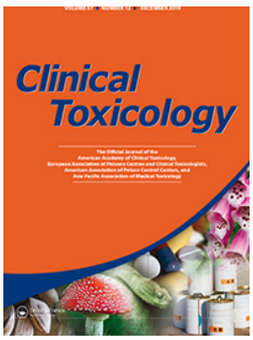

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NPDS REPORT 2018

2018 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS): 36th Annual Report

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This article was originally published with errors, which have now been corrected in the online version. Please see Correction (http://dx.doi.org/10.1080/15563650.2020.1722486)

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Fatality Narrative Contents

ABSTRACT

Introduction: This is the 36th Annual Report of the American Association of Poison Control Centers' (AAPCC) National Poison Data System (NPDS). As of 1 January, 2018, 55 of the nation's poison centers (PCs) uploaded case data automatically to NPDS. The upload interval was 7.72 [6.90, 12.0] (median [25%, 75%]) minutes, creating a near real-time national exposure and information database and surveillance system.

Methods: 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. Cases with medical outcomes of death were evaluated by a team of medical and clinical toxicologist reviewers using an ordinal scale of 1-6 to assess the Relative Contribution to Fatality (RCF) of the exposure.

Results: In 2018, 2,530,238 closed encounters were logged by NPDS: 2,099,751 human exposures, 57,017 animal exposures, 368,025 information requests, 5,346 human confirmed nonexposures, and 99 animal confirmed nonexposures. United States PCs also made 2,621,242 follow-up calls in 2018. Total encounters showed a 2.96% decline from 2017, while health care facility (HCF) human exposure cases remained nearly steady with a slight decrease of 0.261%. All information requests decreased by 15.5%, medication identification (Drug ID) requests decreased by 30.2%, and human exposure cases decreased by 0.729%. Human exposures with less serious outcomes have decreased 2.33% per year since 2008, while those with more serious outcomes (moderate, major or death) have increased 4.45% per year since 2000.

Consistent with the previous year, the top 5 substance classes most frequently involved in all human exposures were analgesics (10.8%), household cleaning substances (7.28%), cosmetics/personal care products (6.53%), sedatives/hypnotics/antipsychotics (5.53%), and antidepressants (5.22%). For cases with more serious outcomes, sedative/hypnotics/antipsychotics exposures were the class that increased most rapidly, by 1,828 cases/year (9.21%/year) over the past 18 years. Over just the past 10 years (for cases with the most serious outcomes) antidepressant exposures increased most rapidly, by 1,887 cases/year (7.02%/year).

The top 5 most common exposures in children age 5 years or less were cosmetics/personal care products (12.1%), household cleaning substances (10.7%), analgesics (9.04%), foreign bodies/toys/miscellaneous (6.87%), and topical preparations (4.69%). Drug identification requests comprised 18.2% of all information requests. NPDS documented 3,111 human exposures resulting in death; 2,582 (83.0%) of these were judged as related (RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).

Conclusions: These data support the continued value of PC expertise and need for specialized medical toxicology information to manage more serious exposures. Unintentional and intentional exposures continue to be a significant cause of morbidity and mortality in the US. The near real-time status of NPDS represents a national public health resource to collect and monitor US exposure cases and information requests. The continuing mission of NPDS is to provide a nationwide infrastructure for surveillance for all types of exposures (e.g., foreign body, infectious, venomous, chemical agent, or commercial product), and the identification and tracking of significant public health events. NPDS is a model system for the near real-time surveillance of national and global public health.

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

Introduction

This is the 36th Annual Report of the American Association of Poison Control Centers' (AAPCC; http://www.aapcc.org) National Poison Data System (NPDS) [1]. Fifty-five 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 patient-specific exposure management and poison information for entire year of 2018.

NPDS is the data warehouse for the nation's PCs. Poison centers place emphasis on exposure management, accurate data collection and coding, and responding to the continuing need for poison-related public and professional education. The PC's healthcare professionals are available free of charge to users, 24 hours a day, every day of the year. Poison centers respond to questions from the public, health care professionals, and public health agencies. The continuous staff dedication at the PCs is manifest as the number of exposure and information encounters averaging close to 3.5 million annually since the year 2000. Poison center encounters involve either an exposed human or animal (EXPOSURE CASE) or a request for information with no person or animal exposed to any foreign body, viral, bacterial, venom, chemical agent or commercial product (INFORMATION REQUEST). A unique feature of PC case management is the use of follow-up calls to monitor case progress, provide ongoing treatment recommendations, and to determine the medical outcome of the case.

What's new in this year's report?

- The most rapidly increasing substance categories resulting in more serious outcomes for the past 10 years are antidepressants, stimulants and street drugs, antihistamines and anticonvulsants.
- Figure 4 represents the most rapidly ascending substance categories over the 10-year period.
- Table 17B shows the most ascending substance categories over 10 years and also since the inception of NPDS (in 2000) reflecting the most recent trends while retaining methodology from prior annual reports.
- New in 2017 and again in this current report, the large Tables 21 & 22 have been moved to Appendices D & E (end of the text) for readability and easy reference.
- This report introduces the morbidity index to identify substances associated with the most serious outcomes among adolescent self-poisoning cases. This index is highlighted in the **Emerging Trends** sections and is illustrated in Figure 8.
- Self-poisoning suicide attempts by adolescents comprise an important **Emerging Trend**.

The NPDS products database

The NPDS products database contains over 444,000 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: IBM Watson Health). A robust generic coding system categorizes the product data into 1,112 active generic codes. These generic codes collapse into Pharmaceutical (543) and Non-Pharmaceutical (562) groups. These two groups are divided into Major (68) and Minor (184) 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 IBM Watson Health editorial and lexicon staff working to meet best terminology practices. The generic code system provides enhanced report granularity as reflected in Appendix E (Table 22). There were no new generic codes introduced in 2018.

Methods

Characterization of participating poison centers and population served

All 55 US PCs are accredited, and all submitted data to AAPCC through 31 December 2018. The entire population of the 50 United States, American Samoa, the District of Columbia, Federated States of Micronesia, Guam, Marshall Islands, Northern Marianas, Puerto Rico, and the US Virgin Islands was served by the US PC network in 2018 [1,2]

The average number of human exposure cases managed per day by all US PCs was 5,753. Similar to other years, higher volumes were observed in the warmer months, with a mean of 6,040 cases per day in May compared with 5,389 per day in December. On average, US PCs experienced a new encounter involving an actual human exposure every 15.0 seconds.

Encounter management – specialized poison exposure emergency providers

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

Encounters with US PCs are managed by healthcare professionals who have received specialized training in toxicology to allow for assessment, triage, management and monitoring of toxic exposure emergencies. These providers include medical and clinical toxicologists, registered nurses (RNs), pharmacists (PharmD or BS), physicians and physician assistants. Most commonly, RNs and pharmacists make up the contingent of "Specialists in Poison Information" (SPIs) or "Certified Specialists in Poison Information" (CSPIs) in the US. These (C)SPIs triage lay public callers to the most appropriate level of care and provide health care professionals with the most up-to-date management recommendations to care for their poisoned/overdosed patients. For a SPI to become nationally certified as a CSPI, (s)he must log a minimum of 1,200 hours in a PC and handle 2,000 human exposure cases

prior to being considered eligible to take the certification examination. RNs, pharmacists, physicians and physician assistants are the only individuals eligible to sit for the CSPI examination. Of note is the lack of an appropriate, core toxicology training within most graduate medical education curricula to allow these medical professionals to be prepared for PC patient management operations. These individuals must receive significant additional training beyond their degree programs to become (C)SPIs. Such training is only offered within the PCs. "Poison Information Providers" (PIPs) are allied healthcare professionals who are allowed to manage information-type and lower acuity (non-hospital) cases while working under the supervision of a CSPI. Poison centers undergo a rigorous accreditation process administered by the AAPCC and must submit an annual accreditation report and an extensive reaccreditation application every 7 years.

NPDS – near real-time data capture

Extensively enhanced over its predecessor, the Toxic Exposure Surveillance System (TESS), which began collecting data in 1983 and near real-time data since 2003, NPDS was launched on 12 April 2006. NPDS is the data repository for all US PCs and includes all case information collected by its predecessor. In 2018, all 55 US PCs uploaded case data automatically to NPDS in near real-time, making NPDS one of the few operational systems of its kind. Poison center staff record cases contemporaneously in 1 of 4 electronic medical record systems. Each PC uploads case data automatically. The average time to upload data for all PCs is 7.72 [6.90, 12.0] (median [25%, 75%]) minutes creating a near real-time national exposure database and surveillance system.

The web-based NPDS software facilitates the detection, analysis, and reporting of surveillance anomalies. System software offers a myriad of surveillance uses allowing AAPCC, its member centers and public health agencies to utilize NPDS exposure data. Users can access regional data for their own areas and view national aggregate data. Custom surveillance definitions are available, along with ad hoc reporting tools. Information in the NPDS database is dynamic. Each year the database is locked prior to extraction of annual report data to ensure consistent, reproducible reports. Additional information including autopsy data on fatalities may be added after the lock date as an addendum to the fatality abstract. The 2018 database was locked on 16 August 2019 at 05:00 PM EDT.

Annual report case inclusion criteria

Note: In this and last years' reports, human and animal "EXPOSURE CALLs" have been renamed to human and animal "EXPOSURE CASEs," since a single call may result in multiple cases and the NPDS database contains information about individual exposure cases. The information in this report reflects only those cases that are not duplicates and classified by the PC as CLOSED. A case is closed when the PC has determined that no further follow-up/recommendations are required or no further information is available. Exposure cases are followed to obtain the most precise medical outcome possible. Depending on the case specifics, most cases are "closed" within a few hours of the initial contact. Cases involving complex hospitalized patients or resulting in death may remain open for months while data continue to be collected. Follow-up contacts provide a proven mechanism for monitoring the appropriateness of management recommendations, enabling continual updates of case information, augmenting patient guidelines, providing poison prevention education, and obtaining final medical outcomes to make the data collected as accurate and complete as possible.

Statistical methods

All tables except Tables 1A, 3B and 17B were generated directly by the NPDS web-based application and can thus be reproduced by each PC. The analyses for Figures 1-4 were done using SAS JMP® version 12.0.1 (SAS Institute, Cary, NC) and summary counts were generated by the NPDS web-based application. The analysis for Figures 5-8 and Table 17B were done using Microsoft Excel 2016 (Microsoft, Redmond, WA) with the RegressItPC add-in (RegressIt$_{TM}$, version 2019.07.08).

NPDS surveillance

As previously noted, all active US PCs upload case data automatically to NPDS. This unique near real-time upload is the foundation of the NPDS surveillance system, making both spatial and temporal case volume and case-based surveillance possible. NPDS allows creation of volume and case-based definitions. Definitions can be applied to national, regional, state, or ZIP code coverage areas. Geocentric definitions can also be created, which use cases reported from a geographic location regardless of which PC managed the case. This functionality is available to every PC as well as the AAPCC surveillance team. Poison centers also have the ability to share NPDS near 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 such as contaminated food or product recalls. Thus, NPDS can provide near real-time adverse event monitoring, surveillance, response and situational awareness.

Surveillance definitions can be created to monitor a variety of parameters (i.e., volume or case based) 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

Table 1A. AAPCC population served and reported exposures (1983–2018).

Year	No. of participating centers	Population served (in millions)	Human exposures	Exposures per thousand population
1983	16	43.1	251,012	5.8
1984	47	99.8	730,224	7.3
1985	56	113.6	900,513	7.9
1986	57	132.1	1,098,894	8.3
1987	63	137.5	1,166,940	8.5
1988	64	155.7	1,368,748	8.8
1989	70	182.4	1,581,540	8.7
1990	72	191.7	1,713,462	8.9
1991	73	200.7	1,837,939	9.2
1992	68	196.7	1,864,188	9.5
1993	64	181.3	1,751,476	9.7
1994	65	215.9	1,926,438	8.9
1995	67	218.5	2,023,089	9.3
1996	67	232.3	2,155,952	9.3
1997	66	250.1	2,192,088	8.8
1998	65	257.5	2,241,082	8.7
1999	64	260.9	2,201,156	8.4
2000	63	270.6	2,168,248	8.0
2001	64	281.3	2,267,979	8.1
2002	64	291.6	2,380,028	8.2
2003	64	294.7	2,395,582	8.1
2004	62	293.7	2,438,643	8.3
2005	61	296.4	2,424,180	8.2
2006	61	299.4	2,403,539	8.0
2007	61	305.6	2,482,041	8.1
2008	61	308.5[b]	2,491,049	8.1
2009	60	310.9[b]	2,479,355	8.0
2010	60[a]	313.3[b]	2,384,825	7.6
2011	57[c]	315.7[b]	2,334,004	7.4
2012	57	318.0[b]	2,275,141	7.2
2013	57[d]	320.2[e]	2,188,013	6.8
2014	56[d]	322.9[f]	2,165,142	6.7
2015	55[g]	325.4[h]	2,168,371	6.7
2016	55	327.0[i]	2,159,032	6.6
2017	55	330.4[j]	2,115,186	6.4
2018	55	333.0[k]	2,099,751	6.3
Total			**70,824,850**	

[a]As of 1 July 2010 there were 60 Participating Centers.
[b]AAPCC Total as of 1 July Mid Year US Census (2012 data for 50 United States, District of Columbia and Puerto Rico; 2011 data for Guam; 2010 data for American Samoa, Federated States of Micronesia, and the US Virgin Islands)
[c]As of 1 July 2011 there were 57 Participating Centers.
[d]One Participating Center closed in September 2013. Its data is included in the 2013 totals but not in the 2014 data.
[e]AAPCC Total as of 1 July Mid Year US Census (2013 data for 50 United States, District of Columbia and Puerto Rico, Guam, American Samoa, Federated States of Micronesia, and the US Virgin Islands)
[f]AAPCC Total as of 1 July Mid Year US Census (2014 data for 50 United States, District of Columbia and Puerto Rico, Guam, American Samoa, Federated States of Micronesia, and the US Virgin Islands) (2)
[g]One Participating Center closed in July 2014. Its data is included in the 2014 totals but not in the 2015 data.
[h]AAPCC Total as of 1 July Mid Year US Census (2015 data for 50 United States, District of Columbia and Puerto Rico, Guam, American Samoa, Federated States of Micronesia, and the US Virgin Islands) (2)
[i]AAPCC Total as of 1 July Mid Year US Census (2016 data for 50 United States, District of Columbia and Puerto Rico, Guam, American Samoa, Federated States of Micronesia, and the US Virgin Islands) (2)
[j]AAPCC Total as of 1 July Mid Year US Census (2017 data for 50 United States, District of Columbia and Puerto Rico, Guam, American Samoa, Federated States of Micronesia, and the US Virgin Islands) (2)
[k]AAPCC Total as of 1 July Mid Year US Census (2018 data for 50 United States, District of Columbia and Puerto Rico, Guam, American Samoa, Federated States of Micronesia, Marshall Islands, Northern Marianas Islands, and the US Virgin Islands) (2).

Table 1B. Non-human exposures by animal type.

Animal	N	%
Dog	51,492	90.31
Cat	4,775	8.37
Bird	149	0.26
Rodent / lagomorph	119	0.21
Horse	97	0.17
Sheep / goat	65	0.11
Cow	36	0.06
Aquatic	23	0.04
Other	261	0.46
Total	**57,017**	**100.00**

444,000 entries ranging from viral and bacterial agents to commercial chemical and drug products. Surveillance definitions may be constructed using volume or case-based definitions with a variety of mathematical options and historical baseline periods from 1 to 5 years. NPDS surveillance tools include:

- Volume Alert Surveillance Definitions
  - Total Encounter Volume
  - Human Exposure Case Volume
  - Animal Exposure Case Volume
  - Information Request Volume
  - Clinical Effects Volume (signs and symptoms, or laboratory abnormalities)
  - Syndromic Surveillance Volume - allows Boolean based definitions utilizing various NPDS data fields to be run based on historical trends for user defined periods of interest
- Case Based Surveillance Definitions utilizing various NPDS data fields linked in Boolean expressions
  - Substance
  - Clinical Effects
  - Species
  - Medical Outcome and others

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

AAPCC Surveillance Team clinical and medical toxicologists review surveillance definitions on a regular basis to fine-tune the queries. The CDC, as well as state and local health departments with NPDS access 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.

Emerging trends

Each year since the 2007 annual report, the authors have selected a topic that highlights recent interesting and

Table 1C. Distribution of information requests.

Information request type	N	% of Info. requests
Drug identification		
Public inquiry: Drug sometimes involved in abuse	20,907	5.68
Public inquiry: Drug not known to be abused	13,563	3.69
Public inquiry: Unknown abuse potential	434	0.12
Public inquiry: Unable to identify	6,420	1.74
HCP inquiry: Drug sometimes involved in abuse	659	0.18
HCP inquiry: Drug not known to be abused	1,038	0.28
HCP inquiry: Unknown abuse potential	39	0.01
HCP inquiry: Unable to identify	455	0.12
Law Enf. Inquiry: Drug sometimes involved in abuse	13,503	3.67
Law Enf. Inquiry: Drug not known to be abused	7,204	1.96
Law Enf. Inquiry: Unknown abuse potential	327	0.09
Law Enf. Inquiry: Unable to identify	2,086	0.57
Other drug ID	483	0.13
Subtotal	**67,118**	**18.24**
Drug information		
Adverse effects (no known exposure)	7,381	2.01
Brand / generic name clarifications	543	0.15
Calculations	90	0.02
Compatibility of parenteral medications	141	0.04
Compounding	180	0.05
Contraindications	1,142	0.31
Dietary supplement, herbal, and homeopathic	540	0.15
Dosage	9,591	2.61
Dosage form / formulation	1,122	0.30
Drug use during breast-feeding	1,471	0.40
Drug-drug interactions	19,853	5.39
Drug-food interactions	1,414	0.38
Foreign drug	68	0.02
Generic substitution	136	0.04
Indications / therapeutic use	4,719	1.28
Medication administration	4,477	1.22
Medication availability	343	0.09
Medication disposal	1,296	0.35
Pharmacokinetics	1,089	0.30
Pharmacology	460	0.12
Regulatory	1,092	0.30
Stability / storage	1,637	0.44
Therapeutic drug monitoring	296	0.08
Other drug info	13,218	3.59
Subtotal	**72,299**	**19.65**
Environmental information		
Air quality	1,531	0.42
Carbon monoxide - no known patient(s)	469	0.13
Carbon monoxide alarm use	240	0.07
Chem / bioterrorism / weapons (suspected or confirmed)	10	0.00
Clarification of media reports of environmental contamination	17	0.00
Clarification of substances involved in a HAZMAT incident - no known victim(s)	76	0.02
General questions about contamination of air and / or soil	230	0.06
HAZMAT planning	63	0.02
Lead - no known patient(s)	307	0.08
Mercury thermometer cleanup	786	0.21
Mercury (excluding thermometers) cleanup	1,170	0.32
Notification of a HAZMAT incident - no known patient(s)	670	0.18
Pesticide application by a professional pest control operator	492	0.13
Pesticides (other)	2,019	0.55
Potential toxicity of chemicals in the environment	948	0.26
Radiation	43	0.01
Safe disposal of chemicals	951	0.26
Water purity / contamination	893	0.24
Other environmental	2,694	0.73
Subtotal	**13,609**	**3.70**
Medical information		
Dental questions	64	0.02
Diagnostic or treatment recommendations for diseases or conditions - non-toxicology	4,926	1.34
Disease prevention	446	0.12
Explanation of disease states	508	0.14
General first-aid	763	0.21
Interpretation of non-toxicology laboratory reports	107	0.03
Medical terminology questions	45	0.01
Rabies - no known patient(s)	245	0.07
Sunburn management	97	0.03
Other medical	12,693	3.45
Subtotal	**19,894**	**5.41**
Occupational information		
Occupational treatment / first-aid guidelines - no known patient(s)	30	0.01
Information on chemicals in the workplace	76	0.02
MSDS interpretation	57	0.02
Occupational MSDS requests	270	0.07
Routine toxicity monitoring	19	0.01
Safe handling of workplace chemicals	69	0.02
Other occupational	136	0.04
Subtotal	**657**	**0.18**
Poison information		
Analytical toxicology	628	0.17
Carcinogenicity	79	0.02
Food poisoning - no known patient(s)	2,049	0.56
Food preparation / handling practices	5,176	1.41
General toxicity	22,880	6.22
Mutagenicity	24	0.01
Plant toxicity	1,338	0.36
Recalls of non-drug products (including food)	442	0.12
Safe use of household products	3,933	1.07
Toxicology information for legal use / litigation	139	0.04
Other poison	12,612	3.43
Subtotal	**49,300**	**13.40**
Prevention / Safety / Education		
Confirmation of poison center number	11,693	3.18
General (non-poison) injury prevention requests	274	0.07
Media requests	534	0.15
Poison prevention material requests	5,521	1.50
Poison prevention week date inquiries	52	0.01
Professional education presentation requests	183	0.05
Public education presentation requests	287	0.08
Other prevention	659	0.18
Subtotal	**19,203**	**5.22**
Teratogenicity information		
Teratogenicity	795	0.22
Subtotal	**795**	**0.22**
Other information		
Other	48,944	13.30
Subtotal	**48,944**	**13.30**
Substance Abuse		
Drug screen information	1,644	0.45
Effects of illicit substances - no known patient(s)	110	0.03
New trend information	111	0.03
Withdrawal from illicit substances - no known patient(s)	103	0.03
Other substance abuse	457	0.12
Subtotal	**2,425**	**0.66**
Administrative		
Expert witness requests	30	0.01
Faculty activities	26	0.01
Funding	15	0.00
Personnel issues	119	0.03
Poison center record request	141	0.04
Product replacement / malfunction (issues intended for the manufacturer)	1,469	0.40
Scheduling of poison center rotations	47	0.01
Other administration	18,954	5.15
Subtotal	**20,801**	**5.65**
Caller Referred		
Immediate referral - animal poison center or veterinarian	23,460	6.37
Immediate referral - drug identification	700	0.19
Immediate referral - drug information	103	0.03
Immediate referral - health department	8,345	2.27

(*continued*)

(*continued*)

Table 1C. Continued.

Information request type	N	% of Info. requests
Immediate referral - medical advice line	537	0.15
Immediate referral - pediatric triage service	112	0.03
Immediate referral - pesticide hotline	248	0.07
Immediate referral - pharmacy	361	0.10
Immediate referral - poison center	5,538	1.50
Immediate referral - private physician	1,682	0.46
Immediate referral - psychiatric crisis line	78	0.02
Immediate referral - teratology information program	175	0.05
Other call referral	11,641	3.16
Subtotal	**52,980**	**14.40**
Total	**368,025**	**100.00**

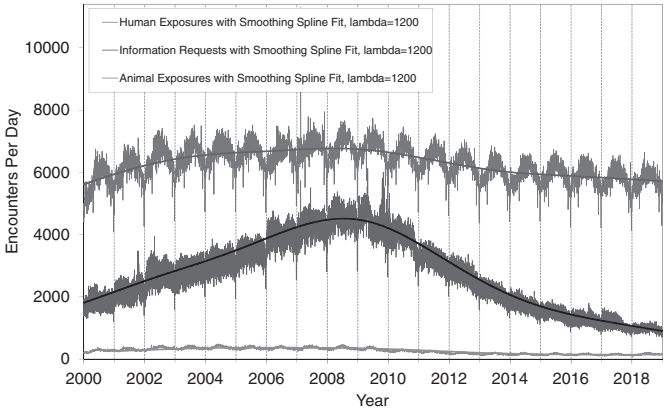

Figure 1. Human exposure cases, information requests and animal exposure cases by day since 1 January 2000. Smoothing spline fits using lambda = 1200 for human exposures had associated RSqr = 0.468, information requests RSqr = 0.916 and animal exposures RSqr = 0.877.

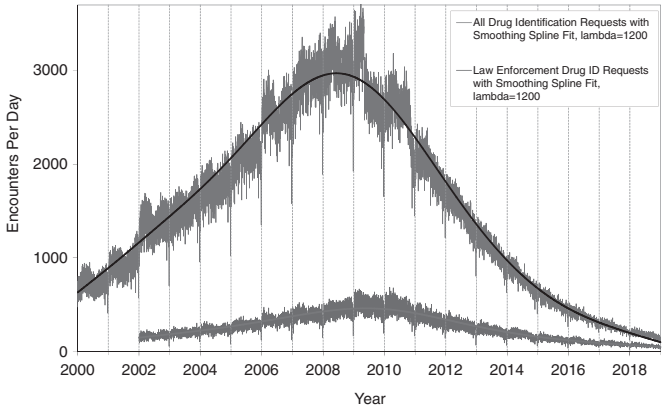

Figure 2. All drug identification and law enforcement drug identification requests by day since 1 January 2000. Smoothing spline fits used lambda = 1200, all drug identification requests had associated RSqr = 0.965 and law enforcement drug ID requests RSqr = 0.875.

sometimes alarming trends in NPDS data. Past trends have compared NPDS findings to other datasets such as Google Trends and CDC reports. Two of the last 3 years focused on the opioid epidemic. Suicides present a concerning trend in the US, impacting especially adolescents [3]. This trend appears to hold true throughout the present decade and for the entire age group in their 2nd decade of life [4]. Surprisingly, the opioid epidemic does not appear to be

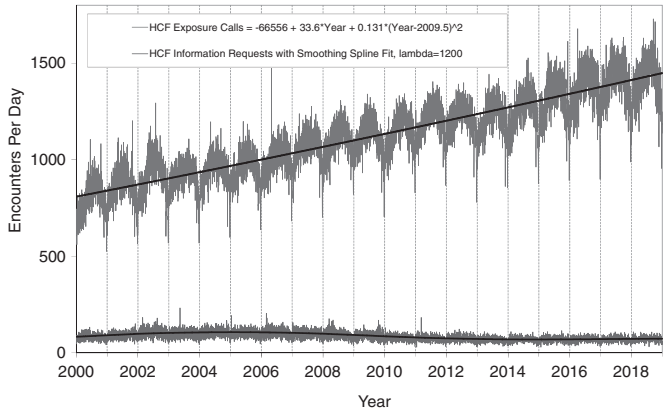

Figure 3. Health care facility (HCF) exposure cases and HCF information requests by day since 1 January 2000. Both linear and second order (quadratic) terms were statistically significant ($p < 0.001$) for regression of HCF human exposure with associated RSqr = 0.780. The quadratic coefficient is positive meaning the case counts are increasing faster than linearly. Smoothing spline fit with lambda = 1200 for HCF information requests had associated RSqr = 0.370.

responsible for this trend, though adolescent deaths from opioid poisoning tripled between 1999 and 2016 [4,5].

For the 2018 report, we evaluated all closed human exposures by year from January 1, 2010 through December 31, 2018 with a focus on adolescent intentional – suspected suicides (see the sections below on Suicides). The percent change from year 2000 for all ages and ages 10-19 years were calculated and compared. In addition, the most rapidly increasing minor substance categories in 10-19 year-old intentional - suspected suicides was calculated using linear regression on single or multi-substance exposures to determine the mean increase per year with 95% confidence intervals for the 8-year period of January 1, 2011 to December 31, 2018. To identify individual generic codes that might identify the most serious outcomes in the 10-19 year-old intentional – suspected suicide exposures, we calculated a morbidity index with binomial 95% confidence intervals for single-substance exposures over the same 8-year period. The morbidity index was calculated as 1000x the ratio of serious medical outcomes to total exposure cases in this subgroup. Serious medical outcomes were defined as Moderate, Major or Death. Findings are presented in the sections on Emerging Trends – Adolescent Suicides and in Distribution of Suicides.

Fatality case review and abstract selection

NPDS fatality cases are recorded as DEATH or DEATH (INDIRECT REPORT). Medical outcome of DEATH is by direct report. DEATHS (INDIRECT REPORT) are deaths that the PC acquired from medical examiners or media but did not manage or answer any questions related specifically to that case.

Although PCs may report death as an outcome, the death may not be a 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

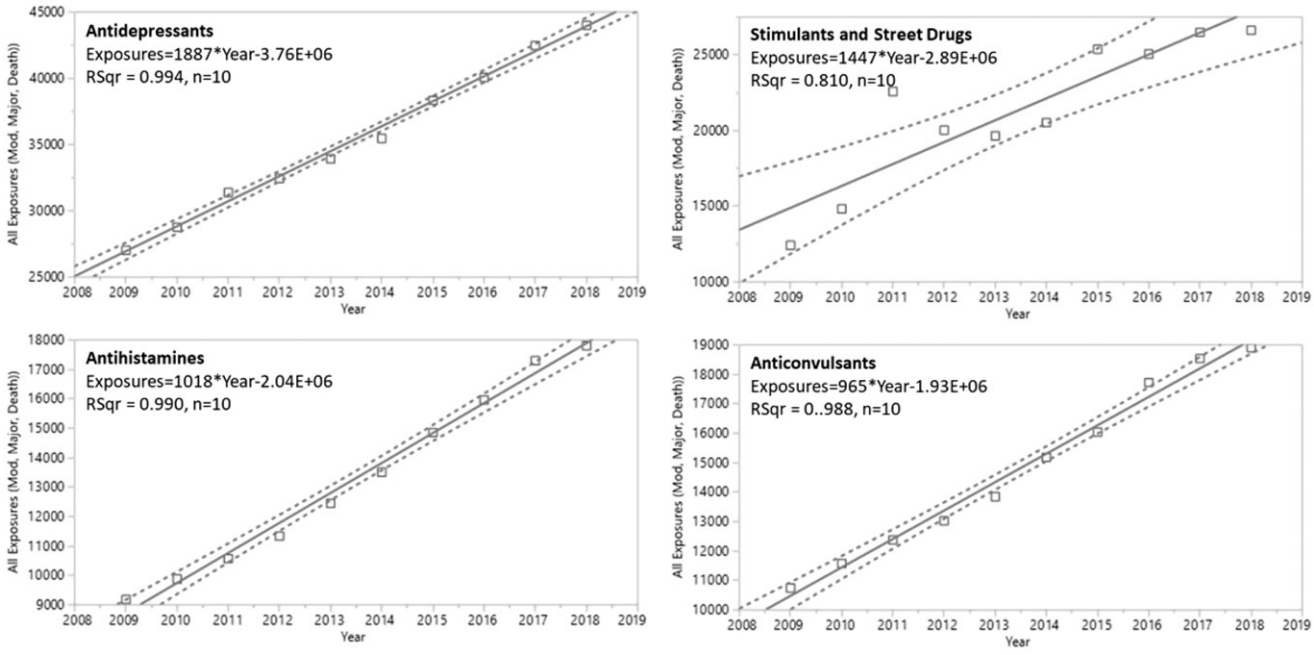

Figure 4. Substance categories with the greatest rate of exposure increase since 1 January 2010 for more severe outcomes (top 4). Solid lines show least-squares linear regressions for the human exposure cases per year for that category (□). Broken lines show 95% confidence interval on the regression.

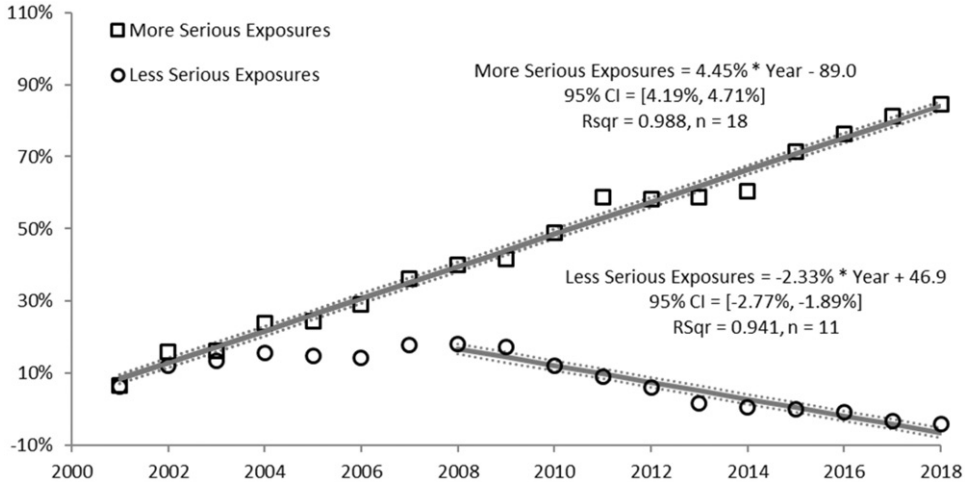

Figure 5. Change in encounters by outcome from year 2000. The figure shows the percent change from baseline (year 2000) for human exposure cases divided among the 10 medical outcomes. The more serious exposures (major, moderate and death) increased. The less serious exposures (no effect, minor effect, not followed (non-toxic), not followed (minimal toxicity possible), unable to follow (potentially toxic) and unrelated effect) decreased after 2008. Solid lines show least-squares linear regressions for the change in more serious exposures per year (□) and less serious exposures (○). Broken lines show 95% confidence intervals on the regression.

methods to select abstracts for publications are described in Appendix C. The AAPCC fatality review process was first published in detail in the 2008 NPDS annual report [1].

Pediatric fatality case review

A focused Pediatric Fatality Review team comprised of 6 pediatric toxicologists evaluated cases for patients under 19 years of age. The panel reviewed the documentation of all such cases, with specific focus on the conditions behind the poisoning exposure and finding commonalities which might inform efforts at prevention. The reviewed pediatric fatality cases exhibited a bimodal age distribution. Exposures causing death in children ≤5 years of age were mostly coded as "Unintentional-General," while those in ages >13 years were mostly "Intentional." As has been true for several years, the circumstances of the case are often not captured in the reason code or the narrative. The pediatric fatality review team continues to encourage the procurement of further detail regarding law enforcement or child protective services involvement, postmortem investigation, and the means by which the child accessed the substances responsible for the fatality. Poison Centers are encouraged to heed previously published pediatric narrative guidelines to improve the determination of causality, and preventability, wherever possible.

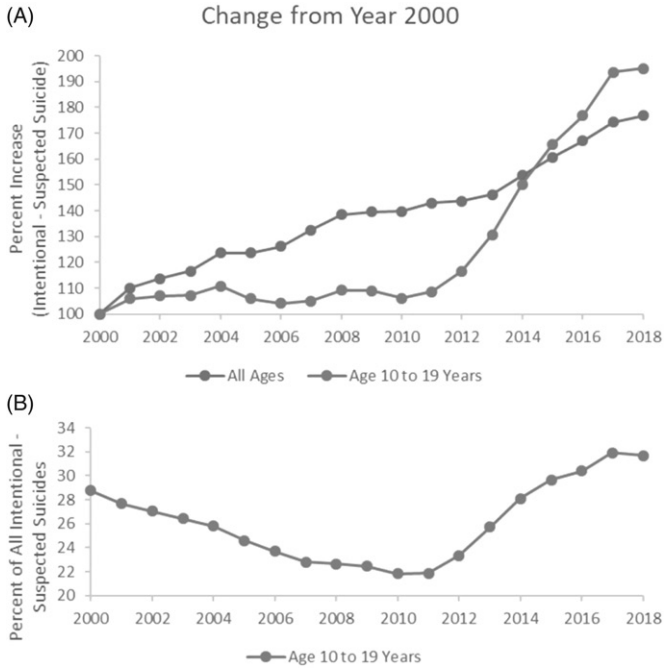

Figure 6. Change in intentional – suspected suicides from year 2000. The figure shows the percent change from baseline (year 2000) for human exposure cases for Intentional – Suspected Suicide for all ages and those aged 10-19 years. Panel A: Intentional – Suspected Suicide exposures increased in both groups, with those in the 10-19 year ages increasing more rapidly since 2010. Panel B: The percentage of all 10-19 year old Intentional – Suspected Suicides started at 28.7% in year 2000, slowly declined reaching a nadir of 21.8% in year 2010 and then rapidly increased to 31.7% by year 2018.

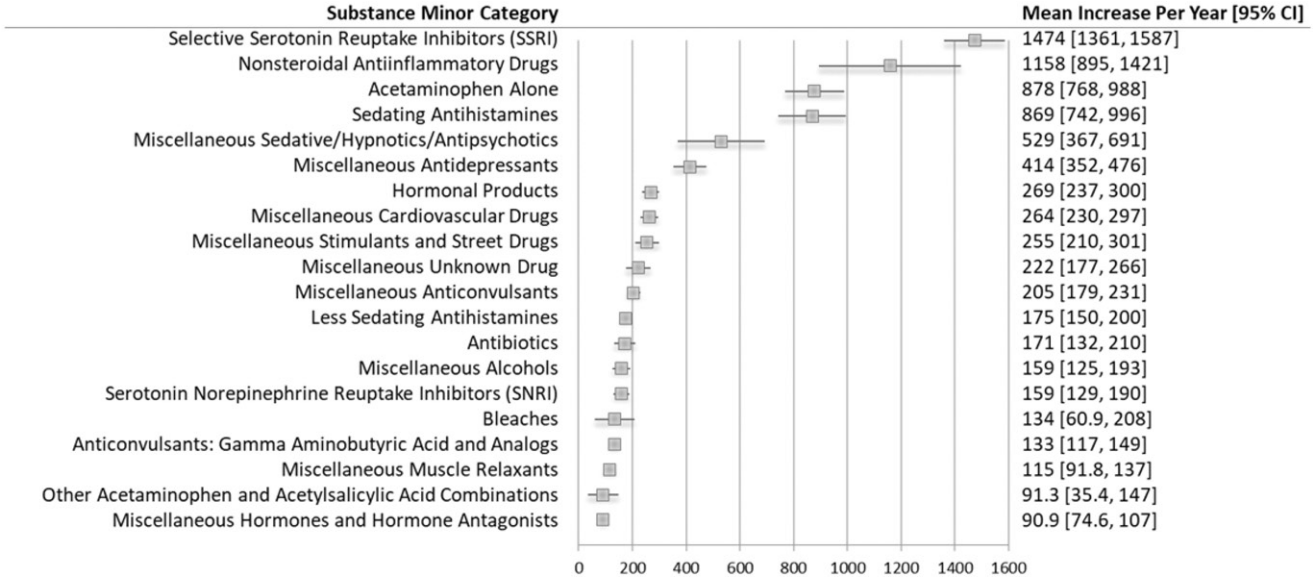

Figure 7. Substance categories with the greatest rate of exposure increase since 1 January 2011 for serious outcomes in 10 to 19 year intentional – Suspected Suicide exposures. The Forest Plot shows the 20 substance categories with the greatest rate of exposure increase from year 2011 for Intentional – Suspected Suicide exposures in the 10-19 year age group. Substance categories include single or multi-substance exposures. The boxes show the mean increase per year determined by least-squares linear regression with the whiskers depicting the 95% confidence interval on the regression.

Results

Information requests to poison centers

Data from 368,025 information requests to PCs in 2018 (Table 1C) was transmitted to NPDS, including requests in optional reporting categories such as prevention/safety/education (19,203), administrative (20,801), and caller referral (52,980).

Figure 2 shows that all Drug ID requests have decreased dramatically since mid-2008. Answering Drug ID requests is optional for poison centers and some have stopped answering these requests due to staffing constraints. Law enforcement Drug ID requests also showed a decline. The most frequent information request was for Drug ID, comprising 67,118 requests with PCs during the year. Of these, 35,069 (52.2%) were identified as drugs with known abuse potential.

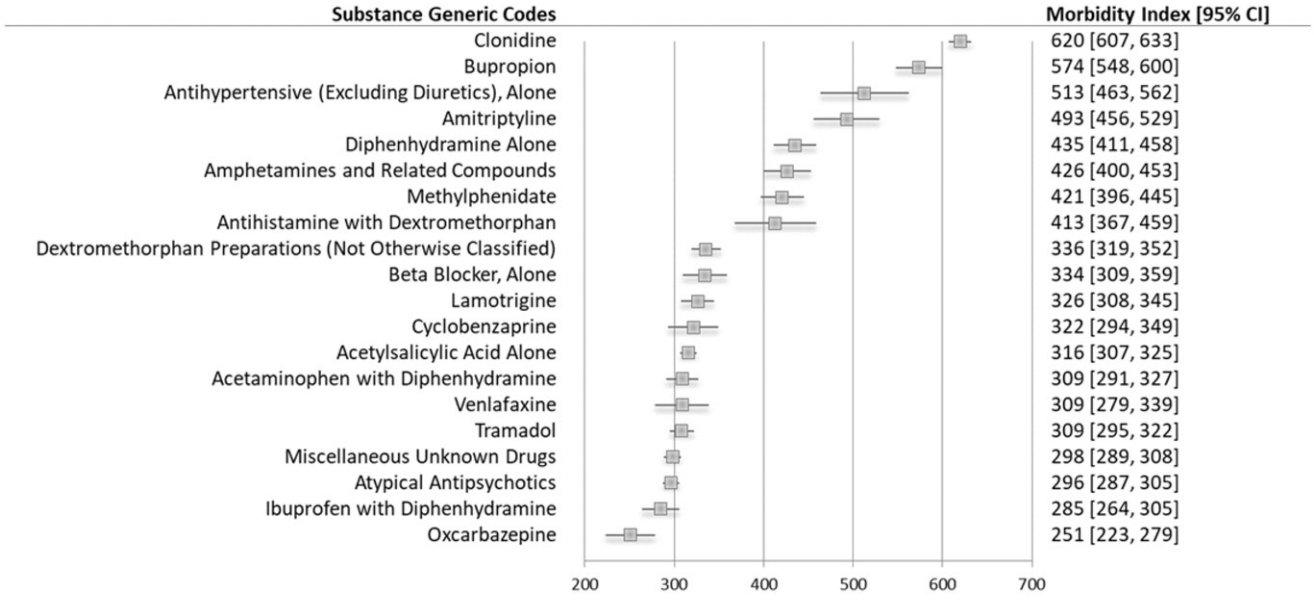

Figure 8. Generic substance codes with the greatest morbidity index since 1 january 2011 for 10 to 19 year intentional – suspected suicide exposures. The Forest Plot shows the 20 generic codes with the greatest Morbidity Index since year 2011 for single-substance Intentional – Suspected Suicide exposures in the 10-19 year age group. The morbidity index was calculated as the rate of serious medical outcomes (serious cases divided by all cases X1000) over the 8-year time period. Serious medical outcomes were defined as moderate, major or death. The boxes show the Morbidity Index with the whiskers depicting the 95% confidence interval for a binomial distribution.

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 requests decreased 4.89% from 2017 (76,014 requests) to 2018 (72,299 requests), the percentage of these slightly increased to 19.7% of all information requests. The most common drug information requests were about drug-drug interactions, followed by other drug information, questions about dosage, inquiries of adverse effects (without a known exposure), and therapeutic use and indications. Environmental inquiries comprised 3.70% of all information requests. Of these environmental inquiries, specific questions related to pesticides were most common, followed by cleanup of mercury (thermometers and other), and air quality.

Of all the information requests, poison information comprised 13.4% of the requests with inquiries involving general toxicity the most common followed by questions involving food preparation handling practices, safe use of household products, and food poisoning.

Exposure cases logged at poison centers

In 2018, participating PCs logged 2,530,238 total encounters including 2,099,751 closed human exposure cases (Table 1A), 57,017 animal exposures (Table 1B), 368,025 information requests (Table 1C), 5,346 human confirmed non-exposures, and 99 animal confirmed non-exposures. An additional 156 cases were still open at the time the database was locked. The cumulative AAPCC database now contains more than 70 million human exposure case records (Table 1A). A total of 19,618,430 information requests have been logged into the AAPCC database since the year 2000.

Figure 1 shows the human exposures, information requests and animal exposures by day since 1 January 2000. Smoothing spline fit of these data shows departure from linearity (declining rate of cases since mid-2007) for Human Exposure cases with some flattening over the last 2 years. information requests are declining more rapidly and are also described by a smoothing spline fit, and Animal Exposure cases have likewise been declining since mid-2005. The 2 May 2006 exposure data spike on Figure 1 was the result of 602 children in a Midwest school reporting a noxious odor which caused anxiety but resolved without sequelae.

A hallmark of PC case management is the use of follow-up contacts to monitor case progress and medical outcome. US PCs made 2,621,242 follow-up contacts in 2018. Follow-up was performed in 45.7% of human exposure cases. One follow-up contact was made in 21.0% of human exposure cases and multiple follow-ups (range 2-201) were performed in 24.8% of cases. For human exposure cases in which follow-up contacts were documented, an average of 2.65 contacts per case were done.

Figure 3 shows a graphic summary and analyses of Health Care Facility (HCF) exposure and HCF information requests. HCF exposure cases slightly departs from linearity but continues to increase at a steady rate, while the rate of HCF information requests has declined since early 2005 but leveled off since late 2013. This increasing use of the PCs for the more serious exposures (HCF cases) is important in the face of the overall decline in exposure and information encounters.

Tables 22A (Nonpharmaceuticals) and 22B (Pharmaceuticals) (in Appendix E) provide summary demographic data on patient age, reason for exposure, medical outcome, and use of an HCF for all 2,099,751 human exposure cases, presented by substance categories. The Pharmaceuticals category includes both licit and illicit drugs.

Column 1: Name of the major, minor generic categories and their associated generic substances (Alternate Names). Note that for pharmaceuticals, the generic category or generic substance listed is for the initial FDA approved indication and may not reflect current indications or uses for the pharmaceutical.

Column 2: Number of Case Mentions (all exposures) in grey shading, displays the number of times the specific generic code was reported in any human exposure case. If a human exposure case has multiple instances of a specific generic code it is only counted once.

Column 3: Number of Single Exposures displays the number of human exposure cases that identified only 1 substance (1 case, 1 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 RCF.

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

Table 2. Site of call and site of exposure, human exposure cases.

	Site of caller		Site of exposure	
Site	N	%	N	%
Residence				
Own	1,384,929	65.96	1,896,286	90.31
Other	27,221	1.30	43,736	2.08
Workplace	23,540	1.12	40,850	1.95
Health care facility	513,728	24.47	6,920	0.33
School	11,075	0.53	32,401	1.54
Restaurant / food service	484	0.02	4,132	0.20
Public area	8,612	0.41	23,687	1.13
Other	123,430	5.88	27,666	1.32
Unknown	6,732	0.32	24,073	1.15

Table 3B. Population-adjusted exposures by age group.

Age Group	Exposures/100k population	Number of Exposures[a]	Population[b]
Children (<20)			
<1	2,525	103,979	4,118,388
1	7,189	295,411	4,109,372
2	6,936	284,308	4,098,763
3	3,304	135,029	4,086,292
4	1,637	66,653	4,070,976
5	986	39,967	4,052,875
Child 6-12	454	131,587	29,007,680
Teen 13-19	579	172,412	29,756,012
Subgroup	**1,483**	**1,235,741**	**83,300,358**
Adults (≥20			
20-29	411	190,567	46,384,620
30-39	354	156,932	44,363,498
40-49	286	117,884	41,149,992
50-59	261	113,686	43,589,684
60-69	231	88,375	38,203,969
70-79	243	56,183	23,131,098
80-89	284	28,922	10,200,727
90+	266	7,132	2,677,064
Subgroup	**340**	**849,884**	**249,700,652**
Overall Total	**631**	**2,099,751**	**333,001,010**

[a]Number of Exposures excludes UNKNOWN ages from the individual age categories, but includes them in the Subtotals and Overall Total (see Table 3A)
[b]AAPCC Total as of 1 July 2018, 333,001,010 (see Table 1A) [2].

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	53,890	51.83	49,689	47.79	400	0.38	103,979	4.95	103,979	4.95
1	153,283	51.89	141,585	47.93	543	0.18	295,411	14.07	399,390	19.02
2	148,272	52.15	135,420	47.63	616	0.22	284,308	13.54	683,698	32.56
3	74,582	55.23	60,058	44.48	389	0.29	135,029	6.43	818,727	38.99
4	37,859	56.80	28,505	42.77	289	0.43	66,653	3.17	885,380	42.17
5	23,118	57.84	16,642	41.64	207	0.52	39,967	1.90	925,347	44.07
Unknown ≤5	887	41.45	794	37.10	459	21.45	2,140	0.10	927,487	44.17
Child 6-12	74,582	56.68	55,598	42.25	1,407	1.07	131,587	6.27	1,059,074	50.44
Teen 13-19	65,006	37.70	106,442	61.74	964	0.56	172,412	8.21	1,231,486	58.65
Unknown Child	1,593	37.44	1,608	37.79	1,054	24.77	4,255	0.20	1,235,741	58.85
Subtotal	**633,072**	**51.23**	**596,341**	**48.26**	**6,328**	**0.51**	**1,235,741**	**58.85**	**1,235,741**	**58.85**
Adults (≥20)										
20-29	87,057	45.68	103,257	54.18	253	0.13	190,567	9.08	1,426,308	67.93
30-39	69,712	44.42	87,094	55.50	126	0.08	156,932	7.47	1,583,240	75.40
40-49	48,746	41.35	69,059	58.58	79	0.07	117,884	5.61	1,701,124	81.02
50-59	46,525	40.92	67,085	59.01	76	0.07	113,686	5.41	1,814,810	86.43
60-69	34,201	38.70	54,118	61.24	56	0.06	88,375	4.21	1,903,185	90.64
70-79	20,596	36.66	35,566	63.30	21	0.04	56,183	2.68	1,959,368	93.31
80-89	10,119	34.99	18,781	64.94	22	0.08	28,922	1.38	1,988,290	94.69
≥90	2,244	31.46	4,885	68.49	3	0.04	7,132	0.34	1,995,422	95.03
Unknown adult	34,612	38.37	53,366	59.16	2,225	2.47	90,203	4.30	2,085,625	99.33
Subtotal	**353,812**	**41.63**	**493,211**	**58.03**	**2,861**	**0.34**	**849,884**	**40.48**	**2,085,625**	**99.33**
Other										
Unknown age	4,846	34.31	6,432	45.53	2,848	20.16	14,126	0.67	2,099,751	100.00
Total	**991,730**	**47.23**	**1,095,984**	**52.20**	**12,037**	**0.57**	**2,099,751**	**100.00**	**2,099,751**	**100.00**

(87.9%) of all exposures. In contrast, only 43.7% of fatalities are single substance exposures (Table 5).

Tables 22A and 22B (Appendix E) tabulate 2,524,733 substance-exposures, of which 1,844,966 were single-substance exposures, including 949,972 (51.5%) nonpharmaceuticals and 894,994 (48.5%) pharmaceuticals. In 23.6% of single-substance exposures that involved pharmaceutical substances, the reason for exposure was intentional, compared to only 4.16% when the exposure involved a nonpharmaceutical substance. Correspondingly, treatment in an HCF was provided in a higher percentage of exposures that involved pharmaceutical substances (34.5%) compared with nonpharmaceutical substances (17.3%). Exposures to pharmaceuticals also had more severe outcomes. Of single-substance exposure-related fatal cases, 1,058 (78.3%) were pharmaceuticals compared with 293 (21.7%) nonpharmaceuticals.

Age and gender distributions

The age and gender distribution of human exposures is outlined in Table 3A. Children younger than 3 years of age were involved in 32.6% of exposures and children ≤5 years accounted for approximately half of all human exposures (44.2%). A male predominance was found among cases involving children ≤12 years, but this gender distribution was reversed in teenagers and adults, with females comprising the majority of reported exposures. The overall rate of poison exposures reported to PCs is 631/100,000 population (Table 3B). The highest rates of poison exposures are in 1-year-old children (7,189/100,000 population) and 2-year-old children (6,936/100,000 population). Rates declined with age from 454/100,000 population in children 6-12 to 340/100,000 population in adults ≥20 years.

Table 4. Distribution of age[a] and gender for fatalities[b].

Age (y)	Male	Female	Unknown	Total (%)	Cumulative total (%)
< 1 year	2	1	0	3 (0.2%)	3 (0.2%)
1 year	1	4	0	5 (0.4%)	8 (0.6%)
2 years	3	0	0	3 (0.2%)	11 (0.8%)
3 years	1	0	0	1 (0.1%)	12 (0.9%)
4 years	2	0	0	2 (0.2%)	14 (1.0%)
5 years	0	0	0	0 (0.0%)	14 (1.0%)
Child 6-12 years	4	2	1	7 (0.5%)	21 (1.6%)
Teen 13-19 years	24	41	0	65 (4.8%)	86 (6.4%)
20-29 years	121	71	0	192 (14.2%)	278 (20.5%)
30-39 years	143	91	0	234 (17.3%)	512 (37.8%)
40-49 years	95	91	0	186 (13.7%)	698 (51.6%)
50-59 years	129	139	0	268 (19.8%)	966 (71.3%)
60-69 years	93	105	0	198 (14.6%)	1,164 (86.0%)
70-79 years	41	65	0	106 (7.8%)	1,270 (93.8%)
80-89 years	25	38	0	63 (4.7%)	1,333 (98.5%)
> = 90 years	6	9	0	15 (1.1%)	1,348 (99.6%)
Unknown adult	4	0	0	4 (0.3%)	1,352 (99.9%)
Unknown age	1	1	0	2 (0.2%)	1,354 (100.0%)
Total	**695**	**658**	**1**	**1,354 (100.0%)**	**1,354 (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.

Table 5. Number of substances involved in human exposure cases.

	Human exposures		Fatal exposures[a]	
No. of Substances	N	%	N	%
1	1,844,966	87.87	591	43.65
2	158,306	7.54	328	24.22
3	53,626	2.55	197	14.55
4	22,108	1.05	102	7.53
5	9,729	0.46	56	4.14
6	4,742	0.23	34	2.51
7	2,508	0.12	25	1.85
8	1,420	0.07	7	0.52
> =9	2,346	0.11	14	1.03
Total	**2,099,751**	**100.00**	**1,354**	**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.

Caller site and exposure site

As shown in Table 2, of the 2,099,751 human exposure cases reported, 67.3% of exposures originated from a residence (own or other) while 92.4% of exposures actually occurred at a residence (own or other). Another 24.5% of exposure cases originated from an HCF. Beyond residences, exposures occurred in the workplace (1.95% of cases), schools (1.54%), HCF (0.330%), and restaurants or food services (0.197%).

Exposures in pregnancy

Exposure during pregnancy occurred in 6,888 women (0.328% of all human exposures). Of those with known pregnancy duration (n = 6,484), 45.3% occurred in the first trimester, 29.4% in the second trimester, and 25.3% in the third trimester. Most (72.6%) were unintentional exposures and 20.0% were intentional exposures. There were 3 deaths in pregnant females in 2018.

Table 6A. Reason for human exposure cases.

Reason	N	% Human exposures
Unintentional		
Unintentional - General	1,043,516	49.7
Unintentional - Therapeutic error	273,581	13.0
Unintentional - Misuse	146,275	7.0
Unintentional - Environmental	51,620	2.5
Unintentional - Bite / sting	38,783	1.8
Unintentional - Occupational	31,316	1.5
Unintentional - Food poisoning	19,161	0.9
Unintentional - Unknown	5,278	0.3
Subtotal	**1,609,530**	**76.7**
Intentional		
Intentional - Suspected suicide	278,345	13.3
Intentional - Misuse	57,519	2.7
Intentional - Abuse	46,754	2.2
Intentional - Unknown	18,510	0.9
Subtotal	**401,128**	**19.1**
Adverse Reaction		
Adverse reaction - Drug	35,070	1.7
Adverse reaction - Other	11,882	0.6
Adverse reaction - Food	5,814	0.3
Subtotal	**52,766**	**2.5**
Unknown		
Unknown reason	18,650	0.9
Subtotal	**18,650**	**0.9**
Other		
Other - Contamination / tampering	8,363	0.4
Other - Malicious	7,532	0.4
Other - Withdrawal	1,782	0.1
Subtotal	**17,677**	**0.8**
Total	**2,099,751**	**100.0**

Table 6B. Scenarios for therapeutic errors[a] by age[b].

Scenario	N	<=5 y (Row %)	6-12 y (Row %)	13-19 y (Row %)	>=20 y (Row %)	Unknown child (Row %)	Unknown adult (Row %)	Unknown age (Row %)
Inadvertently took/given medication twice	84,689	16.56	12.04	5.85	59.18	0.08	5.89	0.40
Wrong medication taken/given	46,197	15.81	11.33	6.14	61.24	0.10	5.08	0.30
Other incorrect dose	40,471	31.32	11.09	6.67	46.64	0.10	3.84	0.35
Medication doses given/taken too close together	30,491	16.96	9.40	6.36	60.61	0.10	6.21	0.36
Inadvertently took/given someone else's medication	24,418	15.25	18.92	7.11	54.38	0.06	4.02	0.26
Other/unknown therapeutic error	18,047	21.00	10.72	6.48	54.75	0.14	6.33	0.59
Incorrect dosing route	10,688	9.09	4.16	4.10	71.05	0.23	10.55	0.80
Confused units of measure	7,415	57.88	16.61	4.11	19.76	0.11	1.42	0.11
Incorrect formulation or concentration given	5,936	48.74	16.61	5.00	27.19	0.12	2.12	0.22
Health professional/iatrogenic error (pharmacist/nurse/physician)	5,409	21.94	11.70	6.53	55.26	0.13	3.72	0.72
More than 1 product containing same ingredient	4,508	11.07	14.66	14.35	52.99	0.13	6.37	0.42
Dispensing cup error	4,476	70.53	15.80	2.23	10.32	0.09	0.96	0.07
Drug interaction	3,276	6.65	6.59	6.53	64.04	0.24	15.26	0.67
10-fold dosing error	1,332	54.50	10.51	3.23	29.43	0.08	2.10	0.15
Incorrect formulation or concentration dispensed	1,257	45.66	13.68	5.49	31.11	0.24	2.47	1.35
Exposure through breast milk	191	91.62	0.00	0.52	6.28	1.05	0.52	0.00

[a]All cases with a scenario category of therapeutic error regardless of reason.
[b]Of the human exposure cases reported to U.S. Poison Centers in 2018, 422,132 (20.1%) 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	921,977	60.12	110,987	7.24	56,804	3.70	434,700	28.35	3,733	0.24	72,282	4.71	9,047	0.59	1,609,530	76.65
Intentional	42	0.01	15,405	3.92	107,988	27.50	266,259	67.80	233	0.06	8,187	2.08	3,014	0.77	401,128	19.10
Adverse reaction	3,313	7.14	2,614	5.64	3,675	7.93	35,881	77.38	138	0.30	6,259	13.50	886	1.91	52,766	2.51
Unknown	870	4.97	979	5.59	2,178	12.44	12,660	72.30	56	0.32	1,084	6.19	823	4.70	18,650	0.89
Other	1,285	8.46	1,602	10.55	1,767	11.63	10,181	67.02	95	0.63	2,391	15.74	356	2.34	17,677	0.84
Total	**927,487**	**46.25**	**131,587**	**6.56**	**172,412**	**8.60**	**759,681**	**37.88**	**4,255**	**0.21**	**90,203**	**4.50**	**14,126**	**0.70**	**2,099,751**	**100.00**

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	5	0	1	22	0	1	0	29
Unintentional - Environmental	2	4	1	26	0	1	1	35
Unintentional - Occupational	0	0	0	1	0	0	0	1
Unintentional - Therapeutic error	1	0	0	37	0	0	0	38
Unintentional - Misuse	0	2	0	10	0	0	0	12
Unintentional - Bite / sting	0	0	0	3	0	0	0	3
Unintentional - Unknown	0	0	1	12	0	0	0	13
Subtotal	**8**	**6**	**3**	**111**	**0**	**2**	**1**	**131**
Intentional								
Intentional - Suspected suicide	0	0	41	662	0	1	1	705
Intentional - Misuse	0	0	1	48	0	0	0	49
Intentional - Abuse	0	0	11	205	0	1	0	217
Intentional - Unknown	0	0	3	82	0	0	0	85
Subtotal	**0**	**0**	**56**	**997**	**0**	**2**	**1**	**1,056**
Other								
Other - Contamination / tampering	0	0	0	2	0	0	0	2
Other - Malicious	0	0	1	7	0	0	0	8
Subtotal	**0**	**0**	**1**	**9**	**0**	**0**	**0**	**10**
Adverse reaction								
Adverse reaction - Drug	1	0	0	31	0	0	0	32
Adverse reaction - Other	0	0	0	1	0	0	0	1
Subtotal	**1**	**0**	**0**	**32**	**0**	**0**	**0**	**33**
Unknown								
Unknown reason	5	1	5	113	0	0	0	124
Subtotal	**5**	**1**	**5**	**113**	**0**	**0**	**0**	**124**
Total	**14**	**7**	**65**	**1,262**	**0**	**4**	**2**	**1,354**

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

Chronicity

Most human exposures, 1,807,022 (86.1%), were acute cases (single, repeated or continuous exposure occurring over 8 hours or less) compared to 984 (31.6%) acute cases among the 3,111 fatalities. Chronic exposures (continuous or repeated exposures occurring over >8 hours) comprised 2.23% (46,861) of all human exposures. Acute-on-chronic exposures (single exposure that was preceded by a

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	1,753,788	79.30	83.52	1,066	72.17	78.73
Dermal	151,121	6.83	7.20	12	0.81	0.89
Inhalation/nasal	134,738	6.09	6.42	125	8.46	9.23
Ocular	88,108	3.98	4.20	2	0.14	0.15
Bite/sting	38,753	1.75	1.85	3	0.20	0.22
Parenteral	20,129	0.91	0.96	67	4.54	4.95
Unknown	17,845	0.81	0.85	182	12.32	13.44
Other	2,665	0.12	0.13	5	0.34	0.37
Otic	1,489	0.07	0.07	0	0.0	0
Aspiration (with ingestion)	1,125	0.05	0.05	12	0.81	0.89
Vaginal	1,019	0.05	0.05	1	0.07	0.07
Rectal	898	0.04	0.04	2	0.14	0.15
Total Number of Routes	**2,211,678**	**100.00**	**105.33**	**1,477**	**100.00**	**109.08**[b]

[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.

Table 10. Management site of human exposures.

Site of management	N	%
Managed on site, nonhealth care facility	1,378,067	65.6
Managed in healthcare facility		
Treated/evaluated and released	305,004	14.5
Admitted to critical care unit	97,963	4.7
Admitted to psychiatric facility	89,671	4.3
Patient lost to follow-up / left AMA	80,660	3.8
Admitted to noncritical care unit	78,401	3.7
Subtotal (managed in HCF)	**651,699**	**31.0**
Other	19,723	0.9
Refused referral	25,428	1.2
Unknown	24,834	1.2
Total	**2,099,751**	**100.0**

continuous, repeated, or intermittent exposure occurring over a period greater than 8 hours) numbered 212,883 (10.1%).

Reason for exposure

The reason category for most human exposures was unintentional (76.7%), including: unintentional general (49.7%), therapeutic error (13.0%), and unintentional misuse (6.97%) (Table 6A).

Scenarios

Of the total 273,581 therapeutic errors, the most common scenarios for all ages included: inadvertent double-dosing (31.0%), wrong medication taken or given (16.9%), other incorrect dose (14.8%), doses given/taken too close together (11.1%), and inadvertent exposure to someone else's medication (8.93%). The types of therapeutic errors observed are different for each age group and are summarized in Table 6B.

Reason by age

Intentional exposures accounted for 19.1% of human exposures. Suicidal intent was suspected in 13.3% of cases, intentional misuse in 2.74%, and intentional abuse in 2.23%. Unintentional exposures outnumbered intentional exposures in all age groups with the exception of ages 13-19 years (Table 7). In contrast, of the 1,354 reported fatalities with RCF 1-3, the major 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 83.5% of cases (Table 9), followed in frequency by dermal (7.20%), inhalation/nasal (6.42%), and ocular routes (4.20%). For the 1,354 exposure-related fatalities, ingestion (78.7%), unknown (13.4%), inhalation/nasal (9.23%), and parenteral (4.95%) were the predominant exposure routes. Each exposure case may have more than one route.

Clinical effects

The NPDS database allows for the coding of up to 131 individual clinical effects (signs, symptoms, or laboratory abnormalities) for each case. Each clinical effect can be further defined as related, not related, or unknown if related. Clinical effects were coded in 808,147 (38.5%) cases (17.6% had 1 effect, 9.89% had 2 effects, 5.29% had 3 effects, 2.62% had 4 effects, 1.29% had 5 effects, and 1.80% had >5 effects coded). Of clinical effects coded, 77.3% were deemed related to the exposure, 9.87% were considered not related, and 12.8% were coded as unknown if related.

Case management site

The majority of cases reported to PCs were managed outside of a HCF (65.6%), usually at the site of exposure, primarily the patient's own residence (Table 10). Treatment in a HCF was rendered in 31.0% of cases. Only 1.21% of cases were referred to a HCF but refused referral.

Of the 651,699 cases managed in a HCF, 305,004 (46.8%) were treated and released, 97,963 (15.0%) were admitted to a critical care unit, 78,401 (12.0%) were admitted to a noncritical unit, and 89,671 (13.8%) were admitted directly to a psychiatric facility.

The percentage of patients treated in a HCF varied considerably with age. Only 12.5% of children ≤5 years and 18.4% of children between 6 and 12 years were managed in a HCF

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	209,362	22.57	23,130	17.58	33,521	19.44	97,917	12.89	615	14.45	8,664	9.61	1,533	10.9	374,742	17.85
Minor effect	72,988	7.87	18,869	14.34	48,775	28.29	173,709	22.87	325	7.64	11,245	12.47	1,735	12.3	327,646	15.60
Moderate effect	9,229	1.00	4,708	3.58	29,331	17.01	122,096	16.07	40	0.94	2,472	2.74	489	3.5	168,365	8.02
Major effect	903	0.10	353	0.27	3,472	2.01	24,548	3.23	6	0.14	174	0.19	54	0.4	29,510	1.41
Death	32	0.00	9	0.01	82	0.05	1,680	0.22	0	0.00	10	0.01	8	0.1	1,821	0.09
No follow-up, nontoxic	149,231	16.09	17,583	13.36	7,202	4.18	39,848	5.25	686	16.12	11,156	12.37	881	6.2	226,587	10.79
No follow-up, minimal toxicity	456,721	49.24	61,163	46.48	36,090	20.93	229,088	30.16	2,001	47.03	43,005	47.68	4,993	35.4	833,061	39.67
No follow-up, potentially toxic	17,101	1.84	3,009	2.29	9,878	5.73	38,872	5.12	479	11.26	9,870	10.94	4,028	28.5	83,237	3.96
Unrelated effect	11,901	1.28	2,757	2.10	4,021	2.33	30,718	4.04	103	2.42	3,592	3.98	400	2.8	53,492	2.55
Death, indirect report	19	0.00	6	0.00	40	0.02	1,205	0.16	0	0.00	15	0.02	5	0.0	1,290	0.06
Total	**927,487**	**100.00**	**131,587**	**100.0**	**172,412**	**100.00**	**759,681**	**100.00**	**4,255**	**100.00**	**90,203**	**100.00**	**14,126**	**100.00**	**2,099,751**	**100.00**

[a]Total number of cases where Death was an outcome (1,821 + 1,290) is greater than the number of fatalities (1,354) judged to be exposure-related (RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).

Table 12. Medical outcome by reason for exposure in human exposures[a].

	Unintentional		Intentional		Other		Adverse reaction		Unknown		Total	
Outcome	N	%	N	%	N	%	N	%	N	%	N	%
No effect	298,213	18.53	71,216	17.75	2,043	11.56	1,832	3.47	1,438	7.71	374,742	17.85
Minor effect	192,026	11.93	117,125	29.20	3,080	17.42	12,739	24.14	2,676	14.35	327,646	15.60
Moderate effect	43,849	2.72	110,925	27.65	1,340	7.58	7,489	14.19	4,762	25.53	168,365	8.02
Major effect	3,224	0.20	23,036	5.74	273	1.54	996	1.89	1,981	10.62	29,510	1.41
Death	174	0.01	1,270	0.32	16	0.09	72	0.14	289	1.55	1,821	0.09
No follow-up, nontoxic	219,484	13.64	4,206	1.05	1,312	7.42	1,338	2.54	247	1.32	226,587	10.79
No follow-up, minimal toxicity	776,418	48.24	30,779	7.67	6,391	36.15	17,055	32.32	2,418	12.97	833,061	39.67
No follow-up, potentially toxic	42,798	2.66	32,379	8.07	1,880	10.64	3,275	6.21	2,905	15.58	83,237	3.96
Unrelated effect	33,295	2.07	9,067	2.26	1,336	7.56	7,965	15.09	1,829	9.81	53,492	2.55
Death, indirect report	49	0.00	1,125	0.28	6	0.03	5	0.01	105	0.56	1,290	0.06
Total	**1,609,530**	**100.00**	**401,128**	**100.00**	**17,677**	**100.00**	**52,766**	**100.00**	**18,650**	**100.00**	**2,099,751**	**100.00**

[a]Total number of cases where Death was an outcome (1,821 + 1,290) is greater than the number of fatalities (1,354) judged to be exposure-related (RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).

Table 13. Duration of clinical effects by medical outcome.

	Minor effect		Moderate effect		Major effect	
Duration of effect	N	%	N	%	N	%
<=2 hours	95,870	29.26	6,979	4.15	775	2.63
>2 hours, <=8 hours	95,896	29.27	33,617	19.97	1,978	6.70
>8 hours, <=24 hours	64,512	19.69	61,949	36.79	6,342	21.49
>24 hours, <=3 days	18,563	5.67	34,652	20.58	10,369	35.14
>3 days, <=1 week	3,904	1.19	8,164	4.85	5,337	18.09
>1 week, <=1 month	1,115	0.34	1,485	0.88	1,563	5.30
>1 month	346	0.11	352	0.21	222	0.75
Anticipated permanent	325	0.10	148	0.09	450	1.52
Unknown	47,115	14.38	21,019	12.48	2,474	8.38
Total	**327,646**	**100.00**	**168,365**	**100.00**	**29,510**	**100.00**

Table 14. Decontamination and therapeutic interventions.

Therapy	N	%
Decontamination Only	988,107	47.1
Therapeutic Intervention Only	266,244	12.7
Decontamination and Therapeutic Intervention	111,383	5.3
Not Coded	734,017	35.0
Total	**2,099,751**	**100.0**

compared to 66.0% of teenagers (13-19 years) and 50.0% of adults (age $\geq$ 20 years).

Medical outcome

Table 11 displays the medical outcome of human exposure cases distributed by age. Older age groups exhibit a greater number of 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 1 clinical effect and have a medical outcome of minor, moderate or major effect (n = 525,521; 25.0% of exposures). Table 13 demonstrates an increasing duration of the clinical effects observed with more severe outcomes.

Decontamination procedures and specific antidotes

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

Ipecac-induced emesis for poisoning continues to decline as shown in Tables 16A and 16B. Ipecac was administered in only 21 (0.00226%) pediatric exposures in 2018. The continued decrease in ipecac syrup use over the last 2 decades was likely a result of ipecac use guidelines issued in 1997 by the American Academy of Clinical Toxicology and the European Association of Poisons Centres and Clinical Toxicologists and updated in 2004 [6,7]. 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 [8]. A

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	275	116	1,255	2,307	0	10	1	3,964
Charcoal, multiple doses	66	14	270	642	0	2	1	995
Charcoal, single dose	4,940	864	10,918	18,989	0	87	14	35,812
Dilute/irrigate/wash	436,550	48,946	27,947	177,436	1,216	30,386	2,995	725,476
Food/snack	120,380	11,525	6,260	30,892	302	5,218	355	174,932
Fresh air	6,089	3,691	4,404	39,663	557	11,362	1,272	67,038
Ipecac	21	1	10	29	0	2	0	63
Lavage	15	8	183	567	0	4	0	777
Other emetic	6,848	647	1,424	5,890	12	418	61	15,300
Whole bowel irrigation	60	18	267	1,211	0	4	2	1,562
Other Therapies								
2-PAM	3	0	1	43	0	0	0	47
Alkalinization	109	93	2,209	9,803	0	20	8	12,242
Amyl nitrite	0	0	1	0	0	0	0	1
Antiarrhythmic	14	15	336	2,061	0	4	1	2,431
Antibiotics	1,640	681	1,264	13,837	9	375	52	17,858
Anticonvulsants[a]	72	29	228	1,364	0	3	2	1,698
Antiemetics	1,223	761	8,576	16,866	2	76	11	27,515
Antihistamines	1,592	1,168	1,725	8,836	8	737	73	14,139
Antihypertensives	18	11	174	2,978	0	4	1	3,186
Antivenom (Immune Fab fragment) – Not Specified	274	242	200	1,818	0	9	2	2,545
Antivenom/antitoxin (Non-Fab) – Not Specified	18	25	18	249	1	1	0	312
Atropine	118	30	192	1,460	0	8	0	1,808
BAL	10	0	2	6	0	0	0	18
Benzodiazepines	1,084	635	7,433	33,265	1	142	28	42,588
Bronchodilators	315	214	385	4,691	2	170	22	5,799
Calcium	5,884	446	381	3,497	3	84	11	10,306
Cardioversion	4	3	19	293	0	1	0	320
CPR	74	11	133	1,591	0	8	5	1,822
Deferoxamine	9	1	40	25	0	0	0	75
Digoxin Immune Fab	10	11	18	491	0	3	0	533
ECMO	4	4	19	71	0	0	0	98
EDTA	35	2	0	5	0	0	0	42
Ethanol	0	0	2	54	0	0	0	56
Extracorp. procedure (other)	3	1	10	221	1	0	0	236
Fluids, IV	5,577	2,954	34,653	124,160	6	400	101	167,851
Flumazenil	72	20	200	1,109	0	6	1	1,408
Folate	8	3	48	1,738	0	3	2	1,802
Fomepizole	68	17	82	1,864	0	3	1	2,035
Glucagon	41	16	118	2,188	0	5	3	2,371
Glucose, > 5%	435	56	415	4,464	0	14	3	5,387
Hemodialysis	7	4	105	2,553	0	6	2	2,677
Hemoperfusion	0	1	2	43	0	0	0	46
Hydroxocobalamin	8	7	7	89	0	3	3	117
Hyperbaric oxygen	23	42	46	295	3	9	0	418
Insulin	16	16	145	2,435	0	2	0	2,614
Intubation	473	150	2,079	20,361	0	102	34	23,199
Methylene blue	18	5	18	196	0	2	0	239
NAC, IV	189	326	6,224	16,535	1	29	19	23,323
NAC, PO	19	31	749	1,814	0	4	1	2,618
Nalmefene	0	1	1	12	0	0	0	14
Naloxone	1,115	208	2,100	21,388	2	201	48	25,062
Neuromuscular blocker	49	16	208	1,842	0	5	4	2,124
Octreotide	100	14	52	432	0	1	0	599
Other	22,692	6,068	12,555	74,434	69	2,927	745	119,490
Oxygen	1,404	743	3,799	42,166	7	405	69	48,593
Pacemaker	3	1	3	226	0	0	0	233
Penicillamine	1	0	0	2	0	0	0	3
Physostigmine	5	13	136	263	0	0	0	417
Phytonadione	18	11	115	994	0	4	0	1,142
Pyridoxine	6	5	41	585	0	0	0	637
Sedation (other)	522	255	2,733	22,488	0	79	27	26,104
Sodium nitrite	0	1	2	23	0	1	0	27
Sodium thiosulfate	4	3	0	35	0	1	0	43
Steroids	535	324	438	4,594	6	294	31	6,222
Succimer	136	8	13	60	0	1	0	218
Transplantation	1	0	6	21	0	0	0	28
Vasopressors	109	43	527	7,074	0	23	5	7,781
Ventilator	445	151	1,943	19,286	0	81	31	21,937

[a]Excludes benzodiazepines.

Table 16A. Decontamination trends (1985-2018).

Year	Human exposures	Ipecac administered (% of all exposures)	Activated charcoal administered (% of all exposures)	Exposures involving children ≤5 y (% of all exposures)	Ipecac administered (% of child exposures)	Activated charcoal administered (% of child exposures)
1985	886,389	132,947 (14.999)	41,063 (4.6)	568,691 (64.2)	94,919 (16.6908)	14,718 (2.59)
1986	1,095,228	145,516 (13.286)	56,481 (5.2)	690,137 (63.0)	99,688 (14.4447)	18,191 (2.64)
1987	1,164,648	117,840 (10.118)	60,310 (5.2)	730,228 (62.7)	83,443 (11.427)	18,507 (2.53)
1988	1,364,113	114,654 (8.4050)	88,876 (6.5)	843,106 (61.8)	80,749 (9.5776)	26,118 (3.10)
1989	1,578,968	110,545 (7.0011)	101,368 (6.4)	963,924 (61.0)	79,192 (8.2156)	30,345 (3.15)
1990	1,646,946	98,986 (6.0103)	108,341 (6.6)	999,751 (60.7)	73,469 (7.3487)	31,579 (3.16)
1991	1,836,364	94,877 (5.1666)	129,092 (7.0)	1,099,179 (59.9)	73,069 (6.6476)	36,177 (3.29)
1992	1,862,796	79,493 (4.2674)	135,625 (7.3)	1,094,256 (58.7)	63,486 (5.8018)	38,937 (3.56)
1993	1,747,147	65,078 (3.7248)	127,893 (7.3)	978,560 (56.0)	50,834 (5.1948)	35,791 (3.66)
1994	1,926,992	51,356 (2.6651)	138,247 (7.2)	1,042,651 (54.1)	41,489 (3.9792)	35,670 (3.42)
1995	2,023,089	47,359 (2.3409)	155,880 (7.7)	1,070,472 (52.9)	38,372 (3.5846)	38,095 (3.56)
1996	2,155,952	39,376 (1.8264)	157,331 (7.3)	1,137,263 (52.7)	32,622 (2.8685)	37,986 (3.34)
1997	2,192,088	32,098 (1.4643)	156,213 (7.1)	1,150,931 (52.5)	26,536 (2.3056)	35,856 (3.12)
1998	2,241,082	26,653 (1.1893)	152,134 (6.8)	1,180,989 (52.7)	22,247 (1.8838)	34,302 (2.90)
1999	2,201,156	21,942 (0.9968)	145,853 (6.6)	1,154,799 (52.5)	18,326 (1.5869)	33,812 (2.93)
2000	2,168,248	18,177 (0.8383)	145,911 (6.7)	1,142,796 (52.7)	15,239 (1.3335)	31,554 (2.76)
2001	2,267,979	16,058 (0.7080)	149,442 (6.6)	1,169,478 (51.6)	13,389 (1.1449)	30,367 (2.60)
2002	2,380,028	13,555 (0.5695)	149,527 (6.3)	1,227,381 (51.6)	11,163 (0.9095)	30,340 (2.47)
2003	2,395,582	9,284 (0.3875)	140,412 (5.9)	1,245,584 (52.0)	7,310 (0.5869)	28,888 (2.32)
2004	2,438,643	4,701 (0.1928)	135,969 (5.6)	1,250,536 (51.3)	3,366 (0.2692)	28,335 (2.27)
2005	2,424,180	3,027 (0.1249)	123,263 (5.1)	1,233,695 (50.9)	1,999 (0.1620)	26,338 (2.13)
2006	2,403,539	2,176 (0.0905)	111,351 (4.6)	1,223,815 (50.9)	1,337 (0.1092)	23,843 (1.95)
2007	2,482,041	1,740 (0.0701)	106,010 (4.3)	1,271,595 (51.2)	1,052 (0.0827)	22,829 (1.80)
2008	2,491,049	1,205 (0.0484)	97,297 (3.9)	1,292,754 (51.9)	641 (0.0496)	21,286 (1.65)
2009	2,479,355	658 (0.0265)	84,805 (3.4)	1,290,784 (52.1)	330 (0.0256)	19,168 (1.48)
2010	2,384,825	360 (0.0200)	74,431 (3.1)	1,207,575 (50.6)	163 (0.0100)	16,581 (1.37)
2011	2,334,004	262 (0.0100)	66,770 (2.9)	1,144,729 (49.1)	98 (0.0100)	13,930 (1.22)
2012	2,275,141	193 (0.0100)	57,888 (2.5)	1,102,307 (48.5)	83 (0.0100)	11,284 (1.02)
2013	2,188,013	134 (0.0100)	50,459 (2.3)	1,049,475 (48.0)	42 (0.0000)	9,334 (0.89)
2014	2,165,142	132 (0.0061)	46,030 (2.1)	1,031,927 (47.7)	41 (0.0040)	7,977 (0.77)
2015	2,168,371	105 (0.0048)	42,712 (2.0)	1,017,369 (46.9)	29 (0.0029)	6,965 (0.68)
2016	2,159,032	88 (0.0041)	40,633 (1.9)	1,002,344 (46.4)	22 (0.0022)	6,333 (0.63)
2017	2,115,186	64 (0.0030)	39,985 (1.9)	956,871 (45.2)	12 (0.0013)	5,743 (0.60)
2018	2,099,751	63 (0.0030)	36,807 (1.8)	927,487 (44.2)	21 (0.0023)	5,006 (0.54)

Table 16B. Decontamination trends: total human and pediatric exposures < =5 years[a].

	Human exposures		Exposures children < =5 y	
Therapy	N	%	N	%
Activated charcoal administered	36,807	1.75	5,006	0.54
Cathartic	3,964	0.19	275	0.03
Ipecac administered	63	0.00	21	0.00
Lavage	777	0.04	15	0.00
Other Emetic	15,300	0.73	6,848	0.74
Whole Bowel Irrigation	1,562	0.07	60	0.01
Total	58,473	2.78	12,225	1.32

[a]Human exposures = 2,099,751; Pediatric exposures = 927,487.

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 3.66% of pediatric cases in 1993 to just 0.540% in 2018.

Top substances in human exposures

Table 17A presents the 25 most common 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 serious exposures PCs regularly manage. It is relevant to know whether exposures to these substances are increasing or decreasing.

To better understand these relationships, we previously examined exposures with more serious outcomes per year over the last 19 years for the change over time for each of the 68 major generic categories via least squares linear regression. For more recent trends, we performed the same analysis of the increase in more serious outcomes over the last 10 years. The serious outcome exposure cases per year over this period were increasing for 35, static for 5, and decreasing for 28 of the 68 categories with data for the entire time period. The change over time for the 10 yearly values was statistically significant ($p < 0.05$) for 39 of the 68 categories with data for the entire time period. Table 17B shows the 25 categories which were increasing the most rapidly over the past 10 years. The increases for these substance categories over the 19-year period are included for comparison. Statistical significance of the linear regressions can be verified by noting the 95% confidence interval on the rate of increase excludes zero for all but 1 of the 25 categories. Figure 4 shows the change over time and linear regressions for the top 4 increasing categories in Table 17B for the 10-year period.

Tables 17C and 17D present exposure results for children and adults, respectively, and show the differences between

Table 17A. Substance categories most frequently involved in human exposures (top 25).

Substance (Major Generic Category)	All substances	%[a]	Single substance exposures	%[b]
Analgesics	275,747	10.85	174,269	9.45
Cleaning Substances (Household)	185,139	7.28	166,408	9.02
Cosmetics/Personal Care Products	165,959	6.53	159,328	8.64
Sedative/Hypnotics/Antipsychotics	140,692	5.53	51,495	2.79
Antidepressants	132,807	5.22	56,891	3.08
Cardiovascular Drugs	111,194	4.37	46,499	2.52
Antihistamines	110,346	4.34	74,698	4.05
Foreign Bodies/Toys/Miscellaneous	93,197	3.67	90,166	4.89
Pesticides	83,305	3.28	77,623	4.21
Alcohols	71,878	2.83	21,274	1.15
Stimulants and Street Drugs	71,117	2.80	39,238	2.13
Anticonvulsants	66,340	2.61	25,936	1.41
Topical Preparations	64,274	2.53	62,512	3.39
Dietary Supplements/Herbals/Homeopathic	59,259	2.33	49,485	2.68
Vitamins	58,862	2.32	48,630	2.64
Hormones and Hormone Antagonists	56,167	2.21	36,033	1.95
Cold and Cough Preparations	54,719	2.15	36,977	2.00
Antimicrobials	51,767	2.04	41,183	2.23
Gastrointestinal Preparations	47,622	1.87	33,952	1.84
Chemicals	45,378	1.79	39,175	2.12
Bites and Envenomations	43,337	1.70	42,671	2.31
Plants	42,495	1.67	40,233	2.18
Fumes/Gases/Vapors	34,144	1.34	31,476	1.71
Other/Unknown Nondrug Substances	31,739	1.25	29,677	1.61
Electrolytes and Minerals	30,046	1.18	24,052	1.30

[a]Percentages are based on the total number of substances reported in all exposures (N = 2,541,958)
[b]Percentages are based on the total number of single substance exposures (N = 1,844,966).

substance categories involved in pediatric and adult exposures.

Table 17E reports the 21 categories of substances most frequently involved in pediatric (≤5 years) fatalities in 2015.

Table 17F reports the 25 Drug ID categories most frequently queried in 2018, highlighting the value of Drug ID information to the AAPCC, public health, public safety, and regulatory agencies. Internet based resources do not afford the caller the option to speak with a health care professional, if needed. Proper resources to continue this vital public service are essential, especially since the top 10 substance categories include antibiotics and 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 including 2,491,049 human exposure cases and 1,703,762 information requests. Total encounters decreased 2.96% from 2,607,413 in 2017 to 2,530,238 in 2018. Information requests decreased by 15.5% from 435,540 in 2017 to 368,025 in 2018, with a 30.2% decrease in drug identification requests and a 3.08% increase in HCF information requests. Human exposures

Table 17B. Substance categories with the greatest rate of exposure increase (top 25).

	Increase in serious exposures per year[a]				
	10 Year		19 Year		
Substance (Major Generic Category)	Mean	95% CI[b]	Mean	95% CI[c]	Single or Multi-Substance Exposures in 2018
Antidepressants	1,887	[1766, 2008]	1409	[1276, 1541]	44,014
Stimulants and Street Drugs	1,447	[876, 2017]	936	[709, 1164]	26,630
Antihistamines	1,018	[934, 1102]	684	[594, 774]	17,808
Anticonvulsants	965	[879, 1052]	734	[674, 795]	18,911
Cardiovascular Drugs	949	[866, 1033]	981	[949, 1013]	23,600
Alcohols	837	[731, 943]	922	[868, 976]	25,322
Unknown Drug	665	[581, 749]	423	[359, 488]	9,793
Analgesics	654	[731, 943]	1689	[1433, 1945]	49,352
Sedative/Hypnotics/Antipsychotics	395	[167, 623]	1828	[1468, 2188]	50,144
Hormones and Hormone Antagonists	260	[239, 280]	254	[243, 264]	7,145
Gastrointestinal Preparations	176	[144, 208]	107	[89, 124]	3,498
Muscle Relaxants	161	[93, 228]	402	[345, 460]	10,351
Cold and Cough Preparations	117	[2, 233]	209	[154, 263]	7,929
Dietary Supplements/Herbals/Homeopathic	111	[52, 171]	15	[-27, 58]	2,503
Weapons of Mass Destruction	55	[43, 66]	23	[15, 31]	522
Anticoagulants	40	[30, 50]	48	[43, 53]	1,237
Diuretics	37	[23, 52]	50	[43, 58]	1,508
Electrolytes and Minerals	36	[30, 42]	40	[36, 45]	1,185
Fumes/Gases/Vapors[d]	35	[20, 51]	−8	[-22, 6]	3,756
Asthma Therapies[d]	30	[5, 55]	2	[-7, 11]	1,016
Cleaning Substances (Household)[d]	29	[-35, 93]	−68	[-100, -36]	7,129
Narcotic Antagonists	28	[19, 36]	14	[10, 18]	391
Tobacco/Nicotine/eCigarette Products	27	[16, 37]	13	[8, 18]	407
Vitamins	19	[10, 27]	35	[30, 41]	1,065
Anesthetics[d]	16	[9, 24]	8	[4, 12]	533

[a]Serious exposures have outcomes of Moderate, Major or Death.
[b]Increase and confidence intervals are based on least squares linear regression of the number of calls per year for 2009-2018.
[c]Increase and confidence intervals are based on least squares linear regression of the number of calls per year for 2000-2018.
[d]Not in top 25 for 2000-2018.

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	117,298	12.12	114,718	12.75
Cleaning Substances (Household)	103,387	10.68	99,514	11.06
Analgesics	87,526	9.04	79,617	8.85
Foreign Bodies/Toys/Miscellaneous	66,519	6.87	64,911	7.21
Topical Preparations	45,397	4.69	44,522	4.95
Antihistamines	44,734	4.62	40,516	4.50
Vitamins	41,581	4.30	37,215	4.14
Dietary Supplements/Herbals/Homeopathic	39,984	4.13	37,456	4.16
Pesticides	35,015	3.62	34,029	3.78
Gastrointestinal Preparations	25,293	2.61	22,846	2.54
Plants	24,342	2.51	23,392	2.60
Antimicrobials	21,504	2.22	20,145	2.24
Arts/Crafts/Office Supplies	20,965	2.17	20,333	2.26
Cardiovascular Drugs	20,555	2.12	13,045	1.45
Cold and Cough Preparations	19,342	2.00	17,516	1.95
Electrolytes and Minerals	17,817	1.84	16,082	1.79
Deodorizers	17,662	1.82	17,423	1.94
Essential Oils	17,247	1.78	16,242	1.81
Hormones and Hormone Antagonists	16,713	1.73	13,064	1.45
Other/Unknown Nondrug Substances	12,247	1.27	11,784	1.31
Antidepressants	11,542	1.19	8,394	0.93
Chemicals	11,237	1.16	10,396	1.16
Tobacco/Nicotine/eCigarette Products	10,362	1.07	10,266	1.14
Stimulants and Street Drugs	9,363	0.97	8,116	0.90
Alcohols	8,816	0.91	8,582	0.95

[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 = 968,057)
[c]Percentages are based on the total number of single substance pediatric exposures (N = 899,827).

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	128,419	10.93	59,768	8.91
Sedative/Hypnotics/Antipsychotics	109,739	9.34	34,890	5.20
Antidepressants	86,018	7.32	30,539	4.55
Cardiovascular Drugs	76,647	6.52	26,277	3.92
Cleaning Substances (Household)	64,340	5.48	51,865	7.74
Alcohols	56,099	4.77	10,048	1.50
Anticonvulsants	49,730	4.23	16,944	2.53
Stimulants and Street Drugs	41,940	3.57	19,435	2.90
Pesticides	40,760	3.47	36,705	5.47
Antihistamines	39,921	3.40	18,577	2.77
Hormones and Hormone Antagonists	33,565	2.86	19,334	2.88
Cosmetics/Personal Care Products	31,288	2.66	28,433	4.24
Bites and Envenomations	28,933	2.46	28,475	4.25
Chemicals	26,747	2.28	22,323	3.33
Fumes/Gases/Vapors	24,945	2.12	22,850	3.41
Antimicrobials	21,764	1.85	15,463	2.31
Cold and Cough Preparations	20,958	1.78	11,202	1.67
Muscle Relaxants	20,213	1.72	7,301	1.09
Hydrocarbons	17,450	1.48	16,044	2.39
Gastrointestinal Preparations	16,927	1.44	7,869	1.17
Unknown Drug	15,423	1.31	9,617	1.43
Topical Preparations	14,736	1.25	14,057	2.10
Other/Unknown Nondrug Substances	14,717	1.25	13,465	2.01
Foreign Bodies/Toys/Miscellaneous	12,781	1.09	11,776	1.76
Miscellaneous Drugs	12,549	1.07	6,383	0.95

[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 = 1,175,150)
[c]Percentages are based on the total number of single substance adult exposures (N = 670,521).

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	14	21.21	2	5.41
Analgesics	11	16.67	7	18.92
Unknown Drug	8	12.12	7	18.92
Antihistamines	7	10.61	3	8.11
Stimulants and Street Drugs	4	6.06	1	2.70
Anesthetics	3	4.55	2	5.41
Batteries	2	3.03	2	5.41
Cardiovascular Drugs	2	3.03	2	5.41
Cleaning Substances (Household)	2	3.03	2	5.41
Miscellaneous Drugs	2	3.03	1	2.70
Alcohols	1	1.52	1	2.70
Antineoplastics	1	1.52	0	0.00
Asthma Therapies	1	1.52	1	2.70
Cold and Cough Preparations	1	1.52	0	0.00
Infectious and Toxin-Mediated Diseases	1	1.52	1	2.70
Muscle Relaxants	1	1.52	1	2.70
Pesticides	1	1.52	0	0.00
Plants	1	1.52	1	2.70
Radiation	1	1.52	1	2.70
Serums, Toxoids, Vaccines	1	1.52	1	2.70
Weapons of Mass Destruction	1	1.52	1	2.70
Total	**66**	**100.00**	**37**	**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 RCF.
[b]Percentages are based on the total number of substances reported in pediatric fatalities (N = 66)
[c]Percentages are based on the total number of single substance pediatric fatalities (N = 37).

Table 17F. Substance categories most frequently identified in drug identification requests (top 25).

Substance (Major Generic Category)	All substances	%[a]
Analgesics	24,472	31.61
Sedative/Hypnotics/Antipsychotics	13,422	17.34
Unknown Drug	6,722	8.68
Cardiovascular Drugs	4,955	6.40
Antidepressants	3,690	4.77
Anticonvulsants	3,559	4.60
Muscle Relaxants	3,114	4.02
Stimulants and Street Drugs	2,986	3.86
Antihistamines	2,772	3.58
Antimicrobials	2,706	3.50
Information Calls	2,364	3.05
Gastrointestinal Preparations	1,659	2.14
Hormones and Hormone Antagonists	1,596	2.06
Diuretics	919	1.19
Miscellaneous Drugs	761	0.98
Cold and Cough Preparations	360	0.47
Anticoagulants	231	0.30
Asthma Therapies	193	0.25
Electrolytes and Minerals	181	0.23
Vitamins	154	0.20
Anticholinergic Drugs	151	0.20
Weapons of Mass Destruction	73	0.09
Narcotic Antagonists	61	0.08
Other/Unknown Nondrug Substances	60	0.08
Antineoplastics	49	0.06

[a]Percentages are based on the total number of substances reported in all drug identification requests (N = 77,412)

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	840	10.60	534	8.62
Cleaning Substances (Household)	636	8.02	523	8.45
Fumes/Gases/Vapors	531	6.70	510	8.24
Pesticides	510	6.43	469	7.57
Bites and Envenomations	338	4.26	333	5.38
Sedative/Hypnotics/Antipsychotics	320	4.04	153	2.47
Antidepressants	318	4.01	172	2.78
Vitamins	298	3.76	214	3.46
Antihistamines	264	3.33	154	2.49
Chemicals	246	3.10	212	3.42
Cosmetics/Personal Care Products	214	2.70	200	3.23
Foreign Bodies/Toys/Miscellaneous	214	2.70	208	3.36
Antimicrobials	194	2.45	137	2.21
Stimulants and Street Drugs	186	2.35	99	1.60
Infectious and Toxin-Mediated Diseases	175	2.21	170	2.75
Hydrocarbons	168	2.12	150	2.42
Plants	164	2.07	155	2.50
Hormones and Hormone Antagonists	155	1.96	125	2.02
Other/Unknown Nondrug Substances	145	1.83	136	2.20
Gastrointestinal Preparations	136	1.72	87	1.41
Electrolytes and Minerals	134	1.69	94	1.52
Cold and Cough Preparations	128	1.61	84	1.36
Alcohols	117	1.48	44	0.71
Cardiovascular Drugs	110	1.39	71	1.15
Anticonvulsants	106	1.34	52	0.84

[a]Includes all patient classified as pregnant and all female patients with a 'duration of pregnancy' greater than 0.
[b]Percentages are based on the total number of substances reported in pregnant exposures (N = 7,927).
[c]Percentages are based on the total number of single substance pregnant exposures (N = 6,192).

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	333	10.66	16	2.71
Miscellaneous Stimulants and Street Drugs	293	9.38	70	11.84
Opioids	251	8.03	41	6.94
Miscellaneous Alcohols	196	6.27	16	2.71
Acetaminophen Alone	175	5.60	77	13.03
Calcium Antagonist	154	4.93	38	6.43
Beta Blockers	122	3.90	18	3.05
Acetaminophen Combinations	101	3.23	21	3.55
Selective Serotonin Reuptake Inhibitors (SSRI)	94	3.01	0	0.00
Miscellaneous Antidepressants	90	2.88	11	1.86
Hypoglycemic, Single Agent	85	2.72	14	2.37
Miscellaneous Unknown Drug	75	2.40	18	3.05
Acetylsalicylic Acid Alone	65	2.08	22	3.72
Tricyclic Antidepressants (TCA)	65	2.08	19	3.21
Miscellaneous Cardiovascular Drugs	56	1.79	18	3.05
Anticonvulsants: Gamma Aminobutyric Acid and Analogs	55	1.76	2	0.34
Sedating Antihistamines	55	1.76	18	3.05
Miscellaneous Fumes/Gases/Vapors	53	1.70	33	5.58
Nonsteroidal Antiinflammatory Drugs	53	1.70	1	0.17
Miscellaneous Anticonvulsants	52	1.66	1	0.17
Miscellaneous Muscle Relaxants	52	1.66	4	0.68
Cannabinoids and Analogs	45	1.44	3	0.51
Serotonin Norepinephrine Reuptake Inhibitors (SNRI)	44	1.41	3	0.51
Angiotensin Converting Enzyme Inhibitor	37	1.18	0	0.00
Miscellaneous Chemicals	36	1.15	17	2.88

[a]Numbers represent total exposures associated with 1,354 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 = 3,125).
[c]Percentages are based on the total number of single substance fatal exposures (N = 591).

decreased by 0.730% from 2,115,186 to 2,099,751 cases over the same time period.

Figure 5 shows the year-to-year change through 2018 as a percentage of year 2000 for human exposure cases broken down into cases with more serious outcomes (death, major effect, and moderate effect) and less serious outcomes (minor effect, no effect, not followed (non-toxic), not followed (minimal toxicity possible), unable to follow (potentially toxic), and unrelated effect. Since 2000, cases with more serious outcomes have increased by 4.45% (95% CI [4.19%, 4.71%]) per year from 108,148 cases in 2000 to 199,696 cases in 2018. However, cases with less serious outcomes have decreased since 2008 by 2.33% [-2.77%, -1.89%] per year from 2,339,460 in 2008 to 1,898,765 cases in 2018. This decrease in less serious exposures has driven the overall decrease in human exposures since 2008. Thus, we see a consistent increase in exposure cases from HCFs (Figure 3), as well as for the most severe exposures (Figure 5), while there is a continued trend toward decreasing cases involving less severe exposures.

Emerging trends – adolescent intentional – suspected suicides

A concerning, current trend is the increase in suicide attempts since 2000 for all ages of Americans. Over the period 2000-2016, the age-adjusted suicide rate in the US increased by nearly 30%. By 2016, suicide was the 10th leading cause of death, as the overall rate has steadily increased since year 2000 [3]. Particularly disconcerting is that adolescent suicide attempts logged in NPDS have increased at an alarming rate in recent years. Despite an early decline in suicide attempts amongst the youngest adolescents[4], the rates have increased in all subgroups from 2011-2018, in which a marked increase was noted in suicide attempts reported to poison centers over this time period (Figure 6A). A particularly significant trend was identified for cases in which the self-poisoning attempt was made by individuals aged 10-19 years. The percent of intentional – suspected suicide cases in the 10-19 year ages were relatively constant compared to year 2000, until 2011 in which a change in the course was noted. (Figure 6A). The percent of all intentional – suspected suicides for 10-19 year age intentional – suspected suicides was 28.7% in 2000, decreasing to a nadir of 21.8% in 2010, and then rapidly increasing to 31.7% in 2018 (Figure 6B). The 20 most rapidly increasing minor substance categories in 10-19 year intentional – suspected suicides for the past 8 years (corresponding to the time period of the most rapidly increasing adolescent suicides) are depicted in Figure 7. The five most rapidly increasing categories are selective serotonin reuptake inhibiters (SSRIs), nonsteroidal anti-inflammatory agents (NSAIDs), acetaminophen alone,

sedating antihistamines and miscellaneous sedative/hypnotics/antipsychotics. This may reflect increasing availability of these medications to adolescents.

Table 19A. Comparisons of death data (1985-2018)[a].

	Total fatalities		Suicides		Pediatric deaths[b]	
Year	N	% of cases	N	% of deaths	N	% of deaths
1985	328	0.036	174	53.0	20	6.1
1986	406	0.037	223	54.9	15	3.7
1987	398	0.034	227	57.0	22	5.5
1988	544	0.040	296	54.4	30	5.5
1989	590	0.037	323	54.7	24	4.1
1990	553	0.032	320	57.9	21	3.8
1991	764	0.042	408	53.4	44	5.8
1992	705	0.038	395	56.0	29	4.1
1993	626	0.036	338	54.0	27	4.3
1994	766	0.040	410	53.5	26	3.4
1995	724	0.036	405	55.9	20	2.8
1996	726	0.034	358	49.3	29	4.0
1997	786	0.036	418	53.2	25	3.2
1998	775	0.035	421	54.3	16	2.1
1999	873	0.040	472	54.1	24	2.7
2000	921	0.042	477	51.8	20	2.2
2001	1,085	0.048	553	51.0	27	2.5
2002	1,170	0.049	635	54.3	27	2.3
2003	1,109	0.046	592	53.4	35	3.2
2004	1,190	0.049	642	53.9	27	2.3
2005	1,438	0.059	674	46.9	32	2.2
2006	1,515	0.063	705	46.5	39	2.6
2007	1,597	0.064	737	46.1	47	2.9
2008	1,756	0.070	797	45.4	39	2.2
2009	1,544	0.062	779	50.5	37	2.4
2010	1,730	0.072	779	45.0	55	3.2
2011	2,765	0.118	865	31.3	42	1.5
2012	2,937	0.129	890	30.3	46	1.6
2013	2,477	0.113	785	31.7	51	2.1
2014	1,835	0.085	790	43.1	34	1.9
2015	1,831	0.084	814	44.5	42	2.3
2016	1,977	0.091	906	45.8	44	2.2
2017	3,208	0.151	954	29.7	25	0.8
2018	3,111	0.148	953	30.6	51	1.6

[a]Human exposures with medical outcome of death or death, indirect regardless of RCF.

[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 RCF.

The morbidity indices for single substance exposures in 10-19 year-old intentional – suspected suicides for the 8-year period are depicted in Figure 8. The top five generic codes associated with the largest morbidity indices in single-substance adolescent suicide attempts were clonidine, bupropion, antihypertensives alone, amitriptyline, and diphenhydramine alone.

Distribution of suicides

Table 19A shows 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 29.7 to 50.5% and the percent of pediatric cases has ranged from 0.779 to 3.18%. The relatively large changes seen for 2011, 2012 and 2017 reflect the large increase in indirect death reports in those years (peaking at 1,376 in year 2017). Analyses of suicides and pediatric deaths for Direct and Indirect reports are shown in Table 19B. For a detailed analysis and discussion of adolescent suicide attempts, see the Emerging Trends section.

Plant exposures

Table 20 provides the number of times a specific plant was reported to NPDS (N= 42,495). The 25 most commonly involved plant species and categories account for 37.8% of all reported plant exposures. Three of the top 5 categories in the table are essentially synonymous for unknown plant and comprise 10.7% (4,552/42,495) of all plant exposures. For a variety of reasons, it was not possible to make a precise identification in these 3 groups. The most frequent plant exposures where positive plant identification was made were (descending order): *Cherry* (species unspecified), Pokeweed (*Phytolacca americana*), *Spathiphyllum* species, *Ilex* species, Poison Ivy and *Malus* species.

Table 19B. Comparisons of direct and indirect death data (2000-2018)[a].

	All deaths			Suicides					Pediatric deaths				
Year	Total	Direct	Indirect	Total	% of deaths	Direct	% of direct	Indirect	Total	% of deaths	Direct	% of direct	Indirect
2000	864	845	19	448	51.85	443	52.43	5	18	2.08	18	2.13	0
2001	1,066	952	114	542	50.84	503	52.84	39	26	2.44	24	2.52	2
2002	850	739	111	455	53.53	436	59.00	19	24	2.82	15	2.03	9
2003	867	826	41	464	53.52	454	54.96	10	29	3.34	22	2.66	7
2004	955	898	57	516	54.03	501	55.79	15	25	2.62	21	2.34	4
2005	1,423	1,332	91	666	46.80	656	49.25	10	32	2.25	26	1.95	6
2006	1,515	1,415	100	705	46.53	687	48.55	18	39	2.57	32	2.26	7
2007	1,597	1,502	95	737	46.15	712	47.40	25	47	2.94	41	2.73	6
2008	1,756	1,535	221	797	45.39	750	48.86	47	39	2.22	32	2.08	7
2009	1,544	1,452	92	779	50.45	748	51.52	31	37	2.40	31	2.13	6
2010	1,730	1,455	275	779	45.03	732	50.31	47	55	3.18	47	3.23	8
2011	2,765	1,503	1,262	865	31.28	758	50.43	107	42	1.52	31	2.06	11
2012	2,937	1,507	1,430	890	30.30	759	50.36	131	46	1.57	30	1.99	16
2013	2,477	1,552	925	785	31.69	698	44.97	87	51	2.06	43	2.77	8
2014	1,835	1,559	276	790	43.05	757	48.56	33	34	1.85	23	1.48	11
2015	1,831	1,670	161	814	44.46	784	46.95	30	42	2.29	34	2.04	8
2016	1,977	1,852	125	906	45.83	885	47.79	21	44	2.23	37	2.00	7
2017	3,208	1,832	1,376	954	29.74	821	44.81	133	25	0.78	19	1.04	6
2018	3,111	1,821	1,290	953	30.63	823	45.19	130	51	1.64	32	1.76	19

[a]Human exposures with medical outcome of death or death, indirect regardless of RCF.

Deaths and exposure-related fatalities

A listing of cases (Table 21, Appendix D) and summary of cases (Tables 4, 5, 8, 9, 18, and 22) are provided for fatal cases with reasonable confidence that the death was a result of the exposure (exposure-related fatalities). Tables 11, 12, 19A and 19B consider all deaths, irrespective of the RCF. Beginning in 2010, deaths recorded as Indirect Report were no longer reviewed by the AAPCC fatality review team and the RCF was determined by the reporting PC. Table 19C indicates which cases are included in 12 tables reporting fatalities.

Table 19C. Detail of cases included in fatality tables.

Table	Fatalities Included	RCF	N
4	Death only	1,2,3	1,354
5	Death only	1,2,3	1,354
8	Death only	1,2,3	1,354
9	Death only	1,2,3	1,354
11	Death and Death (indirect report)	All	3,111
12	Death and Death (indirect report)	All	3,111
17E	Pediatric Death and Death (indirect report)	All	51
18	Death only	1,2,3	1,354
19A	Death and Death (indirect report)	All	3,111
19B	Death and Death (indirect report)	All	3,111
21	Death and Death (indirect report)	1,2,3	2,582
22	Death and Death (indirect report) - Single substance deaths only	All	1,351

There were 1,290 deaths, indirect and 1,821 deaths. Of these 3,111 cases, 2,582 were judged exposure-related fatalities (RCF = 1 - Undoubtedly responsible, 2 - Probably responsible, or 3 - Contributory). The remaining 529 cases were judged as follows: 103 as RCF= 4 - Probably not responsible, 66 as RCF= 5 - Clearly not responsible, and 360 as RCF= 6 - Unknown.

Deaths are sorted in Table 21 (Appendix D) according to the category, then substance deemed most likely responsible for the death (Cause Rank), and then by patient age. The Cause Rank permits the PC to judge 2 or more substances as indistinguishable in terms of cause, for example, 2 substances which appear equally likely to have caused the death could have Substance Rank of 1,2 and Cause Rank of 1,1. Additional agents implicated in the death 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 87.9% of reported human exposures, and 12.1% of patients were exposed to ≥2 drugs or products. The exposure-related fatalities involved a single substance in 591 cases (43.6%), 2 substances in 328 cases (24.2%), 3 in 197 cases (14.6%), and 4 or more in the balance of cases.

In Table 21 (Appendix D), 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 1,228, 47.6% of cases), p = prehospital cardiac and/or respiratory arrest (occurred in 519, 20.1% of cases), h = hospital records reviewed (occurred in 967, or 37.5% of cases), a = autopsy report reviewed (occurred in 1,527, or 59.1% of cases). The distribution of NPDS RCF was: 1 = Undoubtedly responsible in 1,550 cases (60.0%), 2 = Probably responsible in 750 cases (29.1%), 3 = Contributory in 282 cases (10.9%). The denominator for these Table 21 percentages is 2,582.

All fatalities – all ages

Table 4 presents the age and gender distribution for the 1,354 exposure-related fatalities (excluding death, indirect). The age distribution of reported fatalities showed an increase in deaths among children (<20 years old) compared to 2017, with 86 cases representing 6.35% of fatalities. This was an absolute increase of 15 fatalities (21.1% increase) in that age

Table 20. Frequency of plant exposures (top 25)[a].

	Botanical name or Category	AAPCC Generic Code Name	N
1	Unknown Botanical Name	Unknown Toxic Types or Unknown if Toxic	1,989
2	Cherry (Species unspecified)	Amygdalin and/or Cyanogenic Glycosides	1,808
3	Plants-general-unknown	Unknown Toxic Types or Unknown if Toxic	1,639
4	Plants-pokeweed	Other Toxic Types	1,209
5	Berry (not otherwise specified)	Unknown Toxic Types or Unknown if Toxic	924
6	*Spathiphyllum* spp.	Oxalates	715
7	Botanical Terms	Unknown Toxic Types or Unknown if Toxic	599
8	Unknown Botanical Name	Non-Toxic	550
9	*Ilex* spp. (not otherwise specified)	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	538
10	Plants-oxalates	Oxalates	535
11	Plants-toxicodendrol	Skin Irritants (Excluding Oxalate Containing Plants)	529
12	*Phytolacca americana* (L.)	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	524
13	Poison ivy	Skin Irritants (Excluding Oxalate Containing Plants)	499
14	*Malus* spp.	Amygdalin and/or Cyanogenic Glycosides	432
15	Unknown Botanical Name	Amygdalin and/or Cyanogenic Glycosides	417
16	*Epipremnum areum*	Oxalates	384
17	*Euphorbia tirucalli* (L.)	Skin Irritants (Excluding Oxalate Containing Plants)	368
18	Oleandergenin	Cardiac Glycosides (Excluding Drugs)	359
19	*Zantedeschia aethiopica*	Oxalates	303
20	Unknown Botanical Name	Skin Irritants (Excluding Oxalate Containing Plants)	303
21	Plants-cardiac glycosides	Cardiac Glycosides (Excluding Drugs)	296
22	*Solanum dulcamara*	Solanine	290
23	Unknown Botanical Name	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	285
24	Unknown Botanical Name	Oxalates	283
25	*Prunus armeniaca*	Amygdalin and/or Cyanogenic Glycosides	271

[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 = 42,495.

group. The age distribution of reported fatalities in adults (≥20 years) was similar to prior years with 1,266 of 1,354 (93.5%) fatal cases occurring in that age group and 2 (0.148%) occurring in Unknown Age patients. While children ≤5 years old were involved in the majority of exposures, the deaths in this group comprised just 1.03% of the exposure-related fatalities. The number of deaths in this age group increase by 2 from 2017. Most (65.0%) of the fatalities occurred in 20 to 59-year-old individuals, in line with prior years.

Table 21 (Appendix D) lists each of the 2,582 human fatalities (including death, indirect) along with all 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 the substance as other than the primary substance. This alternate name may not agree with the AAPCC generic categories used in the summary tables (including Appendix E (Table 22)).

Table 18 lists the top 25 minor generic substance categories associated with reported fatalities and the number of single substance exposure fatalities for that category. Miscellaneous sedative/hypnotics/antipsychotics, miscellaneous stimulants and street drugs, opioids, and miscellaneous alcohols lead this list, followed by acetaminophen alone, calcium antagonists, beta blockers, acetaminophen combinations, selective serotonin reuptake inhibitors (SSRIs), and miscellaneous antidepressants. 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 (Appendix D, Table 21) was a pharmaceutical in 2,254 (87.3%) of the 2,582 fatalities. These 2,254 first ranked pharmaceuticals included:

834 analgesics (366 fentanyl, 145 acetaminophen, 72 oxycodone, 46 salicylate, 36 methadone, 29 acetaminophen/hydrocodone, 22 morphine, 19 narcotic, other/unknown, 16 tramadol, 15 acetaminophen/oxycodone, 14 hydrocodone, 12 acetaminophen/diphenhydramine)

694 stimulants/street drugs (321 methamphetamine, 242 heroin, 77 cocaine, 8 Kratom (*Mitragyna speciosa (Korth.)*, 8 amphetamine, 7 methylenedioxymethamphetamine (MDMA), 6 THC homologs)

232 cardiovascular drugs (58 amlodipine, 28 verapamil, 20 metoprolol, 20 diltiazem, 13 digoxin, 11 propranolol, 10 flecainide, 10 diltiazem (extended release))

144 antidepressants (35 bupropion, 28 amitriptyline, 14 bupropion [extended release], 14 doxepin, 10 nortriptyline, 9 trazodone, 8 venlafaxine)

92 sedative/hypnotic/antipsychotics (31 alprazolam, 21 quetiapine, 10 benzodiazepine, 7 zolpidem, 6 olanzapine)

The exposure was acute (A) in 764 (29.6%), acute on chronic (A/C) in 338 (13.1%), chronic (C) in 124 (4.80%), and unknown (U) in 1,356 (52.5%) of fatalities.

A total of 1,420 tissue concentrations for 1 or more related analytes were reported in 736 cases. Most of these (1,284) involved fatalities with RCF of 1-3 and are listed in Appendix D (Table 21). Of note, all tissue concentrations are available to the PCs through the NPDS Enterprise Reports. The most frequent of these 1,429 analytes included: 249 acetaminophen, 128 ethanol, 83 salicylate, 79 fentanyl, 45 carboxyhemoglobin, 34 benzoylecgonine, 32 alprazolam, 27 methamphetamine, 24 diphenhydramine, 20 bupropion, 20 cocaine, 18 amlodipine, 16 lithium, 15 amphetamine, 15 ethylene glycol, 15 hydrocodone, 14 hydroxybupropion, 14 morphine (free), 14 norfentanyl, and 14 oxycodone.

Route of exposure was: Ingestion only in 1,021 cases (39.5%), Inhalation/nasal in 115 cases (4.45%), and Parenteral in 44 cases (1.70%). Parenteral only cases decreased by 54.6% from 2017. Most other exposures recorded a combination of routes or an unknown route.

The Intentional exposure reason was: Abuse in 1,173 cases (45.4%), Suspected suicide in 829 cases (32.1%), Misuse in 58 cases (2.25%), and Unknown in 94 cases (3.64%). Unintentional exposure reasons were: Environmental in 52 cases (2.01%), General in 36 cases (1.39%), Therapeutic error in 41 cases (1.59%), and Misuse in 24 cases (0.93%). Adverse drug reaction was the reason in 33 cases (1.28%).

Pediatric fatalities – age ≤ 5 years

Although children younger than 6 years were involved in the majority of exposures, they comprised only 51 (1.64%) of the 3,111 fatalities. These numbers are similar to those reported since 1985 (Table 19A, all RCFs and includes indirect deaths). Table 8 (RCF 1, 2 or 3, excludes indirect deaths) shows the percentage of fatalities in children ≤5 years related to total pediatric exposures was 14/927,487 (0.00151%). By comparison, 1,266/849,884 (0.149%) of all adult exposures involved a fatality. Of the 14 pediatric fatalities in which reason for exposure was documented, 8 (57.1%) were reported as unintentional, 5 (35.7%) as unknown, and 1 was coded as adverse reaction - drug (7.14%) (Table 8).

The 30 fatalities in children ≤5 years detailed in Appendix D (Table 21) (includes death, indirect reports and RCF 1-3) included 17 pharmaceuticals and 13 nonpharmaceuticals. The first ranked substances associated with these fatalities included: fumes/gases/vapors (8), analgesics (7), antihistamines (4), batteries (2), cleaning substances, household (2), stimulants and street drugs (2), plants (1), anesthetics (1), cardiovascular drugs (1), miscellaneous drugs (1), and muscle relaxants (1).

Pediatric fatalities – ages 6–12 years

In the age range 6 to 12 years, 11 fatalities are listed in Appendix D (Table 21) (includes death, indirect reports and RCF 1-3) included: fumes/gases/vapors (8), other/unknown nondrug substances (1), cold and cough preparations (1), and stimulants and street drugs (1). There were 7 cases in

which the exposure reason was specified: 4 were unintentional - environmental, 2 were unintentional - misuse, and 1 was unknown. (Table 8).

Adolescent fatalities – ages 13–19 years

In the age range 13 to 19 years, there were 65 reported fatalities with documented reason for exposure, an increase of 19 (42.2%) from 2017, and included 56 intentional, 3 unintentional, 5 unknown reason, and 1 other (Table 8). The 102 fatalities listed in Appendix D (Table 21) (includes death, indirect reports and RCF 1-3) included 95 pharmaceuticals and 7 nonpharmaceuticals. The first ranked pharmaceuticals associated with these fatalities included: analgesics (42), stimulants and street drugs (18), antihistamines (8), antidepressants (7), cardiovascular drugs (6), unknown drug (4), antimicrobials (2), electrolytes and minerals (2), sedative/hypnotics/antipsychotics (2), anesthetics (1), anticonvulsants (1), gastrointestinal preparations (1) and miscellaneous drugs (1). The first ranked nonpharmaceutical associated with these fatalities included: alcohols (2), chemicals (2), fumes/gases/vapors (2) and hydrocarbons (1). For a detailed analysis and discussion of adolescent suicide attempts, see the Emerging Trends section.

Pregnancy and fatalities

There were 3 deaths in pregnant women reported to NPDS in 2018. A total of 48 deaths of pregnant women have been reported between 2000 and 2018. The majority (40 of 48, 83.3%) were intentional exposures (misuse, abuse or suspected suicide).

AAPCC surveillance results

Key components of the NPDS surveillance system include the automated monitoring tools available to the NPDS user community. In addition to AAPCC national surveillance definitions, 31 PCs utilize NPDS as part of their surveillance programs. The CDC, FDA, 5 state health departments, 1 county health department and 1 state police department run surveillance definitions in NPDS. Since Surveillance Anomaly 1, generated at 2:00 pm EDT on 17 September 2006, over 360,000 anomalies have been detected and reported. Over 2,500 were confirmed as representing public health significance with PCs working collaboratively with local health departments and, in some instances the CDC, on the identified issues.

At the time of this report, 650 surveillance definitions run continuously, monitoring case and clinical effects volumes and a variety of case-based definitions from food poisoning to nerve agents. These definitions represent the surveillance work by many PCs, health departments, the AAPCC, the Health Studies Branch (Division of Environmental Hazards and Health Effects, National Center for Environmental Health), and CDC. NPDS has also been used for surveillance during mass gathering events, such as the Super Bowl.

The methodology for automating surveillance continues to be improved in efforts to detect the index case of any relevant public health event. Algorithms for identifying the index case vary greatly regarding the substance to be identified. No individual algorithm works for every application. The magnitude and penetrance of NPDS are critical to epidemiologic surveillance and to the ability to substantiate situational awareness for clinicians, policymakers, and public health officials nationwide. Typically, NPDS surveillance detects the response to an event, rather than predicting an event. This fosters situational awareness and resilience during and after a public health event. Situational awareness is undoubtedly beneficial to public health surveillance.

Discussion

The exposure cases and information requests reported by PCs in 2018 do not reflect the full extent of PC efforts, which also include poison prevention activities, partnership with public health entities, and public and health care professional education programs.

NPDS exposure data may be considered “numerator data” in the absence of a true denominator; that is, we do not know the number of actual exposures that occur in the population. NPDS data covers only those exposures which are reported to PCs since poison exposures and poisoning deaths are not currently reportable events.

NPDS 2000-2018 encounter volume data clearly demonstrate a continuing decrease in exposure cases. This decline has been apparent and increasing since mid-2007 and reflects the decreasing use of the PC for less serious exposures. However, during this same period, exposures with a more serious outcome (death, major, moderate) and HCF cases have continued to increase. Possible contributors to the declining PC utilization include declining US birth rate (especially since exposure rates are much higher in children $\leq$ 5 years of age), increasing use of text rather than voice communication, and increasing use of and reliance on internet resources. To meet our public health goals, PCs will need to understand and provide access via 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 at HCFs for exposures that could have been managed on-site by a PC. Likewise, minor exposures may progress to more serious morbidity and mortality because of incorrect internet information or the absence of PC management. The net effect could be more serious poisoning outcomes because fewer people took advantage of PC services, with a resultant increased burden on the national healthcare infrastructure as may be reflected in the increased number of cases managed in a HCF this year.

NPDS statistical analyses indicate that adolescent suicide attempts by self-poisoning gradually declined after year 2000, reaching a nadir in 2010, then rapidly increased through 2018. This trend is evident in Figure 6A and 6B. NPDS data confirms a trend that is evidenced in other data

sources [3,5,9]. Unlike other data sources, NPDS offers the ability to provide a near real-time view of these public health issues without the need for data source extrapolations.

One of the limitations of NPDS data has been the perceived lack of fatality case volume compared to other reporting sources. However, when change over time is studied, NPDS is clearly consistent with other public health fatality analyses. One of the issues leading to this concern is the fact that medical record systems seldom have common output streams. This is particularly apparent with the various electronic medical record systems available. It is important to build a federated approach similar to the one modeled by NPDS to allow data sharing, for example, between hospital emergency departments and other medical record systems, including medical examiner offices, nationwide. Enhancements to NPDS can promote interoperability between NPDS and electronic medical records systems to better trend poison-related morbidity and mortality in the US and internationally.

Summary

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

Changes in 2018 encounters from 2017 are shown in Figures 1, 3, and 4, and include:

- Total encounters (all exposure cases and information requests) decreased by 2.96%.
- All information requests decreased 15.5%, Drug ID requests decreased 30.3%, and human exposures decreased 0.729%.
- HCF information requests increased 3.08%. Managed exposure cases reported from an HCF **decreased** 0.43%, attenuating the steady increase since 2000.
- Human exposures with less serious outcomes decreased 0.986% while those with more serious outcomes (moderate, major or death) **increased** 1.82% compared to an overall 4.45% yearly increase since 2000. The most rapidly increasing substance categories resulting in more serious outcomes over the past decade are antidepressants, stimulants and street drugs, antihistamines and anticonvulsants.

These data support the continued value of PC expertise and need for specialized medical toxicology information to manage the more severe exposures, despite a decrease in cases involving less severe exposures. In addition to telephonic services, PCs must consider newer communication approaches that match current, and future, public preferences. The continuing mission of NPDS is to provide a nationwide infrastructure for public health surveillance for all types of exposures, public health event identification, resilience, response and situational awareness tracking. NPDS is a model system for the nation and global public health.

Disclaimer

The American Association of Poison Control Centers (AAPCC; http://www.aapcc.org) maintains the national database of information logged by the country's regional Poison Centers (PCs) serving all 50 United States, Puerto Rico, the District of Columbia and its territories. Case and contact records in this database are from self-reported encounters: 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 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).

Declaration of interest

The authors report no declarations of interest.

References

[1] National Poison Data System: Annual reports 1983-2017 [Internet]. Alexandria (VA): American Association of Poison Control Centers. Available at: http://www.aapcc.org/annual-reports/ Sep 30, 2019.

[2] US Census Bureau: International Data Base (IDB) Mid-Year Population by Single Year Age Groups – Custom Region (American Samoa, Federated States of Micronesia, Guam, Puerto Rico, United States, US Virgin Islands). Accessed at https://www.census.gov/data-tools/demo/idb/informationGateway.php Aug 14, 2019.

[3] Hedegaard H, Curtin SC, Warner M. Suicide Rates in the United States Continue to Increase. NCHS Data Brief, No. 309. Hyattsville, MD: National Center for Health Statistics; 2018.

[4] Spiller HA, Ackerman JP, Spiller NE, Casavant MJ. Sex- and Age-specific Increases in Suicide Attempts by Self-Poisoning in the United States among Youth and Young Adults from 2000 to 2018. J Pediatr. 2019;210:201–208.

[5] Gaither JR, Shabanova V, Leventhal JM. US National Trends in Pediatric Deaths from Prescription and Illicit Opioids, 1999-2016. JAMA Netw Open. 2018;1(8).

[6] American Academy of Clinical Toxicology; European Association of Poisons Centres and Clinical Toxicologists. Position statement: ipecac syrup. J Toxicol Clin Toxicol. 1997;35:699–709.

[7] American Academy of Clinical Toxicology; European Association of Poisons Centres and Clinical Toxicologists. Position paper: ipecac syrup. J Toxicol Clin Toxicol. 2004;42:133–143.

[8] American Academy of Pediatrics Policy Statement. Poison treatment in the home. Pediatrics. 2003;112:1182–1185.

[9] Overdose Death Rates. National Institute on Drug Abuse. Accessed at https://www.drugabuse.gov/related-topics/trends-statistics/overdose-death-rates Sep 30, 2019.

[10] Table SR12-1 Selected Examples of Laboratory Critical Values, Harrison's Principles of Internal Medicine 20e. McGraw-Hill Professional, 2018. Available from: http://www.accessmedicine.com/ Sep 30, 2019.

[11] Goldfrank's Toxicologic Emergencies, Tenth Edition, McGraw-Hill Companies, 2015.
[12] Dart RC, editor. Medical Toxicology, Third Edition. Philadelphia, Lippincott, Williams & Wilkins, 2004.

Appendix A: Acknowledgments

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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 55 participating PCs. Many individuals at each center participated in the fatality case preparation. These toxicology professionals and their centers are:

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

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Regional poison center fatality awards

Each year the AAPCC and the Fatality Review team recognizes several regional PCs for their extra effort in their preparation of fatality reports

and prompt responses to reviewer queries. The awards are presented each year at the North American Congress of Clinical Toxicology Annual meeting.

First Center to Complete all Cases (12/29/18, 19 cases): Alabama Regional Poison Control Center - Children's Hospital (Birmingham)
Largest Number with Autopsy Reports (43 of 58 cases; 74%): Maryland Poison Center (Baltimore)
Highest Percentage with Autopsy Reports (92% of 37 cases): Connecticut Poison Control Center (Farmington)
Largest Number of Indirect cases (n = 1180; 91% of all Indirect cases): Banner Poison & Drug Information Center (Phoenix)
Highest Overall Quality of Reports (5.89 out of possible 12 for 44 cases): Connecticut Poison Control Center (Farmington)
Greatest improvement in Overall Quality of Reports (1.98 increase from last year): Connecticut Poison Control Center (Farmington)
Most Abstracts Published in the 2018 Annual report (6 of the 66 published narratives): Carolinas Poison Center (Charlotte) [4 years running]
Most Helpful Regional Poison Center Staff (based on survey of AAPCC review team): Indiana Poison Center
Endurance Award (Reviewer and additional voluntary efforts for the NPDS review process): Alfred Aleguas Jr. PharmD (Tampa PCC)

Appendix B: Data definitions

Reason for exposure

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

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 for reasons other than the pursuit of a psychotropic effect.
Intentional abuse: An exposure resulting from the intentional improper or incorrect use where the patient was likely attempting to gain a high, euphoric effect or some other psychotropic effect, including recreational use of a substance for any effect.
Contaminant/tampering: The patient is an unintentional victim of a substance that has been adulterated (either maliciously or unintentionally) by the introduction of an undesirable substance.
Malicious: Patients who are victims of another person's intent to harm them.
Withdrawal: Inquiry about or experiencing of symptoms from a decline in blood concentration of a pharmaceutical or other substance after discontinuing therapeutic use or abuse of that substance.
Adverse Reaction Drug: Unwanted effects due to an allergic, hypersensitivity, or idiosyncratic response to the active ingredient(s), inactive ingredient(s) or excipient of a drug, chemical, or other drug substance when the exposure involves the normal, prescribed, labeled or recommended use of the substance.
Adverse Reaction Food: Unwanted effects due to an allergic, hypersensitivity, or idiosyncratic response to a food substance.
Adverse Reaction Other: Unwanted effects due to an allergic, hypersensitivity, or idiosyncratic response to a substance other than drug or food.
Unknown Reason: Reason for the exposure cannot be determined or no other category is appropriate.

Medical outcome

No effect: The patient did not develop any signs or symptoms as a result of the exposure.
Minor effect: The patient developed some signs or symptoms as a result of the exposure, but they were minimally bothersome and generally resolved rapidly with no residual disability or disfigurement. A minor effect is often limited to the skin or mucus membranes (e.g., self-limited gastrointestinal symptoms, drowsiness, skin irritation, first-degree dermal burn, sinus tachycardia without hypotension, and transient cough).
Moderate effect: The patient exhibited signs or symptoms as a result of the exposure that were more pronounced, more prolonged, or more systemic in nature than minor symptoms. Usually, some form of treatment is indicated. Symptoms were not life-threatening, and the patient had no residual disability or disfigurement (e.g., corneal abrasion, acid-base disturbance, high fever, disorientation, hypotension that is rapidly responsive to treatment, and isolated brief seizures that respond readily to treatment).
Major effect: The patient exhibited signs or symptoms as a result of the exposure that were life-threatening or resulted in significant residual disability or disfigurement (e.g., repeated seizures or status epilepticus, respiratory compromise requiring intubation, ventricular tachycardia with hypotension, cardiac or respiratory arrest, esophageal stricture, and disseminated intravascular coagulation).
Death: The patient died as a result of the exposure or as a direct complication of the exposure.
Not followed, judged as nontoxic exposure: No follow-up calls were made to determine the outcome of the exposure because the substance implicated was nontoxic, the amount implicated was insignificant, or the route of exposure was unlikely to result in a clinical effect.
Not followed, minimal clinical effects possible: No follow-up calls were made to determine the patient's outcome because the exposure was likely to result in only minimal toxicity of a trivial nature. (The patient was expected to experience no more than a minor effect.).
Unable to follow, judged as a potentially toxic exposure: The patient was lost to follow-up, refused follow-up, or was not followed, but the exposure was significant and may have resulted in a moderate, major, or fatal outcome.
Unrelated effect: The exposure was probably not responsible for the effect.
Confirmed nonexposure: This outcome option was coded to designate cases where there was reliable and objective evidence that an exposure initially believed to have occurred actually never occurred (e.g., all missing pills are later located). All cases coded as confirmed nonexposure are excluded from this report.

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

Relative contribution to fatality (RCF)

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

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

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

Appendix C: Abstracts of selected cases

Selection of abstracts for publication

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

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

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

Where:

$$\begin{aligned}&\text{Weighted Case Score (WCS)}\\&= \text{Hospital records} * 8.8 + \text{Postmortem} * 15.2\\&\quad + \text{Blood levels} * 6.9 + \text{Quality/Completeness} * 6.4\\&\quad + \text{Novelty/Educational value} * 13.2\end{aligned}$$

WCS Scores were normalized (z-score) within each AAPCC reviewer before the final weighting: 25% for each (1/NumSubstances, WCS, 1/Age, 1/NumCodes).

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

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

Abstracts

Abstracts of the cases were selected (see Selection of Abstracts for Publication, above) from the human fatalities judged related to an exposure as reported to US PCs in 2018. 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 115. Acute ethylene glycol (antifreeze) ingestion: undoubtedly responsible

Scenario/Substances: A 33 y/o female was found unresponsive in a pool of vomit. EMS intubated prior to ED transport.

Past Medical History: Spontaneous abortion 10 days prior.

Laboratory/Diagnostic Findings: VBG-pH 6.55/pCO_2 28/pO_2 189, K 7.7, lactate 10, AST 121, ALT 34, WBC 13. Serum APAP, ethanol and salicylate not detected. Head CT scan: negative. Ethylene glycol 254 mg/dL.

Clinical Course: In the ED: BP 107/44, HR 137, T 35 °C. She received sodium bicarbonate, IVFs and fomepizole. She was started on HD but had three cardiac arrests and died 12 hours after arrival.

Autopsy Findings: Cause of death: complications of acute ethylene glycol intoxication; manner of death: suicide. Pre-mortem blood: ethylene glycol 250 mg/dL.

Case 127. Acute kambo toxin (Phyllomedusa bicolor) dermal: undoubtedly responsible

Scenario/Substances: A 35 y/o female rubbed kambo (dried secretions of *Phyllomedusa bicolor*; giant monkey frog) into burned areas of her skin. She collapsed and was found unresponsive and "gurgling" with emesis and fecal incontinence. EMS found her in cardiac arrest.

Physical Exam: Diaphoretic, tachycardic and flushed, with five small lesions near her axilla ("like cigarette burns").

Laboratory/Diagnostic Findings: ABG-pH 7.15/HCO_3 12.2, lactate 6.2. Na 135/K 3.3/Cl 106/CO_2 27/BUN 7/Cr 1.04/Glu 326. AST 378, ALT 459, troponin 112. ECG: sinus tachycardia with "possible sub-endocardial injury," QRS 86, QTc 316. UDS: positive for benzodiazepines, opioids and cannabinoids. Serum APAP, ethanol and salicylate not detected. Digoxin level was not detected. CT head: negative. ECHO: LVEF 60%.

Clinical Course: She was intubated by EMS and achieved ROSC after several minutes of CPR, sodium bicarbonate and epinephrine. In the ED she was sedated with propofol and started on a bicarbonate infusion. She was tachycardic, diaphoretic and flushed, with intermittent rigidity and posturing. On Day 3 EEG showed seizure activity and she was started on lacosamide and midazolam. On Day 4 MRI shoed anoxic injury; EEG: severe, diffuse dysfunction. On Day 7 she developed central diabetes insipidus, became febrile and required IV metoprolol for tachycardia and hypertension; 1 h later she required epinephrine, norepinephrine and glucagon for hypotension. On Day 8 she had no gag reflex and non-reactive pupils; nuclear medicine scan demonstrated herniation. Based on the prognosis, comfort measures were instituted and she died.

Autopsy Findings: Cause of death: drug toxicity; manner of death: accidental. Circular abrasions/burn areas to her left upper arm consistent with kambo rituals. Antemortem urine from Day 1: codeine < 0.010 mg/L; morphine 0.97 mg/L.

Case 132. Acute sodium nitrite ingestion: probably responsible

Scenario/Substances: A 19 y/o male ingested a mixture of sodium nitrite and water in a suicide attempt. For EMS he was initially conversant, but rapidly became obtunded, had a seizure and became cyanotic. He received midazolam and was intubated during transport.

Physical Exam: Unresponsive, no spontaneous respirations: SBP ~85, HR 50s, O_2 sat 85% (100% FiO_2); pupils fixed and dilated, cyanotic extremities.

Laboratory/Diagnostic Findings: ABG-pH 6.78/pCO_2 65/pO_2 <5/HCO_3 10/BE -26, lactate 9.6. Na 146/K 5.9/Cl 117/CO_2 14/BUN 12/Cr 1.32/Glu 158/AG 15, troponin <0.02, AST 32, ALT 30, bilirubin 0.5. Serum

APAP and ethanol not detected. ECG: junctional rhythm at 38, QRS 108, QTc 283.

Clinical Course: In the ED he received IVFs and methylene blue (2 mg/kg) but rapidly deteriorated, becoming more bradycardic and had a PEA arrest. Resuscitation including CPR, multiple doses of epinephrine, atropine, sodium bicarbonate and dopamine. ECHO: no cardiac activity; he was pronounced dead ~70 min after arrival.

Autopsy Findings: Not available.

Case 137. Acute ethylene glycol ingestion: undoubtedly responsible

Scenario: A 64 y/o male presented to an ED with altered mental status after ingesting an unknown substance.

Past Medical History: Multiple myeloma.

Laboratory/Diagnostic Findings: Na 140/K 6.7/Cl 108/CO_2 6.7/AG 27/BUN 15/Cr 1.95, LFTs 'unremarkable.' ABG-pH 7.07, lactate 29. Serum APAP, ethanol and salicylate not detected. Head CT unremarkable. Subsequently: ethylene glycol 79.6 mg/dl; methanol and isopropanol not detected.

Clinical Course: Repeat labs 4 h later: Na 139/K 7.6/Cl 111/HCO_3 5.8/Cr 2.34/Glu 342, ABG-pH 6.91, lactate 29. Fomepizole was started 6 h after presentation and he was admitted to the ICU where he was intubated, sedated and started on HD. A sodium bicarbonate drip was started; BP 116/57, HR 42. That night he had 6 seizures and a midazolam drip was started. Na 143/K 3.9/Cl 104/CO_2 11.3/BUN 13/Cr 2.41. Venous pH 7.04, repeat ethylene glycol 29 mg/dL. Thiamine and pyridoxine were given; fomepizole continued. On Day 2 the sedation was stopped and he had an episode of PEA. Due to recurrent clotting of the HD circuit a heparin drip was started and he was transitioned to CRRT. On vasopressin, epinephrine and norepinephrine: BP 74/54, HR 113, T 37.2C, FIO_2 65%.At 14 h the ethylene glycol was 16.3 mg/dL. At 17 h: Cl 92/CO_2 25/AG 27, Cr 1.8, Glu 208. On Day 2: Na 139/K 4.7/Cl 104/Cr 3.14/AG 28, ethylene glycol 11.5 mg/dl; he died 30 h after arrival.

Autopsy Findings: Cause of death: acute ethylene glycol intoxication; Manner of death: suicide. Autopsy findings: cerebral edema, crystals in the kidney and brain, obesity (BMI = 40.2), fibrotic liver.

Case 142. Acute strychnine, unknown drug ingestion, unknown: probably responsible

Scenario/Substances: A 33 y/o male was found in PEA arrest after reportedly ingesting a rat poison containing (0.5%) strychnine. EMS achieved ROSC; naloxone was administered without response.

Laboratory/Diagnostic Findings: ABG-pH 6.86/pCO_2 38/pO_2 576/HCO_3 6.9. Na 145/K 4.5/Cl 97/CO_2 8/BUN 28/Cr 1.64/Glu 178/AG 40, AST 122, ALT 130, INR 1.9, CK 1,752, lactate > 20. Serum APAP, ethanol and salicylate not detected. ECG: HR 117, QRS 102, QTc 415.

Clinical Course: Patient was sedated, paralyzed and intubated. He received IVFs and sedation, but exhibited intermittent jerking movements. Lactate normalized on Day 2, CK increased to > 20,000. Despite treatment for rhabdomyolysis his renal function deteriorated and he required HD on Day 5. His clinical status remained unchanged. Based on a poor prognosis family opted for comfort measures and he died on Day 9.

Autopsy Findings: Not available.

Case 164. Acute hydrofluoric acid ingestion: undoubtedly responsible

Scenario/Substances: An 85 y/o male drank an ammonium bifluoride-containing concrete cleaning product.

Past Medical History: Alzheimer's dementia, COPD, depression.

Physical Exam: BP 154/63, HR 86, RR 20, O_2 sat 99%, T 37^{0}C.

Laboratory/Diagnostic Findings: Cl 110, CO_2 20, Glu 152, AG 18, lactate 2.9.

Clinical Course: He had multiple episodes of emesis and coughing, but no oral burns, odynophagia, chest pain or abdominal pain. He was transferred to a tertiary hospital for endoscopy but had cardiac arrest immediately upon arrival. CPR was initiated; torsade de pointes was treated with Mg and defibrillation with ROSC. Two min later, he again went into torsades and then recurrent VF. He received Ca, Mg, lidocaine, amiodarone, epinephrine and defibrillation. He went into PEA with ROSC and was started on norepinephrine. He developed recurrent torsades and VF. Due to his poor prognosis his family opted for comfort measures only. He received fentanyl, went into torsades and died on Day 1.

Autopsy Findings: Cause of death: cardiac dysrhythmia due to hypocalcemia and hypomagnesemia, due to ingestion of ammonium bifluoride; manner of death: accident.

Case 167. Acute hydrofluoric acid ingestion: undoubtedly responsible

Scenario/Substances: A 3 y/o male ingested ~90 ml of rust and stain remover (1-2.5% hydrofluoric acid). EMS found the child awake and alert, but he had 2 episodes of vomiting enroute to the ED.

Physical Exam: On arrival to the ED the child was intubated for lethargy: BP 112/79, HR 148, RR 46, O_2 sat 99%.

Laboratory/Diagnostic Findings: VBG: pH 7.056/pCO_2 59.2/pO_2 23.4/HCO_3 16.2/BE -14.4. Na 137/K 4.5/Cl 110/CO_2 12/BUN 17/Cr 0.43/Glu 228/AG 15, AST 62, ALT 13, bilirubin 0.7, INR 1.10, WBC 20.3/Hgb 12.9/Hct 39.1/PLT 492. Serum APAP, ethanol and salicylate not detected. UDS was negative. CxR: diffuse prominence of bronchovascular markings likely related to reactive airway disease, with left lower lobe infiltrate. ECG: HR 52, QRS 62, QT/QTc 286/308; non-specific T-wave abnormality.

Clinical Course: Patient received 1 g Ca chloride with improvement in HR and then transferred to a tertiary hospital where he arrived. 1 h later he was agitated and received fentanyl, midazolam and vecuronium. A central and arterial line were placed; dopamine and epinephrine drips were started for increasing hypotension. Arterial pH was 6.91 and he received sodium bicarbonate. 4 h later he went into VF and died, despite resuscitation efforts, ~5 h after the ingestion. Final laboratory values:

pH 7.07/pCO2 105/pO_2 < 19, Na 157/K 4.2/Ca 5.9, lactate 11.3.

Autopsy Findings: Not performed per parents' request.

Case 176. Acute drain cleaner ingestion: undoubtedly responsible

Scenario/Substances: A 53 y/o female ingested alkali drain cleaner (sodium hydroxide/sodium hypochlorite/sodium silicate) in a suicidal attempt.

Physical Exam: Pale and cold, RR 60. Burns were noted in her posterior pharynx.

Laboratory/Diagnostic Findings: Lactate 5; serum APAP and salicylate not detected.

Clinical Course: She was intubated and started on propofol and pantoprazole. An ECG suggested pericarditis, but it was unknown if this was related to the ingestion. In the ICU she received fentanyl for abdominal pain. CxR: free air; she was taken to the OR for an exploratory laparotomy that showed a perforated stomach and peritoneal blood. She died 26 h after initial presentation.

Autopsy Findings: Cause of death: complications of alkali ingestion; manner of death: suicide. Findings: gastric perforation, esophagitis, retroperitoneal hematoma and ischemic necrosis of the intestines.

Case 219. Acute hydrogen sulfide inhalation: undoubtedly responsible

Scenario/Substances: A 36 y/o male was found unresponsive in the restroom at a hog farm where he was doing construction work. Coworkers stated that there was a hole in the bathroom floor connecting to a sewer that emptied waste from the hog confinement area.

Physical Exam: BP 210/110, HR 156, RR 24, O_2 sat 94% RA, T 37 °C. Unresponsive and seizing with dilated pupils and right lateral gaze.

Laboratory/Diagnostic Findings: Na 142/K 2.6/Cl 107/CO_2 17.5/BUN 12/Cr 1.7/Glu 287/AG 17.5, WBC 24.4/Hgb 15.0/Hct 43.9/PLT 249. UDS was negative. CxR and CT head: negative.

Clinical Course: He was intubated in the ED and received propofol, midazolam, lorazepam, phenytoin and ceftriaxone. He was then transferred to a tertiary hospital where an MRI brain showed no abnormalities. Lumbar puncture infectious studies were negative. On Day 2 he had episodes of VT treated with amiodarone. His course was complicated by hyperkalemia, diffuse ST elevation (troponin 1.37), acidosis, renal insufficiency (Cr 3.4) and transaminitis (AST 3,914, ALT 1,394). On Day 3, ~30 min after starting HD, he became bradycardic and then died.

Autopsy Findings: Cause of death: chemical asphyxia; manner of death: accidental. Premortem blood showed nontoxic levels of lorazepam and naproxen; serum thiosulfate was measured at 10 mcg/mL. An inhalants panel was positive for acetone, t-butanol and isobutanol.

Case 247. Acute carbon dioxide inhalation: undoubtedly responsible

Scenario/Substances: A 77 y/o female was found unresponsive in a truck containing a large amount of dry ice.

Clinical Course: She died despite resuscitate efforts.

Autopsy Findings: Cause of death: asphyxiation; manner of death: accident. Toxicology testing: no drugs or alcohol detected.

Case 262. Acute barium ingestion: undoubtedly responsible

Scenario/Substances: A 33 y/o female called EMS after ingesting 'several scoops' of barium acetate mixed with water.

Past Medical History: Bipolar disorder, anxiety, diabetes, PTSD, borderline personality disorder, HTN. Medications: amlodipine, metoprolol, doxazosin, baclofen, lurasidone, buspirone, topiramate, sertraline, hydroxyzine.

Physical Exam: In the ED she was initially alert and oriented, with vomiting, but soon became intermittently somnolent and agitated. BP 151/83, HR 151, RR 18, O_2 sat 96% (RA).

Laboratory/Diagnostic Findings: ABG-pH 7.34/pCO_2 29/pO_2 77/HCO_3 15.6/BD 8.6. Na 139/K 1.6/Cl 107. lactate 3.6, Mg 2.1. ECG: "wide complex tachycardia." Repeat ECG (1 h later): HR 67, PR 232, QRS 96, QTc 526.

Clinical Course: She presented to the ED ~1 h after the ingestion. She rapidly developed intermittent periods of tachyarrhythmias progressing to wide complex tachycardia. She was treated with IV K, Mg, lidocaine and cardioversion for VT. Soon after 100 mEq of IV sodium bicarbonate she developed VF. Despite ACLS interventions, including intubation, defibrillation, Ca, Mg and epinephrine, she died within 2 h of ED arrival.

Autopsy Findings: Cause of death: barium acetate toxicity; manner of death: suicide. Postmortem femoral blood: barium 13 mg/L.

Case 263. Acute-on-chronic potassium chloride ingestion: probably responsible

Scenario/Substances: A 72 y/o male was found unresponsive and incontinent after an intentional ingestion (at unknown time) of an oral potassium solution.

Past Medical History: Bulimia. Medications: potassium, APAP, ibuprofen.

Physical Exam: SBP 160s, HR 110, RR 27, T 36 °C.

Laboratory/Diagnostic Findings: K 8.3 (7.4 after treatment), Cr 2.2. Serum APAP, ethanol and salicylate not detected. ECG: PR 213, QRS 133, QTc 487.

Clinical Course: Patient had multiple cardiac arrests ~30 min after ROSC that involved VT, PEA and asystole. He was resuscitated and treated with vasopressors, CRRT, sodium bicarbonate drip, insulin and Ca. He ultimately had another cardiac arrest and died on Day 1.

Autopsy Findings: Not provided.

Case 271. Acute-on-chronic fluorinated hydrocarbon, inhalation: undoubtedly responsible

Scenario/Substances: A 28 y/o male presented to the ED with chest pain, lightheadedness and shortness of breath after huffing cans of an aerosol dusting agent.

Past Medical History: Daily huffing of aerosol product.

Laboratory/Diagnostic Findings: Troponin 8.2, BUN 42, Cr 2.4. ECG: ST elevation.

Clinical Course: In the ED: BP 132/84, HR 138, RR 22, O_2 sat 99% (RA). He was hypotensive during transfer to a tertiary hospital. Cardiac catheterization revealed left-sided vasospasm with no fixed lesions. He was treated with nitroglycerin but ~6 h after presentation went into cardiac arrest and died.

Autopsy Findings: Cause of death: complications of difluoroethane and trifluoroethane exposure. Postmortem drug screen was positive for fluoxetine, lidocaine, chlorpheniramine, and dextromethorphan.

Case 282. Acute hydrocarbon, fluorinated inhalation: undoubtedly responsible

Scenario/Substances: A 41 y/o female presented to an ED 3 h after huffing a keyboard cleaner containing 1,1 difluoroethane.

Past Medical History: Asthma, HTN, Crohn's disease, alcoholism, PTSD, anxiety.

Physical Exam: BP 179/115, HR 122, RR 20, O_2 sat 98% (RA), T 38 °C. Alert and oriented.

Laboratory/Diagnostic Findings: ECG: PR 124, QRS 84, QTc 441.

Clinical Course: Initially she was jittery, anxious and complained of SOB. ~3.5 after exposure, after walking to the bathroom, she went into VF. She received CPR, sodium bicarbonate, epinephrine and Mg, but died 4.5 h after exposure.

Autopsy Findings: Cause of death: 1,1, difluoroethane toxicity; manner of death: accidental. Postmortem blood testing: 1,1 difluoroethane 5.7 mg/L., diazepam, 0.036 mg/L, nordiazepam 0.17 mg/L.

Case 285. Acute hydrocarbon, fluorinated inhalation/nasal: undoubtedly responsible

Scenario/Substances: A 48 y/o male presented to an ED for evaluation of knee pain and was observed using "whippits" (later determined to contain difluoroethane) in the waiting room. He was later found slumped over with no pulse.

Past Medical History: Substance use disorder.

Physical Exam: After ROSC: BP 91/59, HR 126, RR 22, O_2 sat 85% (RA; 94% on ventilator), afebrile. GCS 3, diffuse muscle fasciculations.

Laboratory/Diagnostic Findings: Na 139/K 4/Cl 112/CO_2 24/BUN 16/Cr 0.77/Glu 103, Ca 7.5, AST 69, ALT 110, WBC 10.3/Hgb 12/Hct 37/PLT 219. Serum APAP and salicylate not detected, UDS negative. CT head: no acute findings.

Clinical Course: CPR was initiated, he received epinephrine and Ca with ROSC. He was intubated and cooled. He became hypotensive to 60/29, was started on norepinephrine, but based on concerns for cardiac excitation, BP was maintained off vasopressors. In the ICU he had severe persistent myoclonus that did not respond to levetiracetam. He had no spontaneous breaths or brainstem reflexes. Based on the prognosis, the family opted for institution of comfort measures and he died.

Autopsy Findings: Difluoroethane was confirmed in serum. Cause of death: complications of probable difluoroethane inhalation; manner of death: accident.

Case 293. Acute water ingestion: undoubtedly responsible

Scenario/Substances: A 9 y/o male, who had been drinking a lot of water one day prior, complained to his older sister that he didn't feel well. She gave him his normal dose of dexmethylphenidate; the next morning he was unresponsive with tremors.

Past Medical History: ADHD with compulsive behaviors. Medications: dexmethylphenidate, albuterol.

Physical Exam: Minimally responsive in the ED, where he was intubated. He became hypertensive, bradycardic and hypoxic, then tachycardic. 600 cc of clear fluid removed via NGT.

Laboratory/Diagnostic Findings: Na 118, Urine Glu >500. Serum APAP and salicylate not detected; UDS negative. CT head: diffuse cerebral edema. MRI brain: cerebral edema and compressed spinal cord. Confirmatory drug testing: fentanyl, ketamine, diphenhydramine, methylphenidate, polyethylene glycol.

Clinical Course: In the ED he received 100 ml of 3% sodium chloride, lorazepam and succinylcholine, then transferred to a tertiary hospital. In the ICU he was intubated but had no purposeful movements off sedation; pupils were fixed and dilated. EEG showed no brain activity. BP 88/55, Hr 107, RR 16, O_2 sat 100% (40% FiO_2). Day 2: Na 125; intermittent posturing. Norepinephrine was started for hypotension: BP 85/50, HR 124, T 38 °C, CVP 13. He required active warming for persistent hypothermia. On Day 3 he was declared brain dead, care was removed and he died.

Autopsy Findings: Cause of death: complications of water intoxication; manner of death: accident.

Case 300. Unknown brodifacoum, THC homolog inhalation: undoubtedly responsible

Scenario/Substances: A 31 y/o male presented with hematemesis 2 days after smoking synthetic cannabinoid ("K2").

Physical Exam: Venus oozing from IV sites.

Laboratory/Diagnostic Findings: Hgb 18, INR "immeasurable high." UDS was negative. CT Abd: 'suggestive for peri-renal hemorrhage.'

Clinical Course: He was initially treated with oral vitamin K. On Day 2: Hgb 12; INR remained unmeasurable, Na 125. That evening he became altered; CT head showed a large frontal/parietal hemorrhage with midline shift and herniation. He was intubated and treated with 4 factor PCC, FFP, dexamethasone and mannitol. He was transferred to a tertiary hospital where a ventriculostomy was placed. He had fixed and dilated pupils and was unresponsive off sedation; INR 1.9. He was declared brain dead via brain perfusion study and taken for organ donation.

Autopsy Findings: Cause of death: hemorrhagic complications of acute brodifacoum intoxication; manner of death: accidental. Autopsy findings: bilateral uncal herniations, left frontoparietal hemorrhages, bilateral intraventricular hemorrhages, intraparenchymal pulmonary hemorrhages, intestine hemorrhage and hemorrhagic bladder. Toxicology: blood brodifacoum 96.5 mcg/L. Contributory condition: history of synthetic marijuana (K2) use.

Case 304. Acute imidacloprid ingestion: undoubtedly responsible

Scenario/Substances: A 40 y/o male mistakenly drank an imidocloprid-containing pesticide that was stored in a milk jug. His family found him vomiting and shaky; EMS found him in cardiac arrest. He was intubated with CPR and ROSC.

Past Medical History: Down's syndrome.

Physical Exam: In the ED: BP 75/38, HR 115, RR 20, O_2 sat 100%.

Laboratory/Diagnostic Findings: ABG-pH 7.1/pCO_2 40.5/pO_2 161/HCO_3 12.7, lactate 9.2, Glu 355 (later 55), peak WBC 16.9. UDS negative.

Clinical Course: The patient remained unresponsive without sedation; pupils 8 mm and non-reactive. His clinical course was complicated by persistent hypotension requiring vasopressors, hypokalemia (K 2), hypoglycemia (Glu 55) and oliguria (Cr 1.7). Hypothermia protocol was initiated on Day 2 and he received IVFs, vasopressors, alkalinization and electrolyte replacement. He was rewarmed without neurologic recovery. Based on the prognosis, comfort measures were instituted and he died on Day 3.

Autopsy Findings: Not available.

Case 306. Acute brodifacoum, diphenacoum, THC homolog inhalation: undoubtedly responsible

Scenario/Substances: A 46 y/o male presented to an ED with bloody emesis and then became obtunded.

Past Medical History: Chronic synthetic cannabinoid and ethanol abuse, arthritis.

Physical Exam: BP 119/70, HR 120, RR 20, O_2 sat 99% (intubated), T 36 °C. Pupils fixed and dilated, no spontaneous breathing or gag reflex.

Laboratory/Diagnostic Findings: INR > 10, Hgb 15.8, Hct 46.3. Serum APAP, ethanol and salicylate not detected. ECG: sinus tachycardia. CT head: subarachnoid hemorrhage.

Clinical Course: In the ED he was intubated and transferred to a tertiary hospital where he received 4 factor PCC, IV vitamin K and blood products. Repeat labs: Hob 13.6, INR 1.0. Despite treatment he was declared brain dead and died on Day 1.

Autopsy Findings: Subdural and subarachnoid hemorrhages with cerebral edema. Blood tested positive for difenacoum and brodifacoum.

Case 311. Acute acephate ingestion: undoubtedly responsible

Scenario/Substances: A 54 y/o male was found at home with vomiting and diarrhea. He told family he had ingested "a tin" of ant poison (later identified as acephate). EMS found him in cardiac arrest, intubated him and transported with CPR.

Past Medical History: Bipolar disorder, depression with prior suicidal ideation, GERD, alcohol abuse.

Physical Exam: After ROSC: BP 110/60, HR 125, O_2 sat 100% (100% FiO_2) intubated, pupils dilated and nonreactive.

Laboratory/Diagnostic Findings: Na 137/K 4.3/Cl 101/CO_2 <7/Glu 567/BUN 38/Cr 4.52, Ca 8.1, AST 298, ALT 227. ABG-pH 6.9/pCO_2 44.7/pO_2 553/HCO_3 9.7/BD 22. Serum APAP, ethanol and salicylate not detected; UDS negative.

Clinical Course: In the ICU he received IVFs, atropine, a pralidoxime drip, dopamine and sedation. On the evening of Day 1 he had cardiac arrest x 3; his pupils remained dilated and nonreactive. Over the next 12 h he deteriorated and was declared brain dead on Day 2. Based on the prognosis, comfort measures were instituted and he died on Day 3.

Autopsy Findings: Not performed.

Case 313. Acute paraquat, glyphosate ingestion: undoubtedly responsible

Scenario/Substances: A 59 y/o male accidentally swallowed a 'mouthful' of paraquat and glyphosate-containing herbicide that was stored in an unlabeled sports drink bottle. He developed oral irritation and hematemesis prior to arriving at the ED within 20 min.

Past Medical History: Type 2 diabetes mellitus and HTN.

Physical Exam: BP 193/118, HR 138, RR 22, O_2 sat 99% (RA). The patient was diaphoretic and vomiting clear, foamy emesis.

Laboratory/Diagnostic Findings: ABG-pH 7.34/pCO_2 33/pO_2 218. (100% FiO_2) Na 139/K 3.6/Cl 101/CO_2 17.9/BUN 10/Cr 1.12/Glu 351, AST 22, ALT 27, bilirubin 0.3. WBC 12/Hgb 15.4/Hct 46/PLT 206. CxR: unremarkable. ECG: sinus rhythm, QRS 105, QTc 479.

Clinical Course: In the ED, he was given activated charcoal, IV NAC, ascorbic acid and riboflavin, and intubated for airway protection. He was transferred to a tertiary hospital and remained on an FiO_2 of 21% with a target O_2 sat of 85%. He received emergent HD and then placed on CRRT. He required insulin for hyperglycemia (poorly controlled DM and steroids). On Day 2 he was alert and following commands, so he was extubated. AST 419, ALT 419, Cr 2.97 on CRRT. On Day 3, he was re-intubated for impending respiratory failure and metabolic acidosis and started on high dose norepinephrine, vasopressin and phenylephrine drips, and given 2 doses of methylene blue. On Day 4, he required epinephrine and 100% FiO_2. CxR: bilateral atelectasis with pulmonary edema. The patient went into PEA and ACLS was initiated without ROSC and the patient died. A serum paraquat concentration collected 27 h post-ingestion was 1,400 ng/mL.

Autopsy Findings: Not performed.

Case 314. Acute paraquat ingestion: undoubtedly responsible

Scenario/Substances: A 63 y/o male accidentally ingested ~60 ml of a 30% paraquat solution (his wife had left the solution in a soft drink bottle). He vomited several times and was taken to the ED.

Past Medical History: Parkinson's disease.

Physical Exam: Awake and alert but uncomfortable; no oropharyngeal burns. BP 138/79, HR 80, RR 17, O_2 sat 100% (RA).

Laboratory/Diagnostic Findings: K 3.2, Cr 1.2, BUN 17, AST 42.

Clinical Course: His vomiting stopped before ED arrival. He received IVFs, pantoprazole, ondansetron, IV cyclophosphamide (1g/d for 2 days), methylprednisolone (15 mg/kg/d) and IV NAC. HD was performed on Day 3 for decreased urine output and Cr increased (6.8) and he was transitioned to CCRT. On Day 4 he was intubated for hypoxia during an EGD that found patchy ulcerations and eschar in his esophagus. He required increasing ventilator support (FiO2 65% then 100%; PEEP of 10; O_2 sat ~85%) with increased pulmonary secretions, and vasopressors. Vancomycin was added on Day 18 for sepsis On Day 21: AST increased from 695 to >3,700 and ALT 359 to 3057; ammonia 398, Cr 2.48 on CRRT. The patient had air trapping with decreased lungs compliance; CxR: interstitial prominence. He received 2 units PRBS (to improve oxygen delivery) but died on Day 22 after comfort measures were instituted.

Autopsy Findings: Not performed.

Case 323. Acute plant toxalbumin ingestion: undoubtedly responsible

Scenario/Substances: A 20 y/o male purchased 1,000 jequirity beans online, then crushed and ingested them in a suicide attempt. He developed abdominal pain, vomiting and diarrhea 12 h later, and had

hematemesis and hematochezia when he presented to an ED 24 h after the ingestion.

Past Medical History: Prior suicide attempts with castor beans.

Laboratory/Diagnostic Findings: Na 145/K 4.5/Cl l27/CO_2 27/Glu 122/BUN 22/Cr 0.9, AST 25, ALT 13, lactate 1.3. WBC 34.7/Hgb 17.3/PLT 299, INR 1.1. Serum APAP and salicylate not detected. WBC (Day 3) 52.

Clinical Course: In the ED he was neurologically intact with a normal examination. Over the next 2 days he had progression of GI symptoms that improved with antiemetics and benzodiazepines. On Day 2 he developed confusion and agitation with tremors and abnormal eye movements. CT head was normal. His condition deteriorated to minimal responsiveness and choreoathetoid movements. EEG: mild background slowing. MRI brain: bilaterally signal abnormalities in the basal ganglia, brainstem, corpus callosum and corona radiata with diffuse leptomeningeal enhancement. He developed a tonic clonic seizure followed by PEA arrest that responded to resuscitation. Based on the prognosis, family opted for comfort measures and he died on Day 4.

Autopsy Findings: Not performed per family request. Urine testing (Day 3 sample): abrin 8.84 ng/mL.

Case 325. Acute *Thevetia peruviana* ingestion: undoubtedly responsible

Scenario/Substances: A 63 y/o female presented to an ED ~12 h after consuming a weight loss product. She was told they were candle nuts, and to mix part of one in tea; instead she ate 5 whole nuts at once. The nuts were later identified as *Thevetia peruviana* (yellow oleander).

Past Medical History: NIDDM. Medications: glyburide, metformin, simvastatin, fluticasone/salmeterol inhaler.

Physical Exam: Lethargic with nausea and vomiting, HR 53.

Laboratory/Diagnostic Findings: Na133/K 7.3/Cl 100/CO_2 25/Cr 1.5/Glu 555. Serum digoxin not detected. ECG: slow AF, QRS 114, QTc 335.

Clinical Course: She received insulin and sodium bicarbonate, her BP dropped and dopamine was initiated. She was resuscitated for VF but died during the placement of a temporary pacemaker.

Autopsy Findings: Cause of death: toxic effects of *Thevetia peruviana* (yellow oleander) seeds. The seeds and liver tested positive for peruvoside.

Case 326. Acute Thevetia peruviana ingestion: probably responsible

Scenario/Substances: A 64 y/o male was found hypotensive, tachycardic and diaphoretic after accidentally ingesting his wife's weight loss product. The plant seed product was labelled as 'Brazilian candlenut' but was thought to be oleander-based.

Physical Exam: BP 85/43, HR 175.

Clinical Course: In the ED he was in extremis and, despite ACLS efforts and 10 vials of digoxin Fab fragments, died shortly after arrival.

Autopsy Findings: Not available.

Case 327. Chronic argemone alba ingestion: probably responsible

Scenario/Substances: An 8 m/o male presented with a rash, agitation and lower extremity edema after receiving antimicrobials and herbal "poppy seeds" (sent by relatives in India) for a recent respiratory illness. The seeds had been crushed and mixed with food intermittently for weeks.

Physical Exam: Upon admission, he was afebrile, tachycardic and hypertensive with normal RR and O_2 sat. Physical exam: bilateral lower extremity edema with reticular, blanching rash; delayed capillary refill (5 sec).

Laboratory/Diagnostic Findings: CBC: 'leukocytosis, anemia and thrombocytopenia'; electrolytes, liver function tests, urinalysis, ESR, CRP, INR, Coombs test, blood cultures: 'all normal.' Uric acid 8.3, LDH 536. Respiratory viral panel positive for human metapneumovirus. Abdominal U/S: hepatomegaly and ascites. ECHO: mild pulmonary artery HTN, small bilateral pleural effusions. Samples of the "poppy seeds" were confirmed to be *Argemone mexicana* and tested positive for sanguinarine and dihydrosanguinarine.

Clinical Course: Patient was admitted to the PICU and received diuretics. During preparation for intubation (due to lethargy and clinical decompensation) he went into PEA arrest. Despite CPR and PALS, he failed to have ROSC. Based on the prognosis, family opted for comfort measures and he died on Day 4.

Autopsy Findings: History and clinical findings consistent with *Argemone mexicana* toxicity (also known as "epidemic dropsy"). Clinical findings: myocardial, pulmonary, hepatic and renal medullary congestion; diffuse dermal capillary dilatation and congestion. Serum testing (hospital blood from Day 2): sanguinarine and dihydrosanguinarine not detected.

Case 330. Acute methadone ingestion: undoubtedly responsible

Scenario/Substances: A 2 y/o male was found lethargic by his mother with her methadone bottle open and 20 pills missing. She then put the child down for a nap and could not wake him 5 h later. EMS found him in asystole; he was intubated and received IO naloxone and epinephrine.

Laboratory/Diagnostic Findings: Na 137/K >10/Cl 113/CO_2 7/BUN 24/Cr 0.99/Glu 27/AG 17, AST 3,499, ALT 2,888, Ca 8.7, lipase 965, WBC 24.6/Hgb 8.7/PLT 55, Serum APAP and salicylate not detected; serum drug screen was negative.

Clinical Course: He was in cardiac arrest at ED arrival: cool, pale skin, pupils fixed and dilated, no pupillary or corneal response; T 33.2 °C. An ECHO showed no cardiac activity after 30 min of resuscitation, and he was declared dead.

Autopsy Findings: The cause of death: methadone toxicity; manner of death: undetermined.

Case 377. Unknown, fentanyl inhalation/nasal: undoubtedly responsible

Scenario/Substances: A 20 y/o male was found unresponsive at home after snorting illicit "oxycodone/APAP" pills. EMS found him in cardiac arrest. He was intubated and received ACLS, 2 mg naloxone IM, then epinephrine and naloxone x 3 with ROSC. $ETCO_2$ 44, O_2 sat 91%.

Past Medical History: Substance abuse, ADHD. Medication: dextroamphetamine-amphetamine.

Laboratory/Diagnostic Findings: ABG-pH 7.05/pCO_2 80/pO_2 94/HCO_3 2. Na 139/K 3.7/Cl 100/CO_2 23/BUN 11/Cr 1.4/Glu 411/AG 16, lactate 7. AST 105, ALT 124, INR 1.1. Serum APAP, ethanol and salicylate not detected. UDS positive for benzodiazepines and THC. CxR: pneumomediastinum.

Clinical Course: In the ED he received additional naloxone and started on a naloxone drip started along with IVFs, norepinephrine, sodium bicarbonate, midazolam and hypothermia protocol. On Day 2 rewarming was initiated. EKG: ST depression and probably anterolateral infarct; HR 127, QRS 105, QTC 405. ECHO: LVEF 40-45%, globally decreased. CT head: diffuse brain edema with loss of normal gray-white interface. Brain perfusion scan: no significant flow of blood to the brain. HR 126, RR 22, BP 122/100, T 37 °C (rectal), O_2 sat 91% (35% FiO_2). The patient received enoxaparin, famotidine, piperacillin-tazobactam, D5W, nicardipine and phenylephrine. Based on the prognosis, the family opted for comfort measures and he died on Day 2.

Autopsy Findings: Cause of death: toxic effects of fentanyl; manner of death: accident.

Case 668. Acute oxycodone parenteral: contributory

Scenario/Substances: A 38 y/o male was found injecting a syringe into his IV line during inpatient treatment for endocarditis and 2nd degree heart block.

Past Medical History: Substance abuse, endocarditis, aortic surgery. Medications: diphenhydramine, gabapentin, clonazepam, hydromorphone, oxycodone, quetiapine.

Clinical Course: The patient rapidly developed mydriasis (8 mm pupils) and then cardiac arrest. He was intubated and received CPR, naloxone, epinephrine, atropine, sodium bicarbonate and flumazenil without ROSC and he died after 1 h of resuscitation. An acute PE from IV substance abuse was thought to have contributed to death.

Autopsy Findings: Cause of Death: acute pulmonary thromboemboli due to IV drug abuse; manner of death: accidental. Femoral blood: oxycodone 283 ng/mL, oxymorphone <10 ng/mL, quetiapine metabolites. Vitreous fluid oxycodone >400 ng/mL.

Case 779. Acute-on-chronic tramadol ingestion: undoubtedly responsible

Scenario/Substances: A 47 y/o male mistakenly took a bottle of tramadol 50 mg tablets instead of his evening medications. He was immediately referred to the ED.

Physical Exam: Nauseated and confused.

Clinical Course: Within 15 min he had a seizure and went into PEA arrest. He was intubated, received CPR and ILE with ROSC after 40 min. He coded again in the ICU but died after 30 min of resuscitation efforts.

Autopsy Findings: Cause of Death: tramadol toxicity. Femoral blood (from a hospital sample): diphenhydramine 95 ng/mL, metoprolol 720 ng/mL, tramadol 22,000 ng/mL, o-desmethyltramadol 750 ng/mL.

Case 803. Chronic APAP ingestion: undoubtedly responsible

Scenario/Substances: A 49 y/o female presented to the ED with tachypnea, confusion and hypoglycemia (Glu 58), complaining of "stomach pain."

Past Medical History: Anxiety, substance abuse, prior suicide attempt. Medications: APAP, lorazepam, tramadol, simvastatin, oxycodone. Recently overdosed on benzodiazepines and cocaine and was discharged from the hospital several days prior. Her husband reported that he "threw away" her lorazepam and oxycodone and she was treating her pain with 2-3 tablets of APAP "every 4 - 6 h."

Physical Exam: BP 144/84, HR 95, RR 36, T 37 °C, O_2 sat 96% (RA). Awake but slow to respond to questions with slurred speech. Pupils 3mm and reactive, tachypneic with Kussmaul pattern. Right upper abdominal tenderness.

Laboratory/Diagnostic Findings: Serum APAP 321 mcg/mL; salicylate 4.3 mg/dL. Cr 1.35 (baseline 0.57), VBG-pH 6.84/HCO_3 4, lactate 19.3 mmol/L, AST 9,065, ALT 6,334 ALP 170, bilirubin 5.5, CK 1,014, ammonia 333, Phos 8.2, WBC: 45,200, INR 8.9. CT head: no acute findings; CT Abd: small bowel obstruction.

Clinical Course: In the ED she was given D50W, fomepizole, 2 L IVFs, 3 amps of sodium bicarbonate and started on NAC. Fomepizole was stopped when ethylene glycol, methanol and isopropanol were undetectable. Repeat APAP level (6 h later) was 258 mcg/mL. She was admitted to the ICU, intubated and started on propofol, fentanyl, norepinephrine, sodium bicarbonate, vasopressin and CRRT. Day 2: T 35 °C, HR 107, BP 93/53, O_2 sat 100% (40% FiO_2), AST 10,844, ALT 4665, lipase 73,000, INR 4.3, LDH 10,000, ammonia 164, lactate 13.4. She received FFP, insulin drip and antibiotics for aspiration pneumonia, ascites and splenic infarct. On Day 3 she was listed for liver transplant but then held due to pancreatitis. Day 6: GCS 9; CT head showed cerebral edema. Bilirubin increased to 19.9 on day 7. Day 8: IV NAC discontinued due to lack of IV access. She developed fulminant pancreatitis, ARDS and lost corneal reflexes. Based on the prognosis, the family opted for comfort measures and she died on Day 11.

Autopsy Findings: Cause of death: complications of acute APAP toxicity; manner of death: undetermined.

Case 868. Acute-on-chronic phenazopyridine ingestion: undoubtedly responsible

Scenario/Substances: A 53 y/o female presented with methemoglobinemia after chronic abuse of phenazopyridine.

Past Medical History: Chronic UTIs. Recent admission for methemoglobinemia (MetHgb 44%) after phenazopyridine misuse.

Physical Exam: The patient appeared "jaundiced" and was confused. BP 154/77, HR 108, RR 16, O_2 sat 78% (100% O_2 NRB), T 37 °C.

Laboratory/Diagnostic Findings: MetHgb 46%. ABG-pH 7.32/pCO_2 44/pO_2 67/HCO_3 22. Hgb 9.2/Hct 30.3/WBC 11.1/PLT 89. Serum APAP, ethanol and salicylate not detected. UDS positive for barbiturates and THC. Day 2: K 9.3, CO_2 11, BUN 76, Cr 3.1, AST 930, AST 439, lactate 11.2.

Clinical Course: She remained confused, tachycardic and hypertensive, with renal insufficiency (brownish urine, BUN 42, Cr 1.9), mild acidosis (CO_2 23), transaminitis (AST 123, ALT 156) and "long" QTc. She received a total of 5 mg/kg of methylene blue; repeated MetHgb was 26.4%. Repeat ABG-pH 7.23/pCO_2 40/pO_2 566 (on high-flow O_2), HCO_3 16.8. On Day 2 she was started on norepinephrine for hypotension (BP 74/46) and received exchange transfusion (for cyanosis and increasing confusion). She died during transfer to a tertiary hospital.

Autopsy Findings: Not available.

Case 1163. Acute-on-chronic nitrous oxide inhalation: contributory

Scenario/Substances: A 30 y/o male was found unresponsive in his car with dozens of nitrous oxide cannisters. Upon arousal, he reported inhaling 10 cannisters recently and on a daily basis. He denied use of any other drugs or suicidal ideations but reported feeling light-headed and SOB.

Past Medical History: Morbidly obese, bipolar disorder.

Physical Exam: On ED arrival he was anxious but alert and oriented. BP 106/70, HR 148, RR 50, O_2 sat 100% (NRB), T 37.2 °C.

Laboratory/Diagnostic Findings: WBC 15, Glu 466, Ca (ionized) 1.03, CO_2 20, AG 21. Serum APAP, ethanol and salicylate not detected. UDS: positive for TCAs. ECG: HR 150.

Clinical Course: 50 min after ED arrival: BP 113/74, HR 129, RR 36, O_2 sat 100% (15L). He was given IVFs and 2 mg IV lorazepam and was admitted to a floor bed. ~6 h later he became agitated and dyspneic; O_2 sat was 100% (NRB). He suddenly collapsed and went into PEA. He was intubated and received ACLS (including epinephrine, Mg, Ca, sodium bicarbonate and atropine) for 40 min without ROSC. He died ~7 h after ED arrival. The nitrous oxide use was thought to have been contributory to his death.

Autopsy Findings: Cause of death: bilateral pulmonary emboli due to DVT; manner of death: natural. Femoral blood testing: NO 71 mcg/mL. The autopsy report mentioned that 'chronic nitrous oxide abuse is a risk factor for the formation of DVT.'

Case 1164. Acute ketamine inhalation: undoubtedly responsible

Scenario/Substance: A 34 y/o male was found unresponsive in his bathroom tub with white powdery substance around his nares. He had discussed using ketamine earlier that evening. EMS found he in cardiac arrest and provided CPR, epinephrine, naloxone and defibrillation with ROSC. He lost pulses enroute to the ED.

Past Medical History: Attention deficit disorder, substance abuse.

Physical Exam: In the ED: BP 85/31, HR 79, RR 16, O_2 sat 97% (intubated). He had fixed and dilated pupils, no spontaneous movement and right periorbital ecchymosis.

Laboratory/Diagnostic Findings: VBG- pH 6.89/pCO_2 89, lactate 16, Cr 1.3, AST 700's, INR 1.5 Hgb 15.8/PLT 35, fibrinogen <30. UDS was negative.

Clinical Course: In the ED he received epinephrine, amiodarone, atropine, Ca, naloxone and sodium bicarbonate with ROSC. He was started on norepinephrine, vasopressin and epinephrine drips for persistent hypotension. In the ICU he remained unstable and required increased vasopressors and sodium bicarbonate; CRRT was initiated. On Day 3 he had repeated cardiac arrests with ROSC after resuscitation, but remained in shock (SBP 50s) after the third cardiac arrest. Based on the prognosis, comfort measures were instituted and he died on Day 3.

Autopsy Findings: Cause of death: complications of acute ketamine use. Findings: cerebral edema; subscapular, subgaleal and left temporalis muscle hemorrhages. Antemortem blood: ketamine 13,189 ng/mL, norketamine 16,439 ng/mL.

Case 1166. Acute isoflurane inhalation/nasal: probably responsible

Scenario/Substance: A 46-y/o male was found unresponsive in bed, by his wife, with 5 empty bottles of isoflurane. EMS found him in asystole and provided CPR, epinephrine and defibrillation with ROSC.

Past Medical History: Chronic alcoholism, HTN.

Physical Exam: Unresponsive, facial abrasions, pupils fixed and dilated. BP 185/100, HR 130, O_2 sat 100% (intubated), T 35 °C.

Laboratory/Diagnostic Findings: ABG-pH 7.11/pCO_2 >60/pO_2 110, NA 141/K 4.4/CL 90/CO_2 18/BUN 18/Cr 1.13/Glu 231. WBC 8.8/Hgb 13.7/PLT 217. UDS negative. CT head and CxR: no acute disease.

Clinical Course: In the ICU he developed bilateral pulmonary infiltrates and respiratory failure, and was started on IV antibiotics. He developed progressive hypotension and went into cardiac arrest. He received CPR and norepinephrine with transient ROSC, but again arrested. Based on the prognosis, comfort measures were instituted and he died on Day 1.

Autopsy Findings: Antemortem blood: isoflurane 0.29 mcg/mL.

Case 1168. Acute lidocaine parenteral: undoubtedly responsible

Scenario/Substances: A 78 y/o male called 911 for symptomatic hypoglycemia. He went into cardiac arrest after EMS mistakenly administered IV lidocaine (2%; unknown dose) instead of D10.

Laboratory/Diagnostic Findings: ABG-pH 7.01. Na 138/K 4.4/Cl 98/CO_2 23/BUN 22/Cr 1.8. ECG: HR 94, QRS 186.

Clinical Course: He was in asystole upon ED arrival, and received sodium bicarbonate and 100 mL of 20% ILE (followed by 0.5 mL/kg over 1 h) with ROSC and wide-complex VT. He also received 3 g Ca and intubated for airway protection. He became hypertensive (BP 207/79, HR 94, O_2 100% vent); then, 3 h later, hypotensive and tachycardic (SBP 75, HR 122, QRS 134). He failed to responsive to IVFs and norepinephrine, coded several times and developed cardiac tamponade. Based on the prognosis, the family opted for institution of comfort measures and he died 12 h post exposure.

Autopsy Findings: Cause of death: cardiac arrest, circulatory shock and cardiac tamponade. Autopsy was not performed.

Case 1195. Acute-on-chronic lacosamide, levetiracetam ingestion: undoubtedly responsible

Scenario/Substances: An 81 y/o male presented to the ED via EMS 1 h after ingesting ~75 tablets of lacosamide (200 mg) and levetiracetam (500 mg ER) in a suicide attempt.

Past Medical History: HTN, dementia, previous suicide attempt, seizure disorder. Medications: lacosamide, levetiracetam, aspirin, lorazepam.

Physical Exam: ED vital signs: BP 192/96, HR 91, RR 20, O_2 sat 94% (on 2L).

Laboratory/Diagnostic Findings: ECG: QRS 120, QTc 424. Repeat ECG (6 h later): QRS 124, QTc 447. Electrolytes "normal.". Serum APAP and salicylate not detected.

Clinical Course: In the ED he was intubated and sedated with propofol and lorazepam and received IVFs. Intermittent seizure activity developed ~6 h later and persisted. He developed intermittent episodes of VT and then bradycardia with complete heart block. Based on the prognosis, comfort measures were instituted and he died 16 h after presentation.

Autopsy Findings: Cause of death: levetiracetam and lacosamide toxicity; manner of death: suicide.

Case 1217. Acute-on-chronic clomipramine, perphenazine, paroxetine, diphenhydramine, clonazepam, hydroxyzine, atomoxetine, cetirizine ingestion: undoubtedly responsible

Scenario/Substances: A 29 y/o male was found unresponsive with empty bottles of his medications: clomipramine, perphenazine, atomoxetine, lithium, clonazepam, paroxetine and hydroxyzine. EMS administered naloxone without response.

Physical Exam: In the ED he responded to painful stimuli. Initial BP 104/55, HR 95, O_2 sat 100% (RA), T 36.6^{0}C.

Laboratory/Diagnostic Findings: electrolytes and AST/ALT were 'normal,' Cr 'slightly elevated.' Serum ethanol, APAP and salicylate not detected. ECG: QTc 575. Serum lithium 0.42 mmol/L.

Clinical Course: ~3 h after ED arrival he was somnolent and uncooperative, but admitted to an intentional ingestion. He became hypotensive (80/50) with decreased O_2 sat (93%) and labored breathing. During intubation he had seizure activity (receiving lorazepam) and became bradycardic (HR 30s) followed by heart block and cardiac arrest.

Autopsy Findings: Cause of death: combined toxic effects of atomoxetine, cetirizine, clomipramine, clonazepam, diphenhydramine, hydroxyzine, paroxetine and perphenazine. Femoral blood tested positive for: clonazepam 10.9 ng/mL, 7-aminoclonazepam 308 ng/mL, clomipramine 2,153 ng/mL, norclomipramine 2,864 ng/mL, paroxetine 988 ng/mL, diphenhydramine 67.0 ng/mL, cetirizine 0.7 mcg/mL, hydroxyzine 593 ng/mL, perphenazine 110 ng/mL and atomoxetine 10,000 ng/mL.

Case 1225. Unknown, bupropion (extended release), ethanol ingestion: undoubtedly responsible

Scenario/Substances: A 32 y/o male took 2 handfuls of bupropion 150 mg tablets with ethanol in a suicide attempt.

Past Medical History: Methamphetamine and alcohol abuse, depression with anxiety. Medications: alprazolam.

Laboratory/Diagnostic Findings: ABG-pH 7.36/pCO_2 38/pO_2 180/HCO_3 21/BE -4.2. Na 142/K 3.8/Cl 112/CO_2 23/BUN 8/Cr 0.7/Glu 83/AG 7, AST 14, ALT 16, bilirubin 0.4, WBC 7.7/Hgb 13.4/Hct 40/PLT 217. Serum ethanol 53 mg/dL; serum APAP and salicylate not detected. UDS positive for benzodiazepines, THC and amphetamines. CxR: negative. ECG: HR 87, QRS 84, QTc 425;

Clinical Course: In the ED he was alert: BP 132/86, HR 96, RR 16, O_2 sat 99% (RA), T 37 °C. He was started on WBI, but his mental status declined and he had a seizure. He was intubated; QRS increased to 186 and a sodium bicarbonate drip was started. He became hypotensive and required vasopressor support. A left ventricular assist device was placed on Day 2, but he required escalating doses of 3 vasopressors. CRRT was initiated but he developed refractory shock. ECHO: dilated cardiomyopathy, LVEF 20%, global hypokinesis. ILE was administered with no improvement and he died on Day 3.

Autopsy Findings: Cause of death: bupropion overdose; manner of death: suicide.

Case 1240. Acute bupropion, hydrocarbon, fluorinated ingestion, inhalation/nasal: contributory

Scenario/Substances: A 39 y/o male ingested ~46 bupropion tablets and huffed a 'dusting aerosol' prior to being tasered (x 3) by police and going into cardiac arrest. EMS provided ACLS (epinephrine, sodium bicarbonate, Mg) and defibrillation with ROSC.

Physical Exam: BP 114/57, HR 100, RR 30.

Laboratory/Diagnostic Findings: K 3.4, UDS was negative. ECG: QTc 525, QRS 142; repeat (ICU) ECG: QTc 472, QRS 116.

Clinical Course: He was intubated and sedated with propofol in the ED. In the ICU he received lorazepam and levetiracetam for tremors and started seizing when propofol was weaned. He remained hemodynamically stable (BP 131/65, HR 103) and transferred to a tertiary hospital for EEG monitoring and concern for anoxic brain injury. At that HCF he had myoclonic jerks and seizures, initial MRI head was unremarkable. Repeat MRI: anoxic brain injury. Based on the poor prognosis, family opted for comfort measures and he died on Day 5. The tasering was thought to have contributed to his cardiac arrest and subsequent death.

Autopsy Findings: Cause of death: complications of cardiac arrhythmia following electronic control device and physical restraint. Antemortem blood: bupropion 170 ng/mL, hydroxybupropion 1700 ng/mL, acetone 2.5 mg/dL. The following not detected: methane, ethane, proprane, isobutene, n-butane, halocarbons, 1,1-difluoroethane, 1,1,1,2-tetrafluoroethane.

Case 1337. Acute-on-chronic venlafaxine (extended release) ingestion: undoubtedly responsible

Scenario/Substances: A 77 y/o male was found seizing by family near an empty bottle of venlafaxine (150 mg ER).

Physical Exam: Initial vitals: BP 90/53, HR 114, RR 24, O_2 sat 98% (RA), T 37 °C. He was in status epilepticus. In the ICU: BP 72/52, HR 83, O_2 sat 70% (100% FiO_2).

Laboratory/Diagnostic Findings: pH 7.21/pCO_2 43/pO_2 96/HCO_3 17. K 3.7, BUN 17, Cr 1.3. Serum APAP, ethanol and salicylate not detected; UDS positive for benzodiazepines. ECG: ST depressions, QRS 136, QTc 535.

Clinical Course: In the ED he continued to have seizures and was sedated, intubated and given bicarbonate and vasopressors. He required multiple vasopressors for shock and several episodes of cardiac arrest. He died 14 hours after ED arrival.

Autopsy Findings: Cause of death: venlafaxine intoxication; manner of death: suicide. Numerous pills were found in gastric contents. Antemortem blood: venlafaxine 29,000 ng/mL, o-desmethylvenlafaxine 4,300 ng/mL.

Case 1360. Acute diphenhydramine ingestion: undoubtedly responsible

Scenario/Substances: A 32 y/o female was found by her mother after a presumed overdosed of OTC doxylamine. EMS found her seizing

and in SVT, with pills in her mouth. She rapidly progressed into VT and then PEA.

Physical Exam: Cardiac arrest, no evidence of trauma.

Laboratory/Diagnostic Findings: ABG-pH 6.5/pCO_2 60.5/pO_2 67.9/HCO_3 4.7. Na 151/K 4.4/Cl 113/Glu 201, Hct 40. CxR: intubated, opacification of bilateral lung fields. ECG: junctional rhythm, RBBB, QTc 500.

Clinical Course: She received 1.5 h of ACLS resuscitation, including 16 doses of epinephrine, 10 doses of sodium bicarbonate, atropine, glucagon and transcutaneous pacing without ROSC. She died within 2 h of ED presentation.

Autopsy Findings: Cause of death: acute diphenhydramine intoxication. Blood diphenhydramine 29.8 mg/L (premortem); 29.8 mg/L (femoral blood at autopsy).

Case 1386. Acute hydroxychloroquine, ibuprofen, naproxen ingestion: undoubtedly responsible

Scenario/Substances: A 14 y/o female came home from school upset about bullying. Later that evening she collapsed in the hallway and was found crying, short of breath with thick red oral secretions and white particles in her mouth. EMS found bottles of hydroxychloroquine (6 g missing), ibuprofen (200 mg tablets) and naproxen (750 mg tablets).

Laboratory/Diagnostic Findings: Na 147/K 1.5/Glu 221, Ca 10.7, lactate 7.3, WBC 13.3/Hgb 9.9/Hct 31%. Serum APAP, ethanol and salicylate not detected. UDS was negative. CxR: pulmonary edema.

Clinical Course: She had a cardiac arrest shortly after ED arrival. CPR was initiated and she was intubated (with bloody, frothy sputum). She had ROSC after epinephrine (1mg) and sodium bicarbonate (100 mEq); recurrent cardiac arrests were treated with epinephrine, Ca, K, D50 and sodium bicarbonate. She was started on norepinephrine, vasopressin and sodium bicarbonate drips, and then had a left ventricular assist device placed by cardiology. Her blood pressure failed to improve, oxygenation decreased (O_2 sat 72% on 100% FiO_2) and she had recurrent cardiac arrests. Her pupils were fixed and dilated, and her BP 86/54 on multiple vasopressors. Based on her poor prognosis, comfort measures were instituted and she died 3.5 h after ED arrival.

Autopsy Findings: Cause of death: acute hydroxychloroquine intoxication. Toxicological testing (hospital plasma): hydroxychloroquine: 26,000 ng/mL.

Case 1394. Chronic methotrexate ingestion: undoubtedly responsible

Scenario/Substances: 75 y/o female nursing home patient presented to an ED with respiratory distress, GI bleed and sepsis. Her son, a physician, noted that her medication record from the nursing home listed methotrexate instead of metolazone. She had been mistakenly given methotrexate 2.5 mg/d for 14 d.

Past Medical History: End stage renal disease on HD, HTN, Parkinson's disease, hypothyroidism, s/p CVA, diabetes mellitus. Medications: Apixaban, metolazone.

Physical Exam: SBP 100, HR 70, RR "high 20s", O_2 sat 99% (on oxygen).

Laboratory/Diagnostic Findings: ABG-pH 7.4/pCO_2 34/HCO_3 22.6, Cr 2. AST 41, ALT <6, WBC 0.1/Hgb 9 (after transfusion)/PLT 8, INR 1.6. CxR: pneumonia. Initial methotrexate: 0.09 mmol/L; Day 2: 0.05; Day 5: 0.04; Day 6: not detected.

Clinical Course: She was hypotensive with melena on ED arrival. She received an RBC transfusion and 5 sessions of HD. Leucovorin was administered and continued until her bone marrow demonstrated recovery after about 11 days. Filgrastim and darbepoetin were also given. Glucarpidase was considered but not administered due to severe end organ damage and low plasma methotrexate concentration. She remained anuric and received vasopressors, IV antibiotics and antifungals, and multiple RBC and platelet transfusions for persistent pancytopenia. She required CPAP but refused intubation after severe episode of mucous plugging, hypoxia and bradycardia. Despite airway suctioning she became more bradycardic, then asystolic, and died.

Autopsy Findings: Not performed.

Case 1395. Chronic methotrexate ingestion: undoubtedly responsible

Scenario/Substances: A 79 y/o woman was prescribed methotrexate 2.5 mg once a week but accidentally took 6 tablets a day for 4 days. She became weak and unable to ambulate. When her family discovered the error, she was brought to the ED.

Past Medical History: Cardiac pacemaker. Medications omeprazole, furosemide and ibuprofen.

Laboratory/Diagnostic Findings: Na 137/K 4.4/Cl 101/CO_2 20/BUN 116/Cr 2.31, troponin 0.05, AST 23, ALT 17, ammonia 18. WBC 9.2/Hgb 7.5/PLT 335. Serum salicylate 3; serum APAP and ethanol not detected. CxR: unremarkable. Initial methotrexate level 0.5 mmol/L; 24 h later: 0.06 mmol/L.

Clinical Course: In the ED she was awake and alert; BP 113/51, HR 58, RR 23, O_2 sat 100% (RA). Leucovorin was given at 15 mg q 6h. On Day 1 she developed lethargy and labored breathing: BP 120/65, HR 64, RR 18, O_2 sat 93% (3 L NC). BUN 114, Cr 1.88, WBC 1.3/Hgb 7.6/Hct 24.4/PLT 157; she received 1 unit of blood. On Day 2: increased lethargy and confusion with vomiting and diarrhea. She was moved to the ICU: BP 91/44, HR 62, RR 24, T 36 °C. BUN 114/Cr 2.54, AST 1,142, ALT 560, WBC 1.3/Hgb 7.5/Hct 24.1/PLT 93. On Day 3 she was drowsy but oriented. BP 103/49, HR 60, RR 23, O_2 sat 97% (30%/30L FM). She developed generalized edema, blisters and skin sloughing all over her body, and bleeding from her mouth and other sites. Her leucovorin dose was 38 mg q 3 h. Labs: CO_2 19/BUN 139/Cr 3.68/Glu 181, AST 1,756, ALT 1,237, bilirubin 5.1, ALP 56, ammonia 18, uric acid 24.3, troponin 0.31, Hgb 8.4/PLT 15. On Day 4 she was lethargic with continued bleeding and skin sloughing: BP 117/45, HR 60, O_2 sat 96% (30%/25L FM), T 98.5 °F. On Day 5 she was started on CRRT; BP 90/55, HR 60, RR 6, O_2 sat 98% (10 L NRB). Based on the prognosis, family opted for institution of comfort measures and she died on Day 9.

Autopsy Findings: Autopsy not performed.

Case 1409. Acute-on-chronic propranolol ingestion: undoubtedly responsible

Scenario/Substances: A 25 y/o female intentional ingested > 3 g of her propranolol. EMS found her in cardiac arrest with a suicide note (DNR request).

Past Medical History: Previous suicide attempts. Medications: propranolol, trazodone, levothyroxine.

Physical Exam: Post ROSC: BP 121/70, HR 79.

Laboratory/Diagnostic Findings: ABG (intubated)-pH 7.25/pCO_2 47/pO_2 97. Glu 250, K 7.5 (then 4); lactate 9. ECG: QRS 176, QT_C 555.

Clinical Course: In the ED she was intubated and received epinephrine, sodium bicarbonate, Ca, glucagon, norepinephrine, ILE and IVFs with ROSC after 15 min. She developed PEA and bradycardia. 2 h later BP 143/99, HR 66, RR 24, O_2 sat 100%, T 34 °C. Repeat ECG: first-degree block, QRS 140, QT_C 490. 5 h later: SBP 140s, HR 40s with a junctional rhythm. She developed fixed pupils ~12 h after presentation. CT head: impending herniation with diffuse infarction. She received norepinephrine infusion and vasopressin for diabetes insipidus. She was declared brain dead and died 35 h after presentation.

Autopsy Findings: Cause of death: hypoxic ischemic encephalopathy as a result of acute propranolol intoxication; manner of death: suicide. Antemortem serum: propranolol 360 ng/ml, carbamazepine 1.8 mcg/ml, carbamazepine-10,11-epoxide 0.26 mcg/ml.

Case 1467. Acute-on-chronic verapamil (extended release) ingestion: undoubtedly responsible

Scenario/Substances: A 49 y/o male presented to the ED after ingesting 50 tablets of verapamil 180 mg in a suicide attempt.

Past Medical History: HTN, end-stage renal disease (s/p renal transplant), ethanol abuse.

Laboratory/Diagnostic Findings: Na 137/K 3.3/Cl 107/CO_2 12/BUN 56/Cr 5.98/Glu 260, Ca 7.7 WBC 21.0/Hgb 11/PLT 283, AST 16, ALT 24, INR 1.2. Serum APAP, ethanol and salicylate not detected. Post-intubation ABG: pH 7.14/pCO_2 31/pO_2 73, lactate 4.8. ECG: HR 45, QRS 136, QTc 520.

Clinical Course: He was initially alert and oriented x 3 but hypotensive. He was given 1 dose of activated charcoal but vomited and was subsequently intubated. He received 1 gram Ca, atropine, 2 L IVFs, 1 mg glucagon, and started on dopamine. Vital signs1.5 h after ED arrival: BP 56/36, HR 61, RR 18, T 36 °C, O_2 sat 99%. Norepinephrine and HIE (2 U/kg/hr) were started, he received WBI with 500 mL of polyethylene

glycolate electrolyte solution and he was transferred a tertiary care facility for ECMO. At that hospital he was in refractory shock and received Ca, glucagon (5 mg) and vasopressors and insulin were increased. The patient became bradycardic, transcutaneous and transvenous pacing were unsuccessful; CPR was initiated but he went into cardiac arrest and died prior to ECMO.

Autopsy Findings: Cause of death: acute verapamil toxicity; manner of death: suicide. Heart blood verapamil 51.2 mg/L, norverapamil 4.5 mg/L; brain: verapamil 30.8 mg/kg, norverapamil 4.0 mg/kg; serum: verapamil 1.6 mg/L; norverapamil 1.2 mg/L.

Case 1482. Acute dopamine parenteral: undoubtedly responsible

Scenario/Substances: A 52 y/o male called EMS due to nausea, vomiting and generalized weakness. He had a history of ethanol abuse but had not drank for several days. EMS inadvertently administered 400 mg dopamine IV; he developed cardiopulmonary arrest.

Physical Exam: Intubated, unresponsive, BP 50/20, HR 94, afebrile.

Laboratory/Diagnostic Findings: K 6.3, BUN 23, Cr 2.2. ABG-pH 6.7/pCO_2 19/HCO_3 2.5, lactate 16.3, troponin 0.019, CK-MB 1,421. ECG: occasional PVCs. Head CT and CxR were normal.

Clinical Course: He had ROSC in the ED after being intubated and receiving CPR and epinephrine. He was started on norepinephrine, vasopressin and phenylephrine for hypotension and received multiple boluses of sodium bicarbonate for metabolic acidosis (ABG-pH 6.9/HCO_3 4). He was rewarmed from hypothermia, and developed anuric renal failure and persistent hypotension. Based on the prognosis, comfort measures were instituted and he died on Day 2.

Autopsy Findings: Not available.

Case 1549. Acute ranolazine, quetiapine, valproic acid ingestion: undoubtedly responsible

Scenario/Substances: A 65 y/o female ingested #50 of her brother's 1000 mg ranolazine tablets 45 min prior to ED arrival.

Past Medical History: Turner syndrome, schizophrenia, bipolar disorder, prior overdoses. Medications: mirtazapine, quetiapine, gabapentin, trazadone, rivaroxaban.

Physical Exam: Awake, alert and oriented. BP 103/67, HR 94, RR 20, O_2 sat 98%, T 37 °C.

Laboratory/Diagnostic Findings: VBG: pH 7.37/pCO_2 39.6/pO_2 60.5, lactate 4.3, NA 136/K 4.2/Cl 100/CO_2 26/BUN 22/Cr 0.8/Glu 116, AST16, ALT 19, bilirubin 0.2 WBC 8.7/Hgb 11.9/HCT 37.9/PLT 481. Serum APAP, ethanol and salicylate not detected. UDS negative for amphetamine, benzodiazepine, cannabinoid, cocaine and opiates. ECG: HR 88, QRS 85, QT_C 472.

Clinical Course: She received 50 g of activated charcoal in the ED. One hour later her SBP decreased to 89; repeat ECG: QTc 505. She received IVFs, Mg, Ca and was admitted to the ICU. She required 6 L IVFs and a norepinephrine drip for persistent shock. She developed somnolence, pulmonary edema, diaphoresis and worsening shock, and was intubated 8 h after arrival. Despite prolonged attempts at resuscitation, including IV glucagon, she developed seizure-like activity and bradycardia. She died within 12 h of admission.

Autopsy Findings: Cause of death: acute ranolazine intoxication. Antemortem blood: ranolazine 50 mg/L (therapeutic level 0.4-6.1 mg/L); positive ($\leq$ therapeutic levels): gabapentin, mirtazapine, quetiapine, trazodone.

Case 1561. Acute-on-chronic diltiazem (extended release), ethanol ingestion: undoubtedly responsible

Scenario/Substances: A 67 y/o male presented to an ED after an intentional ingestion of ethanol and #27 diltiazem (delayed release) tablets.

Physical Exam: Awake and alert, complaining of dizziness. BP 102/56, HR 40, RR 18, afebrile, O_2 sat 'OK (RA).

Laboratory/Diagnostic Findings: SBP (after resuscitation): 110, HR 50. Initial lactate 8; serum APAP and salicylate not detected. ECG: NSR, no heart block.

Clinical Course: He received IVFs, atropine, Ca, glucagon and HIE. K became 1.3 so HIE was stopped. In the ICU, ~6 h later, he had a cardiac arrest but was intubated and resuscitated with ROSC; a pacemaker was inserted. A CPR-related pneumothorax was treated with chest tube. HIE was re-started and he received vasopressors and ILE. Pupils were fixed and non-reactive, he developed seizures and was started on CRRT due to poor urine output. Based on his poor prognosis, family opted for comfort measures and he died on Day 6.

Autopsy Findings: Cause of death: complication from acute diltiazem intoxication; manner of death: suicide. Antemortem blood diltiazem 900 ng/mL.

Case 1576. Acute-on-chronic digoxin ingestion: undoubtedly responsible

Scenario/Substances: A 70 y/o male ingested 10 tablets of digoxin 'to put himself to sleep.'

Past Medical History: Metastatic melanoma, HTN, and depression. Medications: escitalopram, metoprolol, prochlorperazine, temazepam and digoxin.

Physical Exam: In the ED he was alert and oriented; BP 79/49, HR 118, RR 16, T 37 °C.

Laboratory/Diagnostic Findings: K 'normal', lactate 10.4, troponin 0.6, ECG: accelerated junctional rhythm at 86. No digoxin concentration available.

Clinical Course: He received IVFs and was admitted to the ICU where he had a cardiac arrest. He received 10 vials of digoxin Fab fragments but died 3 h after presentation.

Autopsy Findings: Cause of death: acute digoxin toxicity; manner of death: suicide. Pre-mortem blood: digoxin 16 ng/mL.

Case 1631. Acute-on-chronic acetaminophen/dextromethorphan/guaifenesin/pseudoephedrine, salicylate ingestion: contributory

Scenario/Substances: A 7 y/o female was diagnosed with influenza and treated with amoxicillin and oseltamivir. Over the next 5 days her family also administered an APAP-containing OTC cough and cold preparation (unknown dose q4 h) and bismuth subsalicylate (262 mg q4 h). On the morning of admission, she was found unresponsive and taken to the ED.

Physical Exam: BP 99/30, HR 160, RR 13, O_2 sat 100%, T 37 °C. Lethargic, pale, distended abdomen with hepatomegaly, capillary refill 5 sec.

Laboratory/Diagnostic Findings: bilirubin 2.1, AST > 20,000, ALT 8,171, ALP 390, INR 14.2, PTT 52, WBC 31/Hgb 8.1/PLT 252, lactate 10.3. Serum APAP 167, salicylate 11.7.

Clinical Course: She was intubated and received IVFs, epinephrine drip, antibiotics, sodium bicarbonate infusion and NAC. She was transferred to a tertiary hospital for further care, including vitamin K, blood products and CRRT, and listed for liver transplantation. ~4 h later she had a cardiac arrest and was resuscitated with epinephrine, amiodarone, multiple defibrillations, Ca, Mg and sodium bicarbonate. Attempts to initiate ECMO were unsuccessful and she died on Day 6. Her viral illness was thought to have contributed to her death.

Autopsy Findings: Acute liver failure; diffuse hepatocellular necrosis with sinusoidal congestion; coagulopathy, multiple ecchymotic and purpuric hemorrhages; hemorrhagic congestion of lungs; epicardial hemorrhages and effusion.

Case 1642. Acute ayahuasca ingestion: contributory

Scenario/Substances: A 22 y/o male developed hallucinations and a seizure after participating in a religious "soul quest" that involved drinking ayahuasca tea. He was intubated by EMS prior to ED arrival.

Physical Exam: BP 123/72, HR 113, RR 30, O_2 sat 100% (60% FiO_2), T 37 °C.

Laboratory/Diagnostic Findings: ABG-pH 7.1/pCO_2 63/pO_2 81/HCO_3 19. Na 114/K 2.5/Cl 71/CO_2 20/BUN 12/Cr 0.72/Glu 249, AST 92, ALT 32, bilirubin 2.1, INR 1.25. WBC 37/Hgb 12.5/PLT 337. Serum APAP, ethanol and salicylate not detected. CxR: patchy bilateral airspace opacities; ECG: NSR, QRS 124, QTc 418.

Clinical Course: The patient was admitted to the ICU, received IVFs, vasopressors and anticonvulsants. Neuroimaging revealed diffuse

cerebral edema and tonsillar herniation. On Day 2 he only withdrew to painful stimuli in his right leg. Based on the prognosis, the family opted for institution of comfort measures and he died on Day 3.

Autopsy Findings: Cause of death: hypoxic encephalopathy due to hyponatremia from primary polydipsia. Four round superficial burns on left forearm (consistent with Kambo inoculation sites); drugs of abuse screen: negative.

Case 1644. Acute ephedra, yohimbine, caffeine ingestion: undoubtedly responsible

Scenario/Substances: A 40 y/o male presented to an ED after ingested 81 pills of a 'fat burning medication' (listed ingredients: caffeine, ephedra extract, proprietary xanthinol, proprietary blend).

Past Medical History: Arthritis, bipolar disorder, traumatic brain injury, seizures, schizophrenia, depression.

Laboratory/Diagnostic Findings: ABG-pH 6.76/pCO_2 70/pO_2 214/HCO_3 8. Na 146/K 2.8/Cl 108/CO_2 14/BUN 8/Cr 1.33/Glu 210/AG 24. WBC 15/Hgb 15.7/Hct 47/PLT 295, CK 161. Serum APAP and ethanol not detected, salicylate 3.4 mg/dL. UDS positive for THC, benzodiazepines. ECG: HR 130s, QRS 132, QTc 359.

Clinical Course: The patient was agitated and combative and was held down by security to place IV and administer lorazepam. Pupils 5 mm and nonreactive, increased muscle tone. He was intubated with increased chemical sedation for persistent agitated delirium: BP 65/40, HR 130s with alternating narrow and wide-complex tachycardia. He received IVFs (for hypotension), sodium bicarbonate, potassium and cardioversion (brief NRS but then wide complex tachycardia). Lidocaine, sodium bicarbonate (11 amps and a drip) and potassium were given. He developed cardiac arrest and died despite continued CPR and resuscitation efforts.

Autopsy Findings: Cause of death: intoxication by yohimbine and caffeine. Blood testing: caffeine 120 mcg/ml, yohimbine 600 ng/ml, delta-9 carboxy THC 22 ng/mL, delta-9 THC 3.5 ng/mL, norfluoxetine 84 ng/mL; no ephedrine detected.

Case 1646. Acute ferrous sulfate, salicylate ingestion: undoubtedly responsible

Scenario/Substances: A 16 y/o female presented 9 h after taking #100 ferrous sulfate (325 mg) tablets and aspirin. She was vomiting at home.

Physical Exam: BP 125/102, HR 64, RR 26, O_2 sat 96%, afebrile.

Laboratory/Diagnostic Findings: ABG-pH 7.31/pCO_2 19/pO_2 133/HCO_3 14. Na 139/K 2.9/CO_2 14/Cr 1.13/Glu "normal." Serum APAP and ethanol not detected. Serum salicylate 10.1 mg/dL, serum iron 4,206 mcg/dL (repeated level was 4,300 mcg/dL).

Clinical Course: In the ED she was pale and lethargic, with bloody diarrhea. Abdominal x-ray showed tablets in her GI tract. WBI was initiated, she received deferoxamine (10 mg/kg/h), IVFs and potassium. Within hours she became more lethargic; repeat ABG-pH 7.02/pCO_2 29/HCO_2 7. She was flown to a tertiary hospital where deferoxamine was continued at 15mg/kg/h, she was intubated. Repeat abdominal x-ray showed no tablets and WBI was stopped. Repeat iron level was 3,953 mcg/dL, ASA 4.2 mg/dL. ABG-pH 7.01/pCO_2 39/pO_2 43/CO_2 11. Na 145/K 3.3/Cl 121/CO_2 10/Cr 0.78/Glu 155., WBC 32.5, AST 72, ALT 28, INR 7.43. BP 119/85, HR 90s, RR 20s, T 97.7 ^{0}F. About 12 h later her iron level was 347 mcg/dL; then 316 mcg/dL 1 h later. She required epinephrine for hypotension and D25 for hypoglycemia (Glu 52). On Day 2 her iron level was 112 mcg/dL and vasopressors were continued. She was transferred to a tertiary hospital for liver transplant evaluation (pH 7.2, lactate 8.1, AST 1,172, INR 6.5, ammonia 90). On Day 3 her ammonia was 738 and lactate 12.4; she remained intubated and unresponsive to stimuli. Plasma FFP; CRRT and NAC were initiated. Transaminases peaked on Day 4 (AST 3,964, ALT 5,136, INR 8, ammonia 150, Factor V was 9% (normal range 60-140%). Day 8 she was extubated and answering questions; vasopressors and CRRT were stopped and she was taken off the transplant list. On Day 12 she developed a lower GI bleed and a bowel perforation on Day 15. She received antibiotics, blood products and multiple operations. She died on Day 49.

Autopsy Findings: Not performed.

Case 1647. Acute fluoride ingestion: undoubtedly responsible

Scenario/Substances: A 21 y/o female ingested 226 g of sodium fluoride powder. EMS found her unresponsive and she was intubated.

Past Medical History: Depression.

Physical Exam: BP 99/63, HR 115, RR 18, O_2 sat 100%.

Laboratory/Diagnostic Findings: ABG-pO_2 477/HCO_3 18.8. Serum ethanol, APAP and salicylate not detected. UDS positive for benzodiazepines. Hgb 9.8, Hct 31%.

Clinical Course: In the ED she was lavaged via NG tube and a HD catheter was placed. She had a cardiac arrest and received CPR, epinephrine (blouses and infusion), Mg, Ca, "massive transfusion protocol" (for acute blood loss and concern for DIC). After 75 min of resuscitation, a bedside ECHO showed no cardiac contractility and she was pronounced dead.

Autopsy Findings: Cause of death: acute sodium fluoride intoxication; manner of death: suicide.

Case 1656. Chronic loperamide ingestion: undoubtedly responsible

Scenario/Substances: A 27 y/o male was found in cardiac arrest after suspected loperamide abuse. EMS provided prolonged CPR, ACLS and "high dose" naloxone with ROSC.

Past Medical History: Loperamide abuse with previous hospital admissions for cardiac toxicity.

Laboratory/Diagnostic Findings: ABG-pH 6.6/pCO_2 130, lactate 20, ALT 1,630, AST 1,200. Serum APAP, ethanol and salicylate not detected. ECG: torsades de pointes followed by sinus rhythm with "wide" QRS, QTc 506. Subsequent serum testing: loperamide 83 ng/mL, desmethylloperamide 340 ng/mL.

Clinical Course: In the ED he was intubated and nonresponsive with fixed and dilated pupils. SBP 60s, HR 120, T 32 °C. He received Mg, vasopressors, sodium bicarbonate and rewarming. Initial head CT showed cerebral edema. The patient was transferred to a tertiary hospital but had a cardiac arrest and died shortly after arrival.

Autopsy Findings: Not available.

Case 1709. Acute-on-chronic ropivacaine, lipid emulsion parenteral, other: undoubtedly responsible

Scenario/Substances: A 4 y/o male developed dysrhythmias after receiving continuous ropivacaine infusion at 120 mcg/kg/min, for 4 days, for post-operative pain.

Past Medical History: Bilateral nephroblastomas s/p chemotherapy. Hospital medications: ropivacaine, ceftriaxone, pantoprazole, propofol, fentanyl and TPN.

Laboratory/Diagnostic Findings: VBG-pH 7.31/pCO_2/48.8/pO_2 49/HCO_3 24.7/BE -2. Na 144/K 3.4/Cl 104/CO_2 31/BUN 11/Cr 0.95/Glu 237/AG 9, CK 1,319, AST 96, ALT 78, bilirubin 0.2. WBC 15.35/Hgb 11.2/Hct 33.4/PLT 295. ECG: HR 136, QRS 148, QTc 517.

Clinical Course: The child was in the PICU, on ropivacaine and CRRT when he started to have increased ventricular ectopy. He received IV Mg, but then developed wide complex tachycardia. The ropivacaine infusion was stopped and an esmolol infusion was begun. ECHO showed decreased LVEF. Because of the persistent dysrhythmia ILE was given, but within minutes he had an asystolic arrest. He was intubated and resuscitated with epinephrine, sodium bicarbonate, Mg and defibrillation. External pacing was attempted without success. ROSC was achieved and the child was started on an epinephrine drip. After ~3 h he developed VF, was resuscitation with amiodarone, sodium bicarbonate, dextrose and insulin (due to hyperkalemia), and additional ILE without ROSC.

Autopsy Findings: Hospital pathologist reported: serum ropivacaine (IVC blood) 1.4 mcg/mL. Pathologist opined that the infusion may have exceeded the child's clearance capacity.

Case 1758. Acute pentobarbital parenteral: undoubtedly responsible

Scenario/Substances: A 36 y/o female posted a suicide note on social media and was found in cardiac arrest, 20 min later in a veterinarian's office with a bottle of pentobarbital and an empty syringe. EMS placed a supraglottic airway device enroute to the ED.

Past Medical History: Depression with suicidal ideation.

Physical Exam: Pupils fixed and dilated. After ROSC: BP 146/81, HR 123.

Laboratory/Diagnostic Findings: VBG-pH 6.882/pCO_2 64/pO_2 81/HCO_3 12.1/BD 21. Lactate 13, Na 138/K 4.3/Cl 106/CO_2 14/BUN 7/Cr 1.38 (peak 6.3)/Glu 347, AG 19. Ca 7.4, Phos 9.8, AST 552 (peak 1,850), ALT 271, bilirubin 1.2, INR 1.6, WBC 42.9/Hgb 10.6/Hct 37/PLT 166. UDS positive for barbiturates. Serum APAP, ethanol salicylate and phenobarbital not detected. Serum pentobarbital (~8 h after injection): 10 mcg/ml. CxR: cardiomegaly, perihilar opacities. ECG: irregular rhythm, HR 116, QRS 82, QTc 404. ECHO: LVEF 25%. CT head: loss of grey/white differentiation with diffuse cerebral edema, consistent with a severe hypoxic ischemic brain injury.

Clinical Course: There was ROSC after 75 min of resuscitation, including intubation, naloxone, epinephrine and sodium bicarbonate. She received ILE, antibiotics and naloxone, epinephrine, norepinephrine, dopamine and sodium bicarbonate drips. On Day 2, SPECT brain imaging showed no intracranial perfusion. Supportive care was withdrawn and she went for organ donation.

Autopsy Findings: Cause of death: drug toxicity; manner of death: suicide.

Case 1844. Acute methylenedioxymethamphetamine (MDMA) ingestion: undoubtedly responsible

Scenario/Substances: A 19 y/o female developed shortness of breath and chest pain shortly after using ecstasy, then had a cardiac arrest. EMS found her in PEA; she received CPR, intubation and epinephrine with ROSC.

Past Medical History: Asthma. Medications: albuterol.

Laboratory/Diagnostic Findings: Lactate 4.99, CK 750, AST 75, ALT 74. Serum APAP, ethanol and salicylate not detected. UDS positive for MDMA. CT head: unremarkable. On day 2: Na 138/K 4.5/Cl 109/CO_2 19/BUN 8 Cr 0.6/AG 15, Mg 1.9, Ca 4.4, AST 68, ALT 54, CK 692, INR 1.2, WBC 18.1.

Clinical Course: In the ED: BP 128/74, HR 122, T 34 °C. She became agitated, biting the endotracheal tube and posturing. She received midazolam 5 h later with resolution of her posturing but only withdrew from pain in upper extremities. Continuous EEG monitoring was initiated for myoclonus and she was started on propofol and levetiracetam. On Day 2: BP 113/72, HR 111, T 36 °C, O_2 sat 92%. On Day 3 her examination was consistent with severe anoxic brain injury. There was concern for serotonin syndrome and cyproheptadine was started without improvement. Later that day she developed acute cerebral herniation and received sodium chloride 23.4% 30 mL IV x 2, mannitol 20% 75 grams IV x 1 and sodium chloride 3% infusion (65 mL/hr). CT head: diffuse cerebral edema and anoxic brain injury; MRI: hypoxic-ischemic injury. During sedation weans she was agitated and tremulous. On Day 7, she herniated and had no cough, gag or corneal reflexes. She developed diabetes insipidus and was started on desmopressin. Due to the poor prognosis, supportive care was withdrawn, she died and went for organ donation.

Autopsy Findings: Cause of death: methylenedioxymethamphetamine toxicity; manner of death: accident. Testing of a hospital urine sample was positive for MDMA.

Case 1859. Acute methamphetamine exposure: undoubtedly responsible

Scenario/Substances: A 21 y/o male called 911 ~ 3 min after ingesting 15 g of methamphetamine. He was found obtunded, hypertensive, tachycardic and hyperthermic (T 42 °C).

Past Medical History: Polysubstance abuse.

Physical Exam: BP 152/119, HR 169, RR 14, O_2 sat 100%, T (axillary) 42.4 °C. Nonverbal, moaning, unable to follow commands.

Laboratory/Diagnostic Findings: WBC 28.1/Hgb 14.8/Hct 43.7/PLT 181. Na 147/K 6.2/Cl 111/HCO_3 19/BUN 32/Cr 2.9/Glu 75, INR >16, PTT >200. ABG-pH 7.19/pCO_2 87/HCO_3 32. UDS: positive for amphetamines, marijuana and opiates.

Clinical Course: He received IVFs, benzodiazepines and active cooling. "Hyperactive muscle activity" was treated with haloperidol (without improvement) and he was subsequently paralyzed and intubated. He developed shock (with hypotension and tachycardia) and was given adenosine, 4 L IVFs and started on norepinephrine. He went into cardiac arrest, received epinephrine and CPR. Dark blood was evident via NGT and per rectum. He was resuscitated, with RBCs, dantrolene, Ca, sodium bicarbonate and atropine, for 3 h before developing wide complex bradycardia and then cardiac arrest.

Autopsy Findings: Cause of death: complications of methamphetamine intoxication; manner of death: accident. Postmortem blood samples: d-methamphetamine 7.5 mg/L, d-amphetamine 0.02 mg/L.

Case 1951. Acute amphetamine (hallucinogenic), n-ethyl pentylone, amphetamine (hallucinogenic) unknown: undoubtedly responsible

Scenario/Substances: A 28 y/o male stole a car and was involved in a minor accident. He was restrained by bystanders until police arrived. After placing him in handcuffs, he became unresponsive but responded to naloxone. He told police he had used "Molly" and became unresponsive again. The patient was in asystole when EMS arrived, initiated CPR and administered epinephrine and sodium bicarbonate.

Clinical Course: Upon ED arrival he was still in asystole, pupils fixed and dilated, T 38.8 °C, Glu 223. He was intubated and received epinephrine, Ca, sodium bicarbonate, naloxone and Mg without ROSC. He was pronounced dead shortly after ED arrival.

Autopsy Findings: Cause of death: acute n-ethyl pentylone toxicity; manner of death: accidental. Two baggies of material consistent with illicit drugs were recovered from his buttocks. Femoral blood tested positive for n-ethyl pentylone at 1100 ng/mL.

Case 1978. Acute-on-chronic methamphetamine unknown: undoubtedly responsible

Scenario/Substances: A 30 y/o male was dropped off at the ED after using methamphetamine.

Past Medical History: Schizoaffective disorder, bipolar disorder, cocaine abuse, alcohol abuse, previous overdoses.

Laboratory/Diagnostic Findings: ABG-pH 7.07/pCO_2 46/pO_2 189, Na 160/K 5.2/Cl 107/CO_2 9/Cr 2.5/AG 44, AST 126, ALT 104. Serum APAP and salicylate not detected; UDS positive for amphetamines, methamphetamines and benzodiazepines. Lactate 14 mg/dL, CK > 89,000. CT head negative.

Clinical Course: In the ED he had agitated delirium and was tachycardic, diaphoretic and febrile. He was treated with sedatives and became tranquil but hypotensive with cardiovascular collapse and then cardiac arrest. He was intubated with CPR and had ROSC within a few minutes. Vital signs: SBPs 60-70; he received 4 L IVFs and started on norepinephrine. BP 70's systolic, HR 160's, T 40 °C. He was transferred to another HCF and received dextrose (for hypoglycemia) and active cooling. On Day 2 he remained unresponsive with dilated and sluggish pupils, no cough or gag and not breathing over the ventilator. Patient taken to the OR for bilateral lower extremity fasciotomies. Cr 3.7, lactate 3.32, CO_2 16 and AG 13. On Day 3 he was unchanged off sedation: Cr 5.5, AST 4,202, ALT 2,612. He was started on CRRT for worsening renal function (Cr 6.8). On Day 6 his EEG suggested profound brain injury. Based on the prognosis, comfort measures were instituted and he died.

Autopsy Findings: Cause of death: complications of acute methamphetamine toxicity; manner of death: accident. Premortem blood: methamphetamine 6.7 mg/L amphetamine 2 mg/L lorazepam 0.26 mg/L.

Case 2049. Acute methamphetamine ingestion: undoubtedly responsible

Scenario/Substances: A 34 y/o female presented with AMS and slurred speech after a reported ingestion of 1.5 g of methamphetamine at a traffic stop.

Past Medical History: Polysubstance abuse.

Physical Exam: Confused, shaking, diaphoretic. BP 87/65, HR 178, RR 24, O_2 sat 98% (4L), T 39.1 °C.

Laboratory/Diagnostic Findings: Na 152/K 3.1/Cl 124/CO_2 19/BUN 29/Cr 2.18/Glu 60, Mg 3, Ca 7.1, lactate 12 (then 6.3 ~ 1.5 h later), AST 88, ALT 13, CK "normal." Serum salicylate not detected. UDS: positive for methamphetamine and cocaine. CxR: normal. ECG: HR 168, QRS 98, QTc 492.

Clinical Course: She was intubated and sedated with fentanyl and propofol; received 6 L IVFs, lorazepam, norepinephrine and vasopressin

(for hypotension), D50 (for hypoglycemia), and antibiotics and actively cooled. In the ICU (~7 h later): BP 107/66, HR 128, RR 33, O_2 sat 95% (50% FiO_2), T 40.1 °C then T 40.5 °C. ABG-pH 7.4/pCO_2 50/pO_2 100/HCO_3 17. ~ 16 h after presentation, CRRT was initiated for anuria and rhabdomyolysis (CK 20,000). ECHO: decreased LVEF and pulmonary edema. She went into PEA, then asystole and died ~22 h after presentation.

Autopsy Findings: Cause of death: complications of methamphetamine and cocaine toxicity; manner of death: accidental. There was crumpled plastic material in her small intestine. Antemortem blood (drawn at presentation): amphetamine <0.12 mg/L, benzoylecgonine <33 mg/L, methamphetamine > 1.0 mg/L. Urine (unknown collection time): positive for amphetamines, methamphetamine and cocaine metabolite.

Case 2078. Acute cocaine, morphine, fentanyl ingestion, vaginal: undoubtedly responsible

Scenario/Substances: A 35 y/o female ingested a large amount of cocaine and concealed wrapped 'rocks' of cocaine in her vagina during arrest by police. EMS administered midazolam, for suspected seizure, prior to ED arrival.

Past Medical History: Bipolar depression, anxiety and substance abuse.

Physical Exam: In the ED she was unresponsive with fixed and dilated pupils; rapidly had a cardiac arrest. T 38.8 °C.

Laboratory/Diagnostic Findings: VBG-pH 6.81/pCO_2 107/pO_2 33/HCO_3 17/BD 19.3. Na 145/K 3.3, Ca (ionized) 4.5, Glu 195, lactate 11.6. Later: ABG-pH 7.08/pCO_2 72/pO_2 95/HCO_3 21/BD 10.2. Na 153/K 2.5/Cl 112/Glu 177, lactate 13.2. Serum APAP, ethanol, salicylate, acetone, isopropyl, ethylene glycol and methanol not detected. UDS positive for THC, cocaine and morphine. ECG (following resuscitation): NSR with 1st degree AVB, QRS 184, QTc 534.

Clinical Course: In the ED the patient had a STEMI followed by PEA and torsades des pointes. She was intubated and resuscitated with IVFs, cardioversion, Mg, sodium bicarbonate, Ca, lidocaine, lorazepam, epinephrine, and ILE; WBI was started. Repeat vitals: SBP 130s (on vasopressors), HR 64, T 36 °C, O_2 sat 92% (60% FiO2). Although family opted for no further resuscitation, she received supportive care including electrolyte replacement and antibiotics (CxR: pneumonia). On Day 2 she had limited response to voice and pain, and later developed rigidity and posturing; T 39.1 °C. ECHO: LVEF 28%. On Day 3 she was moved to hospice and died on Day 5.

Autopsy Findings: Analysis on premortem blood: cocaine 6,046 ng/ml, benzoylecgonine 6,728 ng/ml. Urine was qualitatively positive for benzoylecgonine, norfentanyl and morphine.

Case 2515. Acute cocaine ingestion: undoubtedly responsible

Scenario/Substances: A 14 m/o female was found unresponsive with seizure-like activity at home. She had last been seen normal 15 min earlier. Her mother initiated CPR. EMS intubated her and provided PALS enroute to the ED.

Physical Exam: Hypothermic, no pulse or respirations; pupils fixed and dilated.

Laboratory/Diagnostic Findings: Arterial pH 6.5, BD 24, lactate 17. Na 151/K 2.7/Cl 110/HCO_3 15/BUN 15/Cr 0.4/Glu 440. AST 119, ALT 64, INR 1.4 CK 1,386. Serum APAP, ethanol and salicylate not detected; UDS positive for cocaine. ECG (after ROSC): sinus tachycardia at 160, RBBB, QRS > 121.

Clinical Course: She was resuscitated in the ED with epinephrine, sodium bicarbonate and Ca. ROSC was achieved and an epinephrine drip was initiated for hypotension. She was transferred to a tertiary hospital were confirmatory serum testing (via GC/MS) identified benzoylecgonine >1,000 ng/mL. She remained unresponsive with myoclonus, coagulopathy and diabetes insipidus (with subsequent hypernatremia). On Day 6 she was declared brain dead, supportive care was removed and she died.

Autopsy Findings: Not provided.

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], Goldfranks [11] or Dart [12].

Typical laboratory panels

ABG-pH/pCO_2/pO_2/HCO_3/BE
Basic metabolic panel: Na/K/Cl/CO_2/BUN/Cr/Glu/AG
Complete blood count: WBC/Hgb/Hct/platelets

Abbreviations & Normal Ranges

~	approximately
Abd	abdomen
ABG-pH/pCO_2/pO_2/HCO_3/BE	
ABG	arterial blood gases
pH	hydrogen ion concentration [7.38-7.42 mmHg]
pCO_2	partial pressure of carbon dioxide [38-42 mmHg]
pO_2	partial pressure of oxygen [90-100 mmHg]
HCO_3	bicarbonate [22 - 28 mEq/L]
BE	base excess [±2mEq/L or mmol/L]
ACLS	advanced cardiac life support, protocol for the provision of cardiac resuscitation
ADHD	attention deficit hyperactivity disorder
AF	atrial fibrillation
AG	anion gap Na – (Cl + HCO_3) [12 ± 4 mEq/L or mmol/L]
AICD	automatic implanted cardiodefibrillator
AKI	acute kidney injury
ALP	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
amphetamines (hallucinogenic)	one or more of the products (6-APB, bath salts, plant food, Bliss, Ivory Wave, Purple Wave, Vanilla Sky, et al) or chemicals (3,4 methylenedioxypyrovalerone [MDPV], 6-(2-aminopropyl)benzofuran [6-APB], butylone, desoxypipradrol [2-DPMP], ethylone, flephedrone, naphyrone, mephedrone, methylenedioxypyrovalerone, methylone, methcathinone, et al)
AMS	altered mental status
APAP	acetaminophen (acetyl-para-aminophenol), therapeutic [10-20] mcg/mL
APLS	advanced pediatric life support, protocol for the provision of cardiac resuscitation
aPTT	activated partial thromboplastin time [30-40] sec
ARDS	acute respiratory distress syndrome
AST	Aspartate aminotransferase [12-38] U/L = (SGOT)
AV block	atrio-ventricular block
BAL	British anti-Lewisite
BE	base excess, = base excess [±2mEq/L or mmol/L]
bicarbonate	[22-26] mmol/L
bili (direct)	direct bilirubin [0.1, 0.4] mg/dL
bili (indirect)	indirect bilirubin [0.2, 0.9] mg/dL
bilirubin	total [0.3-1.3] mg/dL
BiPAP	bilevel positive airway pressure, pressure support with 2 levels of continuous positive airway pressure
BLQ	below the limit of quantitation
BMI	body mass index
BNPT	prohormone with a 76 amino acid N-terminal inactive protein that is cleaved from the molecule to release brain natriuretic peptide. CHF is likely if BNPT >125 pg/mL (<75 y/o), > 450 pg/mL (>75 y/o),
body packing	insertion of drugs into body orifices to evade law enforcement
body stuffing	the ingestion of drugs in order to evade law enforcement
BP	Blood Pressure, systolic/diastolic, (Torr)
BPH	benign prostatic hypertrophy

BUN	see Urea nitrogen
C	degrees Centigrade
Ca (ionized)	ionized calcium, [4.5-5.6] mg/dL
Ca	calcium [8.7–10.2] mg/dL
CABG	coronary artery bypass graft
CAD	coronary artery disease
CHF	congestive heart failure
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
CMV	cytomegalovirus
CNS	central nervous system
COHb	carboxyhemoglobin (RR < 3%)
COPD	chronic obstructive pulmonary disease
CPAP	continuous positive airway pressure
CPR	cardiopulmonary 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
CVP	central venous pressure
CVVH	continuous venovenous hemodiafiltration
CxR	chest radiograph, chest xray
c/w	consistent with
D10W	10% dextrose in water
D50W	50% dextrose in water
D5NS	5% dextrose in normal saline
D5W	5% dextrose in water
Day	when capitalized, Day = hospital day, i.e., days since admission to the initial hospital admission for this exposure
DIC	disseminated intravascular coagulation
DM	diabetes mellitus
DNI	do not intubate
DNR	do not resuscitate
drip	intravenous infusion
Dx	diagnosis
ECG	electrocardiogram (EKG), leads = I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6
ECHO	echocardiogram
ECMO	extracorporeal membrane oxygenation
ED	emergency department, in these abstracts refers to the initial health care facility
EDDP	principal methadone metabolite, 2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine
EEG	electroencephalogram
EGD	esophagogastroduodenoscopy
ELISA	enzyme-linked immunosorbent assay
EMS	emergency medical services, paramedics, the first responders
ER	extended release medication
ETT	endotracheal tube
FFP	fresh frozen plasma
FiO_2	fraction of inspired oxygen (%)
g	grams
g/dL	grams per deciliter
GCS	Glasgow Coma Score, ranges from 3 to 15
GERD	gastroesophageal reflux disease
GI	gastrointestinal
Glu	glucose, fasting [75-110] mg/dL
h	hours
HBO	hyperbaric oxygen treatment/therapy
HCF	health care facility
HCG	human chorionic gonadotropin test for pregnancy
HCO_3	bicarbonate [22 - 28 mEq/L]
HCP	health care provider
Hct	hematocrit [35.4-44.4] %females, [38.8-46.4] % males
HD	hemodialysis
Hgb	hemoglobin [12.0-15.8] g/dL females, [13.3-16.2] g/dL males
HIE	hyperinsulinemia-euglycemia therapy
HIV	human immunodeficiency virus
Hour	when capitalized, Hour = hours since admission or since exposure as specified in the narrative
HR	HR, beats per min
IABP	intraortic balloon pump
ICP	intracranial pressure
ICU	intensive care unit
IDDM	insulin dependent diabetes mellitus
IgE	immunoglobulin E
ILE	intravenous lipid emulsion (20%)
IM	intramuscular
INR	international normalized ratio (PT to control) [0.8-1-2]
IO	intraosseous
IU/L	international units per Liter
IV	intravenous
IVF	intravenous fluid(s)
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 [0.5-1.6] mmol/L arterial, [0.5-2.2] mmol/L venous
LBBB	left bundle branch block on ECG
LFT	liver function tests
LV	left ventricle
LVEF	left ventricular ejection fraction
m/o	months old
MAP	mean arterial pressure
mcg/dL	micrograms per deciliter
mcg/L	micrograms per Liter
mcg/min	micrograms per minute
mcg/mL	micrograms per milliliter
mcmol/L	micromoles per liter
MDA	3,4-methylenedioxyamphetamine
MDMA	methylenedioxymethamphetamine (ecstasy, molly)
ME	medical examiner
MetHgb	methemoglobin (RR < 1%)
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	millimoles
mmol/L	millimoles per Liter (previously mEq/L)
mosm/kg	milliosmoles per kilogram
mosm/L	milliosmoles per Liter
MRI	Magnetic Resonance Imaging
MRSA	Methicillin-resistant Staphylococcus aureus
ms	milliseconds
MSDS	material safety data sheet
Na	sodium [136-146] mEq/L
NAC	n-acetyl cysteine

Narrative Headers:

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

NG	nasogastric
ng/mL	nanograms per milliliter

NOS	not otherwise specified
not detected	analyte below the level of quantitation, negative
NPO	nil per os, nothing by mouth
NRB	non rebreathing mask for O_2 delivery
NS	normal saline
NSTEMI	non-ST segment elevation myocardial infarction
O_2 sat	oxygen percent saturation [94-100] % at sea level
OG	serum osmol gap = measured serum osmolality – calculated serum osmolality [0 ± 10 mOsmol/kg]
OR	operating room
Osm	osmole
OTC	over the counter
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
Phos	phosphate (phosphorous) [2.5-4.5] mg/dL
PICU	pediatric intensive care unit
PLT	platelet count [150-400] x109/L
PO	per os ("by mouth" in Latin)
POC	point of care
Ppm	parts per million
PR	P-R interval [120-200] msec on the ECG
PRN	as needed
PT	prothrombin time, INR is preferred, but PT may be used if INR is not available
PTA	Prior to admission
PTSD	post-traumatic stress disorder
PTT	partial thromboplastin time [26.3-39.4] sec
PVC	premature ventricular contraction
QRS	ECG QRS complex duration [60-100] msec
QT	Q to T interval on the ECG waveform, varies with HR
QTc	QT interval corrected for HR, usually $QTcB = QT/RR^{1/2}$ (Bazett correction) 1-15 y-o [<440] msec, adult male [<430] msec, adult female [<450] msec
RA	on room air
RBBB	right bundle branch block on ECG
RBC	red blood cell(s)
ROSC	return of spontaneous circulation
RPC	regional poison center
RR	respiratory rate, breaths per minute
s/p	status post
salicylate	aspirin, acetylsalicylic acid, therapeutic [15-30] mg/dL
SBP	systolic blood pressure
sec	seconds
SL	sublingual
SVT	supraventricular tachycardia
T (oral)	Temperature (oral) [36.4, 37.2] °C or
T (rectal)	Temperature (rectal) [36.4, 37.2] °C or
T (tympanic)	Temperature (tympanic) [36.4, 37.2] °C
TBSA	total body surface area
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	troponin I, normal range [0-0.08] ng/mL, Cut-off for MI >0.04 ng/mL
TTE	transthoracic echocardiogram
U	units
U/dL	units per deciliter
U/L	units per liter
U/mL	units per milliliter
UA	urinalysis
UDS	urine drug screen
Urea nitrogen (BUN)	[6-17] mg/dL
VBG	venous blood gases
VF	ventricular fibrillation
VSD	ventricular septal defect
VT	ventricular tachycardia
WBC	white blood cell (leukocyte) count [3.54-9.06] $10^3/mm^3$
WBI	whole bowel irrigation
WNL	within normal limits
y/o	year old

Appendix D

Table 21. 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										
Adhesives/Glues										
1ph	30+ y M				A	Inhal + Par	Int-A	2		
		toluene	1	1						
		methamphetamine	2	2						
Alcohols										
2ph	17 y F				A	Ingst	Int-A	2		
		ethanol	1	1					ethanol	512 mg/dL In Blood (unspecified) @ Unknown
3ai	17 y F				U	Ingst	Int-A	1		
		ethanol	1	1						
4ai	23 y M				U	Unk	Int-A	3		
		ethanol	1	1						
5ai	26 y F				U	Ingst	Int-A	3		
		ethanol	1	1						
6h	28 y F				U	Ingst	Unk	1		
		methanol	1	1					methanol	54 mg/dL In Blood (unspecified) @ Unknown
		drug, unknown	2	2						
7pha	28 y M				A/C	Ingst	Int-A	3		
		ethanol	1	1						
8a	30 y M				A	Ingst	Int-A	3		
		ethanol	1	1					ethanol	289 mcg/dL In Blood (unspecified) @ Unknown
9ai	30 y M				U	Unk	Int-A	1		
		ethanol	1	1						
		methanol	2	2						
10h	31 y M				A/C	Ingst + Rec	Int-U	2		
		ethanol	1	1						
		cocaine	2	2						
11h	32 y M				A	Ingst	Int-U	2		
		methanol	1	1						
		Mitragyna speciosa korthals	2	2						
12	33 y F				A	Ingst	Int-U	1		
		methanol	1	1						
13ai	33 y M				U	Unk	Int-A	2		
		ethanol	1	1						
14ai	35 y F				C	Ingst	Int-A	1		
		ethanol	1	1						
15ha	37 y M				A	Ingst	Int-S	2		
		methanol	1	1						
16p	37 y F				U	Ingst	Int-S	3		
		ethanol	1	1					ethanol	268 mg/dL In Serum @ Unknown
		automotive-aircraft-boat product	2	2						
17ai	38 y F				U	Unk	Int-A	1		
		ethanol	1	1						
		diphenhydramine	2	2						
18h	38 y M				U	Ingst	Unk	3		
		ethanol	1	1						
		acetaminophen	2	2						
19pha	39 y M				A/C	Ingst	Unk	3		
		ethanol	1	1					ethanol	160 mg/dL In Blood (unspecified) @ Unknown
20ai	40 y F				U	Unk	Int-A	3		
		ethanol	1	1						
21ai	40 y M				U	Unk	Int-A	3		
		ethanol	1	1						
22ai	41 y M				U	Unk	Int-A	1		
		ethanol	1	1						
23ai	41 y M				C	Ingst	Int-A	3		
		ethanol	1	1						
24i	42 y M				C	Ingst	Int-A	3		
		ethanol	1	1						
25ha	43 y M				A	Ingst	Int-A	2		
		alcohol, unknown	1	1					ethanol	615 mg/dL In Serum @ Unknown
26ai	43 y M				U	Unk	Int-A	3		
		ethanol	1	1						
27ai	44 y F				U	Unk	Int-A	3		
		ethanol	1	1						
28ai	44 y M				U	Unk	Int-A	1		
		ethanol	1	1						
29p	45 y F				A	Ingst	Int-S	1		
		isopropanol	1	1					isopropanol	820 mg/dL In Blood (unspecified) @ Autopsy
		doxepin	2	2					doxepin	200 ng/mL In Blood (unspecified) @ Autopsy
		doxepin	2	2					desmethyldoxepin	230 ng/mL In Blood (unspecified) @ Autopsy
		hydroxyzine	3	3					hydroxyzine	120 ng/mL In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
30ai	46 y F				C	Unk	Int-A	2		
		ethanol	1	1						
31ai	46 y M				U	Unk	Int-A	3		
		ethanol	1	1						
32ai	46 y M				U	Unk	Int-A	1		
		ethanol	1	1						
33ai	47 y M				C	Ingst + Unk	Int-A	1		
		ethanol	1	1						
		lidocaine	2	2						
34ai	47 y M				U	Unk	Int-A	3		
		ethanol	1	1						
		diazepam	2	2						
		hydromorphone	3	3						
35ai	48 y M				U	Unk	Int-A	3		
		ethanol	1	1						
36h	48 y M				A	Ingst	Int-U	1		
		methanol	1	1					methanol	71 mg/dL In Blood (unspecified) @ Unknown
37ai	49 y M				C	Unk	Int-A	3		
		ethanol	1	1						
38pha	49 y M				U	Ingst	Int-U	1		
		ethanol	1	1					ethanol	477 mg/dL In Blood (unspecified) @ Unknown
		quetiapine	2	2						
39ai	49 y M				C	Ingst	Int-A	1		
		ethanol	1	1						
40ai	49 y M				U	Unk	Int-A	1		
		ethanol	1	1						
		isopropanol	2	2						
41i	50 y M				C	Ingst	Int-A	3		
		ethanol	1	1						
42h	50 y M				A	Ingst	Int-S	2		
		ethanol	1	1						
		acetaminophen/ diphenhydramine	2	2						
		metformin	3	3						
43hai	50 y F				U	Unk	Int-A	2		
		ethanol	1	1						
44ai	50 y M				U	Unk	Int-A	3		
		ethanol	1	1						
		bupropion	2	2						
		citalopram	3	3						
45ai	50 y F				C	Unk	Int-A	1		
		ethanol	1	1						
		cetirizine	2	2						
		citalopram	3	3						
46ai	50 y M				U	Unk	Int-A	2		
		ethanol	1	1						
47ai	51 y F				U	Ingst + Unk	Int-S	3		
		ethanol	1	1						
		diphenhydramine	2	2						
		hydroxyzine	3	3						
48ha	51 y M				A/C	Ingst	Int-A	2		
		alcohol, unknown	1	1						
49h	52 y F				A	Ingst	Int-S	2		
		methanol	1	1					methanol	174.8 mg/dL In Blood (unspecified) @ Unknown
		morphine	2	2						
50ai	52 y M				U	Unk	Int-A	1		
		ethanol	1	1						
51ai	52 y F				U	Unk	Int-A	3		
		ethanol	2	1						
		venlafaxine	1	1						
52ai	52 y M				U	Unk	Int-A	3		
		ethanol	1	1						
53ai	53 y F				U	Unk	Int-A	3		
		ethanol	1	1						
54ai	53 y M				C	Ingst	Int-A	3		
		ethanol	1	1						
55ai	53 y M				U	Ingst	Int-A	3		
		ethanol	1	1						
56h	53 y M				C	Unk	Unk	1		
		ethanol	1	1						
57ai	53 y M				U	Unk	Int-A	1		
		ethanol	1	1						
		carisoprodol	2	2						
58h	54 y F				A	Ingst	Int-S	2		
		alcohol, unknown	1	1					ethanol	586 mg/dL In Blood (unspecified) @ Unknown
		metformin/sitagliptin	2	2						
59ai	54 y M				U	Ingst	Int-A	1		
		ethanol	1	1						
60ai	54 y M				U	Unk	Int-A	2		
		ethanol	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
61ai	54 y M				U	Unk	Int-A	3		
		ethanol	1	1						
62ai	54 y M				U	Unk	Int-A	1		
		ethanol	1	1						
		isopropanol	2	2						
63ai	55 y M				C	Ingst	Int-A	1		
		ethanol	1	1						
64h	55 y M				C	Ingst	Int-U	3		
		ethanol	1	1					ethanol	252 mg/dL In Blood (unspecified) @ Unknown
65ai	55 y F				C	Unk	Int-A	3		
		ethanol	1	1						
66ai	55 y M				C	Ingst	Int-A	1		
		ethanol	1	1						
67	56 y F				A	Ingst	Int-A	3		
		ethanol	1	1					ethanol	530 mg/dL In Serum @ Unknown
68ai	57 y M				U	Unk	Int-A	2		
		ethanol	1	1						
69ai	57 y M				U	Unk	Int-A	3		
		ethanol	1	1						
70ha	58 y M				A/C	Unk	Int-S	1		
		ethanol	1	1					ethanol	340 mg/dL In Blood (unspecified) @ Unknown
		fluoxetine	2	2					fluoxetine	2617 ng/mL In Blood (unspecified) @ Unknown
		fluoxetine	2	2					norfluoxetine	336 ng/mL In Blood (unspecified) @ Unknown
71i	58 y M				U	Ingst	Int-A	2		
		ethanol	1	1						
72ai	58 y F				U	Unk	Int-A	3		
		ethanol	1	1						
		doxylamine	2	2						
73ai	58 y F				U	Unk	Int-A	2		
		ethanol	1	1						
74ai	58 y M				C	Ingst	Int-A	1		
		ethanol	1	1						
75h	59 y M				U	Ingst	Int-A	2		
		alcohol, unknown	1	1						
		ethanol	2	2					ethanol	314 mg/dL In Blood (unspecified) @ Unknown
76ha	59 y M				C	Ingst	Int-A	2		
		ethanol	1	1					ethanol	181 mg/dL In Blood (unspecified) @ Unknown
77ai	59 y M				U	Unk	Int-A	1		
		ethanol	1	1						
78ai	59 y M				U	Unk	Int-A	3		
		ethanol	1	1						
79ai	60 y M				U	Unk	Int-A	3		
		ethanol	1	1						
80pha	60 y M				U	Ingst + Inhal	Int-A	3		
		ethanol	1	1					ethanol	423 mg/dL In Blood (unspecified) @ 5 m (pe)
		THC homolog	2	2						
81ha	61 y F				U	Ingst	Int-U	1		
		ethanol	1	1					ethanol	450 mg/dL In Blood (unspecified) @ Unknown
82ai	61 y M				U	Ingst	Int-A	1		
		ethanol	1	1						
83i	61 y M				U	Ingst	Int-A	1		
		ethanol	1	1						
84ai	61 y M				U	Unk	Int-A	3		
		ethanol	1	1						
85ai	62 y M				U	Unk	Int-A	2		
		ethanol	1	1						
		isopropanol	2	2						
		cyclobenzaprine	3	3						
86h	63 y F				U	Ingst	Int-U	3		
		methanol	1	1						
87pai	63 y M				C	Ingst	Int-A	3		
		ethanol	1	1						
88ha	63 y M				A	Ingst	Int-S	3		
		ethanol	1	1					ethanol	360 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	2	2					hydrocodone	0.1 mg/L In Blood (unspecified) @ Unknown
		oxycodone	3	3					oxycodone	0.17 mg/L In Blood (unspecified) @ Unknown
89h	63 y M				A/C	Ingst	Int-S	3		
		alcohol, unknown	1	1					ethanol	172 mg/dL In Blood (unspecified) @ Unknown
90h	63 y M				A	Ingst	Unk	3		
		ethanol	1	1					ethanol	79 mg/dL In Blood (unspecified) @ Unknown
		ethylene glycol	2	2					ethylene glycol	0 mg/dL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
91ha	63 y M				U	Ingst + Unk	Int-U	1		
		methanol	1	1					methanol	11 mg/dL In Urine (quantitative only) @ Unknown
		methamphetamine	2	2					methamphetamine	0.67 mcg/mL In Blood (unspecified) @ Autopsy
92ai	63 y M				C	Unk	Int-A	3		
		ethanol	1	1						
93ai	64 y M				C	Unk	Int-A	3		
		ethanol	1	1						
94ai	65 y M				C	Unk	Int-A	2		
		ethanol	1	1						
95ai	65 y F				U	Unk	Int-A	3		
		ethanol	1	1						
96ai	65 y F				C	Unk	Int-A	3		
		ethanol	1	1						
97ai	65 y M				C	Ingst	Int-A	3		
		ethanol	1	1						
98ai	66 y F				U	Ingst	Int-A	1		
		ethanol	1	1						
99ai	67 y M				A/C	Ingst	Int-A	3		
		ethanol	1	1						
100ai	67 y F				U	Unk	Int-A	2		
		ethanol	1	1						
101ai	68 y M				C	Ingst	Int-A	3		
		ethanol	1	1						
102ai	68 y M				U	Unk	Int-A	2		
		ethanol	1	1						
103	69 y M				C	Ingst	Int-A	2		
		ethanol	1	1					ethanol	205 mg/dL In Blood (unspecified) @ Unknown
		glyhcol, NOS	2	2					propylene glycol	8.5 mg/dL In Blood (unspecified) @ Unknown
104ai	69 y F				C	Unk	Int-A	3		
		ethanol	1	1						
105ai	69 y M				U	Unk	Int-A	3		
		ethanol	1	1						
106ai	69 y M				U	Ingst + Unk	Int-A	3		
		ethanol	1	1						
		hyperthermia	2	2						
107i	70 y M				U	Ingst	Int-A	3		
		ethanol	1	1						
		isopropanol	2	2						
108ai	70 y F				U	Unk	Int-A	3		
		ethanol	1	1						
109ai	73 y M				U	Unk	Int-A	1		
		ethanol	1	1						
		methanol	2	2						
110ai	78 y M				U	Unk	Int-A	3		
		ethanol	1	1						
111h	83 y F				A	Ingst	Unk	2		
		isopropanol	1	1						
		metformin	2	2						

See Also case 133, 146, 147, 162, 170, 187, 207, 217, 226, 228, 231, 284, 286, 289, 317, 318, 337, 365, 369, 383, 384, 386, 396, 399, 412, 414, 418, 428, 430, 433, 434, 438, 441, 447, 450, 467, 469, 474, 478, 484, 486, 490, 494, 495, 497, 502, 515, 519, 523, 527, 529, 535, 544, 545, 546, 557, 558, 559, 561, 562, 570, 571, 572, 573, 576, 577, 581, 584, 587, 593, 594, 595, 596, 601, 605, 608, 615, 617, 618, 620, 627, 630, 633, 634, 640, 646, 652, 658, 662, 663, 669, 683, 684, 689, 700, 702, 703, 706, 714, 718, 721, 722, 730, 731, 733, 738, 740, 741, 745, 746, 748, 758, 762, 767, 768, 773, 776, 785, 787, 788, 792, 802, 805, 806, 813, 818, 820, 821, 822, 824, 825, 826, 827, 838, 839, 840, 841, 842, 843, 847, 857, 860, 865, 867, 870, 874, 879, 880, 887, 888, 904, 920, 921, 925, 927, 932, 941, 947, 953, 954, 955, 960, 961, 962, 970, 990, 993, 994, 996, 1024, 1027, 1032, 1033, 1039, 1045, 1053, 1057, 1065, 1070, 1071, 1119, 1150, 1171, 1179, 1180, 1185, 1203, 1210, 1221, 1225, 1228, 1229, 1232, 1233, 1236, 1241, 1242, 1243, 1246, 1247, 1252, 1259, 1269, 1286, 1288, 1289, 1296, 1301, 1309, 1313, 1319, 1335, 1350, 1358, 1364, 1366, 1369, 1370, 1373, 1375, 1407, 1408, 1411, 1420, 1424, 1441, 1444, 1453, 1457, 1462, 1463, 1465, 1466, 1469, 1470, 1473, 1476, 1479, 1490, 1491, 1493, 1505, 1507, 1510, 1515, 1517, 1521, 1524, 1534, 1535, 1540, 1541, 1544, 1559, 1562, 1566, 1568, 1573, 1586, 1636, 1675, 1684, 1689, 1693, 1717, 1721, 1723, 1724, 1726, 1732, 1746, 1747, 1749, 1754, 1755, 1757, 1760, 1761, 1763, 1769, 1771, 1778, 1782, 1788, 1793, 1794, 1796, 1813, 1818, 1820, 1833, 1837, 1840, 1852, 1862, 1882, 1892, 1894, 1898, 1921, 1924, 1926, 1932, 1936, 1961, 1962, 1965, 1969, 1975, 1985, 1987, 1991, 2005, 2006, 2007, 2009, 2011, 2021, 2028, 2034, 2040, 2046, 2048, 2057, 2064, 2072, 2074, 2077, 2099, 2106, 2111, 2114, 2123, 2137, 2146, 2149, 2157, 2163, 2170, 2174, 2178, 2182, 2189, 2205, 2216, 2217, 2219, 2221, 2225, 2226, 2232, 2235, 2253, 2254, 2264, 2284, 2285, 2286, 2295, 2296, 2311, 2316, 2320, 2321, 2322, 2337, 2343, 2349, 2353, 2359, 2363, 2365, 2372, 2376, 2378, 2383, 2384, 2385, 2388, 2394, 2398, 2399, 2402, 2417, 2420, 2422, 2423, 2431, 2433, 2434, 2437, 2441, 2442, 2444, 2448, 2455, 2457, 2462, 2468, 2472, 2482, 2484, 2485, 2487, 2489, 2490, 2494, 2497, 2501, 2502, 2505, 2508, 2512, 2553, 2565, 2575

Automotive/Aircraft/Boat Products

112h	25 y M				A/C	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1						
		lithium	2	2						
		quetiapine (extended release)	3	3						
113h	25 y M				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	28 mg/dL In Serum @ 25 h (pe)
		ethylene glycol (antifreeze)	1	1					ethylene glycol	46 mg/dL In Serum @ 18 h (pe)
		camphor/menthol/ methyl salicylate	2	2						
		glow product	3	3						
114h	29 y M				A	Ingst	Int-S	2		
		methanol	1	1						
[115pha]	33 y F				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	250 mg/dL In Blood (unspecified) @ Autopsy
116	33 y F				A	Ingst	Int-U	1		
		methanol	1	1					methanol	295 mg/dL In Blood (unspecified) @ Unknown
117ha	52 y F				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	51 mg/dL In Blood (unspecified) @ Unknown
		venlafaxine	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
118	53 y M				A	Ingst	Unk	1		
		methanol	1	1					methanol	138 mg/dL In Blood (unspecified) @ Unknown
119h	57 y M				A	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
		diphenhydramine	2	2						
		zolpidem	3	3						
120ph	57 y M				A	Ingst	Unt-M	2		
		methanol	1	1						
121h	58 y F				U	Ingst	Int-S	1		
		methanol	1	1						
122h	62 y F				A	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
123h	62 y F				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	16 mg/dL In Blood (unspecified) @ Unknown
124	63 y M				A	Ingst	Unt-G	2		
		ethylene glycol (antifreeze)	1	1						
See Also case 16, 1365, 2582										
Batteries										
125pai	22 m M				A	Ingst	Unt-G	1		
		battery, disc (lithium)	1	1						
126ai	22 m F				A	Ingst	Unt-G	1		
		battery, disc (lithium)	1	1						
Bites and Envenomations										
[127pha]	35 y F				A	Derm	Int-M	1		
		toxin, Phyllomedusa bilcolor	1	1						
128pa	39 y M				A	B-S	Unt-B	1		
		envenomation (hymenoptera)	1	1						
129a	55 y M				U	B-S	Unt-B	1		
		bite (mammal, rabies)	1	1						
130ph	57 y M				A	B-S	Unt-B	1		
		envenomation (crotalinae)	1	1						
Chemicals										
131pa	19 y M				A	Ingst	Int-S	1		
		sodium nitirite	1	1					methemoglobin	11 % In Blood (unspecified) @ Autopsy
[132p]	19 y M				A	Ingst	Int-S	2		
		sodium nitirite	1	1						
133phi	21 y M				A	Ingst + Unk	Int-S	1		
		cyanide	1	1						
		beta blocker	2	2						
		olanzapine	3	3						
		ethanol	4	4						
		sodium azide	5	5						
134h	21 y M				A	Unk	Unk	1		
		ethylene glycol	1	1					ethylene glycol	113 mg/dL In Blood (unspecified) @ Unknown
135h	22 y M				A	Ingst	Int-S	2		
		hydrochloric acid	1	1						
136a	22 y M				A	Ingst	Int-S	1		
		sodium azide	1	1						
[137ha]	24 y M				A	Ingst	Int-S	1		
		ethylene glycol	1	1					ethylene glycol	89 mg/dL In Blood (unspecified) @ 3 m (pe)
138pha	24 y M				A	Ingst	Int-S	1		
		sodium azide	1	1						
139hai	27 y M				A/C	Ingst	Int-S	1		
		dinitrophenol	1	1						
140ha	29 y M				A/C	Ingst	Int-S	1		
		ethylene glycol	1	1					ethylene glycol	515 mcg/mL In Blood (unspecified) @ Unknown
		ziprasidone	2	2						
		trazodone	3	3						
		hydroxyzine	4	4						
		fluoxetine	5	5						
141ph	31 y M				A	Ingst	Int-S	1		
		sulfuric acid	1	1						
		toilet bowl cleaner (alkali/ hypochlorite)	2	2						
		cleaner (anionic/nonionic)	3	3						
[142p]	33 y M				A	Ingst + Unk	Int-S	2		
		strychnine	1	1						
		drug, unknown	2	2						
143a	36 y M				U	Unk	Unt-G	2		
		ethylene glycol	1	1						
		carbon monoxide	2	2					carboxyhemoglobin	13.6 % In Blood (unspecified) @ Unknown
		amphetamine	3	3						
144h	37 y F				A	Ingst	Int-S	2		
		sodium azide	1	1						
145ph	37 y F				A/C	Inhal	Int-A	2		
		chemical, unknown	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
146pai	38 y M				A	Ingst	Int-S	1		
		nitrites	1	1						
		ethanol	2	2						
147ha	38 y M				A	Ingst	Unk	1		
		ethylene glycol	1	1					ethylene glycol	87 mg/dL In Blood (unspecified) @ Unknown
		isopropanol	2	2						
148pi	43 y F				A	Ingst	Int-S	2		
		sodium azide	1	1						
149ha	44 y M				A	Ingst	Int-S	2		
		acid, unknown	1	1					ethanol	250 mg/dL In Plasma @ Autopsy
150	46 y F				A/C	Unk	AR-D	2		
		dinitrophenol	1	1						
151p	48 y M				A	Ingst	Int-S	1		
		ethylene glycol	1	1					ethylene glycol	37 mg/dL In Blood (unspecified) @ 1 h (pe)
		ethylene glycol	1	1					iron	78 mcg/dL In Blood (unspecified) @ 1 d (pe)
152p	53 y M				A	Unk	Unk	2		
		hydrofluoric acid	1	1						
153	53 y M				A	Ingst	Unk	2		
		ethylene glycol	1	1						
154	57 y F				A	Ingst	Int-U	1		
		ethylene glycol	1	1						
155ha	58 y M				A	Ingst	Int-S	2		
		boric acid	1	1						
156h	58 y M				A	Ingst	Oth-M	2		
		hydrofluoric acid	1	1						
		chemical, unknown	2	2						
157h	59 y M				A	Ingst	Unk	1		
		ethylene glycol	1	1					ethylene glycol	150 mg/dL In Blood (unspecified) @ 1 h (pe)
158ha	61 y M				A	Ingst	Int-S	2		
		ethylene glycol	1	1						
159h	65 y M				A	Ingst	Int-S	2		
		ethylene glycol	1	1						
		bupropion	2	2						
		gabapentin	3	3						
160ha	67 y M				U	Ingst	Unk	2		
		ethylene glycol	1	1					ethylene glycol	21 mg/dL In Blood (unspecified) @ Unknown
161h	71 y M				A	Ingst	Int-S	1		
		ethylene glycol	1	1					ethylene glycol	22 mg/dL In Blood (unspecified) @ 1 h (pe)
		ethylene glycol	1	1					ethylene glycol	6 mg/dL In Blood (unspecified) @ 24 h (pe)
162h	83 y M				A	Ingst	Unt-M	3		
		chemical, unknown	1	1						
		ethanol	2	2					ethanol	53 mg/dL In Blood (unspecified) @ Unknown
		cleaner (anionic/nonionic)/naphtha	3	3						
163ha	84 y M				A	Ingst	Int-S	1		
		potassium cyanoaurite	1	1					cyanide	0.85 mcg/mL In Blood (unspecified) @ Autopsy
		hydroxocobalamin	2	2						
[164ha]	85 y M				A	Ingst	Unt-G	1		
		hydrofluoric acid	1	1						
165	93 y F				A	Inhal	Unk	1		
		chemical, unknown	1	1						
		carbon monoxide	2	2					carboxyhemoglobin	36 % In Blood (unspecified) @ Unknown
		cyanide	3	3						
166pi	Unknown adult (>=20 yrs) F				A	Ingst	Int-S	1		
		cyanide	1	1						
		caffeine	2	2						
See Also case 90, 103, 199, 207, 215, 220, 241, 877, 2456, 2553										
Cleaning Substances (Household)										
[167ha]	3 y M				A	Ingst + Derm	Unt-G	1		
		hydrofluoric acid	1	1						
168h	39 y M				A	Ingst	Int-S	2		
		hydrofluoric acid	1	1						
169	39 y F				A	Ingst	Int-S	1		
		drain cleaner (alkali)	1	1						
		drug, unknown	2	2						
170h	39 y M				A	Ingst	Int-S	1		
		toilet bowl cleaner (acid)	1	1						
		hydrogen peroxide	2	2						
		ethanol	3	3						
		ethanol (non-beverage)	4	4						
		benzoyl peroxide	5	5						
171h	41 y M				A	Ingst	Int-S	1		
		drain cleaner (sodium hydroxide)	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
172h	48 y M				A	Ingst	Int-S	1		
		drain cleaner (alkali/ hypochlorite)	1	1						
173	50 y M				A	Ingst	Int-S	2		
		cleaner (alkali)	1	1						
174h	51 y M				A	Ingst	Int-S	2		
		toilet bowl cleaner (acid)	1	1						
175h	52 y F				A	Ingst	Int-S	1		
		drain cleaner (alkali)	1	1						
[176ha]	53 y F				A	Ingst	Int-S	1		
		drain cleaner (sodium hydroxide/sodium hypochlorite/ sodium silicate)	1	1						
177h	59 y M				A	Ingst + Inhal + Derm	Int-S	2		
		hypochlorite	1	1						
		amphetamine	2	2						
178a	60 y F				A	Ingst	Oth-M	3		
		hypochlorite	1	1						
179	66 y F				A	Ingst	Int-S	1		
		cleaner (alkali)	1	1						
180ha	69 y F				A	Ingst + Oc + Derm	Int-S	1		
		drain cleaner (sodium hydroxide)	1	1						
		hypochlorite	2	2						
181a	69 y M				A	Ingst	Int-S	3		
		hypochlorite	1	1						
		drug, unknown	2	2						
182ph	74 y M				A	Ingst + Aspir	Unt-M	2		
		cleaner (anionic/nonionic)	1	1						
183h	83 y M				A	Ingst	Int-A	3		
		chlorhexidine	1	1						
184h	83 y M				A	Ingst	Int-S	1		
		drain cleaner (alkali)	1	1						
185	92 y M				A	Ingst	Unt-G	3		
		laundry detergent (pod)	1	1						
186	14 m F				A	Ingst + Aspir + Oc + Derm	Unt-G	2		
		cleaner (anionic/nonionic)	1	1						
See Also case 141, 901, 1263, 1562, 2145, 2415										
Cosmetics/Personal Care Products										
187h	51 y F				U	Ingst	Oth-M	2		
		hydrogen peroxide	1	1						
		methadone	2	2						
		benzodiazepine	3	3						
		ethanol	4	4						
188ha	54 y M				A	Ingst	Int-S	2		
		ethanol	1	1					ethanol	137 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen/ diphenhydramine	2	2						
		ethanol	3	3						
		chlordiazepoxide	4	4						
		cocaine	5	5						
		amphetamine	6	6						
189ph	54 y M				A	Ingst	Unt-G	2		
		hydrogen peroxide	1	1						
		acetaminophen	2	2					acetaminophen (apap)	24 mcg/mL In Blood (unspecified) @ Unknown
		levothyroxine	3	3						
		calamine lotion	4	4						
See Also case 162, 170, 495, 1649										
Fumes/Gases/Vapors										
190pha	1 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	22.3 % In Serum @ 1 h (pe)
191pi	1 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
192pi	1 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
193pi	2 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
194pi	3 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
195pha	4 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	17 % In Blood (unspecified) @ Unknown
196pi	5 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
197pi	6 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
198p	8 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
199pha	9 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	9 % In Blood (unspecified) @ Autopsy
		cyanide	2	2						
200pi	10 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
201pi	10 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
202pi	11 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
203h	12 y F				A	Inhal + Derm	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	25 % In Blood (unspecified) @ Unknown
204pha	13 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	61 % In Blood (unspecified) @ Autopsy
205pha	14 y M				A	Inhal	Oth-M	1		
		carbon monoxide	1	1					carboxyhemoglobin	34 % In Serum @ 30 m (pe)
		carbon monoxide	1	1					carboxyhemoglobin	70 % In Serum @ 15 m (pe)
206i	21 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	58 % In Blood (unspecified) @ 1 h (pe)
207pha	23 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	23 % In Blood (unspecified) @ 20 m (pe)
		cyanide	2	2						
		ethanol	3	3					ethanol	312 mg/dL In Serum @ 1 m (pe)
208h	25 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	43 % In Serum @ 1 h (pe)
		carbon monoxide	2	2						
209pi	25 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
210ph	26 y M				A	Inhal + Unk	Int-S	1		
		carbon monoxide	1	1					carboxyhemoglobin	50 % In Blood (unspecified) @ 1 h (pe)
		amphetamine	2	2						
		methamphetamine	3	3						
		oxycodone	4	4						
211pha	26 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	28 % In Blood (unspecified) @ Autopsy
		carbon monoxide	1	1					carboxyhemoglobin	50 % In Blood (unspecified) @ Unknown
212a	27 y M				A	Inhal	Int-S	1		
		helium	1	1						
213p	27 y F				A	Inhal	Int-S	1		
		carbon monoxide	1	1						
214pha	28 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	48 % In Blood (unspecified) @ Unknown
215ph	28 y F				A	Inhal	Unk	1		
		carbon monoxide	1	1						
		cyanide	2	2						
216pi	1 m M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
217pa	35 y F				A	Ingst + Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	60 % In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	180 mg/dL In Blood (unspecified) @ Autopsy
218ph	35 y M				A	Inhal	Int-S	1		
		carbon monoxide	1	1					carboxyhemoglobin	40.5 % In Blood (unspecified) @ Unknown
[219h]	36 y M				A	Inhal	Unt-O	1		
		hydrogen sulfide	1	1					thiosulfate	10 mcg/mL In Serum @ Unknown
220p	36 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		cyanide	2	2						
221ph	41 y F				A	Inhal + Derm	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	21.5 % In Serum @ 3.5 h (pe)
222h	42 y M				A	Unk	Int-S	1		
		carbon monoxide	1	1					carboxyhemoglobin	4.5 % In Serum @ 30 m (pe)
223pi	42 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
224ai	43 y M				U	Unk	Int-S	1		
		carbon monoxide	1	1						
225p	44 y M				A	Inhal	Int-S	2		
		nitrogen	1	1						
226ai	47 y M				A	Unk	Int-S	1		
		carbon monoxide	1	1						
		alprazolam	2	2						
		ethanol	3	3						
227p	48 y M				A	Inhal	Unt-E	3		
		carbon monoxide	1	1					carboxyhemoglobin	26 % In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
228ai	49 y F				A	Ingst + Inhal + Unk	Int-S	1		
		carbon monoxide	1	1						
		alprazolam	2	2						
		ethanol	3	3						
229ai	55 y F				U	Unk	Int-S	1		
		carbon monoxide	1	1						
230pi	55 y M				A	Inhal	Unt-E	3		
		carbon monoxide	1	1					carboxyhemoglobin	40 % In Blood (unspecified) @ Unknown
231pha	58 y F				A	Ingst + Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	5 % In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	30 mg/dL In Blood (unspecified) @ Autopsy
232pa	59 y M				U	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	0.5 % In Blood (unspecified) @ 15 h (pe)
		carbon monoxide	1	1					carboxyhemoglobin	15.4 % In Blood (unspecified) @ Unknown
		carbon monoxide	1	1					carboxyhemoglobin	38 % In Blood (unspecified) @ Unknown
233pa	59 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	32 % In Blood (unspecified) @ Autopsy
234h	60 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1					carboxyhemoglobin	77 % In Blood (unspecified) @ Unknown
235ph	61 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	54 % In Blood (unspecified) @ Unknown
236h	62 y M				A	Inhal	Unt-E	3		
		carbon monoxide	1	1						
237p	62 y M				A	Inhal	Unt-E	3		
		carbon monoxide	1	1					carboxyhemoglobin	9 % In Blood (unspecified) @ Unknown
238ph	62 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	35 % In Blood (unspecified) @ Unknown
239h	66 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1					carboxyhemoglobin	46 % In Blood (unspecified) @ 30 m (pe)
240ph	66 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	2					carboxyhemoglobin	35.6 % In Serum @ 3 h (pe)
241ph	66 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
		carbon monoxide	2	2						
		cyanide	3	3						
242ph	71 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	28.8 % In Blood (unspecified) @ Unknown
243ai	74 y M				A	Inhal	Int-S	1		
		carbon monoxide	1	1						
244ph	77 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
245ha	77 y M				A	Inhal	Unk	1		
		carbon monoxide	1	1					carboxyhemoglobin	18.6 % In Serum @ Unknown
246ai	77 y M				U	Inhal	Unt-U	1		
		carbon monoxide	1	1						
[247p]	77 y F				A	Inhal	Unk	1		
		carbon dioxide	1	1						
248pai	80 y U				U	Inhal	Unt-M	1		
		carbon monoxide	1	1						
249pi	81 y M				U	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		propane	2	2						
250pai	83 y U				U	Inhal	Unt-M	1		
		carbon monoxide	1	1						
251p	89 y M				C	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	73 % In Blood (unspecified) @ Autopsy
252ph	91 y F				A	Inhal	Unt-E	3		
		carbon monoxide	1	1					carboxyhemoglobin	28.3 % In Blood (unspecified) @ 45 m (pe)
		carbon monoxide	2	2						
253ph	6-12 y U				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
254ph	60+ y F				A	Inhal	Unt-E	3		
		carbon monoxide	1	1					carboxyhemoglobin	32 % In Blood (unspecified) @ Unknown
255pi	Unknown adult (>=20 yrs) M				A	Inhal	Unt-O	1		
		hydrogen sulfide	1	1						
256pi	Unknown adult (>=20 yrs) U				A	Inhal	Int-S	1		
		carbon monoxide	1	1						
257i	Unknown adult (>=20 yrs) M				A	Inhal	Unt-E	1		
		fume-gas-vapor, unknown	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
258i	Unknown adult (>=20 yrs) F				U	Inhal	Int-S	1		
		fume-gas-vapor, unknown	1	1						
259p	Unknown adult (>=20 yrs) M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	53 % In Blood (unspecified) @ 1 h (pe)
260ph	Unknown age F				A	Inhal	Unt-E	3		
		carbon monoxide	1	1					carboxyhemoglobin	26.4 % In Blood (unspecified) @ Unknown
261hi	Unknown age U				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	28.3 % In Blood (unspecified) @ Unknown
		carbon monoxide	1	1					carboxyhemoglobin	39.3 % In Blood (unspecified) @ Unknown
		carbon monoxide	1	1					carboxyhemoglobin	56.4 % In Blood (unspecified) @ Unknown
See Also case 143, 165, 694, 1040, 1144, 1505										
Heavy Metals										
[262ha]	33 y F				A	Ingst	Int-S	1		
		barium	1	1					barium	13 mg/L In Blood (unspecified) @ Autopsy
[263h]	72 y M				A	Ingst	Int-S	2		
		potassium chloride	1	1						
Hydrocarbons										
264ph	19 y M				A	Inhal	Int-A	1		
		hydrocarbon, fluorinated	1	1						
		paint-Varnish-lacquer	2	2						
265h	23 y M				A	Inhal	Int-A	2		
		hydrocarbon, fluorinated	1	1						
266ha	25 y F				A	Inhal	Int-S	1		
		hydrocarbon, fluorinated	1	1						
267pha	25 y M				U	Inhal	Int-U	1		
		hydrocarbon, fluorinated	1	1						
268h	26 y F				A/C	Inhal	Int-A	2		
		hydrocarbon, fluorinated	1	1						
269	26 y F				C	Ingst + Inhal	Int-A	1		
		hydrocarbon, fluorinated	1	1						
		acetaminophen/ diphenhydramine	2	2						
270p	27 y M				A	Inhal	Int-A	1		
		hydrocarbon, fluorinated	1	1						
[271a]	28 y M				A/C	Inhal	Int-A	1		
		hydrocarbon, fluorinated	1	1						
272ai	28 y F				U	Unk	Int-A	1		
		hydrocarbon, fluorinated	1	1						
273pai	29 y M				A	Inhal	Int-A	1		
		hydrocarbon, fluorinated	1	1						
274pa	31 y M				C	Inhal	Int-S	1		
		hydrocarbon, fluorinated	1	1					fluoxetine	120 ng/mL In Blood (unspecified) @ Autopsy
		hydrocarbon, fluorinated	1	1					1,1-difluoroethane	16 mg/mL In Blood (unspecified) @ Autopsy
		hydrocarbon, fluorinated	1	1					norfluoxetine	350 ng/mL In Blood (unspecified) @ Autopsy
275p	32 y F				A	Inhal	Int-A	2		
		hydrocarbon, fluorinated	1	1						
276	34 y M				A	Inhal	Int-A	2		
		hydrocarbon, fluorinated	1	1						
277p	36 y M				U	Inhal	Int-M	1		
		hydrocarbon, fluorinated	1	1						
278ha	36 y M				A	Inhal	Int-A	1		
		hydrocarbon, fluorinated	1	1						
279ai	37 y M				U	Unk	Int-S	1		
		hydrocarbon, fluorinated	1	1						
280pha	39 y M				A	Inhal	Int-U	1		
		hydrocarbon, fluorinated	1	1						
281ai	41 y M				U	Inhal	Unk	1		
		hydrocarbon, fluorinated	1	1						
[282ha]	41 y F				A	Inhal	Int-A	1		
		hydrocarbon, fluorinated	1	1					1,1-difluoroethane	5.7 mg/L In Blood (unspecified) @ Autopsy
283ai	43 y M				U	Unk	Unk	1		
		hydrocarbon, fluorinated	1	1						
284ai	44 y F				U	Ingst + Inhal + Unk	Unk	1		
		hydrocarbon, fluorinated	1	1						
		methanol	2	2						
		ethanol	3	3						
[285ha]	49 y M				A	Inhal	Int-A	1		
		hydrocarbon, fluorinated	1	1						
286ai	51 y F				U	Unk	Int-A	1		
		hydrocarbon, fluorinated	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		ethanol	2	2						
		lorazepam	3	3						
See Also case 592, 1240										
Industrial Cleaners										
287ha	63 y F				A	Ingst	Unt-G	1		
		sodium carbonate/sodium hydroxide/ sodium phosphate	1	1						
288ha	85 y F				A	Ingst	Unt-G	1		
		potassium hydroxide/sodium hypochlorite	1	1						
289h	Unknown adult (>=20 yrs) M				A	Ingst	Unt-G	2		
		ammonium biflouride	1	1						
		ethanol	2	2						
Miscellaneous Foods										
290ph	29 y F				U	Ingst	Unk	2		
		sodium bicarbonate	1	1						
Mushrooms										
291i	67 y M				A	Ingst	Int-S	1		
		mushroom (unknown)	1	1						
292h	75 y F				A	Ingst	Unt-G	2		
		Amanita muscaria	1	1						
Other/Unknown Nondrug Substances										
[293ha]	9 y M				A	Ingst	Unt-M	1		
		nondrug, unknown	1	1						
294	91 y M				A	Ingst	Int-S	1		
		nondrug, unknown	1	1						
See Also case 106, 155, 1369, 1698, 1969, 1987, 2008, 2043, 2044, 2147, 2308, 2389, 2463, 2487										
Paints and Stripping Agents										
295	77 y M				A	Ingst	Int-S	1		
		methanol/methylene chloride/toluene	1	1						
See Also case 264, 1432										
Pesticides										
296a	25 y M				A	Inhal	Int-A	1		
		brodifacoum	1	1						
		rodenticide (antocoagulant)	2	2						
		THC homolog	3	3						
297h	26 y F				A	Ingst	Int-S	2		
		organophosphate	1	1						
298a	27 y M				A	Ingst	Int-S	2		
		dinitrophenol	1	1						
299pha	28 y M				U	Inhal	Int-A	2		
		rodenticide (antocoagulant)	1	1						
		THC homolog	2	2						
[300ha]	31 y M				U	Inhal	Int-A	1		
		brodifacoum	1	1					brodifacoum	96.5 mcg/L In Blood (unspecified) @ Unknown
		THC homolog	2	2						
301pi	33 y M				A	Inhal	Oth-C	3		
		brodifacoum	1	1						
		THC homolog	2	2						
302h	33 y M				A	Ingst	Int-S	2		
		glyphosate	1	1						
303pai	37 y M				U	Inhal	Int-A	1		
		brodifacoum	1	1						
		THC homolog	2	2						
		marijuana	3	3					11-oh-thc (11-hydroxy-delta-9-tetrahydrocannabinol)	0.011 mg/L In Whole Blood @ Autopsy
[304ph]	40 y M				A	Ingst	Unt-M	1		
		imidacloprid	1	1						
305i	42 y M				U	Unk	Int-S	1		
		paraquat	1	1						
[306a]	46 y M				A	Inhal	Oth-C	1		
		rodenticide (antocoagulant)	1	1						
		THC homolog	2	2						
307ha	50 y M				A	Inhal	Oth-C	1		
		brodifacoum	1	1						
		rodenticide (antocoagulant)	2	2						
		THC homolog	3	2						
308ph	52 y F				A/C	Ingst	Int-S	2		
		difethialone	1	1						
		lorazepam	2	2						
309p	52 y M				A	Ingst	Int-S	2		
		methomyl	1	1						
310	53 y F				A	Inhal	Unt-E	1		
		sulfuryl fluoride	1	1						
[311ph]	54 y M				A	Ingst	Int-S	1		
		acephate	1	1						
312pha	56 y M				A	Inhal	Unt-G	3		
		esfenvalerate	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
[313h]	59 y M				A	Ingst	Unt-M	1		
		paraquat	1	1					paraquat	1400 ng/mL In Blood (unspecified) @ 27 h (pe)
		glyphosate	2	2						
[314h]	63 y M				A	Ingst	Unt-G	1		
		paraquat	1	1						
315h	65 y M				A	Ingst	Unt-M	2		
		paraquat	1	1						
316	66 y M				A	Ingst	Int-S	2		
		organophosphate	1	1						
317pai	67 y M				A	Unk	Int-S	1		
		strychnine	1	1					strychnine	0.19 mcg/g In Muscle @ Autopsy
		strychnine	1	1					strychnine	36 mcg/g In Liver @ Autopsy
		ethanol	2	2					ethanol	59 mg/dL In Unknown @ Autopsy
318pa	68 y M				A	Ingst	Int-S	2		
		phosphine	1	1						
		ethanol	2	2					ethanol	0.11 g/dL In Vitreous @ Autopsy
319ha	71 y M				A	Ingst	Int-S	2		
		glyphosate	1	1						
		zinc phosphide	2	2						
320pi	77 y F				A	Ingst	Int-S	1		
		copper ammonium complex	1	1						
321	78 y M				A	Ingst	Int-S	2		
		diclorvos	1	1						
		chlorpyrifos	2	2						
322h	84 y M				A	Ingst	Int-S	2		
		diquate/glyphosate	1	1						
See Also case 852, 2250										
Plants										
[323h]	20 y M				A	Ingst	Int-S	1		
		plant, toxalbumin	1	1					abrin (abrus precatorius)	8.84 ng/mL In Blood (unspecified) @ 61 h (pe)
324h	35 y M				A	Par	Int-U	2		
		plant, toxalbumin	1	1						
[325ha]	63 y F				A	Ingst	Unt-M	1		
		Thevetia peruviana	1	1						
[326]	64 y M				A	Ingst	Int-M	2		
		Thevetia peruviana	1	1						
[327ha]	8 m M				C	Ingst	Unt-G	2		
		Argemone alba	1	1						
See Also case 770, 930, 1244, 1644										
Pharmaceutical Exposures										
Analgesics										
328i	1 y M				U	Unk	Unt-G	1		
		methadone	1	1						
329p	1 y F				U	Unk	Unk	1		
		fentanyl	1	1						
		heroin	2	2						
[330pha]	2 y M				A	Ingst	Unk	1		
		methadone	1	1					methadone	0.45 mg/L In Blood (unspecified) @ Autopsy
331phai	3 y M				A	Ingst	Unt-G	1		
		methadone	1	1						
332hi	14 y F				U	Ingst	Int-S	1		
		colchicine	1	1						
		lisinopril	2	2						
		ciprofloxacin	3	3						
		tizanidine	4	4						
		meloxicam	5	5						
		iron	6	6						
333	15 y F				A	Ingst	Int-M	2		
		acetaminophen	1	1					acetaminophen (apap)	30.8 mcg/mL In Serum @ Unknown
334pha	15 y F				A	Ingst	Int-S	1		
		hydromorphone	1	1					hydromorphone	232 ng/mL In Blood (unspecified) @ Unknown
		fluoxetine	2	2					fluoxetine	68 ng/mL In Blood (unspecified) @ Unknown
		cyclobenzaprine	3	3					cyclobenzaprine	69 ng/mL In Blood (unspecified) @ Unknown
335i	15 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
336ai	15 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
337h	16 y F				A	Ingst	Int-S	1		
		colchicine	1	1						
		lisinopril	2	2						
		mirtazapine	3	3						
		clonidine	4	4						
		ethanol	5	5						
338ai	16 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		clonazepam	3	3						
339i	16 y M				U	Unk	Int-A	1		
		fentanyl	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
340ai	17 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
341i	17 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
342ai	17 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
343h	17 y M				A	Ingst	Int-S	2		
		oxycodone	1	1						
		diphenhydramine	2	2						
		dextromethorphan	3	3						
		hydromorphone	4	4						
		hydroxyzine	5	5						
344h	17 y F				A	Ingst	Int-S	1		
		oxycodone	1	1						
		pregabalin	2	2						
		THC homolog	3	3						
		acetaminophen/bultalbital/caffeine/codeine	4	4						
345h	17 y F				A	Ingst	Int-S	1		
		colchicine	1	1						
		hydroxyzine	2	2						
		diphenhydramine	3	3						
		acetaminophen	4	4					acetaminophen (apap)	54 mcg/mL In Serum @ 4 h (pe)
346ai	17 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
347ai	17 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		alprazolam	3	3						
348pa	18 y F				U	Ingst	Int-S	1		
		fentanyl	1	1					cyclopropylfentanyl	1 mcg/mL In Blood (unspecified) @ Unknown
		beta blocker	2	2						
349ai	18 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		alprazolam	3	3						
350i	18 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
351pha	18 y M				A	Ingst	Int-U	1		
		fentanyl	1	1					fentanyl	11 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	2	2						
352pha	18 y M				U	Inhal	Int-A	2		
		acetaminophen/oxycodone	1	1						
353	18 y F				C	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	229 mcg/mL In Serum @ 20 h (pe)
354p	18 y F				A	Ingst	Int-S	2		
		acetaminophen	2	1					acetaminophen (apap)	15.6 mcg/mL In Serum @ Unknown
		drug, unknown	1	1						
		salicylate	3	2					salicylate	6.6 mg/dL In Serum @ Unknown
355h	18 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
356ai	18 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
357ai	18 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
358ai	18 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		gabapentin	2	2						
		codeine	3	3						
359ai	18 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
360ai	18 y M				U	Unk	Int-A	1		
		narcotic, other/unknown	1	1						
361h	19 y F				A	Ingst	Int-U	2		
		acetaminophen	1	1					acetaminophen (apap)	30 mcg/mL In Blood (unspecified) @ Unknown
		lithium	2	2					lithium	1.7 mmol/L In Blood (unspecified) @ Unknown
362p	19 y M				U	Ingst	Unk	2		
		fentanyl	1	1						
363pha	19 y M				A	Ingst	Int-A	1		
		fentanyl	1	1					fentanyl	10 ng/mL In Serum @ 1 d (pe)
		benzodiazepine	2	2					alprazolam	250 ng/mL In Serum @ 1 d (pe)
364i	19 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
365ai	19 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
366ai	19 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
367ai	19 y M				U	Unk	Int-S	1		
		methadone	1	1						
		bupropion	2	2						
		propranolol	3	3						
368pa	19 y M				U	Inhal	Int-A	1		
		fentanyl	1	1						
369ai	19 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		amphetamine	2	2						
		ethanol	3	3						
370ai	19 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		marijuana	2	2						
371ai	19 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
		citalopram	3	3						
		cocaine	4	4						
372ai	19 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		valproic acid	2	2						
373ai	19 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
374h	20 y F				C	Ingst	Int-M	2		
		naproxen	1	1						
		trazodone	2	2						
		sertraline	3	3						
		hydroxyzine	4	4						
375ha	20 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	72 mg/dL In Blood (unspecified) @ Autopsy
376p	20 y M				A	Ingst + Inhal	Int-A	2		
		acetaminophen/oxycodone	1	1						
		alprazolam	2	2						
		marijuana	3	3						
[377pha]	20 y M				U	Inhal	Int-A	1		
		fentanyl	1	1					fentanyl	5.6 ng/mL In Serum @ Unknown
378ai	20 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
379ai	20 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
380i	20 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
381ai	20 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
382i	20 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
383i	20 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		alprazolam	3	3						
		ethanol	4	4						
384ha	20 y M				U	Ingst + Inhal	Int-A	2		
		methadone	1	1						
		Codeine	2	2						
		ethanol	3	3						
		amphetamine (hallucinogenic) cathinone	4	4						
		marijuana	5	5						
385ai	20 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		citalopram	2	2						
		antihistamine	3	3						
386ai	20 y M				U	Unk	Int-U	1		
		fentanyl	1	1						
		ethanol	2	2						
387ai	20 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		alprazolam	3	3						
388ai	20 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		alprazolam	3	3						
389ai	20 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
390ai	20 y M				U	Unk	Int-A	1		
		fentanyl	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		cocaine	2	2						
		alprazolam	3	3						
391ai	20 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
392ai	20 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		methamphetamine	3	3						
393a	21 y F				A	Ingst	Int-U	1		
		acetaminophen	1	1					acetaminophen (apap)	126 mcg/mL In Blood (unspecified) @ 4 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	174 mcg/mL In Blood (unspecified) @ 1 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	45 mcg/mL In Blood (unspecified) @ 36 h (pe)
		acetaminophen/oxycodone	2	2						
		naproxen	3	3						
394ai	21 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		alprazolam	3	3						
395ai	21 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		alprazolam	3	3						
396ai	21 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
		dextromethorphan	3	3						
397ai	21 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
398ai	21 y F				U	Unk	Int-S	1		
		fentanyl	1	1						
		alprazolam	2	2						
		bupropion	3	3						
399ai	21 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		ethanol	3	3						
400ai	21 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		benztropine	2	2						
		fluoxetine	3	3						
401ai	21 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
402ph	22 y M				A	Ingst	Unk	2		
		fentanyl	1	1						
		heroin	2	2						
		methamphetamine	3	3						
		trazodone	4	4						
		marijuana	5	5						
403ai	22 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
404i	22 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
405ai	22 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		alprazolam	3	3						
406ai	22 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
407ai	22 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		alprazolam	3	3						
408i	22 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
409i	22 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
410i	22 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
411	22 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	182 mcg/mL In Serum @ 18 h (pe)
		diphenhydramine	2	1						
		ibuprofen	3	2						
412h	22 y M				A	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1					acetaminophen (apap)	29 mcg/mL In Blood (unspecified) @ Unknown
		ibuprofen	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		salicylate	3	3					salicylate	15 mg/dL In Blood (unspecified) @ Unknown
		ethanol	4	4					ethanol	57 mg/dL In Blood (unspecified) @ Unknown
413h	22 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	89.4 mg/L In Serum @ Unknown
		drug, unknown	2	2						
414a	22 y M				U	Ingst	Unk	2		
		acetaminophen/ diphenhydramine	1	1						
		ethanol	2	2						
415a	22 y F				U	Ingst + Inhal	Int-A	3		
		fentanyl	1	1						
		amitriptyline	2	2						
		cocaine	3	3						
416pa	22 y M				A	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	0.019 mg/L In Blood (unspecified) @ Autopsy
417ai	22 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
418ai	22 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		ethanol	3	3						
419ai	22 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		tramadol	2	2						
420ai	22 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
421ai	22 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
422pha	23 y M				A	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	2.4 ng/mL In Blood (unspecified) @ 1 h (pe)
423pha	23 y M				A	Par + Unk	Int-A	1		
		fentanyl	1	1					norfentanyl	0.95 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	1	1					fentanyl	5.1 ng/mL In Blood (unspecified) @ Unknown
		drug, unknown	2	2						
		cocaine	3	3						
		amphetamine	4	4					amphetamine	57 ng/mL In Blood (unspecified) @ Unknown
424pa	23 y F				A	Par	Int-A	1		
		fentanyl	1	1					fentanyl	0.08 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	0.027 mg/L In Blood (unspecified) @ Autopsy
425ai	23 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		alprazolam	3	3						
426i	23 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		amphetamine	2	2						
		amphetamine (hallucinogenic)	3	3						
		alprazolam	4	4						
		cocaine	5	5						
427ai	23 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		oxycodone	3	3						
428ai	23 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
429ai	23 y F				U	Unk	Int-A	2		
		fentanyl	1	1						
430ai	23 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
431ai	23 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
432ai	23 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		alprazolam	3	3						
433ha	23 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	113.8 mg/dL In Blood (unspecified) @ 15 h (pe)

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		salicylate	1	1					salicylate	13 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	2.6 mg/dL In Blood (unspecified) @ Unknown
		clonazepam	2	2						
		ethanol	3	3					ethanol	42 mg/dL In Blood (unspecified) @ Unknown
		phenibut	4	4						
434pa	23 y M				A	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	0.01 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					cocaine	0.2 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	2.4 mg/L In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	0.03 % (wt/Vol) In Blood (unspecified) @ Autopsy
435ai	23 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		heroin	2	2						
436ai	23 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		tramadol	2	2						
437ai	23 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
438ai	23 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		ethanol	3	3						
439ai	23 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
440ai	23 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
441ai	23 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
442ai	23 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
443pa	24 y F				A	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	0.022 mg/L In Blood (unspecified) @ Autopsy
		heroin	2	1					morphine (free)	21 mcg/L In Blood (unspecified) @ Autopsy
		cocaine	3	3					benzoylecognine	1.6 mg/L In Blood (unspecified) @ Autopsy
444h	24 y M				A	Ingst + Par	Int-A	1		
		morphine	1	1						
		fentanyl	2	2						
		fentanyl analog, acetyl fentanyl	3	3						
445ai	24 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
446i	24 y M				U	Unk	Int-M	1		
		fentanyl	1	1						
		cocaine	2	2						
		alprazolam	3	3						
447ai	24 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
448ai	24 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
449ai	24 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
450i	24 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
451ai	24 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		methadone	2	2						
		cocaine	3	3						
452ai	24 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
453pha	24 y M				A	Inhal	Int-A	1		
		fentanyl	1	1					fentanyl	7.1 ng/mL In Blood (unspecified) @ Unknown
		cocaine	2	2					benzoylecognine	634 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	3	3						
454h	24 y F-Pregnant				C	Ingst	Int-M	1		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminophen	1	1					acetaminophen (apap)	11 mcg/mL In Plasma @ Unknown
455i	24 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
456ai	24 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
457ai	24 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
458ai	24 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
		cocaine	3	3						
459ai	24 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		alprazolam	3	3						
460pa	25 y F				A	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	0.03 mg/L In Blood (unspecified) @ Autopsy
461pa	25 y M				A	Inhal	Int-A	1		
		fentanyl	1	1					fentanyl	0.026 mg/L In Blood (unspecified) @ Autopsy
462ha	25 y M				A	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	106 mcg/mL In Serum @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	115 mcg/mL In Serum @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	116 mcg/mL In Serum @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	17 mcg/mL In Serum @ Unknown
		diphenhydramine	2	2						
		ibuprofen	3	3						
463h	25 y M				A	Ingst	Int-S	2		
		ibuprofen	1	1						
		risperidone	2	2						
		alprazolam	3	3						
464pa	25 y M				A	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	0.019 mg/L In Blood (unspecified) @ Autopsy
465ai	25 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
466i	25 y F				U	Unk	Int-A	2		
		fentanyl	1	1						
		cocaine	2	2						
		dextromethorphan	3	3						
467i	25 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
468ai	25 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		alprazolam	3	3						
469ai	25 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
470ai	25 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
471ai	25 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		Mitragyna speciosa korthals	2	2						
472ai	25 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methylenedioxy methamphetamine (MDMA)	2	2						
		alprazolam	3	3						
473ph	25 y M				U	Inhal	Unt-G	1		
		fentanyl	1	1						
474	25 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	96.3 mcg/mL In Serum @ Unknown
		tramadol	2	2						
		ibuprofen	3	3						
		ethanol	4	4						
		citalopram	5	5						
475pha	25 y M				A	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	0.001 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2						
476ai	25 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
477ai	25 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
478ai	25 y F				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		ethanol	2	2						
479ai	25 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
480	26 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	84 mcg/mL In Serum @ Unknown
481ai	26 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
482i	26 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		alprazolam	3	3						
483ai	26 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		buprenorphine	2	2						
		alprazolam	3	3						
484ai	26 y M				U	Unk	Int-A	1		
		methadone	1	1						
		ethanol	2	2						
485pa	26 y M				A	Par	Int-A	1		
		fentanyl	1	1					fentanyl	0.019 mg/L In Blood (unspecified) @ Autopsy
486	26 y M				U	Ingst	Int-A	2		
		acetaminophen	1	1						
		ethanol	2	2						
487ph	26 y F				A	Par	Int-A	2		
		narcotic, other/unknown	1	1						
488h	26 y F				C	Ingst	Unt-M	1		
		acetaminophen	1	1					acetaminophen (apap)	11 mcg/mL In Serum @ 15 m (pe)
489ai	26 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		morphine	2	2						
		codeine	3	3						
		alprazolam	4	4						
490ai	26 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
491ai	26 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		nonsteroidal antiinflammatory	2	2						
492ai	26 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
493ai	26 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		cocaine	3	3						
494p	27 y M				A	Ingst + Unk	Int-U	1		
		fentanyl	1	1					fentanyl	0.015 mg/L In Blood (unspecified) @ Autopsy
		morphine	2	2					morphine (free)	16 mcg/L In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	0.03 % (wt/Vol) In Vitreous @ Autopsy
		ethanol	3	3					ethanol	0.04 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	0.06 % (wt/Vol) In Blood (unspecified) @ Autopsy
495a	27 y F				A/C	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	62 mcg/mL In Blood (unspecified) @ Unknown
		isopropanol	2	2						
		ethanol (non-beverage)	3	3						
496i	27 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		lorazepam	2	2						
497ai	27 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
		ethanol	3	3						
498i	27 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
499ai	27 y M				U	Unk	Int-A	1		
		narcotic, other/unknown	1	1						
		amphetamine	2	2						
500pa	27 y M				U	Par	Int-A	1		
		fentanyl	1	1					fentanyl	8.3 ng/mL In Blood (unspecified) @ Autopsy
		bupropion	2	2					bupropion	330 ng/mL In Blood (unspecified) @ Autopsy
501ph	27 y M				A	Ingst	Int-A	2		
		acetaminophen/oxycodone	1	1						
		fentanyl	2	2						
502ai	27 y M				U	Ingst + Unk	Int-A	1		
		buprenorphine	1	1						
		diazepam	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		ethanol	3	3						
503ai	27 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		tramadol	2	2						
		cocaine	3	3						
504ai	27 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		hydrocodone	3	3						
		alprazolam	4	4						
505ai	27 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		clonazepam	2	2						
		zolpidem	3	3						
506ai	27 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
507ai	27 y M				U	Unk	Int-A	1		
		methadone	1	1						
		morphine	2	2						
		methamphetamine	3	3						
		benzodiazepine	4	4						
508h	28 y F				U	Unk	Int-U	2		
		acetaminophen	1	1					acetaminophen (apap)	35 mcg/mL In Blood (unspecified) @ Unknown
		drug, unknown	2	1						
509ph	28 y F				A/C	Ingst	Int-A	2		
		tramadol	1	1						
		acetaminophen/hydrocodone	2	2						
510pha	28 y M				U	Ingst	Unk	1		
		fentanyl	1	1					fentanyl	0.26 ng/mL In Blood (unspecified) @ 1 h (pe)
511ai	28 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
512ai	28 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
513ai	28 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		gabapentin	2	2						
		trazodone	3	3						
514ai	28 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
515ai	28 y F				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
		ethanol	3	3						
516i	28 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
		doxylamine	3	3						
517ai	28 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		amphetamine (hallucinogenic)	2	2						
		cocaine	3	3						
518ai	28 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
519ai	28 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		ethanol	3	3						
520ai	28 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
521ai	28 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
522i	29 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
523ai	29 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		ethanol	3	3						
524h	29 y M				A/C	Ingst	Int-S	1		
		acetaminoophen	1	1					acetaminophen (apap)	174.7 mcg/mL In Serum @ 1 d (pe)
		acetaminoophen	1	1					acetaminophen (apap)	23.9 mcg/mL In Serum @ 4 d (pe)
		acetaminoophen	1	1					acetaminophen (apap)	252.3 mcg/mL In Serum @ 0 d (pe)
		acetaminoophen	1	1					acetaminophen (apap)	41.8 mcg/mL In Serum @ 3 d (pe)
		acetaminoophen	1	1					acetaminophen (apap)	82.2 mcg/mL In Serum @ 2 d (pe)
		acetaminoophen	1	1					acetaminophen (apap)	9.9 mcg/mL In Serum @ 5 d (pe)
525ph	29 y F				A	Ingst	Int-A	2		
		buprenorphine/naloxone (sublingual tablet)	1	1						
526ai	29 y M				U	Unk	Int-A	1		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		fentanyl	1	1						
		citalopram	2	2						
		benzodiazepine	3	3						
527ai	29 y F				U	Unk	Int-S	1		
		fentanyl	1	1						
		cocaine	2	2						
		ethanol	3	3						
528ai	29 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
529ai	29 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
530ai	29 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
531ai	29 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		alprazolam	3	3						
532ai	29 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
533pha	30 y M				A	Unk	Int-U	2		
		fentanyl	1	1					fentanyl	2 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	2	2					methamphetamine	113 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	2	2					amphetamine	24 ng/mL In Blood (unspecified) @ Unknown
534pha	30 y M				A/C	Par + Unk	Int-A	1		
		fentanyl	1	1					norfentanyl	1.9 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	14 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	1200 mg/mL In Blood (unspecified) @ Autopsy
535ai	30 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
536ai	30 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
537ai	30 y F				U	Unk	Unk	3		
		oxycodone	1	1						
		duloxetine	2	2						
		olanzapine	3	3						
538p	30 y M				A	Ingst	Int-A	2		
		fentanyl	1	1						
539ha	30 y M				A	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen (apap)	23.4 mcg/mL In Blood (unspecified) @ Unknown
540pa	30 y F-Pregnant				A	Par	Int-A	1		
		fentanyl	1	1					fentanyl	0.074 mg/L In Blood (unspecified) @ Autopsy
541h	30 y F				C	Ingst	Int-A	2		
		acetaminophen/ diphenhydramine	1	1					acetaminophen (apap)	30 mcg/mL In Blood (unspecified) @ Unknown
542h	30 y M				U	Ingst	Unk	2		
		fentanyl	1	1						
		cocaine	2	2						
		nalmexone	3	3						
		trazodone	4	4						
		gabapentin	5	5						
543ai	30 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
544ai	30 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		diazepam	2	2						
		ethanol	3	3						
545ai	30 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		ethanol	3	3						
546ai	30 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
547ai	30 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		heroin	2	2						
		cocaine	3	3						
548ai	30 y F				U	Unk	Int-A	1		
		fentanyl	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		sertraline	2	2						
		alprazolam	3	3						
549ai	30 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		cyclobenzaprine	3	3						
550ai	30 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
551ai	30 y M				U	Unk	Int-A	2		
		fentanyl	1	1						
		cocaine	2	2						
552p	31 y M				A	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	0.034 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	1.4 mg/L In Blood (unspecified) @ Autopsy
553h	31 y F				U	Ingst	Int-S	2		
		acetaminophen	1	1						
554pha	31 y M				A/C	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	2	1						
		oxycodone	1	1					oxycodone	182 ng/mL In Blood (unspecified) @ Unknown
		lorazepam	3	3					lorazepam	150 ng/mL In Blood (unspecified) @ Unknown
555h	31 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	52.5 mcg/mL In Blood (unspecified) @ 5 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	75 mcg/mL In Blood (unspecified) @ 30 m (pe)
		drug, unknown	2	2						
556ai	31 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		heroin	2	2						
557i	31 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
558ai	31 y M				U	Ingst + Unk	Int-A	1		
		oxycodone	1	1						
		ethanol	2	2						
559p	31 y F				A	Ingst	Int-S	1		
		oxycodone	1	1						
		ethanol	2	2						
560ai	31 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methadone	2	2						
561ai	31 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		ethanol	3	3						
562pa	32 y M				A	Unk	Unk	1		
		fentanyl	1	1						
		ethanol	2	2					ethanol	0.13 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.14 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.17 % (wt/Vol) In Vitreous @ Autopsy
		ethanol	2	2					ethanol	0.2 % (wt/Vol) In Urine (quantitative only) @ Autopsy
563pha	32 y F				U	Unk	Unk	1		
		fentanyl	1	1					fentanyl	5.4 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	2	2					oxycodone	58 ng/mL In Blood (unspecified) @ Autopsy
564pa	32 y F				U	Inhal + Unk	Int-A	1		
		fentanyl	1	1					fentanyl	15 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					norfentanyl	5 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	2	2					cocaine	210 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	3	3					7-aminoclonazepam	42 ng/mL In Blood (unspecified) @ Autopsy
565ai	32 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		methamphetamine	3	3						
566ai	32 y M				U	Unk	Int-A	1		
		narcotic, other/unknown	1	1						
		benzodiazepine	2	2						
567ha	32 y F				A/C	Ingst + Unk	Int-S	1		
		tramadol	1	1					tramadol	19 mg/L In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		tramadol	1	1					tramadol	200 mg/L In Blood (unspecified) @ Autopsy
		duloxetine	2	2						
		cyclobenzaprine	3	3					cyclobenzaprine	0.06 mg/L In Blood (unspecified) @ Autopsy
		amphetamine	4	4						
		levetiracetam	5	5					levetiracetam	17 mg/L In Blood (unspecified) @ Autopsy
		topiramate	6	6					topiramate	14 mg/L In Blood (unspecified) @ Autopsy
568pha	32 y M				U	Unk	AR-O	1		
		fentanyl	1	1					fentanyl	0.014 mg/L In Whole Blood @ Autopsy
		fentanyl analog, acetyl fentanyl	2	2						
		heroin	3	3					morphine	0.057 mg/L In Whole Blood @ Autopsy
		methamphetamine	4	4					methamphetamine	0.15 mg/L In Whole Blood @ Autopsy
		cocaine	5	5					benzoylecognine	1.6 mg/L In Whole Blood @ Autopsy
569h	32 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	129 mcg/mL In Blood (unspecified) @ Unknown
570pa	32 y M				A	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	0.023 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2						
		ethanol	3	3					ethanol	0.06 mg/dL In Blood (unspecified) @ Autopsy
571pha	32 y M				U	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	1.2 ng/mL In Blood (unspecified) @ Autopsy
		heroin	2	2					morphine (free)	29 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	200 mg/dL In Blood (unspecified) @ Autopsy
572ai	32 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
		diphenhydramine	3	3						
573ai	32 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
574ai	32 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
575ai	32 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
576ai	32 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		fentanyl analog, acetyl fentanyl	2	2						
		ethanol	3	3						
577ai	32 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
		ethanol	3	3						
578p	33 y F				A/C	Ingst	Int-S	2		
		methadone	1	1						
		clonazepam	2	2						
		cyclobenzaprine	3	3						
579pha	33 y F				U	Ingst	Int-S	1		
		fentanyl	1	1					norfentanyl	2.7 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	8.5 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	28 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	3	3						
		cocaine	4	4					benzoylecognine	413 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	5	5					oxycodone	33 ng/mL In Blood (unspecified) @ Autopsy
580ph	33 y M				A/C	Unk	Int-A	2		
		narcotic, other/unknown	1	1						
581ai	33 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
582ai	33 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
583ai	33 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		Mitragyna speciosa korthals	2	2						
584ai	33 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
585i	33 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		cocaine	3	3						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
586ai	33 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
587ai	33 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		ethanol	3	3						
588ai	33 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
589ai	33 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		fluoxetine	2	2						
		gabapentin	3	3						
590pha	34 y M				A	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	0.17 mg/L In Blood (unspecified) @ Autopsy
591ph	34 y M				A	Unk	Int-U	2		
		fentanyl	1	1						
		synthetic opiate	2	2						
		cocaine	3	3						
		amphetamine	4	4						
592ai	34 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethylbenzene	2	2						
		xylene	3	3						
593i	34 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
594ai	34 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		ethanol	3	3						
595ai	34 y M				U	Unk	Int-A	2		
		fentanyl	1	1						
		codeine	2	2						
		ethanol	3	3						
596ai	34 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		ethanol	3	3						
597i	34 y F				U	Unk	Int-A	2		
		methadone	1	1						
		cocaine	2	2						
		alprazolam	3	3						
598ai	34 y M				U	Unk	Unk	2		
		methadone	1	1						
		diazepam	2	2						
599h	34 y M				A/C	Inhal	Int-A	2		
		fentanyl	1	1						
		methamphetamine	2	2						
		amphetamine	3	3						
		buprenorphine	4	4						
600pha	34 y F				U	Par	Int-A	1		
		fentanyl	1	1					fentanyl	14 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	2	2					cocaine	46 ng/mL In Blood (unspecified) @ Autopsy
601pa	34 y F				A	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	0.029 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					cocaine	0.7 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	2.4 mg/L In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	0.02 % (wt/Vol) In Blood (unspecified) @ Autopsy
602ai	34 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		cyclobenzaprine	2	2						
603pha	35 y F				A/C	Ingst	Int-S	1		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	12.5 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	1	1					hydrocodone	220 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	1	1					hydromorphone	60 ng/mL In Blood (unspecified) @ Unknown
		quetiapine	2	2						
		clonazepam	3	3						
		trazodone	4	4					trazodone	0.97 mcg/mL In Blood (unspecified) @ Unknown
		ziprasidone	5	5						
		hydrochlorothiazide	6	6						
		oxybutynin	7	7						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		valproic acid	8	8						
		doxycycline	9	9						
604ph	35 y M				A	Unk	Int-A	2		
		narcotic, other/unknown	1	1						
605pa	35 y M				A	Ingst	Int-S	1		
		fentanyl	1	1					fentanyl	0.044 mg/L In Blood (unspecified) @ Autopsy
		heroin	2	2					morphine (free)	64 mcg/L In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	0.17 % (wt/Vol) In Blood (unspecified) @ Autopsy
606pa	35 y F				A	Ingst	Unk	2		
		methadone	1	1					methadone	320 ng/mL In Blood (unspecified) @ Unknown
607h	35 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	15 mcg/mL In Serum @ 72 h (pe)
608ai	35 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		ethanol	3	3						
609ai	35 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		hydrocodone	2	2						
		alprazolam	3	3						
610ai	35 y M				U	Unk	Unk	1		
		oxycodone	1	1						
		alprazolam	2	2						
		cyclobenzaprine	3	3						
611ha	35 y M				A	Unk	Unk	1		
		salicylate	1	1					salicylate	450 mcg/mL In Blood (unspecified) @ Autopsy
612pha	35 y M				A	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	17 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	17 ng/mL In Blood (unspecified) @ Autopsy
613h	35 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	120 mg/dL In Serum @ 3.75 h (pe)
		salicylate	1	1					salicylate	58.9 mg/dL In Serum @ 30 m (pe)
614pa	35 y M				U	Par	Int-A	1		
		fentanyl	1	1					fentanyl	1.5 ng/mL In Blood (unspecified) @ Autopsy
615ai	35 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		ethanol	3	3						
616ai	35 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		morphine	2	2						
		alprazolam	3	3						
617ai	35 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
618ai	35 y M				U	Unk	Int-U	1		
		fentanyl	1	1						
		ethanol	2	2						
619ai	35 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		buprenorphine	3	3						
620ai	35 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
621ai	35 y M				U	Unk	Int-A	2		
		methadone	1	1						
		lorazepam	2	2						
622	36 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
		acetaminophen/oxycodone	2	2						
623pha	36 y F				U	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	4 ng/mL In Blood (unspecified) @ Autopsy
		narcotic, other/unknown	2	2					acetyl fentanyl	0.43 ng/mL In Blood (unspecified) @ Unknown
		heroin	3	3					6-mam (6-monoacetylmorphine)	150 ng/mL In Blood (unspecified) @ Autopsy
		methadone	4	4					methadone	67 ng/mL In Blood (unspecified) @ Unknown
		cocaine	5	5					cocaine	170 ng/mL In Blood (unspecified) @ Unknown
624ha	36 y F				A/C	Ingst	Int-M	1		
		acetaminophen	1	1						
625h	36 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ diphenhydramine	1	1					acetaminophen (apap)	110 mcg/mL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminophen/ diphenhydramine	1	1					acetaminophen (apap)	49 mcg/mL In Blood (unspecified) @ Unknown
626pha	36 y M				A	Ingst + Unk	Int-S	1		
		oxycodone	1	1					oxymorphone	0.02 mg/L In Blood (unspecified) @ Unknown
		oxycodone	1	1					oxycodone (free)	0.26 mg/L In Blood (unspecified) @ Unknown
		fentanyl	2	2					fentanyl	2.2 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	2	2					norfentanyl	4.7 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	3	3					alprazolam	0.046 mg/L In Blood (unspecified) @ Unknown
627pa	36 y M				A/C	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	2.4 mcg/L In Whole Blood @ Autopsy
		ethanol	2	2					ethanol	0.171 % In Whole Blood @ Autopsy
		heroin	3	3					morphine	0.047 mg/L In Whole Blood @ Autopsy
		cocaine	4	4					benzoylecognine	0.018 mg/L In Whole Blood @ Autopsy
628p	36 y F				A	Inhal	Int-A	1		
		fentanyl	1	1					fentanyl	0.018 mg/L In Blood (unspecified) @ Autopsy
629h	36 y F				A	Ingst	Int-S	2		
		salicylate	1	1					salicylate	81.2 mg/mL In Blood (unspecified) @ Unknown
		diphenhydramine	2	2						
		drug, unknown	3	3						
630i	36 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		tramadol	3	3						
		ethanol	4	4						
631ai	36 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
632ai	36 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
633ai	36 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
634ai	36 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		ethanol	3	3						
635ai	36 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
636i	36 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
		ketamine	3	3						
637ai	36 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
638ai	36 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		diphenhydramine	2	2						
		phenobarbital	3	3						
639i	36 y M				U	Unk	Int-A	1		
		oxycodone	1	1						
		morphine	2	2						
		methamphetamine	3	3						
640ai	36 y F				U	Unk	Int-S	1		
		tramadol	1	1						
		ethanol	2	2						
		amphetamine	3	3						
641h	36 y M				U	Unk	Int-A	2		
		fentanyl	1	1						
642ai	36 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
643ai	36 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
644ai	36 y M				U	Unk	Int-U	1		
		fentanyl	1	1						
		oxycodone	2	2						
645ai	36 y M				U	Unk	Unk	2		
		morphine	1	1						
		alprazolam	2	2						
		ephedrine	3	3						
646ai	36 y M				U	Unk	Unk	1		
		oxycodone	1	1						
		ethanol	2	2						
		fluoxetine	3	3						
647a	37 y M				A	Ingst	Int-S	3		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminoophen	1	1					acetaminophen (apap)	46 mcg/mL In Blood (unspecified) @ Unknown
648ai	37 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		heroin	2	2						
		methamphetamine	3	3						
649ai	37 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		marijuana	3	3						
650ai	37 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		heroin	2	2						
		diazepam	3	3						
651i	37 y M				U	Unk	Int-S	1		
		fentanyl	1	1						
		diazepam	2	2						
		alprazolam	3	3						
652ai	37 y F				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
653ai	37 y M				U	Unk	Int-A	1		
		methadone	1	1						
654i	37 y F				U	Unk	Int-A	2		
		oxycodone	1	1						
		fentanyl	2	2						
		cyclobenzaprine	3	3						
655ai	37 y M				U	Unk	Unk	2		
		oxycodone	1	1						
656h	37 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1						
		diazepam	3	2						
		salicylate	2	2						
		lorazepam	4	3						
657	37 y F				A	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1					acetaminophen (apap)	1190 mg/L In Serum @ Unknown
		acetaminophen/ diphenhydramine	1	1					acetaminophen (apap)	464 mg/L In Serum @ Unknown
		acetaminophen/ diphenhydramine	1	1					acetaminophen (apap)	505 mg/L In Serum @ Unknown
658ai	37 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
659ai	37 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
660ai	37 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
661ai	37 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
662ai	37 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
663ai	37 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
664ai	38 y F				U	Unk	Int-S	1		
		acetaminophen	1	1						
		oxycodone	2	2						
		baclofen	3	3						
665ai	38 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		Mitragyna speciosa korthals	3	3						
666i	38 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
667ai	38 y F				U	Unk	Int-S	1		
		oxycodone	1	1						
		codeine	2	2						
		morphine	3	3						
		alprazolam	4	4						
		acetaminophen	5	5						
[668ha]	38 y M				A	Par	Int-U	3		
		oxycodone	1	1					oxycodone	283 ng/mL In Blood (unspecified) @ Autopsy
669h	38 y M				C	Ingst	Unt-T	1		
		acetaminophen	1	1						
		ethanol	2	2						
670pha	38 y M				A	Inhal + Unk	Int-A	1		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		fentanyl	1	1					fentanyl	16 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl analog, acetyl fentanyl	2	2					acetyl fentanyl	6.1 ng/mL In Blood (unspecified) @ Autopsy
671	38 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1						
		ibuprofen	2	2						
672ai	38 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		amitriptyline	2	2						
		citalopram	3	3						
673ai	38 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		diphenhydramine	2	2						
674ai	38 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
675ai	38 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		heroin	2	2						
		methamphetamine	3	3						
676ai	38 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
677ai	38 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		benzodiazepine	3	3						
678ai	38 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		hydrocodone	2	2						
		alprazolam	3	3						
679ph	39 y M				A	Par + Unk	Int-A	2		
		narcotic, other/unknown	1	1						
680ai	39 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
681i	39 y M				U	Unk	Int-A	3		
		fentanyl	1	1						
		cocaine	2	2						
682ai	39 y F				U	Unk	Unk	1		
		fentanyl	1	1						
		hydrocodone	2	2						
		oxymorphone	3	3						
683h	39 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen (apap)	32.4 mcg/mL In Blood (unspecified) @ 1 h (pe)
		acetaminophen/ diphenhydramine	2	2						
		ethanol	3	3					ethanol	0.064 g/dL In Blood (unspecified) @ 1 h (pe)
684ph	39 y M				U	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	2 ng/mL In Blood (unspecified) @ 30 m (pe)
		ethanol	2	2					ethanol	90 mg/dL In Blood (unspecified) @ 30 m (pe)
685h	39 y F				A/C	Ingst	Int-M	1		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	70.1 mcg/mL In Serum @ Unknown
		acetaminophen/ diphenhydramine	2	2						
686ha	39 y F				U	Ingst	Int-S	1		
		colchicine	1	1					colchicine	25 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen	2	2					acetaminophen (apap)	10 mcg/mL In Blood (unspecified) @ Unknown
687ai	39 y M				U	Unk	Int-A	1		
		codeine	1	1						
		oxycodone	2	2						
		diphenhydramine	3	3						
688ai	39 y F				U	Unk	Int-S	1		
		colchicine	1	1						
689ai	39 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		ethanol	3	3						
690ai	39 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
		nonsteroidal antiinflammatory	3	3						
691pi	39 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
692ai	39 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		tramadol	3	3						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
693ai	39 y M				U	Unk	Unk	1		
		methadone	1	1						
		alprazolam	2	2						
		carisoprodol	3	3						
694ai	39 y F				U	Unk	Int-S	1		
		narcotic, other/unknown	1	1						
		benzodiazepine	2	2						
		carbon monoxide	3	3						
695ai	39 y M				U	Unk	Unk	2		
		oxycodone	1	1						
		tramadol	2	2						
		gabapentin	3	3						
696ai	39 y M				U	Unk	Unk	1		
		oxycodone	1	1						
		fluoxetine	2	2						
697pa	40 y M				A	Unk	Unk	1		
		fentanyl	1	1					fentanyl	0.04 mg/L In Blood (unspecified) @ Autopsy
		methadone	2	2					methadone	0.05 mg/L In Blood (unspecified) @ Autopsy
		morphine	3	3					morphine (free)	12 mcg/L In Blood (unspecified) @ Autopsy
698	40 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	54 mg/dL In Serum @ 26 h (pe)
		salicylate	1	1					salicylate	62 mg/dL In Serum @ 20 h (pe)
		salicylate	1	1					salicylate	63 mg/dL In Serum @ 24 h (pe)
		salicylate	1	1					salicylate	65 mg/dL In Serum @ 19 h (pe)
699ai	40 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		tramadol	2	2						
		oxycodone	3	3						
		morphine	4	4						
700ha	40 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen (apap)	116 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	271 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	36 mg/dL In Blood (unspecified) @ Unknown
701h	40 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	5.1 mcg/mL In Blood (unspecified) @ Unknown
702ph	40 y M				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	553 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	219 mg/dL In Blood (unspecified) @ Unknown
		naproxen	3	3						
		acetaminophen/ caffeine/salicylate	4	4					salicylate	8.8 mg/dL In Blood (unspecified) @ Unknown
		ibuprofen	5	5						
		alprazolam	6	6						
703ai	40 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		ethanol	3	3						
704ai	40 y F				U	Unk	Int-A	2		
		fentanyl	1	1						
		cocaine	2	2						
		methamphetamine	3	3						
705ai	40 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		diphenhydramine	2	2						
		dextromethorphan	3	3						
706ai	40 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
707ai	40 y F				U	Unk	Int-A	1		
		hydrocodone	1	1						
		alprazolam	2	2						
708ai	40 y M				U	Unk	Int-A	1		
		methadone	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
709ai	40 y M				U	Unk	Int-A	3		
		narcotic, other/unknown	1	1						
		methamphetamine	2	2						
710h	41 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	27.7 mg/L In Serum @ Unknown
711	41 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	99.2 mg/dL In Serum @ Unknown
712ai	41 y F				U	Unk	Int-A	1		
		fentanyl	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		amphetamine	2	2						
		citalopram	3	3						
713h	41 y F				A/C	Ingst	Int-S	3		
		methadone	1	1						
714ph	41 y F				U	Ingst	Int-S	2		
		acetaminophen/codeine	1	1						
		acetaminophen	2	2					acetaminophen (apap)	11 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	2	2					acetaminophen (apap)	171 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	2	2					acetaminophen (apap)	548 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	2	2					acetaminophen (apap)	6 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	2	2					acetaminophen (apap)	710 mcg/mL In Blood (unspecified) @ Unknown
		alcohol, unknown	3	3					ethanol	161 mg/dL In Blood (unspecified) @ Unknown
		ibuprofen	4	4						
		diphenhydramine/naproxen	5	5						
		clonazepam	6	6						
		amphetamine/ dextroamphetamine	7	7						
715ph	41 y F				A/C	Ingst	Int-S	1		
		acetaminophen/hydrocodone	1	1						
		clonazepam	2	2						
716ha	41 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	68 mcg/mL In Blood (unspecified) @ 1 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	94 mcg/mL In Blood (unspecified) @ 15 m (pe)
717h	41 y M				A/C	Ingst	Int-M	3		
		acetaminophen/ diphenhydramine	1	1						
718ai	41 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		dextromethorphan	2	2						
		ethanol	3	3						
719ai	41 y F				U	Unk	Int-U	2		
		morphine	1	1						
		hydromorphone	2	2						
		chlordiazepoxide	3	3						
720pa	42 y F				U	Ingst	Int-S	1		
		oxycodone	1	1					oxycodone	450 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	1	1					oxymorphone	6.6 ng/mL In Blood (unspecified) @ Autopsy
		tramadol	2	2					o-demethyl tramadol	3500 ng/mL In Blood (unspecified) @ Autopsy
		tramadol	2	2					tramadol	7200 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	3	3					clonazepam	430 ng/mL In Blood (unspecified) @ Autopsy
		trazodone	4	4						
		topiramate	5	5					trazodone	0.31 mcg/mL In Blood (unspecified) @ Autopsy
		acetaminophen	6	6					acetaminophen (apap)	51.3 mcg/mL In Blood (unspecified) @ 1 h (pe)
		acetaminophen	6	6					acetaminophen (apap)	55 mcg/mL In Blood (unspecified) @ Autopsy
721ai	42 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		ethanol	3	3						
722ai	42 y F				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		chlordiazepoxide	3	3						
		ethanol	4	4						
723	42 y F				A	Ingst	Unk	1		
		acetaminoophen	1	1						
724a	42 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	69 mg/dL In Blood (unspecified) @ Unknown
		oxycodone	2	2						
		doxepin	3	3					doxepin	45 ng/mL In Blood (unspecified) @ Unknown
		sertraline	4	4					sertraline	190 ng/mL In Blood (unspecified) @ Unknown
		sertraline	4	4					desmethylsertraline	570 ng/mL In Blood (unspecified) @ Unknown
		naproxen	5	5						
725ph	42 y F				U	Unk	Int-U	2		
		narcotic, other/unknown	1	1						
726h	42 y F				A/C	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	183.9 mg/L In Serum @ 31 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	250 mg/L In Serum @ 23 h (pe)

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminophen	1	1					acetaminophen (apap)	287.2 mg/L In Serum @ 21 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	380 mg/L In Serum @ 16 h (pe)
		venlafaxine (extended release)	2	2						
		benzodiazepine	3	3						
		ibuprofen	4	4						
727pha	42 y F				A/C	Ingst	Unt-T	1		
		morphine	1	1						
		quetiapine	2	2						
728	42 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	292 mcg/mL In Blood (unspecified) @ 23 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	600 mcg/mL In Blood (unspecified) @ 12 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	600 mcg/mL In Blood (unspecified) @ 18 h (pe)
729pha	43 y F				U	Unk	Int-A	1		
		morphine	1	1					morphine (free)	260 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	2	2					clonazepam	5.2 ng/mL In Blood (unspecified) @ Autopsy
		methylphenidate	3	3					methylphenidate	8.6 ng/mL In Blood (unspecified) @ Autopsy
		sertraline	4	4					sertraline	71 ng/mL In Blood (unspecified) @ Autopsy
730ha	43 y M				A	Ingst + Aspir	Int-S	1		
		acetaminophen/ diphenhydramine	1	1						
		ethanol	2	2						
731ai	43 y M				U	Unk	Int-S	1		
		acetaminophen	1	1						
		ethanol	2	2						
732ai	43 y M				U	Unk	Int-S	1		
		acetaminophen	1	1						
733i	43 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
734ai	43 y F				U	Unk	Int-A	1		
		hydrocodone	1	1						
735ai	43 y F				U	Unk	Int-S	1		
		tramadol	1	1						
		alprazolam	2	2						
		citalopram	3	3						
736	43 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	60 mg/dL In Serum @ 15 m (pe)
737h	43 y F				C	Ingst	Unt-T	1		
		acetaminophen	1	1					acetaminophen (apap)	26 mcg/mL In Serum @ 12 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	33 mcg/mL In Serum @ 15 m (pe)
		ibuprofen	2	2						
738	43 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	305 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	405 mcg/mL In Blood (unspecified) @ Unknown
		alprazolam	2	2						
		ethanol	3	3						
		sertraline	4	4					sertraline	100 ng/mL In Blood (unspecified) @ Unknown
		sertraline	4	4					desmethylsertraline	190 ng/mL In Blood (unspecified) @ Unknown
739phi	43 y M				A/C	Ingst	Int-S	3		
		fentanyl	1	1						
		amphetamine/ dextroamphetamine	2	2						
		methamphetamine	3	3						
		diazepam	4	4						
740pa	43 y M				A	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	0.025 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					cocaine	0.2 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	2.4 mg/L In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	0.02 % (wt/Vol) In Blood (unspecified) @ Autopsy
741pha	43 y M				U	Unk	Unk	1		
		fentanyl	1	1					fentanyl	4.7 ng/mL In Blood (unspecified) @ 5 m (pe)
		alprazolam	2	2					alprazolam	0.056 mg/L In Blood (unspecified) @ 5 m (pe)
		ethanol	3	2					ethanol	102 mg/dL In Serum @ 5 m (pe)
		ethanol	3	2					ethanol	80 mg/dL In Blood (unspecified) @ 5 m (pe)
742ph	43 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	120.9 mg/dL In Serum @ 2 h (pe)
743ai	43 y F				U	Unk	Int-S	1		
		morphine	1	1						
		alprazolam	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		zolpidem	3	3						
744ph	44 y M				C	Ingst	Int-S	2		
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	13 mcg/mL In Blood (unspecified) @ Unknown
745ai	44 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
746ai	44 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
		doxylamine	3	3						
747h	44 y F				A/C	Ingst	Int-S	1		
		salicylate	1	1						
		diphenhydramine	2	2						
		acetaminophen/ antihistamine/ dextromethorphan	3	3						
748	44 y F				U	Ingst	Int-U	2		
		acetaminophen	1	1						
		drug, unknown	2	2						
		ethanol	3	3						
749	44 y M				A	Unk	Int-S	1		
		salicylate	1	1					salicylate	106 mg/dL In Plasma @ Unknown
750ai	44 y M				U	Unk	Int-A	2		
		fentanyl	1	1						
		methamphetamine	2	2						
751ai	44 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
752ai	44 y F				U	Unk	Int-A	2		
		fentanyl	1	1						
		oxycodone	2	2						
		amitriptyline	3	3						
753ai	44 y F				U	Unk	Int-S	1		
		oxycodone	1	1						
754ai	45 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
755ai	45 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		oxycodone	3	3						
756ai	45 y M				U	Unk	Int-A	1		
		morphine	1	1						
757pa	45 y M				A/C	Par	Int-A	1		
		fentanyl	1	1					fentanyl	11 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl analog, acetyl fentanyl	2	2					acetyl fentanyl	1.3 ng/mL In Blood (unspecified) @ Autopsy
758ha	45 y F				A/C	Ingst	Int-U	1		
		acetaminophen	1	1					acetaminophen (apap)	105 mcg/mL In Blood (unspecified) @ Autopsy
		acetaminophen	1	1					acetaminophen (apap)	99 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	27 mg/dL In Blood (unspecified) @ Unknown
		lidocaine	3	3					lidocaine	1.5 mcg/mL In Blood (unspecified) @ Autopsy
		sertraline	4	4					sertraline	162 ng/mL In Blood (unspecified) @ Autopsy
		quetiapine	5	5					quetiapine	201 ng/mL In Blood (unspecified) @ Autopsy
759ha	45 y F				U	Ingst	Unk	2		
		salicylate	1	1					salicylate	40 mg/dL In Serum @ 1 h (pe)
760ph	45 y F				A	Ingst	Int-S	2		
		narcotic, other/unknown	1	1						
		clonazepam	2	2						
		barbiturate (long acting)	3	3						
761h	45 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen (apap)	26.5 mcg/mL In Plasma @ Unknown
762ai	45 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
		diazepam	3	3						
		ethanol	4	4						
763ai	45 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		fentanyl analog, acetyl fentanyl	2	2						
764ai	45 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		alprazolam	3	3						
765a	46 y M				A	Unk	Int-A	1		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		fentanyl	1	1					fentanyl	0.02 mg/L In Blood (unspecified) @ Autopsy
766ph	46 y F				A	Inhal	Int-A	2		
		narcotic, other/unknown	1	1						
767ai	46 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
768ai	46 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
769i	46 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		heroin	2	2						
		methadone	3	3						
770i	46 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		plant, mitragyna	2	2						
		dipyrone	3	3						
771ai	46 y M				U	Unk	Int-S	1		
		hydrocodone	1	1						
		carisoprodol	2	2						
		hydromorphone	3	3						
772ai	46 y F				U	Unk	Unk	2		
		morphine	1	1						
		lidocaine	2	2						
		gabapentin	3	3						
773i	46 y M				U	Ingst + Unk	Int-A	1		
		oxycodone	1	1						
		clonazepam	2	2						
		ethanol	3	3						
774ph	46 y M				A	Unk	Int-A	2		
		fentanyl	1	1						
775ha	46 y F				U	Ingst	Int-S	2		
		acetaminophen	1	1						
		carisoprodol	2	2						
		alprazolam	3	3						
776ai	46 y M				U	Ingst + Unk	Unk	1		
		methadone	1	1						
		tramadol	2	2						
		diphenhydramine	3	3						
		alprazolam	4	4						
		ethanol	5	5						
777ai	46 y F				U	Unk	Unk	2		
		oxycodone	1	1						
		gabapentin	2	2						
778pha	47 y F				A/C	Ingst + Aspir	Int-S	1		
		methadone	1	1						
		oxycodone	2	2						
		temazepam	3	3						
		trazodone	4	4						
		imipramine	5	5						
[779ha]	47 y M				A/C	Ingst	Unt-T	1		
		tramadol	1	1					tramadol	22000 ng/mL In Blood (unspecified) @ Autopsy
		tramadol	1	1					o-demethyl tramadol	750 ng/mL In Blood (unspecified) @ Autopsy
780ai	47 y F				U	Unk	Unk	1		
		oxycodone	1	1						
		hydrocodone	2	2						
		diazepam	3	3						
		temazepam	4	4						
781i	47 y M				U	Unk	Unk	1		
		oxycodone	1	1						
782p	47 y M				A	Ingst	Unk	3		
		narcotic, other/unknown	1	1						
783ph	47 y F				A/C	Ingst	Unk	1		
		tapentadol (extended release)	1	1						
784	47 y F				U	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	200 mcg/mL In Serum @ Unknown
785ai	47 y F				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
786ai	47 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		tramadol	3	3						
787ai	47 y M				U	Unk	Int-S	1		
		morphine	1	1						
		hydrocodone	2	2						
		ethanol	3	3						
788ai	47 y M				U	Ingst + Unk	Int-A	1		
		oxycodone	1	1						
		diazepam	2	2						
		ethanol	3	3						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
789ph	48 y M				A	Ingst	Int-S	2		
		acetaminophen/ diphenhydramine	1	1					acetaminophen (apap)	0 mcg/mL In Blood (unspecified) @ Unknown
		diphenhydramine	2	2						
790	48 y F				U	Ingst	Int-U	3		
		acetaminophen	1	1					acetaminophen (apap)	166 mcg/mL In Blood (unspecified) @ Unknown
791	48 y M				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	31 mcg/mL In Serum @ Unknown
792hai	48 y M				U	Unk	Int-S	1		
		acetaminophen	1	1						
		ethanol	2	2						
793ai	48 y M				U	Unk	Int-A	1		
		hydrocodone	1	1						
		alprazolam	2	2						
		zolpidem	3	3						
794pa	48 y M				U	Par	Int-A	1		
		fentanyl	1	1					fentanyl	4.7 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl analog, acetyl fentanyl	2	2					acetyl fentanyl	0.3 ng/mL In Blood (unspecified) @ Autopsy
795h	48 y F				A	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen (apap)	20 mcg/mL In Blood (unspecified) @ 1 h (pe)
796h	48 y M				U	Ingst	Unk	2		
		acetaminophen	1	1						
797h	48 y M				U	Ingst + Unk	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	6 mcg/mL In Blood (unspecified) @ Unknown
		phencyclidine	2	2						
		marijuana	3	3						
		benzodiazepine	4	4						
798ai	48 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		gabapentin	3	3						
799ai	48 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
800ai	48 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		oxycodone	3	3						
801ai	48 y F				U	Unk	Int-S	2		
		hydrocodone	1	1						
		acetaminophen	2	2						
		diphenhydramine	3	3						
802ai	48 y M				U	Unk	Int-A	1		
		oxycodone	1	1						
		cyclobenzaprine	2	2						
		ethanol	3	3						
[803ha]	49 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	321 mcg/mL In Blood (unspecified) @ Unknown
804	49 y F				A	Ingst	Int-U	2		
		acetaminophen	1	1					acetaminophen (apap)	29.04 mcg/mL In Serum @ Unknown
805	49 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
		ethanol	2	2						
806p	49 y F				A	Ingst	Int-S	2		
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	23.8 mcg/mL In Serum @ Unknown
		carisoprodol	2	2						
		ethanol	3	3						
807ai	49 y F				U	Unk	Unk	2		
		fentanyl	1	1						
		oxycodone	2	2						
		gabapentin	3	3						
808ai	49 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		amitriptyline	2	2						
		fluoxetine	3	3						
809i	49 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		heroin	2	2						
		methamphetamine	3	3						
810ai	49 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
811i	49 y M				U	Unk	Int-S	1		
		oxycodone	1	1						
		hydrocodone	2	2						
		benzodiazepine	3	3						
812h	49 y F				U	Ingst	Int-S	2		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminophen	1	1					acetaminophen (apap)	55 mcg/mL In Serum @ Unknown
813h	49 y M				C	Ingst	Int-M	2		
		acetaminophen	1	1						
		ethanol	2	2						
814	49 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	154 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	208 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	243 mcg/mL In Blood (unspecified) @ Unknown
815h	49 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	148.8 mcg/mL In Blood (unspecified) @ Unknown
		narcotic, other/unknown	2	2						
		benzodiazepine	3	3						
816ai	49 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		morphine	2	2						
		diphenhydramine	3	3						
817ai	49 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		levamisole	2	2						
818ai	49 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
819ai	49 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
820ai	49 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
821ai	49 y M				U	Unk	Int-A	2		
		morphine	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
822	50 y M				A	Ingst	Int-S	2		
		acetaminophen/ diphenhydramine	1	1					acetaminophen (apap)	309 mcg/mL In Blood (unspecified) @ Unknown
		loperamide	2	2						
		ethanol	3	3						
823h	50 y F				A	Unk	Unk	2		
		narcotic, other/unknown	1	1						
		acetaminophen	2	2					acetaminophen (apap)	26 mcg/mL In Blood (unspecified) @ Unknown
824	50 y F				A	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen (apap)	126 mcg/mL In Plasma @ Unknown
		isopropanol	2	2						
825ph	50 y F				A/C	Ingst	Int-U	1		
		fentanyl	1	1					fentanyl	129 ng/mL In Urine (quantitative only) @ Unknown
		fentanyl	1	1					norfentanyl	226 ng/mL In Urine (quantitative only) @ Unknown
		alprazolam	2	2					alpha-oh-alprazolam	549 ng/mL In Urine (quantitative only) @ Unknown
		ethanol	3	3					ethanol	37 mg/dL In Blood (unspecified) @ Unknown
		hydrocodone	4	4					hydrocodone	197 ng/mL In Urine (quantitative only) @ Unknown
		hydrocodone	4	4					hydromorphone	54 ng/mL In Urine (quantitative only) @ Unknown
826ph	50 y M				A	Ingst	Int-S	2		
		buprenorphine	1	1						
		clonazepam	2	2						
		ethanol	3	3						
827ai	50 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
828h	50 y M				A/C	Ingst	Unt-T	3		
		acetaminophen	1	1						
829ai	50 y M				U	Unk	Unk	2		
		oxycodone	1	1						
		fluoxetine	2	2						
830ai	50 y F				U	Unk	Int-A	1		
		oxycodone	1	1						
831a	51 y F				A/C	Ingst	Int-S	3		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	46.4 mcg/mL In Blood (unspecified) @ Unknown
		clonazepam	2	2						
832h	51 y F				U	Ingst	Int-M	1		
		salicylate	1	1					salicylate	162 mg/dL In Serum @ 1 h (pe)
		salicylate	1	1					salicylate	173 mg/dL In Serum @ 2 h (pe)
833ai	51 y M				U	Unk	Unt-M	1		
		oxycodone	1	1						
		citalopram	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		cyclobenzaprine	3	3						
834pa	51 y M				U	Par	Int-A	1		
		fentanyl	1	1					fentanyl	3.9 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl analog, acetyl fentanyl	2	2					acetyl fentanyl	0.69 ng/mL In Blood (unspecified) @ Autopsy
		heroin	3	3					6-mam (6-monoacetylmorphine)	3.2 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	4	4					7-aminoclonazepam	9.2 ng/mL In Blood (unspecified) @ Autopsy
		phenobarbital	5	5					phenobarbital	12 mcg/mL In Blood (unspecified) @ Autopsy
		carbamazepine	6	6					carbamazepine	2.6 mcg/mL In Blood (unspecified) @ Autopsy
835pa	51 y F				A	Ingst	Int-S	2		
		oxycodone	1	1						
		benzodiazepine	2	2						
		alprazolam	3	3					alprazolam	17 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	4	4						
836ph	51 y F				A	Ingst + Derm	Int-S	2		
		fentanyl (transdermal)	1	1						
		morphine	2	2						
		acetaminophen/hydrocodone	3	3					acetaminophen (apap)	50 mcg/mL In Serum @ Unknown
		hydromorphone	4	4						
		trazodone	5	5						
		diazepam	6	6						
837pha	51 y F				A	Par + Unk	Int-A	1		
		fentanyl	1	1					fentanyl	326 % In Liver @ Autopsy
		fentanyl analog, despropionyl fentanyl	2	2					despropionyl fentanyl (4-anpp)	0.99 ng/mL In Blood (unspecified) @ 1 h (pe)
		methamphetamine	3	3					amphetamine	0.03 mg/L In Blood (unspecified) @ 1 h (pe)
		methamphetamine	3	3					methamphetamine	0.2 mg/L In Blood (unspecified) @ 1 h (pe)
838ai	51 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
839a	52 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	57 mg/mL In Blood (unspecified) @ Autopsy
		salicylate	1	1					salicylate	64.9 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	72.4 mg/dL In Blood (unspecified) @ Unknown
		ethanol	2	2						
840h	52 y M				C	Ingst	Int-M	2		
		salicylate	1	1					salicylate	52.6 mg/dL In Serum @ Unknown
		salicylate	1	1					salicylate	62.1 mg/dL In Serum @ Unknown
		ethanol	2	2						
841pha	52 y M				U	Ingst + Par	Unk	1		
		fentanyl	1	1					fentanyl	3.8 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	365 mg/dL In Serum @ Autopsy
842i	52 y M				A	Ingst	Int-S	1		
		salicylate	1	1						
		ethanol	2	2						
843i	52 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
844ai	52 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		dextromethorphan	3	3						
845ai	52 y M				U	Unk	Int-S	1		
		morphine	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
846ai	52 y F				U	Unk	Unk	1		
		oxycodone	1	1						
		diazepam	2	2						
		alprazolam	3	3						
847ai	52 y M				U	Ingst + Unk	Int-U	1		
		oxycodone	1	1						
		ethanol	2	2						
848i	52 y F				U	Unk	Unk	2		
		tramadol	1	1						
		alprazolam	2	2						
849ph	52 y M				A	Inhal	Int-U	2		
		buprenorphine	1	1						
850ai	52 y F				U	Unk	Unk	2		
		fentanyl	1	1						
		cyclobenzaprine	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
851h	52 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	144 mcg/mL In Serum @ Unknown
		trazodone	2	2						
		risperidone	3	3						
852h	52 y M				A	Ingst + Derm	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	104 mcg/mL In Blood (unspecified) @ 2 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	16.4 mcg/mL In Blood (unspecified) @ 2 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	220 mcg/mL In Blood (unspecified) @ 1 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	36.4 mcg/mL In Blood (unspecified) @ 2 d (pe)
		glyphosate	2	2						
		insecticide, unknown	3	3						
853	52 y F				U	Ingst	Unk	3		
		acetaminophen	1	1					acetaminophen (apap)	172 mcg/mL In Blood (unspecified) @ Unknown
854h	52 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen (apap)	25.3 mcg/mL In Serum @ 1 m (pe)
855ph	52 y F				A	Ingst	Int-S	2		
		acetaminophen/oxycodone	1	1						
		benzodiazepine	2	2						
856h	52 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen (apap)	194 mcg/mL In Serum @ Unknown
857ai	52 y F				U	Unk	Int-S	1		
		hydrocodone	1	1						
		sertraline	2	2						
		ethanol	3	3						
858h	53 y F				U	Ingst	Int-U	2		
		acetaminophen	1	1					acetaminophen (apap)	43.1 mcg/mL In Serum @ Unknown
859ha	53 y F				U	Ingst + Unk	Int-M	1		
		acetaminophen/opioid	1	1					acetaminophen (apap)	184 mcg/mL In Blood (unspecified) @ Unknown
		oxycodone	2	2						
860	53 y F				A	Ingst	Unt-U	2		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	1.5 mcg/mL In Serum @ Unknown
		ethanol	2	2						
861ai	53 y F				U	Unk	Unt-M	2		
		acetaminophen	1	1						
862ai	53 y F				U	Unk	Unk	2		
		methadone	1	1						
		duloxetine	2	2						
		amitriptyline	3	3						
863pha	53 y F				A	Ingst + Unk	Int-U	1		
		fentanyl	1	1					fentanyl	3.8 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	1	1					norfentanyl	6.4 ng/mL In Blood (unspecified) @ Unknown
		fentanyl analog, 4-fluoroisobutyrfentanyl	2	2					para-fluorobutyryl fentanyl (p-fibf)	5.1 ng/mL In Blood (unspecified) @ Unknown
		beta blocker	3	3						
		THC homolog	4	4						
		sertraline	5	5					sertraline	140 ng/mL In Blood (unspecified) @ Unknown
		sertraline	5	5					desmethylsertraline	370 ng/mL In Blood (unspecified) @ Unknown
		clonidine	6	6					clonidine	3.2 ng/mL In Blood (unspecified) @ Unknown
		heroin	7	7						
864ai	53 y F				U	Unk	Int-A	1		
		methadone	1	1						
		diazepam	2	2						
		trazodone	3	3						
865pha	53 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	810 mcg/mL In Blood (unspecified) @ 30 m (pe)
		salicylate	1	1					salicylate	88.9 mg/dL In Blood (unspecified) @ 30 m (pe)
		ethanol	2	2					ethanol	0.03 g/dL In Blood (unspecified) @ 30 m (pe)
		ethanol	2	2					ethanol	0.1 g/dL In Urine (quantitative only) @ 30 m (pe)
866h	53 y F				A/C	Ingst	Int-U	3		
		acetaminophen/diphenhydramine	1	1						
		metaxalone	2	2						
867	53 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	60 mg/dL In Serum @ Unknown
		ethanol	2	2					ethanol	190.4 mg/dL In Serum @ Unknown
[868h]	53 y F				A/C	Ingst	AR-D	1		
		phenazopyridine	1	1					methemoglobin	20.3 % In Blood (unspecified) @ 24 h (pe)
		phenazopyridine	1	1					methemoglobin	20.9 % In Blood (unspecified) @ 16 h (pe)
		phenazopyridine	1	1					methemoglobin	35.9 % In Blood (unspecified) @ 2 h (pe)

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		phenazopyridine	1	1					methemoglobin	46 % In Blood (unspecified) @ 10 m (pe)
869ph	53 y F				C	Ingst	Int-S	2		
		acetaminophen	1	1						
870pa	53 y M				A	Inhal + Unk	Int-A	1		
		fentanyl	1	1					fentanyl	14 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl analog, acetyl fentanyl	2	2					acetyl fentanyl	2.6 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	3	3					cocaine	260 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	4	4					ethanol	71 mg/dL In Blood (unspecified) @ Autopsy
871pa	53 y F				A	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	0.037 mg/L In Blood (unspecified) @ Autopsy
		heroin	2	1					morphine (free)	10 mcg/L In Blood (unspecified) @ Autopsy
872ai	53 y F				U	Unk	Int-A	2		
		fentanyl	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
873ai	53 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		cocaine	3	3						
874ai	53 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		cyclobenzaprine	2	2						
		ethanol	3	3						
875ai	53 y F				U	Unk	Unk	2		
		oxycodone	1	1						
		dextromethorphan	2	2						
		gabapentin	3	3						
876ai	53 y F				U	Unk	Unk	1		
		tramadol	1	1						
		fluoxetine	2	2						
		gabapentin	3	3						
877h	54 y M				U	Unk	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	500 mcg/mL In Blood (unspecified) @ 1 d (pe)
		methemoglobin causing chemical	2	2					methemoglobin	32 % In Blood (unspecified) @ 1 d (pe)
878	54 y F				A	Ingst	Int-M	2		
		acetaminophen	1	1						
879ai	54 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		ethanol	2	2						
880ai	54 y F				U	Unk	Unk	2		
		oxycodone	1	1						
		oxymorphone	2	2						
		ethanol	3	3						
881ha	54 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	42 mcg/mL In Blood (unspecified) @ Unknown
		barbiturate	2	2						
		benzodiazepine	3	3						
882h	54 y M				A	Ingst	Int-S	2		
		caffeine/salicylate	1	1					salicylate	59.5 mg/dL In Blood (unspecified) @ Unknown
883h	54 y F				A	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1					acetaminophen (apap)	36.1 mcg/mL In Blood (unspecified) @ Unknown
		promethazine	2	2						
884ha	54 y M				A	Ingst	Int-S	2		
		colchicine	1	1						
		carvedilol	2	2						
		rivaroxaban	3	3						
		sacubitril/valsartan	4	4						
		diphenhydramine/ibuprofen	5	5						
885h	54 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	92 mcg/mL In Blood (unspecified) @ 3 d (pe)
886h	54 y F				C	Ingst	Int-M	3		
		acetaminophen	1	1					acetaminophen (apap)	45 mcg/mL In Blood (unspecified) @ 1 d (pe)
887ai	54 y F				U	Ingst + Unk	Int-A	1		
		oxycodone	1	1						
		gabapentin	2	2						
		ethanol	3	3						
888ai	54 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		ethanol	3	3						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
889ai	54 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		morphine	3	3						
890ai	54 y M				U	Unk	Int-A	3		
		methadone	1	1						
		olanzapine	2	2						
891ai	54 y M				A/C	Unk	Int-A	2		
		oxycodone	1	1						
		oxymorphone	2	2						
892ai	54 y F				U	Unk	Unk	2		
		oxycodone	1	1						
		citalopram	2	2						
		hydroxyzine	3	3						
893ha	55 y F				U	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	51 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	2	2					hydrocodone	56 ng/mL In Blood (unspecified) @ Unknown
894h	55 y M				U	Ingst	Int-U	1		
		salicylate	1	1					salicylate	95 mg/dL In Serum @ 30 m (pe)
		salicylate	1	1					salicylate	97.3 mg/dL In Serum @ 3.5 d (pe)
895pha	55 y M				A	Ingst	Int-S	1		
		oxycodone	1	1					oxycodone (free)	120 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/codeine	2	2						
		diazepam	3	3					diazepam	130 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	3	3					nordiazepam	53 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	4	4						
896ph	55 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	24 mcg/mL In Blood (unspecified) @ Unknown
		alprazolam	2	2						
897	55 y F				U	Ingst	Unk	1		
		salicylate	1	1					salicylate	39.6 mg/dL In Blood (unspecified) @ Unknown
898ai	55 y F				U	Unk	Unk	2		
		buprenorphine	1	1						
899i	55 y F				U	Unk	Int-A	1		
		methadone	1	1						
		methamphetamine	2	2						
		sertraline	3	3						
900ai	55 y M				U	Unk	Int-A	1		
		oxycodone	1	1						
		cocaine	2	2						
901	55 y F				A	Ingst + Aspir	Int-S	1		
		salicylate	1	1					salicylate	56 mg/dL In Plasma @ Unknown
		cleaner (alkali)	2	2						
		acetaminophen/ dextromethorphan/ doxylamine	3	3					acetaminophen (apap)	14 mcg/mL In Blood (unspecified) @ Unknown
		drug, unknown	4	4						
902ha	55 y M				A	Ingst	Unk	3		
		acetaminophen	1	1						
903pha	55 y M				A	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	0.08 mg/L In Blood (unspecified) @ Autopsy
		fentanyl analog, acetyl fentanyl	2	2					acetyl fentanyl	0.055 mg/L In Blood (unspecified) @ Autopsy
904ai	55 y F				U	Unk	Unk	2		
		acetaminophen	1	1						
		ethanol	2	2						
		fluoxetine	3	3						
905ai	55 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
		oxycodone	3	3						
906ai	55 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
		diphenhydramine	3	3						
907ai	55 y M				U	Unk	Unk	1		
		morphine	1	1						
		hydrocodone	2	2						
		acetaminophen	3	3						
908ha	55 y M				A/C	Ingst	Int-U	3		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	28 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	1	1					hydrocodone (free)	78 ng/mL In Blood (unspecified) @ Unknown
		lorazepam	2	2						
		tramadol	3	3						
909	56 y M				U	Ingst	Unt-U	3		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminoophen	1	1					acetaminophen (apap)	10 mcg/mL In Plasma @ Unknown
910h	56 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	48 mcg/mL In Serum @ Unknown
		salicylate	2	2					salicylate	20.8 mg/dL In Serum @ Unknown
		diphenhydramine	3	3						
		amoxicillin	4	4						
911i	56 y F				C	Ingst	Unt-T	1		
		acetaminophen	1	1					acetaminophen (apap)	25 mcg/mL In Serum @ Unknown
912ai	56 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		heroin	2	2						
		methamphetamine	3	3						
913i	56 y F				U	Unk	Unk	1		
		oxycodone	1	1						
		diphenhydramine	2	2						
		promethazine	3	3						
914ha	56 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	810 mcg/mL In Blood (unspecified) @ Autopsy
		glipizide	2	2						
915h	56 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	537 mcg/mL In Plasma @ Unknown
916ai	56 y F				U	Unk	Int-A	1		
		narcotic, other/unknown	1	1						
917ai	56 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		morphine	2	2						
		oxycodone	3	3						
918ai	56 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		cocaine	2	2						
		diphenhydramine	3	3						
919	57 y F				U	Ingst	Int-S	1		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	4.7 mcg/mL In Plasma @ Unknown
920ph	57 y F				A	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	119 mg/L In Plasma @ 30 m (pe)
		drug, unknown	2	1						
		ethanol	3	2					ethanol	250 mg/dL In Plasma @ 30 m (pe)
921ph	57 y M				U	Ingst	Int-S	2		
		methadone	1	1						
		ethanol	2	2					ethanol	300 mg/dL In Blood (unspecified) @ Unknown
		hydroxyzine	3	2						
922h	57 y M				C	Ingst	Int-A	3		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	5 mcg/mL In Blood (unspecified) @ Unknown
923ha	57 y F				U	Ingst	Int-S	1		
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	338 mcg/mL In Blood (unspecified) @ Unknown
		diphenhydramine	2	2					diphenhydramine	750 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	3	3					alprazolam	990 ng/mL In Blood (unspecified) @ Unknown
924i	57 y F				U	Unk	Unk	3		
		fentanyl	1	1						
		sertraline	2	2						
		cyclobenzaprine	3	3						
925ai	57 y F				U	Unk	Int-A	1		
		morphine	1	1						
		oxycodone	2	2						
		ethanol	3	3						
926i	57 y F				U	Unk	Int-A	1		
		oxycodone	1	1						
		methadone	2	2						
		cocaine	3	3						
927ai	57 y F				U	Unk	Int-S	1		
		oxycodone	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
928ai	57 y M				U	Unk	Int-S	1		
		tramadol	1	1						
		morphine	2	2						
		alprazolam	3	3						
		temazepam	4	4						
929h	57 y F				C	Ingst	Unt-T	3		
		acetaminophen	1	1					acetaminophen (apap)	14 mcg/mL In Blood (unspecified) @ 4 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	16 mcg/mL In Blood (unspecified) @ 4 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	33 mcg/mL In Blood (unspecified) @ 3 d (pe)
930pa	57 y M				A	Unk	Int-A	1		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		fentanyl	1	1					fentanyl	0.012 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	2	2					oxycodone	0.1 mg/L In Blood (unspecified) @ Autopsy
		plant, mitragyna	3	3					mirtazapine	0.1 mg/L In Blood (unspecified) @ Autopsy
931	57 y F				A	Ingst	Int-S	3		
		acetaminophen/hydrocodone	1	1						
932h	57 y M				C	Ingst	Unt-T	2		
		acetaminophen	1	1						
		ethanol	2	2						
933h	57 y M				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen (apap)	22 mcg/mL In Blood (unspecified) @ Unknown
934ha	57 y F				A	Ingst + Aspir	Int-S	1		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	57 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	75 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	1	1					hydrocodone	870 ng/mL In Blood (unspecified) @ Unknown
		diazepam	2	2						
		lorazepam	3	3						
		morphine	4	4					morphine	20 ng/mL In Blood (unspecified) @ Unknown
935pa	57 y M				A	Par	Int-A	1		
		fentanyl	1	1					fentanyl	3.9 ng/mL In Blood (unspecified) @ Autopsy
936ai	57 y F				U	Unk	Int-S	1		
		acetaminophen	1	1						
		carisoprodol	2	2						
		hydrocodone	3	3						
937ai	57 y F				U	Ingst + Unk	Int-S	1		
		hydrocodone	1	1						
		acetaminophen	2	2						
		cyclobenzaprine	3	3						
		diazepam	4	4						
		morphine	5	5						
938ai	57 y F				U	Unk	Int-A	1		
		oxycodone	1	1						
		dextromethorphan	2	2						
		fluoxetine	3	3						
939h	58 y F				A	Ingst	Int-U	3		
		salicylate	1	1					salicylate	92 mg/dL In Blood (unspecified) @ Unknown
940pai	58 y M				A	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	0.035 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	2	2					oxycodone	0.1 mg/L In Blood (unspecified) @ Autopsy
		methadone	3	3					methadone	0.2 mg/L In Blood (unspecified) @ Autopsy
		methadone	3	3					methadone	0.3 mg/L In Blood (unspecified) @ Autopsy
941pa	58 y F				A	Ingst	Int-S	2		
		salicylate	1	1					salicylate	970 mcg/mL In Blood (unspecified) @ 1 m (pe)
		ethanol	2	2						
942ai	58 y F				U	Unk	Int-M	1		
		fentanyl	1	1						
943ai	58 y F				U	Unk	Unk	3		
		fentanyl	1	1						
944h	58 y M				U	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	442 mcg/mL In Serum @ Unknown
		mirtazapine	2	2						
		antihistamine	3	3						
945pha	58 y M				U	Unk	Int-U	1		
		fentanyl	1	1					acetyl fentanyl	0.77 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	1	1					norfentanyl	0.78 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	1	1					fentanyl	3.1 ng/mL In Blood (unspecified) @ Unknown
		fentanyl analog, acetyl fentanyl	2	2						
		nicotine	3	3						
946pa	58 y M				A	Par	Int-A	1		
		fentanyl	1	1					acetyl fentanyl	0.014 mg/L In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	0.49 mg/L In Blood (unspecified) @ Autopsy
947ha	58 y M				U	Ingst	Unt-T	1		
		acetaminophen	1	1					acetaminophen (apap)	201 mg/mL In Serum @ 2 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	300.1 mcg/mL In Serum @ 0.5 d (pe)
		metformin	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
948ha	58 y F				C	Ingst	Unt-T	1		
		acetaminophen	1	1					acetaminophen (apap)	30.9 mcg/mL In Serum @ 5 m (pe)
		acetaminophen	1	1					acetaminophen (apap)	44 mg/L In Blood (unspecified) @ 5 m (pe)
949h	58 y F				A	Unk	Unk	2		
		acetaminophen/oxycodone	1	1						
950ai	58 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
		gabapentin	3	3						
951ai	58 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
952ai	58 y F				U	Unk	Unk	2		
		oxycodone	1	1						
		lorazepam	2	2						
		mirtazapine	3	3						
953ai	58 y F				U	Unk	Int-A	2		
		oxycodone	1	1						
		alprazolam	2	2						
		ethanol	3	3						
954ai	58 y F				U	Unk	Int-A	1		
		oxycodone	1	1						
		ethanol	2	2						
		gabapentin	3	3						
955ai	58 y M				U	Ingst + Unk	Int-A	3		
		tramadol	1	1						
		ethanol	2	2						
956	59 y M				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen (apap)	84 mcg/mL In Blood (unspecified) @ Unknown
957ha	59 y F				U	Ingst	Int-S	1		
		salicylate	1	1					salicylate	33 mg/dL In Serum @ Unknown
		salicylate	1	1					salicylate	43.5 mg/dL In Serum @ Unknown
		acetaminophen	2	2					acetaminophen (apap)	172 mcg/mL In Serum @ Unknown
		acetaminophen	2	2					acetaminophen (apap)	352.7 mcg/mL In Serum @ Unknown
958h	59 y F				A/C	Ingst	Int-S	1		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	47.9 mcg/mL In Blood (unspecified) @ Unknown
		benzodiazepine	2	2						
959ai	59 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
		baclofen	3	3						
960ai	59 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
		ethanol	3	3						
961ai	59 y M				U	Ingst + Unk	Int-A	1		
		hydrocodone	1	1						
		diphenhydramine	2	2						
		alprazolam	3	3						
		ethanol	4	4						
962ai	59 y F				U	Unk	Int-A	1		
		oxycodone	1	1						
		citalopram	2	2						
		ethanol	3	3						
963i	59 y F				U	Unk	Int-U	1		
		oxycodone	1	1						
		citalopram	2	2						
964h	59 y M				U	Ingst	Unk	3		
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	10.4 mcg/mL In Blood (unspecified) @ 2 d (pe)
965h	59 y F				C	Ingst + Par	AR-D	3		
		acetaminophen	1	1						
966h	59 y F				A/C	Ingst	Unt-T	3		
		acetaminophen/hydrocodone	1	1						
		acetaminoophen	2	2					acetaminophen (apap)	85 mcg/mL In Blood (unspecified) @ Unknown
967	60 y F				A	Ingst	Int-S	1		
		methadone	1	1						
968h	60 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	130 mcg/mL In Serum @ 12 h (pe)
969ph	60 y F				A	Ingst	Int-S	1		
		acetaminophen/hydrocodone	1	1						
		fluoxetine	2	2						
		clonazepam	3	3						
970h	60 y M				A	Ingst	Int-S	2		
		salicylate	1	1					salicylate	45 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	50 mg/dL In Blood (unspecified) @ Unknown
		ethanol	2	2						
971i	60 y M				U	Unk	Unk	1		
		oxycodone	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
972a	60 y M				C	Ingst	Int-U	2		
		acetaminophen	1	1					acetaminophen (apap)	240 mcg/mL In Blood (unspecified) @ Autopsy
973pi	2 m M				U	Unk	Oth-M	2		
		methadone	1	1					methadone	1 mg/mL In Other @ Autopsy
		methadone	1	1					methadone	4 mg/mL In Urine (quantitative only) @ Autopsy
974ha	60 y M				A/C	Ingst	Unt-T	2		
		acetaminophen	1	1					acetaminophen (apap)	106 mg/L In Serum @ 9.5 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	24.9 mg/L In Serum @ 33 h (pe)
975h	60 y F				A	Ingst	Int-M	2		
		acetaminophen	1	1					acetaminophen (apap)	66 mg/L In Serum @ 1 h (pe)
976p	60 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	28 mg/dL In Serum @ Unknown
		salicylate	1	1					salicylate	33 mg/dL In Serum @ Unknown
		heroin	2	2						
		acetaminophen	3	3					acetaminophen (apap)	118 mcg/mL In Plasma @ Unknown
		acetaminophen	3	3					acetaminophen (apap)	185 mcg/mL In Plasma @ Unknown
		acetaminophen	3	3					acetaminophen (apap)	545 mcg/mL In Plasma @ Unknown
977ai	60 y F				U	Unk	Int-S	1		
		fentanyl	1	1						
		diazepam	2	2						
		diphenhydramine	3	3						
978ai	60 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
979ai	60 y M				U	Unk	Int-A	1		
		methadone	1	1						
980ai	60 y M				U	Unk	Int-A	1		
		oxycodone	1	1						
		morphine	2	2						
981a	61 y M				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	336.8 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	627 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen	1	1					acetaminophen (apap)	800 mcg/mL In Blood (unspecified) @ Unknown
982h	61 y F				A	Ingst	Int-S	3		
		tramadol	1	1						
		marijuana	2	2						
983h	61 y F				U	Ingst	Int-S	1		
		tapentadol	1	1						
		metoprolol	2	2						
		fentanyl (transdermal)	3	3						
		lorazepam	4	4						
		amiodarone	5	5						
		albuterol	6	6						
		arformoterol	7	7						
		budesonide	8	8						
		fluticasone/vilanterol	9	9						
		gabapentin	10	10						
		duloxetine	11	11						
		bupropion	12	12						
		insulin (lispro)	13	13						
		metformin	14	14						
		spironolactone	15	15						
		bumetanide	16	16						
		acetazolamide	17	17						
		losartan	18	18						
		benztropine	19	19						
		haloperidol	20	20						
		carvedilol	21	21						
984ai	61 y F				U	Unk	Unk	1		
		acetaminophen	1	1						
		citalopram	2	2						
		diphenhydramine	3	3						
985ai	61 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		methamphetamine	2	2						
986i	61 y M				U	Unk	Int-S	1		
		hydrocodone	1	1						
		lorazepam	2	2						
987ph	61 y F				A	Ingst	Int-S	1		
		oxycodone	1	1					oxymorphone	2.9 ng/mL In Blood (unspecified) @ Unknown
		oxycodone	1	1					oxycodone	210 ng/mL In Blood (unspecified) @ Unknown
		hydrocodone	2	2					hydrocodone	58 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	3	3					diazepam	100 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	4	4					alprazolam	8.4 ng/mL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
988pa	61 y M				U	Unk	Unk	1		
		fentanyl	1	1					fentanyl	0.012 mg/L In Blood (unspecified) @ Autopsy
989	61 y M				A	Ingst	Int-M	2		
		colchicine	1	1						
990ha	61 y F				A	Ingst	Int-S	3		
		ibuprofen	1	1					ibuprofen	22 mg/L In Blood (unspecified) @ Unknown
		diphenhydramine	2	2						
		ethanol	3	3					ethanol	50 mg/dL In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	63 mg/dL In Serum @ 15 m (pe)
991h	61 y M				A	Ingst	Int-S	2		
		narcotic, other/unknown	1	1						
		brexpiprazole	2	2						
		diazepam	3	3						
		melatonin	4	4						
992ai	61 y M				U	Unk	Int-A	1		
		methadone	1	1						
		oxycodone	2	2						
		carisoprodol	3	3						
		gabapentin	4	4						
		diphenhydramine	5	5						
		lorazepam	6	6						
993ai	61 y F				U	Unk	Int-S	1		
		oxycodone	1	1						
		ethanol	2	2						
994ai	61 y M				U	Unk	Int-A	1		
		oxycodone	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
995ha	62 y M				A	Ingst	Int-S	1		
		tramadol	1	1					tramadol	1.1 mg/dL In Blood (unspecified) @ Autopsy
		metformin	2	2						
		salicylate	3	3					salicylate	8.7 mg/dL In Blood (unspecified) @ Unknown
996h	62 y M				C	Ingst	Int-M	2		
		acetaminophen	1	1					acetaminophen (apap)	15.7 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	21 mg/dL In Blood (unspecified) @ Unknown
997ha	62 y M				A	Ingst + Inhal	Int-M	3		
		oxycodone	1	1					oxycodone	0.02 mg/mL In Blood (unspecified) @ 1 h (pe)
		oxycodone	1	1					oxymorphone (total)	0.18 mg/L In Blood (unspecified) @ 1 h (pe)
		hydrocodone	2	2					hydrocodone	0.06 mg/L In Blood (unspecified) @ 1 h (pe)
998h	62 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	107 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	84 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	85 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	94 mcg/mL In Blood (unspecified) @ Unknown
999ha	62 y M				A	Ingst	Int-M	3		
		oxycodone	1	1						
		methadone	2	2						
1000pha	62 y M				A	Ingst	Int-S	2		
		salicylate	1	1					salicylate	59.3 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	73 mg/dL In Blood (unspecified) @ Unknown
		codeine	2	2					codeine	1.4 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	3	3					oxycodone (total)	0.54 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen	4	4					acetaminophen (apap)	34 mcg/mL In Blood (unspecified) @ Unknown
1001ai	62 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
1002i	62 y F				U	Unk	Unk	1		
		oxycodone	1	1						
		cyclobenzaprine	2	2						
		ibuprofen	3	3						
1003p	62 y F				A/C	Ingst	Int-S	2		
		methadone	1	1						
		oxycodone	2	2						
		barbiturate	3	3						
		alprazolam	4	4						
1004h	62 y F				U	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	169.9 mcg/mL In Serum @ Unknown
		salicylate	2	2					salicylate	6 mg/dL In Serum @ Unknown

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1005h	62 y F				U	Ingst	Int-S	3		
		acetaminophen	1	1						
		drug, unknown	2	2						
1006p	62 y M				A/C	Ingst	Int-S	2		
		morphine	1	1						
1007ai	62 y F				U	Unk	Unk	1		
		acetaminophen	1	1						
		diphenhydramine	2	2						
		carbamazepine	3	3						
1008ai	62 y F				U	Unk	Int-A	1		
		fentanyl	1	1						
		heroin	2	2						
		oxycodone	3	3						
1009a	63 y F				A	Ingst	Unk	1		
		acetaminophen/hydrocodone	1	1					hydrocodone	340 ng/mL In Blood (unspecified) @ 7 h (pe)
		baclofen	2	2						
		quetiapine	3	3						
1010	63 y M				U	Ingst	Int-U	2		
		acetaminophen	1	1					acetaminophen (apap)	10.4 mcg/mL In Serum @ Unknown
		hydromorphone	2	2						
		diazepam	3	3						
		morphine	4	4						
1011ai	63 y M				U	Unk	Unk	2		
		acetaminophen	1	1						
		diphenhydramine	2	2						
1012ai	63 y M				U	Unk	Unt-M	1		
		acetaminophen	1	1						
		diphenhydramine	2	2						
1013ai	63 y M				U	Unk	Int-A	3		
		fentanyl	1	1						
		heroin	2	2						
		methadone	3	3						
		oxycodone	4	4						
1014i	63 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		morphine	2	2						
		hydrocodone	3	3						
1015ai	63 y F				U	Unk	Unk	2		
		morphine	1	1						
		oxycodone	2	2						
		lorazepam	3	3						
1016ai	63 y F				U	Unk	Unk	1		
		tramadol	1	1						
		diphenhydramine	2	2						
		salicylate	3	3						
1017pa	63 y F				A	Unk	Unk	1		
		fentanyl	1	1					fentanyl	0.032 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					cocaine	0.1 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	2.4 mg/L In Blood (unspecified) @ Autopsy
1018h	63 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen (apap)	198.3 mcg/mL In Blood (unspecified) @ Unknown
		ibuprofen	2	2						
1019h	63 y F				A	Ingst	Int-S	2		
		salicylate	1	1					salicylate	19.7 mg/dL In Plasma @ Unknown
		acetaminophen	2	2					acetaminophen (apap)	50 mcg/mL In Blood (unspecified) @ Unknown
		valproic acid	3	3					valproic acid	115 mcg/mL In Plasma @ Unknown
		loratadine	4	4						
		furosemide	5	5						
		atorvastain	6	6						
1020h	63 y M				C	Ingst	Int-M	3		
		acetaminophen	1	1					acetaminophen (apap)	62 mcg/mL In Blood (unspecified) @ Unknown
1021p	63 y M				A/C	Ingst	Int-A	2		
		acetaminophen/hydrocodone	1	1						
		morphine	2	2						
		alprazolam	3	3						
1022ai	63 y M				U	Unk	Unt-M	1		
		acetaminophen	1	1						
		diphenhydramine	2	2						
1023ai	63 y M				U	Unk	Int-A	1		
		buprenorphine	1	1						
		gabapentin	2	2						
		dextromethorphan	3	3						
1024ai	63 y M				U	Ingst + Unk	Int-A	1		
		methadone	1	1						
		hydromorphone	2	2						
		ethanol	3	3						
1025h	64 y F				A/C	Ingst	Int-U	2		
		acetaminophen	1	1					acetaminophen (apap)	44 mcg/mL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1026h	64 y F				A	Ingst	Int-S	1		
		acetaminophen/oxycodone	1	1						
1027ai	64 y M				U	Unk	Int-S	1		
		hydrocodone	1	1						
		ethanol	2	2						
1028ai	64 y M				U	Unk	Unk	1		
		methadone	1	1						
		sertraline	2	2						
1029hi	64 y F				U	Ingst	Int-S	2		
		acetaminophen	1	1						
1030h	64 y F				A	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1					acetaminophen (apap)	176.9 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ diphenhydramine	1	1					acetaminophen (apap)	207 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ diphenhydramine	1	1					acetaminophen (apap)	323 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ diphenhydramine	1	1					acetaminophen (apap)	62.7 mcg/mL In Blood (unspecified) @ Unknown
1031h	64 y F				A/C	Ingst	Int-S	1		
		acetaminophen/codeine	1	1					acetaminophen (apap)	51 mcg/mL In Blood (unspecified) @ Unknown
		lamotrigine	2	2						
		diazepam	3	3						
1032ai	64 y M				U	Unk	Int-S	1		
		codeine	1	1						
		oxycodone	2	2						
		ethanol	3	3						
1033ai	64 y F				U	Ingst + Unk	Int-A	1		
		methadone	1	1						
		oxycodone	2	2						
		hydromorphone	3	3						
		gabapentin	4	4						
		ethanol	5	5						
1034ph	65 y F				A/C	Ingst	Int-U	2		
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	276 mcg/mL In Blood (unspecified) @ Unknown
		alprazolam	2	2						
1035	65 y F				A	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen (apap)	7 mcg/mL In Serum @ Unknown
1036ai	65 y F				U	Unk	Unk	2		
		methadone	1	1						
		gabapentin	2	2						
1037pai	65 y F				U	Unk	Unt-M	1		
		morphine	1	1						
		hydrocodone	2	2						
		trazodone	3	3						
1038ai	65 y F				U	Unk	Unt-M	1		
		oxycodone	1	1						
		tramadol	2	2						
1039i	65 y M				U	Ingst + Unk	Int-S	1		
		oxycodone	1	1						
		diazepam	2	2						
		ethanol	3	3						
1040ha	65 y F				A/C	Ingst + Inhal	Int-S	2		
		nonsteroidal antiinflammatory drug	1	1						
		carbon monoxide	2	2						
		suvorexant	3	3						
		mirtazapine	4	4						
		tizanidine	5	5						
1041hi	65 y F				A/C	Ingst	Int-S	2		
		tramadol	1	1						
		gabapentin	2	2						
1042h	65 y M				A	Ingst	Int-S	2		
		ibuprofen	1	1						
		marijuana (oil)	2	2						
		saw palmetto	3	3						
		fish oil	4	4						
		dietary supplement	5	5						
1043pai	65 y F				U	Unk	Int-A	1		
		methadone	1	1						
		citalopram	2	2						
1044h	66 y F				A/C	Ingst	Int-S	2		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	187 mcg/mL In Serum @ 1 h (pe)
1045h	66 y M				U	Ingst	Int-U	2		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	175.7 mcg/mL In Serum @ Unknown
		ethanol	2	2					ethanol	225 mg/dL In Serum @ 1 h (pe)
1046ha	66 y F				A	Ingst	Int-S	2		
		methadone	1	1					methadone	271 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	2	2					diazepam	1143 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	2	2					temazepam	295 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	3	3						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1047h	66 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	94 mcg/mL In Serum @ 15 m (pe)
1048ha	66 y F				U	Ingst	Int-S	1		
		salicylate	1	1					salicylate	51.5 mg/dL In Blood (unspecified) @ 4 h (pe)
		olanzapine	2	2					olanzapine	340 ng/mL In Blood (unspecified) @ 4 h (pe)
1049ha	66 y F				A	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen (apap)	110 mcg/mL In Serum @ 1 h (pe)
1050a	66 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	710 mcg/mL In Blood (unspecified) @ Unknown
1051ai	66 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
1052hi	67 y M				U	Ingst	Int-M	2		
		acetaminophen	1	1						
		acetaminophen/codeine	2	2						
		bismuth subsalicylate	3	3						
		acetaminophen/oxycodone	4	4						
		ibuprofen	5	5						
1053ha	67 y F				A/C	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	140 mcg/mL In Plasma @ Unknown
		bupropion	2	2					bupropion	22 ng/mL In Blood (unspecified) @ Unknown
		bupropion	2	2					hydroxybupropion	690 ng/mL In Blood (unspecified) @ Unknown
		diphenhydramine	3	3					diphenhydramine	67 ng/mL In Blood (unspecified) @ Unknown
		ethanol	4	3					ethanol	84 mg/dL In Serum @ Unknown
1054pai	67 y M				A	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	0.04 mg/L In Blood (unspecified) @ Autopsy
		cocaine	3	2					benzoylecognine	0.6 mg/L In Blood (unspecified) @ Autopsy
		fentanyl analog, despropionyl fentanyl	2	2						
1055h	67 y F				U	Ingst	Unk	3		
		oxycodone	1	1						
		acetaminophen	2	2					acetaminophen (apap)	45.4 mcg/mL In Serum @ 15 m (pe)
		quetiapine	3	3						
		gabapentin	4	4						
		lamotrigine	5	5						
		hydroxyzine	6	6						
		clonazepam	7	7						
		dextromethorphan	8	8						
		sertraline	9	9						
		sedative/hpnotic/anti-anxiety/ anti-psychotic	10	10						
		quetiapine	11	11						
		ibuprofen	12	12						
1056h	67 y F				A/C	Ingst	Unk	3		
		acetaminophen	1	1					acetaminophen (apap)	152 mcg/mL In Serum @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	48 mcg/mL In Serum @ Unknown
		salicylate	2	2					salicylate	20.8 mg/dL In Serum @ Unknown
		salicylate	2	2					salicylate	28 mg/dL In Serum @ Unknown
		salicylate	2	2					salicylate	34.9 mg/dL In Serum @ Unknown
		morphine	3	3						
		oxycodone	4	4						
1057ai	67 y F				U	Unk	Int-A	2		
		oxycodone	1	1						
		ethanol	2	2						
1058p	68 y F				A/C	Ingst	Int-S	2		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	13.6 mcg/mL In Blood (unspecified) @ 48 h (pe)
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	280 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	73.3 mcg/mL In Blood (unspecified) @ 24 h (pe)
1059ai	68 y F				U	Unk	Unt-G	3		
		salicylate	1	1						
1060ha	68 y M				A/C	Ingst	Int-S	1		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	137 mcg/mL In Serum @ Unknown
1061pha	68 y M				A/C	Ingst	Int-S	3		
		acetaminophen/oxycodone	1	1					oxycodone	0.02 mg/L In Blood (unspecified) @ Unknown
1062ai	68 y F				U	Unk	Int-S	1		
		oxycodone	1	1						
		quetiapine	2	2						
1063ai	68 y F				U	Unk	Unk	3		
		salicylate	1	1						
1064h	68 y F				U	Ingst	Int-S	2		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminophen	1	1					acetaminophen (apap)	50 mcg/mL In Blood (unspecified) @ Unknown
		metformin	2	2						
		rivaroxaban	3	3						
		benztropine	4	4						
		venlafaxine	5	5						
		zolpidem	6	6						
		diltiazem	7	7						
		methocarbamol	8	8						
		angiotensin converting enzyme inhibitor	9	9						
		simvastatin	10	10						
		montelukast	11	11						
		ephedrine/theophylline	12	12						
		albuterol	13	13						
1065ha	68 y M				A	Ingst + Unk	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	44 mcg/mL In Blood (unspecified) @ Unknown
		ibuprofen	2	2						
		ethanol	3	3						
1066h	68 y M				A/C	Ingst	Int-M	2		
		salicylate	1	1					salicylate	60 mg/dL In Serum @ Unknown
1067h	68 y M				C	Ingst	Unt-T	1		
		acetaminophen	1	1					acetaminophen (apap)	11.2 mcg/mL In Blood (unspecified) @ 2 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	26.3 mcg/mL In Blood (unspecified) @ 24 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	73.4 mcg/mL In Blood (unspecified) @ 8 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	96.7 mcg/mL In Blood (unspecified) @ 1 h (pe)
1068ai	68 y M				U	Unk	Int-S	1		
		acetaminophen	1	1						
		ibuprofen	2	2						
1069ai	68 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
1070ai	68 y F				U	Ingst + Unk	Unk	1		
		oxycodone	1	1						
		ethanol	2	2						
		duloxetine	3	3						
1071h	69 y F				A	Ingst	Int-S	2		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	109 mcg/mL In Blood (unspecified) @ Unknown
		alprazolam	2	2						
		ethanol	3	3					ethanol	9 mg/dL In Blood (unspecified) @ Unknown
1072pha	69 y M				A	Ingst	Int-S	2		
		meperidine	1	1						
		tramadol	2	2						
1073	69 y F				A/C	Ingst	Int-M	2		
		acetaminophen	1	1						
1074	69 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	167 mcg/mL In Plasma @ Unknown
1075ha	69 y F				U	Ingst	Int-S	1		
		acetaminoophen	1	1					acetaminophen (apap)	408 mcg/mL In Plasma @ Unknown
1076h	69 y F				A/C	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen (apap)	37.8 mg/dL In Blood (unspecified) @ Unknown
		nitroglycerin	2	2						
1077h	69 y M				A	Ingst	Int-S	3		
		acetaminophen/codeine	1	1						
		metronidazole	2	2						
		allopurinol	3	3						
1078ha	69 y M				C	Ingst	Unt-T	1		
		acetaminophen	1	1					acetaminophen (apap)	40 mcg/mL In Blood (unspecified) @ Unknown
1079h	69 y F				U	Unk	Int-S	1		
		salicylate	1	1					salicylate	107 mg/dL In Blood (unspecified) @ Unknown
1080	70 y F				U	Ingst	Int-S	3		
		acetaminophen/oxycodone	1	1						
		benzonatate	2	2						
1081p	70 y F				A/C	Ingst	Int-S	2		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	171 mcg/mL In Blood (unspecified) @ Unknown
		alprazolam	2	2						
1082ai	70 y F				U	Unk	Unk	1		
		oxycodone	1	1						
		morphine	2	2						
		lorazepam	3	3						
1083	70 y F				A	Ingst	Unt-G	2		
		acetaminophen	1	1					acetaminophen (apap)	487 mcg/mL In Serum @ 2 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	538 mcg/mL In Serum @ 1 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	761 mcg/mL In Serum @ Unknown

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1084ph	70 y F				A/C	Ingst	Int-S	3		
		tramadol	1	1						
		acetaminophen/codeine	2	2						
1085h	70 y F				C	Ingst	Unt-T	2		
		caffeine/salicylamide/salicylate	1	1						
1086h	71 y M				A	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen (apap)	397.5 mcg/mL In Serum @ Unknown
1087	71 y F				U	Ingst	Int-M	3		
		acetaminophen	1	1					acetaminophen (apap)	47 mg/L In Serum @ Unknown
1088h	71 y M				U	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen (apap)	342 mcg/mL In Serum @ Unknown
1089h	71 y M				U	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen (apap)	45 mcg/mL In Blood (unspecified) @ Unknown
1090ai	71 y F				U	Unk	Unk	3		
		morphine	1	1						
		fentanyl	2	2						
		lorazepam	3	3						
1091ai	71 y F				U	Unk	Int-S	1		
		oxycodone	1	1						
		zolpidem	2	2						
		alprazolam	3	3						
1092ai	71 y F				U	Unk	Int-S	1		
		oxycodone	1	1						
		lorazepam	2	2						
1093h	72 y M				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	113 mcg/mL In Blood (unspecified) @ Unknown
		narcotic, other/unknown	2	2						
1094	72 y F				A/C	Ingst	Int-S	1		
		tramadol	1	1						
		acetaminophen/oxycodone	2	2						
		morphine	3	3						
1095h	72 y M				A	Ingst	Int-S	2		
		acetaminophen	2	1						
		acetaminophen/ butalbital/caffeine	1	1					acetaminophen (apap)	215 mcg/mL In Blood (unspecified) @ Unknown
1096ai	72 y F				U	Unk	Int-S	1		
		morphine	1	1						
		diphenhydramine	2	2						
		dextromethorphan	3	3						
1097ha	73 y F				A/C	Ingst	Int-S	1		
		oxycodone	1	1						
		losartan	2	2						
		acetaminophen/ caffeine/salicylate	3	3						
		sertraline	4	4						
		antihyperlipidemic	5	5						
		quetiapine	6	6						
1098h	73 y F				A	Ingst	Int-U	1		
		acetaminophen	1	1					acetaminophen (apap)	50 mcg/mL In Blood (unspecified) @ 1 h (pe)
1099h	73 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	147 mg/dL In Blood (unspecified) @ 14 h (pe)
1100i	73 y M				U	Unk	Int-S	1		
		hydrocodone	1	1						
		oxycodone	2	2						
		temazepam	3	3						
1101h	73 y F				A	Ingst	Unk	2		
		acetaminoophen	1	1						
1102h	73 y F				A	Ingst	Int-S	1		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	291 mg/mL In Blood (unspecified) @ 1 d (pe)
1103h	73 y F				A/C	Ingst	Int-S	3		
		acetaminophen/codeine	2	1						
		acetaminophen/ hydrocodone	1	1						
		iron	3	3						
		tramadol	4	4						
		levothyroxine	5	5						
		metoprolol	6	6						
1104ai	73 y F				U	Unk	Int-S	1		
		morphine	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
1105h	74 y F				U	Ingst	Unt-T	1		
		acetaminophen	1	1					acetaminophen (apap)	183 mcg/mL In Blood (unspecified) @ Unknown
		metformin	2	2						
1106ai	74 y F				U	Unk	Unk	2		
		oxycodone	1	1						
		diazepam	2	2						
		tramadol	3	3						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1107ha	74 y M				A	Ingst	Int-S	1		
		methadone	1	1						
		acetaminophen/hydrocodone	2	2					hydrocodone (free)	0.02 mg/L In Vitreous @ Autopsy
		acetaminophen/hydrocodone	2	2					morphine (free)	0.04 mg/L In Vitreous @ Autopsy
1108ai	74 y F				U	Unk	Int-S	1		
		codeine	1	1						
		acetaminophen	2	2						
1109h	75 y F				A/C	Ingst	Unk	3		
		hydromorphone	1	1						
		oxycodone	2	2						
1110h	75 y M				A	Ingst	Int-S	3		
		acetaminophen	1	1						
		ibuprofen	2	2						
		acetaminpphen/ dextromethorphan/ doxylamine/ pseudoephedrine	3	3						
1111h	75 y F				C	Ingst	Unt-M	2		
		acetaminophen	1	1					acetaminophen (apap)	0 mcg/mL In Serum @ Unknown
1112	75 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	60.4 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	69 mg/dL In Blood (unspecified) @ 11 h (pe)
1113ai	75 y F				U	Unk	Unk	1		
		methadone	1	1						
		morphine	2	2						
		trazodone	3	3						
		cyclobenzaprine	4	4						
		gabapentin	5	5						
		lorazepam	6	6						
1114ai	75 y F				U	Unk	Unk	2		
		oxycodone	1	1						
		duloxetine	2	2						
		acetaminophen	3	3						
1115h	76 y M				U	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	300 mcg/mL In Blood (unspecified) @ 30 m (pe)
		acetaminophen	1	1					acetaminophen (apap)	365 mcg/mL In Blood (unspecified) @ 24 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	600 mcg/mL In Blood (unspecified) @ 12 h (pe)
		ibuprofen	2	2						
1116h	76 y F				A	Ingst	Int-S	3		
		tramadol	1	1						
		beta blocker	2	2						
		benzodiazepine	3	3						
1117h	76 y F				A/C	Ingst	Int-S	2		
		salicylate	1	1					salicylate	50 mg/dL In Plasma @ Unknown
		diphenhydramine	2	2						
		escitalopram	3	3						
1118ai	76 y F				U	Unk	Int-S	1		
		hydrocodone	1	1						
		gabapentin	2	2						
1119h	77 y F				A	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen (apap)	40 mcg/mL In Blood (unspecified) @ Unknown
		salicylate	2	2					salicylate	8.4 mg/dL In Blood (unspecified) @ Unknown
		alcohol, unknown	3	3					ethanol	65 mg/dL In Blood (unspecified) @ Unknown
1120i	77 y F				U	Unk	Unk	2		
		oxycodone	1	1						
		lorazepam	2	2						
1121ha	77 y F				A/C	Ingst	Int-S	2		
		oxycodone	1	1					oxycodone (free)	280 ng/mL In Blood (unspecified) @ Unknown
		amitriptyline/perphenazine	2	2						
1122ph	77 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	906.1 mcg/mL In Serum @ Unknown
1123	78 y M				C	Ingst	Int-M	2		
		salicylate	1	1					salicylate	56 mg/dL In Serum @ Unknown
1124ai	78 y F				U	Unk	Int-S	1		
		oxycodone	1	1						
		amitriptyline	2	2						
		fluoxetine	3	3						
1125ai	79 y M				U	Unk	Unk	3		
		morphine	1	1						
1126ai	79 y F				U	Unk	Int-S	1		
		oxycodone	1	1						
1127ai	79 y M				U	Unk	Unk	2		
		morphine	1	1						
1128ai	79 y F				U	Unk	Int-S	2		
		oxycodone	1	1						
1129ha	79 y F				A	Ingst	Int-S	1		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminophen	1	1					acetaminophen (apap)	188.9 mg/L In Blood (unspecified) @ Autopsy
		hydrocodone	2	2					hydrocodone	233 ng/mL In Blood (unspecified) @ Autopsy
		codeine	3	3					codeine	242 ng/mL In Blood (unspecified) @ Autopsy
		doxylamine	4	4					doxylamine	13051 ng/mL In Blood (unspecified) @ Autopsy
1130h	80 y M				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	512 mcg/mL In Blood (unspecified) @ 1 h (pe)
1131ha	80 y F				A	Ingst	Int-S	2		
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	221 mg/L In Blood (unspecified) @ Autopsy
1132h	80 y M				A	Ingst	Unt-U	1		
		salicylate	1	1					salicylate	107 mg/dL In Blood (unspecified) @ 8 h (pe)
		salicylate	1	1					salicylate	137 mg/dL In Blood (unspecified) @ 9 h (pe)
1133h	80 y F				A/C	Ingst	Int-S	2		
		acetaminophen/hydrocodone	1	1						
		diazepam	2	2						
1134	80 y F				A/C	Ingst	Int-S	3		
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	449 mg/L In Serum @ 7.5 h (pe)
1135h	81 y F				A/C	Ingst	Int-U	3		
		acetaminophen	1	1						
1136ha	81 y F				C	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen (apap)	51 mcg/mL In Blood (unspecified) @ Unknown
1137h	81 y F				A/C	Ingst	Int-S	3		
		salicylate	1	1						
1138	82 y M				U	Ingst	Int-S	2		
		salicylate	1	1						
		amlodipine	2	2						
		thiazide	3	3						
		metformin	4	4						
		antihyperlipidemic	5	5						
1139	83 y F				A/C	Ingst + Derm	Unk	2		
		fentanyl	1	1						
		dabigatran	2	2						
		primidone	3	3						
		gabapentin	4	4						
1140ha	83 y M				U	Ingst	Int-S	3		
		acetaminophen/hydrocodone	1	1						
		venlafaxine	2	2						
		diphenhydramine	3	3						
		alprazolam	4	4						
		metformin	5	5						
		drug, unknown	6	6						
1141h	84 y F				A	Ingst	Int-U	2		
		acetaminophen/hydrocodone	1	1						
		acetaminoophen	2	2						
1142h	84 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	72.9 mg/dL In Blood (unspecified) @ 3 h (pe)
		salicylate	1	1					salicylate	77.9 mg/dL In Blood (unspecified) @ 6 h (pe)
1143ai	84 y M				U	Unk	Int-S	1		
		oxycodone	1	1						
		hydrocodone	2	2						
		temazepam	3	3						
1144pa	85 y F				A	Inhal + Unk	Int-S	1		
		narcotic, other/unknown	1	1					hydromorphone	0.033 mg/L In Blood (unspecified) @ Autopsy
		narcotic, other/unknown	1	1					normeperidine	0.3 mg/L In Blood (unspecified) @ Autopsy
		narcotic, other/unknown	1	1					meperidine	0.4 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen	2	2					acetaminophen (apap)	26 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen	2	2					acetaminophen (apap)	67 mg/L In Blood (unspecified) @ Unknown
		carbon monoxide	3	3					carboxyhemoglobin	4.1 % In Blood (unspecified) @ Unknown
1145ai	85 y F				U	Unk	Int-S	1		
		salicylate	1	1						
		acetaminophen	2	2						
		diphenhydramine	3	3						
1146h	86 y M				U	Ingst	Int-S	1		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	158 mcg/mL In Blood (unspecified) @ Unknown
1147h	86 y M				C	Ingst	Int-A	3		
		acetaminophen	1	1					acetaminophen (apap)	18 mcg/mL In Blood (unspecified) @ Unknown
1148h	86 y M				A/C	Ingst	Int-S	2		
		morphine	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		oxycodone	2	2						
		zolpidem	3	3						
1149h	86 y M				C	Ingst	Unt-G	1		
		acetaminophen	1	1					acetaminophen (apap)	128 mcg/mL In Serum @ Unknown
		acetaminophen/hydrocodone	2	2						
1150ha	87 y M				U	Ingst	Int-S	1		
		salicylate	1	1					salicylate	109.9 mg/dL In Whole Blood @ Unknown
		ethanol	2	2					ethanol	178 mg/dL In Blood (unspecified) @ Unknown
1151	89 y F				C	Ingst	Int-U	1		
		acetaminophen	1	1						
1152ha	90 y F				A/C	Ingst	Int-S	2		
		acetaminophen/hydrocodone	1	1					hydrocodone	1895 ng/mL In Serum @ 30 m (pe)
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	200 mcg/mL In Serum @ 30 m (pe)
		acetaminophen/hydrocodone	1	1					hydromorphone	43 ng/mL In Serum @ 30 m (pe)
		warfarin	2	2						
1153h	91 y M				A	Ingst	Unt-M	2		
		colchicine	1	1						
		furosemide	2	2						
1154ai	91 y M				U	Unk	Int-S	1		
		hydrocodone	1	1						
1155ha	92 y M				A/C	Ingst	Unt-G	2		
		acetaminophen	1	1					acetaminophen (apap)	357 mg/dL In Blood (unspecified) @ Unknown
1156h	13 m F				A	Unk	Unk	2		
		narcotic, other/unknown	1	1						
1157phi	17 m M				A	Unk	Unk	1		
		hydrocodone	1	1						
1158ha	20+ y F				A	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	0.013 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	0.8 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	1.2 mg/L In Blood (unspecified) @ Autopsy
		fentanyl analog, 4-fluoroisobutyrfentanyl	3	3						
1159p	20+ y M				A	Par	Int-A	2		
		narcotic, other/unknown	1	1						
1160pa	Unknown adult (>=20 yrs) M				A	Ingst	Int-S	2		
		acetaminophen/hydrocodone	1	1						
		acetaminophen/hydrocodone	2	2						
		gabapentin	3	3						
1161ph	Unknown age M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	76.4 mg/dL In Serum @ Unknown

See Also case 18, 34, 42, 49, 88, 187, 188, 189, 210, 269, 1172, 1178, 1179, 1192, 1197, 1199, 1204, 1224, 1231, 1236, 1237, 1238, 1249, 1252, 1261, 1263, 1267, 1269, 1270, 1274, 1278, 1288, 1293, 1296, 1297, 1299, 1300, 1307, 1313, 1315, 1321, 1323, 1328, 1329, 1333, 1334, 1335, 1339, 1342, 1357, 1361, 1368, 1378, 1380, 1386, 1387, 1403, 1410, 1412, 1417, 1423, 1425, 1433, 1442, 1445, 1452, 1468, 1476, 1488, 1489, 1492, 1496, 1498, 1506, 1522, 1535, 1545, 1550, 1562, 1571, 1580, 1584, 1591, 1600, 1603, 1604, 1609, 1634, 1639, 1641, 1645, 1646, 1673, 1675, 1676, 1691, 1716, 1720, 1727, 1728, 1732, 1739, 1742, 1743, 1745, 1752, 1754, 1756, 1759, 1762, 1764, 1766, 1773, 1791, 1797, 1798, 1802, 1803, 1808, 1809, 1811, 1817, 1818, 1834, 1841, 1842, 1847, 1848, 1860, 1861, 1863, 1864, 1872, 1873, 1876, 1891, 1892, 1900, 1901, 1906, 1917, 1921, 1924, 1939, 1942, 1945, 1946, 1949, 1958, 1959, 1960, 1965, 1966, 1971, 1973, 1974, 1979, 1990, 1992, 2003, 2012, 2020, 2021, 2024, 2030, 2039, 2041, 2047, 2050, 2055, 2058, 2061, 2062, 2068, 2069, 2078, 2082, 2083, 2092, 2095, 2104, 2107, 2110, 2114, 2118, 2119, 2123, 2126, 2131, 2142, 2146, 2151, 2153, 2160, 2164, 2168, 2177, 2178, 2180, 2184, 2186, 2191, 2196, 2202, 2212, 2214, 2226, 2230, 2238, 2242, 2252, 2257, 2265, 2267, 2275, 2278, 2279, 2280, 2282, 2293, 2295, 2296, 2300, 2301, 2302, 2303, 2315, 2316, 2319, 2326, 2328, 2338, 2339, 2344, 2349, 2356, 2363, 2368, 2394, 2401, 2403, 2407, 2409, 2414, 2417, 2424, 2426, 2429, 2430, 2436, 2437, 2438, 2439, 2443, 2448, 2452, 2461, 2466, 2477, 2478, 2483, 2488, 2490, 2492, 2497, 2501, 2508, 2531, 2538, 2545, 2555, 2566, 2580, 2582

Anesthetics

1162pha	19 y M				A	Ingst + Inhal	Unt-U	3		
		nitrous oxide	1	1						
		benzodiazepine	2	2						
[1163ha]	30 y M				U	Inhal	Int-A	3		
		nitrous oxide	1	1					nitrous oxide	71 mcg/mL In Blood (unspecified) @ Autopsy
[1164pha]	34 y M				A	Inhal	Int-A	1		
		ketamine	1	1					ketamine	13189 ng/mL In Blood (unspecified) @ Unknown
		ketamine	1	1					norketamine	16439 ng/mL In Blood (unspecified) @ Unknown
1165ph	43 y F				A	Par	AR-D	2		
		lidocaine	1	1						
		bupivacaine	2	2						
[1166pha]	46 y M				A	Inhal	Unt-E	2		
		isoflurane	1	1					isoflurane	0.29 mcg/mL In Blood (unspecified) @ Unknown
1167pa	60 y M				A	Inhal	Int-S	2		
		sevoflurane	1	1						
[1168ph]	78 y M				A	Par	Unt-T	1		
		lidocaine	1	1						
1169pi	6 m F				A	Rec	Unt-T	1		
		lidocaine	1	1						

See Also case 33, 636, 758, 772, 1693, 1709, 1854, 2066, 2196, 2529

Anticholinergic Drugs

1170ph	59 y F				A	Ingst	Int-S	2		
		atropine	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
See Also case 400, 983, 1064, 1181, 1280, 1316, 1417, 1550, 1822, 2100, 2165										
Anticoagulants										
1171h	65 y M				C	Unk	Unk	3		
		warfarin	1	1						
		ethanol	2	2						
1172h	79 y F				A/C	Ingst	Int-S	1		
		rivaroxaban	1	1						
		diltiazem	2	2						
		losartan	3	3						
		salicylate	4	4						
		acetaminophen	5	5					acetaminophen (apap)	18 mcg/mL In Blood (unspecified) @ Unknown
		ibuprofen	6	6						
		cetirizine	7	7						
1173ha	87 y M				A	Ingst	Int-S	3		
		apixaban	1	1						
		clonazepam	2	2						
See Also case 884, 1064, 1139, 1152, 1241, 1298, 1305, 1403, 1468, 1484, 1490, 1501, 1505, 1517, 1535, 1537, 1557, 1560, 1566, 1580, 1627, 1645, 1814										
Anticonvulsants										
1174pha	15 y F				A/C	Ingst	Int-S	1		
		lamotrigine	3	1						
		propranolol	1	1					propranolol	3.5 mg/L In Blood (unspecified) @ 2 h (pe)
		venlafaxine	2	1						
		melatonin	4	4						
1175p	21 y M				A	Ingst	Int-S	3		
		lamotrigine	1	1						
1176ha	21 y M				A	Ingst	Int-S	1		
		lamotrigine	1	1					lamotrigine	9.6 mcg/mL In Blood (unspecified) @ Unknown
		bupropion	2	2					hydroxybupropion	160 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	3	3					alprazolam	110 ng/mL In Blood (unspecified) @ Unknown
		diazepam	4	4					diazepam	110 ng/mL In Blood (unspecified) @ Unknown
1177h	25 y F				A	Ingst	Int-S	2		
		lamotrigine	1	1						
		buspirone	2	2						
		venlafaxine (extended release)	3	3						
		alprazolam	4	4						
1178ph	26 y M				A/C	Ingst	Int-S	2		
		gabapentin	1	1						
		methadone	2	2						
1179pha	32 y M				A	Ingst	Int-S	2		
		valproic acid (extended release)	1	1					valproic acid	139.5 mcg/mL In Blood (unspecified) @ Unknown
		sertraline	2	2						
		quetiapine	3	3						
		salicylate	4	4						
		acetaminophen	5	5						
		ethanol	6	6					ethanol	11 mg/dL In Blood (unspecified) @ Unknown
1180pha	32 y M				A	Ingst	Int-S	1		
		gabapentin	1	1					gabapentin	17.5 mcg/mL In Blood (unspecified) @ 1 h (pe)
		lamotrigine	2	2					lamotrigine	1 mcg/mL In Blood (unspecified) @ 1 h (pe)
		bupropion	3	3					bupropion	1300 ng/mL In Blood (unspecified) @ 1 h (pe)
		bupropion	3	3					hydroxybupropion	2200 ng/mL In Blood (unspecified) @ 1 h (pe)
		ethanol	4	4					ethanol	0.122 g/dL In Blood (unspecified) @ 1 h (pe)
1181ph	34 y F				A/C	Ingst	Int-S	1		
		valproic acid (extended release)	1	1					valproic acid	135 mcg/mL In Serum @ Unknown
		gabapentin	2	2						
		venlafaxine (extended release)	3	3						
		chlorpromazine	4	4						
		chlorpromazine	5	5						
		benztropine	6	6						
		clonazepam	7	7						
1182pha	39 y F				U	Ingst	Int-A	2		
		gabapentin	1	1						
		carisoprodol	3	2						
		cyclobenzaprine	2	2						
1183ai	46 y M				U	Unk	Int-S	1		
		valproic acid	1	1						
		clonazepam	2	2						
		loxapine	3	3						
1184ai	46 y M				U	Unk	Int-S	1		
		valproic acid	1	1						
		clonazepam	2	2						
		loxapine	3	3						
1185ha	47 y M				A	Ingst	Int-S	2		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		gabapentin	1	1					gabapentin	72.2 mcg/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	128 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	204 mg/dL In Blood (unspecified) @ 1 h (pe)
		dextromethorphan/ guaifenesen	3	3					dextromethorphan	308 ng/mL In Blood (unspecified) @ Autopsy
1186ai	48 y F				U	Unk	Int-S	1		
		valproic acid	1	1						
		buspirone	2	2						
		duloxetine	3	3						
1187p	50 y M				A	Ingst	Int-S	2		
		carbamazepine	1	1						
1188a	52 y M				A	Ingst	Int-S	1		
		valproic acid	1	1					clonazepam	520 ng/mL In Blood (unspecified) @ Unknown
		valproic acid	1	1					valproic acid	859 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	2	2						
1189ha	58 y F				A	Ingst	Int-S	1		
		gabapentin	1	1						
1190ai	59 y F				U	Unk	Int-S	1		
		valproic acid	1	1						
		lamotrigine	2	2						
		risperidone	3	3						
1191h	59 y F				A/C	Ingst	Int-U	3		
		gabapentin	1	1						
1192pha	61 y F				A	Ingst	Int-S	3		
		gabapentin	1	1					gabapentin	25 mcg/mL In Blood (unspecified) @ Unknown
		hydrocodone	2	2					hydrocodone (free)	13 mcg/mL In Blood (unspecified) @ Unknown
		quetiapine	3	3					quetiapine	160 ng/mL In Blood (unspecified) @ Unknown
		citalopram	4	4					citalopram	77 ng/mL In Blood (unspecified) @ Unknown
		amitriptyline	5	5						
1193h	63 y F				A/C	Ingst	Int-S	2		
		valproic acid	1	1						
		venlafaxine	2	2						
		lurasidone	3	3						
		oxcarbazepine	4	4						
1194ha	70 y F				A/C	Ingst	Unk	1		
		valproic acid	1	1					valproic acid	252 mcg/mL In Plasma @ Unknown
		vilazodone	2	2						
[1195ha]	81 y M				A/C	Ingst	Int-U	1		
		lacosamide	1	1						
		levetiracetam	2	2						

See Also case 159, 344, 358, 372, 513, 542, 567, 589, 603, 695, 720, 772, 777, 798, 807, 834, 875, 876, 887, 950, 954, 983, 992, 1007, 1019, 1023, 1031, 1033, 1036, 1041, 1055, 1113, 1118, 1139, 1160, 1199, 1202, 1210, 1212, 1230, 1231, 1236, 1237, 1238, 1253, 1257, 1260, 1261, 1270, 1274, 1275, 1278, 1281, 1291, 1294, 1298, 1310, 1314, 1328, 1339, 1378, 1380, 1403, 1411, 1416, 1417, 1425, 1428, 1444, 1457, 1459, 1462, 1463, 1468, 1471, 1475, 1492, 1501, 1507, 1532, 1545, 1549, 1563, 1580, 1585, 1586, 1671, 1679, 1682, 1686, 1694, 1718, 1721, 1727, 1728, 1729, 1745, 1751, 1755, 1765, 1767, 1768, 1772, 1786, 1790, 1798, 1814, 1854, 1973, 2087, 2100, 2119, 2182, 2252, 2289, 2318, 2319, 2351, 2455, 2524, 2572

Antidepressants

1196	13 y F				A	Ingst	Int-S	2		
		venlafaxine	1	1						
		propranolol	2	2						
		duloxetine	3	3						
		alprazolam	4	4						
		hydroxyzine	5	5						
1197ha	14 y M				A	Ingst + Inhal	Int-S	1		
		bupropion (extended release)	1	1					hydroxybupropion	1400 ng/mL In Blood (unspecified) @ Unknown
		bupropion (extended release)	1	1					bupropion	1800 ng/mL In Blood (unspecified) @ Unknown
		bupropion (extended release)	1	1					hydroxybupropion	4500 ng/mL In Blood (unspecified) @ Autopsy
		bupropion (extended release)	1	1					bupropion	8700 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	2	2					delta-9-carboxy-thc	8.9 ng/mL In Blood (unspecified) @ Unknown
		ibuprofen	3	3						
1198pa	14 y F				A	Ingst	Int-S	1		
		venlafaxine	1	1						
		mirtazapine	2	2						
		quetiapine	3	3						
		fluoxetine	4	4						
		melatonin	5	5						
		lorazepam	6	6						
1199ha	15 y M				A/C	Ingst	Int-S	1		
		escitalopram	1	1					citalopram	1400 ng/mL In Blood (unspecified) @ 2 h (pe)
		quetiapine	2	2						
		sertraline	3	3					sertraline	120 ng/mL In Blood (unspecified) @ 2 h (pe)
		lamotrigine	4	4						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		diclofenac	5	5						
		lisinopril	6	6						
		cyclobenzaprine	7	7						
		vitamin D	8	8						
1200ph	15 y F				U	Ingst	Int-S	2		
		bupropion (extended release)	1	1						
1201h	16 y F				A/C	Ingst	Int-S	2		
		bupropion (extended release)	1	1						
		escitalopram	2	2						
1202ha	19 y F				U	Ingst + Aspir	Int-S	1		
		bupropion	1	1						
		pregabalin	2	2						
		fluoxetine	3	3						
1203a	20 y F				A	Ingst	Int-S	1		
		bupropion	1	1					fluoxetine	3100 ng/mL In Blood (unspecified) @ Unknown
		bupropion	1	1					bupropion	5900 ng/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
		amphetamine	3	3						
1204pa	20 y F				A	Ingst	Int-S	1		
		bupropion	1	1						
		acetaminophen	2	2					acetaminophen (apap)	14.7 mcg/mL In Serum @ Unknown
1205p	21 y F				A	Ingst	Int-S	1		
		venlafaxine (extended release)	1	1						
		sertraline	2	2						
		drug, unknown	3	3						
1206ai	21 y F				U	Unk	Int-S	1		
		nortriptyline	1	1						
		cocaine	2	2						
1207pha	22 y M				A	Ingst	Int-A	2		
		bupropion	1	1						
		methamphetamine	2	2						
		marijuana	3	3						
		heroin	4	4						
1208ph	23 y F				A	Ingst	Int-S	2		
		amitriptyline	1	1						
		propranolol (extended release)	2	2						
		venlafaxine	3	3						
1209ha	23 y F				A	Ingst	Int-S	1		
		bupropion (extended release)	1	1					bupropion	18 mcg/mL In Blood (unspecified) @ Autopsy
		sertraline	2	2					sertraline	5 mcg/mL In Blood (unspecified) @ Autopsy
		lurasidone	3	3						
1210pa	23 y F				A/C	Ingst	Int-S	1		
		bupropion	1	1						
		lamotrigine	2	2					lamotrigine	14 mg/L In Blood (unspecified) @ 3 d (pe)
		lamotrigine	2	2					lamotrigine	21 mg/L In Blood (unspecified) @ Autopsy
		lamotrigine	2	2					lamotrigine	22 mg/L In Blood (unspecified) @ Unknown
		ethanol	3	3						
1211	25 y M				U	Ingst	Int-S	2		
		trazodone	1	1						
1212ph	27 y M				A	Ingst	Int-S	2		
		bupropion (extended release)	1	1						
		atenolol	2	2						
		olanzapine	3	3						
		gabapentin	4	4						
1213ha	27 y F				A	Ingst	Int-S	1		
		doxepin	1	1					doxepin	0.39 mcg/mL In Serum @ Unknown
		methamphetamine	2	2					methamphetamine	0.14 mcg/mL In Serum @ Unknown
1214ph	28 y F				A/C	Ingst	Int-S	2		
		bupropion	1	1						
1215ha	29 y M				A	Ingst	Int-S	1		
		amitriptyline	1	1					lorazepam	0.02 mg/L In Blood (unspecified) @ Autopsy
		amitriptyline	1	1					nortriptyline	0.05 mg/L In Blood (unspecified) @ Autopsy
		amitriptyline	1	1					amitriptyline	0.07 mg/L In Blood (unspecified) @ Autopsy
		amitriptyline	1	1					nortriptyline	0.17 mg/L In Blood (unspecified) @ 2 h (pe)
		amitriptyline	1	1					amitriptyline	0.28 mg/L In Blood (unspecified) @ 2 h (pe)
		amitriptyline	1	1					lidocaine	0.81 mg/L In Blood (unspecified) @ Autopsy
1216p	29 y M				A	Ingst	Int-S	1		
		doxepin	1	1						
[1217ha]	29 y M				A/C	Ingst	Int-S	1		
		clomipramine	1	1					clomipramine	2153 ng/mL In Blood (unspecified) @ Autopsy
		perphenazine	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		paroxetine	3	3					paroxetine	988 ng/mL In Blood (unspecified) @ Autopsy
		diphenhydramine	4	4						
		clonazepam	5	5					clonazepam	10.9 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	5	5					7-aminoclonazepam	308 ng/mL In Blood (unspecified) @ Autopsy
		hydroxyzine	6	6					hydroxyzine	593 ng/mL In Blood (unspecified) @ Autopsy
		atomoxetine	7	7						
		cetirizine	8	8						
1218p	30 y F				U	Ingst	Int-S	2		
		amitriptyline	1	1					amitriptyline	990 ng/mL In Blood (unspecified) @ Unknown
1219h	30 y F				A	Ingst	Int-S	2		
		bupropion	1	1						
		trazodone	2	2						
1220hi	30 y F				U	Ingst	Int-S	2		
		cyclic antidepressant, unknown	1	1						
1221ai	30 y F				U	Ingst + Unk	Int-A	1		
		duloxetine	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
1222pa	32 y M				U	Ingst	Int-A	3		
		bupropion	1	1						
1223	32 y M				U	Rec	Int-A	1		
		bupropion	1	1						
1224h	32 y F				A/C	Ingst	Int-U	2		
		bupropion	1	1						
		lisinopril	2	2						
		metoclopramide	3	3						
		salicylate	4	4					salicylate	12.1 mg/dL In Blood (unspecified) @ Unknown
[1225ha]	32 y M				U	Ingst	Int-S	1		
		bupropion (extended release)	1	1					bupropion	701 ng/mL In Blood (unspecified) @ 1 h (pe)
		ethanol	2	2						
1226pha	32 y F				A	Ingst + Unk	Int-S	1		
		venlafaxine	1	1					venlafaxine	0.24 mg/L In Blood (unspecified) @ Unknown
		amitriptyline	2	2					amitriptyline	1.39 mg/L In Blood (unspecified) @ Unknown
1227	32 y M				A	Ingst	Unt-G	2		
		nortriptyline	1	1						
1228h	33 y M				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		sertraline	2	2						
		clonazepam	3	3						
		ethanol	4	4						
1229pa	33 y F				A	Ingst	Int-S	1		
		bupropion	1	1					hydroxybupropion	3500 ng/mL In Blood (unspecified) @ 1 h (pe)
		bupropion	1	1					bupropion	4600 ng/mL In Blood (unspecified) @ 1 h (pe)
		clonazepam	2	2					clonazepam	14 ng/mL In Blood (unspecified) @ 1 h (pe)
		clonazepam	2	2					7-aminoclonazepam	82 ng/mL In Blood (unspecified) @ 1 h (pe)
		sertraline	3	3					sertraline	19 ng/mL In Blood (unspecified) @ 1 h (pe)
		sertraline	3	3					desmethylsertraline	300 ng/mL In Blood (unspecified) @ 1 h (pe)
		ethanol	4	4					ethanol	100 mg/dL In Blood (unspecified) @ 1 h (pe)
1230ha	34 y F				A/C	Ingst	Int-S	1		
		bupropion	1	1						
		valproic acid	2	2					valproic acid	12 mcg/mL In Blood (unspecified) @ Unknown
		trazodone	3	3					trazodone	4.2 mg/L In Blood (unspecified) @ Autopsy
1231ai	34 y F				U	Unk	Unt-M	1		
		amitriptyline	1	1						
		gabapentin	2	2						
		oxycodone	3	3						
		morphine	4	4						
1232pha	34 y F				A	Ingst	Unk	1		
		bupropion	1	1					bupropion	9.7 mg/L In Blood (unspecified) @ Autopsy
		doxepin	2	2					doxepin	20 mg/L In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	0.15 % (wt/Vol) In Blood (unspecified) @ Autopsy
1233ph	34 y M				A	Ingst	Int-S	1		
		doxepin	1	1						
		ethanol	2	2					ethanol	192 mg/dL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1234h	35 y F				A/C	Ingst	AR-D	2		
		lithium	1	1					lithium	4.13 mmol/L In Plasma @ Unknown
1235pai	35 y F				U	Unk	Unk	1		
		venlafaxine	1	1						
		bupropion	2	2						
		quetiapine	3	3						
1236	36 y M				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		citalopram	2	2						
		mirtazapine	3	3						
		gabapentin	4	4						
		ibuprofen	5	5						
		ethanol	6	6						
1237ai	36 y F				U	Unk	Int-A	1		
		bupropion	1	1						
		gabapentin	2	2						
		oxycodone	3	3						
1238ha	38 y F				A/C	Ingst	Int-U	1		
		amitriptyline	1	1						
		prazosin	2	2						
		valproic acid	3	3						
		risperidone	4	4						
		buspirone	5	5						
		alprazolam	6	6					alprazolam	25 ng/mL In Blood (unspecified) @ Autopsy
		lorazepam	7	7					lorazepam	25.2 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/hydrocodone	8	8					hydrocodone	28.1 ng/mL In Blood (unspecified) @ Autopsy
1239h	38 y M				A/C	Ingst	Int-S	2		
		doxepin	1	1						
[1240pha]	39 y M				A	Ingst + Inhal	Int-S	3		
		bupropion	1	1					bupropion	170 ng/mL In Blood (unspecified) @ 1 h (pe)
		bupropion	1	1					hydroxybupropion	1700 ng/mL In Blood (unspecified) @ 1 h (pe)
		hydrocarbon, fluorinated	2	2					acetone	2.5 mg/dL In Blood (unspecified) @ 1 h (pe)
1241ha	39 y M				A/C	Ingst	Int-S	1		
		bupropion	1	1					threobupropion	0.94 mg/L In Blood (unspecified) @ 2.5 h (pe)
		venlafaxine	2	2						
		carvedilol	3	3						
		ethanol	4	4					ethanol	86 mg/dL In Serum @ 15 m (pe)
		rivaroxaban	5	5						
1242pha	40 y F				A	Ingst	Int-S	2		
		bupropion	1	1						
		venlafaxine	2	2						
		fluoxetine	3	3						
		ethanol	4	4					ethanol	297 mg/dL In Serum @ Unknown
1243i	40 y F				U	Ingst + Unk	Int-S	1		
		bupropion	1	1						
		fluoxetine	2	2						
		venlafaxine	3	3						
		ethanol	4	4						
1244i	40 y F				U	Unk	Int-U	3		
		bupropion	1	1						
		phentermine	2	2						
		plant, mitragyna	3	3						
1245ph	40 y F				A	Ingst	Int-S	2		
		cyclic antidepressant, unknown	1	1						
1246ha	40 y M				U	Ingst	Int-S	1		
		bupropion	1	1					bupropion	3300 ng/mL In Whole Blood @ Autopsy
		bupropion	1	1					hydroxybupropion	890 ng/mL In Whole Blood @ Autopsy
		propranolol	2	2					propranolol	3400 ng/mL In Whole Blood @ Autopsy
		sertraline	3	3					sertraline	3.9 mg/L In Whole Blood @ Autopsy
		ethanol	4	4					ethanol	39 mg/dL In Serum @ 1 h (pe)
1247h	42 y F				A/C	Ingst	Int-S	2		
		citalopram	1	1						
		ethanol	2	2					ethanol	121 mg/dL In Blood (unspecified) @ Unknown
1248h	42 y F				A/C	Ingst	Int-S	1		
		doxepin	1	1						
1249h	42 y F				A	Ingst	Int-S	2		
		sertraline	1	1						
		ondansetron	2	2						
		hydromorphone	3	3						
		alprazolam	4	4						
1250ha	43 y M				A	Ingst	Int-S	2		
		amitriptyline	1	1					amitriptyline	0.54 mg/L In Blood (unspecified) @ Unknown
		amitriptyline	1	1					amitriptyline	0.72 mg/L In Blood (unspecified) @ Autopsy
1251i	43 y M				U	Unk	Unk	2		
		citalopram	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		cyclobenzaprine	2	2						
		hydroxyzine	3	3						
1252pha	43 y F				A/C	Ingst	Int-S	1		
		bupropion	1	1						
		fentanyl	2	2						
		acetaminophen	3	3					acetaminophen (apap)	20.4 mcg/mL In Blood (unspecified) @ 1 h (pe)
		ethanol	4	4					ethanol	0.256 g/dL In Blood (unspecified) @ 1 h (pe)
		hydrocodone	5	5						
		oxycodone	6	6						
		naproxen	7	7						
1253i	44 y F				A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
		zolpidem	2	2						
		cyclobenzaprine	3	3						
		clonazepam	4	4						
		topiramate	5	5						
1254h	44 y F				A/C	Ingst	Int-S	3		
		bupropion (extended release)	1	1						
1255h	44 y F				A/C	Ingst	Int-S	2		
		venlafaxine (extended release)	1	1						
		doxylamine	2	2						
		ondansetron	3	3						
		spironolactone	4	4						
1256h	46 y M				U	Ingst	Int-S	1		
		bupropion (extended release)	1	1						
1257h	46 y F				A/C	Ingst	Unk	2		
		trazodone	1	1						
		gabapentin	2	2						
		drug, unknown	3	3						
1258ai	46 y M				U	Unk	Int-S	1		
		amitriptyline	1	1						
1259ai	46 y F				U	Unk	Int-A	1		
		paroxetine	1	1						
		ethanol	2	2						
		baclofen	3	3						
1260h	47 y M				U	Unk	Int-S	3		
		bupropion (extended release)	1	1						
		olanzapine	2	2						
		lamotrigine	3	3						
		escitalopram	4	4						
1261ha	47 y M				A/C	Ingst	Int-S	1		
		trazodone	1	1					trazodone	480 ng/mL In Blood (unspecified) @ Autopsy
		pregabalin	2	2						
		topiramate	3	3						
		metoprolol	4	4						
		pramipexole	5	5						
		ibuprofen	6	6						
		hydroxyzine	7	7						
		valproic acid	8	8						
		metformin	9	9						
		amlodipine	10	10						
		guanfacine	11	11						
		canagliflozin	12	12						
		lurasidone	13	13						
		pantoprazole	14	14						
1262pha	47 y M				A	Ingst	Int-U	1		
		nortriptyline	1	1					nortriptyline	4100 ng/mL In Blood (unspecified) @ Autopsy
1263p	48 y M				A/C	Ingst	Int-S	2		
		nortriptyline	1	1						
		paroxetine	2	2						
		hypochlorite	3	3						
		metformin	4	4						
		salicylate	5	5						
		angiotensin converting enzyme inhibitor	6	6						
		simvastatin	7	7						
1264ha	48 y F				A/C	Ingst	Int-S	2		
		bupropion	1	1					hydroxybupropion	160 ng/mL In Blood (unspecified) @ Autopsy
		quetiapine	2	2					quetiapine	970 ng/mL In Whole Blood @ Autopsy
1265h	49 y M				A/C	Ingst	Int-S	2		
		lithium	1	1					lithium	0.1 mEq/L In Blood (unspecified) @ 1 h (pe)
		lithium	1	1					lithium	2.1 mEq/L In Blood (unspecified) @ 1 d (pe)
		lithium	1	1					lithium	2.5 mEq/L In Blood (unspecified) @ 2 d (pe)
		lithium	1	1					lithium	4.4 mEq/L In Blood (unspecified) @ 1 d (pe)
		lithium	1	1					lithium	5.5 mEq/L In Blood (unspecified) @ 1 d (pe)

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		lithium	1	1					lithium	5.6 mEq/L In Blood (unspecified) @ 1 d (pe)
		lithium	1	1					lithium	5.7 mEq/L In Blood (unspecified) @ 1 d (pe)
		lithium	1	1					lithium	6 mEq/L In Blood (unspecified) @ 9 h (pe)
		asenapine	2	2						
1266h	49 y F				A	Ingst	Int-S	2		
		amitriptyline	1	1						
1267pha	51 y F				U	Ingst	Int-S	1		
		venlafaxine	1	1						
		acetaminophen/bultalbital/caffeine/codeine	2	2					acetaminophen (apap)	17.1 mcg/mL In Blood (unspecified) @ Unknown
		benzodiazepine	3	3						
		promethazine	4	4						
		tizanidine	5	5						
		drug, unknown	6	6						
1268pha	51 y F				A	Ingst	Int-S	1		
		nortriptyline	1	1						
		asenapine	2	2						
1269h	51 y F				A/C	Ingst	Int-S	2		
		bupropion	1	1					hydroxybupropion	1900 ng/mL In Blood (unspecified) @ Unknown
		bupropion	1	1					bupropion	420 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	2	2					hydrocodone (free)	190 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	2	2					acetaminophen (apap)	42.6 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	0.236 % (wt/Vol) In Blood (unspecified) @ Unknown
		escitalopram	4	4					citalopram	149 ng/mL In Blood (unspecified) @ Unknown
1270ha	51 y F				A/C	Ingst	Int-S	1		
		desvenlafaxine	1	1					o-desmethyl-venlafaxine	2318 ng/mL In Blood (unspecified) @ Unknown
		cyclic antidepressant, unknown	2	2						
		quetiapine	3	3					quetiapine	1199 ng/mL In Blood (unspecified) @ Unknown
		citalopram	4	4						
		oxcarbazepine	5	5					10-hydroxycarbazepine	160 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	6	6					acetaminophen (apap)	8.5 mcg/mL In Blood (unspecified) @ Unknown
		ibuprofen	7	7						
1271h	51 y F				A	Ingst	Int-S	2		
		bupropion (extended release)	1	1						
		quetiapine	2	2						
		lurasidone	3	3						
		dicyclomine	4	4						
1272	52 y F				A	Ingst	Int-S	1		
		venlafaxine	1	1						
1273ha	52 y M				U	Ingst	Int-S	2		
		paroxetine	1	1					paroxetine	4500 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	2	2					clonazepam	2.9 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	2	2					7-aminoclonazepam	49 ng/mL In Blood (unspecified) @ Autopsy
1274ph	52 y F				A/C	Ingst	Int-S	2		
		bupropion (extended release)	1	1						
		gabapentin	2	2						
		cyclobenzaprine	3	3						
		diclofenac	4	4						
1275a	52 y F				A	Ingst	Int-S	1		
		doxepin	1	1					doxepin	1300 ng/mL In Blood (unspecified) @ Autopsy
		doxepin	1	1					desmethyldoxepin	250 ng/mL In Blood (unspecified) @ Autopsy
		oxcarbazepine	2	2					10-hydroxycarbazepine	17 mcg/mL In Plasma @ Unknown
		lamotrigine	3	3					lamotrigine	9.3 mcg/mL In Blood (unspecified) @ Autopsy
		vortioxetine	4	4						
		hydrochlorothiazide/lisinopril	5	5						
		risperidone	6	6					risperidone	490 ng/mL In Blood (unspecified) @ Autopsy
		risperidone	6	6					9-hydroxyrisperidone	66 ng/mL In Blood (unspecified) @ Autopsy
		levothyroxine	7	7						
1276	52 y M				U	Ingst	Int-S	1		
		amitriptyline	1	1						
1277ai	52 y F				U	Unk	Unk	2		
		amitriptyline	1	1						
1278	52 y M				A/C	Ingst	Int-S	1		
		bupropion	1	1						
		tramadol	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		temazepam	3	3						
		gabapentin	4	4						
		duloxetine	5	5						
		levothyroxine	6	6						
1279ph	52 y F				A	Ingst	Int-S	2		
		amitriptyline	1	1						
1280h	52 y M				A	Ingst	Int-S	2		
		doxepin	1	1						
		olanzapine	2	2						
		baclofen	3	3						
		benztropine	4	4						
		lithium	5	5						
		quetiapine	6	6						
		hydroxyzine	7	7						
		naltrexone	8	8						
		fluoxetine	9	9						
		benztropine	10	10						
		diphenhydramine	11	11						
1281h	52 y M				A/C	Ingst	Int-S	1		
		bupropion	1	1						
		citalopram	2	2						
		hydrochlorothiazide/lisinopril	3	3						
		gabapentin	4	4						
1282ha	53 y F				U	Ingst	Int-S	1		
		bupropion	1	1					hydroxybupropion	1.8 mg/L In Blood (unspecified) @ Unknown
		bupropion	1	1					bupropion	2.3 mg/L In Blood (unspecified) @ Unknown
1283	54 y M				A	Ingst	Int-S	2		
		nortriptyline	1	1						
		hydroxyzine	2	2						
		quetiapine	3	3						
		vilazodone	4	4						
		glimipiride	5	5						
		paroxetine	6	6						
		lisinopril	7	7						
		tamsulosin	8	8						
		lorazepam	9	9						
		atorvastatin	10	10						
		levothyroxine	11	11						
		finasteride	12	12						
1284h	54 y M				A/C	Ingst	Int-S	3		
		lithium	1	1						
		metoprolol	2	2						
1285h	54 y F				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		venlafaxine	2	2						
		propranolol	3	3						
		amphetamine/ dextroamphetamine	4	4						
		hydrochlorothiazide	5	5						
		benzodiazepine	6	6						
		tamoxifen	7	7						
1286h	55 y F				A	Ingst	Int-S	1		
		amitriptyline	1	1						
		ethanol	2	2					ethanol	109 mg/dL In Blood (unspecified) @ Unknown
1287ai	55 y M				U	Unk	Int-S	1		
		doxepin	1	1						
1288ai	55 y M				U	Ingst + Unk	Unt-M	1		
		sertraline	1	1						
		oxycodone	2	2						
		ethanol	3	3						
1289pa	56 y F				A	Ingst	Int-S	1		
		trazodone	1	1					trazodone	6 mg/L In Blood (unspecified) @ Autopsy
		citalopram	2	2					citalopram	0.43 mg/L In Blood (unspecified) @ Autopsy
		alcohol, unknown	3	3					ethanol	0.21 % In Whole Blood @ Autopsy
1290h	57 y F				A/C	Ingst	Int-S	1		
		amitriptyline	1	1						
		doxepin	2	2						
		risperidone	3	3						
1291ai	57 y F				U	Unk	Int-S	1		
		amitriptyline	1	1						
		temazepam	2	2						
		gabapentin	3	3						
1292p	57 y F				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		amlodipine	2	2						
		sertraline	3	3						
1293h	57 y M				A/C	Ingst	Int-S	3		
		mirtazapine	1	1						
		ropinirole	2	2						
		naproxen	3	3						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1294ph	58 y F				A	Ingst	Int-S	1		
		amitriptyline	1	1						
		metoprolol	2	2						
		trazodone	3	3						
		levetiracetam	4	4						
		lorazepam	5	5						
1295h	58 y F				A/C	Ingst	Int-S	1		
		nortriptyline	1	1						
		antipsychotic (atypical)	2	2						
1296i	58 y F				U	Ingst + Unk	Unk	1		
		doxepin	1	1						
		oxycodone	2	2						
		diazepam	3	3						
		ethanol	4	4						
1297ha	58 y M				A/C	Ingst	Int-S	1		
		nortriptyline	1	1					nortriptyline	11000 ng/mL In Blood (unspecified) @ Autopsy
		tramadol	2	2					tramadol	440 ng/mL In Blood (unspecified) @ Autopsy
		morphine	3	3					morphine (free)	0.11 mcg/mL In Blood (unspecified) @ Autopsy
1298h	58 y M				A/C	Ingst	Int-S	2		
		doxepin	1	1						
		tizanidine	2	2						
		warfarin	3	3						
		pregabalin	4	4						
1299h	58 y F				U	Ingst	Int-M	3		
		amitriptyline	1	1					nortriptyline	188 ng/mL In Serum @ 1 h (pe)
		amitriptyline	1	1					amitriptyline	936 ng/mL In Serum @ 1 h (pe)
		acetaminophen/ diphenhydramine	2	2						
		temazepam	3	3						
		alprazolam	4	4						
1300ai	59 y M				U	Unk	Unk	2		
		amitriptyline	1	1						
		fluoxetine	2	2						
		morphine	3	3						
1301i	59 y M				U	Ingst + Unk	Unt-M	1		
		bupropion	1	1						
		zolpidem	2	2						
		ethanol	3	3						
1302h	59 y F				U	Ingst	Int-S	1		
		amitriptyline	1	1						
1303	59 y M				A/C	Ingst	Int-S	3		
		trazodone	1	1						
1304	59 y F				A/C	Ingst	Int-S	2		
		venlafaxine	1	1						
1305h	59 y M				A/C	Ingst	Int-S	3		
		venlafaxine	1	1						
		apixiban	2	2						
		zolpidem	3	3						
1306ai	60 y F				U	Unk	Unk	2		
		amitriptyline	1	1						
		diazepam	2	2						
		diphenhydramine	3	3						
1307pha	61 y F				U	Ingst	Unk	2		
		amitriptyline	1	1					amitriptyline	1.5 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	2	2						
1308p	61 y F				U	Ingst	Int-S	2		
		bupropion	1	1						
1309ai	61 y F				U	Unk	Int-A	1		
		amitriptyline	1	1						
		diazepam	2	2						
		ethanol	3	3						
1310p	61 y M				A	Ingst	Int-S	2		
		trazodone	1	1						
		gabapentin	2	2						
		zolpidem	3	3						
1311h	61 y F				U	Ingst	Int-S	2		
		amitriptyline	1	1						
1312p	61 y F				A	Ingst	Int-S	2		
		paroxetine	1	1						
		quetiapine	2	2						
		lorazepam	3	3						
		diazepam	4	4						
1313ai	61 y F				U	Unk	Unk	2		
		amitriptyline	1	1						
		oxycodone	2	2						
		ethanol	3	3						
1314ai	61 y F				U	Unk	Int-S	1		
		trazodone	1	1						
		donepezil	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		gabapentin	3	3						
		levetiracetam	4	4						
1315pa	62 y F				U	Ingst	Int-S	2		
		cyclic antidepressant, unknown	1	1						
		paroxetine	2	2						
		oxycodone	3	3						
1316h	63 y F				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		risperidone	2	2						
		quetiapine	3	3						
		escitalopram	4	4						
		clorazepate	5	5						
		benztropine	6	6						
1317h	64 y F				A	Ingst	Int-S	2		
		bupropion	1	1						
		quetiapine	2	2						
		Lorazepam	3	3						
1318ph	65 y F				A	Ingst	Int-S	2		
		bupropion	1	1						
		escitaopram	2	2						
		amphetamine/ dextroamphetamine	3	3						
		alprazolam	4	4						
1319h	65 y M				A/C	Ingst	Int-S	2		
		bupropion (extended release)	1	1						
		buspirone	2	2						
		ethanol	3	3						
1320ai	65 y F				U	Unk	Unk	1		
		fluoxetine	1	1						
		cyclobenzaprine	2	2						
		diphenhydramine	3	3						
1321ai	66 y F				U	Unk	Unk	2		
		doxepin	1	1						
		hydromorphone	2	2						
		morphine	3	3						
1322ph	66 y M				A	Ingst	Int-S	2		
		amitriptyline	1	1						
1323h	67 y F				A	Ingst	Int-S	2		
		bupropion (extended release)	1	1						
		methadone	2	2						
1324	68 y F				A/C	Ingst	Unt-U	2		
		doxepin	1	1						
1325ai	68 y F				U	Unk	Int-S	1		
		trazodone	1	1						
		alprazolam	2	2						
1326h	69 y M				A	Ingst	Int-S	1		
		amitriptyline	1	1						
1327h	69 y F				A/C	Ingst	Int-S	2		
		venlafaxine (extended release)	1	1						
		clonazepam	2	2						
1328h	69 y F				A/C	Ingst	Int-S	3		
		duloxetine	1	1						
		hydroxyzine	2	2						
		gabapentin	3	3						
		lorazepam	4	4						
		diclofenac	5	5						
1329ph	71 y M				A/C	Ingst	Int-S	2		
		clomipramine	1	1						
		tramadol	2	2						
1330ph	71 y F				A/C	Ingst	Int-S	2		
		doxepin	1	1						
1331	72 y F				A/C	Ingst	Int-S	2		
		nortriptyline	1	1						
		venlafaxine	2	2						
		venlafaxine (extended release)	3	3						
		diazepam	4	4						
1332ai	72 y F				U	Unk	Int-S	1		
		nortriptyline	1	1						
		insulin	2	2						
1333ha	73 y F				A	Ingst	Int-S	1		
		bupropion (extended release)	1	1					bupropion	35 mg/L In Blood (unspecified) @ Autopsy
		bupropion (extended release)	1	1					bupropion	40 mg/L In Blood (unspecified) @ Autopsy
		hydromorphone	2	2					morphine (free)	380 mcg/L In Blood (unspecified) @ Autopsy
		oxycodone	3	3						
		duloxetine	4	4						
1334p	73 y M				A/C	Ingst	Int-S	2		
		mirtazapine	1	1						
		salicylate	2	2					salicylate	26 mg/dL In Serum @ 15 m (pe)
		metformin	3	3						
		temazepam	4	4						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1335ai	75 y F				U	Unk	Unk	2		
		amitriptyline	1	1						
		oxycodone	2	2						
		ethanol	3	3						
1336	76 y F				U	Ingst	Int-S	2		
		trazodone	1	1						
[1337ha]	77 y M				A/C	Ingst	Int-S	1		
		venlafaxine (extended release)	1	1					venlafaxine	29000 ng/mL In Serum @ 1 h (pe)
		venlafaxine (extended release)	1	1					o-desmethyl-venlafaxine	4300 ng/mL In Serum @ 1 h (pe)
1338	78 y M				A	Ingst	Int-S	1		
		amitriptyline	1	1						
1339	82 y F				A/C	Ingst	Int-S	1		
		doxepin	1	1						
		venlafaxine	2	2						
		salicylate	3	3					salicylate	29.7 mg/dL In Blood (unspecified) @ Unknown
		salicylate	3	3					salicylate	33.8 mg/dL In Blood (unspecified) @ Unknown
		alprazolam	4	4						
		levetiracetam	5	5						

See Also case 29, 44, 45, 51, 70, 112, 117, 140, 159, 334, 337, 361, 367, 371, 374, 385, 398, 400, 402, 415, 474, 500, 513, 526, 537, 542, 548, 567, 589, 603, 646, 672, 696, 712, 720, 724, 726, 729, 735, 738, 752, 758, 778, 808, 829, 833, 836, 851, 857, 862, 863, 864, 876, 892, 899, 904, 924, 938, 944, 952, 962, 963, 969, 983, 984, 1028, 1037, 1040, 1043, 1053, 1055, 1064, 1070, 1097, 1113, 1114, 1117, 1121, 1124, 1140, 1144, 1174, 1176, 1177, 1179, 1180, 1181, 1183, 1184, 1186, 1192, 1193, 1194, 1344, 1357, 1361, 1366, 1377, 1380, 1400, 1401, 1403, 1404, 1412, 1416, 1417, 1423, 1424, 1431, 1433, 1435, 1440, 1446, 1448, 1452, 1456, 1457, 1458, 1459, 1460, 1468, 1473, 1478, 1485, 1486, 1490, 1496, 1519, 1532, 1535, 1536, 1537, 1543, 1544, 1545, 1552, 1562, 1563, 1566, 1570, 1572, 1580, 1591, 1592, 1593, 1599, 1607, 1611, 1620, 1623, 1641, 1651, 1662, 1666, 1667, 1682, 1686, 1688, 1695, 1710, 1717, 1719, 1720, 1727, 1728, 1737, 1741, 1751, 1752, 1753, 1756, 1757, 1759, 1761, 1763, 1766, 1775, 1776, 1777, 1779, 1780, 1783, 1792, 1798, 1814, 1825, 1901, 1946, 2016, 2019, 2067, 2079, 2082, 2100, 2136, 2158, 2165, 2167, 2274, 2289, 2332, 2352, 2390, 2405, 2456, 2524, 2545, 2557, 2579

Antihistamines

1340pa	2 y M				A	Ingst	Unt-G	1		
		diphenhydramine	1	1					midazolam	0.034 mg/L In Blood (unspecified) @ Autopsy
		diphenhydramine	1	1					diphenhydramine	40 mg/L In Blood (unspecified) @ Autopsy
1341ph	13 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
1342	14 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
		acetaminophen/salicylate	2	2						
1343ph	15 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	100 ng/mL In Serum @ 2 d (pe)
		diphenhydramine	1	1					diphenhydramine	2400 ng/mL In Serum @ 1 h (pe)
1344ai	16 y M				U	Unk	Int-S	1		
		diphenhydramine	1	1						
		bupropion	2	2						
		sertraline	3	3						
1345h	16 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
1346p	17 y M				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
1347pha	18 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	18000 ng/mL In Whole Blood @ 1 h (pe)
1348a	19 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1						
1349pha	20 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1						
		cocaine	2	2						
1350ph	21 y F				U	Ingst	Int-S	2		
		diphenhydramine	1	1						
		ethanol	2	2					ethanol	256 mg/dL In Blood (unspecified) @ Unknown
1351h	22 y M				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
1352	25 y F				A	Ingst + Inhal	Int-S	2		
		antihistamine	1	1						
		methamphetamine	2	2						
1353ai	26 y F				U	Unk	Int-S	1		
		diphenhydramine	1	1						
1354ai	27 y M				U	Unk	Int-S	1		
		diphenhydramine	1	1						
1355h	28 y M				A	Ingst	Int-S	1		
		diphenhydramine	1	1						
		antihelmintic	2	2						
1356p	29 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
1357ph	31 y F				A	Ingst	Int-S	1		
		hydroxyzine	1	1						
		acetaminophen/hydrocodone	2	2						
		trazodone	3	3						
		sertraline	4	4						
		tizanidine	5	5						
1358ph	32 y F				A	Ingst	Unk	1		
		diphenhydramine	1	1						
		ethanol	2	2						
1359h	32 y M				A	Ingst	Int-S	1		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		diphenhydramine	1	1					diphenhydramine	1000 ng/mL In Serum @ 4 d (pe)
[1360pha]	33 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	29.8 mg/L In Blood (unspecified) @ Autopsy
		diphenhydramine	1	1					diphenhydramine	29.8 mg/L In Serum @ Unknown
1361hai	33 y M				U	Unk	Int-S	1		
		diphenhydramine	1	1						
		acetaminophen	2	2						
		venlafaxine	3	3						
1362pa	37 y M				A	Unk	Int-A	1		
		diphenhydramine	1	1					diphenhydramine	13 mg/L In Blood (unspecified) @ Autopsy
		diphenhydramine	1	1					diphenhydramine	8 mg/L In Blood (unspecified) @ Autopsy
		dextromethorphan	2	2					dextromethorphan	10 mg/L In Blood (unspecified) @ Autopsy
		dextromethorphan	2	2					dextromethorphan	7.2 mg/L In Blood (unspecified) @ Autopsy
1363ha	37 y F				A	Ingst	Int-S	3		
		diphenhydramine	1	1						
1364ai	37 y M				U	Ingst + Unk	Int-A	1		
		diphenhydramine	1	1						
		phentermine	2	2						
		ethanol	3	3						
1365h	38 y M				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
		ethylene glycol (antifreeze)	2	2						
1366	38 y F				A	Ingst	Int-S	2		
		antihistamine	1	1						
		amitriptyline	2	2						
		citalopram	3	3						
		ethanol	4	4						
1367ha	41 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	6300 ng/mL In Blood (unspecified) @ Autopsy
1368pa	44 y F				A/C	Ingst	Int-S	1		
		hydroxyzine	2	1					lorazepam	130 ng/mL In Blood (unspecified) @ Autopsy
		hydroxyzine	2	1					oxymorphone	35 ng/mL In Blood (unspecified) @ Autopsy
		hydroxyzine	2	1					hydroxyzine	56 ng/mL In Blood (unspecified) @ Autopsy
		hydroxyzine	2	1					oxycodone (free)	670 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	1	1						
		lorazepam	3	3						
1369ai	44 y M				U	Ingst + Unk	Int-S	1		
		diphenhydramine	1	1						
		ethanol	2	2						
		hyperthermia	3	3						
1370ai	49 y F				U	Unk	Int-S	1		
		diphenhydramine	1	1						
		ethanol	2	2						
1371ph	59 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
1372	59 y F				A	Ingst	Int-U	3		
		promethazine	1	1						
1373ai	60 y M				U	Unk	Int-S	1		
		diphenhydramine	1	1						
		ethanol	2	2						
1374p	62 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1						
1375ai	63 y F				U	Ingst + Unk	Int-A	1		
		diphenhydramine	1	1						
		ethanol	2	2						
1376pha	63 y M				U	Unk	Int-S	2		
		diphenhydramine	1	1					diphenhydramine	4.57 mg/L In Blood (unspecified) @ 1 h (pe)
		alprazolam	2	2					alprazolam	0.2 mg/L In Blood (unspecified) @ 1 h (pe)
1377ha	67 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	47000 ng/mL In Blood (unspecified) @ Autopsy
		sertraline	2	2					sertraline	1500 mg/mL In Blood (unspecified) @ Autopsy
1378pha	68 y F				U	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	1.85 mg/L In Blood (unspecified) @ Unknown
		gabapentin	2	1						
		acetaminophen	3	3					acetaminophen (apap)	8 mcg/mL In Blood (unspecified) @ Unknown
		lorazepam	4	4					lorazepam	143 ng/mL In Serum @ Unknown
		zolpidem	5	5						
1379pa	68 y M				U	Ingst	Oth-M	2		
		diphenhydramine	1	1					diphenhydramine	1300 ng/mL In Vitreous @ Unknown

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1380ha	70 y F				U	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	2.4 mcg/mL In Blood (unspecified) @ Unknown
		phendimetrazine	2	2					phendimetrazine / phenmetrazine	0.8 mcg/mL In Blood (unspecified) @ Unknown
		phendimetrazine	2	2					phendimetrazine / phenmetrazine	1.3 mcg/mL In Blood (unspecified) @ Unknown
		phendimetrazine	2	2					phendimetrazine / phenmetrazine	1.5 mcg/mL In Blood (unspecified) @ Unknown
		phendimetrazine	2	2					phendimetrazine / phenmetrazine	2 mcg/mL In Blood (unspecified) @ Unknown
		ibuprofen	3	3						
		salicylate	4	4					salicylate	126 mg/L In Serum @ 2 d (pe)
		salicylate	4	4					salicylate	137 mg/L In Serum @ 19 h (pe)
		salicylate	4	4					salicylate	171 mg/L In Serum @ 13 h (pe)
		salicylate	4	4					salicylate	188 mg/L In Serum @ 7 h (pe)
		salicylate	4	4					salicylate	93 mg/L In Serum @ 1 h (pe)
		lithium	5	5					lithium	0.8 mmol/L In Serum @ 7 h (pe)
		lithium	5	5					lithium	0.9 mmol/L In Serum @ 1 h (pe)
		quetiapine	6	6						
		lamotrigine	7	7						
		citalopram	8	8						
1381ai	91 y F				U	Unk	Int-S	1		
		diphenhydramine	1	1						
1382a	4 m F				A	Ingst	Unk	2		
		diphenhydramine	1	1					diphenhydramine	216 ng/mL In Blood (unspecified) @ Autopsy
1383p	6 m M				A	Ingst	Unk	2		
		diphenhydramine	1	1					diphenhydramine	290 ng/mL In Blood (unspecified) @ Unknown
1384pi	9 m M				U	Unk	Oth-M	2		
		diphenhydramine	1	1					diphenhydramine	4 mg/L In Blood (unspecified) @ Autopsy
		loratadine	2	2						

See Also case 17, 29, 45, 47, 119, 140, 343, 345, 374, 385, 411, 450, 462, 572, 629, 638, 652, 673, 687, 705, 706, 747, 776, 789, 801, 816, 820, 883, 892, 906, 910, 913, 918, 921, 923, 927, 944, 961, 977, 984, 990, 992, 994, 1007, 1011, 1012, 1016, 1019, 1022, 1053, 1055, 1096, 1117, 1140, 1145, 1172, 1196, 1217, 1221, 1251, 1261, 1267, 1280, 1283, 1306, 1320, 1328, 1438, 1452, 1486, 1493, 1495, 1500, 1502, 1507, 1531, 1532, 1544, 1545, 1591, 1639, 1662, 1666, 1688, 1700, 1714, 1720, 1741, 1753, 1803, 1822, 1862, 1922, 1968, 2016, 2059, 2067, 2128, 2130, 2181, 2257, 2289, 2300, 2324, 2453, 2461, 2463, 2474

Antimicrobials

1385ha	13 y F				A	Ingst	Int-S	1		
		hydroxychloroquine	1	1						
		cyclobenzaprine	2	2						
		esomeprazole	3	3						
		clindamycin	4	4						
[1386ha]	14 y F				A	Ingst	Int-S	1		
		hydroxychloroquine	1	1						
		ibuprofen	2	2						
		naproxen	3	3						
1387ha	24 y M				A/C	Ingst + Unk	Int-S	2		
		cobistat/elvitegravir/ emtrictabine/tenofovir	1	1						
		ibuprofen	2	2						
		drug, unknown	3	3						
		acetaminophen	4	4					acetaminophen (apap)	58 mcg/mL In Serum @ Unknown
1388	30 y F				A/C	Ingst	Int-S	1		
		hydroxychloroquine	1	1						
1389h	38 y M				C	Ingst	Unt-T	3		
		amantadine	1	1						
1390h	62 y F				A/C	Ingst	AR-D	2		
		sulfamethoxazole/ trimethoprim	1	1						
1391h	63 y F				A	Par	AR-D	2		
		azithromycin	1	1						
		ceftriaxone	2	2						
1392h	65 y M				U	Ingst	AR-D	2		
		tenofovir	1	1						
		methocarbamol	2	2						

See Also case 332, 603, 817, 910, 1077, 1355, 1417, 1700, 1721, 1805

Antineoplastics

1393ph	72 y M				U	Par	AR-D	2		
		fluorouracil	1	1						
[1394h]	75 y F				C	Ingst	Unt-T	1		
		methotrexate	1	1					methotrexate	0.04 µmol/L In Blood (unspecified) @ 5 d (pe)
		methotrexate	1	1					methotrexate	0.05 µmol/L In Blood (unspecified) @ 2 d (pe)
		methotrexate	1	1					methotrexate	0.09 µmol/L In Blood (unspecified) @ Unknown
[1395h]	79 y F				C	Ingst	Unt-T	1		
		methotrexate	1	1					methotrexate	0.04 microU/mL In Blood (unspecified) @ 108 h (pe)
		methotrexate	1	1					methotrexate	0.06 microU/mL In Blood (unspecified) @ 56 h (pe)
		methotrexate	1	1					methotrexate	0.5 mmol/L In Blood (unspecified) @ 18 h (pe)

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
Asthma Therapies										
1396h	34 y F				U	Unk	Int-A	2		
		sympathomimetic	1	1						
1397h	60 y F				C	Ingst	AR-D	3		
		theophylline	1	1						
1398h	89 y F				C	Ingst	AR-D	3		
		ephedrine/theophylline	1	1						
		digoxin	2	2					digoxin	9 ng/mL In Blood (unspecified) @ Unknown
See Also case 983, 1064, 1571, 1973										
Cardiovascular Drugs										
1399ai	3 y F				A	Ingst	Unt-G	1		
		verapamil	1	1					verapamil	1551 ng/mL In Blood (unspecified) @ Unknown
1400p	13 y F				A	Ingst	Int-S	1		
		metoprolol	1	1						
		fluvoxamine	2	2						
		bupropion (extended release)	3	3						
		risperidone	4	4						
1401	15 y F				A	Ingst	Int-S	1		
		amlodipine/benazpril	1	1						
		risperidone	2	2						
		fluoxetine	3	3						
1402	15 y F				A	Ingst	Int-S	2		
		calcium antagonist	1	1						
1403ph	17 y F				A/C	Ingst + Aspir + Unk	Int-S	2		
		beta blocker	1	1						
		levetiracetam	2	2						
		aripiprazole	3	3						
		escitaopram	4	4						
		clopidogrel	5	5						
		salicylate	6	6						
		acetaminophen	7	7						
		atorvastatin	8	8						
		marijuana	9	9						
1404p	17 y F				A	Ingst	Int-S	2		
		propranolol	1	1						
		fluoxetine	2	2						
1405p	19 y F				A	Ingst	Unt-G	1		
		metoprolol	1	1						
		metformin	2	2						
		omeprazole	3	3						
1406	22 y M				A	Ingst	Int-S	2		
		verapamil	1	1						
1407	24 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		hydroxyurea	2	2						
		ethanol	3	3						
1408ph	24 y F				A	Ingst	Int-S	2		
		flecainide	1	1						
		metoprolol	2	2						
		ethanol	3	3					ethanol	192 mg/dL In Serum @ Unknown
[1409pha]	25 y F				A/C	Ingst	Int-S	1		
		propranolol	1	1					propranolol	360 ng/mL In Other @ Unknown
1410h	26 y F				A	Ingst	Int-S	2		
		amlodipine	1	1						
		metformin	2	2						
		salicylate	3	3						
1411h	27 y M				A	Ingst	Int-S	2		
		propranolol	1	1						
		lamotrigine	2	2						
		clonazepam	3	3						
		quetiapine	4	4						
		ethanol	5	5						
		marijuana	6	6						
		cocaine	7	7						
1412h	27 y F				A/C	Ingst	Int-S	2		
		metoprolol	1	1						
		acetaminophen	2	2					acetaminophen (apap)	441 mcg/mL In Blood (unspecified) @ 1 h (pe)
		trazodone	3	3						
		pindolol	4	4						
		lisinopril	5	5						
		losartan	6	6						
		mirtazapine	7	7						
1413i	27 y F				A/C	Ingst	Unk	3		
		diltiazem	1	1						
		digoxin	2	2					digoxin	1.1 ng/mL In Serum @ Unknown
1414ph	29 y F				A	Ingst	Int-S	2		
		propranolol	1	1						
1415a	29 y M				A	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	0.6 mg/L In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		cocaine	2	2					benzoylecognine	0.4 mg/L In Blood (unspecified) @ Unknown
1416	29 y F				A	Ingst	Int-S	2		
		propanolol	1	1						
		amitriptyline	2	2						
		gabapentin	3	3						
1417h	30 y M				A/C	Ingst	Int-S	2		
		propranolol	1	1						
		quetiapine	2	2						
		acetaminophen/ diphenhydramine	3	3					acetaminophen (apap)	75 mcg/mL In Blood (unspecified) @ Unknown
		levetiracetam	4	4						
		amantadine	5	5						
		escitalopram	6	6						
		methylphenidate	7	7						
		trihexyphenidyl	8	8						
		phenobarbital	9	9						
1418h	30 y F				U	Ingst	Int-S	1		
		beta blocker	1	1						
1419h	31 y M				A	Ingst	Int-S	2		
		diltiazem	1	1						
		beta blocker	2	2						
1420	31 y F				A	Ingst	Int-S	2		
		calcium antagonist	1	1						
		beta blocker	2	2						
		indapamide	3	3						
		ethanol	4	4						
1421	33 y M				U	Ingst	Int-S	2		
		amlodipine	1	1						
1422h	33 y F				A	Ingst	Int-S	2		
		verapamil	1	1						
1423h	34 y F				A/C	Ingst	Int-S	2		
		labetalol	1	1						
		amlodipine	2	2						
		acetaminophen/tramadol	3	3						
		clonidine	4	4						
		trazodone	5	5						
		diuretic, unknown	6	6						
		levothyroxine	7	7						
		atorvastatin	8	8						
1424a	35 y F				A	Ingst	Int-S	1		
		metoprolol	1	1						
		amlodipine	2	2						
		venlafaxine	3	3						
		amphetamine/ dextroamphetamine	4	4						
		zolpidem	5	5						
		ethanol	6	6						
1425ph	36 y F				A/C	Ingst	Int-S	2		
		propranolol	1	1						
		pregabalin	2	2						
		acetaminophen	3	3					acetaminophen (apap)	78 mcg/mL In Blood (unspecified) @ Unknown
1426pha	36 y F				U	Ingst	Int-S	1		
		metoprolol (extended release)	1	1					metoprolol	320 ng/mL In Blood (unspecified) @ Autopsy
1427pha	36 y F				U	Unk	Unk	1		
		flecainide	1	1					flecainide	3.2 mcg/mL In Blood (unspecified) @ Autopsy
		methylphenidate	2	2					methylphenidate	150 ng/mL In Blood (unspecified) @ Autopsy
		amphetamine	3	3					amphetamine	68 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	4	4					7-aminoclonazepam	15 ng/mL In Blood (unspecified) @ Autopsy
1428	37 y M				A	Ingst	Int-S	2		
		verapamil	1	1						
		clonazepam	2	2						
		gabapentin	3	3						
1429h	37 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		metoprolol (extended release)	2	2						
		hydralazine	3	3						
		lisinopril	4	4						
		metformin	5	5						
1430	38 y F				A	Ingst	Int-S	2		
		calcium antagonist	1	1						
1431pha	38 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1						
		citalopram	2	2						
		fluoxetine	3	3						
		duloxetine	4	4						
		clonazepam	5	5						
1432ha	38 y F				A/C	Ingst + Derm	Int-S	1		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		metoprolol	1	1					metoprolol	3.9 mg/L In Blood (unspecified) @ 5 m (pe)
		amlodipine	2	2					amlodipine	0.17 mg/L In Blood (unspecified) @ 5 m (pe)
		alprazolam	3	3					alprazolam	0.046 mg/L In Blood (unspecified) @ 5 m (pe)
		paint	4	4						
1433i	38 y F				U	Unk	Int-S	1		
		verapamil	1	1						
		trazodone	2	2						
		oxycodone	3	3						
1434h	40 y M				A	Ingst	Int-S	2		
		nifedipine	1	1						
1435p	40 y F				A/C	Ingst	Int-S	2		
		verapamil	1	1						
		bupropion (extended release)	2	2						
1436h	40 y M				A	Ingst	Int-S	2		
		diltiazem (extended release)	1	1						
1437h	41 y F				A	Ingst	Int-S	1		
		diltiazem	1	1						
		prazosin	2	2						
		zolpidem	3	3						
1438ha	41 y M				A	Ingst	Int-S	2		
		clonidine	1	1					clonidine	11 ng/mL In Blood (unspecified) @ Autopsy
		methylphenidate	2	2					methylphenidate	6.5 ng/mL In Blood (unspecified) @ Autopsy
		diphenhydramine	3	3					diphenhydramine	220 ng/mL In Blood (unspecified) @ Autopsy
1439h	41 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		quetiapine	2	2						
		angiotensin converting enzyme inhibitor	3	3						
1440h	41 y M				A/C	Ingst + Par	Int-S	2		
		amlodipine	1	1						
		carvedilol	2	2						
		citalopram	3	3						
		lisinopril	4	4						
		insulin	5	5						
1441ha	41 y F				A/C	Ingst + Unk	Int-S	1		
		diltiazem	1	1						
		alprazolam	2	2					alprazolam	190 mcg/L In Blood (unspecified) @ 2 h (pe)
		ethanol	3	3					ethanol	0.095 g/dL In Blood (unspecified) @ 2 h (pe)
1442h	41 y M				A	Ingst	Int-S	2		
		verapamil (extended release)	1	1						
		lisinopril	2	2						
		dexlansoprazole	3	3						
		quetiapine	4	4						
		oxycodone	5	5						
		hydrochlorothiazide/ triamterene	6	6						
1443	43 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		losartan	2	2						
		metoprolol	3	3						
1444h	43 y F				A/C	Ingst + Inhal	Int-S	2		
		clonidine	1	1						
		topiramate	2	2						
		clonazepam	3	3						
		ethanol	4	4					ethanol	0.056 g/dL In Blood (unspecified) @ 1 h (pe)
		aripiprazole	5	5						
		marijuana	6	6						
1445ha	43 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1					verapamil	0.28 mg/L In Blood (unspecified) @ 90 m (pe)
		acetaminophen	2	2					acetaminophen (apap)	21 mcg/mL In Blood (unspecified) @ 90 m (pe)
1446h	43 y F				C	Ingst	Int-S	1		
		atenolol	1	1						
		ropinerole	2	2						
		venlafaxine	3	3						
		amitriptyline	4	4						
1447pa	44 y F				A	Ingst	Int-S	1		
		flecainide	1	1					flecainide	5 mcg/mL In Blood (unspecified) @ Unknown
1448h	44 y F				A/C	Ingst	Int-S	2		
		propranolol (extended release)	1	1						
		amitriptyline	2	2						
		quetiapine	3	3						
		fluoxetine	4	4						
		clonazepam	5	5						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1449ha	44 y F				U	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	310 ng/mL In Blood (unspecified) @ Unknown
		metoprolol	2	2					metoprolol	2000 ng/mL In Blood (unspecified) @ Unknown
1450	44 y M				A/C	Ingst	Int-S	1		
		diltiazem	1	1						
1451ph	44 y F				A	Ingst	Int-S	2		
		labetalol	1	1						
1452ai	44 y F				U	Ingst + Unk	Int-S	1		
		verapamil	1	1						
		amitriptyline	2	2						
		lurasidone	3	3						
		sertraline	4	4						
		diphenhydramine	5	5						
		tramadol	6	6						
		zolpidem	7	7						
1453pha	46 y M				A	Ingst	Int-S	1		
		verapamil	1	1					verapamil	5300 ng/mL In Whole Blood @ Autopsy
		ethanol	2	2					ethanol	0.179 % In Whole Blood @ Autopsy
1454h	46 y M				A/C	Ingst	Unt-T	1		
		diltiazem	1	1						
1455h	46 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		atenolol	2	2						
		minoxidil	3	3						
1456ha	47 y M				A	Ingst	Int-S	2		
		amlodipine	1	1					amlodipine	0.038 mg/L In Blood (unspecified) @ Unknown
		mirtazapine	2	2					mirtazapine	0.01 mg/L In Blood (unspecified) @ Unknown
1457ph	47 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		diltiazem	2	2						
		ranolazine	3	3						
		duloxetine	4	4						
		pregabalin	5	5						
		ethanol	6	6						
1458pha	47 y M				U	Ingst	Int-S	2		
		diltiazem	1	1						
		amitriptyline	2	2					nortriptyline	1200 ng/mL In Blood (unspecified) @ Unknown
		amitriptyline	2	2					amitriptyline	960 ng/mL In Blood (unspecified) @ Unknown
1459ha	48 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		valproic acid	2	1					valproic acid	104.2 mcg/mL In Blood (unspecified) @ Unknown
		buspirone	3	2						
		duloxetine	4	3						
		lisinopril	5	4						
1460pha	48 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	84 ng/mL In Blood (unspecified) @ Unknown
		beta blocker	2	2					metoprolol	2000 ng/mL In Blood (unspecified) @ Unknown
		phentermine	3	3					phentermine	59 ng/mL In Blood (unspecified) @ Unknown
		tizanidine	4	4						
		prednisone	5	5						
		sertraline	6	6						
		metformin	7	7						
1461h	48 y F				A/C	Ingst	Int-S	1		
		diltiazem (exrtended release)	1	1						
1462h	48 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		hydrochlorothiazide	2	2						
		ethanol	3	3					ethanol	231 mg/dL In Blood (unspecified) @ Unknown
		levetiracetam	4	4					levetiracetam	94 mcg/mL In Blood (unspecified) @ Unknown
1463	48 y F				A	Ingst	Int-S	2		
		metoprolol	1	1						
		lamotrigine	2	2						
		ethanol	3	3					ethanol	390 mg/dL In Serum @ Unknown
1464h	48 y M				A	Ingst	Int-S	1		
		verapamil	1	1						
1465h	49 y M				A/C	Ingst	Int-S	1		
		verapamil	1	1						
		atenolol	2	2						
		losartan	3	3						
		cyclobenzaprine	4	4						
		ethanol	5	5						
1466h	49 y M				A/C	Ingst	Int-S	2		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		labetalol	1	1						
		ethanol	2	2					ethanol	196 mg/dL In Blood (unspecified) @ Unknown
[1467ha]	49 y M				A/C	Ingst	Int-S	1		
		verapamil (extended release)	1	1					verapamil	30.8 mg/kg In Brain @ Autopsy
		verapamil (extended release)	1	1					norverapamil	4.5 mg/L In Blood (unspecified) @ Autopsy
		verapamil (extended release)	1	1					verapamil	51.2 mg/L In Blood (unspecified) @ Autopsy
1468h	49 y M				A	Ingst	Int-S	2		
		amlodipine	1	1						
		carvedilol	2	2						
		metformin	3	3						
		sitagliptin	4	4						
		clopidogrel	5	5						
		gabapentin	6	6						
		vortioxetine	7	7						
		benzodiazepine	8	8						
		salicylate	9	9						
		acetaminophen	10	10						
1469ha	49 y M				U	Ingst	Int-S	1		
		verapamil (extended release)	1	1						
		benzodiazepine	2	2						
		ethanol	3	3						
1470	49 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		ethanol	2	2						
1471h	50 y F				A/C	Ingst	Int-S	3		
		amlodipine	1	1						
		gabapentin	2	2						
		atorvastain	3	3						
1472ha	50 y F				A/C	Ingst	Int-S	1		
		diltiazem (extended release)	1	1					diltiazem	0.34 mg/L In Blood (unspecified) @ 2 m (pe)
		lisinopril	2	2						
		spironolactone	3	3						
1473ha	50 y M				U	Ingst	Int-S	1		
		clonidine	1	1					clonidine	28 ng/mL In Blood (unspecified) @ Autopsy
		metformin	2	2						
		lorazepam	3	3					lorazepam	5.4 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	4	4					clonazepam	110 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	4	4					7-aminoclonazepam	81 ng/mL In Blood (unspecified) @ Autopsy
		paroxetine	5	5					paroxetine	11 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	6	6					ethanol	76 mg/dL In Blood (unspecified) @ Autopsy
1474h	50 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
1475ha	50 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1					verapamil	240 ng/mL In Blood (unspecified) @ Autopsy
		metformin	2	2					metformin	210 mcg/mL In Blood (unspecified) @ Autopsy
		pregabalin	3	3						
		hydrochlorothiazide/ triamterene	4	4						
		losartan	5	5						
1476h	51 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		ethanol	2	2						
		diphenhydramine/ibuprofen	3	3						
1477ph	51 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
1478h	51 y M				A/C	Ingst	Int-U	1		
		carvedilol	1	1						
		cyclobenzaprine	2	2						
		fluoxetine	3	3						
		atorvastatin	4	4						
		lisinopril	5	5						
		lorazepam	6	6						
1479a	51 y F				A	Ingst	Int-S	1		
		atenolol	1	1					atenolol	7329 ng/mL In Blood (unspecified) @ Unknown
		amlodipine	2	2					amlodipine	382 ng/mL In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	163 mg/dL In Blood (unspecified) @ Unknown
1480ph	51 y F				A/C	Ingst	Unk	2		
		propanolol	1	1						
1481h	51 y F				U	Ingst	Unk	1		
		atenolol	1	1					atenolol	26000 ng/mL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		atenolol	1	1					amlodipine	830 ng/mL In Blood (unspecified) @ Unknown
		amlodipine	2	2						
		dextromethorphan/ guaifenesen	3	3						
[1482ph]	52 y M				A	Par	Unt-T	1		
		dopamine	1	1						
1483h	52 y M				U	Ingst	Int-S	2		
		verapamil	1	1						
		atenolol	2	2						
		fenofibrate	3	3						
1484	52 y M				A	Ingst	Unt-T	2		
		carvedilol	1	1						
		diltiazem	2	2						
		labetalol	3	3						
		furosemide	4	4						
		lisinopril	5	5						
		apixaban	6	6						
1485	52 y M				A	Ingst	Int-S	2		
		beta blocker	1	1						
		lurasidone	2	2						
		sertraline	3	3						
		amphetamine/ dextroamphetamine	4	4						
1486	52 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		metoprolol	2	2						
		hydroxyzine	3	3						
		metaxalone	4	4						
		mirtazapine	5	5						
1487ph	52 y M				A/C	Ingst	Int-S	2		
		propranolol	1	1						
1488ha	52 y M				A/C	Ingst	Int-S	1		
		verapamil	1	1					verapamil	5443 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	50 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	3	3					oxycodone	47 ng/mL In Blood (unspecified) @ Autopsy
1489ha	53 y F				A	Ingst	Int-S	2		
		metoprolol	1	1						
		oxycodone	2	2						
		hydrocodone	3	3						
		acetaminophen	4	4					acetaminophen (apap)	144 mcg/mL In Blood (unspecified) @ Unknown
1490ha	53 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	0.15 mg/L In Blood (unspecified) @ 30 m (pe)
		metoprolol (extended release)	2	2					metoprolol	4.3 mg/L In Blood (unspecified) @ 30 m (pe)
		ethanol	3	3					ethanol	180 mg/dL In Blood (unspecified) @ 30 m (pe)
		ethanol	3	3					ethanol	70 mg/dL In Blood (unspecified) @ Autopsy
		lisinopril	4	4						
		fluoxetine	5	5					norfluoxetine	0.23 mg/L In Blood (unspecified) @ 30 m (pe)
		fluoxetine	5	5					fluoxetine	0.35 mg/L In Blood (unspecified) @ 30 m (pe)
		warfarin	6	6						
1491h	53 y F				A/C	Ingst	Int-S	1		
		verapamil (extended release)	1	1						
		ethanol	2	2						
1492	53 y M				A/C	Ingst	Int-S	2		
		atenolol/chlorthalidone	1	1						
		gabapentin	2	2						
		acetaminophen	3	3						
1493pha	53 y F				A	Ingst	Int-S	1		
		metoprolol	1	1					metoprolol	44000 ng/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	112 mg/dL In Blood (unspecified) @ Unknown
		diphenhydramine	3	3					diphenhydramine	2200 ng/mL In Blood (unspecified) @ Unknown
1494a	53 y M				A	Ingst	Int-S	1		
		metoprolol	1	1					metoprolol	24000 ng/mL In Blood (unspecified) @ Unknown
		amlodipine	2	2					amlodipine	580 ng/mL In Blood (unspecified) @ Unknown
1495ha	54 y M				A/C	Ingst	Int-S	1		
		nifedipine (extended release)	1	1					nifedipine	100 ng/mL In Blood (unspecified) @ Autopsy
		lisinopril	2	2						
		risperidone	3	3					risperidone	290 ng/mL In Blood (unspecified) @ Autopsy
		hydroxyzine	4	4					hydroxyzine	40 ng/mL In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		zolpidem	5	5						
		simvastatin	6	6						
		dexlansoprazole	7	7						
1496hi	54 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		lisinopril	2	2						
		acetaminophen/ butalbital/caffeine	3	3						
		sertraline	4	4						
1497h	54 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		metoprolol	2	2						
		clonidine	3	3						
		thiazide	4	4						
1498ha	54 y F				A	Ingst + Par	Int-S	1		
		amlodipine	1	1					amlodipine	120 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/codeine	2	2					codeine	355.8 ng/mL In Blood (unspecified) @ Autopsy
		insulin	3	3						
1499i	55 y M				A/C	Ingst	Unt-T	2		
		diltiazem	1	1						
		lisinopril	2	2						
1500ha	55 y F				A/C	Ingst + Unk	Unt-G	1		
		amlodipine	1	1						
		atenolol	2	2						
		losartan	3	3						
		methamphetamine	4	4					methamphetamine	0.025 mg/L In Blood (unspecified) @ Unknown
		cyclobenzaprine	5	5						
		diphenhydramine	6	6						
		hydrochlorothiazide	7	7						
1501h	55 y F				A	Ingst	Int-S	1		
		diltiazem (extended release)	1	1						
		warfarin	2	2						
		levetiracetam	3	3						
1502ha	55 y M				C	Ingst	Int-S	1		
		amlodipine	1	1						
		clonidine	2	2					clonidine	40 ng/mL In Whole Blood @ Unknown
		hydroxyzine	3	3					hydroxyzine	390 ng/mL In Whole Blood @ Unknown
		zaleplon	4	4						
1503ai	55 y F				U	Unk	Int-S	1		
		amlodipine	1	1						
		atenolol	2	2						
		losartan	3	3						
1504ha	56 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		lisinopril	2	2						
1505a	56 y M				A/C	Ingst	Int-S	2		
		diltiazem	1	1						
		carvedilol	2	2						
		warfarin	3	3						
		rivaroxaban	4	4						
		lisinopril	5	5						
		ethanol	6	6					ethanol	125 mg/dL In Blood (unspecified) @ Unknown
		carbon monoxide	7	7					carboxyhemoglobin	2.9 % In Blood (unspecified) @ Unknown
1506ph	56 y M				A	Ingst	Int-S	2		
		amlodipine	1	1						
		baclofen	2	2						
		nonsteroidal antiinflammatory drug	3	3						
1507a	56 y F				A/C	Ingst	Int-S	1		
		amlodipine/benazpril	1	1					amlodipine	44 ng/mL In Blood (unspecified) @ Autopsy
		zolpidem	2	2					zolpidem	0.91 mg/L In Blood (unspecified) @ Autopsy
		baclofen	3	3						
		ethanol	4	4					ethanol	0.18 g/dL In Blood (unspecified) @ Autopsy
		ethanol	4	4					ethanol	0.229 g/dL In Blood (unspecified) @ Unknown
		hydroxyzine	5	5						
		buspirone	6	6						
		gabapentin	7	7						
1508	56 y F				A/C	Ingst	Int-S	2		
		propranolol	1	1						
		cyclobenzaprine	2	2						
		lorazepam	3	3						
1509h	56 y F				A	Ingst	Int-S	2		
		amlodipine	1	1						
1510h	56 y M				A/C	Ingst	Int-S	2		
		verapamil	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		clonazepam	2	2						
		eszopiclone	3	3						
		ethanol	4	4					ethanol	293 mg/dL In Serum @ Unknown
1511h	56 y F				A/C	Ingst	Int-S	1		
		diltiazem (extended release)	1	1						
1512	56 y M				A/C	Ingst	Int-S	2		
		verapamil	1	1						
1513h	57 y M				A/C	Ingst	Int-S	2		
		calcium antagonist	1	1						
1514ph	57 y F				U	Ingst	Int-S	3		
		diltiazem	1	1						
		risperidone	2	2						
		valbenazine	3	3						
1515h	57 y M				A/C	Ingst	Int-S	2		
		metoprolol	1	1						
		ethanol	2	2					ethanol	270 mg/dL In Blood (unspecified) @ Unknown
1516i	57 y M				A	Ingst	Int-S	2		
		carvedilol	1	1						
		diltiazem	2	2						
		drug, unknown	3	3						
1517ha	58 y F				A/C	Ingst	Int-S	2		
		metoprolol	1	1						
		metformin	2	2						
		apixaban	3	3						
		ethanol	4	4					ethanol	69 mg/dL In Blood (unspecified) @ Unknown
		drug, unknown	5	5						
1518h	58 y F				A/C	Ingst	Int-S	2		
		metoprolol (extended release)	1	1						
1519ph	58 y M				A	Ingst	Int-S	1		
		diltiazem (extended release)	1	1					diltiazem	1200 ng/mL In Blood (unspecified) @ Autopsy
		bupropion	2	2					hydroxybupropion	550 ng/mL In Blood (unspecified) @ Autopsy
		bupropion	2	2					bupropion	7800 ng/mL In Blood (unspecified) @ Autopsy
1520h	58 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1						
1521	58 y M				A	Ingst	Int-S	1		
		verapamil	1	1						
		atenolol	2	2						
		tamsulosin	3	3						
		sildenafil	4	4						
		ethanol	5	5						
1522ph	58 y F				A/C	Ingst	Int-S	2		
		amlodipine/olmesartan	1	1						
		acetaminophen/hydrocodone	2	2					acetaminophen (apap)	95 mcg/mL In Serum @ 9 h (pe)
1523ha	59 y M				A/C	Ingst	Int-S	1		
		metoprolol	1	1					metoprolol	5500 ng/mL In Blood (unspecified) @ Unknown
1524ha	59 y F				A	Ingst	Int-S	1		
		amlodipine	1	1						
		losartan	2	2						
		ethanol	3	3						
1525h	59 y M				A/C	Ingst	Unk	1		
		propranolol	1	1						
1526a	59 y F				A	Ingst	Int-M	1		
		verapamil	1	1					verapamil	310 ng/mL In Blood (unspecified) @ Unknown
1527pha	59 y M				A	Ingst	Int-S	1		
		carvedilol	1	1						
1528h	59 y M				A	Ingst	Int-S	2		
		propranolol	1	1						
1529ha	59 y F				U	Ingst	Int-S	1		
		diltiazem	1	1						
1530h	59 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1						
1531ph	59 y M				A	Ingst	Int-S	2		
		metoprolol	1	1						
		methimazole	2	2						
		zolpidem	3	3						
		diphenhydramine	4	4						
1532ha	60 y F				U	Ingst	Int-S	1		
		propranolol	1	1						
		alpha-adrenergic blocker	2	2						
		primidone	3	3						
		antipsychotic (atypical)	4	4						
		duloxetine	5	5						
		lamotrigine	6	6						
		antihistamine	7	7						
1533h	60 y F				A/C	Ingst + Par	Int-S	1		
		verapamil	1	1						
		lipid emulsion	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1534ha	60 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		lisinopril	2	2						
		hydralazine	3	3						
		ethanol	4	4					ethanol	79 mg/dL In Serum @ 5 m (pe)
1535	61 y M				A	Ingst	Int-S	3		
		atenolol	1	1						
		amlodipine	2	2						
		colchicine	3	3						
		alopurinol	4	4						
		apixaban	5	5						
		hydrochlorothiazide	6	6						
		sertraline	7	7						
		salicylate	8	8					salicylate	14.3 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen	9	9					acetaminophen (apap)	300 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	10	10					ethanol	178 mg/dL In Blood (unspecified) @ Unknown
1536h	61 y F				A	Ingst	Int-S	1		
		amlodipine	1	1						
		escitalopram	2	2						
1537h	61 y M				A/C	Ingst	Unk	2		
		metoprolol	1	1						
		apixaban	2	2						
		fluoxetine	3	3						
		diuretics, potassium sparing	4	4						
		losartan	5	5						
1538	61 y F				C	Ingst	Int-S	2		
		digoxin	1	1						
1539h	61 y F				A/C	Ingst	Int-S	3		
		amlodipine	1	1						
		quetiapine	2	2						
1540pha	61 y M				A	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	1200 ng/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	133 mg/dL In Blood (unspecified) @ Unknown
		alopurinol	3	3						
1541ha	61 y M				U	Ingst	Int-S	1		
		verapamil	1	1					verapamil	1.8 mg/L In Serum @ Unknown
		ethanol	2	2					ethanol	0.13 % In Whole Blood @ Unknown
		ethanol	2	2					ethanol	197 mg/dL In Blood (unspecified) @ Unknown
1542ai	61 y M				U	Unk	Int-S	1		
		verapamil	1	1						
1543h	62 y F				A/C	Ingst	Unt-T	2		
		flecainide	1	1						
		sertraline	2	2						
1544ha	62 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		ethanol	2	2					ethanol	104 mg/dL In Blood (unspecified) @ 2 d (pe)
		diazepam	3	3						
		chlorpheniramine	4	4					chlorpheniramine	22 ng/mL In Blood (unspecified) @ 2 d (pe)
		chlorpheniramine	4	4					meta-chlorophenylpiperazine (mcpp)	33 ng/mL In Blood (unspecified) @ 2 d (pe)
		trazodone	5	5					trazodone	1.1 mcg/mL In Blood (unspecified) @ 2 d (pe)
		lisinopril	6	6						
1545h	62 y F				A/C	Ingst	Int-S	3		
		amlodipine	1	1						
		hydroxyzine	2	2						
		sertraline	3	3						
		lisinopril	4	4						
		gabapentin	5	5						
		trazodone	6	6						
		ibuprofen	7	7						
		prednisone	8	8						
1546a	63 y M				A	Ingst	Int-S	1		
		metoprolol	1	1					metoprolol	210 ng/mL In Blood (unspecified) @ Unknown
		quetiapine	2	2						
		meclizine	3	3						
1547	64 y F				A/C	Ingst	Int-S	2		
		amiodarone	1	1						
		drug, unknown	2	2						
1548h	64 y M				U	Ingst	Unk	2		
		flecainide	1	1					flecainide	3 mcg/mL In Blood (unspecified) @ 1 h (pe)
[1549ha]	65 y F				A	Ingst	Int-S	1		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		ranolazine	1	1					ranolazine	50 mg/L In Blood (unspecified) @ Unknown
1550	65 y M				C	Ingst	Int-S	2		
		carvedilol	1	1						
		amlodipine	2	2						
		ibuprofen	3	3						
		cyclobenzaprine	4	4						
		clonidine	5	5						
		metformin	6	6						
		lisinopril	7	7						
		benztropine	8	8						
1551	65 y F				A	Ingst	Int-S	2		
		amlodipine	1	1						
1552ha	65 y F				A	Ingst	Int-S	1		
		amlodipine	1	1						
		bupropion	2	2						
		lisinopril	3	3						
		atorvastain	4	4						
		hydrochlorothiazide	5	5						
		levothyroxine	6	6						
1553	65 y M				A/C	Ingst	Int-S	2		
		beta blocker	1	1						
		zolpidem	2	2						
1554h	66 y M				A/C	Ingst	AR-D	3		
		digoxin	1	1						
1555h	66 y M				A	Ingst	Unt-T	2		
		diltiazem	1	1						
1556	66 y M				A	Ingst	Int-S	2		
		amlodipine	1	1						
1557ha	66 y F				A	Ingst	Int-S	1		
		verapamil (extended release)	1	1					verapamil	9500 ng/mL In Blood (unspecified) @ Autopsy
		warfarin	2	2						
1558h	66 y F				A	Ingst	Int-S	2		
		metoprolol	1	1						
		nifedipine	2	2						
1559a	67 y F				A	Ingst	Int-S	1		
		verapamil (extended release)	1	1					verapamil	40 ng/mL In Blood (unspecified) @ Autopsy
		mirtazapine	2	2						
		zolpidem	3	3						
		ethanol	4	4						
1560h	67 y M				U	Ingst	Int-S	3		
		carvedilol	1	1						
		clopidogrel	2	2						
		furosemide	3	3						
[1561ha]	67 y M				A/C	Ingst	Int-S	1		
		diltiazem (extended release)	1	1					diltiazem	900 ng/mL In Blood (unspecified) @ Unknown
1562h	67 y M				A/C	Ingst	Int-S	2		
		metoprolol	1	1						
		amlodipine	2	2						
		nortriptyline	3	3						
		baclofen	4	4						
		venlafaxine (extended release)	5	5						
		acetaminophen/hydrocodone	6	6						
		cleaner (anionic/nonionic)	7	7						
		ethanol	8	8						
		atorvastain	9	9						
1563h	67 y F				A/C	Ingst	Int-S	3		
		calcium antagonist	1	1						
		clozapine	2	2						
		losartan	3	3						
		gabapentin	4	4						
		fluoxetine	5	5						
1564a	67 y M				A	Ingst	Int-S	1		
		nifedipine (extended release)	1	1						
1565h	67 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
1566h	67 y M				U	Ingst	Int-S	2		
		amlodipine	1	1						
		citalopram	2	2						
		clopidogrel	3	3						
		pravastatin	4	4						
		ethanol	5	5					ethanol	125 mg/dL In Blood (unspecified) @ Unknown
1567h	68 y M				A/C	Ingst	Int-S	1		
		amodipine/olmesartan	1	1						
		lorazepam	2	2						
1568h	68 y F				A	Ingst	Int-S	2		
		nifedipine	1	1						
		ethanol	2	2					ethanol	149 mg/dL In Blood (unspecified) @ 30 m (pe)
1569h	68 y M				A	Ingst	Int-S	2		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		metoprolol	1	1						
		benzodiazepine	2	2						
1570h	68 y F				A/C	Ingst	Int-S	2		
		clonidine	1	1						
		citalopram	2	2						
		clonazepam	3	3						
1571a	69 y F				A/C	Ingst	Int-S	2		
		flecainide	1	1						
		salicylate	2	2						
		clonazepam	3	3						
		montelukast	4	4						
		melatonin	5	5						
1572	69 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		fluoxetine	2	2						
		meclizine	3	3						
		pantoprazole	4	4						
1573ha	69 y M				A	Ingst	Int-S	1		
		nifedipine	1	1					nifedipine	610 ng/mL In Blood (unspecified) @ Unknown
		amlodipine	2	2					amlodipine	290 ng/mL In Blood (unspecified) @ Unknown
		alcohol, unknown	3	3					ethanol	0.1 % In Blood (unspecified) @ Unknown
		propranolol	4	4						
1574h	69 y M				A/C	Ingst	Unt-T	3		
		nadolol	1	1						
1575	70 y M				C	Ingst	AR-D	3		
		cardiac glycoside	1	1					digoxin	6.4 ng/mL In Blood (unspecified) @ Unknown
[1576ha]	70 y M				A/C	Ingst	Int-S	1		
		digoxin	1	1					digoxin	16 ng/mL In Plasma @ Autopsy
1577h	70 y F				C	Ingst	AR-D	2		
		digoxin	1	1					digoxin	4.7 ng/mL In Serum @ Unknown
1578h	70 y M				A/C	Ingst	Unt-T	2		
		flecainide	1	1						
1579h	70 y F				A/C	Ingst	Unt-T	2		
		metoprolol (extended release)	1	1						
1580h	70 y F				A/C	Ingst	Int-S	2		
		sotolol	1	1						
		carvedilol	2	2						
		acarbose	3	3						
		furosemide	4	4						
		potassium salts	5	5						
		thyroid preparation	6	6						
		bupropion	7	7						
		sertraline	8	8						
		salicylate	9	9						
		rosuvastatin	10	10						
		prasugrel	11	11						
		gabapentin	12	12						
		pantoprazole	13	13						
		risperidone	14	14						
1581	71 y F				A/C	Ingst	Unt-T	2		
		metoprolol	1	1						
1582h	71 y F				A/C	Ingst	Unt-G	3		
		digoxin	1	1						
1583h	72 y F				A	Ingst	Unt-T	3		
		diltiazem	1	1						
1584	72 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		ibuprofen	2	2						
1585h	73 y F				A/C	Ingst	Int-S	3		
		diltiazem (extended release)	1	1						
		metaxalone	2	2						
		lamotrigine	3	3						
1586	73 y M				A/C	Ingst	Int-S	2		
		diltiazem	1	1						
		ethanol	2	2						
		gabapentin	3	3						
1587	73 y F				A	Ingst	Unk	2		
		verapamil	1	1						
		nifedipine	2	2						
1588ph	74 y F				A/C	Ingst	Unt-U	1		
		amlodipine	1	1						
1589	74 y M				C	Ingst	AR-D	3		
		diltiazem	1	1						
		metoprolol (extended release)	2	2						
1590h	74 y F				A/C	Ingst	Unk	1		
		carvedilol	1	1						
1591h	75 y F				A	Ingst	Int-S	2		
		amlodipine	1	1						
		buspirone	2	2						
		quetiapine	3	3						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		fluoxetine	4	4						
		tizanidine	5	5						
		diphenhydramine	6	6						
		acetaminophen/salicylate	7	7						
1592h	75 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1						
		amlodipine	2	2						
		amitriptyline	3	3						
		fluoxetine	4	4						
		hydrochlorothiazide/lisinopril	5	5						
1593ha	75 y M				A	Ingst	Int-S	2		
		Dofetilide	1	1						
		quetiapine	2	2						
		trazodone	3	3						
		clonazepam	4	4						
1594	76 y F				A/C	Ingst	Unt-G	2		
		digoxin	1	1					digoxin	2 mcg/mL In Blood (unspecified) @ 1 d (pe)
		metoprolol (extended release)	2	2						
1595h	76 y M				C	Ingst	Unk	3		
		digoxin	1	1					digoxin	3 ng/mL In Blood (unspecified) @ Unknown
1596h	76 y M				A/C	Ingst	Int-U	1		
		amlodipine	1	1						
1597ha	76 y F				A/C	Ingst	Int-S	1		
		flecainide	1	1					flecainide	20 mg/L In Blood (unspecified) @ Autopsy
		beta blocker	2	2					metoprolol	1.1 mg/L In Blood (unspecified) @ Autopsy
1598	77 y F				A	Ingst	Int-S	1		
		cardiac glycoside	1	1					digoxin	10.9 ng/mL In Blood (unspecified) @ 1 h (pe)
		beta blocker	2	2						
1599h	77 y F				A/C	Ingst	Int-S	2		
		verapamil	1	1						
		atenolol	2	2						
		sertraline	3	3						
1600i	77 y F				U	Unk	Int-S	1		
		diltiazem	1	1						
		salicylate	2	2						
		morphine	3	3						
1601h	77 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
1602h	77 y F				A	Ingst	AR-D	3		
		flecainide	1	1						
1603ha	77 y F				A/C	Ingst	Int-S	2		
		diltiazem	1	1						
		diclofenac	2	2						
1604p	78 y F				A	Ingst	Int-S	2		
		beta blocker	1	1						
		acetaminophen	2	2						
1605ha	78 y F				A/C	Ingst	Int-S	2		
		diltiazem (extended release)	1	1						
		clonazepam	2	2					7-aminoclonazepam	19 ng/mL In Serum @ Autopsy
		clonazepam	2	2					clonazepam	6.9 ng/mL In Serum @ Autopsy
		alprazolam	3	3					alprazolam	10 ng/mL In Serum @ Autopsy
1606h	78 y F				A/C	Ingst	Unt-T	2		
		diltiazem (extended release)	1	1						
1607h	78 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		escitalopram	2	2						
		pravastatin	3	3						
1608ha	78 y M				A	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	130 ng/mL In Blood (unspecified) @ Unknown
		beta blocker	2	2					metoprolol	500 ng/mL In Blood (unspecified) @ Unknown
1609i	79 y F				U	Unk	Int-S	1		
		diltiazem	1	1						
		morphine	2	2						
		acetaminophen	3	3						
1610h	80 y M				C	Ingst	AR-D	2		
		digoxin	1	1					digoxin	4.1 ng/mL In Blood (unspecified) @ 1 h (pe)
1611h	80 y F				A/C	Ingst	Int-S	2		
		metoprolol (extended release)	1	1						
		escitalopram	2	2						
		losartan	3	3						
		diazepam	4	4						
		alprazolam	5	5						
1612ha	82 y M				U	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	140 ng/mL In Blood (unspecified) @ Unknown
		atenolol	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		losartan	3	3						
1613ha	82 y F				A/C	Ingst	Unt-U	1		
		digoxin	1	1						
1614ha	82 y F				A/C	Ingst	Unt-G	2		
		amlodipine	1	1						
		methocarbamol	2	2						
		pseudoephedrine	3	3					pseudoephedrine	4.9 mg/L In Blood (unspecified) @ Autopsy
1615h	83 y F				C	Ingst	Int-S	2		
		diltiazem (extended release)	1	1						
1616	83 y F				A	Ingst	Int-S	1		
		amlodipine	1	1						
		hydralazine	2	2						
1617h	83 y F				A/C	Ingst	Unt-T	3		
		verapamil	1	1						
1618h	85 y F				A/C	Ingst	AR-D	3		
		digoxin	1	1					digoxin	1.9 ng/mL In Serum @ Unknown
		metoprolol	2	2						
1619h	86 y F				C	Ingst	AR-D	3		
		digoxin	1	1					digoxin	3.3 ng/mL In Blood (unspecified) @ Unknown
1620	86 y F				A	Ingst	Int-S	1		
		amlodipine	1	1						
		carvedilol	2	2						
		lisinopril	3	3						
		fluoxetine	4	4						
		olanzapine	5	5						
		levothyroxine	6	6						
		pravastatin	7	7						
1621	87 y M				C	Ingst	AR-D	3		
		metoprolol	1	1						
1622h	87 y F				A	Ingst	Int-S	2		
		diltiazem	1	1						
1623ph	87 y F				A	Ingst	Int-S	2		
		metoprolol (extended release)	1	1						
		lisinopril	2	2						
		alprazolam	3	3						
		sertraline	4	4						
1624h	89 y F				A	Ingst	Unt-T	3		
		amlodipine	1	1						
1625ai	89 y F				U	Unk	Int-S	1		
		flecainide	1	1						
1626ha	90 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	890 ng/mL In Blood (unspecified) @ Autopsy
1627h	91 y F				A/C	Ingst	Unk	3		
		diltiazem	1	1						
		metoprolol	2	2						
		warfarin	3	3						
1628h	93 y F				A/C	Ingst	Unt-U	2		
		digoxin	1	1					digoxin	4.9 ng/mL In Blood (unspecified) @ 1 h (pe)
1629h	96 y F				C	Ingst	Unk	2		
		digoxin	1	1					digoxin	2.9 ng/mL In Blood (unspecified) @ Unknown
1630p	96 y F				A/C	Ingst	Int-S	2		
		sotalol	1	1						
See Also case 133, 332, 337, 348, 367, 863, 884, 983, 1019, 1064, 1076, 1097, 1103, 1116, 1138, 1172, 1174, 1196, 1199, 1208, 1212, 1224, 1238, 1241, 1246, 1261, 1263, 1275, 1281, 1283, 1284, 1285, 1292, 1294, 1398, 1645, 1670, 1671, 1672, 1673, 1676, 1682, 1686, 1688, 1696, 1697, 1699, 1708, 1720, 1755, 1756, 1769, 1779, 1807, 1810, 1811, 1814, 1961, 2064, 2100, 2298, 2352, 2524, 2532										
Cold and Cough Preparations										
[1631ha]	7 y F				A/C	Ingst	Unk	3		
		acetaminpphen/ dextromethorphan/ guaifenesin/ pseudoephedrine	1	1					acetaminophen (apap)	167 mcg/mL In Blood (unspecified) @ Unknown
		salicylate	2	2					salicylate	11.7 mg/dL In Blood (unspecified) @ Unknown
1632ph	22 y F				A	Ingst + Unk	Int-A	2		
		acetaminophen/ antihistamine/ dextromethorphan	1	1						
		heroin	2	2						
		cocaine	3	3						
		marijuana	4	4						
		drug, unknown	5	5						
1633ha	33 y F				A	Ingst	Int-U	3		
		dextromethorphan/ guaifenesin	1	1					dextromethorphan	0.21 mg/L In Blood (unspecified) @ 13 h (pe)
1634	34 y M				A	Ingst	Int-S	3		
		acetaminpphen/ dextromethorphan/ doxylamine	1	1						
		tramadol	2	2						
1635ph	35 y M				A/C	Ingst + Aspir	Int-M	2		
		dextromethorphan	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		cyclobenzaprine	2	2						
1636	45 y M				A/C	Ingst	Int-M	1		
		acetaminpphen/ dextromethorphan/ doxylamine/ pseudoephedrine	1	1						
		acetaminpphen/ dextromethorphan/ guaifenesin/ pseudoephedrine	2	2						
		acetaminophen/pheniramine/ phenylephrine	3	3					acetaminophen (apap)	12 mcg/mL In Serum @ Unknown
		ethanol	4	4					ethanol	23 mg/dL In Serum @ Unknown
1637h	47 y F				C	Ingst	Int-A	2		
		acetaminophen/ antihistamine/ dextromethorphan	1	1						
1638pha	53 y M				A	Ingst	Int-U	1		
		dextromethorphan/ guaifenesen	1	1						
1639	59 y M				C	Ingst	Int-M	3		
		cough and cold preparation	1	1						
		diphenhydramine	2	2						
		acetaminophen	3	3					acetaminophen (apap)	0 mcg/mL In Serum @ Unknown
1640	83 y M				A	Ingst	Int-U	3		
		brompheniramine/ dextromethorphan/ pseudoephedrine	1	1						
		dextromethorphan/ guaifenesen	2	2						
1641p	84 y F				A	Ingst	Int-S	2		
		meclizine	1	1						
		tramadol	2	2						
		escitalopram	3	3						
		cyclobenzaprine	4	4						
		acetaminophen	5	5					acetaminophen (apap)	19 mcg/mL In Blood (unspecified) @ Unknown
See Also case 72, 343, 396, 466, 516, 705, 718, 746, 747, 844, 875, 901, 938, 1023, 1055, 1080, 1096, 1110, 1129, 1185, 1362, 1481, 1546, 1572, 1614, 1663, 1669, 1714, 1757, 2016, 2229, 2231, 2398, 2464										
Dietary Supplements/Herbals/Homeopathic										
[1642ha]	22 y M				A	Ingst	Int-A	3		
		ayahuasca	1	1						
1643h	30 y M				C	Ingst	Unk	2		
		dietary supplement	1	1						
[1644ha]	40 y M				A	Ingst	Int-U	1		
		ephedra	1	1						
		yohimbine	2	2						
		caffeine	3	3					caffeine	120 mcg/mL In Blood (unspecified) @ Autopsy
See Also case 166, 991, 1042, 1174, 1198, 1571										
Electrolytes and Minerals										
1645ph	16 y F				A	Ingst	Int-S	1		
		iron	1	1					iron	2000 mcg/dL In Blood (unspecified) @ Unknown
		iron	1	1					iron	698 mcg/dL In Blood (unspecified) @ Unknown
		metoprolol	2	2						
		rivaroxaban	3	3						
		amiodarone	4	4						
		ibuprofen	5	5						
		lovastatin	6	6						
[1646h]	16 y F				A	Ingst	Int-S	1		
		ferrous sulfate	1	1					iron	110 mcg/dL In Blood (unspecified) @ 8 h (pe)
		ferrous sulfate	1	1					iron	112 mcg/dL In Blood (unspecified) @ 2 d (pe)
		ferrous sulfate	1	1					iron	347 mcg/dL In Blood (unspecified) @ 12 h (pe)
		ferrous sulfate	1	1					iron	3953 mcg/dL In Blood (unspecified) @ 8 h (pe)
		ferrous sulfate	1	1					iron	4206 mcg/dL In Blood (unspecified) @ 1 h (pe)
		ferrous sulfate	1	1					iron	4300 mcg/dL In Blood (unspecified) @ 3 h (pe)
		salicylate	2	2					salicylate	10.1 mg/dL In Blood (unspecified) @ 1 h (pe)
		salicylate	2	2					salicylate	4.2 mg/dL In Blood (unspecified) @ 8 h (pe)
[1647ha]	21 y F				A	Ingst	Int-S	1		
		fluoride	1	1						
1648ai	45 y M				U	Unk	Int-S	1		
		potassium chloride	1	1						
		quetiapine	2	2						
		clonazepam	3	3						
1649a	59 y F				A	Ingst	Int-S	3		
		sodium bicarbonate	1	1						
		shampoo	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1650	70 y F				A	Ingst	AR-D	3		
		potassium salts	1	1						
See Also case 332, 1103, 1580, 1811										
Gastrointestinal Preparations										
1651ph	16 y M				A	Ingst + Unk	Int-S	1		
		loperamide	1	1					loperamide	260 ng/mL In Blood (unspecified) @ 15 m (pe)
		loperamide	1	1					desmethylloperamide	410 ng/mL In Blood (unspecified) @ 15 m (pe)
		duloxetine	2	2					duloxetine	25.7 ng/mL In Blood (unspecified) @ 15 m (pe)
		lithium	3	3					lithium	0.31 mEq/L In Blood (unspecified) @ 15 m (pe)
		alprazolam	4	4					alprazolam	26.5 ng/mL In Blood (unspecified) @ 15 m (pe)
1652hi	21 y M				U	Unk	Int-A	1		
		loperamide	1	1						
		Mitragyna speciosa korthals	2	2						
1653i	22 y M				U	Unk	Int-A	1		
		loperamide	1	1						
		Mitragyna speciosa korthals	2	2						
1654pha	25 y M				A	Ingst	Int-A	1		
		loperamide	1	1					desmethylloperamide	240 ng/mL In Blood (unspecified) @ Autopsy
		loperamide	1	1					loperamide	97 ng/mL In Blood (unspecified) @ Autopsy
1655ai	25 y M				U	Unk	Int-A	1		
		loperamide	1	1						
		benzodiazepine	2	2						
[1656ph]	27 y M				C	Ingst	Int-A	1		
		loperamide	1	1					desmethylloperamide	340 ng/mL In Serum @ Unknown
		loperamide	1	1					loperamide	83 ng/mL In Serum @ Unknown
1657ph	27 y M				A	Ingst	Int-A	2		
		loperamide	1	1						
		drug, unknown	2	2						
1658ph	28 y M				A	Ingst	Int-A	2		
		loperamide	1	1						
1659pha	29 y M				C	Ingst	Int-A	2		
		loperamide	1	1						
		drug, unknown	2	2						
1660pha	29 y M				C	Ingst	Int-A	2		
		loperamide	1	1						
1661p	31 y M				U	Ingst	Int-S	1		
		loperamide	1	1						
1662pha	33 y M				U	Ingst	Int-U	1		
		loperamide	1	1					desmethylloperamide	2100 ng/mL In Blood (unspecified) @ Autopsy
		loperamide	1	1					loperamide	420 ng/mL In Blood (unspecified) @ Autopsy
		diphenhydramine	2	2					diphenhydramine	1800 ng/mL In Blood (unspecified) @ Autopsy
		lithium	3	3					lithium	0.34 mEq/L In Blood (unspecified) @ Autopsy
1663ph	36 y F				C	Ingst	Int-M	1		
		loperamide	1	1					loperamide	170 ng/mL In Blood (unspecified) @ Unknown
		loperamide	1	1					desmethylloperamide	830 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/ antihistamine/ dextromethorphan	2	2					dextromethorphan	49 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	3	3					alprazolam	43 ng/mL In Blood (unspecified) @ Unknown
1664ai	36 y M				U	Unk	Int-A	1		
		loperamide	1	1						
		amphetamine	2	2						
		diazepam	3	3						
1665pa	39 y F				A	Ingst	Int-A	2		
		loperamide	1	1						
1666ai	57 y F				U	Unk	Int-A	1		
		loperamide	1	1						
		diphenhydramine	2	2						
		venlafaxine	3	3						
See Also case 603, 822, 1052, 1224, 1249, 1255, 1261, 1271, 1385, 1405, 1442, 1495, 1572, 1580, 1631, 1700, 1744, 1756, 1936, 2524										
Hormones and Hormone Antagonists										
1667h	23 y F				A/C	Ingst + Aspir + Par	Int-S	2		
		insulin (aspart)	1	1						
		liraglutide	2	2						
		metformin	3	3						
		bupropion (extended release)	4	4						
		fluoxetine	5	5						
		alprazolam	6	6						
		cyclobenzaprine	7	7						
1668	25 y F				A/C	Derm	Int-S	1		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		insulin	1	1						
1669h	26 y M				U	Ingst + Par	Unt-T	1		
		insulin (isophane/regular)	1	1						
		acetaminophen/ dextromethorphan/ doxylamine	2	2						
1670	32 y F				A/C	Ingst	Int-S	3		
		metformin	1	1					metformin	210 mcg/mL In Blood (unspecified) @ Autopsy
		lisinopril	2	2						
1671	35 y M				A/C	Ingst	Int-S	1		
		levothyroxine	1	1						
		valproic acid	2	2						
		amphetamine	3	3						
		clonidine	4	4						
		propranolol	5	5						
		topiramate	6	6						
		metformin	7	7						
1672h	35 y F				A	Ingst + Par	Int-S	1		
		insulin	1	1						
		lorazepam	2	2						
		metoprolol	3	3						
1673h	40 y F				A	Ingst	Int-S	1		
		metformin	1	1					metformin	110 mg/L In Blood (unspecified) @ 10 h (pe)
		glipizide	2	2						
		lisinopril	3	3						
		acetaminophen	4	4					acetaminophen (apap)	28 mcg/mL In Blood (unspecified) @ Unknown
1674h	43 y M				A/C	Par	Int-S	2		
		insulin (glargine)	1	1						
		insulin (aspart)	2	2						
1675a	43 y F				A/C	Ingst	Int-S	1		
		metformin	1	1					metformin	210 mcg/mL In Blood (unspecified) @ Unknown
		ibuprofen	2	2						
		ethanol	3	3					ethanol	66 mg/dL In Blood (unspecified) @ Unknown
1676	45 y M				A	Ingst	Int-S	3		
		metformin	1	1						
		lisinopril	2	2						
		acetaminophen/ diphenhydramine	3	3						
		tramadol	4	4						
		cyclobenzaprine	5	5						
1677h	46 y M				A/C	Ingst	Int-S	2		
		metformin	1	1						
1678ha	47 y F				A	Par	Int-S	1		
		insulin	1	1						
1679	47 y M				A	Ingst	Int-S	1		
		metformin	1	1						
		valproic acid	2	2						
		drug, unknown	3	3						
1680h	48 y M				A	Ingst	Int-U	2		
		oral hypoglycemic (sulfonylurea)	1	1						
1681h	48 y M				A/C	Ingst + Unk	Int-S	1		
		metformin	1	1						
		marijuana	2	2						
1682ha	49 y M				A/C	Ingst	Int-S	1		
		metformin	1	1						
		carvedilol	2	2						
		lisinopril	3	3						
		gabapentin	4	4						
		mirtazapine	5	5						
1683ha	49 y F				A	Ingst	Int-S	1		
		metformin	1	1					metformin	270 mcg/mL In Blood (unspecified) @ Autopsy
1684	50 y M				A/C	Ingst	Int-S	1		
		metformin	1	1						
		sitagliptin	2	2						
		ethanol	3	3					ethanol	250 mg/dL In Serum @ 30 m (pe)
1685	50 y F				A	Ingst	Int-S	2		
		metformin	1	1						
1686a	52 y F				A	Ingst	Int-S	1		
		glyburide	1	1						
		amlodipine	2	2					amlodipine	2000 ng/mL In Whole Blood @ Autopsy
		benzodiazepine	3	3					7-aminoclonazepam	130 ng/mL In Blood (unspecified) @ Autopsy
		benzodiazepine	3	3					clonazepam	3.6 ng/mL In Blood (unspecified) @ Autopsy
		bupropion	4	4					bupropion	71 ng/mL In Blood (unspecified) @ Autopsy
		lamotrigine	5	5					lamotrigine	6.2 mcg/mL In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		antipsychotic (atypical)	6	6					ziprasidone	18 ng/mL In Blood (unspecified) @ Autopsy
		oral hypoglycemic (sulfonylurea)	7	7						
1687	54 y M				A	Ingst	Int-S	2		
		metformin	1	1						
		drug, unknown	2	2						
1688ha	57 y F				A/C	Ingst	Int-S	1		
		metformin	1	1					metformin	17 mg/mL In Whole Blood @ Unknown
		diphenhydramine	2	2					diphenhydramine	320 ng/mL In Whole Blood @ Unknown
		metoprolol	3	2						
		venlafaxine	4	3					o-desmethyl-venlafaxine	49 ng/mL In Whole Blood @ Unknown
1689	57 y M				A/C	Ingst	Unk	2		
		mirtazapine	1	1					metformin	5.7 ng/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
1690	57 y M				A/C	Ingst	AR-D	3		
		metformin	1	1						
1691h	58 y F				A/C	Ingst + Par	Int-S	2		
		insulin (detemir)	1	1						
		tramadol	2	2						
1692ha	58 y M				A/C	Ingst	Int-S	2		
		metformin	1	1						
1693ph	58 y F				A	Ingst + Unk	Int-S	3		
		sitagliptin	1	1						
		ethanol	2	2						
		ketamine	3	3						
1694	59 y M				A	Ingst	Int-S	2		
		metformin	1	1						
		gabapentin	2	2						
		linagliptin	3	3						
1695pa	63 y M				A/C	Ingst + Par	Int-S	3		
		insulin	1	1						
		mirtazapine	2	2						
		zolpidem	3	3						
1696ha	65 y M				A	Ingst	Int-S	3		
		metformin	1	1						
		amlodipine	2	2						
1697	65 y M				A	Ingst	Int-S	2		
		metformin	1	1						
		lisinopril	2	2						
		carvedilol	3	3						
1698h	68 y F				A	Ingst	Unk	3		
		metformin	1	1						
		substance (non-drug), unknown	2	1						
1699hi	71 y M				A/C	Ingst + Par	Int-S	1		
		insulin (aspart)	1	1						
		amlodipine	2	2						
1700ha	71 y M				A/C	Ingst	Int-S	1		
		metformin	1	1						
		ciprofloxaxin	2	2						
		omeprazole	3	3						
		diphenhydramine	4	4						
		pantoprazole	5	5						
1701h	71 y M				C	Ingst	AR-D	3		
		metformin	1	1						
1702h	74 y M				A/C	Ingst	AR-D	3		
		metformin	1	1						
1703	76 y F				C	Ingst	AR-D	2		
		metformin	1	1						
1704	78 y M				A/C	Ingst	Int-S	3		
		metformin	1	1						
1705h	81 y F				C	Ingst	AR-D	3		
		metformin	1	1						
1706	86 y F				C	Ingst	Oth-M	3		
		metformin	1	1						
1707	86 y F				A	Ingst	AR-D	3		
		metformin/pioglitazone	1	1						
1708	91 y F				A/C	Ingst	Unt-U	1		
		metformin	1	1						
		furosemide	2	2						
		thyroid preparation	3	3						
		lisinopril	4	4						
		simvastatin	5	5						
See Also case 42, 58, 111, 189, 914, 947, 983, 995, 1064, 1103, 1105, 1138, 1140, 1261, 1263, 1275, 1278, 1283, 1285, 1332, 1334, 1405, 1410, 1423, 1429, 1440, 1460, 1468, 1473, 1475, 1498, 1517, 1531, 1545, 1550, 1552, 1559, 1580, 1620, 1779, 1797, 1801, 1810, 1822, 2524, 2545										
Miscellaneous Drugs										
[1709h]	4 y M				A/C	Par + Oth	AR-D	1		
		lipid emulsion	2	1						
		ropivacaine	1	1					ropivacaine	1.4 mcg/mL In Serum @ Autopsy
1710p	15 y M				A/C	Ingst	Int-S	2		
		atomoxetine	1	1						
		fluoxetine	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1711h	51 y F				A	Par	Unt-T	1		
		sodium polystyrene sulfonate	1	1						
1712h	57 y F				A	Par	AR-D	3		
		hemoglobin glutamer	1	1						
See Also case 1077, 1217, 1261, 1283, 1293, 1314, 1407, 1446, 1514, 1533, 1535, 1540, 1547, 1814										
Muscle Relaxants										
1713	2 y M				A/C	Ingst	Unt-T	3		
		baclofen	1	1						
1714ai	25 y F				U	Unk	Unk	3		
		cyclobenzaprine	1	1						
		dextromethorphan	2	2						
		diphenhydramine	3	3						
1715p	37 y M				A	Ingst	Int-A	2		
		cyclobenzaprine	1	1						
1716	39 y M				A	Ingst	Int-S	2		
		baclofen	1	1						
		ibuprofen	2	2						
1717i	39 y F				U	Ingst + Unk	Unk	1		
		cyclobenzaprine	1	1						
		paroxetine	2	2						
		ethanol	3	3						
1718ai	39 y F				U	Unk	Int-A	1		
		cyclobenzaprine	1	1						
		gabapentin	2	2						
1719h	49 y M				A/C	Ingst	Int-S	2		
		cyclobenzaprine	1	1						
		doxepin	2	2						
1720ha	51 y F				A	Ingst	Int-S	2		
		baclofen	1	1						
		amitriptyline	2	2						
		benzodiazepine	3	3						
		cocaine	4	4						
1721h	57 y M				A/C	Ingst	Unt-U	2		
		metaxalone	1	1						
		ethanol	2	2						
		gabapentin	3	3						
		ritonavir	4	4						
		darunivir	5	5						
		emtricitabine/tenofovir	6	6						
1722ha	58 y M				A/C	Ingst	Int-S	2		
		methocarbamol	1	1						
		quetiapine	2	2						
1723pha	58 y F				U	Ingst	Int-S	2		
		tizanidine	1	1						
		ethanol	2	2					ethanol	232 mg/dL In Serum @ Unknown
1724	58 y F				A	Ingst	Int-S	3		
		tizanidine	1	1						
		ethanol	2	2						
1725i	59 y F				U	Unk	Int-S	1		
		baclofen	1	1						
		quetiapine	2	2						
1726hi	62 y F				A	Ingst	Int-S	2		
		baclofen	1	1						
		ethanol	2	2						
1727ha	62 y F				A/C	Ingst	Int-U	2		
		cyclobenzaprine	1	1					cyclobenzaprine	1.3 mg/L In Blood (unspecified) @ Autopsy
		cyclobenzaprine	1	1					cyclobenzaprine	20 mg/kg In Liver @ Autopsy
		hydrocodone	2	2					hydrocodone	0.054 mg/L In Blood (unspecified) @ Unknown
		gabapentin	3	3					gabapentin	5.6 mg/L In Blood (unspecified) @ Unknown
		alprazolam	4	4					alprazolam	0.11 mg/L In Blood (unspecified) @ Unknown
		duloxetine (extended release)	5	4						
1728ph	64 y F				C	Ingst	Unk	2		
		tizanidine	1	1						
		duloxetine	2	2						
		gabapentin	3	3						
		quetiapine	4	4						
		morphine	5	5						
		acetaminophen/hydrocodone	6	6						
1729	64 y F				A/C	Ingst	Int-S	2		
		baclofen	1	1						
		gabapentin	2	2						
1730p	69 y M				A	Ingst	Int-S	2		
		carisoprodol	1	1						
1731	72 y F				A	Unk	Int-S	2		
		baclofen	1	1						
		drug, unknown	2	2						
1732ha	77 y F				A/C	Ingst	Int-S	3		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		baclofen	1	1						
		acetaminophen/oxycodone	2	2					oxycodone	40.6 ng/mL In Blood (unspecified) @ 1 h (pe)
		acetaminophen/oxycodone	2	2					acetaminophen (apap)	81 mcg/mL In Plasma @ 1 h (pe)
1733h	91 y M				A	Ingst	AR-D	3		
		baclofen	1	1						
See Also case 57, 85, 332, 334, 549, 567, 578, 602, 610, 654, 664, 693, 771, 775, 802, 806, 833, 850, 866, 874, 924, 936, 937, 959, 992, 1002, 1009, 1040, 1064, 1113, 1182, 1199, 1251, 1253, 1259, 1267, 1274, 1280, 1298, 1320, 1357, 1385, 1392, 1460, 1465, 1478, 1486, 1500, 1506, 1507, 1508, 1550, 1562, 1585, 1591, 1614, 1635, 1641, 1667, 1676, 1753, 1893, 1959, 2131, 2242, 2281, 2464										
Sedative/Hypnotics/Antipsychotics										
1734	17 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
1735ph	17 y M				A	Ingst	Int-S	2		
		benzodiazepine	1	1						
1736pha	20 y M				A/C	Ingst	Int-A	2		
		alprazolam	1	1						
1737pha	21 y M				U	Ingst	Int-S	1		
		olanzapine	1	1						
		fluoxetine	2	2						
1738h	21 y F				U	Ingst	Int-S	3		
		barbiturate (long acting)	1	1						
		benzodiazepine	2	2						
		clonazepam	3	3						
1739h	22 y M				A/C	Ingst	Int-U	3		
		alprazolam	1	1						
		tramadol	2	2						
1740ai	22 y M				U	Unk	Int-A	1		
		clonazepam	1	1						
1741ai	24 y M				U	Unk	Int-S	1		
		quetiapine	1	1						
		trazodone	2	2						
		diphenhydramine	3	3						
1742pa	25 y M				U	Ingst	Int-A	2		
		alprazolam	1	1					alprazolam	64.2 ng/mL In Blood (unspecified) @ Unknown
		amphetamine	2	2					amphetamine	136 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	3	3					fentanyl	3.2 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	4	4					methamphetamine	473 ng/mL In Blood (unspecified) @ Unknown
1743pa	25 y M				A	Ingst	Int-U	1		
		alprazolam	1	1					alprazolam	74 ng/mL In Blood (unspecified) @ Unknown
		narcotic, other/unknown	2	2					fentanyl	5.1 ng/mL In Blood (unspecified) @ Unknown
1744ph	27 y F				A	Ingst	Int-S	2		
		zolpidem	1	1						
1745	28 y M				A/C	Ingst	Int-S	2		
		alprazolam	1	1						
		oxycodone	2	2						
		gabapentin	3	3						
1746ai	29 y M				U	Unk	Int-A	1		
		benzodiazepine	1	1						
		ethanol	2	2						
1747ai	29 y M				U	Unk	Int-A	1		
		benzodiazepine	1	1						
		ethanol (non-beverage)	2	2						
1748p	30 y M				A	Ingst	Int-S	2		
		quetiapine	1	1						
1749ph	30 y M				U	Ingst	Int-S	2		
		benzodiazepine	1	1						
		ethanol	2	2						
1750ph	30 y M				A	Ingst	Int-S	2		
		alprazolam	1	1						
1751p	33 y M				C	Ingst	AR-D	2		
		risperidone	1	1					9-hydroxyrisperidone	21 ng/mL In Blood (unspecified) @ Autopsy
		risperidone	1	1					risperidone	39 ng/mL In Blood (unspecified) @ Autopsy
		paroxetine	2	2					paroxetine	260 ng/mL In Blood (unspecified) @ Autopsy
		clozapine	3	3					norclozapine	400 ng/mL In Blood (unspecified) @ Autopsy
		clozapine	3	3					clozapine	840 ng/mL In Blood (unspecified) @ Autopsy
		valproic acid	4	4						
		quetiapine	5	5						
1752ai	33 y M				U	Unk	Unk	1		
		alprazolam	1	1						
		oxycodone	2	2						
		trazodone	3	3						
1753ai	34 y M				U	Unk	Unk	1		
		quetiapine	1	1						
		cyclobenzaprine	2	2						
		citalopram	3	3						
		sertraline	4	4						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		diphenhydramine	5	5						
		zolpidem	6	6						
1754ai	35 y M				U	Ingst + Unk	Int-M	1		
		chlordiazepoxide	1	1						
		codeine	2	2						
		diazepam	3	3						
		ethanol	4	4						
1755	35 y F				A	Ingst	Int-S	2		
		alprazolam	1	1						
		lamotrigine	2	2						
		propranolol	3	3						
		ethanol	4	4						
		drug, unknown	5	5						
1756ha	35 y F				A	Par	Int-A	1		
		zolpidem	1	1					zolpidem	272 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	2	2					hydrocodone	113 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	2	2					acetaminophen (apap)	13.5 ng/mL In Blood (unspecified) @ Unknown
		mirtazapine	3	3					mirtazapine	149 ng/mL In Blood (unspecified) @ Unknown
		mirtazapine	3	3					mirtazapine	249 ng/mL In Blood (unspecified) @ Unknown
		amlodipine	4	4					amlodipine	19.1 ng/mL In Blood (unspecified) @ Unknown
		metoclopramide	5	5						
1757i	36 y M				U	Ingst + Unk	Unk	1		
		quetiapine	1	1						
		fluoxetine	2	2						
		dextromethorphan	3	3						
		ethanol	4	4						
[1758pha]	36 y F				A	Par	Int-S	1		
		pentobarbital	1	1					pentobarbital	10 mcg/mL In Serum @ 7.5 h (pe)
1759ph	36 y F				A	Ingst	Int-A	2		
		alprazolam	1	1						
		fentanyl	2	2						
		cyclic antidepressant, unknown	3	3						
1760ph	39 y M				U	Ingst	Int-S	2		
		quetiapine	1	1						
		ethanol	2	2						
1761ai	41 y F				U	Ingst + Unk	Unk	1		
		olanzapine	1	1						
		citalopram	2	2						
		ethanol	3	3						
1762h	42 y F				A/C	Ingst + Unk	Int-S	2		
		clonazepam	1	1						
		narcotic, other/unknown	2	2						
1763p	43 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
		lithium	2	2					lithium	0.5 mmol/L In Blood (unspecified) @ Unknown
		lorazepam	3	3						
		alcohol, unknown	4	4					ethanol	130 mg/dL In Blood (unspecified) @ Unknown
1764ai	45 y M				U	Unk	Int-S	1		
		alprazolam	1	1						
		ibuprofen	2	2						
1765	46 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		pregabalin	2	2						
		alprazolam	3	3						
1766ai	46 y F				U	Unk	Unk	1		
		alprazolam	1	1						
		amitriptyline	2	2						
		tramadol	3	3						
1767ai	46 y M				U	Unk	Unk	2		
		quetiapine	1	1						
		gabapentin	2	2						
		lamotrigine	3	3						
1768a	47 y F				A	Ingst	Int-U	2		
		olanzapine	1	1					olanzapine	430 ng/mL In Blood (unspecified) @ Autopsy
		gabapentin	2	2						
		alprazolam	3	3						
1769i	48 y F				U	Ingst + Unk	Unk	1		
		chlordiazepoxide	1	1						
		clonidine	2	2						
		ethanol	3	3						
1770ai	48 y F				U	Unk	Unk	2		
		quetiapine	1	1						
1771ai	49 y M				U	Unk	Unk	2		
		alprazolam	1	1						
		ethanol	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1772p	49 y M				A	Ingst	Int-S	2		
		quetiapine	1	1						
		gabapentin	2	2						
1773pha	50 y F				A	Ingst	Int-S	2		
		alprazolam	1	1					alprazolam	70 mcg/L In Blood (unspecified) @ Unknown
		morphine (extended release)	2	2						
		oxycodone	3	3						
		diazepam	4	4						
1774h	50 y F				A/C	Ingst	Int-S	3		
		ziprasidone	1	1						
1775ph	50 y F				C	Ingst	Int-S	2		
		zolpidem	1	1						
		benzodiazepine	2	2						
		trazodone	3	3						
1776ai	50 y F				U	Unk	Int-S	1		
		alprazolam	1	1						
		trazodone	2	2						
1777ai	50 y M				U	Unk	Unk	2		
		quetiapine	1	1						
		amitriptyline	2	2						
1778ai	51 y M				U	Unk	Int-A	2		
		olanzapine	1	1						
		temazepam	2	2						
		ethanol	3	3						
1779pha	52 y F				A/C	Ingst	Int-S	1		
		alprazolam	1	1					alpha-oh-alprazolam	15 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	1	1					alprazolam	300 ng/mL In Blood (unspecified) @ Unknown
		bupropion	2	2					bupropion	1600 ng/mL In Blood (unspecified) @ Unknown
		bupropion	2	2					hydroxybupropion	3800 ng/mL In Blood (unspecified) @ Unknown
		escitalopram	3	3					escitalopram	1200 ng/mL In Blood (unspecified) @ Unknown
		simvastatin	4	4						
		glipizide	5	5					glipizide	5300 ng/mL In Blood (unspecified) @ Unknown
		sitagliptin	6	6						
		marijuana	7	7					delta-9-thc	0.6 ng/mL In Blood (unspecified) @ Unknown
		marijuana	7	7					delta-9-carboxy-thc	7.4 ng/mL In Whole Blood @ Unknown
1780	52 y M				C	Ingst	Unt-T	2		
		clozapine	1	1					norclozapine	4500 ng/mL In Blood (unspecified) @ Autopsy
		clozapine	1	1					clozapine	8000 ng/mL In Blood (unspecified) @ Autopsy
		fluvoxamine	2	2					fluvoxamine	5000 ng/mL In Blood (unspecified) @ Autopsy
		clomipramine	3	3					clomipramine	1600 ng/mL In Blood (unspecified) @ Autopsy
		clomipramine	3	3					desmethylclomipramine	700 ng/mL In Blood (unspecified) @ Autopsy
		aripiprazole	4	4					aripiprazole	430 ng/mL In Blood (unspecified) @ Autopsy
1781h	52 y M				A/C	Ingst	Int-U	3		
		alprazolam	1	1						
1782pha	53 y M				U	Ingst	Int-A	1		
		alprazolam	1	1					alprazolam	0.17 mg/L In Blood (unspecified) @ Autopsy
		ethanol (non-beverage)	2	2					ethanol	200 mg/dL In Blood (unspecified) @ Autopsy
1783i	54 y F				U	Unk	Int-S	1		
		quetiapine	1	1						
		duloxetine	2	2						
1784ph	54 y F				A	Ingst	Int-S	1		
		alprazolam	1	1						
		heroin	2	2						
1785ha	55 y M				A	Ingst	Int-S	3		
		quetiapine	1	1						
1786ha	55 y F				A/C	Ingst + Inhal	Int-S	1		
		alprazolam	1	1					alprazolam	0.4 mg/L In Blood (unspecified) @ 15 h (pe)
		gabapentin	2	2					gabapentin	8.3 mg/L In Blood (unspecified) @ 15 h (pe)
		amphetamine	3	3						
		drug, unknown	4	4						
1787ai	55 y F				U	Unk	Int-S	1		
		pentobarbital	1	1						
1788ai	56 y F				U	Unk	Int-A	3		
		diazepam	1	1						
		ethanol	2	2						
1789ai	57 y F				U	Unk	Unt-M	1		
		benzodiazepine	1	1						
1790h	58 y M				A	Ingst	Int-S	2		
		antipsychotic (atypical)	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		gabapentin	2	2						
1791ai	58 y M				U	Unk	Int-A	3		
		alprazolam	1	1						
		buprenorphine	2	2						
		diazepam	3	3						
1792ai	59 y F				U	Unk	Unk	2		
		alprazolam	1	1						
		duloxetine	2	2						
1793ai	59 y M				U	Ingst + Unk	Int-A	1		
		quetiapine	1	1						
		diazepam	2	2						
		ethanol	3	3						
1794ai	60 y M				U	Ingst + Unk	Int-A	3		
		diazepam	1	1						
		oxazepam	2	2						
		ethanol	3	3						
1795p	60 y F				U	Ingst	Int-S	2		
		alprazolam	1	1						
1796ai	60 y M				U	Unk	Int-S	1		
		benzodiazepine	1	1						
		ethanol	2	2						
		methamphetamine	3	3						
1797ha	61 y M				A	Ingst + Unk	Unt-G	1		
		alprazolam	1	1					alprazolam	118 ng/mL In Serum @ Unknown
		oxycodone	2	2						
		metformin	3	3						
		oral hypoglycemic, dipeptidyl peptidase-4 (DPP-4) inhibitor	4	4						
1798ph	61 y F				U	Ingst	Int-S	1		
		alprazolam	1	1					alprazolam	0.06 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	1	1					alpha-oh-alprazolam	0.08 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	1	1					alpha-oh-alprazolam	0.239 mg/L In Serum @ 1 h (pe)
		alprazolam	1	1					alprazolam	0.314 mg/L In Serum @ 1 h (pe)
		quetiapine	2	2					quetiapine	110 ng/mL In Blood (unspecified) @ 1 h (pe)
		quetiapine	2	2					quetiapine	310 ng/mL In Whole Blood @ Autopsy
		lithium	3	3					lithium	1.3 mmol/L In Serum @ 1 h (pe)
		acetaminophen/hydrocodone	4	4						
		lamotrigine	5	5						
1799ph	61 y F				U	Ingst	Unk	3		
		quetiapine	1	1						
1800ai	61 y M				U	Unk	Int-S	1		
		alprazolam	1	1						
1801h	63 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		metformin	2	2						
1802	63 y M				A	Ingst	Int-S	3		
		benzodiazepine	1	1						
		acetaminophen/oxycodone	2	2					acetaminophen (apap)	0 mcg/mL In Serum @ Unknown
1803ai	63 y F				U	Unk	Int-S	1		
		antipsychotic (atypical)	1	1						
		oxycodone	2	2						
		hydroxyzine	3	3						
1804hi	65 y M				A	Ingst	AR-D	2		
		haloperidol	1	1						
1805	65 y M				A/C	Ingst	Int-S	2		
		benzodiazepine	1	1						
		cobicistat/darunivir	2	2						
		sulfamethoxazole/trimethoprim	3	3						
1806ai	66 y F				U	Unk	Unk	1		
		quetiapine	1	1						
		clonazepam	2	2						
1807h	67 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		labetalol	2	2						
		clonazepam	3	3						
		furosemide	4	4						
1808	68 y F				A	Ingst	Int-S	2		
		zolpidem	1	1						
		temazepam	2	2						
		lorazepam	3	3						
		acetaminophen	4	4					acetaminophen (apap)	20.9 mcg/mL In Serum @ Unknown
1809ha	68 y F				A	Ingst	Int-S	2		
		alprazolam	1	1						
		narcotic, other/unknown	2	2						
1810	70 y F				U	Ingst	Int-S	1		
		alprazolam	1	1						
		metoprolol	2	2						
		lisinopril	3	3						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		temazepam	4	4						
		thyroid preparation	5	5						
		amlodipine	6	6						
1811h	71 y F				A/C	Ingst + Unk	Int-S	2		
		zolpidem	1	1						
		potassium chloride	2	2						
		beta blocker	3	3						
		acetaminophen	4	4					acetaminophen (apap)	70 mcg/mL In Serum @ Unknown
		narcotic, other/unknown	5	5						
1812	74 y F				C	Ingst	Unt-G	3		
		benzodiazepine	1	1						
1813h	76 y M				A/C	Ingst	Int-S	2		
		alprazolam	1	1						
		ethanol	2	2						
1814pha	76 y F				A/C	Ingst	Int-S	2		
		olanzapine	1	1					olanzapine	9900 ng/mL In Blood (unspecified) @ Autopsy
		desipramine	2	2						
		lamotrigine	3	3					lamotrigine	20 mcg/mL In Blood (unspecified) @ Autopsy
		midodrine	4	4						
		sotalol	5	5						
		warfarin	6	6						
		atorvastatin	7	7						
1815	79 y M				A	Ingst	Int-S	2		
		clonazepam	1	1						
1816i	80 y F				U	Unk	Int-S	1		
		alprazolam	1	1						
		lorazepam	2	2						
1817h	81 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		acetaminophen	2	2						
1818h	81 y M				A/C	Ingst	Int-S	2		
		alprazolam	1	1						
		ethanol	2	2						
		acetaminophen	3	3					acetaminophen (apap)	85 mcg/mL In Blood (unspecified) @ Unknown
1819p	81 y F				U	Ingst	Int-S	2		
		phenobarbital	1	1						
1820h	85 y M				A	Ingst	Int-S	1		
		alprazolam	1	1						
		ethanol	2	2						
1821	85 y M				A/C	Par	Unt-T	3		
		olanzapine	1	1						
1822h	87 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		alprazolam	2	2						
		benztropine	3	3						
		vitamin D	4	4						
		levothyroxine	5	5						
		famotidine	6	6						
1823ha	87 y F				A	Ingst	Int-S	1		
		benzodiazepine	1	1						
1824	88 y F				A	Ingst	Unk	2		
		zolpidem	1	1						
1825ha	90 y M				A/C	Ingst	Int-S	2		
		zolpidem	1	1						
		mirtazapine	2	2						

See Also case 34, 38, 112, 119, 133, 140, 187, 188, 226, 228, 286, 308, 338, 346, 347, 349, 356, 363, 371, 376, 379, 383, 387, 388, 389, 390, 391, 394, 395, 398, 405, 407, 410, 420, 424, 425, 426, 432, 433, 440, 446, 449, 452, 458, 459, 463, 468, 472, 482, 483, 489, 496, 497, 502, 504, 505, 507, 526, 531, 536, 537, 544, 548, 554, 564, 566, 578, 579, 586, 588, 597, 598, 603, 609, 610, 612, 616, 621, 626, 638, 642, 645, 650, 651, 656, 659, 660, 667, 677, 678, 680, 690, 693, 694, 702, 707, 708, 714, 715, 719, 720, 722, 726, 727, 729, 735, 738, 739, 741, 743, 758, 760, 762, 764, 773, 775, 776, 778, 780, 788, 793, 797, 811, 815, 825, 826, 831, 834, 835, 836, 845, 846, 848, 851, 855, 864, 872, 881, 890, 895, 896, 908, 923, 928, 934, 937, 951, 952, 953, 958, 961, 969, 977, 983, 986, 987, 991, 992, 1003, 1009, 1010, 1015, 1021, 1031, 1034, 1039, 1040, 1046, 1048, 1055, 1062, 1064, 1071, 1081, 1082, 1090, 1091, 1092, 1097, 1100, 1104, 1106, 1113, 1116, 1120, 1133, 1140, 1143, 1148, 1162, 1173, 1176, 1177, 1179, 1181, 1183, 1184, 1186, 1188, 1190, 1192, 1193, 1196, 1198, 1199, 1209, 1212, 1217, 1228, 1229, 1235, 1238, 1249, 1253, 1255, 1260, 1261, 1264, 1265, 1267, 1268, 1270, 1271, 1273, 1275, 1278, 1280, 1283, 1285, 1290, 1291, 1294, 1295, 1296, 1299, 1301, 1305, 1306, 1309, 1310, 1312, 1316, 1317, 1318, 1319, 1325, 1327, 1328, 1331, 1334, 1339, 1368, 1376, 1378, 1380, 1400, 1401, 1403, 1411, 1417, 1424, 1427, 1428, 1431, 1432, 1437, 1439, 1441, 1442, 1444, 1448, 1452, 1459, 1468, 1469, 1473, 1478, 1485, 1488, 1495, 1502, 1507, 1508, 1510, 1514, 1531, 1532, 1539, 1544, 1546, 1549, 1553, 1559, 1563, 1567, 1569, 1570, 1571, 1580, 1591, 1593, 1605, 1611, 1620, 1623, 1648, 1651, 1655, 1663, 1664, 1667, 1672, 1686, 1695, 1720, 1722, 1725, 1727, 1728, 1829, 1832, 1843, 1845, 1846, 1847, 1848, 1860, 1863, 1874, 1894, 1899, 1902, 1909, 1911, 1917, 1945, 1961, 1966, 1971, 1974, 1982, 2004, 2011, 2033, 2034, 2035, 2036, 2039, 2041, 2052, 2061, 2068, 2083, 2100, 2104, 2105, 2136, 2177, 2182, 2206, 2209, 2210, 2225, 2238, 2239, 2245, 2274, 2279, 2281, 2286, 2298, 2300, 2309, 2314, 2326, 2329, 2339, 2375, 2383, 2397, 2403, 2407, 2433, 2453, 2468, 2524, 2528, 2529, 2540, 2570, 2572, 2579

Stimulants and Street Drugs

1826p	8 y M				A	Ingst	Unt-M	1		
		methamphetamine	1	1					methamphetamine	18000 ng/mL In Blood (unspecified) @ Autopsy
1827pha	16 y M				A	Inhal	Int-A	3		
		marijuana	1	1					thc (tetrahydrocannabinol)	3 ng/mL In Blood (unspecified) @ Autopsy
1828ai	17 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
1829ph	17 y M				U	Unk	Int-U	2		
		cocaine	1	1						
		methamphetamine	2	2						
		benzodiazepine	3	3						
1830pha	18 y F				A	Unk	Unk	2		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		methamphetamine	1	1					methamphetamine	0.33 mg/L In Blood (unspecified) @ Unknown
		cocaine	2	2					cocaine	0.03 mg/L In Blood (unspecified) @ Unknown
		cocaine	2	2					benzoylecognine	0.2 mg/L In Blood (unspecified) @ Unknown
1831	18 y M				A	Ingst	Int-A	2		
		methamphetamine	1	1						
1832ai	18 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		benzodiazepine	2	2						
		marijuana	3	3						
1833ai	18 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		ethanol	2	2						
1834ai	18 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
1835ha	18 y M				A	Ingst	Unk	1		
		methamphetamine	1	1					methamphetamine	2.76 mg/L In Blood (unspecified) @ Unknown
1836h	18 y F				A	Ingst + Inhal	Int-A	2		
		amphetamine (hallucinogenic) 3,4-methylenedioxy amphetamine	1	1						
		cocaine	2	2						
		marijuana	3	3						
1837ai	18 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		isopropanol	2	2						
1838ai	18 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1839ai	18 y M				U	Unk	Int-S	1		
		methamphetamine	1	1						
1840a	19 y M				A	Ingst + Unk	Int-A	1		
		cocaine	1	1					ethanol	114 mg/dL In Blood (unspecified) @ Unknown
		cocaine	1	1					benzoylecognine	440 ng/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
1841pai	19 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
1842pha	19 y M				A	Unk	Int-A	1		
		heroin	1	1					morphine (free)	260 mcg/L In Blood (unspecified) @ Autopsy
		fentanyl	2	2					fentanyl	0.013 mg/L In Blood (unspecified) @ Autopsy
		methadone	3	3					methadone	0.3 mg/L In Blood (unspecified) @ Autopsy
		methadone	3	3					methadone	0.5 mg/L In Blood (unspecified) @ Autopsy
1843ai	19 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		benzodiazepine	2	2						
[1844pha]	19 y F				A	Ingst	Int-A	1		
		methylenedioxy methamphetamine (MDMA)	1	1						
1845ph	20 y M				A	Ingst + Par	Int-M	2		
		methamphetamine	1	1						
		propofol	2	2						
1846ai	20 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
1847ai	20 y F				U	Unk	Int-A	1		
		heroin	1	1						
		alprazolam	2	2						
		codeine	3	3						
1848ai	20 y M				U	Unk	Int-A	1		
		heroin	1	1						
		codeine	2	2						
		alprazolam	3	3						
1849h	20 y M				U	Ingst	Int-A	3		
		methylenedioxy methamphetamine (MDMA)	1	1						
1850h	20 y M				U	Unk	Int-U	2		
		methamphetamine	1	1						
1851ph	20 y M				A	Unk	Int-A	2		
		amphetamine (hallucinogenic) flakka	1	1						
1852pha	20 y M				A	Ingst + Unk	Int-A	1		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		heroin	1	1						
		ethanol	2	2					ethanol	242 mg/dL In Blood (unspecified) @ 1 h (pe)
1853h	20 y F				A	Ingst	Int-A	2		
		amphetamine/ dextroamphetamine	1	1						
		cocaine	2	2						
1854ai	20 y M				U	Unk	Int-A	1		
		heroin	1	1						
		ketamine	2	2						
		gabapentin	3	3						
1855ai	20 y M				U	Unk	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
1856ai	20 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
1857pa	21 y M				A	Par	Int-U	1		
		heroin	1	1						
1858ai	21 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
[1859ha]	21 y M				A	Unk	Int-A	1		
		methamphetamine	1	1					amphetamine	0.02 mg/L In Blood (unspecified) @ 5 m (pe)
		methamphetamine	1	1					methamphetamine	7.5 mg/L In Blood (unspecified) @ 5 m (pe)
1860pha	21 y F				U	Unk	Int-U	1		
		cocaine	1	1					benzoylecognine	210 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	2	2					alprazolam	13 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	3	3					fentanyl	12 ng/mL In Blood (unspecified) @ Unknown
		buprenorphine/naloxone (sublingual film)	4	4						
		heroin	5	5						
1861ai	21 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
1862ai	21 y M				U	Unk	Int-A	1		
		heroin	1	1						
		diphenhydramine	2	2						
		ethanol	3	3						
1863ai	21 y M				U	Unk	Int-A	1		
		heroin	1	1						
		alprazolam	2	2						
		codeine	3	3						
1864ai	21 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		methylenedioxy methamphetamine (MDMA)	2	2						
		methadone	3	3						
1865pha	22 y M				A	Unk	Int-U	1		
		synthetic opiate	1	1					cyclopropylfentanyl	1.9 ng/mL In Blood (unspecified) @ Autopsy
1866ha	22 y M				A	Ingst + Inhal	Int-A	2		
		methamphetamine	1	1						
		amphetamine	2	2						
		marijuana	3	3						
1867ph	22 y F				A	Ingst	Int-A	2		
		amphetamine (hallucinogenic)	1	1						
1868ph	22 y F				A	Ingst	Unk	3		
		cocaine	1	1						
1869	22 y M				U	Unk	Int-A	2		
		drug, unknown stimulant or street drug	1	1						
1870	22 y M				A	Ingst	Int-M	1		
		methamphetamine	1	1						
1871ph	22 y M				A	Unk	Int-A	2		
		cocaine	1	1						
1872ai	22 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		methadone	3	3						
1873pha	23 y M				A	Par	Int-A	1		
		cocaine	1	1					cocaine	130 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	1	1					benzoylecognine	1500 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	2	2					fentanyl	56 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl analog, acetyl fentanyl	3	3					acetyl fentanyl	19 ng/mL In Blood (unspecified) @ Autopsy
		heroin	4	4						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1874h	23 y M				A	Inhal	Int-A	1		
		cocaine	1	1						
		alprazolam	2	2						
1875	23 y F				A	Unk	Unk	2		
		cocaine	1	1						
		heroin	2	2						
		drug, unknown	3	3						
1876ai	23 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
1877ai	23 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1878ai	23 y F				U	Unk	Int-A	2		
		heroin	1	1						
		methamphetamine	2	2						
1879p	23 y M				A	Unk	Int-A	2		
		heroin	1	1						
1880p	23 y M				U	Par	Int-S	1		
		heroin	1	1						
1881p	23 y M				A	Inhal + Unk	Int-A	2		
		cocaine	1	1						
		marijuana	2	2						
1882ai	23 y F				U	Unk	Int-A	1		
		cocaine	1	1						
		ethanol	2	2						
1883ai	23 y F				U	Unk	Int-A	1		
		heroin	1	1						
1884ai	23 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1885h	24 y M				U	Ingst	Int-U	1		
		methamphetamine	1	1						
1886h	24 y M				A	Ingst	Int-A	2		
		amphetamine	1	1						
		marijuana	2	2						
		amphetamine (hallucinogenic)	3	3						
1887h	24 y M				A	Ingst	Unk	2		
		methamphetamine	1	1						
1888	24 y M				A	Ingst	Int-A	2		
		methamphetamine	1	1						
		marijuana	2	2						
1889pai	24 y M				A	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1890ph	24 y M				C	Ingst	Int-A	2		
		Mitragyna speciosa korthals	1	1					mitragynine	1300 ng/mL In Blood (unspecified) @ 5 m (pe)
1891i	24 y F				U	Unk	Int-A	1		
		heroin	1	1						
		codeine	2	2						
		amphetamine	3	3						
1892pi	25 y F				A/C	Ingst + Par	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
		ethanol	3	3						
		fentanyl	4	4						
1893i	25 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		cyclobenzaprine	3	3						
1894ai	25 y M				U	Unk	Int-A	1		
		heroin	1	1						
		ethanol	2	2						
		temazepam	3	3						
1895ai	25 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		cocaine	3	3						
1896p	25 y M				A	Par	Int-A	2		
		heroin	1	1						
1897h	25 y F				U	Unk	Int-U	3		
		methamphetamine	1	1						
1898ai	25 y M				U	Unk	Int-A	1		
		heroin	1	1						
		ethanol	2	2						
1899ai	25 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
1900ai	25 y M				U	Unk	Int-A	1		
		heroin	1	1						
		codeine	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1901ai	25 y F				U	Unk	Int-A	1		
		heroin	1	1						
		bupropion	2	2						
		codeine	3	3						
1902ai	25 y M				U	Unk	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
		alprazolam	3	3						
1903ai	25 y M				U	Unk	Int-A	1		
		heroin	1	1						
1904pa	26 y M				A	Unk	Int-A	1		
		heroin	1	1						
		body stuffer	2	2						
1905ph	26 y F				A/C	Unk	Int-A	2		
		cocaine	1	1						
		amphetamine	2	2						
1906ai	26 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		fentanyl	2	2						
		amphetamine	3	3						
1907ai	26 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1908ai	26 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1909i	26 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		midazolam	3	3						
1910ai	26 y M				U	Unk	Int-A	1		
		heroin	1	1						
		Mitragyna speciosa korthals	2	2						
1911i	26 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		cocaine	3	3						
		alprazolam	4	4						
1912i	26 y M				U	Unk	Int-A	1		
		heroin	1	1						
1913ai	26 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
1914i	26 y M				U	Unk	Int-A	1		
		methylenedioxy methamphetamine (MDMA)	1	1						
1915a	26 y M				A	Inhal	Int-A	1		
		THC homolog	1	1					cocaine	26 ng/mL In Blood (unspecified) @ Unknown
		THC homolog	1	1					benzoylecognine	820 ng/mL In Blood (unspecified) @ Unknown
		cocaine	2	2					cocaine	26 ng/mL In Blood (unspecified) @ Unknown
1916h	26 y M				A	Unk	Oth-M	3		
		methamphetamine	1	1						
1917h	26 y F				A	Ingst	Unk	3		
		methamphetamine	1	1					methamphetamine	78 ng/mL In Serum @ 1 h (pe)
		narcotic, other/unknown	2	2						
		benzodiazepine	3	3						
1918h	26 y F				A	Par	Int-A	2		
		heroin	1	1						
		methamphetamine	2	2						
1919h	26 y M				U	Ingst + Inhal	Int-U	1		
		methamphetamine	1	1					amphetamine	110 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	1	1					methamphetamine	4700 ng/mL In Blood (unspecified) @ Unknown
1920ai	26 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1921ai	26 y F				U	Unk	Int-A	1		
		heroin	1	1						
		ethanol	2	2						
		codeine	3	3						
1922ai	26 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		hydroxyzine	3	3						
1923ai	26 y M				U	Unk	Int-A	1		
		heroin	1	1						
1924ai	26 y M				U	Ingst + Unk	Int-A	1		
		heroin	1	1						
		codeine	2	2						
		ethanol	3	3						
1925ai	26 y M				U	Unk	Int-A	1		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		methamphetamine	1	1						
1926pha	27 y M				A	Ingst + Inhal	Int-S	2		
		cocaine	1	1						
		ethanol	2	2						
1927ai	27 y M				C	Unk	Int-A	1		
		heroin	1	1						
1928pha	27 y F				A	Unk	Int-A	1		
		heroin	1	1					fentanyl	0.006 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	1.9 mg/L In Blood (unspecified) @ Autopsy
1929ha	27 y M				A	Unk	Int-A	1		
		methamphetamine	1	1						
		drug, unknown stimulant or street drug	2	2						
1930i	27 y F				U	Unk	Int-A	1		
		cocaine	1	1						
1931i	27 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1932ai	27 y M				U	Ingst + Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
1933ai	27 y M				U	Unk	Int-A	1		
		heroin	1	1						
1934i	27 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1935i	27 y F				U	Unk	Int-A	3		
		methamphetamine	1	1						
1936ai	27 y M				U	Ingst + Unk	Int-A	1		
		methamphetamine	1	1						
		loperamide	2	2						
		ethanol	3	3						
1937i	27 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
1938ha	27 y M				U	Unk	Unk	1		
		methamphetamine	1	1					methamphetamine	6.88 mg/L In Blood (unspecified) @ Unknown
1939ai	27 y M				U	Unk	Int-A	2		
		cocaine	1	1						
		oxycodone	2	2						
1940ai	27 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1941ai	27 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1942ai	27 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
1943ai	27 y M				U	Unk	Int-A	1		
		heroin	1	1						
1944h	28 y M				A/C	Par + Unk	Int-A	2		
		methamphetamine	1	1						
		THC homolog	2	2						
1945ai	28 y M				U	Unk	Int-A	1		
		heroin	1	1						
		codeine	2	2						
		diazepam	3	3						
1946ai	28 y M				U	Unk	Int-A	1		
		heroin	1	1						
		codeine	2	2						
		sertraline	3	3						
1947ai	28 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
1948ai	28 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
1949pa	28 y F				A	Ingst + Inhal	Int-U	2		
		cocaine	1	1						
		narcotic, other/unknown	2	2						
		marijuana	3	3						
1950ha	28 y M				A	Ingst	Unk	1		
		methamphetamine	1	1					amphetamine	145 ng/mL In Blood (unspecified) @ 5 h (pe)
		methamphetamine	1	1					methamphetamine	4622 ng/mL In Blood (unspecified) @ 5 h (pe)
		marijuana	2	2					thc (tetrahydrocannabinol)	1 ng/mL In Blood (unspecified) @ 5 h (pe)
[1951pha]	28 y M				A	Unk	Unk	1		
		amphetamine (hallucinogenic), n-ethyl pentylone	1	1					n-ethyl pentylone	1100 ng/mL In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		amphetamine (hallucinogenic)	2	2						
1952h	28 y M				A	Ingst	Int-U	2		
		methamphetamine	1	1						
1953h	28 y M				A/C	Ingst	Int-A	1		
		methamphetamine	1	1						
1954ai	28 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1955pha	29 y M				A	Unk	Unk	1		
		methamphetamine	1	1					methamphetamine	988 ng/mL In Blood (unspecified) @ Unknown
1956pha	29 y M				U	Unk	Int-A	1		
		heroin	1	1						
		drug, unknown	2	2						
		cocaine	3	3						
1957i	29 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1958ai	29 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
1959ai	29 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
		oxycodone	2	2						
		cyclobenzaprine	3	3						
1960pa	29 y M				A	Unk	Int-A	1		
		heroin	1	1					morphine (free)	20 mcg/L In Blood (unspecified) @ Autopsy
		fentanyl	2	2					fentanyl	0.025 mg/L In Blood (unspecified) @ Autopsy
1961	29 y F				A/C	Ingst	Int-S	1		
		amphetamine/ dextroamphetamine	1	1						
		propranolol (extended release)	2	2						
		alprazolam	3	3						
		ethanol	4	4					ethanol	127 mg/dL In Serum @ Unknown
1962ph	29 y M				U	Ingst + Unk	Int-S	2		
		heroin	1	1						
		alcohol, unknown	2	2					ethanol	0.1 % In Blood (unspecified) @ 1 h (pe)
1963ai	29 y M				U	Unk	Int-A	3		
		cocaine	1	1						
1964ai	29 y F				U	Unk	Int-A	3		
		heroin	1	1						
		methamphetamine	2	2						
1965ai	29 y M				U	Unk	Int-A	1		
		heroin	1	1						
		fentanyl	2	2						
		ethanol	3	3						
1966ai	29 y M				U	Unk	Int-A	1		
		heroin	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
1967ai	29 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
1968ai	29 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		diphenhydramine	2	2						
		heroin	3	3						
1969ai	29 y M				U	Ingst + Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
		hyperthermia	3	3						
1970p	30 y M				U	Inhal + Unk	Int-A	2		
		THC homolog	1	1						
		amphetamine	2	2						
1971ai	30 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		narcotic, other/unknown	2	2						
		benzodiazepine	3	3						
1972hi	30 y M				A	Inhal + Derm	Int-M	2		
		methamphetamine	1	1						
1973pha	30 y M				U	Unk	Unk	1		
		methamphetamine	1	1					methamphetamine	330 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	1	1					amphetamine	40 ng/mL In Blood (unspecified) @ Autopsy
		gabapentin	2	2						
		hydrocodone	3	3					hydrocodone	6.9 ng/mL In Blood (unspecified) @ Autopsy
		buprenorphine	4	4					buprenorphine	2.7 ng/mL In Blood (unspecified) @ Autopsy
		buprenorphine	4	4					norbuprenorphine	3.2 ng/mL In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		albuterol/itratropium	5	5						
		montelukast	6	6						
1974ai	30 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		narcotic, other/unknown	2	2						
		benzodiazepine	3	3						
1975ai	30 y M				U	Ingst + Unk	Int-A	1		
		heroin	1	1						
		ethanol	2	2						
1976ai	30 y F				U	Unk	Int-S	1		
		methamphetamine	1	1						
1977ai	30 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
[1978ha]	30 y M				A/C	Unk	Int-A	1		
		methamphetamine	1	1					amphetamine	2 mg/L In Whole Blood @ Autopsy
		methamphetamine	1	1					methamphetamine	6.7 mg/L In Whole Blood @ Autopsy
1979ha	30 y F				U	Unk	Unk	1		
		cocaine	1	1					ecgonine methyl ester	0.027 mg/L In Blood (unspecified) @ Autopsy
		cocaine	1	1					benzoylecognine	0.125 mg/L In Blood (unspecified) @ Autopsy
		fentanyl	2	2					norfentanyl	0.006 mg/L In Blood (unspecified) @ Autopsy
		fentanyl	2	2					fentanyl	0.016 mg/L In Blood (unspecified) @ Autopsy
		morphine	3	3					morphine	0.021 mg/L In Blood (unspecified) @ Autopsy
1980h	30 y M				A	Unk	Int-M	2		
		amphetamine	1	1						
		marijuana	2	2						
1981ai	30 y F				U	Unk	Int-A	1		
		cocaine	1	1						
1982ai	30 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
1983ai	30 y F				U	Unk	Int-A	2		
		heroin	1	1						
		methamphetamine	2	2						
1984ai	30 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
1985ai	30 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
1986ai	30 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
1987ai	30 y M				U	Ingst + Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
		hyperthermia	3	3						
1988h	31 y M				A/C	Ingst	Int-A	1		
		methamphetamine	1	1						
1989ai	31 y M				U	Unk	Int-A	1		
		heroin	1	1						
1990ai	31 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
1991ai	31 y M				U	Unk	Int-A	1		
		heroin	1	1						
		ethanol	2	2						
1992ai	31 y F				U	Unk	Int-M	1		
		methamphetamine	1	1						
		fentanyl	2	2						
		tramadol	3	3						
1993ai	31 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
1994ai	31 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
1995i	31 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
1996	31 y M				A	Inhal	Int-A	2		
		THC homolog	1	1						
1997ha	31 y M				U	Ingst + Inhal	Int-A	1		
		methamphetamine	1	1					amphetamine	306 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	1	1					methamphetamine	4984 ng/mL In Blood (unspecified) @ Unknown
		cocaine	2	2					benzoylecognine	206 ng/mL In Blood (unspecified) @ Unknown
		marijuana	3	3						
1998	31 y M				U	Unk	Int-U	2		
		cocaine	1	1						
		drug, unknown	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1999pha	31 y M				A	Ingst	Int-A	1		
		3,4-methylenedioxy amphetamine (MDA)	1	1					mda (3,4-methylenedioxy amphetamine)	3300 ng/mL In Blood (unspecified) @ Autopsy
2000pa	31 y F				A	Oth	Int-A	1		
		cocaine	1	1					norfentanyl	0.82 ng/mL In Blood (unspecified) @ Unknown
		cocaine	1	1					acetyl fentanyl	1.8 ng/mL In Blood (unspecified) @ Unknown
		cocaine	1	1					benzoylecognine	1500 ng/mL In Blood (unspecified) @ Unknown
		cocaine	1	1					cocaethylene	44 ng/mL In Blood (unspecified) @ Unknown
		cocaine	1	1					fentanyl	6.8 ng/mL In Blood (unspecified) @ Unknown
		cocaine	1	1					cocaine	68 ng/mL In Blood (unspecified) @ Unknown
2001ai	31 y M				U	Unk	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
2002ai	31 y M				U	Unk	Int-A	1		
		heroin	1	1						
2003ai	31 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
2004ai	31 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
2005ai	31 y M				U	Ingst + Unk	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
		ethanol	3	3						
2006ai	31 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2007ai	31 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2008ai	31 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hyperthermia	2	2						
2009a	32 y M				A	Ingst	Int-M	1		
		cocaine	1	1					cocaine	0.024 mg/L In Blood (unspecified) @ 105 m (pe)
		cocaine	1	1					cocaethylene	0.73 mg/L In Blood (unspecified) @ Autopsy
		cocaine	1	1					benzoylecognine	1.5 mg/L In Blood (unspecified) @ 105 m (pe)
		cocaine	1	1					benzoylecognine	4.1 mg/L In Blood (unspecified) @ Autopsy
		cocaine	1	1					cocaine	9.1 mg/L In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	100 mg/dL In Blood (unspecified) @ Autopsy
2010ha	32 y M				U	Unk	Unk	1		
		methamphetamine	1	1					methamphetamine	6600 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	1	1					amphetamine	92 ng/mL In Whole Blood @ Autopsy
2011pha	32 y M				U	Ingst + Aspir + Unk	Int-A	1		
		heroin	1	1						
		alprazolam	2	2						
		ethanol	3	3						
2012ai	32 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methadone	2	2						
2013ai	32 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2014ai	32 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2015pha	32 y M				A	Unk	Int-U	1		
		methamphetamine	1	1					methamphetamine	8 mg/L In Blood (unspecified) @ Autopsy
		amphetamine	2	2					amphetamine	0.18 mg/L In Blood (unspecified) @ Autopsy
2016pha	32 y M				U	Unk	Int-S	1		
		cocaine	1	1					benzoylecognine	870 ng/mL In Blood (unspecified) @ 5 m (pe)
		cocaine	1	1					cocaine	90 ng/mL In Blood (unspecified) @ 5 m (pe)
		heroin	2	2					codeine	13 ng/mL In Blood (unspecified) @ 5 m (pe)

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		heroin	2	2					6-mam (6-monoacetylmorphine)	18 ng/mL In Blood (unspecified) @ 5 m (pe)
		heroin	2	2					morphine	250 ng/mL In Blood (unspecified) @ 5 m (pe)
		Mitragyna speciosa korthals	3	3					mitragynine	54 ng/mL In Blood (unspecified) @ 5 m (pe)
		sertraline	4	4						
		dextromethorphan	5	5						
		chlorpheniramine	6	6						
		bupropion	7	7					bupropion	110 ng/mL In Blood (unspecified) @ 5 m (pe)
		bupropion	7	7					hydroxybupropion	1400 ng/mL In Blood (unspecified) @ 5 m (pe)
2017pa	32 y M				A	Ingst + Inhal	Unk	1		
		methylenedioxy methamphetamine (MDMA)	1	1						
		cocaine	2	2					benzoylecognine	420 ng/mL In Blood (unspecified) @ Unknown
		cocaine	2	2					cocaine	44 ng/mL In Blood (unspecified) @ Unknown
2018ai	32 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2019ai	32 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		bupropion	3	3						
2020ai	32 y F				U	Unk	Int-U	2		
		methamphetamine	1	1						
		methadone	2	2						
2021p	33 y M				A	Unk	Int-A	2		
		heroin	1	1						
		ethanol	2	2					ethanol	137 mcg/dL In Blood (unspecified) @ Unknown
		morphine	3	3						
2022pha	33 y M				A	Oth + Unk	Int-A	1		
		cocaine	1	1						
2023	33 y M				A	Ingst	Int-U	1		
		caffeine	1	1						
2024ha	33 y M				U	Unk	Unk	1		
		amphetamine (hallucinogenic)	1	1						
		THC homolog	2	2						
2025ha	33 y F				U	Inhal + Unk	Int-A	2		
		methamphetamine	1	1						
		drug, unknown	2	2						
2026i	33 y M				U	Unk	Int-A	3		
		cocaine	1	1						
2027ai	33 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2028ai	33 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2029ai	33 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2030ai	33 y M				U	Unk	Int-A	1		
		Mitragyna speciosa korthals	1	1						
		fentanyl	2	2						
2031ph	33 y M				A/C	Oth	Int-A	2		
		methamphetamine	1	1						
2032a	33 y M				A	Ingst + Par	Int-A	1		
		methamphetamine	1	1					methamphetamine	5.3 mg/L In Blood (unspecified) @ Autopsy
		heroin	2	2						
2033ph	33 y M				A	Par	Int-A	3		
		heroin	1	1						
		alprazolam	2	2						
2034ai	33 y M				U	Unk	Int-A	2		
		amphetamine	1	1						
		benzodiazepine	2	2						
		ethanol	3	3						
2035pai	33 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
2036ai	33 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
2037ai	33 y M				U	Unk	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
		methamphetamine	3	3						
2038ai	33 y M				U	Unk	Int-A	2		
		heroin	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		methamphetamine	2	2						
2039ai	33 y M				U	Unk	Int-A	1		
		heroin	1	1						
		fentanyl	2	2						
		alprazolam	3	3						
		clonazepam	4	4						
2040ai	33 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2041ai	33 y F				U	Unk	Int-A	3		
		methamphetamine	1	1						
		hydrocodone	2	2						
		benzodiazepine	3	3						
2042ai	33 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
2043ai	33 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hyperthermia	2	2						
2044ai	33 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hyperthermia	2	2						
2045ai	33 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2046i	34 y M				U	Ingst + Unk	Int-A	1		
		cocaine	1	1						
		ethanol	2	2						
2047ai	34 y F				U	Unk	Int-A	1		
		heroin	1	1						
		fentanyl	2	2						
2048ai	34 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
[2049ha]	34 y F				A	Ingst	Int-M	1		
		methamphetamine	1	1					methamphetamine	1.001 mg/L In Blood (unspecified) @ Unknown
2050ai	34 y F				A	Unk	Int-A	1		
		heroin	1	1						
		oxycodone	2	2						
2051h	34 y M				U	Ingst	Int-A	2		
		methylenedioxy methamphetamine (MDMA)	1	1						
2052p	34 y F				A	Ingst + Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		benzodiazepine	3	3						
2053ai	34 y M				U	Unk	Int-M	1		
		heroin	1	1						
		methamphetamine	2	2						
2054ai	34 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		cocaine	3	3						
2055ai	34 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
2056ha	35 y M				A/C	Ingst	Int-A	1		
		methamphetamine	1	1					methamphetamine	3.8 mg/L In Blood (unspecified) @ 1 h (pe)
2057ai	35 y F				U	Unk	Int-A	1		
		cocaine	1	1						
		ethanol	2	2						
2058ai	35 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		oxycodone	3	3						
2059ai	35 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		diphenhydramine	2	2						
2060ai	35 y F				C	Par	Int-A	3		
		methamphetamine	1	1						
2061ph	35 y M				A	Inhal + Unk	Int-A	2		
		fentanyl analog, carfentanil	1	1						
		benzodiazepine	2	2						
		fentanyl	3	3						
		synthetic opiate	4	4						
2062h	35 y F				U	Ingst + Aspir	Unk	2		
		methamphetamine	1	1						
		acetaminophen/ diphenhydramine	2	2						
		marijuana	3	3						
2063a	35 y F				A/C	Ingst + Par	Int-A	2		
		heroin	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		methamphetamine	2	2						
2064ph	35 y M				A	Ingst + Unk	Unk	2		
		methamphetamine	1	1						
		ethanol	2	2					ethanol	128 mg/dL In Blood (unspecified) @ Unknown
		amlodipine	3	3						
		drug, unknown	4	4						
2065ai	35 y M				U	Unk	Int-A	1		
		amphetamine	1	1						
		heroin	2	2						
2066ai	35 y M				U	Unk	Int-A	1		
		fentanyl analog, methoxyacetylfentanyl	1	1						
		ketamine	2	2						
		cocaine	3	3						
2067ai	35 y F				U	Unk	Int-A	1		
		heroin	1	1						
		amitriptyline	2	2						
		diphenhydramine	3	3						
2068ai	35 y F				U	Unk	Int-A	1		
		heroin	1	1						
		hydrocodone	2	2						
		clonazepam	3	3						
2069ai	35 y F				U	Unk	Int-A	1		
		heroin	1	1						
		oxycodone	2	2						
		cocaine	3	3						
2070ai	35 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2071ai	35 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
2072ai	35 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
2073i	36 y M				U	Unk	Int-A	1		
		heroin	1	1						
2074ai	36 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
2075ai	36 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2076i	36 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2077ai	36 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		heroin	2	2						
		ethanol	3	3						
[2078ha]	36 y F				A	Ingst + Vag	Int-U	1		
		cocaine	1	1					cocaine	6046 ng/mL In Blood (unspecified) @ Unknown
		cocaine	1	1					benzoylecognine	6728 ng/mL In Blood (unspecified) @ Unknown
2079pha	36 y M				A/C	Ingst	Int-A	1		
		Mitragyna speciosa korthals	1	1					mitragynine	1600 ng/mL In Blood (unspecified) @ Unknown
		sertraline	2	2					sertraline	35 ng/mL In Blood (unspecified) @ Unknown
		sertraline	2	2					desmethylsertraline	89 ng/mL In Blood (unspecified) @ Unknown
2080h	36 y M				U	Par	Int-A	3		
		drug, unknown stimulant or street drug	1	1						
2081p	36 y F				A	Unk	Int-A	2		
		heroin	1	1						
2082ai	36 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		oxycodone	2	2						
		bupropion	3	3						
2083ai	36 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
2084ai	36 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		cocaine	3	3						
2085ai	36 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2086ai	36 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2087ph	37 y M				A	Ingst + Inhal + Par	Int-A	3		
		heroin	1	1						
		cocaine	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		gabapentin	3	3						
2088p	37 y M				A	Inhal	Int-A	2		
		cocaine	1	1						
		drug, unknown	2	2						
2089h	37 y M				U	Unk	Int-A	3		
		phencyclidine	1	1						
		marijuana	2	2						
		THC homolog	3	3						
2090pa	37 y F				A	Inhal	Int-A	1		
		THC homolog	1	1						
2091ai	37 y M				U	Unk	Int-A	2		
		heroin	1	1						
		methamphetamine	2	2						
2092ai	37 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methadone	2	2						
		codeine	3	3						
2093i	37 y M				U	Unk	Int-A	1		
		heroin	1	1						
2094i	37 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2095ai	37 y M				U	Unk	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
		methadone	3	3						
2096i	37 y M				C	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2097ai	37 y M				U	Unk	Int-A	1		
		heroin	1	1						
2098i	37 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2099i	37 y M				U	Ingst + Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2100p	37 y M				A	Ingst + Inhal + Unk	Int-S	2		
		cocaine	1	1						
		hydralazine	2	2						
		aripiprazole	3	3						
		trazodone	4	4						
		phenytoin	5	5						
		benztropine	6	6						
2101ha	37 y F				U	Unk	Unk	1		
		methamphetamine	1	1						
		heroin	2	2						
2102ph	37 y M				A	Par	Int-A	2		
		heroin	1	1						
2103p	37 y M				A	Unk	Int-A	2		
		heroin	1	1						
2104ai	37 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		hydrocodone	2	2						
		alprazolam	3	3						
2105ai	37 y M				U	Unk	Int-A	1		
		heroin	1	1						
		alprazolam	2	2						
		olanzapine	3	3						
2106ai	37 y M				U	Unk	Int-A	1		
		heroin	1	1						
		ethanol	2	2						
2107ai	37 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
		oxycodone	2	2						
2108ai	37 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
2109	38 y M				A	Unk	Int-A	2		
		methamphetamine	1	1						
2110pha	38 y M				U	Unk	Unk	2		
		methamphetamine	1	1					amphetamine	22 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	1	1					methamphetamine	237 ng/mL In Blood (unspecified) @ Autopsy
		morphine	2	2						
2111	38 y F				C	Ingst	Int-A	3		
		Mitragyna speciosa korthals	1	1						
		ethanol	2	2					ethanol	130 mg/dL In Blood (unspecified) @ Unknown
2112ai	38 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2113ai	38 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2114ai	38 y M				U	Unk	Int-A	1		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		heroin	1	1						
		fentanyl	2	2						
		ethanol	3	3						
2115ai	38 y M				U	Unk	Int-A	1		
		heroin	1	1						
2116i	38 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2117pai	38 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2118ai	38 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		fentanyl	2	2						
		heroin	3	3						
2119i	38 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
		oxycodone	2	2						
		gabapentin	3	3						
2120ph	38 y M				U	Unk	Unk	2		
		drug, unknown stimulant or street drug	1	1						
2121ha	38 y M				A	Ingst	Int-A	1		
		methamphetamine	1	1						
2122h	38 y M				U	Ingst	Int-U	1		
		methamphetamine	1	1						
2123ai	38 y M				U	Unk	Int-A	1		
		heroin	1	1						
		codeine	2	2						
		ethanol	3	3						
2124ai	38 y M				U	Unk	Int-A	1		
		heroin	1	1						
		THC homolog	2	2						
2125ai	38 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2126ai	38 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		methadone	2	2						
2127ai	38 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2128ai	38 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		diphenhydramine	2	2						
2129ai	38 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2130ai	38 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		diphenhydramine	2	2						
2131ai	38 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		cyclobenzaprine	2	2						
		ibuprofen	3	3						
2132h	39 y M				A	Ingst	Int-M	2		
		methamphetamine	1	1						
2133pha	39 y M				U	Unk	Unk	2		
		cocaine	1	1						
		marijuana	2	2						
		drug, unknown	3	3						
2134ai	39 y F				U	Unk	Int-S	2		
		cocaine	1	1						
2135ai	39 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2136ai	39 y M				U	Unk	Int-A	1		
		heroin	1	1						
		bupropion	2	2						
		buspirone	3	3						
2137ai	39 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2138ai	39 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
2139ai	39 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
2140ai	39 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
2141ai	39 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
2142ph	39 y M				A/C	Par + Unk	Int-A	2		
		heroin	1	1						
		buprenorphine	2	2						
2143p	39 y M				A	Unk	Int-A	2		
		heroin	1	1						
2144h	39 y M				U	Ingst	Int-A	2		
		amphetamine (hallucinogenic)	1	1						
		methamphetamine	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
2145	39 y M				A	Ingst	Int-M	2		
		methamphetamine	1	1						
		glass cleaner (household)	2	2						
2146ai	39 y F				U	Unk	Int-A	1		
		cocaine	1	1						
		methadone	2	2						
		ethanol	3	3						
2147ai	39 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		hyperthermia	3	3						
2148ai	39 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2149ai	39 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2150i	40 y M				U	Unk	Int-M	1		
		heroin	1	1						
		methamphetamine	2	2						
2151ai	40 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		oxycodone	3	3						
2152ai	40 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2153ai	40 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		oxycodone	3	3						
2154ai	40 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2155i	40 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2156ai	40 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2157ai	40 y M				U	Unk	Int-A	1		
		Mitragyna speciosa korthals	1	1						
		ethanol	2	2						
2158ha	40 y M				A	Ingst	Int-A	1		
		Mitragyna speciosa korthals	1	1					mitragynine	300 ng/mL In Blood (unspecified) @ Autopsy
		venlafaxine	2	2					venlafaxine	216 ng/mL In Blood (unspecified) @ Autopsy
		venlafaxine	2	2					o-desmethyl-venlafaxine	337 ng/mL In Blood (unspecified) @ Autopsy
2159ai	40 y M				U	Unk	Int-A	1		
		cocaine	1	1						
2160ai	40 y F				U	Unk	Int-A	1		
		heroin	1	1						
		codeine	2	2						
2161ai	40 y F				C	Unk	Int-A	1		
		methamphetamine	1	1						
2162ai	40 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2163ai	40 y M				U	Ingst + Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2164ai	40 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		fentanyl	2	2						
		ibuprofen	3	3						
2165ai	40 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		bupropion	2	2						
		benztropine	3	3						
2166ai	41 y F				U	Unk	Int-A	3		
		methamphetamine	1	1						
2167	41 y M				U	Ingst + Unk	Unt-U	2		
		amphetamine	1	1						
		cyclic antidepressant, unknown	2	2						
		marijuana	3	3						
2168ai	41 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
2169i	41 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2170ai	41 y M				U	Ingst + Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		ethanol	3	3						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
2171ai	41 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
2172h	41 y F				A/C	Ingst	Int-S	3		
		cocaine	1	1						
2173ph	41 y M				A/C	Ingst	Int-A	2		
		methamphetamine	1	1						
2174ai	41 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2175ai	41 y M				U	Unk	Int-A	1		
		cocaine	1	1						
2176ai	41 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2177ai	41 y M				U	Unk	Int-A	1		
		heroin	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
2178ai	41 y M				U	Unk	Int-A	1		
		heroin	1	1						
		codeine	2	2						
		ethanol	3	3						
2179ai	41 y M				U	Unk	Int-A	1		
		heroin	1	1						
2180ai	41 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		morphine	2	2						
2181i	41 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		diphenhydramine	2	2						
2182ai	41 y M				U	Ingst + Unk	Int-M	1		
		Mitragyna speciosa korthals	1	1						
		antipsychotic (atypical)	2	2						
		gabapentin	3	3						
		diazepam	4	4						
		ethanol	5	5						
2183p	42 y F				A	Inhal	Int-U	2		
		heroin	1	1						
2184pha	42 y M				A	Unk	Unk	1		
		heroin	1	1					morphine (free)	620 mcg/L In Blood (unspecified) @ Autopsy
		fentanyl	2	2					fentanyl	0.012 mg/L In Blood (unspecified) @ Autopsy
2185ai	42 y F				U	Unk	Int-A	1		
		heroin	1	1						
2186ai	42 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
2187ai	42 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2188ai	42 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
2189pha	42 y F				U	Oth + Unk	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
		ethanol	3	3						
2190ph	42 y M				A/C	Par	Int-A	2		
		heroin	1	1						
2191ai	42 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
2192ai	42 y M				U	Unk	Int-S	1		
		methamphetamine	1	1						
2193ai	42 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2194ai	42 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
2195ph	43 y M				A	Par	Int-A	2		
		heroin	1	1						
2196ai	43 y M				U	Unk	Int-S	1		
		cocaine	1	1						
		fentanyl	2	2						
		ketamine	3	3						
2197hai	43 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		cocaine	3	3						
2198ai	43 y M				U	Unk	Int-A	2		
		heroin	1	1						
		methamphetamine	2	2						
2199ai	43 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
2200ai	43 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
2201a	43 y M				A	Ingst	Int-A	1		
		methamphetamine	1	1					methamphetamine	17749 ng/mL In Blood (unspecified) @ Unknown
2202ph	43 y M				U	Unk	Unk	2		
		heroin	1	1						
		fentanyl	2	2						
2203ph	43 y M				A	Unk	Int-A	2		
		heroin	1	1						
2204ai	43 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2205ai	43 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		ethanol	2	2						
2206ai	43 y M				U	Unk	Int-A	1		
		heroin	1	1						
		lorazepam	2	2						
2207ai	43 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2208ai	43 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
2209ai	43 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		risperidone	2	2						
2210ai	44 y M				C	Par + Unk	Int-A	1		
		heroin	1	1						
		alprazolam	2	2						
		chlordiazepoxide	3	3						
2211ai	44 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2212ai	44 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		fentanyl	2	2						
		oxycodone	3	3						
2213ai	44 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
2214ai	44 y M				U	Unk	Int-A	2		
		heroin	1	1						
		codeine	2	2						
2215ai	44 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2216ph	45 y M				A	Unk	Int-A	2		
		amphetamine	1	1						
		ethanol	2	2					ethanol	143 mg/dL In Whole Blood @ Unknown
2217ai	45 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
2218ai	45 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2219ai	45 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		amphetamine	2	2						
		ethanol	3	3						
2220ai	45 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2221ai	45 y M				U	Unk	Int-A	1		
		heroin	1	1						
		ethanol	2	2						
2222i	45 y M				U	Unk	Int-A	1		
		heroin	1	1						
2223ai	45 y M				U	Unk	Int-S	1		
		methamphetamine	1	1						
		heroin	2	2						
2224ai	45 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2225ai	45 y M				U	Ingst + Unk	Int-A	1		
		methamphetamine	1	1						
		diazepam	2	2						
		ethanol	3	3						
2226ai	45 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		isopropanol	2	2						
		naproxen	3	3						
2227h	45 y M				A/C	Ingst	Int-A	2		
		methylenedioxy methamphetamine (MDMA)	1	1						
2228p	45 y M				A	Ingst	Int-A	2		
		methamphetamine	1	1						
2229ai	45 y F				U	Unk	Int-A	1		
		amphetamine	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		phenylpropanolamine	2	2						
2230ai	45 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		methadone	3	3						
2231ai	45 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		phenylpropanolamine	2	2						
2232ai	45 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		isopropanol	2	2						
2233ai	45 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2234ai	45 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2235ai	45 y M				U	Ingst + Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2236ph	46 y M				U	Ingst	Int-M	1		
		methamphetamine	1	1						
2237ai	46 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2238pha	46 y M				A/C	Unk	Unk	2		
		cocaine	1	1					benzoylecognine	370 ng/mL In Blood (unspecified) @ Autopsy
		benzodiazepine	2	2						
		narcotic, other/unknown	3	3					norfentanyl	1.5 ng/mL In Blood (unspecified) @ Autopsy
		narcotic, other/unknown	3	3					acetyl fentanyl	5.2 ng/mL In Blood (unspecified) @ Autopsy
		narcotic, other/unknown	3	3					fentanyl	8.8 ng/mL In Blood (unspecified) @ Autopsy
2239ai	46 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		chlordiazepoxide	3	3						
2240ai	46 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
2241ai	46 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
2242ai	46 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		tramadol	2	2						
		cyclobenzaprine	3	3						
2243ha	46 y M				A	Ingst	Int-A	2		
		methamphetamine	1	1						
		drug, unknown	2	2						
2244ai	46 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2245ai	46 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		diazepam	3	3						
2246ai	46 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
2247ai	46 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2248ai	46 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2249ai	46 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2250ph	47 y M				A	Ingst	Int-M	2		
		methamphetamine	1	1						
		pyrethroids	2	2						
2251ai	47 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2252ai	47 y M				U	Unk	Int-A	1		
		heroin	1	1						
		tramadol	2	2						
		gabapentin	3	3						
2253hai	47 y M				U	Ingst + Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
2254ai	47 y M				U	Ingst + Unk	Int-A	1		
		heroin	1	1						
		ethanol	2	2						
2255ai	47 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		heroin	2	2						
2256ai	47 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
2257ai	47 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		codeine	2	2						
		diphenhydramine	3	3						
2258ai	47 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
2259ai	47 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2260ai	47 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2261ai	47 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2262ai	47 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2263ai	48 y F				U	Unk	Int-A	1		
		heroin	1	1						
2264pha	48 y F				U	Ingst + Unk	Int-S	3		
		methamphetamine	1	1					methamphetamine	0.31 mg/L In Blood (unspecified) @ 1 h (pe)
		cocaine	2	2					benzoylecognine	0.22 mg/L In Blood (unspecified) @ 1 h (pe)
		ethanol	3	2					ethanol	44 mg/dL In Serum @ 1 h (pe)
2265ai	48 y M				U	Unk	Int-S	1		
		cocaine	1	1						
		acetaminophen/hydrocodone	2	2						
2266ai	48 y M				U	Unk	Int-A	1		
		heroin	1	1						
2267ai	48 y M				U	Unk	Int-A	2		
		heroin	1	1						
		fentanyl	2	2						
		methamphetamine	3	3						
2268ai	48 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2269ai	48 y F				U	Unk	Int-A	1		
		heroin	1	1						
2270ai	48 y F				C	Unk	Int-A	3		
		methamphetamine	1	1						
2271ai	48 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		heroin	2	2						
2272	48 y M				C	Unk	Int-A	2		
		methamphetamine	1	1						
2273ph	48 y M				A/C	Unk	Int-A	2		
		heroin	1	1						
2274ai	48 y M				U	Unk	Int-S	1		
		cocaine	1	1						
		mirtazapine	2	2						
		diazepam	3	3						
2275ai	48 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		methadone	3	3						
2276ai	48 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2277ai	49 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
2278ai	49 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
2279i	49 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		oxycodone	3	3						
		lorazepam	4	4						
2280ai	49 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		fentanyl	2	2						
		oxycodone	3	3						
2281ai	49 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		cyclobenzaprine	2	2						
		diazepam	3	3						
2282ai	49 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		oxycodone	2	2						
		acetaminophen	3	3						
2283ai	49 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
2284ph	49 y F				A	Par	Int-A	2		
		heroin	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		ethanol	2	2						
2285ai	49 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		ethanol	2	2						
2286ai	49 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
		diazepam	3	3						
2287ai	49 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
2288ai	49 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		phencyclidine	2	2						
2289ai	49 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		amitriptyline	2	2						
		diphenhydramine	3	3						
		fluoxetine	4	4						
		gabapentin	5	5						
2290ai	49 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
2291ai	49 y F				U	Unk	Int-A	3		
		methamphetamine	1	1						
2292ai	50 y F				U	Unk	Int-A	3		
		methamphetamine	1	1						
2293ai	50 y M				U	Unk	Int-A	1		
		heroin	1	1						
		codeine	2	2						
2294ai	50 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
2295ai	50 y F				U	Ingst + Unk	Int-A	1		
		methamphetamine	1	1						
		codeine	2	2						
		ethanol	3	3						
2296i	50 y F				U	Ingst + Unk	Int-A	1		
		methamphetamine	1	1						
		oxycodone	2	2						
		ethanol	3	3						
2297ai	50 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
2298pha	50 y F				A/C	Ingst	Int-S	1		
		heroin	1	1						
		clonazepam	2	2						
		amlodipine	3	3						
		cocaine	4	4						
2299ai	50 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2300ha	50 y F				C	Ingst	Unk	2		
		heroin	1	1					6-mam (6-monoacetylmorphine)	210 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	2	2					oxycodone (free)	100 ng/mL In Blood (unspecified) @ Autopsy
		methadone	3	3					methadone	81 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	4	4					clonazepam	19 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	5	5					alprazolam	5.7 ng/mL In Blood (unspecified) @ Autopsy
		hydroxyzine	6	6					hydroxyzine	270 ng/mL In Blood (unspecified) @ Autopsy
2301ai	50 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
2302ai	50 y M				U	Unk	Int-A	1		
		heroin	1	1						
		oxycodone	2	2						
		methamphetamine	3	3						
2303ai	50 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		oxycodone	2	2						
2304ai	50 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2305ai	50 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2306ai	50 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
2307ai	50 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2308ai	50 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		hyperthermia	2	2						
2309ha	51 y F				U	Unk	Unk	3		
		cocaine	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		alprazolam	2	2					alpha-oh-alprazolam	0.04 mg/L In Urine (quantitative only) @ Unknown
		diazepam	3	3					oxazepam	0.011 mg/L In Urine (quantitative only) @ Unknown
2310ai	51 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
2311i	51 y M				U	Ingst + Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
2312ai	51 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
2313ph	51 y M				A	Unk	Int-A	2		
		heroin	1	1						
2314ai	51 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
2315ai	51 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
2316ai	51 y M				U	Ingst + Unk	Int-A	1		
		methamphetamine	1	1						
		tramadol	2	2						
		ethanol	3	3						
2317ai	51 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2318ai	51 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		gabapentin	2	2						
2319ai	51 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		oxycodone	2	2						
		levetiracetam	3	3						
2320ai	51 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2321i	52 y M				U	Ingst + Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2322ai	52 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2323i	52 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
2324ai	52 y M				U	Unk	Int-S	1		
		methamphetamine	1	1						
		diphenhydramine	2	2						
2325pa	52 y M				A	Unk	Unt-U	1		
		cocaine	1	1					cocaine	0.06 mg/L In Blood (unspecified) @ Autopsy
2326ai	52 y F				U	Unk	Int-A	2		
		amphetamine	1	1						
		narcotic, other/unknown	2	2						
		benzodiazepine	3	3						
2327ai	52 y M				U	Unk	Int-A	1		
		cocaine	1	1						
2328ai	52 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		hydromorphone	3	3						
2329ai	52 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		olanzapine	2	2						
2330ai	52 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		heroin	2	2						
2331ai	52 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2332ai	52 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		fluoxetine	2	2						
2333i	53 y M				U	Unk	Int-A	1		
		cocaine	1	1						
2334i	53 y M				U	Unk	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
2335ai	53 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2336ai	53 y M				U	Unk	Int-S	1		
		methamphetamine	1	1						
2337i	53 y M				U	Unk	Int-A	1		
		Mitragyna speciosa korthals	1	1						
		ethanol	2	2						
2338pha	53 y M				A	Par	Int-A	1		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		cocaine	1	1					cocaine	0.05 mg/L In Blood (unspecified) @ Autopsy
		fentanyl analog, 4-flouroisobutyryl fentanyl	2	2						
2339ai	53 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methadone	2	2						
		methamphetamine	3	3						
		diazepam	4	4						
		alprazolam	5	5						
2340ai	53 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2341ai	53 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2342ai	53 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2343ai	53 y M				U	Ingst + Unk	Int-A	1		
		methamphetamine	1	1						
		lysergic acid diethylamide (LSD)	2	2						
		ethanol	3	3						
2344pha	54 y F				A	Ingst + Par	Int-U	1		
		heroin	1	1					morphine	0.16 mg/L In Blood (unspecified) @ Autopsy
		heroin	1	1					6-mam (6-monoacetylmorphine)	8.7 ng/mL In Blood (unspecified) @ Autopsy
		methadone	2	2					methadone	0.087 mg/L In Blood (unspecified) @ Autopsy
2345ai	54 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2346ai	54 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
2347ai	54 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2348ai	54 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2349ai	54 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		narcotic, other/unknown	2	2						
		ethanol	3	3						
2350ai	54 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2351ai	54 y M				U	Unk	Int-A	1		
		heroin	1	1						
		gabapentin	2	2						
2352ai	54 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		propranolol	2	2						
		paroxetine	3	3						
2353ai	54 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2354ai	54 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2355ai	54 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2356ai	54 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		methadone	2	2						
2357ai	54 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
2358ai	54 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2359h	55 y F				U	Ingst + Unk	Int-A	3		
		methamphetamine	1	1						
		ethanol	2	2						
2360ai	55 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2361ai	55 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2362ai	55 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2363ai	55 y M				U	Ingst + Unk	Int-S	1		
		methamphetamine	1	1						
		morphine	2	2						
		ethanol	3	3						
2364ai	55 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2365ai	55 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
2366ai	55 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
2367ai	55 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2368ai	55 y M				U	Unk	Int-A	1		
		heroin	1	1						
		codeine	2	2						
2369ai	55 y F				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2370ai	55 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2371ai	55 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2372ai	55 y M				U	Ingst + Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2373ha	56 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		methylenedioxy methamphetamine (MDMA)	2	2						
		marijuana	3	3						
2374p	56 y F				A	Unk	Int-A	2		
		heroin	1	1						
2375ai	56 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		alprazolam	2	2						
2376ai	56 y M				U	Unk	Int-A	2		
		heroin	1	1						
		ethanol	2	2						
2377i	56 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2378ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2379ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2380ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2381ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2382ai	56 y M				U	Unk	Int-A	2		
		methylenedioxy methamphetamine (MDMA)	1	1						
		methamphetamine	2	2						
2383h	56 y M				A	Ingst + Inhal	Unt-T	3		
		marijuana	1	1						
		ethanol	2	2						
		midazolam	3	3						
		haloperidol	4	4						
2384ph	56 y M				U	Unk	Unk	1		
		heroin	1	1						
		ethanol	2	2					ethanol	362 mg/dL In Blood (unspecified) @ Unknown
2385ai	56 y M				U	Ingst + Unk	Int-A	1		
		cocaine	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
2386ai	56 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2387ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2388ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2389ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		hyperthermia	2	2						
2390ai	56 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		trazodone	2	2						
2391ai	56 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2392ai	57 y M				U	Unk	Int-A	3		
		cocaine	1	1						
2393ai	57 y M				U	Unk	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
		methamphetamine	3	3						
2394ai	57 y M				U	Ingst + Unk	Int-A	1		
		methamphetamine	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		ethanol	2	2						
		naproxen	3	3						
2395ai	57 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2396hai	57 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2397ai	57 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
		lorazepam	2	2						
		clonazepam	3	3						
2398ai	57 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
		dextromethorphan	3	3						
2399hai	57 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2400ai	57 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		cocaine	2	2						
		phencyclidine	3	3						
2401ai	57 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		oxycodone	2	2						
2402ai	57 y M				U	Ingst + Unk	Int-A	1		
		phencyclidine	1	1						
		ethanol	2	2						
2403pa	57 y F				A	Unk	Int-A	1		
		cocaine	1	1					benzoylecognine	2400 ng/mL In Blood (unspecified) @ Unknown
		narcotic, other/unknown	2	2					fentanyl	15 ng/mL In Blood (unspecified) @ Unknown
		narcotic, other/unknown	2	2					norfentanyl	30 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	3	3					alprazolam	14 ng/mL In Blood (unspecified) @ Unknown
2404ai	57 y F				U	Unk	Int-A	1		
		heroin	1	1						
2405ai	57 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		trazodone	2	2						
		citalopram	3	3						
2406ai	57 y M				U	Unk	Int-U	1		
		methamphetamine	1	1						
2407ai	57 y F				U	Unk	Int-A	1		
		phencyclidine	1	1						
		codeine	2	2						
		lorazepam	3	3						
2408ai	58 y M				U	Unk	Int-A	1		
		cocaine	1	1						
2409ai	58 y F				U	Unk	Int-A	3		
		heroin	1	1						
		codeine	2	2						
2410i	58 y M				U	Unk	Int-A	2		
		heroin	1	1						
		methamphetamine	2	2						
		cocaine	3	3						
2411i	58 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2412i	58 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2413ai	58 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
2414ai	58 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		methadone	2	2						
2415a	58 y M				A	Unk	Int-S	2		
		methamphetamine	1	1						
		cleaner (anionic/nonionic)	2	2						
2416ai	58 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2417ai	58 y M				U	Unk	Int-A	2		
		heroin	1	1						
		oxycodone	2	2						
		ethanol	3	3						
2418ai	58 y M				U	Unk	Int-A	1		
		heroin	1	1						
2419ai	58 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
2420ai	58 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
2421ai	58 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
2422ai	58 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
2423i	59 y M				U	Ingst + Unk	Int-A	1		
		heroin	1	1						
		ethanol	2	2						
2424ai	59 y M				U	Unk	Int-A	1		
		heroin	1	1						
		codeine	2	2						
2425ai	59 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2426ai	59 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		acetaminophen	2	2						
2427ai	59 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
2428	59 y M				A	Ingst	Int-A	2		
		methamphetamine	1	1						
		body stuffer	2	2						
2429ai	59 y M				U	Unk	Int-A	1		
		heroin	1	1						
		oxycodone	2	2						
2430ai	59 y M				U	Unk	Int-A	1		
		heroin	1	1						
		oxycodone	2	2						
		methamphetamine	3	3						
2431ai	59 y M				U	Ingst + Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
2432ai	59 y M				U	Unk	Int-A	1		
		heroin	1	1						
2433ai	59 y F				U	Unk	Int-A	1		
		heroin	1	1						
		alprazolam	2	2						
		ethanol	3	3						
2434ai	59 y M				U	Ingst + Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2435ai	59 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2436pa	60 y M				A	Inhal	Int-A	1		
		heroin	1	1					morphine (free)	15 mcg/L In Blood (unspecified) @ Autopsy
		fentanyl	2	2					fentanyl	0.018 mg/L In Blood (unspecified) @ Autopsy
2437ai	60 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		methadone	2	2						
		ethanol	3	3						
2438ai	60 y F				U	Unk	Int-A	1		
		cocaine	1	1						
		fentanyl	2	2						
2439ai	60 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
2440ai	60 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2441ai	60 y M				U	Ingst + Unk	Int-A	3		
		THC homolog, 5F-ADB	1	1						
		ethanol	2	2						
2442ai	60 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
2443ai	60 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		morphine	3	3						
2444ai	60 y M				U	Ingst + Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
2445ai	60 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2446ai	61 y M				U	Unk	Int-A	1		
		cocaine	1	1						
2447ai	61 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
2448i	61 y M				U	Ingst + Unk	Int-A	1		
		methamphetamine	1	1						
		hydrocodone	2	2						
		ethanol	3	3						
2449ai	61 y M				C	Unk	Unt-G	3		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		street drug, unknown	1	1						
2450ai	61 y M				U	Unk	Int-A	2		
		cocaine	1	1						
2451ai	61 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2452ai	61 y M				U	Unk	Int-A	1		
		heroin	1	1						
		codeine	2	2						
		hydrocodone	3	3						
2453ai	61 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		diphenhydramine	2	2						
		lorazepam	3	3						
2454ai	61 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2455ai	61 y M				U	Ingst + Unk	Int-A	1		
		methamphetamine	1	1						
		gabapentin	2	2						
		ethanol	3	3						
2456ai	61 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		ethylene glycol	2	2						
		bupropion	3	3						
2457ai	62 y M				U	Unk	Int-A	2		
		cocaine	1	1						
		ethanol	2	2						
2458i	62 y M				U	Unk	Int-A	1		
		heroin	1	1						
2459ai	62 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
2460ai	62 y M				U	Unk	Int-A	1		
		cocaine	1	1						
2461ai	62 y F				U	Unk	Int-A	2		
		cocaine	1	1						
		buprenorphine	2	2						
		diphenhydramine	3	3						
2462ai	62 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2463ai	62 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		diphenhydramine	2	2						
		hyperthermia	3	3						
2464ai	62 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		pseudoephedrine	2	2						
		cyclobenzaprine	3	3						
2465ai	62 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2466i	63 y M				U	Unk	Int-A	1		
		heroin	1	1						
		oxycodone	2	2						
		buprenorphine	3	3						
2467ai	63 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2468ai	63 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		diazepam	2	2						
		ethanol	3	3						
2469ai	63 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2470ai	63 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		cocaine	2	2						
2471ai	63 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2472ai	63 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2473ai	63 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2474ai	64 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		diphenhydramine	2	2						
2475ai	64 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2476ph	64 y M				A	Inhal	Int-A	2		
		cocaine	1	1						
2477ai	64 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
2478ai	64 y M				U	Unk	Int-A	1		
		heroin	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		methamphetamine	2	2						
		codeine	3	3						
2479ai	64 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2480ai	64 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2481	65 y M				A	Inhal	Int-A	3		
		methamphetamine	1	1						
2482ai	65 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		ethanol	2	2						
2483ai	65 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
2484i	65 y M				U	Ingst + Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
2485ai	65 y M				U	Ingst + Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
2486ai	65 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
2487ai	65 y M				U	Ingst + Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
		hyperthermia	3	3						
2488pi	65 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		morphine	2	2						
		chlorophenhylpiperazine	3	3						
2489ai	65 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2490ai	65 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
		ibuprofen	3	3						
2491ai	66 y M				U	Unk	Int-A	1		
		heroin	1	1						
2492ai	66 y M				U	Unk	Int-A	3		
		heroin	1	1						
		codeine	2	2						
2493ai	66 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
2494ai	66 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		ethanol	3	3						
2495ai	66 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2496ai	66 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2497ai	67 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		oxycodone	2	2						
		ethanol	3	3						
2498ai	67 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2499ai	67 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2500ai	67 y M				U	Unk	Int-A	3		
		methamphetamine	1	1						
2501ai	67 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		morphine	2	2						
		isopropanol	3	3						
2502ai	67 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
2503i	68 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2504ai	68 y M				U	Unk	Int-A	1		
		heroin	1	1						
2505ai	68 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
2506ai	68 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2507ai	68 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2508ai	69 y M				U	Unk	Int-A	1		
		heroin	1	1						

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		codeine	2	2						
		ethanol	3	3						
2509ai	69 y M				U	Unk	Int-A	3		
		cocaine	1	1						
2510ai	69 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2511ai	69 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
2512ai	70 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		ethanol	2	2						
2513ai	73 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2514ai	9 m M				U	Unk	Unt-U	1		
		methamphetamine	1	1						
		heroin	2	2						
[2515ph]	14 m F				A	Ingst	Unt-G	1		
		cocaine	1	1					benzoylecognine	1000 ng/mL In Serum @ Unknown
2516	30+ y M				A	Unk	Int-A	1		
		methamphetamine	1	1						
2517ai	Unknown adult (>=20 yrs) M				A	Unk	Oth-C	1		
		THC homolog	1	1						
2518p	Unknown adult (>=20 yrs) M				A	Unk	Int-A	2		
		heroin	1	1						
2519i	Unknown age U				A	Unk	Int-A	2		
		THC homolog	1	1						

See Also case 1, 10, 11, 80, 91, 143, 177, 188, 210, 296, 299, 300, 301, 303, 306, 307, 329, 338, 344, 347, 349, 357, 369, 370, 371, 376, 382, 383, 384, 387, 388, 390, 392, 394, 395, 399, 401, 402, 404, 405, 407, 415, 417, 418, 423, 425, 426, 427, 432, 434, 435, 438, 439, 442, 443, 444, 446, 451, 453, 458, 459, 465, 466, 468, 470, 471, 472, 475, 477, 481, 482, 493, 498, 499, 503, 504, 507, 512, 517, 518, 519, 520, 523, 527, 530, 531, 533, 534, 542, 545, 547, 549, 551, 552, 556, 561, 564, 565, 567, 568, 570, 571, 576, 579, 583, 584, 585, 587, 591, 594, 596, 597, 599, 600, 601, 605, 608, 615, 619, 623, 627, 630, 632, 634, 639, 640, 643, 645, 648, 649, 650, 658, 659, 665, 670, 675, 676, 677, 681, 689, 692, 703, 704, 708, 709, 712, 714, 721, 722, 729, 739, 740, 750, 751, 755, 757, 763, 764, 769, 785, 786, 794, 797, 798, 800, 809, 810, 821, 834, 837, 843, 844, 863, 870, 871, 873, 888, 889, 899, 900, 903, 905, 912, 918, 926, 945, 976, 978, 982, 985, 1008, 1013, 1017, 1042, 1054, 1158, 1197, 1203, 1206, 1207, 1213, 1244, 1285, 1318, 1349, 1352, 1364, 1380, 1403, 1411, 1415, 1417, 1424, 1427, 1438, 1444, 1460, 1485, 1500, 1632, 1644, 1652, 1653, 1664, 1671, 1681, 1720, 1742, 1779, 1784, 1786, 1796, 2520, 2548, 2550, 2565

Topical Preparations

2520h	61 y M				C	Ingst + Inhal	Int-S	2		
		iodine	1	1						
		methamphetamine	2	2						

See Also case 113, 170, 189

Unknown Drug

2521h	16 y F				A	Ingst	Int-S	1		
		drug, unknown	1	1						
2522pa	17 y F				U	Unk	Unk	2		
		drug, unknown	1	1						
2523h	18 y F				A	Ingst	Int-S	2		
		drug, unknown	1	1						
2524p	19 y M				A	Unk	Unk	1		
		drug, unknown	1	1						
		calcium antagonist	2	2						
		angiotensin converting enzyme inhibitor	3	3						
		antipsychotic (atypical)	4	4						
		metformin	5	5						
		antipsychotic (atypical)	6	6						
		topiramate	7	7						
		phenothiazine	8	8						
		trazodone	9	9						
		antacid (proton pump inhibitor)	10	10						
		antihyperlipidemic	11	11						
2525ph	20 y M				U	Ingst	Int-S	2		
		drug, unknown	1	1						
2526ph	21 y F				U	Unk	Unk	2		
		drug, unknown	1	1						
2527	22 y M				A	Ingst	Int-A	3		
		drug, unknown	1	1						
2528p	23 y M				A/C	Ingst	Int-S	2		
		drug, unknown	1	1						
		clonazepam	2	2						
2529ph	24 y F				U	Unk	Int-U	2		
		drug, unknown	1	1						
		alprazolam	2	2						
		ketamine	3	3						
2530pa	25 y F				A	Unk	Unt-U	1		
		drug, unknown	1	1					alprazolam	13 ng/mL In Blood (unspecified) @ Unknown
		drug, unknown	1	1					norfentanyl	3.1 ng/mL In Blood (unspecified) @ Unknown
		drug, unknown	1	1					amphetamine	330 ng/mL In Blood (unspecified) @ Unknown
		drug, unknown	1	1					fentanyl	4.7 ng/mL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		drug, unknown	1	1					hydrocodone (free)	5.7 ng/mL In Blood (unspecified) @ Unknown
2531pha	26 y F				U	Unk	Int-A	2		
		drug, unknown	1	1						
		narcotic, other/unknown	2	2						
2532ph	27 y F				A	Ingst	Unk	2		
		drug, unknown	1	1						
		clonidine	2	2						
2533pai	28 y F				U	Unk	Int-A	3		
		drug, unknown	1	1						
2534	31 y M				U	Unk	Int-A	2		
		drug, unknown	1	1						
2535i	31 y M				C	Par	Int-A	3		
		drug, unknown	1	1						
2536i	34 y M				C	Par	Int-A	3		
		drug, unknown	1	1						
2537ai	34 y F				C	Unk	Int-A	2		
		drug, unknown	1	1						
2538pha	35 y M				U	Unk	Unk	3		
		drug, unknown	1	1						
		fentanyl	2	2					fentanyl	10 ng/mL In Urine (quantitative only) @ Unknown
		fentanyl	2	2					norfentanyl	25 ng/mL In Urine (quantitative only) @ Unknown
2539ai	35 y F				U	Unk	Int-A	3		
		drug, unknown	1	1						
2540ha	35 y F				U	Ingst	Unk	2		
		drug, unknown	2	1						
		quetiapine	1	1						
2541ha	35 y M				A	Unk	Unk	3		
		drug, unknown	1	1						
2542ai	35 y M				U	Unk	Int-A	1		
		drug, unknown	1	1						
2543ai	36 y F				U	Unk	Unk	2		
		drug, unknown	1	1						
2544ai	36 y F				U	Unk	Unk	1		
		drug, unknown	1	1						
2545h	37 y M				A	Ingst + Par	Int-S	2		
		drug, unknown	1	1						
		insulin, lispro	2	2						
		insulin, glargine	3	3						
		trazodone	4	4						
		acetaminophen/hydrocodone	5	5						
2546ph	37 y M				A	Ingst	Int-A	2		
		drug, unknown	1	1						
2547ai	37 y F				U	Unk	Int-A	1		
		drug, unknown	1	1						
2548ph	38 y F				A	Unk	Int-S	2		
		drug, unknown	1	1						
		methylenedioxy methamphetamine (MDMA)	2	2						
2549p	39 y M				A	Unk	Int-U	2		
		drug, unknown	1	1						
2550ph	42 y F				U	Par	Unk	2		
		drug, unknown	1	1						
		heroin	2	2						
2551ai	43 y F				U	Unk	Int-A	3		
		drug, unknown	1	1						
2552ai	43 y M				U	Unk	Int-A	1		
		drug, unknown	1	1						
2553ph	44 y F				A	Ingst	Oth-M	2		
		drug, unknown	1	1						
		ethylene glycol	2	2						
		ethanol	3	3					ethanol	0.022 % In Blood (unspecified) @ Unknown
2554h	45 y M				U	Ingst	Int-S	2		
		drug, unknown	1	1						
2555	47 y F				A	Unk	Unk	2		
		drug, unknown	1	1						
		acetaminophen	2	2					acetaminophen (apap)	78 mcg/mL In Blood (unspecified) @ Unknown
2556ph	49 y F				U	Ingst	Int-U	2		
		drug, unknown	1	1						
2557ph	50 y F				U	Par	Int-U	1		
		drug, unknown	1	1						
2558ai	50 y M				C	Unk	Int-A	1		
		drug, unknown	1	1						
2559ai	50 y M				U	Unk	Int-A	1		
		drug, unknown	1	1						
2560	51 y M				U	Ingst	Int-S	2		
		drug, unknown	1	1						
2561ai	51 y M				U	Unk	Int-A	2		
		drug, unknown	1	1						
2562phi	52 y M				A	Inhal	Int-A	2		

(*continued*)

Table 21. Listing of Fatal Nonpharmaceutical and Pharmaceutical Exposures – Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		drug, unknown	1	1						
2563ai	53 y M				C	Unk	Int-A	3		
		drug, unknown	1	1						
2564ai	54 y M				U	Unk	Int-A	3		
		drug, unknown	1	1						
2565pha	55 y M				A	Ingst + Unk	Int-S	2		
		drug, unknown	1	1						
		ethanol	2	2						
		cocaine	3	3					benzoylecognine	1600 ng/mL In Blood (unspecified) @ Unknown
2566ha	55 y M				A	Ingst	Unk	3		
		drug, unknown	1	1						
		acetaminophen/hydrocodone	2	2					hydrocodone	30 ng/mL In Blood (unspecified) @ Autopsy
2567ai	58 y M				C	Unk	Int-A	3		
		drug, unknown	1	1						
2568ai	59 y M				C	Unk	Int-A	2		
		drug, unknown	1	1						
2569ai	60 y M				U	Unk	Int-A	3		
		drug, unknown	1	1						
2570h	60 y M				A	Ingst	Int-S	2		
		drug, unknown	1	1						
		olanzapine	2	2						
2571h	60 y M				A/C	Ingst	Int-S	2		
		drug, unknown	1	1						
2572h	60 y F				A	Ingst	Int-S	2		
		drug, unknown	1	1						
		gabapentin	2	2						
		lamotrigine	3	3						
		antipsychotic (atypical)	4	4						
2573h	66 y F				U	Ingst	Unt-G	3		
		drug, unknown	1	1						
2574ai	66 y M				C	Unk	Int-A	2		
		drug, unknown	1	1						
2575ai	69 y M				U	Unk	Int-A	3		
		drug, unknown	1	1						
		ethanol	2	2						
2576	73 y M				A/C	Ingst	Int-S	2		
		drug, unknown	1	1						
2577ai	73 y M				U	Unk	Unk	3		
		drug, unknown	1	1						
2578ai	75 y M				U	Unk	Int-A	3		
		drug, unknown	1	1						
2579ph	85 y F				C	Ingst	AR-D	2		
		drug, unknown	1	1						
		citalopram	2	2						
		amitriptyline	3	3						
		buspirone	4	4						
2580a	86 y F				A	Ingst	Unk	3		
		drug, unknown	1	1						
		salicylate	2	2					salicylate	47.5 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen	3	3					acetaminophen (apap)	44 mcg/mL In Blood (unspecified) @ Unknown
2581pi	Unknown adult (> =20 yrs) M				A	Unk	Int-A	2		
		drug, unknown	1	1						
See Also case 6, 142, 169, 181, 354, 355, 413, 423, 508, 555, 629, 641, 748, 858, 901, 920, 1005, 1095, 1140, 1205, 1257, 1267, 1387, 1516, 1517, 1632, 1657, 1659, 1679, 1687, 1731, 1755, 1786, 1875, 1904, 1956, 1998, 2025, 2064, 2088, 2133, 2243, 2428, 2582										
Veterinary Drugs										
2582p	43 y F				A	Ingst + Par + Unk	Int-S	2		
		pentobarbital/phenytoin	1	1						
		morphine	2	2						
		drug, unknown	3	3						
		ethylene glycol (antifreeze)	4	4						

Listing of 2,582 (1,354 Direct + 1,228 Indirect) fatalities classified as Relative Contribution to Fatality category = 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).

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

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

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

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

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

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

Appendix E – Table 22(A) & Table 22(B), Demographic profile of SINGLE SUBSTANCE exposure cases by generic category

Nonpharmaceuticals (Table 22(A))

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

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposure	≤5	6–12	13–19	≥20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Nonpharmaceuticals																			
Adhesives/Glues																			
Miscellaneous Adhesives/Glues																			
Cyanoacrylates (Superglues, etc)	4,448	4,396	1,825	315	285	1,577	12	325	57	4,221	98	36	28	1,231	670	832	162	5	0
Epoxy	676	628	158	27	30	337	4	66	6	603	6	2	17	182	87	141	50	3	0
Non-Toxic Adhesives/Glues (White Glue, Paper Glue, etc)	949	796	466	199	55	55	7	10	4	723	62	8	2	35	101	28	2	0	0
Toluene/Xylene (Adhesives Only)	234	217	89	3	11	90	0	23	1	206	10	0	1	52	40	44	13	0	0
Unknown Types of Adhesive, Glue, Cement or Paste	4,325	3,970	1,603	360	219	1,365	45	342	36	3,703	152	32	66	593	625	495	91	12	0
Category Total:	**10,632**	**10,007**	**4,141**	**904**	**600**	**3,424**	**68**	**766**	**104**	**9,456**	**328**	**78**	**114**	**2,093**	**1,523**	**1,540**	**318**	**20**	**0**
Alcohols																			
Miscellaneous Alcohols																			
Ethanol (Beverages)	52,432	7,312	1,875	177	1,015	3,681	6	429	129	2,490	4,182	270	182	3,438	842	1,499	1,099	246	79
Ethanol (Non-Beverage, Non-Rubbing)	2,671	2,142	1,371	93	94	496	2	73	13	1,958	141	14	15	231	395	159	27	5	0
Higher Alcohols (Butanol, Amyl Alcohol, Propanols, etc)	137	100	35	7	11	38	0	9	0	80	12	6	1	29	12	23	4	0	0
Isopropanol (Excluding Rubbing Alcohols and Cleaning Agents)	4,388	3,748	1,572	154	187	1,575	3	235	22	2,859	809	28	20	1,059	645	720	306	39	0
Methanol (Excluding Automotive Products and Cleaning Agents)	655	526	77	13	28	347	2	55	4	442	51	11	1	222	123	81	22	18	5
Other Types of Alcohol	153	132	69	8	8	42	0	4	1	118	6	0	4	30	21	27	3	0	0
Unknown Types of Alcohol	3,578	663	133	9	77	355	2	65	22	214	378	18	14	294	55	124	107	29	4
Rubbing Alcohols																			
Rubbing Alcohols: Ethanol with Methyl Salicylate	8	8	6	0	0	2	0	0	0	7	1	0	0	3	3	2	0	0	0
Rubbing Alcohols: Ethanol without Methyl Salicylate	350	325	182	14	16	102	0	5	6	278	45	0	1	64	55	48	19	2	0
Rubbing Alcohols: Isopropanol with Methyl Salicylate	191	182	122	5	4	50	0	1	0	169	11	0	1	41	61	14	3	0	0
Rubbing Alcohols: Isopropanol without Methyl Salicylate	6,671	6,032	3,109	162	298	2,177	8	243	35	4,938	983	54	15	1,349	1,148	999	310	25	0
Rubbing Alcohols: Unknown	147	104	31	3	6	62	0	2	0	58	41	2	1	48	11	21	15	0	0
Category Total:	**71,381**	**21,274**	**8,582**	**645**	**1,744**	**8,927**	**23**	**1,121**	**232**	**13,611**	**6,660**	**403**	**255**	**6,808**	**3,371**	**3,717**	**1,915**	**364**	**88**
Arts/Crafts/Office Supplies																			
Miscellaneous Arts/Crafts/Office Supplies																			
Artist Paints (Non-Water Color)	3,834	3,702	2,792	285	144	389	12	70	10	3,605	69	14	10	143	452	144	10	0	0
Artist Paints (Water Color)	1,618	1,576	1,298	157	36	61	4	19	1	1,535	34	3	3	21	190	22	1	0	0
Chalks	1,581	1,541	1,410	75	19	26	5	6	0	1,508	26	5	2	42	180	42	1	0	0
Clays	2,461	2,396	1,973	240	62	90	9	20	2	2,349	37	3	5	83	249	92	5	0	0
Crayons	1,946	1,889	1,559	205	32	70	13	7	3	1,837	46	1	3	47	192	61	2	0	0
Glazes	92	90	35	21	14	17	0	2	1	80	8	0	2	8	12	9	0	0	0
Office Supplies: Miscellaneous	108	106	56	11	5	28	0	5	1	97	9	0	0	5	17	9	2	0	0
Other Types of Arts/Crafts/ Writing Products	7,329	6,963	5,093	789	293	574	29	160	25	6,683	210	35	20	300	933	289	30	1	0
Pencils	1,134	1,092	457	457	107	53	7	9	2	954	105	19	4	48	105	56	4	0	0
Pens or Inks	8,584	8,344	5,326	1,811	722	311	31	118	25	7,744	493	32	49	261	1,020	242	12	0	0
Typewriter Correction Fluids	459	447	248	81	52	51	2	12	1	400	34	5	2	37	106	32	1	0	0
Unknown Types of Arts/Crafts/ Writing Products	131	125	86	24	7	7	0	1	0	117	7	0	0	13	22	4	1	0	0
Category Total:	**29,277**	**28,271**	**20,333**	**4,156**	**1,493**	**1,677**	**112**	**429**	**71**	**26,909**	**1,078**	**117**	**100**	**1,008**	**3,478**	**1,002**	**69**	**1**	**0**

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Automotive/Aircraft/Boat Products																			
Automotive Products																			
Automotive Products: Brake Fluids	897	844	197	17	57	494	1	71	7	763	56	15	2	318	153	215	41	12	0
Automotive Products: Ethylene Glycol (Including Antifreeze)	6,411	5,897	469	125	436	4,197	36	552	82	4,990	684	143	17	2,287	1,137	967	420	109	5
Automotive Products: Glycol and Methanol Mixtures	157	147	33	10	10	80	3	9	2	132	12	0	3	45	39	24	5	1	0
Automotive Products: Hydrocarbons (Transmission Fluids, Power Steering Fluids, etc)	1,884	1,757	513	48	106	939	3	138	10	1,635	85	27	6	575	298	519	102	4	0
Automotive Products: Methanol (Dry Gas, Windshield Washing Solutions, etc)	1,356	1,278	165	48	119	767	5	161	13	1,170	75	16	4	368	319	216	36	10	6
Automotive Products: Other Glycols	200	189	63	13	14	74	6	16	3	172	6	7	4	45	56	31	7	0	0
Miscellaneous Automotive/Aircraft/ Boat Products																			
Automotive/Aircraft/Boat Products: Non-Toxic	25	23	13	1	3	6	0	0	0	22	0	0	1	4	4	0	1	0	0
Automotive/Aircraft/Boat Products: Other	1,275	1,206	420	56	49	580	3	75	23	1,151	24	13	14	380	228	335	74	1	0
Automotive/Aircraft/Boat Products: Unknown	192	176	42	5	11	87	0	28	3	161	6	5	0	68	39	34	15	1	0
Category Total:	**12,397**	**11,517**	**1,915**	**323**	**805**	**7,224**	**57**	**1,050**	**143**	**10,196**	**948**	**226**	**51**	**4,090**	**2,273**	**2,341**	**701**	**138**	**11**
Batteries																			
Disc Batteries																			
Disc Batteries: Alkaline (MNO2)	599	586	350	62	23	121	1	27	2	546	30	6	1	401	299	60	16	2	0
Disc Batteries: Lithium	592	351	93	22	33	186	0	14	3	190	68	1	80	287	89	77	90	20	2
Disc Batteries: Mercuric Oxide	18	18	10	2	0	4	0	2	0	18	0	0	0	10	7	1	0	0	0
Disc Batteries: Nickel Cadmium	24	24	5	7	1	9	0	1	1	22	1	0	0	6	3	1	3	0	0
Disc Batteries: Other	28	26	16	2	1	5	0	0	2	24	1	0	0	22	9	3	1	0	0
Disc Batteries: Silver Oxide	108	108	55	6	1	43	2	1	0	106	0	0	1	83	64	6	3	1	0
Disc Batteries: Unknown	1,837	1,798	1,107	221	39	387	6	32	6	1,712	67	5	0	1,374	908	109	25	7	0
Disc Batteries: Zinc-Air	677	666	377	61	13	193	3	17	2	644	17	2	0	506	394	34	6	2	0
Miscellaneous Batteries																			
Automotive/Aircraft/Boat Batteries	611	590	52	11	33	405	1	78	10	571	4	5	8	207	58	182	46	0	0
Other Types of Battery	320	310	57	21	48	140	2	39	3	269	21	14	5	86	60	49	20	0	0
Penlight/Flashlight/Dry Cell Batteries	5,278	5,132	3,071	526	286	968	20	242	19	4,587	447	52	19	1,141	1,410	472	83	3	0
Unknown Types of Battery	153	142	71	10	7	40	0	11	3	129	10	0	1	34	50	14	3	0	0
Category Total:	**10,245**	**9,751**	**5,264**	**951**	**485**	**2,501**	**35**	**464**	**51**	**8,818**	**666**	**85**	**115**	**4,157**	**3,351**	**1,008**	**296**	**35**	**2**
Bites and Envenomations																			
Aquatic																			
Fish Stings	448	440	19	26	54	310	0	27	4	436	1	0	3	226	7	133	71	1	0
Jellyfish and Other Coelenterate Stings	219	214	24	58	17	103	1	10	1	211	3	0	0	72	2	60	30	1	0
Other or Unknown Marine Animal Bites and/or Envenomations	287	273	112	16	14	118	0	13	0	260	7	3	3	78	29	41	11	2	0
Exotic Snakes																			
Exotic Snake: Unknown If Poisonous	5	5	1	1	1	1	0	1	0	5	0	0	0	2	0	1	2	0	0
Exotic Snakes: Non-Poisonous	27	27	3	2	3	16	0	2	1	27	0	0	0	21	0	12	1	0	0
Exotic Snakes: Poisonous	41	40	0	4	1	34	0	0	1	40	0	0	0	31	1	11	14	4	0
Insects																			
Ant or Fire Ant Bites	536	488	131	41	26	224	0	55	11	454	6	17	6	68	22	99	22	0	1
Bee, Wasp, or Hornet Stings	2,671	2,584	454	250	105	1,457	7	282	29	2,579	0	3	1	448	30	858	216	10	1
Caterpillars	2,816	2,802	551	380	196	1,372	12	255	36	2,759	13	6	22	403	67	846	142	3	0
Centipede or Millipede Bites	428	423	118	29	30	205	0	36	5	418	1	3	0	57	17	130	17	0	0
Mosquito Bites	147	123	38	9	11	54	1	8	2	123	0	0	0	19	2	25	9	0	0
Other Insect Bites and/or Stings	4,061	3,945	958	313	206	1,937	16	467	48	3,768	15	102	38	672	192	737	188	4	0
Scorpion Stings	11,313	11,300	1,378	1,279	854	7,359	5	352	73	11,296	2	1	1	1,479	72	6,991	597	17	0
Tick Bites	657	631	173	59	27	263	7	90	12	630	0	0	1	140	16	94	10	1	0

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Mammals																			
Bat Bites	744	740	88	82	52	411	3	90	14	730	0	1	1	467	127	98	2	0	0
Cat Bites	766	758	37	88	65	474	4	70	20	755	1	0	1	530	10	338	46	0	0
Dog Bites	2,546	2,533	364	478	259	1,269	7	125	31	2,533	0	0	0	1,972	27	1,196	175	8	0
Fox Bites	27	26	2	2	2	15	1	2	2	26	0	0	0	16	1	9	1	0	0
Human Bites	11	10	3	1	0	4	0	2	0	9	0	1	0	6	0	4	0	0	0
Other Mammal Bites	774	761	98	72	72	413	7	82	17	746	1	9	1	416	44	173	13	1	1
Raccoon Bites	131	130	5	10	7	87	4	16	1	128	0	0	0	85	10	32	2	0	0
Rodent or Lagomorph Bites (Squirrels, Rats, Mice, Gerbils, Hamsters, Rabbits, etc)	773	751	183	101	49	315	8	85	10	713	1	27	3	259	42	170	20	0	0
Skunk Bites	10	10	1	0	1	5	1	2	0	10	0	0	0	5	1	1	0	0	0
Miscellaneous Bites and Envenomations																			
Other or Unknown Animal Bites	260	256	31	26	20	144	2	30	3	246	6	0	4	110	15	88	26	0	0
Other or Unknown Reptile Bites	305	300	82	53	27	111	0	17	10	281	6	2	10	66	28	82	11	1	1
Unknown Types of Insect or Spider Bite and/or Envenomation	2,096	2,044	482	154	97	1,086	5	184	36	2,016	5	11	6	399	62	418	101	3	0
Miscellaneous Snake Bites and Envenomations																			
Unknown or Known Non-Poisonous Snake Bites	575	567	44	88	72	336	4	22	1	561	4	0	0	360	25	287	40	2	0
Unknown Types of Snake Envenomation	2,443	2,423	150	275	249	1,689	1	48	11	2,417	5	0	0	2,230	60	1,041	867	60	0
Snakes																			
Copperhead Envenomations	2,117	2,082	75	156	152	1,674	2	21	2	2,077	5	0	0	2,028	15	574	1,295	51	0
Coral Envenomations	79	78	2	1	5	70	0	0	0	76	0	1	0	70	9	36	19	3	0
Cottonmouth Envenomations	212	211	8	14	24	164	0	1	0	207	3	0	1	202	4	57	117	5	0
Rattlesnake Envenomations	1,091	1,064	39	64	76	867	0	12	6	1,060	2	2	0	1,029	19	252	562	107	1
Unknown CrotalidEnvenomations	593	580	25	62	68	412	0	8	5	580	0	0	0	561	5	172	336	19	0
Spiders																			
Black Widow Spider Bites and/or Envenomations	1,015	1,000	83	59	65	742	2	40	9	997	0	0	2	559	35	313	244	6	0
Brown Recluse Spider Bites and/or Envenomations	734	721	38	49	46	493	0	85	10	715	0	3	3	329	17	138	170	11	0
Other Necrotizing Spider Bites and/or Envenomations	72	70	20	6	1	27	0	16	0	70	0	0	0	17	4	11	9	0	0
Other Spider Bites and/or Envenomations	2,249	2,216	287	128	146	1,405	5	221	24	2,198	5	8	3	563	50	560	163	1	0
Tarantula Bites and/or Envenomations	46	45	5	5	2	27	0	5	1	44	0	0	1	17	1	20	6	0	0
Category Total:	**43,325**	**42,671**	**6,112**	**4,441**	**3,102**	**25,693**	**105**	**2,782**	**436**	**42,201**	**92**	**200**	**111**	**16,012**	**1,068**	**16,108**	**5,555**	**321**	**5**
Building and Construction Products																			
Insulation																			
Asbestos	386	337	49	13	6	193	1	71	4	333	0	3	0	47	42	16	6	0	0
Fiberglass	503	476	225	39	25	150	0	29	8	452	8	8	6	77	59	83	13	0	0
Other Types of Insulation	106	102	44	5	2	39	0	11	1	96	4	0	2	20	14	11	3	0	0
Unknown Types of Insulation	437	418	276	27	12	75	2	24	2	408	6	0	3	39	65	29	6	0	0
Urea or Formaldehyde Insulations	13	13	3	0	1	6	0	3	0	13	0	0	0	3	2	4	0	0	0
Miscellaneous Building and Construction Products																			
Caulking Compounds and Construction Putties	2,431	2,355	1,404	110	45	590	2	177	27	2,265	39	15	33	185	472	186	31	0	0
Cement or Concrete (Excluding Glues)	1,343	1,287	338	29	48	727	2	132	11	1,243	20	3	18	586	173	288	227	9	0
Other Types of Building or Construction Products	2,203	2,032	957	163	75	614	10	150	63	1,952	44	11	18	344	374	334	77	3	0
Soldering Flux	172	165	34	3	18	93	0	15	2	156	3	3	2	54	24	53	14	2	0
Unknown Types of Building or Construction Products	96	91	24	4	5	42	3	12	1	87	2	0	1	25	15	14	5	0	0
Category Total:	**7,690**	**7,276**	**3,354**	**393**	**237**	**2,529**	**20**	**624**	**119**	**7,005**	**126**	**43**	**83**	**1,380**	**1,240**	**1,018**	**382**	**14**	**0**

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Chemicals																			
Acids																			
Hydrochloric Acid	1,794	1,483	63	44	208	1,004	0	145	19	1,394	42	17	17	613	118	543	175	13	1
Hydrofluoric Acid	682	581	17	4	25	484	1	39	11	566	5	1	6	459	63	236	137	7	2
Other Types of Acid	4,909	4,215	815	284	250	2,423	11	382	50	3,910	175	56	58	1,542	555	1,164	432	22	0
Unknown Types of Acid	170	140	13	1	9	95	0	19	3	124	5	8	2	75	10	34	22	1	1
Miscellaneous Chemicals																			
Acetone (Excluding Nail Polish Removers)	1,437	1,205	430	43	80	532	0	105	15	1,077	71	29	8	315	191	252	51	4	0
Alkalis (Excluding Cleaning Agents, Bleaches, Batteries, and Detergents)	3,360	2,899	414	105	247	1,876	4	217	36	2,699	94	43	42	1,587	244	942	556	59	0
Ammonia (Excluding Cleaning Agents)	2,548	1,694	345	64	117	1,002	6	137	23	1,563	74	27	19	636	191	555	158	13	1
Borates or Boric Acid (Excluding Topicals and Pesticides)	7,411	7,075	2,409	1,187	557	2,449	14	411	48	6,589	202	173	85	812	1,169	612	62	0	1
Chlorates (Excluding Matches and Fireworks)	20	16	3	1	3	6	0	3	0	14	0	2	0	6	0	0	3	0	0
Cyanides (Excluding Rodenticides)	272	185	11	1	9	140	0	19	5	137	17	18	3	116	31	42	13	2	2
Dioxins	18	12	0	0	1	9	0	1	1	11	0	1	0	1	0	0	2	0	0
Ethylene Glycol (Excluding Automotive, Aircraft, or Boat Products)	849	702	87	25	31	514	0	41	4	433	190	21	6	406	120	95	82	91	14
Formaldehyde or Formalin	647	585	42	35	65	350	3	68	22	535	21	11	12	228	68	172	36	0	0
Ketones	349	301	79	2	13	187	1	15	4	288	8	1	4	129	42	104	30	3	0
Methylene Chloride (Excluding Paint Strippers)	219	185	32	6	6	109	1	28	3	181	3	0	1	78	25	49	16	1	0
Nitrates and Nitrites (Excluding Medications and Substances of Abuse)	949	867	262	205	72	277	3	44	4	712	125	17	4	209	164	114	31	6	2
Other Chemicals	13,188	11,335	4,121	900	706	4,538	48	892	130	10,133	557	186	387	2,843	1,798	2,127	668	48	8
Other Chemicals-Unknown If Toxic	2	2	0	0	0	2	0	0	0	2	0	0	0	1	0	0	0	0	0
Other Glycols (Excluding Automotive, Aircraft, or Boat Products)	738	570	224	26	24	227	1	62	6	502	25	7	25	165	115	83	26	8	1
Phenol or Creosotes (Excluding Disinfectants)	318	288	31	9	15	168	0	63	2	274	7	3	3	138	34	90	30	3	0
Strychnine (Excluding Rodenticides)	26	22	10	3	1	6	0	2	0	19	0	0	3	6	9	2	0	0	0
Toluene Diisocyanate	464	436	114	19	12	235	0	53	3	416	10	0	9	142	35	98	25	5	0
Unknown Chemicals	4,652	4,377	874	220	220	2,339	16	605	103	3,398	135	545	160	1,513	571	947	300	26	2
Category Total:	**45,022**	**39,175**	**10,396**	**3,184**	**2,671**	**18,972**	**109**	**3,351**	**492**	**34,977**	**1,766**	**1,166**	**854**	**12,020**	**5,553**	**8,261**	**2,855**	**312**	**35**
Cleaning Substances (Household)																			
Automatic Dishwasher Detergents																			
Automatic Dishwasher Detergents: Granules (Unit Dose)	2,368	2,354	2,225	26	6	79	1	13	4	2,338	8	6	1	115	538	341	8	0	0
Automatic Dishwasher Detergents: Granules (Various Containers)	2,273	2,236	1,865	33	20	254	4	56	4	2,179	13	38	2	156	415	283	18	1	0
Automatic Dishwasher Detergents: Granules with Liquids (Unit Dose)	6,643	6,599	6,221	45	44	241	4	42	2	6,565	27	6	1	450	1,492	1,087	47	0	0
Automatic Dishwasher Detergents: Liquids (Unit Dose)	392	385	339	12	4	24	1	4	1	381	2	2	0	44	78	56	6	0	0
Automatic Dishwasher Detergents: Liquids (Various Containers)	1,558	1,508	1,146	26	29	248	0	55	4	1,473	11	21	1	160	279	233	41	2	0
Automatic Dishwasher Detergents: Tablets	2,979	2,953	2,695	30	23	156	2	44	3	2,933	10	10	0	187	730	378	13	0	0
Automatic Dishwasher Rinse Agents	817	775	587	17	12	124	1	33	1	760	13	1	0	71	154	119	8	0	0
Other or Unknown Types of Automatic Dishwasher Detergent	1,263	1,248	1,034	17	21	138	1	36	1	1,228	3	13	3	104	177	134	8	0	0
Bleaches																			
Bleaches: Borates	3,257	2,510	868	105	189	1,110	5	189	44	2,223	205	49	18	757	414	655	124	6	0
Bleaches: Hypochlorite (Liquid and Dry)	35,425	29,707	11,004	1,166	2,222	12,763	58	2,171	323	26,284	2,413	525	305	8,210	4,366	8,083	1,043	38	2
Bleaches: Non-Hypochlorite	237	200	78	11	9	81	0	19	2	165	11	10	14	51	33	53	10	0	0
Bleaches: Other or Unknown (Household)	1,029	830	261	32	60	417	2	45	13	710	92	13	8	298	99	187	45	1	0

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Cleansers																			
Anionic or Nonionic Cleansers	2,059	1,890	1,396	44	43	339	5	57	6	1,820	39	19	12	172	383	218	16	2	0
Other or Unknown Types of Household Cleanser	2,401	2,168	1,219	80	78	615	5	156	15	1,999	93	45	21	458	387	385	62	3	0
Disinfectants																			
Disinfectants: Hypochlorite (Non-Bleach Products)	1,892	1,638	692	59	78	648	1	145	15	1,512	70	25	25	459	216	393	83	1	0
Disinfectants: Other or Unknown	6,773	6,275	3,475	445	298	1,639	19	344	55	5,759	309	94	96	761	1,151	1,068	116	7	1
Disinfectants: Phenol	474	448	227	35	31	124	0	29	2	395	36	6	8	69	98	63	11	1	0
Disinfectants: Pine Oil	3,173	2,789	1,497	108	109	907	5	148	15	2,568	134	41	29	540	650	561	59	2	0
Drain Cleaners																			
Drain Cleaners: Acids	112	73	16	2	2	38	1	12	2	64	4	1	2	25	6	19	11	0	0
Drain Cleaners: Alkalis	2,557	2,156	306	65	53	1,377	0	317	38	1,977	109	13	41	698	257	580	246	29	5
Drain Cleaners: Hydrochloric Acid	32	16	5	0	0	7	0	4	0	16	0	0	0	5	3	5	1	0	0
Drain Cleaners: Other or Unknown	709	515	96	16	15	305	4	74	5	477	26	7	3	144	71	115	31	5	0
Drain Cleaners: Sulfuric Acid	500	368	23	14	14	260	1	51	5	345	9	4	8	155	34	98	70	3	0
Fabric Softeners/Antistatic Agents																			
Fabric Softener/Antistatic Agent: Other or Unknown	25	25	18	0	0	7	0	0	0	24	0	1	0	2	5	3	0	0	0
Fabric Softeners/Antistatic Agents: Aerosol or Spray	96	93	78	2	1	8	0	3	1	93	0	0	0	3	23	7	2	0	0
Fabric Softeners/Antistatic Agents: Dry or Powder (Unit Dose)	6	6	4	2	0	0	0	0	0	6	0	0	0	1	0	1	0	0	0
Fabric Softeners/Antistatic Agents: Dry or Powder (Various Containers)	11	11	9	0	1	1	0	0	0	11	0	0	0	0	2	0	0	0	0
Fabric Softeners/Antistatic Agents: Liquid (Unit Dose)	10	10	9	0	0	1	0	0	0	10	0	0	0	1	3	0	0	0	0
Fabric Softeners/Antistatic Agents: Liquid (Various Containers)	890	810	591	24	27	140	2	22	4	773	24	4	8	101	153	94	3	1	0
Fabric Softeners/Antistatic Agents: Powder with Liquid (Unit Dose)	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Fabric Softeners/Antistatic Agents: Solid or Sheet	609	593	487	27	10	53	0	12	4	567	12	6	7	15	86	24	2	0	0
Glass Cleaners																			
Glass Cleaners: Ammonia Containing	1,473	1,309	958	46	76	176	5	45	3	1,224	69	13	1	112	304	144	13	0	0
Glass Cleaners: Anionics or Nonionics	145	128	72	10	12	27	0	7	0	111	11	6	0	19	32	12	3	0	0
Glass Cleaners: Isopropanol	1,191	1,081	734	62	52	191	1	35	6	1,016	49	11	4	114	249	116	5	1	0
Glass Cleaners: Other or Unknown Types of Household	1,424	1,251	824	63	79	247	1	35	2	1,144	88	12	5	143	239	154	17	0	0
Hand Dishwashing																			
Anionic or Nonionic Hand Dishwashing Detergents	6,263	5,531	3,222	357	168	1,429	18	306	31	5,194	125	160	34	498	660	1,000	77	2	0
Other or Unknown Types of Household Hand Dishwashing Detergent	2,290	1,966	1,035	123	71	582	3	135	17	1,863	30	62	3	150	187	272	13	0	0
Laundry Additives																			
Enzyme and/or Microbiological Laundry Additives	47	43	20	1	0	20	0	2	0	41	1	0	1	9	8	9	2	0	0
Laundry Bluing and/or Brightening Agents (without Detergent)	27	23	11	2	0	8	0	2	0	22	0	0	1	2	6	2	2	0	0
Laundry Detergent Boosters	475	450	227	67	21	121	3	10	1	420	12	16	1	44	125	61	3	1	0
Other or Unknown Laundry Additives or Miscellaneous Products	1,560	1,489	1,192	49	54	132	2	31	29	1,430	42	11	2	134	304	131	15	0	0
Water Softeners	45	41	25	5	0	11	0	0	0	38	2	1	0	5	8	6	0	0	0
Laundry Detergents																			
Laundry Detergents: Granules (Unit Dose)	397	387	236	16	18	98	1	16	2	368	12	2	5	77	97	74	10	0	0
Laundry Detergents: Granules (Various Containers)	2,592	2,429	1,644	114	89	477	1	93	11	2,313	78	17	13	355	374	397	43	2	1
Laundry Detergents: Granules with Liquids (Unit Dose)	224	221	169	14	3	29	0	5	1	214	7	0	0	83	55	80	11	0	0

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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 Detergents: Liquids (Unit Dose)	11,911	11,782	9,291	739	542	928	36	198	48	11,122	555	41	35	4,331	2,246	4,463	642	14	1
Laundry Detergents: Liquids (Various Containers)	6,523	6,135	4,104	305	274	1,221	9	209	13	5,763	272	53	26	993	988	1,136	105	6	1
Laundry Detergents: Other or Unknown Types of Household Laundry Detergent and/or Fabric Cleaner	275	246	143	7	18	61	1	14	2	220	16	5	4	60	44	51	6	1	0
Laundry Detergents: Soaps	187	171	105	9	2	48	0	7	0	164	5	0	2	17	48	25	3	0	0
Laundry Prewash/Stain Removers																			
Laundry Prewash/Stain Removers: Aerosol or Spray Solvent Based	121	119	101	4	0	10	0	2	2	118	0	0	1	16	21	25	4	0	0
Laundry Prewash/Stain Removers: Aerosol or Spray Surfactant Based	242	229	184	5	3	30	0	6	1	224	3	1	0	28	40	39	3	0	0
Laundry Prewash/Stain Removers: Dry Solvent Based	2	2	2	0	0	0	0	0	0	2	0	0	0	1	1	0	0	0	0
Laundry Prewash/Stain Removers: Dry Surfactant Based	56	52	44	1	0	5	0	2	0	51	0	0	1	2	7	6	0	0	0
Laundry Prewash/Stain Removers: Liquid Solvent Based	158	150	102	2	2	40	0	4	0	145	1	2	2	19	42	22	1	0	0
Laundry Prewash/Stain Removers: Liquid Surfactant Based	1,443	1,377	1,169	21	25	136	2	21	3	1,335	27	6	6	125	257	246	18	1	0
Laundry Prewash/Stain Removers: Other or Unknown	1,844	1,737	1,285	52	37	294	4	59	6	1,685	26	11	10	181	301	290	18	0	0
Laundry Prewash/Stain Removers: Other or Unknown Solvent Based	45	41	33	0	2	2	0	3	1	41	0	0	0	8	5	8	1	0	0
Laundry Prewash/Stain Removers: Other or Unknown Surfactant Based	44	44	36	0	1	4	0	3	0	44	0	0	0	2	7	6	0	0	0
Miscellaneous Cleaners																			
Miscellaneous Cleaning Agents: Acids	1,722	1,519	710	43	46	606	1	103	10	1,425	45	29	14	320	287	308	58	2	0
Miscellaneous Cleaning Agents: Alkalis	7,612	6,649	3,699	182	258	2,070	25	368	47	6,214	273	89	55	1,484	1,193	1,303	296	19	2
Miscellaneous Cleaning Agents: Anionics or Nonionics	5,117	4,591	2,896	225	163	1,070	9	209	19	4,316	156	61	45	535	764	610	56	8	1
Miscellaneous Cleaning Agents: Cationics	2,453	2,266	1,174	115	114	724	3	129	7	2,081	125	26	27	458	362	432	83	2	0
Miscellaneous Cleaning Agents: Ethanol (Excluding Automotive Products)	543	508	360	27	13	89	1	17	1	481	13	8	6	46	118	64	2	0	0
Miscellaneous Cleaning Agents: Glycols (Excluding Automotive Products)	371	346	194	31	19	87	0	13	2	323	18	3	1	70	75	57	12	1	0
Miscellaneous Cleaning Agents: Isopropanol (Excluding Automotive Products and Glass)	1,344	1,259	642	177	90	264	5	73	8	1,131	91	27	5	121	204	152	26	0	0
Miscellaneous Cleaning Agents: Methanol (Excluding Automotive Products)	24	24	8	0	1	15	0	0	0	22	1	1	0	8	4	8	1	1	0
Miscellaneous Cleaning Agents: Other or Unknown Household Cleaning Agents	4,691	4,215	2,328	224	192	1,193	8	236	34	3,825	208	94	59	797	810	884	134	8	0
Miscellaneous Cleaning Agents: Phenol (Excluding Disinfectants)	6	6	1	0	0	5	0	0	0	5	0	0	1	4	0	3	0	0	0
Miscellaneous Cleaning Substances (Household)																			
Ammonia Cleaners (All Purpose)	617	453	119	16	22	237	0	55	4	419	18	5	8	118	78	118	39	2	0
Carpet, Upholstery, Leather, or Vinyl Cleaners	3,086	2,874	1,933	68	64	677	9	110	13	2,784	47	19	16	360	533	437	34	1	0
Hydrofluoric Acid or Bifluoride Wheel Cleaners	37	35	6	0	2	25	0	2	0	33	1	0	1	29	2	18	9	1	0
Starches, Fabric Finishes, or Sizing	203	188	138	16	8	21	2	2	1	181	4	2	1	12	39	17	1	0	0
Oven Cleaners																			
Oven Cleaners: Acids	5	5	0	0	0	5	0	0	0	5	0	0	0	2	0	3	0	0	0
Oven Cleaners: Alkalis	1,946	1,889	295	69	141	1,122	12	225	25	1,772	20	59	32	653	201	523	227	12	0
Oven Cleaners: Detergent Types	8	8	3	1	0	4	0	0	0	7	0	0	1	2	1	1	0	0	0
Oven Cleaners: Other or Unknown	293	279	48	16	14	147	3	46	5	245	5	25	3	88	42	65	23	1	0

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Rust Removers																			
Rust Removers: Acids Other Than Hydrofluoric Acid Types	391	342	107	8	7	191	0	26	3	333	7	0	2	74	72	96	10	3	0
Rust Removers: Alkalis	11	11	2	0	0	8	0	1	0	10	0	0	1	5	1	5	0	0	0
Rust Removers: Anionics or Nonionics	2	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Rust Removers: Hydrofluoric Acid	205	196	27	1	5	149	0	10	4	183	8	3	1	105	37	63	27	1	2
Rust Removers: Other or Unknown	111	102	23	3	1	61	0	13	1	91	4	2	5	28	22	24	8	0	0
Spot Removers/Dry Cleaning Agents																			
Spot Removers/Dry Cleaning Agents: Anionics or Nonionics	136	122	90	3	1	24	0	3	1	121	1	0	0	12	18	21	1	1	0
Spot Removers/Dry Cleaning Agents: Glycols	64	55	35	2	0	14	0	4	0	54	1	0	0	10	7	13	2	0	0
Spot Removers/Dry Cleaning Agents: Isopropanol	23	22	12	2	1	7	0	0	0	18	0	1	3	3	4	6	1	0	0
Spot Removers/Dry Cleaning Agents: Other Halogenated Hydrocarbon Containing Products	11	10	3	1	0	6	0	0	0	8	0	0	2	2	0	5	0	0	0
Spot Removers/Dry Cleaning Agents: Other Hydrocarbon and/or Non-Halogenated Containing	616	584	389	20	19	124	3	25	4	565	9	6	4	94	152	106	16	1	0
Spot Removers/Dry Cleaning Agents: Other or Unknown	93	85	59	1	3	18	0	4	0	83	0	0	1	13	19	12	1	0	0
Spot Removers/Dry Cleaning Agents: Perchloroethylene	8	7	3	0	0	2	0	1	1	7	0	0	0	1	0	2	1	0	0
Toilet Bowl Cleaners																			
Toilet Bowl Cleaners: Acids	2,963	2,406	1,320	69	74	774	1	137	31	2,285	90	18	9	517	594	598	86	12	1
Toilet Bowl Cleaners: Alkalis	2,913	2,681	2,203	45	50	299	4	75	5	2,593	64	6	16	335	809	378	31	3	1
Toilet Bowl Cleaners: Other or Unknown	4,423	4,082	3,438	71	49	416	5	87	16	3,995	55	7	14	391	995	358	31	2	0
Wall/Floor/Tile Cleaners																			
Wall/Floor/Tile/All-Purpose Cleaning Agents: Acids	1,236	1,030	609	30	37	287	4	58	5	977	26	7	16	209	210	215	31	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Alkalis	7,056	6,332	3,897	207	233	1,634	11	322	28	5,980	224	45	65	1,195	1,153	1,474	233	11	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Anionics or Nonionics	7,637	6,803	4,092	211	283	1,881	13	279	44	6,347	307	81	36	1,154	1,319	988	102	6	1
Wall/Floor/Tile/All-Purpose Cleaning Agents: Cationics	2,253	2,022	1,299	76	78	475	2	84	8	1,893	87	25	13	314	384	411	31	2	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Ethanol	184	175	134	7	5	22	1	6	0	167	4	2	2	17	48	28	4	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Glycols	739	663	463	14	22	128	1	28	7	631	22	4	5	69	130	82	6	1	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Isopropanol	387	356	268	8	9	57	0	13	1	338	15	2	0	36	72	48	5	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Other or Unknown	1,758	1,583	1,047	68	61	352	2	49	4	1,479	57	22	20	247	324	288	24	3	0
Category Total:	**184,873**	**166,408**	**99,514**	**6,575**	**7,033**	**43,721**	**334**	**8,144**	**1,087**	**155,396**	**7,110**	**2,069**	**1,260**	**31,678**	**30,041**	**34,242**	**4,751**	**234**	**19**
Cosmetics/Personal Care Products																			
Dental Care Products																			
False Teeth Cleaning Agents	2,516	2,490	241	43	38	1,890	7	248	23	2,397	53	18	19	158	354	184	6	0	0
Other Dental Care Products (Excluding Fluoride Supplements)	1,577	1,523	577	93	78	644	3	111	17	1,385	37	6	90	134	217	165	18	1	0
Toothpastes (with Fluoride)	14,404	14,013	12,074	438	299	935	10	235	22	13,621	203	26	143	274	2,186	698	25	0	0
Toothpastes (without Fluoride)	1,834	1,760	1,536	38	42	101	3	35	5	1,720	15	3	21	19	248	73	1	0	0
Hair Care Products																			
Curl Activators	46	43	34	1	3	3	0	2	0	39	2	0	2	5	6	9	1	0	0
Hair Coloring Agents (Excluding Peroxides)	2,234	2,151	910	69	133	849	5	171	14	1,909	30	4	204	424	318	435	105	4	0
Hair Oils	569	547	481	12	10	35	0	9	0	533	7	4	1	73	119	53	4	1	0
Hair Relaxers (with Other Alkalines)	155	152	106	3	3	34	1	2	3	145	0	0	7	76	26	51	17	0	0
Hair Relaxers (with Other Non-Alkalines)	26	25	16	2	0	6	0	1	0	25	0	0	0	11	5	7	1	0	0

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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)	245	242	154	4	5	62	0	15	2	232	3	0	7	116	36	67	37	1	0
Hair Rinses, Conditioners, Relaxers	2,075	1,958	1,588	81	64	178	3	40	4	1,884	43	5	23	141	304	163	20	0	0
Hair Sprays	1,105	1,008	611	70	55	225	2	40	5	895	92	5	13	155	164	148	33	2	0
Other Hair Care Products (Excluding Peroxides)	2,491	2,367	1,772	62	87	339	4	90	13	2,262	43	6	53	280	405	268	46	1	0
Permanent Wave Solutions	104	102	51	1	4	38	1	7	0	96	1	0	5	39	13	36	7	1	0
Shampoos	5,593	5,287	3,900	280	185	737	17	146	22	4,974	210	10	78	450	618	850	51	2	0
Hand Sanitizers																			
Hand Sanitizers: Ethanol Based	19,769	19,201	14,055	2,130	840	1,872	27	234	43	16,999	1,726	374	22	1,560	4,592	1,419	273	29	0
Hand Sanitizers: Isopropanol Based	189	182	140	15	4	21	0	1	1	163	16	1	0	20	36	10	8	1	0
Hand Sanitizers: Non-Alcohol Based	1,315	1,285	1,012	110	43	89	8	23	0	1,213	59	11	1	56	195	54	6	0	0
Hand Sanitizers: Unknown	616	572	293	113	51	101	3	8	3	450	87	29	2	85	115	87	12	1	0
Miscellaneous Cosmetics/Personal Care Products																			
Baby Oils	1,347	1,301	1,160	29	13	78	5	15	1	1,273	11	6	6	120	249	114	9	0	0
Bath Oils and/or Bubble Baths	3,792	3,688	3,184	291	30	130	17	30	6	3,590	51	9	34	166	642	306	14	1	0
Creams, Lotions, and Make-Up	19,931	19,065	15,287	567	441	2,234	41	415	80	18,152	247	39	601	752	2,528	1,064	87	3	0
Deodorants	12,644	12,435	10,897	360	454	586	23	100	15	12,008	285	53	72	475	1,664	753	35	1	0
Depilatories	667	647	217	18	79	269	2	51	11	450	37	7	153	177	72	170	59	3	0
Douches	59	58	36	1	1	15	0	3	2	55	1	0	1	2	12	8	1	0	0
Eye Products	1,301	1,236	913	54	42	178	2	40	7	1,166	15	3	49	85	168	106	21	1	0
Lipsticks and Lip Balms (with Camphor)	811	794	668	35	43	29	5	12	2	764	19	2	7	23	123	27	2	0	0
Lipsticks and Lip Balms (without Camphor)	4,221	4,104	3,536	160	94	231	4	49	30	3,813	54	9	226	95	525	299	23	1	0
Perfumes, Colognes, and Aftershaves	7,007	6,712	5,189	384	364	618	19	121	17	6,256	332	84	19	651	1,326	1,127	55	1	0
Peroxides	6,462	5,940	1,817	254	358	2,852	13	573	73	5,432	304	43	118	1,124	699	1,355	223	22	0
Powders Made of Material Other Than Talc	1,454	1,414	1,231	47	35	72	6	21	2	1,360	34	7	8	85	220	217	13	1	0
Powders Made of Talc	1,480	1,441	1,097	62	66	160	9	42	5	1,372	41	15	10	201	263	250	24	0	0
Soaps (Bar, Hand or Complexion)	13,235	12,571	8,536	787	525	2,229	40	392	62	11,792	417	121	215	853	1,442	1,663	111	3	0
Suntan and/or Sunscreen Products	7,240	7,115	6,031	393	135	432	16	94	14	6,949	62	24	68	258	849	626	35	2	0
Mouthwashes																			
Mouthwashes: Ethanol Containing	5,464	4,886	1,199	418	412	2,417	6	400	34	3,922	878	26	24	866	678	484	214	24	0
Mouthwashes: Fluoride Containing	5,034	4,973	3,315	970	113	463	5	93	14	4,872	64	1	29	83	738	137	9	1	0
Mouthwashes: Non Ethanol Containing	1,699	1,634	556	143	101	726	5	100	3	1,515	96	1	15	92	238	65	12	1	0
Mouthwashes: Unknown	230	185	42	13	13	87	0	27	3	151	28	0	3	28	24	20	1	0	0
Nail Products																			
Acrylic Nail Adhesives	1,079	1,070	338	185	141	344	5	48	9	1,039	26	1	3	474	110	320	81	2	0
Acrylic Nail Primers	211	207	153	3	6	40	1	4	0	201	1	0	3	64	51	45	7	1	0
Acrylic Nail Removers	9	8	5	0	2	1	0	0	0	8	0	0	0	3	1	1	0	0	0
Miscellaneous Nail Products	705	693	473	37	17	133	1	26	6	669	12	4	6	126	137	128	17	1	0
Nail Polish Removers (Acetone Containing)	3,124	3,012	2,048	135	151	573	5	85	15	2,869	95	29	11	365	658	421	32	1	0
Nail Polishes	5,399	5,245	4,521	214	119	305	9	62	15	5,128	84	14	11	341	876	517	20	1	0
Other Nail Polish Removers	976	951	667	42	48	155	2	35	2	900	30	9	8	102	197	123	9	0	0
Unknown Nail Polish Removers	3,172	3,035	2,051	136	174	543	5	118	8	2,892	105	27	7	363	449	416	18	1	0
Category Total:	**165,616**	**159,328**	**114,718**	**9,303**	**5,921**	**24,059**	**340**	**4,374**	**613**	**149,540**	**5,956**	**1,036**	**2,398**	**12,050**	**24,896**	**15,539**	**1,803**	**116**	**0**
Deodorizers																			
Air Freshener																			
Air Fresheners: Aerosols	2,166	2,102	1,400	158	76	371	3	79	15	1,978	67	28	21	181	366	328	23	1	0
Air Fresheners: Liquids	9,230	9,062	7,775	250	164	687	16	156	14	8,879	110	43	20	663	1,769	1,214	45	1	0
Air Fresheners: Solids	2,350	2,320	2,016	87	41	141	5	28	2	2,287	20	9	4	176	429	192	5	0	0
Air Fresheners: Unknown Form	1,669	1,657	1,371	69	34	141	2	34	6	1,622	23	3	6	149	313	191	10	0	0
Miscellaneous Deodorizers																			
Diaper Pail Deodorizers (Excluding Moth Repellants)	10	10	10	0	0	0	0	0	0	10	0	0	0	1	1	1	0	0	0
Other Types of Deodorizer (Not For Personal Use)	6,551	6,256	4,500	282	172	1,074	9	191	28	6,004	136	54	50	579	1,204	836	65	5	0

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Toilet Bowl Deodorizers	381	371	295	10	11	43	0	11	1	365	4	0	2	44	83	30	5	0	0
Unknown Types of Deodorizer (Not for Personal Use)	83	79	56	4	3	13	0	2	1	72	6	0	1	15	14	14	0	0	0
Category Total:	**22,440**	**21,857**	**17,423**	**860**	**501**	**2,470**	**35**	**501**	**67**	**21,217**	**366**	**137**	**104**	**1,808**	**4,179**	**2,806**	**153**	**7**	**0**
Dyes																			
Miscellaneous Dyes																			
Dyes: Chlorate Containing	1	1	0	0	0	0	0	1	0	0	0	0	1	1	0	0	1	0	0
Dyes: Fabrics	298	294	203	25	9	43	1	11	2	283	4	0	7	24	53	18	2	0	0
Dyes: Foods (Including Easter Egg)	706	644	477	96	19	37	10	5	0	597	30	9	8	15	96	40	3	0	0
Dyes: Leathers	81	78	61	4	4	4	1	4	0	71	1	3	3	4	20	1	1	0	0
Dyes: Other	470	412	194	62	66	63	3	19	5	378	16	2	15	48	75	36	10	0	0
Dyes: Unknown	56	51	26	8	4	10	0	2	1	45	3	1	2	5	11	6	1	0	0
Category Total:	**1,612**	**1,480**	**961**	**195**	**102**	**157**	**15**	**42**	**8**	**1,374**	**54**	**15**	**36**	**97**	**255**	**101**	**18**	**0**	**0**
Essential Oils																			
Miscellaneous Essential Oil																			
Cinnamon Oil	604	543	353	47	13	107	2	18	3	475	37	3	28	57	58	190	11	0	0
Clove Oil	655	599	392	24	10	135	1	31	6	559	18	0	21	108	119	137	10	2	0
Eucalyptus Oil	1,504	1,352	834	67	34	356	2	52	7	1,288	26	11	23	257	314	187	18	4	0
Miscellaneous Essential Oils	17,638	16,730	12,433	636	353	2,647	32	579	50	15,984	314	78	320	1,158	3,211	2,539	131	7	0
Pennyroyal Oil	22	19	1	3	2	11	0	1	1	14	2	0	3	4	4	0	1	0	0
Tea Tree Oil	4,583	4,292	2,229	150	183	1,389	16	294	31	3,936	170	26	123	492	960	396	32	3	0
Category Total:	**25,006**	**23,535**	**16,242**	**927**	**595**	**4,645**	**53**	**975**	**98**	**22,256**	**567**	**118**	**518**	**2,076**	**4,666**	**3,449**	**203**	**16**	**0**
Fertilizers																			
Miscellaneous Fertilizers																			
Household Plant Foods (Generally for Indoor Plants)	1,359	1,320	697	86	47	405	2	83	0	1,271	22	19	6	57	217	48	2	0	0
Other Types of Fertilizer	1,380	1,261	767	102	33	282	7	63	7	1,219	19	13	8	88	246	76	11	0	0
Outdoor Fertilizers	2,111	1,992	1,171	126	42	510	2	119	22	1,915	29	26	19	148	368	138	25	0	0
Plant Hormones	56	48	19	1	0	25	0	3	0	48	0	0	0	7	13	6	3	0	0
Unknown Types of Fertilizer	137	124	53	17	3	44	1	5	1	116	2	2	4	19	20	7	4	0	0
Category Total:	**5,043**	**4,745**	**2,707**	**332**	**125**	**1,266**	**12**	**273**	**30**	**4,569**	**72**	**60**	**37**	**319**	**864**	**275**	**45**	**0**	**0**
Fire Extinguishers																			
Miscellaneous Fire Extinguisher																			
Miscellaneous Fire Extinguishers	2,454	2,382	200	277	326	1,115	22	336	106	2,157	65	105	34	705	436	656	134	3	0
Category Total:	**2,454**	**2,382**	**200**	**277**	**326**	**1,115**	**22**	**336**	**106**	**2,157**	**65**	**105**	**34**	**705**	**436**	**656**	**134**	**3**	**0**
Foreign Bodies/Toys/Miscellaneous																			
Miscellaneous Foreign Bodies/Toys/ Miscellaneous																			
Ashes	344	315	258	12	2	30	0	11	2	306	3	6	0	12	51	18	4	0	0
Bubble Blowing Solutions	3,241	3,206	2,893	202	31	56	8	14	2	3,164	30	7	1	120	353	449	16	0	0
Charcoals	652	509	337	31	22	86	7	22	4	449	24	8	26	45	90	39	4	0	0
Christmas ornaments	278	271	196	15	2	38	0	20	0	270	1	0	0	16	38	18	1	0	0
Coins	2,392	2,328	1,859	372	39	35	9	12	2	2,269	47	7	2	839	534	275	19	2	0
Desiccants	19,623	19,479	15,703	1,407	434	1,414	82	386	53	18,912	373	146	21	936	2,389	167	10	0	0
Feces/Urine	5,736	5,042	3,858	194	98	632	31	203	26	4,851	34	133	15	144	607	152	9	0	0
Glass	3,886	3,785	862	195	194	1,617	31	819	67	3,558	42	149	25	255	634	158	9	0	0
Glow Products	14,598	14,568	11,102	2,799	263	248	41	85	30	14,375	169	6	1	551	1,529	2,551	29	0	0
Incense (Punk)	228	221	160	5	9	32	1	14	0	212	4	2	3	13	42	15	1	0	0
Other Types of Foreign Body, Toy, or Miscellaneous Substance	25,973	24,732	16,860	2,658	916	2,973	116	1,054	155	23,514	643	309	198	2,226	3,898	1,061	110	3	0
Oxygen Absorbers	510	505	196	124	42	111	0	19	13	437	42	18	6	22	116	13	0	0	0
Soil	2,059	1,854	1,349	96	39	284	5	79	2	1,779	39	10	21	132	234	114	18	1	0
Toys	9,853	9,743	7,602	1,610	201	220	35	65	10	9,467	195	26	44	651	1,538	553	30	0	0
Unknown Types of Foreign Body, Toy, or Miscellaneous Substance	1,907	1,856	1,311	249	70	155	10	52	9	1,786	37	18	6	144	293	95	10	0	0
Thermometers																			
Thermometers: Mercury	1,076	1,071	172	124	62	391	26	267	29	1,053	6	3	8	88	182	15	3	0	0

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Thermometers: Other	587	583	165	75	34	155	21	124	9	563	7	13	0	40	121	30	5	0	0
Thermometers: Unknown	98	98	28	9	8	34	0	19	0	97	1	0	0	12	8	2	0	0	0
Category Total:	**93,041**	**90,166**	**64,911**	**10,177**	**2,466**	**8,511**	**423**	**3,265**	**413**	**87,062**	**1,697**	**861**	**377**	**6,246**	**12,657**	**5,725**	**278**	**6**	**0**
Fumes/Gases/Vapors																			
Miscellaneous Fumes/Gases/Vapors																			
Carbon Dioxide	480	440	29	28	65	247	4	60	7	393	29	2	13	103	49	125	22	1	1
Carbon Monoxide	13,353	12,055	1,608	952	833	6,758	108	1,607	189	11,528	359	29	26	6,270	2,196	3,257	1,347	237	42
Chloramine Gas	2,303	2,168	69	39	126	1,578	7	295	54	2,068	75	1	17	419	228	659	202	3	0
Chlorine Gas	3,354	3,176	206	198	207	2,074	8	441	42	3,028	106	9	29	977	305	1,071	352	8	1
Chlorine Gas (When Household Acid is Mixed with Hypochlorite)	2,666	2,554	101	60	135	1,808	7	378	65	2,410	107	0	31	510	427	840	255	5	0
Hydrogen Sulfide (Sewer Gas)	846	739	49	28	19	505	4	124	10	726	5	2	3	345	103	206	97	10	2
Methane and Natural Gas	4,645	4,354	891	396	259	2,018	64	635	91	4,312	12	18	4	928	1,185	792	125	9	0
Other Types of Fume, Gas or Vapor	1,757	1,624	199	80	95	921	18	289	22	1,495	72	12	37	376	237	362	100	15	2
Polymer Fume Fever	24	23	5	1	1	7	0	8	1	21	1	1	0	0	4	0	1	0	0
Simple Asphyxiants	2,625	2,404	276	233	207	1,290	34	294	70	2,164	190	17	16	756	353	546	225	9	4
Unknown Types of Fume, Gas or Vapor	1,997	1,939	88	60	184	1,003	17	510	77	1,838	17	51	7	559	168	482	112	8	2
Category Total:	**34,050**	**31,476**	**3,521**	**2,075**	**2,131**	**18,209**	**271**	**4,641**	**628**	**29,983**	**973**	**142**	**183**	**11,243**	**5,255**	**8,340**	**2,838**	**305**	**54**
Heavy Metals																			
Miscellaneous Heavy Metals																			
Aluminum	926	860	429	68	44	238	4	74	3	809	8	25	5	71	99	42	8	2	0
Arsenic (Excluding Pesticides)	753	654	60	20	23	454	4	80	13	393	9	120	11	355	83	55	39	0	0
Barium, Soluble Salts	33	25	1	1	4	18	0	1	0	17	3	3	2	10	1	5	1	0	1
Cadmium	102	58	3	1	2	47	0	1	4	44	0	1	2	30	7	6	4	1	0
Copper	632	534	75	45	113	241	2	43	15	465	32	11	16	153	61	136	29	1	0
Fireplace Flame Colors	28	27	8	8	7	3	0	1	0	26	1	0	0	6	4	3	1	1	0
Gold	1	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
Lead	2,380	2,219	1,119	180	108	624	18	154	16	2,051	34	39	20	1,085	625	127	64	9	0
Manganese	56	41	9	2	2	23	0	5	0	32	3	2	3	10	7	2	8	0	0
Mercury (Other)	297	275	29	15	42	143	0	34	12	215	4	14	26	77	36	17	4	0	0
Mercury, Elemental (Excluding Thermometer)	872	826	60	60	71	415	2	181	37	690	40	27	44	213	140	38	15	6	0
Metal Fume Fever	259	234	15	3	12	189	0	15	0	225	2	2	5	108	11	69	34	2	0
Other Types of Heavy Metal	2,772	1,825	725	119	90	727	3	148	13	1,477	133	21	177	378	299	200	53	7	2
Thallium	37	27	0	0	1	23	0	1	2	9	0	12	1	20	3	3	0	0	1
Unknown Types of Heavy Metal	70	60	8	2	6	29	2	13	0	40	1	7	6	27	4	5	2	0	0
Category Total:	**9,218**	**7,666**	**2,541**	**524**	**525**	**3,174**	**35**	**752**	**115**	**6,493**	**270**	**284**	**319**	**2,543**	**1,380**	**708**	**262**	**29**	**4**
Hydrocarbons																			
Miscellaneous Hydrocarbons																			
Benzene	150	50	5	1	2	36	0	6	0	48	1	0	0	26	8	12	7	1	0
Carbon Tetrachloride	53	46	6	1	2	24	0	12	1	45	0	1	0	11	10	2	0	0	0
Diesel Fuels	971	928	134	18	57	600	0	103	16	865	43	8	4	293	130	246	46	4	0
Freon and Other Propellants	4,425	4,217	289	168	308	2,858	9	498	87	3,309	801	44	34	1,714	564	1,022	490	44	20
Gasolines	9,201	8,846	1,466	514	693	5,064	40	970	99	8,127	579	75	21	2,013	1,182	2,521	322	13	0
Kerosenes	739	698	305	35	22	266	2	62	6	649	25	17	2	236	120	192	48	7	0
Lamp Oils	1,047	1,019	685	34	30	227	2	39	2	986	17	13	2	374	226	224	102	15	0
Lighter Fluids and/or Naphtha	1,835	1,713	941	46	102	520	0	96	8	1,567	76	46	14	644	345	454	107	14	0
Lubricating Oils and/or Motor Oils	3,525	3,256	1,673	112	140	1,091	6	196	38	3,101	91	42	7	658	761	592	72	1	0
Mineral Seal Oil	10	10	5	0	1	4	0	0	0	9	0	1	0	2	0	3	0	0	0
Mineral Spirits	1,686	1,562	396	44	78	852	9	165	18	1,440	84	20	9	564	217	438	129	6	0
Other Types of Halogenated Hydrocarbon	274	240	32	8	17	164	2	15	2	221	15	2	0	94	36	68	22	1	0
Other Types of Hydrocarbon	3,292	3,001	1,313	127	133	1,187	7	206	28	2,819	101	46	30	778	558	611	140	11	0
Toluene and/or Xylene (Excluding Adhesives)	582	479	69	5	29	335	0	35	6	445	23	6	3	205	58	158	48	1	0
Turpentine	337	294	60	7	18	176	1	31	1	221	63	0	5	97	34	67	22	2	0

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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 Hydrocarbon	449	396	147	9	24	181	2	25	8	341	50	4	1	156	81	82	42	1	0
Category Total:	**28,576**	**26,755**	**7,526**	**1,129**	**1,656**	**13,585**	**80**	**2,459**	**320**	**24,193**	**1,969**	**325**	**132**	**7,865**	**4,330**	**6,692**	**1,597**	**121**	**20**
Industrial Cleaners																			
Miscellaneous Industrial Cleaners																			
Industrial Cleaner: Disinfectants	1,803	1,673	208	84	132	1,000	6	230	13	1,497	140	19	12	543	181	534	149	7	0
Industrial Cleaner: Other or Unknown	1,524	1,404	344	51	77	778	2	137	15	1,265	55	62	14	503	181	435	118	4	0
Industrial Cleaners: Acids	1,442	1,231	278	22	61	739	0	119	12	1,141	42	28	11	424	158	358	121	4	0
Industrial Cleaners: Alkalis	2,905	2,695	419	47	206	1,784	8	200	31	2,556	67	54	14	1,425	260	989	448	26	2
Industrial Cleaners: Anionics or Nonionics	524	480	185	31	21	204	0	37	2	443	22	7	2	125	74	101	22	1	0
Industrial Cleaners: Cationics	809	756	114	32	89	436	0	70	15	652	66	12	19	304	108	256	42	3	0
Category Total:	**9,007**	**8,239**	**1,548**	**267**	**586**	**4,941**	**16**	**793**	**88**	**7,554**	**392**	**182**	**72**	**3,324**	**962**	**2,673**	**900**	**45**	**2**
Infectious and Toxin-Mediated Diseases																			
Botulinum Toxins																			
Botulism	218	205	58	5	6	115	0	21	0	113	18	8	50	84	23	6	22	26	1
Ichthyosarcotoxins																			
Ciguatera Poisoning	169	158	0	3	9	125	0	18	3	134	0	0	24	68	3	28	39	6	0
Clupeotoxic Fish Poisoning	13	13	1	0	0	8	0	4	0	12	0	0	1	3	0	2	0	0	0
Other Types of Seafood Poisoning	210	195	8	8	18	129	0	28	4	150	3	1	40	95	5	56	33	3	0
Paralytic Shellfish Poisoning	79	77	10	3	2	47	0	13	2	65	0	2	10	19	6	19	4	0	0
Scombroid Fish Poisoning	153	144	9	6	9	98	0	21	1	96	0	2	46	42	3	42	28	0	0
Tetrodon Poisoning	147	147	34	29	8	56	0	19	1	131	7	2	6	21	14	24	4	1	0
Infectious Diseases																			
Bacterial Diseases	437	414	84	35	29	197	3	56	10	360	4	15	27	99	22	53	25	4	0
Fungal Diseases	3,579	3,488	913	464	212	1,472	22	365	40	3,146	8	153	179	83	360	112	10	1	0
Other Types of Bacterial Food Poisoning (Salmonella, Shigella, Vibrio, Staphylococcus, Streptococcus, etc)	102	89	28	7	2	33	1	17	1	84	0	3	2	8	1	3	3	0	0
Parasitic Diseases	25	22	9	1	0	8	0	3	1	20	0	0	1	4	2	0	0	0	0
Unknown Types of Bacterial Food Poisoning	318	309	38	18	20	171	3	57	2	300	0	1	8	56	5	29	17	1	0
Unknown Types of Suspected Food Poisoning	10,680	10,444	1,903	734	676	5,626	39	1,321	145	9,588	28	139	650	966	558	1,549	349	6	0
Viral Diseases	171	148	23	10	5	71	2	34	3	135	0	5	1	66	13	8	3	1	0
Category Total:	**16,301**	**15,853**	**3,118**	**1,323**	**996**	**8,156**	**70**	**1,977**	**213**	**14,334**	**68**	**331**	**1,045**	**1,614**	**1,015**	**1,931**	**537**	**49**	**1**
Information Calls																			
Food Information Calls																			
Information Calls About Food Products, Additives or Supplements	7,286	5,356	2,594	408	210	1,602	27	457	58	4,399	354	249	316	546	734	655	109	4	0
Information Calls About Possibly Spoiled Foods	5,060	4,964	1,130	431	317	2,396	23	601	66	4,542	9	129	274	194	418	340	75	7	0
Category Total:	**12,346**	**10,320**	**3,724**	**839**	**527**	**3,998**	**50**	**1,058**	**124**	**8,941**	**363**	**378**	**590**	**740**	**1,152**	**995**	**184**	**11**	**0**
Lacrimators																			
Miscellaneous Lacrimators																			
Lacrimators: Capsicum Defense Sprays	3,054	3,014	577	652	604	852	23	263	43	2,409	127	326	37	646	118	1,456	161	2	0
Lacrimators: CN (Chloroacetophenone)	237	231	26	38	58	79	1	15	14	156	11	60	2	63	12	92	18	0	0
Lacrimators: CS (O-ChlorobenzylideneMalonitrile)	44	41	3	5	7	9	0	17	0	37	2	2	0	8	1	14	3	0	0
Lacrimators: Other	92	56	4	3	3	34	0	12	0	53	0	0	3	15	4	8	3	0	0
Lacrimators: Unknown	196	186	25	53	21	67	2	16	2	151	8	21	3	94	40	90	11	1	0
Category Total:	**3,623**	**3,528**	**635**	**751**	**693**	**1,041**	**26**	**323**	**59**	**2,806**	**148**	**409**	**45**	**826**	**175**	**1,660**	**196**	**3**	**0**
Matches/Fireworks/Explosives																			
Miscellaneous Matches/ Fireworks/Explosives																			
Explosives	163	150	87	17	8	28	0	9	1	134	11	1	2	52	40	21	1	0	0
Fireworks	746	736	627	42	18	37	3	5	4	714	15	6	1	75	213	57	11	0	0
Matches	421	417	361	7	11	25	0	10	3	401	7	7	1	12	78	6	1	0	0
Other Types of Match, Firework, or Explosive	81	78	56	10	5	7	0	0	0	71	5	1	1	10	19	11	3	0	0

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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 Match, Firework, or Explosive	8	8	8	0	0	0	0	0	0	8	0	0	0	1	3	1	0	0	0
Category Total:	**1,419**	**1,389**	**1,139**	**76**	**42**	**97**	**3**	**24**	**8**	**1,328**	**38**	**15**	**5**	**150**	**353**	**96**	**16**	**0**	**0**
Miscellaneous Foods																			
Foods																			
Capsicum Peppers	2,172	2,103	487	279	377	718	12	207	23	1,580	168	61	278	270	95	880	88	2	0
Food Additives	451	395	142	57	27	134	0	29	6	309	25	10	51	72	48	74	10	2	0
Food Products	10,061	9,425	4,184	768	501	2,871	48	852	201	7,578	214	281	1,306	711	1,013	765	161	5	1
Other Adverse Reactions to Food	1,400	1,307	245	102	59	660	9	209	23	561	22	55	660	234	72	229	103	6	0
Category Total:	**14,084**	**13,230**	**5,058**	**1,206**	**964**	**4,383**	**69**	**1,297**	**253**	**10,028**	**429**	**407**	**2,295**	**1,287**	**1,228**	**1,948**	**362**	**15**	**1**
Mushrooms																			
Miscellaneous Mushrooms																			
Group 1 Mushrooms: Cyclopeptides	76	69	8	1	6	48	0	6	0	38	22	0	6	39	15	18	4	4	0
Group 1A Mushrooms: Orellanine	18	17	0	0	12	5	0	0	0	10	6	0	1	14	8	3	2	1	0
Group 2 Mushrooms: Muscimol (Ibotenic Acid)	34	33	7	3	3	15	2	3	0	22	10	0	1	20	9	9	9	1	1
Group 3 Mushrooms: Monomethylhydrazine (MMH)	20	20	0	0	1	18	0	1	0	12	4	0	4	10	5	6	1	0	0
Group 4 Mushrooms: Muscarine and Histamine	16	14	1	0	0	10	0	2	1	12	0	0	2	8	1	7	1	0	0
Group 5 Mushrooms: Coprine	9	9	6	0	1	2	0	0	0	8	1	0	0	4	5	2	0	0	0
Group 6 Mushrooms: Hallucinogenics (Psilocybin and Psilocin)	454	304	15	3	90	175	0	12	9	38	258	3	5	250	16	69	136	9	0
Group 7 Mushrooms: Gastrointestinal Irritants	281	269	80	22	19	134	0	14	0	197	48	1	21	138	48	116	37	0	0
Mushrooms: Miscellaneous, Non-Toxic	165	137	65	9	4	46	1	10	2	116	3	0	16	36	42	24	7	0	0
Mushrooms: Other Potentially Toxic	107	90	35	7	5	39	0	4	0	69	8	1	11	22	19	17	9	1	1
Mushrooms: Unknown	5,138	4,970	3,131	485	186	1,005	21	120	22	4,227	554	10	154	1,554	1,946	646	234	27	3
Category Total:	**6,318**	**5,932**	**3,348**	**530**	**327**	**1,497**	**24**	**172**	**34**	**4,749**	**914**	**15**	**221**	**2,095**	**2,114**	**917**	**440**	**43**	**5**
Other/Unknown Nondrug Substances																			
Miscellaneous Other/Unknown Nondrug Substances																			
Other Non-Drug Substances	24,837	23,232	10,662	2,177	930	6,959	145	1,943	416	20,741	793	677	783	3,321	3,951	3,658	607	35	2
Unknown Substances Unlikely to be Drug Products	6,745	6,445	1,122	268	264	3,785	30	778	198	4,587	199	1,010	202	1,736	441	631	264	72	6
Category Total:	**31,582**	**29,677**	**11,784**	**2,445**	**1,194**	**10,744**	**175**	**2,721**	**614**	**25,328**	**992**	**1,687**	**985**	**5,057**	**4,392**	**4,289**	**871**	**107**	**8**
Paints and Stripping Agents																			
Miscellaneous Paints and Stripping Agents																			
Other Types of Paint, Varnish or Lacquer	540	497	187	16	13	190	3	70	18	476	6	4	9	109	51	82	36	2	0
Unknown Types of Paint, Varnish or Lacquer	4,640	4,377	2,885	205	134	851	12	266	24	4,238	50	17	57	435	652	342	53	1	0
Varnishes and Lacquers	824	780	182	27	36	414	1	109	11	742	17	3	16	160	102	152	44	4	0
Paints																			
Anti-Algae Paints	23	22	3	0	0	16	0	3	0	21	0	0	1	8	2	4	1	1	0
Anti-Corrosion Paints	39	39	6	0	0	28	0	5	0	38	1	0	0	12	6	10	2	0	0
Oil-Base Paints	1,967	1,874	498	207	108	871	4	168	18	1,762	50	14	45	328	219	399	80	4	0
Water Base Paints (Acrylic, Latex, etc)	2,847	2,767	1,987	98	74	484	6	109	9	2,669	32	14	38	209	386	195	26	4	0
Wood stains	708	663	257	24	24	275	1	73	9	638	5	3	16	84	121	110	21	0	0
Stripping Agents																			
Methylene Chloride Stripping Agents	370	349	40	9	28	235	0	33	4	331	6	1	8	142	22	127	49	2	1
Other Types of Stripping Agent	373	348	71	6	6	226	0	37	2	334	6	1	6	133	25	106	50	2	0
Unknown Types of Stripping Agent	73	67	6	1	5	47	0	7	1	62	3	0	2	28	2	27	4	2	0
Category Total:	**12,404**	**11,783**	**6,122**	**593**	**428**	**3,637**	**27**	**880**	**96**	**11,311**	**176**	**57**	**198**	**1,648**	**1,588**	**1,554**	**366**	**22**	**1**
Pesticides																			
Fumigants																			
Aluminum Phosphide	84	75	1	3	1	67	0	2	1	70	3	1	1	47	14	25	11	1	0
Methyl Bromide	19	18	3	1	0	11	0	3	0	18	0	0	0	8	3	5	3	0	0
Other Fumigants	43	41	6	4	1	21	0	8	1	40	0	0	1	19	9	10	3	0	0

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Sulfuryl Fluoride	345	300	35	31	10	184	3	27	10	286	1	8	3	48	33	53	4	0	1
Unknown Fumigants	89	85	9	5	3	55	1	11	1	74	4	2	5	31	3	20	8	0	0
Fungicides (Non-medicinal)																			
Carbamate Fungicides	67	55	13	0	3	19	0	6	14	52	2	1	0	12	8	16	2	0	1
Copper Compound Fungicides	95	92	13	0	3	62	0	14	0	88	2	1	0	16	9	17	2	2	1
Other Types of Non-Medicinal Fungicide	550	446	117	17	8	236	0	57	11	406	17	9	13	74	82	82	18	3	0
Other/Unknown Type of Non-Medicinal Fungicide	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0
Phthalimide Fungicides	25	20	11	1	1	7	0	0	0	20	0	0	0	1	2	3	0	0	0
Unknown Types of Non-Medicinal Fungicide	45	32	5	0	0	21	0	6	0	30	0	2	0	5	5	10	0	0	0
Wood Preservatives	142	132	17	7	0	88	0	19	1	125	2	1	2	29	21	18	8	1	0
Herbicides (Including Algaecides, Defoliants, Desiccants, Plant Growth Regulators)																			
Carbamate Herbicides (Excluding Metam Sodium)	9	7	1	0	0	6	0	0	0	7	0	0	0	4	1	3	2	0	0
Chlorophenoxy Herbicides	1,706	1,493	349	56	21	868	9	170	20	1,408	20	14	48	270	276	338	47	2	0
Diquat	406	374	93	15	7	214	1	40	4	347	12	3	12	66	105	80	13	1	0
Glyphosate	3,160	2,860	530	137	56	1,774	14	321	28	2,662	45	52	92	527	541	577	85	2	4
Other Types of Herbicide	1,426	1,144	217	49	38	687	1	131	21	1,089	17	10	24	242	189	238	42	1	2
Paraquat	139	120	1	1	11	97	0	9	1	105	10	4	1	75	17	20	17	2	3
Triazine Herbicides	164	113	20	4	2	74	0	12	1	110	2	1	0	23	20	33	2	0	0
Unknown Types of Herbicide	481	387	94	28	13	198	2	45	7	357	5	9	14	76	48	60	12	2	1
Urea Herbicides	50	43	9	4	2	23	1	3	1	38	2	1	2	10	8	10	0	0	0
Insecticides (Including Insect Growth Regulators, Molluscicides, Nematicides)																			
Carbamate Insecticides Alone	1,152	1,074	342	57	25	522	3	109	16	994	41	11	25	208	214	164	41	6	1
Carbamate Insecticides in Combination with Other Insecticides	303	292	66	8	7	168	0	32	11	276	4	5	5	45	33	43	15	1	0
Chlorinated Hydrocarbon Insecticides Alone	128	119	39	4	2	56	0	18	0	111	5	0	0	26	20	12	4	2	0
Chlorinated Hydrocarbon Insecticides in Combination with Other Insecticides	250	246	40	11	15	143	0	32	5	229	11	1	5	56	32	70	15	0	0
Insect Growth Regulators	148	88	30	4	2	43	0	8	1	84	0	0	3	18	11	9	0	0	0
Metaldehyde	27	22	6	0	0	11	0	3	2	20	0	1	0	1	3	1	1	0	0
Nicotine (Excluding Tobacco Products)	57	50	19	3	4	20	0	3	1	38	4	2	6	9	6	8	4	1	0
Organophosphate Insecticides Alone	2,004	1,844	576	75	48	899	6	208	32	1,685	84	20	42	473	420	348	86	24	3
Organophosphate Insecticides in Combination with Carbamate Insecticides	63	59	14	5	3	33	0	3	1	55	1	1	2	8	9	12	1	0	0
Organophosphate Insecticides in Combination with Non-Carbamate Insecticides	510	489	103	24	24	269	1	67	1	468	12	3	6	99	66	123	25	0	0
Other Types of Insecticide	9,898	9,227	4,860	346	183	2,953	40	698	147	8,823	131	58	191	878	1,736	968	124	6	1
PiperonylButoxide & Pyrethrins (without Carbamate or O.P.)	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Pyrethrins	5,632	5,312	1,535	353	218	2,577	19	540	70	4,838	183	34	239	1,212	652	1,388	277	11	1
Pyrethroids	21,660	20,382	4,892	900	714	11,227	60	2,273	316	18,545	661	215	868	3,628	2,806	5,386	787	24	1
Rotenone	39	37	6	4	4	17	0	3	3	35	0	0	2	5	12	5	1	0	0
Unknown Types of Insecticide	4,314	3,966	953	187	146	2,034	30	534	82	3,479	141	155	137	1,116	456	755	208	12	2
Veterinary Insecticide/Pesticide Product (For Pets-Flea Collars, Etc.)	4	4	3	0	0	1	0	0	0	4	0	0	0	1	0	1	0	0	0
Miscellaneous Pesticides																			
Arsenic Pesticides	32	32	18	2	0	6	1	5	0	30	0	2	0	3	4	0	1	0	0
Borates and/or Boric Acid Pesticides (Excluding Other Uses)	8,643	8,536	7,635	182	61	507	12	118	21	8,455	38	28	12	498	1,499	204	15	2	0
Repellents																			
Animal Repellents	405	392	106	19	8	192	0	62	5	362	10	8	12	62	50	96	9	0	0
Insect Repellents with DEET	4,181	4,114	2,118	483	193	1,033	12	242	33	3,736	91	53	218	397	564	1,125	79	1	0

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Insect Repellents without DEET	1,851	1,807	1,337	134	26	240	1	60	9	1,750	16	9	30	94	315	248	14	0	0
Naphthalene Moth Repellants (Excluding Deodorizing Products)	1,031	1,004	533	38	16	292	4	109	12	962	30	4	8	147	255	86	23	0	0
Other Types of Moth Repellant	14	13	6	0	3	1	0	2	1	9	4	0	0	1	1	0	0	0	0
Paradichlorobenzene Moth Repellants (Excluding Deodorizing Products)	105	105	59	6	1	26	2	10	1	100	3	0	2	12	21	6	1	0	0
Unknown Types of Insect Repellent	197	185	77	12	12	61	0	21	2	176	3	3	3	29	28	32	9	0	0
Unknown Types of Moth Repellant	1,949	1,904	957	89	41	558	13	213	33	1,792	66	14	24	307	426	175	20	2	0
Rodenticides																			
ANTU (1-naphthalenylthiourea)	2	2	0	0	1	0	0	1	0	2	0	0	0	1	1	1	0	0	0
Bromethalin Rodenticides	1,264	1,203	883	30	13	203	3	50	21	1,111	51	24	7	393	443	45	10	1	0
Cholecalciferol Rodenticides	79	77	60	1	3	11	0	2	0	72	4	0	0	20	22	2	0	0	0
Cyanide Rodenticides	3	2	1	0	0	1	0	0	0	2	0	0	0	1	2	0	0	0	0
Long-Acting Anticoagulant Rodenticides	4,446	4,226	3,377	106	40	525	13	128	37	4,037	119	41	21	1,195	1,109	87	21	6	1
Other Types of Rodenticide	696	670	454	23	8	150	0	31	4	629	26	7	6	124	147	28	5	0	0
Sodium Monofluoroacetate	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Strychnine Rodenticides	51	40	5	0	1	30	0	4	0	16	5	14	2	28	9	8	1	1	0
Unknown Types of Rodenticide	2,114	1,920	1,185	56	42	442	8	138	49	1,614	149	123	9	667	524	79	23	2	0
Warfarin Type Anticoagulant Rodenticides	225	210	169	5	2	24	0	7	3	201	4	3	1	64	49	2	2	0	0
Zinc Phosphide Rodenticides	148	130	20	4	4	84	2	14	2	117	11	0	2	51	49	18	2	0	0
Category Total:	**82,673**	**77,623**	**34,029**	**3,534**	**2,050**	**30,073**	**262**	**6,632**	**1,043**	**72,192**	**2,052**	**958**	**2,106**	**13,460**	**13,388**	**13,154**	**2,103**	**119**	**23**
Photographic Products																			
Miscellaneous Photographic Products																			
Developers, Fixing Baths, Stop Baths	110	103	34	2	23	35	0	9	0	99	0	2	2	21	18	26	1	0	0
Other Types of Photographic Product	553	519	223	63	45	157	2	27	2	477	29	7	6	51	101	47	2	2	0
Photographic Coating Fluids	9	8	8	0	0	0	0	0	0	8	0	0	0	0	1	0	0	0	0
Unknown Types of Photographic Product	4	4	3	0	0	1	0	0	0	4	0	0	0	1	1	0	0	0	0
Category Total:	**676**	**634**	**268**	**65**	**68**	**193**	**2**	**36**	**2**	**588**	**29**	**9**	**8**	**73**	**121**	**73**	**3**	**2**	**0**
Plants																			
Miscellaneous Plants																			
Plants: Amygdalin and/or Cyanogenic Glycosides	5,409	5,340	2,543	644	261	1,483	17	362	30	4,933	172	35	189	304	938	178	24	3	0
Plants: Anticholinergics	657	620	381	37	28	134	1	29	10	537	61	3	14	115	155	62	34	4	0
Plants: Cardiac Glycosides (Excluding Drugs)	1,566	1,533	815	181	60	393	6	70	8	1,399	100	8	18	236	344	123	33	3	2
Plants: Colchicine	14	13	4	3	2	4	0	0	0	13	0	0	0	3	5	2	0	0	0
Plants: Depressants	189	126	65	7	10	39	0	5	0	94	15	0	15	23	15	13	4	2	0
Plants: Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	4,915	4,711	3,185	478	128	734	15	152	19	4,300	211	13	177	359	798	415	60	3	1
Plants: Hallucinogenics (Code as Street Drug Unless Plant Part Involved)	474	416	85	52	69	171	0	33	6	219	135	17	41	148	63	110	56	4	0
Plants: Nicotine (Excluding Tobacco Products)	223	215	89	30	11	71	1	11	2	190	21	0	3	59	65	58	12	0	0
Plants: Non-Toxic	3,958	3,655	2,354	526	108	470	19	151	27	3,329	143	19	156	187	483	210	36	0	0
Plants: Other Toxic Types	4,084	3,838	2,409	496	112	634	16	147	24	3,437	224	11	150	414	800	252	93	16	1
Plants: Oxalates	4,584	4,509	3,225	554	152	449	8	106	15	4,149	282	7	63	371	803	878	49	0	0
Plants: Skin Irritants (Excluding Oxalate Containing Plants)	5,221	4,827	1,682	495	220	1,876	20	480	54	4,358	193	10	248	865	438	742	269	4	0
Plants: Solanine	1,380	1,350	801	85	39	312	7	99	7	1,213	45	11	78	82	291	91	7	1	0
Plants: Stimulants	370	347	85	23	21	179	1	33	5	303	28	2	13	87	79	28	10	4	0
Plants: Toxalbumins	234	226	66	12	18	99	2	23	6	162	47	7	4	103	73	35	16	1	2
Plants: Unknown Toxic Types or Unknown if Toxic	9,012	8,507	5,603	1,071	258	1,202	44	281	48	7,789	398	32	255	621	1,572	674	95	0	0
Category Total:	**42,290**	**40,233**	**23,392**	**4,694**	**1,497**	**8,250**	**157**	**1,982**	**261**	**36,425**	**2,075**	**175**	**1,424**	**3,977**	**6,922**	**3,871**	**798**	**45**	**6**
Polishes and Waxes																			
Miscellaneous Polishes and Waxes																			
Floor Waxes, Polishes, or Sealers	473	439	246	16	9	142	0	24	2	422	5	1	10	68	76	90	7	0	0
Furniture Polishes	1,351	1,273	1,073	30	17	123	3	24	3	1,245	19	4	3	130	381	174	13	0	0

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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 Polishes and Waxes (Excluding Mineral Seal Oils)	1,559	1,476	993	50	46	302	4	73	8	1,419	29	10	12	158	275	149	17	2	0
Category Total:	**3,383**	**3,188**	**2,312**	**96**	**72**	**567**	**7**	**121**	**13**	**3,086**	**53**	**15**	**25**	**356**	**732**	**413**	**37**	**2**	**0**
Radiation																			
Ionizing Radiation																			
Alpha Radiation	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
Beta Radiation	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Gamma Radiation	3	2	0	0	0	2	0	0	0	1	0	0	1	2	0	0	0	0	0
Ionizing Radiation: Type Unknown	60	60	3	2	1	34	1	16	3	46	0	2	9	26	11	3	3	0	0
Neutron Radiation	2	2	0	0	0	1	0	1	0	2	0	0	0	1	0	0	0	0	0
Radon	59	56	7	6	0	26	2	14	1	54	0	0	1	11	5	5	0	0	1
Specific Nonpharmaceutical Radionuclides	102	85	10	1	2	53	0	15	4	64	3	3	11	33	20	7	9	0	0
X-ray Radiation	22	20	0	1	0	13	0	5	1	6	0	0	12	1	0	0	0	0	0
Miscellaneous Radiation																			
Nonpharmaceutical Radiation: Type Unknown	9	8	0	1	0	5	0	2	0	7	1	0	0	3	1	1	0	0	0
Non-ionizing Radiation																			
Extremely Low-frequency Radiation	2	2	0	0	0	2	0	0	0	2	0	0	0	1	0	0	0	0	0
Infrared Radiation	2	2	0	0	0	2	0	0	0	0	0	2	0	0	0	1	0	0	0
Microwave Radiation	17	17	0	0	1	10	1	5	0	16	1	0	0	2	1	2	1	0	0
Non-ionizing Radiation: Type Unknown	28	28	1	0	0	18	0	6	3	20	1	4	2	17	5	5	1	0	0
Radio Frequency Radiation	7	5	0	0	0	5	0	0	0	4	0	1	0	3	0	0	0	0	0
Ultraviolet Radiation	17	17	0	1	1	6	0	3	6	16	0	1	0	13	2	5	2	0	0
Visible Light Radiation (Lasers)	5	5	0	2	0	3	0	0	0	4	0	1	0	1	2	0	0	0	0
Category Total:	**337**	**311**	**21**	**14**	**5**	**181**	**4**	**68**	**18**	**244**	**6**	**14**	**36**	**114**	**47**	**29**	**16**	**0**	**1**
Sporting Equipment																			
Miscellaneous Sporting Equipment																			
Fishing Baits	47	45	31	5	2	6	0	1	0	41	3	1	0	3	10	5	1	0	0
Fishing Products, Miscellaneous	13	13	10	0	1	1	0	1	0	13	0	0	0	0	4	0	0	0	0
Golf Balls (Including Liquid Center of Golf Balls)	5	5	2	0	0	2	0	1	0	5	0	0	0	1	4	1	0	0	0
Golf Products, Miscellaneous	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Gun Bluing Compounds	26	26	11	0	0	14	0	0	1	25	1	0	0	15	5	7	4	0	0
Hunting Products, Miscellaneous	202	197	97	22	16	48	0	11	3	172	18	6	1	58	50	23	3	1	0
Other Types of Sporting Equipment	7	7	5	1	0	1	0	0	0	7	0	0	0	1	4	0	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:	**302**	**295**	**158**	**28**	**19**	**72**	**0**	**14**	**4**	**265**	**22**	**7**	**1**	**78**	**77**	**36**	**8**	**1**	**0**
Swimming Pool/Aquarium																			
Miscellaneous Swimming Pool/Aquarium																			
Algicides	684	631	180	44	28	296	2	76	5	603	8	1	17	120	87	165	30	0	0
Aquarium Products, Miscellaneous	1,310	1,235	967	56	45	139	2	22	4	1,199	23	7	4	72	238	61	11	1	0
Bromine Shock Treatments	45	42	10	5	0	20	0	7	0	36	3	0	3	5	9	15	0	0	0
Chlorine Shock Treatments	2,631	2,515	470	324	208	1,271	14	197	31	2,407	60	6	35	740	180	897	238	12	0
Other Types of Swimming Pool or Aquarium Product	1,499	1,406	371	163	84	664	7	99	18	1,343	21	4	33	319	177	475	99	0	0
Swimming Pool and Aquarium Test Kits	149	126	41	22	29	23	1	9	1	123	2	1	0	15	29	13	5	0	0
Category Total:	**6,318**	**5,955**	**2,039**	**614**	**394**	**2,413**	**26**	**410**	**59**	**5,711**	**117**	**19**	**92**	**1,271**	**720**	**1,626**	**383**	**13**	**0**
Tobacco/Nicotine/eCigarette Products																			
eCigarettes: Nicotine Containing																			
eCigarettes: Nicotine Device Flavor Unknown	599	570	330	12	98	108	2	15	5	446	84	4	29	181	148	98	40	1	0
eCigarettes: Nicotine Device With Added Flavors	259	255	168	16	23	41	0	5	2	221	25	1	7	62	92	43	5	0	0
eCigarettes: Nicotine Device Without Added Flavors	670	640	403	15	68	123	1	25	5	545	56	8	27	188	184	104	26	1	0
eCigarettes: Nicotine Liquid Flavor Unknown	959	920	587	18	81	200	4	23	7	812	68	9	30	324	303	177	17	0	0

(*continued*)

Table 22A. Demographic profile of SINGLE SUBSTANCE nonpharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
eCigarettes: Nicotine Liquid With Added Flavors	525	504	328	10	67	77	0	18	4	422	47	8	24	144	181	112	10	0	0
eCigarettes: Nicotine Liquid Without Added Flavors	128	126	76	6	8	34	0	1	1	116	6	3	0	34	41	22	3	1	0
Miscellaneous Tobacco Products																			
Chewing Tobacco	1,536	1,509	1,369	27	25	71	4	8	5	1,471	27	6	5	301	447	411	29	1	0
Cigarettes	5,656	5,491	5,091	37	59	228	7	61	8	5,356	82	12	34	692	1,682	826	48	1	0
Cigars	194	179	109	6	16	40	0	7	1	140	12	1	24	24	50	33	5	0	0
Dissolvable Tobacco	12	11	8	1	0	2	0	0	0	11	0	0	0	2	2	1	1	0	0
Filter Tips Only (i.e. Butts)	79	77	70	0	0	4	0	3	0	76	1	0	0	12	28	14	1	0	0
Other Types of Tobacco Product	159	143	83	2	9	41	0	8	0	117	17	1	8	31	24	32	5	0	0
Snuff	331	326	274	6	7	30	1	6	2	307	12	0	6	67	84	87	12	0	0
Unknown Types of Tobacco Product	2,376	2,242	1,370	68	206	485	6	93	14	1,880	221	16	104	632	621	415	83	5	0
Category Total:	**13,483**	**12,993**	**10,266**	**224**	**667**	**1,484**	**25**	**273**	**54**	**11,920**	**658**	**69**	**298**	**2,694**	**3,887**	**2,375**	**285**	**10**	**0**
Waterproofers/Sealants																			
Miscellaneous Waterproofers/Sealants																			
Waterproofers/sealants: aerosols	186	176	73	7	11	71	1	11	2	160	4	3	9	48	34	35	17	2	0
Waterproofers/sealants: liquids	111	110	50	5	5	36	0	14	0	102	1	3	3	37	24	23	6	0	0
Waterproofers/sealants: solids	4	4	2	0	0	1	0	1	0	3	0	1	0	0	0	0	0	0	0
Waterproofers/sealants: unknown form	36	33	16	0	0	14	0	3	0	30	2	0	1	6	8	7	1	0	0
Category Total:	**337**	**323**	**141**	**12**	**16**	**122**	**1**	**29**	**2**	**295**	**7**	**7**	**13**	**91**	**66**	**65**	**24**	**2**	**0**
Weapons of Mass Destruction																			
Miscellaneous Weapons of Mass Destruction																			
Anthrax	2	2	0	0	0	2	0	0	0	0	0	2	0	1	1	0	0	0	0
Nerve Gases	5	4	0	2	0	1	0	1	0	4	0	0	0	0	0	0	0	0	0
Other Biological Weapons	2	2	0	0	0	1	0	0	1	1	1	0	0	2	0	0	0	0	0
Other Chemical Weapons	7	5	0	0	0	3	0	2	0	5	0	0	0	4	0	1	0	0	0
Other Suspicious Powders	240	221	31	21	12	124	3	26	4	142	22	48	2	105	38	45	23	5	0
Other Suspicious Substances (Non-Powder)	2,742	2,448	476	145	171	1,178	10	383	85	1,356	221	457	87	1,057	292	384	269	77	7
Suspicious Powders in Envelope or Package	52	44	1	4	2	27	0	10	0	20	5	18	0	25	10	11	2	0	0
Category Total:	**3,050**	**2,726**	**508**	**172**	**185**	**1,336**	**13**	**422**	**90**	**1,528**	**249**	**525**	**89**	**1,194**	**341**	**441**	**294**	**82**	**7**
Nonpharmaceuticals Total:	**1,061,831**	**949,972**	**499,971**	**64,854**	**43,248**	**275,044**	**3,106**	**55,581**	**8,168**	**876,046**	**39,551**	**12,749**	**16,629**	**164,247**	**150,096**	**151,674**	**31,996**	**2,613**	**293**

Pharmaceuticals (Table 22(B))

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

	No. of Case Mentions	No. of Single Exposure	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
Analgesics																			
Acetaminophen Alone																			
Acetaminophen Alone, Adult	43,318	27,872	6,542	1,210	6,849	12,423	12	665	171	13,069	14,060	9	373	17,489	7,822	4,640	2,609	786	82
Acetaminophen Alone, Pediatric	20,280	18,156	16,257	1,206	256	385	22	24	6	17,561	457	4	98	2,638	3,746	336	93	21	1
Acetaminophen Alone, Unknown if Adult or Pediatric	7,297	4,266	1,230	179	904	1,802	7	114	30	2,057	2,029	6	54	2,661	1,071	688	425	148	27
Acetaminophen Combinations																			
Acetaminophen in Combination with Other Drugs, Adult Formulations	5,685	3,203	727	113	1,224	1,066	3	53	17	1,164	1,928	5	66	2,185	780	855	487	49	1
Acetaminophen in Combination with Other Drugs, Pediatric Formulations	188	167	149	13	1	4	0	0	0	159	4	0	4	17	27	8	0	0	0
Acetaminophen with Codeine	3,170	1,448	197	42	210	922	2	66	9	599	722	1	114	858	372	302	167	25	2
Acetaminophen with Diphenhydramine	6,762	3,943	595	95	767	2,383	0	77	26	1,113	2,739	1	48	2,922	830	964	861	136	7
Acetaminophen with Hydrocodone	13,116	5,605	801	148	680	3,698	2	227	49	2,484	2,735	15	258	3,373	1,381	1,182	653	166	10
Acetaminophen with Other Narcotics or Narcotic Analogs	234	102	15	1	13	65	1	6	1	33	61	0	2	72	25	20	14	9	0
Acetaminophen with Oxycodone	6,557	2,892	409	64	261	2,014	2	118	24	1,205	1,464	14	134	1,871	665	644	463	138	12
Acetaminophen with Propoxyphene	36	17	0	0	5	12	0	0	0	5	12	0	0	12	5	1	5	2	0
Acetylsalicylic Acid Alone																			
Acetylsalicylic Acid Alone, Adult Formulations	8,567	4,399	1,645	214	816	1,648	4	51	21	2,263	1,980	1	76	2,623	1,125	653	752	99	15
Acetylsalicylic Acid Alone, Pediatric Formulations	2,178	982	510	61	128	273	0	7	3	630	320	1	18	470	251	81	130	16	0
Acetylsalicylic Acid Alone, Unknown if Adult or Pediatric Formulations	6,635	3,201	951	138	589	1,458	3	48	14	1,437	1,572	1	65	2,076	699	550	675	89	11
Acetylsalicylic Acid Combinations																			
Acetylsalicylic Acid in Combination with Other Drugs, Adult Formulations	1,029	679	210	19	57	379	0	13	1	376	245	2	36	386	139	114	135	19	2
Acetylsalicylic Acid with Carisoprodol	6	3	2	0	0	1	0	0	0	3	0	0	0	1	2	0	0	0	0
Acetylsalicylic Acid with Codeine	33	17	3	2	2	10	0	0	0	7	10	0	0	12	2	3	4	1	0
Acetylsalicylic Acid with Other Narcotics or Narcotic Analogs	5	1	0	0	0	1	0	0	0	1	0	0	0	1	1	0	0	0	0
Acetylsalicylic Acid with Oxycodone	6	4	0	0	0	4	0	0	0	1	2	0	1	2	0	0	1	0	0
Acetylsalicylic Acid with Propoxyphene	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0
Miscellaneous Analgesics																			
Non-Aspirin Salicylates (Excluding Topicals and/or Gastrointestinal Drugs)	296	224	116	7	21	72	0	8	0	194	22	0	7	52	40	33	8	1	0
Other Analgesics	814	561	213	17	51	262	0	16	2	369	178	0	12	217	121	107	66	1	0
Phenacetin	2	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
Phenazopyridine	1,234	1,016	717	28	23	212	0	34	2	906	46	1	60	232	305	66	32	8	1
Salicylamide	7	5	3	0	0	2	0	0	0	4	1	0	0	1	0	1	0	0	0
Unknown Analgesics	173	74	13	4	24	27	1	2	3	21	45	1	4	56	12	13	12	3	0
Nonsteroidal Antiinflammatory Drugs																			
Colchicine	386	256	65	7	9	161	2	11	1	195	35	0	23	128	57	57	28	3	2
Cyclooxygenase-2 Inhibitors	819	408	135	18	19	206	0	26	4	351	45	1	11	76	94	19	6	0	0
Ibuprofen	80,850	60,893	39,253	3,260	8,369	8,926	54	816	215	47,649	12,490	51	512	14,733	13,946	4,469	1,108	74	1
Ibuprofen with Diphenhydramine	2,507	1,543	316	26	283	862	1	40	15	732	778	3	23	854	326	325	229	19	0
Ibuprofen with Hydrocodone	59	33	5	0	5	22	0	1	0	12	18	0	3	15	7	7	3	0	0
Indomethacin	396	203	50	10	24	105	0	13	1	132	57	0	13	67	41	34	7	0	0
Ketoprofen	40	17	11	1	0	5	0	0	0	13	4	0	0	10	7	0	0	0	0
Naproxen	12,728	7,184	2,302	246	1,701	2,607	5	266	57	4,181	2,770	3	191	3,009	2,028	983	255	11	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE pharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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 Nonsteroidal Antiinflammatory Drug	7,462	3,965	1,290	162	297	1,965	1	228	22	3,210	597	2	143	929	961	318	69	0	0
Unknown Types of Nonsteroidal Antiinflammatory Drug	12	5	2	0	0	2	0	1	0	4	0	0	0	2	1	0	1	0	1
Opioids																			
Alfentanil	2	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0
Buprenorphine	4,219	2,440	1,104	56	68	1,072	3	113	24	1,476	688	70	144	1,883	367	707	496	90	4
Butorphanol	61	38	7	1	0	27	0	3	0	26	7	1	4	21	9	8	3	0	0
Codeine	1,403	884	306	104	67	369	0	29	9	695	137	2	36	257	251	117	26	3	0
Dihydrocodeine	3	2	0	0	0	2	0	0	0	0	1	0	1	1	0	0	0	0	0
Fentanyl	2,094	978	54	5	47	752	0	93	27	309	576	23	39	729	125	134	245	146	77
Hydrocodone Alone or in Combination (Excluding Combination Products with Acetaminophen, Acetylsalicylic Acid or Ibuprofen)	1,308	544	122	30	32	317	0	36	7	340	163	3	26	230	133	95	36	8	3
Hydromorphone	957	406	42	16	10	309	0	26	3	199	161	2	25	254	85	75	68	17	1
Levorphanol	8	4	1	0	0	3	0	0	0	3	0	0	0	2	0	0	1	1	0
Meperidine	61	26	4	2	3	15	1	1	0	13	9	1	3	18	7	9	0	0	0
Methadone	2,184	962	137	17	37	713	1	49	8	372	434	32	64	785	137	147	284	142	9
Morphine	2,394	1,106	145	17	53	816	1	66	8	644	381	5	51	679	243	201	177	62	5
Nalbuphine	12	10	1	0	0	9	0	0	0	2	1	1	6	8	0	2	3	1	0
Other or Unknown Narcotics	2,185	1,084	45	7	48	919	3	49	13	123	701	160	26	948	50	155	389	255	13
Oxycodone Alone or in Combination (Excluding Combination Products with Acetaminophen or Acetylsalicylic Acid)	6,783	2,894	421	113	219	1,949	1	158	33	1,385	1,290	39	118	1,790	611	561	472	188	11
Oxymorphone	164	78	9	0	7	61	0	0	1	22	50	0	4	63	13	16	25	4	0
Pentazocine	13	6	3	0	0	2	0	1	0	4	1	0	1	3	4	0	1	0	0
Propoxyphene	19	3	1	0	0	1	0	0	1	0	2	0	0	3	0	0	2	0	0
Remifentanil	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sufentanil	1	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	0
Tapentadol	230	129	9	3	0	105	0	11	1	73	40	2	11	78	24	29	20	3	1
Tramadol	9,565	4,209	738	115	428	2,762	4	134	28	1,865	2,068	19	189	2,856	1,054	937	710	128	1
Other Acetaminophen and Acetylsalicylic Acid Combinations																			
Acetaminophen and Acetylsalicylic Acid with Other Ingredients	6,755	4,309	1,482	144	1,163	1,393	1	90	36	2,122	2,018	4	140	2,310	1,007	924	509	15	1
Acetaminophen and Acetylsalicylic Acid without Other Ingredients	211	122	35	2	18	65	0	2	0	51	66	0	1	79	19	28	22	2	0
Serotonin 5-HT 1B,1D Receptor Agonists																			
Serotonin 5-HT 1B,1D Receptor Agonists: Other or Unknown	348	180	73	15	16	69	0	6	1	130	28	0	21	61	57	24	7	0	0
Serotonin 5-HT 1B,1D Receptor Agonists: Sumatriptan	983	507	144	40	67	230	0	22	4	350	92	0	63	238	141	78	44	1	0
Category Total:	**274,852**	**174,269**	**79,617**	**7,978**	**25,871**	**55,948**	**137**	**3,820**	**898**	**112,345**	**56,342**	**486**	**3,323**	**73,347**	**41,227**	**21,721**	**12,839**	**2,890**	**301**
Anesthetics																			
Inhalation Anesthetics																			
Nitrous Oxide	202	160	18	18	13	98	1	9	3	53	84	1	22	103	19	23	40	6	1
Other Types of Inhalation Anesthetic	65	52	0	0	5	47	0	0	0	44	4	1	3	31	7	20	9	0	2
Local and/or Topical Anesthetics																			
Dibucaine	24	22	17	1	0	4	0	0	0	21	0	0	1	6	11	0	2	0	0
Lidocaine	2,040	1,797	636	112	110	795	1	133	10	1,440	96	3	243	406	346	256	76	24	3
Other or Unknown Local and/or Topical Anesthetic	3,206	2,999	1,702	123	120	872	4	159	19	2,610	128	17	227	434	753	360	86	23	0
Miscellaneous Anesthetics																			
Ketamine and Analogs	265	118	2	7	8	90	0	8	3	40	50	6	18	96	11	24	36	6	2
Other Types of Anesthetic	29	24	10	1	5	8	0	0	0	15	3	0	6	8	4	4	0	0	0
Unknown Types of Anesthetic	9	5	3	0	0	2	0	0	0	3	0	0	2	3	2	0	1	0	0
Category Total:	**5,840**	**5,177**	**2,388**	**262**	**261**	**1,916**	**6**	**309**	**35**	**4,226**	**365**	**28**	**522**	**1,087**	**1,153**	**687**	**250**	**59**	**8**

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE pharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Anticholinergic Drugs																			
Miscellaneous Anticholinergic Drugs																			
Anticholinergic Drugs (Excluding Cough and Cold Preparations, and Plants)	6,029	3,613	235	66	95	2,797	3	379	38	3,139	294	15	141	590	491	204	184	14	2
Category Total:	**6,029**	**3,613**	**235**	**66**	**95**	**2,797**	**3**	**379**	**38**	**3,139**	**294**	**15**	**141**	**590**	**491**	**204**	**184**	**14**	**2**
Anticoagulants																			
Miscellaneous Anticoagulants																			
Glycoprotein IIIa/IIb Inhibitors	6	5	0	0	0	5	0	0	0	5	0	0	0	3	2	0	0	1	0
Heparins	249	210	25	5	2	157	0	17	4	171	17	2	18	81	50	13	7	4	0
Other Antiplatelets	3,005	1,031	215	18	16	706	1	65	10	962	49	0	18	165	218	25	17	1	0
Other Types of Anticoagulant	4,660	2,504	423	30	18	1,847	1	170	15	2,268	133	2	91	477	527	70	57	18	0
Unknown Types of Anticoagulant	23	16	8	1	0	5	0	2	0	11	1	1	0	7	2	1	0	3	0
Warfarin (Excluding Rodenticides)	2,342	1,136	175	12	24	867	2	51	5	928	159	1	33	350	192	49	98	22	0
Category Total:	**10,285**	**4,902**	**846**	**66**	**60**	**3,587**	**4**	**305**	**34**	**4,345**	**359**	**6**	**160**	**1,083**	**991**	**158**	**179**	**49**	**0**
Anticonvulsants																			
Anticonvulsants: Carbamazepine and Analogs																			
Carbamazepine	3,185	1,566	178	31	84	1,237	1	26	9	569	777	1	158	1,182	303	421	382	75	1
Oxcarbazepine	4,471	1,956	381	268	505	745	3	44	10	1,020	882	1	41	1,111	425	511	256	34	1
Anticonvulsants: Gamma Aminobutyric Acid and Analogs																			
Gabapentin	22,763	7,662	1,143	147	545	5,463	4	316	44	3,146	4,132	49	228	4,704	2,027	1,714	851	144	3
Other Types of Gamma Aminobutyric Acid Anticonvulsant	3,216	1,204	230	28	65	822	0	47	12	603	509	8	58	686	270	280	160	26	0
Anticonvulsants: Hydantoins																			
Fosphenytoin	17	13	1	0	1	10	0	1	0	7	1	0	5	12	1	3	4	2	0
Phenytoin	1,897	1,218	47	8	18	1,109	1	29	6	430	239	2	458	1,010	148	349	379	49	3
Miscellaneous Anticonvulsants																			
Felbamate	58	26	11	5	2	5	0	2	1	26	0	0	0	7	6	4	1	0	0
Lamotrigine	10,346	3,876	520	172	756	2,239	2	166	21	2,301	1,401	4	131	1,997	639	876	574	78	1
Levetiracetam	5,250	2,649	889	273	251	1,145	3	79	9	2,090	486	3	60	789	701	357	98	7	0
Other Types of Anticonvulsant (Excluding Barbiturates)	1,126	421	78	36	45	242	1	17	2	325	71	0	18	163	83	75	42	7	0
Primidone	372	124	9	2	4	104	0	5	0	78	32	1	13	65	32	27	10	4	0
Succinimides	181	125	59	39	17	8	1	1	0	113	11	0	1	25	39	13	0	0	0
Topiramate	4,845	1,783	436	168	413	716	0	38	12	965	725	2	68	1,007	529	397	196	9	0
Unknown Types of Anticonvulsant (Excluding Barbiturates)	8	4	1	0	1	1	0	1	0	2	2	0	0	2	0	0	0	0	0
Valproic Acid	7,699	2,996	279	163	371	2,094	0	75	14	1,160	1,271	6	406	2,079	634	650	564	87	0
Zonisamide	701	313	86	27	43	147	0	10	0	255	50	0	8	81	71	38	8	1	0
Category Total:	**66,135**	**25,936**	**4,348**	**1,367**	**3,121**	**16,087**	**16**	**857**	**140**	**13,090**	**10,589**	**77**	**1,653**	**14,920**	**5,908**	**5,715**	**3,525**	**523**	**9**
Antidepressants																			
Lithium Salts																			
Lithium	7,055	3,865	93	40	480	3,130	3	102	17	858	1,354	9	1,405	3,360	564	913	1,419	180	3
Miscellaneous Antidepressants																			
Antidepressants: Type Unknown to Consumer	77	19	2	1	6	9	0	0	1	2	14	2	0	11	3	4	2	0	0
Bupropion	14,824	6,903	754	198	1,228	4,434	3	243	43	3,706	2,998	9	133	4,569	1,399	1,082	1,644	455	9
Other Types of Antidepressant	427	189	24	5	40	113	0	5	2	61	114	2	10	140	41	51	28	9	0
Trazodone	21,859	8,115	572	233	1,722	5,342	0	185	61	1,851	6,077	8	113	6,509	1,705	2,658	1,696	116	3
Monoamine Oxidase Inhibitors (MAOI)																			
Other Types of Monoamine Oxidase Inhibitor (MAOI)	74	28	6	0	0	18	0	4	0	24	2	0	1	9	7	2	1	1	0
Phenelzine	46	18	2	0	0	14	0	1	1	7	7	0	2	13	2	3	3	2	0
Selegiline	47	20	1	2	0	14	0	3	0	12	4	0	4	12	3	0	3	0	0
Tranylcypromine	49	25	3	0	0	20	0	2	0	14	4	0	5	14	7	6	1	2	1
Selective Serotonin Reuptake Inhibitors (SSRI)																			
Citalopram	8,169	3,331	720	171	896	1,442	3	76	23	1,559	1,679	4	66	1,983	942	674	464	60	1
Escitalopram	9,819	4,454	691	299	1,723	1,576	2	129	34	1,820	2,470	5	129	2,776	1,230	927	632	24	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE pharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Fluoxetine	13,932	5,938	775	527	2,710	1,740	9	131	46	2,105	3,683	8	99	3,872	1,951	1,293	536	34	3
Fluvoxamine	476	156	15	6	42	82	0	7	4	88	54	2	12	64	29	27	16	3	0
Other Types of Selective Serotonin Reuptake Inhibitor (SSRI)	4,379	1,854	450	111	508	710	0	64	11	885	889	7	62	1,096	551	388	217	23	0
Paroxetine	3,369	1,362	301	37	242	729	0	40	13	686	616	8	41	736	334	281	145	5	0
Sertraline	20,294	10,108	2,216	591	3,604	3,401	14	223	59	4,472	5,253	22	294	6,148	2,586	2,460	1,306	53	1
Serotonin Norepinephrine Reuptake Inhibitors (SNRI)																			
Duloxetine	5,802	2,063	482	73	298	1,127	1	70	12	1,137	799	13	101	1,073	514	439	268	15	0
Nefazodone	28	15	1	0	0	12	0	2	0	12	3	0	0	3	2	4	0	1	0
Other Types of Serotonin Norepinephrine Reuptake Inhibitor (SNRI)	579	248	69	11	58	99	0	11	0	153	80	1	12	121	65	42	23	1	0
Venlafaxine	6,846	2,687	542	72	476	1,492	1	91	13	1,394	1,159	17	92	1,613	677	514	443	56	4
Tetracyclic Antidepressants																			
Maprotiline	3	3	0	0	0	3	0	0	0	0	3	0	0	3	1	1	1	0	0
Mirtazapine	4,960	1,518	226	64	240	942	0	37	9	529	933	3	39	1,103	368	458	246	21	0
Tricyclic Antidepressants (TCA)																			
Amitriptyline	5,492	2,397	293	99	476	1,460	0	56	13	788	1,466	3	63	1,855	336	521	726	272	14
Amoxapine	12	4	0	1	0	3	0	0	0	1	2	0	1	3	0	1	0	0	0
Clomipramine	240	103	11	4	11	70	0	7	0	71	27	0	3	46	17	17	13	4	1
Desipramine	61	34	6	1	2	23	0	2	0	18	12	0	3	21	6	7	5	3	0
Doxepin	1,675	671	48	20	76	501	0	21	5	188	449	0	26	522	104	156	190	66	6
Imipramine	212	95	22	11	9	51	0	1	1	56	32	0	6	54	23	14	22	4	0
Loxapine	87	23	0	0	2	20	0	1	0	2	18	0	3	19	2	8	10	0	0
Nortriptyline	1,115	474	56	21	78	305	0	14	0	208	225	1	27	302	86	89	99	31	2
Other Types of Tricyclic Antidepressant (TCA)	347	150	8	6	18	111	0	6	1	19	92	12	6	134	15	23	55	26	2
Protriptyline	8	5	0	1	0	3	0	1	0	1	3	0	1	3	0	1	2	0	0
Tricyclic Antidepressants (TCA) Formulated with a Benzodiazepine	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tricyclic Antidepressants (TCA) Formulated with a Phenothiazine	24	13	5	0	2	6	0	0	0	7	6	0	0	11	5	1	3	1	0
Tricyclic Antidepressants (TCA): Type Unknown to Consumer	22	3	0	0	1	2	0	0	0	0	3	0	0	3	0	0	3	0	0
Category Total:	**132,412**	**56,891**	**8,394**	**2,605**	**14,948**	**29,004**	**36**	**1,535**	**369**	**22,734**	**30,530**	**136**	**2,759**	**38,201**	**13,575**	**13,065**	**10,222**	**1,468**	**50**
Antihistamines																			
Histamine H2 Antagonists																			
Cimetidine and Other Histamine-2 Blockers	8,609	6,030	4,326	263	207	1,044	2	167	21	5,672	268	1	78	477	1,255	213	15	2	0
Less Sedating Antihistamines																			
Cetirizine	1	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
Miscellaneous Antihistamines																			
Other Antihistamines Alone (Excluding Cough and Cold Preparations)	55,857	37,784	21,086	4,846	3,575	7,439	23	678	137	31,483	5,731	22	412	7,592	8,478	2,835	1,168	83	2
Sedating Antihistamines																			
Diphenhydramine Alone (Over the Counter)	25,881	18,485	9,757	1,131	2,399	4,836	7	288	67	12,434	5,656	17	258	7,447	3,866	2,693	2,329	263	5
Diphenhydramine Alone (Prescription)	1,772	1,127	452	57	190	397	1	25	5	617	474	1	22	575	232	163	224	18	2
Diphenhydramine Alone (Unknown if Over the Counter or Prescription)	16,920	11,271	4,894	756	1,848	3,508	11	195	59	6,514	4,484	13	157	5,385	2,197	1,971	1,911	239	15
Other Sedating Antihistamines	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Category Total:	**109,042**	**74,698**	**40,516**	**7,053**	**8,219**	**17,224**	**44**	**1,353**	**289**	**56,721**	**16,613**	**54**	**927**	**21,476**	**16,029**	**7,875**	**5,647**	**605**	**24**
Antimicrobials																			
Anthelmintics																			
Diethylcarbamazine	14	13	9	1	0	1	0	2	0	13	0	0	0	1	1	1	0	0	0
Levamisole	35	25	1	1	2	20	1	0	0	15	8	0	1	18	5	3	6	3	0
Other Types of Anthelmintic	1,725	1,604	854	147	37	486	5	69	6	1,432	77	5	76	197	351	121	26	0	0
Piperazine	139	130	89	7	4	25	0	2	3	119	9	1	0	15	39	12	2	1	0
Unknown Types of Anthelmintic	14	12	7	0	2	2	0	1	0	11	1	0	0	1	2	1	0	0	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE pharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Antibiotics																			
Systemic Antibiotic Preparations (Oral, Intravenous, Intramuscular)	28,891	22,696	10,221	2,064	1,458	7,615	43	1,168	127	19,261	1,308	18	2,045	2,984	3,720	1,557	312	29	1
Topical Antibiotic Preparations (Dermal, Otic, Ophthalmic, Nasal)	4,770	4,531	3,107	185	99	893	13	208	26	4,341	51	5	127	146	651	174	17	1	0
Unknown Types of Antibiotic Preparation	268	173	80	8	12	51	2	18	2	133	11	3	25	28	25	13	2	0	0
Antifungals																			
Systemic Antifungal Preparations (Oral, Intravenous, Intramuscular)	1,156	903	380	54	38	360	1	61	9	769	29	0	102	141	145	88	18	1	0
Topical Antifungal Preparations (Dermal, Otic, Ophthalmic, Nasal)	6,499	6,149	3,930	169	97	1,581	12	339	21	5,910	42	13	173	395	897	411	52	4	0
Unknown Types of Antifungal Preparation	12	10	1	0	0	9	0	0	0	9	1	0	0	4	1	3	0	0	0
Antiparasitics																			
Antimalarials	826	454	113	38	51	229	0	19	4	359	56	0	36	185	117	58	32	12	3
Metronidazole	1,232	699	181	21	54	375	0	62	6	541	74	2	80	128	98	74	18	0	0
Other Types of Antiparasitic	39	33	12	3	0	14	0	4	0	28	1	0	4	10	4	3	0	0	0
Antituberculars																			
Isoniazid	123	89	16	8	18	43	0	3	1	50	22	0	13	57	18	9	11	17	0
Other Types of Antitubercular	29	6	2	0	0	4	0	0	0	5	0	0	1	3	0	0	1	0	0
Rifampin	95	61	5	5	6	39	0	6	0	48	10	0	3	24	12	6	5	0	0
Antivirals																			
Amantadine	302	110	24	18	12	53	0	3	0	80	20	0	8	42	19	15	20	2	1
Antiretrovirals	785	412	68	8	32	272	0	30	2	295	107	0	7	145	87	47	19	2	0
Other Anti-Influenza Agents	1,461	1,333	430	366	122	345	8	57	5	1,154	17	1	159	129	202	94	26	3	0
Systemic Antiviral Preparations (Oral, Intravenous, Intramuscular)	1,605	1,163	349	20	50	646	3	81	14	988	96	0	76	208	213	69	37	4	0
Topical Antiviral Preparations (Dermal, Otic, Ophthalmic, Nasal)	157	154	77	10	3	52	1	11	0	150	1	0	3	5	22	14	0	0	0
Unknown Types of Antiviral Preparations	312	204	68	3	13	108	0	12	0	171	14	1	18	31	38	12	2	1	0
Miscellaneous Antimicrobials																			
Other Types of Antimicrobial	226	214	118	6	6	69	0	13	2	197	3	0	14	21	43	25	2	0	0
Unknown Types of Antimicrobial	5	5	3	0	0	2	0	0	0	5	0	0	0	2	1	0	2	0	0
Category Total:	**50,720**	**41,183**	**20,145**	**3,142**	**2,116**	**13,294**	**89**	**2,169**	**228**	**36,084**	**1,958**	**49**	**2,971**	**4,920**	**6,711**	**2,810**	**610**	**80**	**5**
Antineoplastics																			
Miscellaneous Antineoplastics																			
Antineoplastic Drugs	2,167	1,670	270	46	41	1,144	4	148	17	1,505	47	6	104	602	354	167	90	14	4
Category Total:	**2,167**	**1,670**	**270**	**46**	**41**	**1,144**	**4**	**148**	**17**	**1,505**	**47**	**6**	**104**	**602**	**354**	**167**	**90**	**14**	**4**
Asthma Therapies																			
Miscellaneous Asthma Therapies																			
Albuterol	4,291	3,857	1,984	651	323	747	5	130	17	3,143	495	9	189	517	721	480	212	5	1
Aminophylline or Theophylline	132	88	3	3	3	75	0	3	1	61	6	0	19	46	18	10	22	8	1
Leukotriene Antagonist or Inhibitor	6,109	4,258	2,842	682	187	474	3	63	7	4,020	207	0	25	488	974	91	3	0	0
Non-Selective Beta Agonists	3,805	3,762	1,596	878	179	957	5	133	14	3,653	79	2	18	938	240	1,577	266	3	0
Other Asthma Therapeutic Agents	301	203	62	18	12	100	0	11	0	162	22	0	14	55	51	18	12	3	1
Terbutaline and Other Beta-2 Agonists	981	834	131	91	33	500	0	74	5	719	69	2	39	99	133	73	48	1	0
Unknown Asthma Therapeutic Agents	7	3	0	2	0	1	0	0	0	1	2	0	0	2	0	1	1	0	0
Category Total:	**15,626**	**13,005**	**6,618**	**2,325**	**737**	**2,854**	**13**	**414**	**44**	**11,759**	**880**	**13**	**304**	**2,145**	**2,137**	**2,250**	**564**	**20**	**3**
Cardiovascular Drugs																			
Angiotensin Converting Enzyme Inhibitor																			
Angiotensin Converting Enzyme Inhibitor in Combination with Diuretic	1,932	1,063	407	77	43	496	0	40	0	955	99	0	9	337	358	54	37	1	0
Angiotensin Converting Enzyme Inhibitor in Combination with Other Drugs (Excluding Calcium Antagonists)	8	3	2	0	0	1	0	0	0	3	0	0	0	0	3	0	0	0	0
Angiotensin Converting Enzyme Inhibitor, Alone	14,407	5,766	2,297	319	218	2,691	4	211	26	4,896	762	3	86	1,997	2,117	228	167	7	0
Angiotensin Receptor Blocker																			
Angiotensin Receptor Blocker in Combination with Diuretic	1,777	966	208	30	33	647	0	46	2	901	55	1	9	176	259	53	18	1	1

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE pharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Angiotensin Receptor Blocker in Combination with Other Drugs (Excluding Calcium Antagonists)	209	80	22	0	1	50	0	6	1	69	5	0	6	19	15	5	6	0	0
Angiotensin Receptor Blocker, Alone	8,175	3,502	841	111	102	2,235	2	192	19	3,183	233	9	68	779	1,092	177	81	3	0
Antihyperlipidemic																			
Antihyperlipidemic Combinations (Excluding Calcium Antagonists)	50	25	5	1	0	18	0	1	0	24	0	0	1	0	3	2	0	0	0
Antihyperlipidemic, Alone	12,210	4,127	1,582	121	147	1,988	6	264	19	3,835	213	4	71	494	748	123	20	0	1
Antihypertensives																			
Antihypertensive (Excluding Diuretics), Alone	5,105	2,762	776	1,160	553	248	4	18	3	2,251	430	6	49	1,508	848	427	472	32	1
Antihypertensive in Combination with Diuretic	11	7	3	0	0	4	0	0	0	7	0	0	0	1	1	0	0	0	0
Antihypertensive in Combination with Other Drugs (Excluding Diuretics)	5	2	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0
Beta Blockers																			
Beta Blocker in Combination with Diuretic	267	127	36	10	6	70	0	5	0	114	10	0	1	50	48	7	7	2	0
Beta Blocker in Combination with Other Drugs (Excluding Calcium Antagonists)	8	1	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
Beta Blocker, Alone	26,397	10,398	2,591	361	494	6,512	4	395	41	8,338	1,766	5	225	4,354	3,674	594	1,025	134	23
Calcium Antagonist																			
Calcium Antagonist in Combination with Angiotensin Converting Enzyme Inhibitor	292	167	43	5	9	104	0	5	1	152	14	0	0	66	66	6	15	1	0
Calcium Antagonist in Combination with Angiotensin Receptor Blocker	198	103	25	1	3	72	0	2	0	96	6	0	1	40	32	6	6	0	0
Calcium Antagonist in Combination with Antihyperlipidemic	15	8	3	0	0	5	0	0	0	8	0	0	0	5	1	1	1	0	0
Calcium Antagonist in Combination with Diuretic	2	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Calcium Antagonist in Combination with Other Drugs	70	44	19	0	1	21	0	3	0	42	1	0	0	18	20	2	2	0	0
Calcium Antagonist, Alone	13,840	5,495	1,242	180	177	3,669	1	205	21	4,695	646	0	123	2,718	2,026	376	484	80	41
Miscellaneous Cardiovascular Drugs																			
Alpha Blockers	5,570	1,587	274	30	187	1,002	3	80	11	978	527	2	72	708	373	274	163	8	0
Antiarrhythmics	2,088	1,094	102	13	17	903	1	48	10	988	38	1	61	492	385	78	101	25	6
Cardiac Glycosides	1,689	1,143	57	5	7	1,059	0	14	1	438	49	1	595	931	137	119	445	114	23
Clonidine	10,684	5,439	1,616	1,306	1,031	1,402	5	57	22	3,410	1,847	17	102	3,853	982	1,135	1,758	200	0
Hydralazine	1,510	552	133	8	28	363	0	17	3	447	90	0	12	239	166	71	52	3	0
Long-Acting Nitrates	959	241	44	5	5	178	0	9	0	215	20	0	5	67	63	24	11	1	0
Nitroglycerin	808	514	276	20	10	183	1	23	1	418	80	1	9	233	211	30	23	3	0
Nitroprusside	11	9	3	0	0	6	0	0	0	0	0	0	9	9	1	1	2	1	0
Other Types of Cardiovascular Drug	501	213	60	4	6	138	0	5	0	190	13	1	7	71	66	17	11	2	1
Other Types of Vasodilator	1,135	771	292	36	22	365	0	51	5	587	85	3	88	278	197	93	49	6	0
Unknown Types of Cardiovascular Drug	60	23	4	0	1	11	2	5	0	14	8	0	0	11	4	1	3	0	0
Unknown Types of Vasodilator	11	7	2	0	2	3	0	0	0	4	1	0	2	2	2	3	0	0	0
Vasopressors	301	259	79	42	7	118	1	10	2	240	5	0	13	80	22	98	35	2	2
Category Total:	**110,305**	**46,499**	**13,045**	**3,845**	**3,110**	**24,564**	**34**	**1,713**	**188**	**37,502**	**7,003**	**54**	**1,624**	**19,537**	**13,920**	**4,005**	**4,994**	**626**	**99**
Cold and Cough Preparations																			
Acetaminophen and Acetylsalicylic Acid with Decongestant and/or Antihistamine																			
Acetaminophen and Acetylsalicylic Acid with Antihistamine without Opioids	14	10	4	0	3	2	0	1	0	6	4	0	0	6	3	1	2	0	0
Acetaminophen and Acetylsalicylic Acid with Decongestant and Antihistamine without Opioids	18	14	7	4	1	1	0	1	0	11	2	0	0	4	2	1	0	0	0
Acetaminophen and Acetylsalicylic Acid with Decongestant without Opioids	7	3	2	0	1	0	0	0	0	2	1	0	0	1	1	1	0	0	0
Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan with Antihistamine	20	11	3	1	2	5	0	0	0	5	4	0	2	5	1	3	2	0	0
Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan with Decongestant	15	8	5	0	0	3	0	0	0	7	0	0	1	1	1	0	0	0	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE pharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan with Decongestant and Antihistamine	14	11	9	0	1	1	0	0	0	9	1	0	0	4	2	1	0	0	0
Acetaminophen, Acetylsalicylic Acid, and Opioid with Decongestant	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acetaminophen, Acetylsalicylic Acid, and Opioid with Decongestant and Antihistamine	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Obsolete: Acetaminophen and Acetylsalicylic Acid with Decongestant and/or Antihistamine Combinations without Phenylpropanolamine or Opioids	3	3	2	0	0	1	0	0	0	3	0	0	0	0	2	0	0	0	0
Obsolete: Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	5	3	2	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0
Acetaminophen with Decongestant and/or Antihistamine																			
Acetaminophen and Codeine with Antihistamine	4	1	0	0	1	0	0	0	0	0	1	0	0	1	0	0	1	0	0
Acetaminophen and Codeine with Decongestant	5	4	1	0	0	3	0	0	0	1	2	0	1	2	2	1	0	0	0
Acetaminophen and Codeine with Decongestant and Antihistamine	16	10	3	1	2	4	0	0	0	5	2	0	2	3	2	3	1	0	0
Acetaminophen and Dextromethorphan with Antihistamine	4,944	2,382	881	166	487	781	3	51	13	1,272	999	3	73	1,137	548	421	218	20	1
Acetaminophen and Dextromethorphan with Decongestant	4,314	2,354	1,170	198	319	604	2	54	7	1,758	449	1	138	591	539	234	79	4	0
Acetaminophen and Dextromethorphan with Decongestant and Antihistamine	3,014	1,701	873	148	240	398	2	32	8	1,195	433	0	62	572	388	246	76	5	0
Acetaminophen and Other Opioid with Antihistamine	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acetaminophen and Other Opioid with Decongestant and Antihistamine	8	3	1	2	0	0	0	0	0	3	0	0	0	0	1	0	1	0	0
Acetaminophen with Antihistamine without Opioids	621	406	72	20	107	201	0	6	0	113	283	0	6	296	57	105	111	13	0
Acetaminophen with Decongestant and Antihistamine without Opioids	1,087	658	376	58	68	138	1	14	3	492	141	2	20	213	169	64	37	6	0
Acetaminophen with Decongestant without Opioids	990	579	307	45	72	138	0	17	0	459	78	1	38	117	118	43	23	0	0
Obsolete: Acetaminophen and Codeine Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	2	2	1	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0
Obsolete: Acetaminophen and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	18	13	8	3	1	1	0	0	0	12	0	0	1	1	1	0	0	0	0
Obsolete: Acetaminophen with Decongestant and/or Antihistamine Combinations without Phenylpropanolamine or Opioids	9	6	2	0	2	2	0	0	0	3	3	0	0	4	0	2	1	0	0
Acetylsalicylic Acid with Decongestant and/or Antihistamine																			
Acetylsalicylic Acid and Codeine with Antihistamine	1	1	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0
Acetylsalicylic Acid and Dextromethorphan with Antihistamine	3	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Acetylsalicylic Acid and Dextromethorphan with Decongestant	4	2	1	0	0	1	0	0	0	2	0	0	0	0	1	0	0	0	0
Acetylsalicylic Acid and Dextromethorphan with Decongestant and Antihistamine	20	16	11	3	0	2	0	0	0	15	0	0	1	2	4	2	0	0	0
Acetylsalicylic Acid with Antihistamine without Opioids	18	14	5	1	3	5	0	0	0	7	7	0	0	8	2	2	4	0	0
Acetylsalicylic Acid with Decongestant and Antihistamine without Opioids	114	75	53	10	2	7	0	2	1	67	3	1	4	8	20	1	1	0	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE pharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Acetylsalicylic Acid with Decongestant without Opioids	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Antihistamine and/or Decongestant																			
Antihistamine and Decongestant with Codeine	72	50	24	4	1	18	0	3	0	38	8	0	4	15	16	4	1	0	0
Antihistamine and Decongestant with Dextromethorphan	2,785	2,341	1,693	357	117	151	1	18	4	2,173	126	2	33	368	566	221	58	2	0
Antihistamine and Decongestant with Other Opioid	14	10	5	0	0	5	0	0	0	8	0	0	1	2	2	2	0	0	0
Antihistamine and Decongestant without Opioid	3,888	3,140	2,046	390	183	466	2	44	9	2,863	192	3	75	495	763	250	83	7	0
Antihistamine with Codeine	483	359	89	27	49	176	0	16	2	261	88	0	6	125	79	65	18	2	0
Antihistamine with Dextromethorphan	3,701	2,901	644	214	763	1,234	3	31	12	1,114	1,708	4	44	1,864	429	654	833	49	0
Antihistamine with Other Opioid	131	102	18	7	5	59	1	11	1	83	14	0	5	39	23	14	11	0	0
Antihistamine without Opioid	1,550	907	455	62	106	257	1	23	3	629	252	1	19	396	269	132	87	10	0
Decongestant with Codeine	38	26	6	2	1	15	0	2	0	19	5	0	2	5	6	2	0	0	0
Decongestant with Dextromethorphan	1,581	1,235	819	195	86	124	0	9	2	1,072	125	1	33	183	285	74	52	2	0
Decongestant with Other Opioid	10	3	2	1	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
Decongestant without Opioid	3,972	2,659	1,322	199	247	790	2	91	8	2,326	215	1	110	442	620	165	100	1	0
Obsolete: Antihistamine and/or Decongestant with Dextromethorphan without Phenylpropanolamine	110	88	7	2	18	59	0	1	1	12	75	0	0	75	9	26	38	2	0
Obsolete: Antihistamine and/or Decongestant without Phenylpropanolamine and Opioid	12	11	10	0	0	1	0	0	0	11	0	0	0	2	2	3	0	0	0
Miscellaneous Cold and Cough Preparations																			
Acetaminophen in Combination with Dextromethorphan (Without Decongestants or Antihistamines)	158	104	64	5	14	20	0	1	0	78	23	0	2	37	28	7	4	1	0
Cough and Cold Preparations (Not Otherwise Classified)	3,654	2,596	1,874	149	156	367	4	36	10	2,124	382	0	70	518	482	218	121	15	0
Dextromethorphan Preparations (Not Otherwise Classified)	11,057	8,195	2,922	980	1,118	2,993	2	154	26	5,172	2,724	21	211	3,291	1,331	1,362	1,258	62	2
Dextromethorphan With Expectorants	733	574	313	82	44	127	0	7	1	452	99	0	19	148	106	57	49	0	0
Expectorants Without Dextromethorphan	2,125	1,354	551	72	97	555	2	70	7	1,145	157	1	43	202	206	65	30	1	0
Non-Narcotic Antitussives Excluding Dextromethorphan	2,130	1,435	513	90	187	572	0	64	9	1,103	236	0	83	594	453	217	52	12	0
Obsolete: Acetylsalicylic Acid in Combination with Dextromethorphan	1	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	0
Obsolete: Expectorants or Antitussives (Without Narcotics or Narcotic Analogs)	10	8	4	1	2	1	0	0	0	6	1	0	1	2	2	0	2	0	0
Obsolete: Unknown Types of Cough and Cold Preparation	80	35	6	7	7	15	0	0	0	14	19	1	1	22	10	8	3	0	0
Non-Acetylsalicylic Acid Salicylates with Decongestant and/or Antihistamine																			
Non-Acetylsalicylic Acid Salicylates and Dextromethorphan with Antihistamine	5	5	3	0	2	0	0	0	0	4	1	0	0	3	1	1	1	0	0
Non-Acetylsalicylic Acid Salicylates and Dextromethorphan with Decongestant	8	8	7	0	0	1	0	0	0	7	1	0	0	1	2	0	1	0	0
Non-Acetylsalicylic Acid Salicylates and Dextromethorphan with Decongestant and Antihistamine	4	4	2	0	0	2	0	0	0	3	1	0	0	1	0	1	0	0	0
Non-Acetylsalicylic Acid Salicylates and Opioid with Decongestant	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-Acetylsalicylic Acid Salicylates and Opioid with Decongestant and Antihistamine	1	1	0	0	0	1	0	0	0	0	1	0	0	1	0	1	0	0	0
Non-Acetylsalicylic Acid Salicylates with Antihistamine without Opioid	4	3	2	0	0	0	0	1	0	3	0	0	0	0	0	0	0	0	0
Non-Acetylsalicylic Acid Salicylates with Decongestant and Antihistamine without Opioid	5	3	1	0	2	0	0	0	0	2	1	0	0	1	2	0	0	0	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE pharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Non-Acetylsalicylic Acid Salicylates with Decongestant without Opioid	5	4	2	1	0	1	0	0	0	4	0	0	0	0	1	0	0	0	0
Obsolete: Non-Acetylsalicylic Acid Salicylates with Decongestant and/or Antihistamine without Phenylpropanolamine and Opioid	1	1	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0
Phenylpropanolamine Containing Preparations																			
Acetaminophen and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	38	22	5	4	3	10	0	0	0	11	9	0	1	15	3	4	4	1	0
Acetaminophen, Acetylsalicylic Acid, and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	4	2	0	0	0	2	0	0	0	0	2	0	0	2	0	1	0	0	0
Acetaminophen, Acetylsalicylic Acid, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	9	6	3	1	0	2	0	0	0	4	2	0	0	3	1	1	1	0	0
Acetaminophen, Acetylsalicylic Acid, Phenylpropanolamine, and Opioid 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
Acetaminophen, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	14	10	5	1	1	1	2	0	0	9	1	0	0	3	3	0	0	0	0
Acetylsalicylic Acid and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	19	13	8	0	2	3	0	0	0	11	0	0	2	0	0	3	0	0	0
Acetylsalicylic Acid, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	11	8	5	2	0	1	0	0	0	8	0	0	0	0	2	0	0	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine and Codeine	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine and Dextromethorphan	174	130	90	22	6	12	0	0	0	124	6	0	0	21	29	8	4	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine without Opioid	215	150	106	24	6	11	1	1	1	130	14	0	4	27	28	10	5	1	0
Other Phenylpropanolamine Preparations (Excluding Street Drugs and Diet Aids)	206	179	87	1	3	75	0	11	2	177	1	1	0	6	51	2	1	0	0
Category Total:	**54,314**	**36,977**	**17,516**	**3,562**	**4,538**	**10,429**	**29**	**773**	**130**	**26,660**	**8,903**	**44**	**1,119**	**11,888**	**7,675**	**4,709**	**3,375**	**216**	**3**
Diagnostic Agents																			
Miscellaneous Diagnostic Agents																			
Diagnostic Tablets for Glucose or Ketones	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0
Other Types of Diagnostic Agent	386	330	52	16	11	190	1	53	7	232	5	1	91	123	47	54	20	3	0
Unknown Types of Diagnostic Agent	9	7	1	0	0	4	0	2	0	5	0	0	2	2	0	2	0	0	0
Category Total:	**396**	**338**	**53**	**16**	**11**	**195**	**1**	**55**	**7**	**238**	**5**	**1**	**93**	**125**	**47**	**57**	**20**	**3**	**0**
Dietary Supplements/Herbals/Homeopathic																			
Amino Acids																			
Creatine	150	104	65	7	10	21	0	1	0	84	9	1	10	22	21	10	3	0	0
Other Amino Acid Dietary Supplements	792	532	278	22	39	167	0	21	5	384	60	0	88	113	80	69	15	0	0
Botanical Products																			
Citrus Aurantium (Single Ingredient)	11	10	5	0	1	4	0	0	0	8	1	0	1	5	2	0	2	0	0
Echinacea	156	101	71	13	1	14	0	2	0	86	4	0	8	7	24	7	0	0	0
Ginkgo Biloba	91	58	32	1	1	22	0	2	0	45	9	0	4	9	11	6	2	0	0
Ginseng	86	55	21	1	11	18	0	4	0	27	16	0	9	21	15	4	5	1	0
Kava Kava	112	70	6	1	7	45	0	11	0	19	27	0	23	41	7	16	10	1	0
Ma Huang/Ephedra (Single Ingredient)	18	11	4	1	0	6	0	0	0	7	2	0	2	6	1	4	0	0	0
Multi-Botanicals with Citrus Aurantium	51	44	14	3	1	25	0	1	0	21	8	1	13	23	8	6	10	1	0
Multi-Botanicals with Ma Huang	51	32	12	2	5	13	0	0	0	17	11	0	4	16	7	9	5	0	0
Multi-Botanicals without Ma Huang or Citrus Aurantium	1,783	1,444	953	68	58	322	2	38	3	1,133	114	5	188	296	294	147	84	7	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE pharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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 Single Ingredient Botanicals	3,897	3,047	1,747	157	104	849	8	160	22	2,482	204	7	339	394	495	343	76	4	0
St. John's Wort	180	105	65	4	14	21	0	1	0	77	20	0	8	26	21	7	1	0	0
Valerian	242	113	41	3	7	52	0	8	2	64	20	1	24	38	20	21	7	0	0
Yohimbe	123	96	10	2	2	76	0	4	2	26	16	1	53	63	9	24	32	3	0
Cultural Medicines																			
Asian Medicines	90	78	30	5	1	37	1	4	0	54	6	0	18	33	6	9	7	2	0
Ayurvedic Medicines	21	14	6	0	0	7	0	1	0	7	1	1	5	7	2	2	0	1	0
Hispanic Medicines	11	10	8	0	0	1	0	1	0	10	0	0	0	0	0	0	0	0	0
Other Cultural Medicines	116	97	45	2	10	34	1	5	0	63	21	1	11	39	8	8	15	0	1
Energy Products																			
Energy Drinks: Caffeine Containing (From Any Source Including Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc)	1,154	942	571	55	114	179	0	21	2	691	130	5	112	186	163	140	92	2	0
Energy Drinks: Caffeine Only (Without Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc)	873	622	373	47	57	121	0	20	4	457	107	3	52	108	122	91	31	4	0
Energy Drinks: Ethanol and Caffeine Containing (From Any Source Including Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc)	118	28	6	0	8	12	0	1	1	9	13	1	3	11	4	6	5	0	0
Energy Drinks: Ethanol and Caffeine Only (Without Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy Drinks: Ethanol Containing Without Caffeine (From Any Source)	1	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
Energy Drinks: No Caffeine (From Any Source)	28	22	11	7	1	3	0	0	0	14	4	0	4	4	3	5	0	0	0
Energy Drinks: Unknown	423	291	134	31	29	82	0	14	1	187	45	4	55	55	42	48	19	0	0
Energy Products: Other	319	257	133	11	24	79	1	6	3	171	38	2	44	89	60	42	29	0	0
Hormonal Products																			
Androgen or Androgen Precursor Dietary Supplements	142	105	73	1	5	24	0	2	0	88	7	0	10	17	23	9	5	0	0
Glandular Dietary Supplements	38	27	19	2	0	4	0	2	0	24	2	0	1	7	4	1	0	0	0
Melatonin	35,027	30,324	24,238	3,004	1,581	1,268	36	155	42	27,772	2,276	20	179	3,890	6,092	2,544	88	5	0
Phytoestrogen Dietary Supplements	72	54	23	1	5	21	0	3	1	37	10	0	7	10	9	5	4	0	0
Miscellaneous Dietary Supplements/Herbals/ Homeopathic																			
Homeopathic Agents	7,883	7,361	6,455	309	71	435	9	70	12	7,113	82	5	152	518	1,327	200	27	1	0
Unknown Dietary Supplements or Homeopathic Agents	1,968	1,550	928	101	64	393	2	52	10	1,187	100	2	248	288	281	169	63	6	5
Other Dietary Supplements																			
Blue-Green Algae	537	507	95	71	51	201	8	55	26	463	0	29	13	88	137	98	11	0	0
Fatty Acid Supplements	324	204	163	12	3	24	0	2	0	190	6	0	8	14	38	7	1	1	0
Glucosamine (with or without Chondroitin)	531	385	285	12	9	68	0	10	1	368	10	0	5	26	62	10	0	0	0
Other Single Ingredient Non-Botanical Dietary Supplements	1,537	784	536	47	18	150	4	21	8	685	32	5	58	87	152	39	7	2	0
Category Total:	**58,957**	**49,485**	**37,456**	**4,003**	**2,312**	**4,798**	**72**	**699**	**145**	**44,070**	**3,412**	**94**	**1,759**	**6,557**	**9,550**	**4,106**	**656**	**41**	**6**
Diuretics																			
Miscellaneous Diuretics																			
Furosemide	3,233	935	351	29	22	496	0	32	5	849	53	1	27	257	210	109	36	3	1
Other Types of Diuretic	2,859	1,108	391	57	74	527	1	50	8	926	120	1	55	288	280	106	32	4	0
Thiazide	4,137	1,445	559	92	61	658	1	69	5	1,268	146	3	24	344	358	84	24	0	0
Unknown Types of Diuretic	197	53	18	2	4	27	0	2	0	46	7	0	0	13	13	6	2	0	0
Category Total:	**10,426**	**3,541**	**1,319**	**180**	**161**	**1,708**	**2**	**153**	**18**	**3,089**	**326**	**5**	**106**	**902**	**861**	**305**	**94**	**7**	**1**
Electrolytes and Minerals																			
Miscellaneous Electrolytes and Minerals																			
Calcium and Calcium Salts	11,349	9,877	8,744	495	121	438	10	54	15	9,617	201	8	47	320	1,572	173	20	2	0
Chromium, Trivalent	156	132	43	8	5	62	0	14	0	127	2	0	3	36	17	15	6	0	0
Colloidal Silver	151	125	48	13	5	51	1	7	0	75	21	0	26	38	15	12	11	1	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE pharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Fluoride (Excluding Vitamins, Hydrofluoric Acid & Mouthwashes)	1,362	1,303	1,013	135	35	97	3	18	2	1,204	28	4	62	72	209	87	10	1	1
Germanium and Germanium Salts	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Iron and Iron Salts (Excluding Vitamins with Iron)	6,210	4,549	2,173	156	540	1,472	2	184	22	3,555	627	7	335	1,266	987	587	141	10	1
Magnesium and Magnesium Salts	2,436	1,952	890	115	99	719	5	107	17	1,603	170	17	154	261	296	210	43	0	0
Multi-Mineral and Multi-Herbal Dietary Supplement	590	459	254	23	55	116	0	10	1	318	99	1	40	172	118	65	51	1	0
Multi-Mineral Dietary Supplements	148	114	52	6	7	39	0	9	1	84	14	0	16	20	14	20	0	1	0
Other Types of Electrolyte or Mineral	62	49	17	2	1	24	0	5	0	45	2	0	2	6	3	11	2	1	0
Potassium and Potassium Salts	1,641	613	184	21	14	338	0	47	9	476	87	8	38	148	124	43	27	5	1
Selenium and Selenium Salts	85	56	16	4	4	27	0	5	0	40	5	1	6	13	9	4	2	1	0
Sodium and Sodium Salts	4,525	3,751	2,156	406	177	796	9	184	23	3,209	382	46	90	603	692	510	50	2	0
Unknown Types of Electrolyte or Mineral	17	12	5	2	0	4	0	1	0	11	0	0	0	6	1	4	0	0	0
Zinc and Zinc Salts	1,250	1,060	487	44	47	406	4	67	5	831	71	1	154	103	129	157	15	0	0
Category Total:	**29,983**	**24,052**	**16,082**	**1,430**	**1,110**	**4,589**	**34**	**712**	**95**	**21,195**	**1,709**	**93**	**973**	**3,064**	**4,186**	**1,898**	**378**	**25**	**3**
Eye/Ear/Nose/Throat Preparations																			
Miscellaneous Eye/Ear/Nose/Throat Preparations																			
Topical Steroids For Eye/Nose/Throat	2,005	1,711	780	297	56	478	4	85	11	1,592	56	2	56	59	260	114	6	1	0
Nasal Preparations																			
Other Nasal Decongestants or Sympathomimetics (Excluding Tetrahydrazoline)	1,700	1,595	576	72	115	689	2	134	7	1,385	78	6	122	191	334	140	39	4	0
Other Types of Nasal Preparation	588	564	324	15	14	169	4	36	2	522	10	6	25	22	79	54	2	0	0
Tetrahydrozoline, Nasal Preparations	32	30	18	1	0	10	0	1	0	26	0	3	0	6	10	2	1	0	0
Unknown Types of Nasal Preparation	7	5	2	0	0	2	0	1	0	4	1	0	0	2	0	1	0	0	0
Ophthalmic Preparations																			
Contact Lens Products	2,049	1,954	986	65	94	688	1	110	10	1,896	26	15	13	328	162	355	63	4	0
Glaucoma Medications	377	337	68	2	9	218	0	38	2	304	6	1	26	45	59	36	13	0	0
Other Ophthalmic Sympathomimetics	688	651	410	18	30	140	1	43	9	573	24	33	18	166	238	35	14	0	0
Other Types of Ophthalmic Preparation	1,931	1,840	960	66	43	581	4	172	14	1,738	24	13	57	90	262	80	16	2	0
Tetrahydrozoline, Ophthalmic Preparations	853	812	436	20	47	261	1	37	10	662	49	81	14	213	259	56	22	2	0
Unknown Types of Ophthalmic Preparation	55	49	15	3	4	20	1	4	2	23	7	12	6	16	5	8	4	0	0
Otic Preparations																			
Combination Products	820	815	346	63	28	323	5	45	5	803	3	0	8	63	132	186	14	0	0
Other Types of Otic Preparation	2,439	2,416	706	99	66	1,307	5	219	14	2,370	9	2	30	340	218	743	60	0	0
Unknown Types of Otic Preparation	33	31	5	3	3	14	1	5	0	31	0	0	0	5	2	14	0	0	0
Throat Preparations																			
Other Types of Throat Preparation	432	413	96	41	41	188	0	41	6	378	21	0	12	30	62	33	3	0	0
Throat Lozenges with Local Anesthetics	184	168	78	6	14	52	2	16	0	146	9	0	13	13	34	5	4	0	0
Throat Lozenges without Local Anesthetics	723	676	536	52	14	57	2	13	2	628	20	0	28	22	116	31	1	0	0
Unknown Types of Throat Preparation	6	5	3	0	0	2	0	0	0	3	1	0	1	0	1	1	0	0	0
Category Total:	**14,922**	**14,072**	**6,345**	**823**	**578**	**5,199**	**33**	**1,000**	**94**	**13,084**	**344**	**174**	**429**	**1,611**	**2,233**	**1,894**	**262**	**13**	**0**
Gastrointestinal Preparations																			
Antacids																			
Antacids: Other Types	3,353	3,071	2,679	145	30	179	2	33	3	2,964	66	3	33	77	421	47	5	1	0
Antacids: Proton Pump Inhibitors	9,337	4,136	2,034	141	215	1,482	3	236	25	3,698	300	3	124	453	763	123	22	0	0
Antacids: Salicylate-Containing	2,583	2,267	1,772	231	31	199	2	28	4	2,129	84	0	49	229	504	68	12	0	1
Antidiarrheals																			
Antidiarrheals: Diphenoxylate and Atropine Containing	218	100	35	3	6	48	0	8	0	64	27	0	6	67	28	15	16	5	0
Antidiarrheals: Loperamide	1,476	1,043	435	35	26	506	1	35	5	634	327	13	51	480	289	115	100	73	7
Antidiarrheals: Non-Narcotic Containing (Excluding Salicyl Containing)	34	26	17	0	1	5	0	3	0	25	1	0	0	3	7	2	1	0	0
Antidiarrheals: Other Narcotic Containing	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Antidiarrheals: Paregoric Containing	6	4	0	0	0	4	0	0	0	4	0	0	0	3	1	1	0	0	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE pharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Antispasmodics																			
Antispasmodics: Anticholinergic Containing	2,736	1,194	407	96	157	480	2	45	7	879	237	1	63	491	349	182	102	8	0
Antispasmodics: Other Types	269	132	20	1	1	97	0	13	0	124	2	0	6	24	34	8	3	0	0
Miscellaneous Gastrointestinal Preparations																			
Laxatives	14,603	12,517	8,511	755	431	2,343	19	415	43	11,365	597	66	458	1,154	1,648	1,176	149	6	0
Other Types of Gastrointestinal Preparation	9,259	7,647	5,798	327	138	1,123	18	204	39	6,940	188	11	488	500	1,232	436	76	2	0
Unknown Types of Gastrointestinal Preparation	38	21	17	1	2	1	0	0	0	19	1	0	1	3	3	0	0	0	0
Serotonin 5-HT3 Receptor Antagonists																			
Serotonin 5-HT3 Receptor Antagonists: Ondansetron	3,210	1,786	1,120	150	132	340	1	37	6	1,555	162	1	58	509	596	136	50	2	0
Serotonin 5-HT3 Receptor Antagonists: Other or Unknown	13	8	1	1	1	5	0	0	0	6	1	0	1	3	3	1	0	0	0
Category Total:	**47,137**	**33,952**	**22,846**	**1,886**	**1,171**	**6,812**	**48**	**1,057**	**132**	**30,406**	**1,993**	**98**	**1,338**	**3,996**	**5,878**	**2,310**	**536**	**97**	**8**
Hormones and Hormone Antagonists																			
Hypoglycemic, Combination																			
Hypoglycemic: Biguanide Combinations (Excluding Sulfonylurea)	473	259	49	2	9	180	0	19	0	231	20	0	7	55	73	9	12	3	1
Hypoglycemic: Other or Unknown Oral Hypoglycemic Combination	30	17	5	1	1	8	0	2	0	15	1	0	0	4	5	1	1	0	0
Hypoglycemic: Sulfonylurea Combinations	104	65	25	4	7	25	0	3	1	49	13	0	2	47	22	4	16	0	0
Hypoglycemic, Single Agent																			
Hypoglycemics: Glucagon-Like Peptide-1 (GLP-1) Receptor Agonists	545	470	16	6	0	390	0	50	8	416	23	0	30	111	107	55	22	2	0
Hypoglycemics: Other or Unknown	73	29	4	2	0	21	1	1	0	26	2	0	0	11	11	0	3	0	0
Insulin	6,880	5,736	171	96	163	4,930	3	337	36	4,841	740	16	100	2,708	2,296	359	989	63	2
Oral Hypoglycemics: Alpha-Glucosidase Inhibitors	40	19	9	1	1	6	0	2	0	17	2	0	0	5	4	0	0	0	0
Oral Hypoglycemics: Biguanides	9,230	3,804	906	112	344	2,228	2	201	11	2,966	712	3	93	1,227	838	329	254	49	16
Oral Hypoglycemics: Dipeptidyl Peptidase-4 (DPP-4) Inhibitors	1,006	352	108	15	9	199	0	20	1	319	20	0	12	87	127	14	4	0	0
Oral Hypoglycemics: Meglitinides	77	39	13	0	2	21	0	3	0	34	1	0	3	23	19	2	7	0	0
Oral Hypoglycemics: Sodium Glucose Co-Transporter 2 Inhibitor (SGLT2) Inhibitors	587	272	104	7	6	143	0	12	0	244	11	0	17	75	91	11	10	3	0
Oral Hypoglycemics: Sulfonylureas	3,752	1,512	613	64	45	755	1	28	6	1,199	189	2	89	1,148	494	74	435	47	1
Oral Hypoglycemics: Thiazolidinediones	341	106	35	3	6	59	0	3	0	92	8	0	4	33	40	5	3	0	0
Miscellaneous Hormones and Hormone Antagonists																			
Androgens	432	342	76	17	22	189	0	32	6	256	40	0	45	90	52	41	24	1	0
Corticosteroids	10,942	8,762	3,646	633	350	3,517	11	551	54	8,106	186	11	445	645	1,228	332	58	3	0
Estrogens	1,300	847	423	30	62	270	3	55	4	756	58	3	29	75	147	33	7	0	0
Oral Contraceptives	3,339	2,618	1,643	88	376	413	4	82	12	2,170	397	1	43	237	374	148	12	0	0
Other Hormone Antagonists	630	470	130	31	23	258	2	23	3	431	30	0	8	71	92	26	4	0	0
Other Hormones	871	636	203	62	46	279	0	41	5	576	32	2	25	151	167	40	21	0	0
Progestins	1,190	941	537	38	41	274	2	44	5	836	43	1	56	87	181	36	8	0	0
Selective Estrogen Receptor Modulators	273	147	48	9	11	69	0	8	2	142	4	0	0	28	35	10	0	1	0
Thyroid Preparations (Including Synthetics and Extracts)	13,161	8,582	4,296	388	289	3,188	8	392	21	8,136	346	6	75	1,243	1,518	172	54	6	0
Unknown Hormones or Hormone Antagonists	13	8	4	0	1	2	0	1	0	6	0	0	2	5	2	0	1	1	0
Category Total:	**55,289**	**36,033**	**13,064**	**1,609**	**1,814**	**17,424**	**37**	**1,910**	**175**	**31,864**	**2,878**	**45**	**1,085**	**8,166**	**7,923**	**1,701**	**1,945**	**179**	**20**
Miscellaneous Drugs																			
Alzheimer Drugs																			
Miscellaneous Alzheimer Drugs	1,717	583	83	6	7	469	0	17	1	511	32	0	29	208	106	109	54	5	0
Antidotes																			
Miscellaneous Antidote Drugs	285	177	44	4	10	103	0	11	5	146	11	0	14	60	32	29	8	2	0
Other Miscellaneous Drugs																			
Allopurinol	949	282	124	11	7	132	0	8	0	258	18	0	5	42	79	14	1	0	0
Bisphosphonates (Including Combinations)	341	309	8	0	2	276	0	20	3	288	1	1	19	59	50	19	7	0	0
Disulfiram	252	76	6	1	0	56	0	11	2	33	21	1	20	30	6	16	10	2	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE pharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Ergot Alkaloids	39	27	9	1	2	14	0	1	0	16	4	0	7	18	5	5	5	0	0
Hematopoietics	27	25	3	2	0	19	0	1	0	23	0	0	2	8	5	0	1	0	0
Monoclonal Antibodies (Including Fragments)	125	116	11	0	4	92	0	8	1	88	2	0	26	37	13	18	10	1	0
Neuromuscular Blocking Agents (Succinylcholine, Curare, etc)	27	15	2	0	0	13	0	0	0	10	0	0	5	14	5	1	1	1	1
Nicotine Pharmaceuticals	1,741	1,646	979	157	47	391	0	65	7	1,428	112	7	94	306	482	243	43	2	0
Other Types of Miscellaneous Prescription or Over the Counter Drug	11,925	8,219	3,420	479	518	3,237	11	495	59	7,193	510	19	444	1,722	1,639	878	305	28	4
Parkinson Drugs																			
Decarboxylase Inhibitor, Alone	30	10	3	0	0	5	0	1	1	7	1	0	2	4	2	3	0	0	0
Levodopa (Alone or with Decarboxylase Inhibitor)	1,414	814	161	6	9	582	0	53	3	710	63	4	26	232	175	108	69	2	1
Levodopa and Carbidopa with Other Drugs	81	42	12	0	0	30	0	0	0	38	2	0	1	8	11	6	1	0	0
Other Parkinson Drugs (Including Combinations)	1,199	525	203	22	24	254	1	19	2	413	81	5	22	242	96	160	42	3	0
Category Total:	**20,152**	**12,866**	**5,068**	**689**	**630**	**5,673**	**12**	**710**	**84**	**11,162**	**858**	**37**	**716**	**2,990**	**2,706**	**1,609**	**557**	**46**	**6**
Muscle Relaxants																			
Miscellaneous Muscle Relaxants																			
Baclofen	5,341	2,316	262	59	197	1,730	1	46	21	692	1,378	24	121	1,865	274	494	683	341	2
Carisoprodol (Formulated Alone)	1,795	737	61	4	36	612	0	19	5	153	545	1	12	613	72	238	217	38	3
Cyclobenzaprine	9,956	4,080	905	232	445	2,368	3	105	22	1,977	1,963	2	61	2,547	893	1,032	708	104	1
Metaxalone	377	165	27	3	18	111	0	5	1	91	65	0	5	89	37	40	19	4	0
Methocarbamol	2,324	879	132	25	123	569	0	26	4	385	464	0	15	561	229	248	102	15	0
Other Types of Muscle Relaxant	573	225	32	3	25	146	0	18	1	108	98	0	15	120	44	62	27	4	0
Tizanidine	4,754	1,951	287	40	104	1,431	0	79	10	890	914	10	109	1,331	276	430	600	76	0
Unknown Types of Muscle Relaxant	263	57	9	1	9	33	0	3	2	10	46	0	1	43	11	14	10	2	0
Category Total:	**25,383**	**10,410**	**1,715**	**367**	**957**	**7,000**	**4**	**301**	**66**	**4,306**	**5,473**	**37**	**339**	**7,169**	**1,836**	**2,558**	**2,366**	**584**	**6**
Narcotic Antagonists																			
Miscellaneous Narcotic Antagonists																			
Miscellaneous Narcotic Antagonist	1,127	436	34	7	18	330	0	40	7	206	96	20	104	220	54	83	77	6	0
Category Total:	**1,127**	**436**	**34**	**7**	**18**	**330**	**0**	**40**	**7**	**206**	**96**	**20**	**104**	**220**	**54**	**83**	**77**	**6**	**0**
Radiopharmaceuticals																			
Miscellaneous Radiopharmaceutical																			
Specific Pharmaceutical Radionuclides	36	32	5	1	3	20	0	3	0	21	1	0	9	7	3	5	1	0	0
Category Total:	**36**	**32**	**5**	**1**	**3**	**20**	**0**	**3**	**0**	**21**	**1**	**0**	**9**	**7**	**3**	**5**	**1**	**0**	**0**
Sedative/Hypnotics/Antipsychotics																			
Barbiturates																			
Long Acting Barbiturates	1,363	821	186	38	44	520	0	28	5	593	174	0	35	308	184	114	77	34	1
Short or Intermediate Acting Barbiturates	161	81	3	1	4	60	0	12	1	54	23	0	2	42	14	21	8	6	2
Unknown Types of Barbiturate	37	6	0	0	1	4	0	0	1	1	4	0	1	5	0	0	1	1	0
Miscellaneous Sedative/Hypnotics/ Antipsychotics																			
Atypical Antipsychotics	45,252	17,471	1,638	896	3,202	11,124	8	476	127	5,520	10,950	48	689	13,409	3,078	4,898	4,408	677	9
Benzodiazepines	63,570	22,995	3,365	605	3,155	14,872	13	738	247	6,668	15,285	307	353	17,346	4,518	8,091	3,430	469	19
Buspirone	6,717	2,028	272	68	396	1,203	1	70	18	741	1,197	4	74	1,325	628	525	185	18	1
Chloral Hydrate	10	4	1	0	1	2	0	0	0	1	2	0	1	3	1	0	1	1	0
Ethchlorvynol	4	1	0	0	0	1	0	0	0	0	0	0	1	1	0	0	1	0	0
Meprobamate	15	8	2	1	0	5	0	0	0	3	4	0	0	7	1	2	2	1	0
Methaqualone	6	3	1	0	0	2	0	0	0	1	2	0	0	3	1	1	1	0	0
Other Types of Sedative/Hypnotic/Anti-Anxiety or Anti-Psychotic Drug	12,769	5,132	524	185	405	3,800	2	182	34	1,720	3,108	45	113	3,712	802	1,785	904	137	3
Phenothiazines	4,092	1,585	170	59	165	1,123	1	59	8	622	759	3	176	1,138	251	340	471	22	2
Sleep Aids, Over the Counter Only (Excluding Diphenhydramine)	1,940	1,286	520	20	183	532	1	24	6	625	635	0	16	732	328	206	268	24	0
Unknown Types of Sedative/Hypnotic/ Anti-Anxiety or Anti-Psychotic Drug	227	74	4	1	11	48	0	5	5	7	58	5	0	59	11	12	16	2	0
Category Total:	**136,163**	**51,495**	**6,686**	**1,874**	**7,567**	**33,296**	**26**	**1,594**	**452**	**16,556**	**32,201**	**412**	**1,461**	**38,090**	**9,817**	**15,995**	**9,773**	**1,392**	**37**

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE pharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Serums, Toxoids, Vaccines																			
Miscellaneous Serums, Toxoids, Vaccines																			
Miscellaneous Serums, Toxoids and Vaccines	1,801	1,619	311	124	132	859	7	168	18	1,273	4	0	333	553	147	287	109	5	1
Category Total:	**1,801**	**1,619**	**311**	**124**	**132**	**859**	**7**	**168**	**18**	**1,273**	**4**	**0**	**333**	**553**	**147**	**287**	**109**	**5**	**1**
Stimulants and Street Drugs																			
Cannabinoids and Analogs																			
Cannabidiol (CBD)	1	1	0	0	0	1	0	0	0	0	1	0	0	1	0	1	0	0	0
eCigarettes: Marijuana Device Flavor Unknown	117	93	26	1	28	33	0	3	2	44	36	6	4	53	7	28	12	4	0
eCigarettes: Marijuana Device With Added Flavors	6	5	3	0	1	1	0	0	0	5	0	0	0	1	0	1	0	0	0
eCigarettes: Marijuana Device Without Added Flavors	1	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
eCigarettes: Marijuana Liquid Flavor Unknown	19	14	4	1	6	3	0	0	0	6	6	0	2	9	0	3	6	1	0
eCigarettes: Marijuana Liquid With Added Flavors	9	7	4	0	2	1	0	0	0	4	3	0	0	2	1	2	0	0	0
eCigarettes: Marijuana Liquid Without Added Flavors	5	5	0	0	2	3	0	0	0	3	2	0	0	1	0	0	1	0	0
Marijuana: Concentrated Extract (Including Oils and Tinctures)	1,082	863	167	36	213	397	1	36	13	329	359	14	143	549	84	245	199	11	0
Marijuana: Dried Plant	6,040	2,335	532	133	649	844	11	132	34	912	1,071	69	214	1,631	178	704	533	42	2
Marijuana: Edible Preparation	1,974	1,716	572	217	373	489	7	38	20	912	561	81	125	1,196	143	589	325	18	0
Marijuana: Oral Capsule or Pill Preparation	44	32	7	3	4	18	0	0	0	9	11	0	12	18	4	6	7	3	0
Marijuana: Other or Unknown Preparation	997	285	79	6	76	100	2	13	9	95	146	6	23	224	21	93	77	6	0
Marijuana: Pharmaceutical Preparation	118	80	27	3	3	46	0	0	1	47	16	0	14	54	16	26	12	2	0
Marijuana: Topical Preparation	24	19	5	1	3	6	1	3	0	13	2	0	3	5	1	3	1	0	0
Marijuana: Undried Plant	167	44	8	0	14	17	0	2	3	16	23	1	4	26	3	12	6	2	0
Synthetic Cannabinoids, Analogs and Precursors	1,993	1,350	21	9	293	951	4	39	33	91	1,088	114	20	1,255	68	344	486	234	9
Diet Aids																			
Diet Aids: Phenylpropanolamine and Caffeine Combinations	9	5	2	0	2	1	0	0	0	2	2	0	0	3	1	2	1	0	0
Diet Aids: Phenylpropanolamine Only	6	4	1	0	1	2	0	0	0	2	1	0	1	1	1	0	1	0	0
Other Types of Diet Aid, Over the Counter Only	114	91	41	6	11	32	0	1	0	55	15	0	20	47	20	14	13	2	0
Other Types of Diet Aid, Prescription Only	21	15	9	0	0	6	0	0	0	11	2	0	2	8	5	1	3	0	0
Unknown Types of Diet Aid	42	28	9	0	5	14	0	0	0	14	5	0	8	13	1	6	4	0	0
Miscellaneous Stimulants and Street Drugs																			
Amphetamines and Related Compounds	16,486	10,027	3,509	1,867	1,821	2,606	7	156	61	6,890	2,671	47	239	5,147	2,440	1,722	1,689	125	2
Amyl or Butyl Nitrites (Street Drugs)	167	139	9	2	8	109	2	9	0	53	83	0	1	83	10	30	36	5	0
Caffeine	3,740	2,849	1,113	102	428	1,046	6	140	14	1,693	666	16	441	798	407	485	325	21	2
Cocaine	5,778	1,358	76	14	74	1,056	1	96	41	150	1,107	27	7	1,168	191	216	398	114	28
Ephedrine	137	104	57	2	5	35	0	5	0	78	19	0	7	32	24	16	10	0	0
gamma-Hydroxybutyric Acid including Analogs or Precursors	617	392	11	2	12	343	0	18	6	73	247	41	7	339	13	65	147	85	0
Hallucinogenic Amphetamines	1,818	810	26	5	158	564	1	40	16	58	702	28	9	686	47	171	308	62	8
Heroin	7,653	4,265	24	3	88	4,004	3	109	34	182	3,930	70	27	3,891	416	699	1,346	896	54
Kratom	1,146	746	39	3	42	615	1	31	15	102	488	53	85	611	46	199	235	49	2
Lysergic acid diethylamide (LSD)	795	470	9	0	280	156	0	17	8	32	423	8	2	413	17	104	229	21	0
Mescaline/Peyote	32	26	6	1	1	16	0	2	0	12	12	0	1	18	5	5	8	0	0
Methamphetamines	8,390	3,971	257	48	185	3,134	2	269	76	598	3,138	92	42	3,279	355	736	1,360	306	183
Methylphenidate	8,988	5,994	1,319	2,413	1,380	795	3	65	19	4,802	1,032	8	113	1,935	1,467	882	642	26	0
Other Hallucinogens	20	13	0	0	5	7	1	0	0	1	10	0	0	13	3	1	8	0	0
Other Stimulants (Excluding Amphetamines)	495	291	99	3	27	146	0	14	2	180	70	2	36	133	46	49	46	4	0
Other Street Drugs	138	86	8	5	12	58	0	2	1	13	63	3	1	73	10	8	32	10	1
Other Synthetic Street Drugs	56	40	4	0	16	18	0	2	0	8	30	1	1	30	0	9	18	2	0
Phenylcyclohexylpiperidine (PCP)	449	189	12	0	14	152	0	10	1	37	133	6	1	165	15	36	71	22	0
Phenylpropanolamine Containing Look Alike Drugs	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Synthetic Cathinones, Analogs and Precursors	290	180	13	5	16	131	0	10	5	22	141	9	1	154	13	21	77	25	2
Synthetic Opioids, Analogs and Precursors (Excluding Pharmaceutical Preparations)	101	57	0	0	3	34	0	19	1	22	31	3	0	55	5	6	29	5	3

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE pharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Synthetic Tryptamines, Analogs and Precursors	60	38	1	0	8	28	0	1	0	2	35	1	0	35	2	2	25	0	0
Unknown Hallucinogens	6	4	0	0	1	3	0	0	0	1	3	0	0	4	1	0	2	0	0
Unknown Stimulants or Street Drugs	300	196	7	3	52	115	2	16	1	28	140	7	3	168	17	27	69	25	4
Category Total:	**70,452**	**39,238**	**8,116**	**4,894**	**6,322**	**18,136**	**55**	**1,299**	**416**	**17,607**	**18,525**	**713**	**1,619**	**24,327**	**6,104**	**7,569**	**8,797**	**2,128**	**300**
Topical Preparations																			
Miscellaneous Topical Preparations																			
Acne Preparations	1,844	1,764	936	109	220	399	3	90	7	1,639	31	6	80	111	273	197	16	0	0
Boric Acid or Borates (As Antiseptics, Excluding Insecticides)	266	260	40	12	9	173	0	23	3	243	3	0	10	28	42	21	5	0	0
Calamine (Including All Caladryl Type Products)	1,797	1,744	1,144	53	23	461	5	55	3	1,716	15	2	8	119	243	149	9	1	0
Camphor	9,418	9,233	7,510	212	151	1,089	16	233	22	9,001	137	15	66	1,103	2,348	1,063	76	10	0
Camphor and Methyl Salicylate Combinations	1,386	1,362	1,039	37	27	223	3	28	5	1,319	12	6	22	149	347	186	10	0	0
Diaper Care and Rash Products	21,088	20,710	19,536	242	127	629	46	112	18	20,617	37	9	42	457	2,645	588	22	1	0
Hexachlorophene Containing Antiseptics	23	23	10	0	3	9	0	1	0	21	0	1	1	2	1	4	1	1	0
Hydrogen Peroxide 3%	6,087	5,747	1,872	286	292	2,892	3	377	25	5,480	184	35	30	550	570	1,023	61	1	0
Iodine or Iodide Containing Antiseptics	941	853	177	39	65	490	1	69	12	707	71	15	51	192	145	157	19	0	0
Mercury Containing Antiseptics	32	31	11	0	0	13	0	7	0	26	3	1	0	11	8	3	0	1	0
Methyl Salicylate	5,215	5,107	3,527	234	140	975	6	204	21	4,883	73	17	129	516	995	724	32	3	0
Minoxidil, Topical	186	178	65	5	2	86	0	19	1	145	7	1	24	45	37	22	14	1	0
Other Types of Rubefacient or Liniment (Excluding Camphor and Methyl Salicylate)	3,207	3,147	2,190	76	63	674	4	125	15	2,892	34	8	209	205	510	480	26	1	0
Other Types of Topical Antiseptic	2,010	1,943	900	91	70	744	6	121	11	1,811	69	13	48	274	328	240	26	2	0
Podophyllin	55	54	16	3	2	32	0	1	0	43	5	0	6	15	7	8	5	0	0
Silver Nitrate	97	77	22	0	16	30	1	7	1	68	3	0	6	17	14	12	6	0	0
Topical Steroids (Including Otic, Ophthalmic, and Dermal Preparations)	8,463	8,238	4,390	619	204	2,479	17	483	46	8,098	37	8	83	191	1,122	300	13	1	0
Topical Steroids in Combination with Antibiotics (Including Otic, Ophthalmic, and Dermal Preparations)	1,019	990	534	54	23	306	3	64	6	956	9	3	21	50	144	116	5	0	0
Wart Preparations and Other Keratolytics	1,068	1,051	603	82	26	284	2	50	4	994	16	3	38	166	174	176	33	0	0
Category Total:	**64,202**	**62,512**	**44,522**	**2,154**	**1,463**	**11,988**	**116**	**2,069**	**200**	**60,659**	**746**	**143**	**874**	**4,201**	**9,953**	**5,469**	**379**	**23**	**0**
Unknown Drug																			
Miscellaneous Unknown Drug																			
Miscellaneous Unknown Drugs	25,134	16,842	3,976	647	2,211	8,833	42	784	349	5,880	6,837	861	606	12,829	2,842	2,787	3,876	1,520	160
Category Total:	**25,134**	**16,842**	**3,976**	**647**	**2,211**	**8,833**	**42**	**784**	**349**	**5,880**	**6,837**	**861**	**606**	**12,829**	**2,842**	**2,787**	**3,876**	**1,520**	**160**
Veterinary Drugs																			
Miscellaneous Veterinary Drugs																			
Miscellaneous Veterinary Drugs without Human Equivalent	5,090	4,621	1,105	82	114	2,801	1	487	31	4,519	46	6	41	412	954	414	59	3	2
Category Total:	**5,090**	**4,621**	**1,105**	**82**	**114**	**2,801**	**1**	**487**	**31**	**4,519**	**46**	**6**	**41**	**412**	**954**	**414**	**59**	**3**	**2**
Vitamins																			
Miscellaneous Vitamins																			
Other Types of Vitamin	712	510	381	38	15	64	2	9	1	460	28	0	21	57	102	20	8	0	0
Unknown Types of Vitamin	729	506	385	46	19	36	2	14	4	459	33	3	10	54	118	28	3	0	0
Multiple Vitamin Liquids: Adult Formulations																			
Multiple Vitamin Liquids: Adult Formulations with Fluoride (No Iron)	21	21	15	3	0	2	0	1	0	20	1	0	0	2	5	3	0	0	0
Multiple Vitamin Liquids: Adult Formulations with Iron (No Fluoride)	222	179	106	13	5	49	0	6	0	153	7	1	18	18	29	12	3	0	0
Multiple Vitamin Liquids: Adult Formulations with Iron and Fluoride	18	8	3	0	0	4	0	1	0	7	0	0	1	1	1	0	0	0	0
Multiple Vitamin Liquids: Adult Formulations without Iron or Fluoride	522	392	268	46	12	58	1	7	0	357	24	1	9	32	53	14	6	0	0
Multiple Vitamin Liquids: Pediatric Formulations																			
Multiple Vitamin Liquids: Pediatric Formulations with Fluoride (No Iron)	84	82	80	1	0	1	0	0	0	81	1	0	0	2	10	3	0	0	0
Multiple Vitamin Liquids: Pediatric Formulations with Iron (No Fluoride)	478	452	430	16	0	4	1	1	0	448	1	0	3	29	91	11	1	0	0

(*continued*)

Table 22B. Demographic profile of SINGLE SUBSTANCE pharmaceuticals exposure cases by generic category. – Continued.

	No. of Case Mentions	No. of Single Exposure	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
Multiple Vitamin Liquids: Pediatric Formulations with Iron and Fluoride	36	32	30	1	0	1	0	0	0	32	0	0	0	3	5	1	0	0	0
Multiple Vitamin Liquids: Pediatric Formulations without Iron or Fluoride	899	832	695	114	9	9	3	2	0	801	26	0	4	37	128	16	2	0	0
Multiple Vitamin Tablets: Adult Formulations																			
Multiple Vitamin Tablets: Adult Formulations with Fluoride (No Iron)	87	78	67	5	0	6	0	0	0	75	2	0	1	3	14	1	0	0	0
Multiple Vitamin Tablets: Adult Formulations with Iron (No Fluoride)	4,827	3,848	2,947	119	121	575	1	77	8	3,611	157	2	74	366	805	156	13	0	0
Multiple Vitamin Tablets: Adult Formulations with Iron and Fluoride	25	18	9	2	2	5	0	0	0	16	2	0	0	1	3	0	0	0	0
Multiple Vitamin Tablets: Adult Formulations with Iron Carbonyl (No Fluoride)	102	84	68	4	3	9	0	0	0	81	2	0	0	11	23	2	0	0	0
Multiple Vitamin Tablets: Adult Formulations without Iron or Fluoride	8,030	6,535	4,829	778	244	580	10	79	15	6,083	344	3	88	419	1,295	196	17	1	0
Multiple Vitamin Tablets: Pediatric Formulations																			
Multiple Vitamin Tablets: Pediatric Formulations with Fluoride (No Iron)	203	187	163	20	3	1	0	0	0	179	5	0	3	8	27	5	0	0	0
Multiple Vitamin Tablets: Pediatric Formulations with Iron (No Fluoride)	3,999	3,747	3,316	330	34	56	3	6	2	3,659	76	0	11	310	744	228	16	0	0
Multiple Vitamin Tablets: Pediatric Formulations with Iron and Fluoride	18	18	16	1	1	0	0	0	0	17	1	0	0	6	6	1	0	0	0
Multiple Vitamin Tablets: Pediatric Formulations with Iron Carbonyl (No Fluoride)	21	19	14	5	0	0	0	0	0	18	1	0	0	3	4	0	0	0	0
Multiple Vitamin Tablets: Pediatric Formulations without Iron or Fluoride	17,511	16,815	13,371	2,869	326	189	24	25	11	16,117	661	1	19	703	2,792	385	6	1	0
Multiple Vitamins, Unspecified Adult Formulations																			
Multiple Vitamins, Unspecified Adult Formulations with Fluoride (No Iron)	12	12	7	2	0	3	0	0	0	12	0	0	0	1	1	0	0	0	0
Multiple Vitamins, Unspecified Adult Formulations with Iron (No Fluoride)	806	581	420	18	21	98	0	23	1	540	34	0	7	62	105	19	3	0	0
Multiple Vitamins, Unspecified Adult Formulations with Iron and Fluoride	9	6	4	0	0	2	0	0	0	5	0	0	1	0	1	0	0	0	0
Multiple Vitamins, Unspecified Adult Formulations without Iron or Fluoride	535	484	357	71	14	33	0	8	1	441	37	1	5	26	75	4	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations																			
Multiple Vitamins, Unspecified Pediatric Formulations with Fluoride (No Iron)	12	12	10	2	0	0	0	0	0	10	1	0	0	1	4	1	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations with Iron (No Fluoride)	82	77	70	4	1	2	0	0	0	75	2	0	0	9	17	3	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations with Iron and Fluoride	4	4	2	1	1	0	0	0	0	4	0	0	0	0	2	0	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations without Iron or Fluoride	1,072	1,024	828	169	16	4	4	2	1	965	57	0	1	28	199	30	0	0	0
Other Vitamins																			
Other B Complex Vitamins	5,411	3,616	2,895	210	83	354	5	60	9	3,408	125	1	79	264	632	61	6	0	0
Vitamin A	442	348	196	19	15	90	0	27	1	310	18	0	17	44	65	19	4	0	0
Vitamin B3 (Niacin)	1,002	792	248	20	80	397	1	42	4	405	150	1	232	227	71	255	61	1	0
Vitamin B6 (Pyridoxine)	350	211	142	18	2	43	0	4	2	190	9	0	12	17	33	8	2	0	0
Vitamin C	1,516	1,001	728	95	27	124	0	24	3	910	55	2	32	63	153	44	7	0	0
Vitamin D	8,004	5,610	3,767	349	209	1,104	8	164	9	5,362	155	2	85	515	964	156	30	2	0
Vitamin E	724	489	348	38	15	67	0	19	2	449	22	0	17	28	78	15	1	0	0
Category Total:	**58,525**	**48,630**	**37,215**	**5,427**	**1,278**	**3,970**	**65**	**601**	**74**	**45,760**	**2,037**	**18**	**750**	**3,350**	**8,655**	**1,697**	**189**	**5**	**0**
Pharmaceuticals Total:	**1,462,902**	**894,994**	**399,856**	**58,530**	**90,969**	**312,479**	**970**	**27,417**	**4,773**	**642,005**	**211,374**	**3,725**	**28,242**	**308,365**	**183,920**	**114,110**	**72,553**	**12,641**	**1,058**
GRAND TOTAL (Nonpharmaceuticals + Pharmaceuticals):	**2,524,733**	**1,844,966**	**899,827**	**123,384**	**134,217**	**587,523**	**4,076**	**82,998**	**12,941**	**1,518,051**	**250,925**	**16,474**	**44,871**	**472,612**	**334,016**	**265,784**	**104,549**	**15,254**	**1,351**