetic Resonance Imaging
ms	= milliseconds

Narrative Headers:

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 and beyond with outcome
Autopsy Findings: medical examiner and/or autopsy results

NG	= nasogastric
ng/mL	= nanograms per milliliter

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not detected	= analyte below the level of quantitation, negative
NPO	= nil per os, nothing by mouth
NS	= normal saline
O_2 sat	= oxygen percent saturation [94–100]% at sea level
OR	= operating room
Osm	= osmole
PALS	= pediatric advanced life support
PC	= poison center (= PCC, or Poison Control Center)
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] $\times 10^9$/L
PO	= per os ("by mouth" in Latin)
Potassium	= [3.5–5] mEq/L
ppm	= parts per million
PR	= P-R interval [120–200] ms 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
QRS	= ECG QRS complex duration [60–100] ms
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] ms, adult male [< 430] ms, adult female [< 450] ms
RBBB	= right bundle branch block on ECG
RBC	= red blood cell(s)
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, etc.)
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/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

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