



2017 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS): 35th Annual Report

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ABSTRACT

Introduction: This is the 35th Annual Report of the American Association of Poison Control Centers' (AAPCC) National Poison Data System (NPDS). As of 1 January 2017, 55 of the nation's poison centers (PCs) uploaded case data automatically to NPDS. The upload interval was 8.07 [7.32, 12.65] (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 2017, 2,607,413 closed encounters were logged by NPDS: 2,115,186 human exposures, 51,164 animal exposures, 435,540 information contacts, 5,424 human confirmed nonexposures, and 99 animal confirmed nonexposures. US PCs also made 2,680,625 follow-up calls in 2017. Total encounters showed a 3.79% decline from 2016, while health care facility (HCF) human exposure cases increased by 3.06%. All information contacts decreased by 11.5%, medication identification (Drug ID) requests decreased by 30.2%, and human exposure cases decreased by 2.03%. Human exposures with less serious outcomes have decreased 2.48% per year since 2008, while those with more serious outcomes (moderate, major or death) have increased 4.44% per year since 2000.

Consistent with the previous year, the top 5 substance classes most frequently involved in all human exposures were analgesics (11.08%), household cleaning substances (7.43%), cosmetics/personal care products (6.76%), sedatives/hypnotics/antipsychotics (5.74%), and antidepressants (5.02%). As a class, sedative/hypnotics/antipsychotics exposures increased most rapidly, by 1962 cases/year (4.91%/year), over the last 17 years for cases with more serious outcomes. The top 5 most common exposures in children age 5 years or less were cosmetics/personal care products (12.59%), household cleaning substances (10.96%), analgesics (9.18%), foreign bodies/toys/miscellaneous (6.39%), and topical preparations (4.84%). Drug identification requests comprised 22.1% of all information contacts. NPDS documented 3,208 human exposures resulting in death; 2,682 (83.6%) 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, despite a decrease in cases involving less serious exposures. Unintentional and intentional exposures continue to be a significant cause of morbidity and mortality in the US. The near real-time status of NPDS represents a national public health resource to collect and monitor US exposure cases and information contacts. 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 35th 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 telephonic patient-specific exposure management and poison information for entire year of 2017.

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 CONTACT). 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.

The NPDS products database

The NPDS products database contains over 437,000 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 1,105 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). The following 14 new generic codes were introduced in 2017.

Methods

Characterization of participating poison centers and population served

All 55 US PCs are accredited, and all submitted data to AAPCC through 31 December 2017. The entire population of the 50 United States, American Samoa, the District of

Generic Codes Added in 2017*

1	Bisphosphonates (Including Combinations)
2	Decarboxylase Inhibitor, Alone
3	Fatty Acid Supplements
4	Hematopoietics
5	Kratom
6	Levodopa and Carbidopa with Other Drugs
7	Miscellaneous Alzheimer Drugs
8	Miscellaneous Antidote Drugs
9	Monoclonal Antibodies (Including Fragments)
10	Other Parkinson Drugs (Including Combinations)
11	Other Synthetic Street Drugs
12	Synthetic Cathinones, Analogs and Precursors
13	Synthetic Opioids, Analogs and Precursors (Excluding Pharmaceutical Preparations)
14	Synthetic Tryptamines, Analogs and Precursors

*Because the new codes were added during 2017, the numbers for these generic codes in Appendix E (Table 22) do not reflect the entire year. For completeness, certain categories require customized data retrieval until they have been in place for more than 1 calendar year..

Columbia, Federated States of Micronesia, Guam, Puerto Rico, and the US Virgin Islands was served by the US PC network in 2017 [2].

The average number of human exposure cases managed per day by all US PCs was 5,795. Similar to other years, higher volumes were observed in the warmer months, with a mean of 6,156 cases per day in June compared with 5,222 per day in December. On average, US PCs experienced a new encounter involving an actual human exposure every 14.9 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. Of note, while the only individuals eligible to sit for the CSPI examination are RNs, pharmacists, physicians and physician assistants, there is a lack of an appropriate, core toxicology training within most graduate medical

education curricula to allow them 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 2017, 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 8.07 [7.32, 12.65] (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 prevent inadvertent changes and 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 2017 database was locked on 1 August 2018 at 12:01 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

Table 1A. AAPCC population served and reported exposures (1983–2017).

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
Total			66,609,913	

^aAs of 1 July 2010 there were 60 Participating Centers.

^bAAPCC 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).

^cAs of 1 July 2011 there were 57 Participating Centers.

^dOne Participating Center closed in September 2013. Its data is included in the 2013 totals but not in the 2014 data.

^eAAPCC 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).

^fAAPCC 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].

^gOne Participating Center closed in July 2014. Its data is included in the 2014 totals but not in the 2015 data.

^hAAPCC 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].

ⁱAAPCC 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].

^jAAPCC 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].

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.

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

Animal	N	%
Dog	46,125	90.15
Cat	4,329	8.46
Bird	151	0.30
Rodent/lagomorph	126	0.25
Horse	83	0.16
Sheep/goat	45	0.09
Cow	34	0.07
Aquatic	10	0.02
Other	261	0.51
Total	51,164	100.00

Statistical methods

All tables except Tables 3B and 17B were generated directly by the NPDS web-based application and can thus be reproduced by each PC. The analyses for Figures 1-4, Figure 7 and Table 17B 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 Figure 5 was done using Microsoft Excel 2016 (Microsoft, Redmond, WA).

Table 1C. Distribution of information calls.

Information call type	N	% of Info. calls
Drug identification		
Public inquiry: Drug sometimes involved in abuse	33,058	7.59
Public inquiry: Drug not known to be abused	19,919	4.57
Public inquiry: Unknown abuse potential	643	0.15
Public inquiry: Unable to identify	8,810	2.02
HCP inquiry: Drug sometimes involved in abuse	797	0.18
HCP inquiry: Drug not known to be abused	1,239	0.28
HCP inquiry: Unknown abuse potential	79	0.02
HCP inquiry: Unable to identify	561	0.13
Law Enf. Inquiry: Drug sometimes involved in abuse	18,238	4.19
Law Enf. Inquiry: Drug not known to be abused	9,446	2.17
Law Enf. Inquiry: Unknown abuse potential	398	0.09
Law Enf. Inquiry: Unable to identify	2,430	0.56
Other drug ID	603	0.14
Subtotal	96,221	22.09
Drug information		
Adverse effects (no known exposure)	7,726	1.77
Brand/generic name clarifications	667	0.15
Calculations	94	0.02
Compatibility of parenteral medications	141	0.03
Compounding	181	0.04
Contraindications	1,244	0.29
Dietary supplement, herbal, and homeopathic	442	0.10
Dosage	10,192	2.34
Dosage form/formulation	1,211	0.28
Drug use during breast-feeding	1,524	0.35
Drug-drug interactions	19,944	4.58
Drug-food interactions	1,390	0.32
Foreign drug	92	0.02
Generic substitution	181	0.04
Indications/therapeutic use	5,178	1.19
Medication administration	4,503	1.03
Medication availability	361	0.08
Medication disposal	1,637	0.38
Pharmacokinetics	1,194	0.27
Pharmacology	639	0.15
Regulatory	1,344	0.31
Stability/storage	1,680	0.39
Therapeutic drug monitoring	299	0.07
Other drug info	14,150	3.25
Subtotal	76,014	17.45
Environmental information		
Air quality	1,458	0.33
Carbon monoxide – no known patient(s)	485	0.11
Carbon monoxide alarm use	313	0.07
Chem/bioterrorism/weapons (suspected or confirmed)	14	0.00
Clarification of media reports of environmental contamination	27	0.01
Clarification of substances involved in a HAZMAT incident – no known victim(s)	53	0.01
General questions about contamination of air and/or soil	262	0.06
HAZMAT planning	94	0.02
Lead – no known patient(s)	376	0.09
Mercury thermometer cleanup	953	0.22
Mercury (excluding thermometers) cleanup	1,524	0.35
Notification of a HAZMAT incident – no known patient(s)	743	0.17
Pesticide application by a professional pest control operator	538	0.12
Pesticides (other)	2,370	0.54
Potential toxicity of chemicals in the environment	1,077	0.25
Radiation	41	0.01
Safe disposal of chemicals	1,023	0.23

(continued)

Table 1C. Continued.

Information call type	N	% of Info. calls
Water purity/contamination	559	0.13
Other environmental	2,789	0.64
Subtotal	14,699	3.37
Medical information		
Dental questions	84	0.02
Diagnostic or treatment recommendations for diseases or conditions – non-toxicology	5,997	1.38
Disease prevention	786	0.18
Explanation of disease states	2,935	0.67
General first-aid	795	0.18
Interpretation of non-toxicology laboratory reports	104	0.02
Medical terminology questions	53	0.01
Rabies – no known patient(s)	268	0.06
Sunburn management	24	0.01
Other medical	44,424	10.20
Subtotal	55,470	12.74
Occupational information		
Occupational treatment/first-aid guidelines – no known patient(s)	27	0.01
Information on chemicals in the workplace	77	0.02
MSDS interpretation	38	0.01
Occupational MSDS requests	351	0.08
Routine toxicity monitoring	13	0.00
Safe handling of workplace chemicals	57	0.01
Other occupational	230	0.05
Subtotal	793	0.18
Poison information		
Analytical toxicology	725	0.17
Carcinogenicity	84	0.02
Food poisoning – no known patient(s)	1,748	0.40
Food preparation/handling practices	5,293	1.22
General toxicity	23,009	5.28
Mutagenicity	50	0.01
Plant toxicity	1,463	0.34
Recalls of non-drug products (including food)	175	0.04
Safe use of household products	3,837	0.88
Toxicology information for legal use/litigation	136	0.03
Other poison	12,985	2.98
Subtotal	49,505	11.37
Prevention/Safety/Education		
Confirmation of poison center number	11,943	2.74
General (non-poison) injury prevention requests	346	0.08
Media requests	162	0.04
Poison prevention material requests	6,353	1.46
Poison prevention week date inquiries	25	0.01
Professional education presentation requests	186	0.04
Public education presentation requests	245	0.06
Other prevention	740	0.17
Subtotal	20,000	4.59
Teratogenicity information		
Teratogenicity	1,711	0.39
Subtotal	1,711	0.39
Other information		
Other	48,986	11.25
Subtotal	48,986	11.25
Substance Abuse		
Drug screen information	2,080	0.48
Effects of illicit substances – no known patient(s)	142	0.03
New trend information	538	0.12
Withdrawal from illicit substances – no known patient(s)	105	0.02
Other substance abuse	431	0.10
Subtotal	3,296	0.76
Administrative		
Expert witness requests	19	0.00
Faculty activities	37	0.01
Funding	9	0.00
Personnel issues	172	0.04
Poison center record request	166	0.04
Product replacement/malfunction (issues intended for the manufacturer)	2,371	0.54
Scheduling of poison center rotations	68	0.02
Other administration	17,403	4.00
Subtotal	20,245	4.65
Caller Referred		
Immediate referral – animal poison center or veterinarian	20,362	4.68
Immediate referral – drug identification	1,102	0.25
Immediate referral – drug information	114	0.03

(continued)

Table 1C. Continued.

Information call type	N	% of Info. calls
Immediate referral – health department	8,107	1.86
Immediate referral – medical advice line	442	0.10
Immediate referral – pediatric triage service	98	0.02
Immediate referral – pesticide hotline	298	0.07
Immediate referral – pharmacy	440	0.10
Immediate referral – poison center	4,217	0.97
Immediate referral – private physician	1,883	0.43
Immediate referral – psychiatric crisis line	92	0.02
Immediate referral – teratology information program	168	0.04
Other call referral	11,277	2.59
Subtotal	48,600	11.16
Total	435,540	100.00

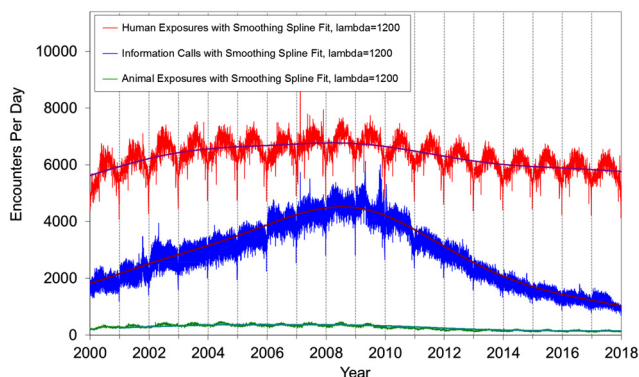


Figure 1. Human exposure cases, information contacts and animal exposure cases by day since 1 January 2000.

Smoothing spline fits using $\lambda = 1200$ for human exposures had associated $RSqr = 0.447$, information contacts $RSqr = 0.904$ and animal exposures $RSqr = 0.871$.

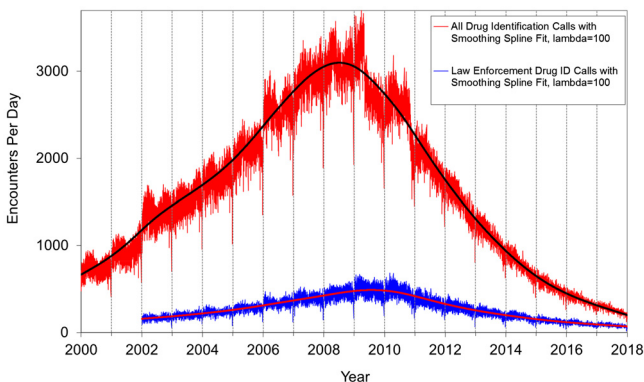


Figure 2. All drug identification and law enforcement drug identification contacts by day since 1 January 2000.

Smoothing spline fits used $\lambda = 100$, all drug identification contacts had associated $RSqr = 0.966$ and law enforcement drug ID contacts $RSqr = 0.868$.

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 software allows creation of volume and case-based definitions. Definitions can be applied to national, regional, state, or ZIP code coverage areas. Geocentric definitions can also be created, which use cases reported from a geographic location regardless of which 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

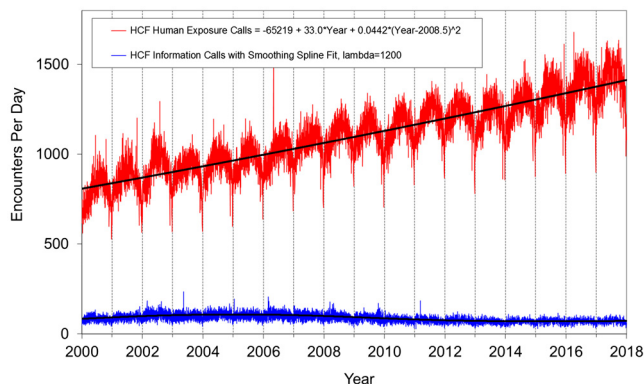


Figure 3. Health care facility (HCF) exposure cases and hcf information contacts by day since 1 January 2000.

Both linear and second order (quadratic) terms were statistically significant ($p < 0.001$) for regression of HCF human exposure with associated $RSqr = 0.766$. The quadratic coefficient is positive meaning the case counts are increasing faster than linearly. Smoothing spline fit with $\lambda = 1200$ for HCF information contacts had associated $RSqr = 0.369$.

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 437,000 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 15 years. NPDS surveillance tools include:

- Volume Alert Surveillance Definitions
- Total Encounter Volume
- Human Exposure Case Volume
- Animal Exposure Case Volume
- Information Contact Volume
- Clinical Effects Volume (signs and symptoms, or laboratory abnormalities)

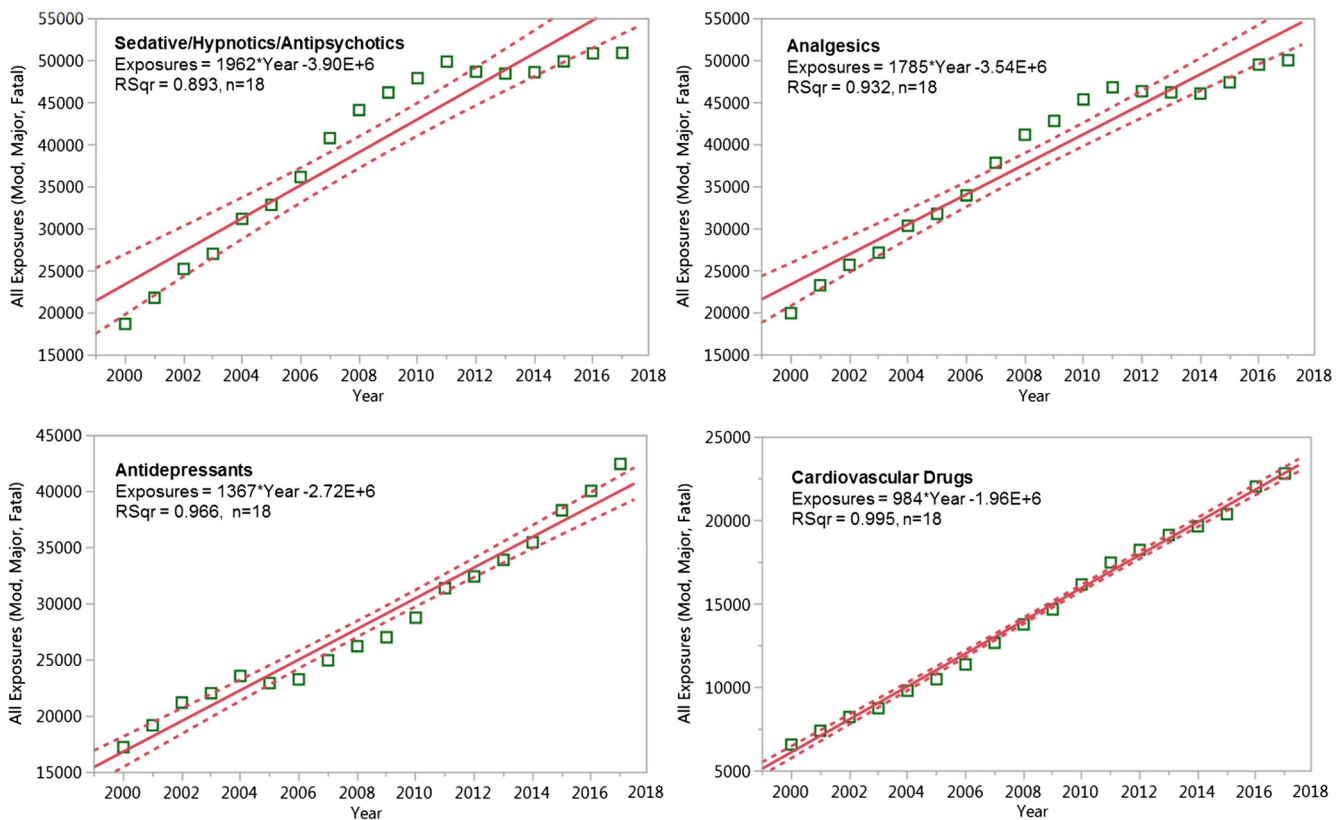


Figure 4. Substance categories with the greatest rate of exposure increase since 1 January 2000 for more severe outcomes (Top 4). Solid lines show least-squares linear regressions for the human exposure cases per year for that category (□). Broken lines show 95% confidence interval on the regression.

- Case Based Surveillance Definitions utilizing various NPDS data fields linked in Boolean expressions
 - Substance
 - Clinical Effects
 - Species
 - Medical Outcome and others
- Syndromic Surveillance Definitions allows Boolean based definitions utilizing various NPDS data fields to be run based on historical trends for user defined periods of interest

Incoming data 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 exemplifies recent trends in NPDS data. Past trends have compared NPDS data to other sources such as trademark and CDC reports. Two of the last 3 years have focused on the opioid epidemic. The worldwide prevalence of illicit substance use is currently in flux, and the pattern of use in the United States is no exception. An increasing number of individual states within the US have begun to legalize and control the sale and consumption of phytocannabinoids, complicating the definition of "illicit" [3]. The opioid and specifically the heroin epidemic continues to beleague the US and other western nations, but data characterizing patterns of use of other classes of abusable substances, including "novel psychoactive substances" (NPS), remain incomplete. According to federal sources, cocaine consumption in the US fell sharply from 2005-2010, and has only increased in more recent years [3,4]. At least 97% of cocaine trafficked to the US is cultivated in South America, most notably Columbia, Peru, and Bolivia, where production has increased since 2014.

In June, 2017, the AAPCC Board of Directors approved a change in the way that search strategies could be employed in NPDS. The Historical Generic Code (GC) search strategy process allows identification and categorization of substance searches by product code before definition of the GC. Creating this strategy facilitated identification of cases associated with specific substances within the database particularly for novel substances.

We evaluated a broader view of substances of abuse, and examined all closed human single substance exposures, by

week, from 1-Jul-2010 through 30-Jul-2018 by Generic Code (GC) for:

0201127 - Methamphetamines (Active 01/01/1985)
 0113000 - Cocaine (Active 01/01/1985)
 0201126 - Hallucinogenic Amphetamines (Active 01/11/1985)
 0037702 - Heroin (Active 01/01/1985)
 0310130 - Kratom (Active 03/06/2017)
 0310140-Synthetic Cathinones, Analogs and Precursors (Active 10/24/2017)
 0310141 - Synthetic Opioids, Analogs and Precursors (excluding pharmaceutical preparations) (Active 10/24/2017)
 0310142 - Synthetic Tryptamines, Analogs and Precursors (Active 10/24/2017)

Since 4 of these GCs predate NPDS and 4 were activated in 2017, we utilized the newly defined Historical Generic Code search strategy to map these GCs. We examined changes over time for each GC using flexible (spline) fits. We also examined recent rates of change, by linear regression, for the last 52 weeks of data for each GC. From a public health perspective, changes in both the absolute number

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

Site	Site of caller		Site of exposure	
	N	%	N	%
Residence				
Own	1,399,309	66.16	1,915,044	90.54
Other	28,606	1.35	46,089	2.18
Workplace	23,085	1.09	38,849	1.84
Health care facility	515,962	24.39	7,083	0.33
School	10,493	0.50	30,628	1.45
Restaurant/food service	445	0.02	3,679	0.17
Public area	8,065	0.38	23,005	1.09
Other	123,385	5.83	26,641	1.26
Unknown	5,836	0.28	24,168	1.14

Table 3A. Age and gender distribution of human exposures.

Age (y)	Male		Female		Unknown gender		Total		Cumulative total	
	N	% of age group total	N	% of age group total	N	% of age group total	N	% of total exposures	N	%
Children (<20)										
< 1	55,512	51.82	51,198	47.79	416	0.39	107,126	5.06	107,126	5.06
1	160,303	52.07	147,019	47.75	560	0.18	307,882	14.56	415,008	19.62
2	154,214	52.10	141,193	47.70	596	0.20	296,003	13.99	711,011	33.61
3	74,858	54.85	61,302	44.92	319	0.23	136,479	6.45	847,490	40.07
4	37,919	56.38	29,101	43.27	238	0.35	67,258	3.18	914,748	43.25
5	23,040	57.07	17,128	42.42	207	0.51	40,375	1.91	955,123	45.16
Unknown ≤5	763	43.65	745	42.62	240	13.73	1,748	0.08	956,871	45.24
Child 6-12	74,924	56.57	56,310	42.51	1,217	0.92	132,451	6.26	1,089,322	51.50
Teen 13-19	62,615	36.55	108,000	63.05	688	0.40	171,303	8.10	1,260,625	59.60
Unknown Child	1,710	38.63	1,658	37.45	1,059	23.92	4,427	0.21	1,265,052	59.81
Subtotal	645,858	51.05	613,654	48.51	5,540	0.44	1,265,052	59.81	1,265,052	59.81
Adults (≥20)										
20-29	86,158	45.97	101,064	53.92	206	0.11	187,428	8.86	1,452,480	68.67
30-39	68,350	44.48	85,209	55.45	100	0.07	153,659	7.26	1,606,139	75.93
40-49	48,498	41.27	68,940	58.66	82	0.07	117,520	5.56	1,723,659	81.49
50-59	46,687	40.76	67,759	59.16	82	0.07	114,528	5.41	1,838,187	86.90
60-69	33,429	38.50	53,356	61.44	51	0.06	86,836	4.11	1,925,023	91.01
70-79	20,022	37.14	33,853	62.80	33	0.06	53,908	2.55	1,978,931	93.56
80-89	9,974	35.19	18,358	64.77	12	0.04	28,344	1.34	2,007,275	94.90
≥90	2,185	31.50	4,742	68.37	9	0.13	6,936	0.33	2,014,211	95.23
Unknown adult	33,583	38.54	51,855	59.50	1,709	1.96	87,147	4.12	2,101,358	99.35
Subtotal	348,886	41.72	485,136	58.01	2,284	0.27	836,306	39.54	2,101,358	99.35
Other										
Unknown age	4,577	33.10	6,222	45.00	3,029	21.90	13,828	0.65	2,115,186	100.00
Total	999,321	47.25	1,105,012	52.24	10,853	0.51	2,115,186	100.00	2,115,186	100.00

and percentage of exposures may be relevant, so both parameters were calculated and presented.

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

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

Age Group	Exposures/ 100 k population	Number of Exposures ^a	Population ^b
Children (<20)			
< 1	2,618	107,126	4,092,273
1	7,542	307,882	4,082,061
2	7,270	296,003	4,071,693
3	3,363	136,479	4,058,295
4	1,664	67,258	4,041,350
5	996	40,375	4,051,951
Child 6-12	456	132,451	29,064,156
Teen 13-19	576	171,303	29,727,838
Subgroup	1,521	1,265,052	83,189,617
Adults (≥20)			
20-29	405	187,428	46,239,807
30-39	351	153,659	43,732,816
40-49	286	117,520	41,148,415
50-59	260	114,528	44,024,966
60-69	232	86,836	37,463,960
70-79	245	53,908	21,975,428
80-89	283	28,344	10,023,916
90+	266	6,936	2,609,019
Subgroup	338	836,306	247,218,327
Overall Total	640	2,115,186	330,407,944

^aNumber of Exposures excludes UNKNOWN ages from the individual age categories, but includes them in the Subtotals and Overall Total (see Table 3A).

^bAAPCC Total as of 1 July 2017 330,407,944 (see Table 1A) [2].

Table 4. Distribution of age^a and Gender for Fatalities^b.

Age (y)	Male	Female	Unknown	Total (%)	Cumulative total (%)
< 1 year	2	2	0	4 (0.3%)	4 (0.3%)
1 year	1	0	0	1 (0.1%)	5 (0.4%)
2 years	2	1	0	3 (0.2%)	8 (0.6%)
3 years	1	0	0	1 (0.1%)	9 (0.7%)
4 years	3	0	0	3 (0.2%)	12 (0.9%)
Child 6–12 years	8	4	1	13 (0.9%)	25 (1.8%)
Teen 13–19 years	19	27	0	46 (3.3%)	71 (5.1%)
20–29 years	123	81	1	205 (14.8%)	276 (19.9%)
30–39 years	148	95	0	243 (17.5%)	519 (37.4%)
40–49 years	99	128	0	227 (16.4%)	746 (53.8%)
50–59 years	131	137	0	268 (19.3%)	1,014 (73.1%)
60–69 years	75	114	0	189 (13.6%)	1,203 (86.7%)
70–79 years	43	61	0	104 (7.5%)	1,307 (94.2%)
80–89 years	25	33	0	58 (4.2%)	1,365 (98.3%)
> = 90 years	5	12	0	17 (1.2%)	1,382 (99.6%)
Unknown adult	3	1	0	4 (0.3%)	1,386 (99.9%)
Unknown age	0	1	1	2 (0.1%)	1,388 (100.0%)
Total	688	697	3	1,388 (100.0%)	1,388 (100.0%)

^aAge includes cases with both actual and estimated ages as shown in Table 21.

^bIncludes 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.

No. of Substances	Human exposures		Fatal exposures ^a	
	N	%	N	%
1	1,858,385	87.86	598	43.08
2	159,710	7.55	327	23.56
3	53,855	2.55	214	15.42
4	22,485	1.06	97	6.99
5	9,764	0.46	74	5.33
6	4,814	0.23	24	1.73
7	2,504	0.12	22	1.59
8	1,427	0.07	9	0.65
> =9	2,242	0.11	23	1.66
Total	2,115,186	100.00	1,388	100.00

^aIncludes cases with RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory. This excludes reports with outcome of Death INDIRECT.

exposure-related fatality as a death judged by the AAPCC Fatality Review Team to be at least contributory to the exposure. The definitions used for the Relative Contribution to Fatality (RCF) classification are defined in Appendix B and the methods to select abstracts for publications are described in Appendix C. For details of the AAPCC fatality review process, see the 2008 annual report [1].

Pediatric fatality case review

A focused Pediatric Fatality Review team comprised of 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

Table 6A. Reason for human exposure cases.

Reason	N	% Human exposures
Unintentional		
Unintentional – General	1,072,789	50.7
Unintentional – Therapeutic error	271,112	12.8
Unintentional – Misuse	141,330	6.7
Unintentional – Environmental	51,755	2.4
Unintentional – Bite / sting	41,850	2.0
Unintentional – Occupational	29,834	1.4
Unintentional – Food poisoning	16,181	0.8
Unintentional – Unknown	4,525	0.2
Subtotal	1,629,376	77.0
Intentional		
Intentional – Suspected suicide	274,390	13.0
Intentional – Misuse	57,085	2.7
Intentional – Abuse	49,234	2.3
Intentional – Unknown	19,452	0.9
Subtotal	400,161	18.9
Adverse Reaction		
Adverse reaction – Drug	34,896	1.6
Adverse reaction – Other	11,033	0.5
Adverse reaction – Food	5,561	0.3
Subtotal	51,490	2.4
Unknown		
Unknown reason	17,986	0.9
Subtotal	17,986	0.9
Other		
Other – Contamination / tampering	7,262	0.3
Other – Malicious	7,151	0.3
Other – Withdrawal	1,760	0.1
Subtotal	16,173	0.8
Total	2,115,186	100.0

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.

Results

Informational contacts with poison centers

Data from 435,540 information contacts to PCs in 2017 (Table 1C) was transmitted to NPDS, including contacts in optional reporting categories such as prevention/safety/education (20,000), administrative (20,245), and caller referral (48,600).

Figure 2 shows that all Drug ID contacts have decreased dramatically since mid-2008. Law enforcement Drug ID contacts also showed a decline. The most frequent information contacts was for Drug ID, comprising 96,221 contacts with PCs during the year. Of these, 52,093 (54.1%) were identified as drugs with known abuse potential. However, these cases were categorized based on the drug's abuse potential without knowledge of whether abuse was actually intended.

While the number of Drug information contacts decreased 5.98% from 2016 (80,847 contacts) to 2017 (76,014 contacts), the percentage of these slightly increased to 17.45% 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 3.37% of all information contacts. Of these environmental inquiries, specific questions related to pesticides were most

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	82,891	16.56	12.13	5.79	59.41	0.09	5.69	0.32
Wrong medication taken/given	45,212	15.74	11.33	5.91	61.66	0.08	4.93	0.35
Other incorrect dose	39,469	32.26	11.66	6.62	45.27	0.10	3.67	0.42
Medication doses given/taken too close together	30,371	17.33	9.65	6.33	60.28	0.08	6.01	0.32
Inadvertently took/given someone else's medication	24,479	15.39	19.48	6.75	53.72	0.07	4.37	0.22
Other/unknown therapeutic error	17,436	22.38	9.97	6.84	53.90	0.20	6.22	0.48
Incorrect dosing route	10,488	8.39	4.55	3.63	71.97	0.16	10.65	0.65
Confused units of measure	8,407	58.76	17.28	3.69	18.43	0.15	1.64	0.05
Incorrect formulation or concentration given	5,861	48.17	16.65	4.85	27.83	0.05	2.25	0.20
Health professional/iatrogenic error (pharmacist/nurse/physician)	5,748	24.55	10.73	6.89	52.24	0.33	4.24	1.01
Dispensing cup error	4,931	68.02	18.07	2.78	10.06	0.12	0.93	0.02
More than 1 product containing same ingredient	4,625	11.61	15.14	14.31	53.10	0.06	5.36	0.41
Drug interaction	2,806	6.52	7.34	6.56	64.83	0.29	13.93	0.53
Incorrect formulation or concentration dispensed	1,304	44.10	15.87	6.67	29.45	0.08	3.53	0.31
10-fold dosing error	1,268	57.81	9.70	2.68	28.08	0.16	1.42	0.16
Exposure through breast milk	143	92.31	0.00	0.00	4.20	2.80	0.00	0.70

^aAll cases with a scenario category of therapeutic error regardless of reason.

^bOf the human exposure cases reported to U.S. Poison Centers in 2017, 418,629 (19.8%) were coded to 1 or more of 54 scenarios.

Table 7. Distribution of reason for exposure by age.

Reason	<=5 y		6–12 y		13–19 y		>=20 y		Unknown child		Unknown adult		Unknown age		Total	
	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %	N	%
Unintentional	951,369	61.13	112,399	7.22	55,954	3.60	427,736	27.49	3,858	0.25	69,331	4.46	8,729	0.56	1,629,376	77.03
Intentional	79	0.02	14,632	3.74	107,982	27.61	265,430	67.86	246	0.06	8,785	2.25	3,007	0.77	400,161	18.92
Adverse reaction	3,350	7.37	2,703	5.95	3,612	7.95	34,817	76.64	182	0.40	5,881	12.95	945	2.08	51,490	2.43
Unknown	834	4.96	1,032	6.14	2,021	12.02	12,140	72.21	58	0.34	1,115	6.63	786	4.67	17,986	0.85
Other	1,239	8.82	1,685	11.99	1,734	12.34	9,036	64.29	83	0.59	2,035	14.48	361	2.57	16,173	0.76
Total	956,871	47.29	132,451	6.55	171,303	8.47	749,159	37.02	4,427	0.22	87,147	4.31	13,828	0.68	2,115,186	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	7	0	0	19	0	1	0	27
Unintentional – Environmental	2	7	2	25	0	0	0	36
Unintentional – Occupational	0	0	0	8	0	0	0	8
Unintentional – Therapeutic error	0	1	0	26	0	0	0	27
Unintentional – Misuse	0	0	0	16	0	0	0	16
Unintentional – Bite/sting	0	0	0	4	0	0	0	4
Unintentional – Food poisoning	0	0	0	1	0	0	0	1
Unintentional – Unknown	0	0	1	7	0	0	0	8
Subtotal	9	8	3	106	0	1	0	127
Intentional								
Intentional – Suspected suicide	0	3	25	671	0	2	1	702
Intentional – Misuse	0	0	1	61	0	0	0	62
Intentional – Abuse	0	0	11	216	0	1	1	229
Intentional – Unknown	0	0	1	79	0	0	0	80
Subtotal	0	3	38	1,027	0	3	2	1,073
Other								
Other – Contamination/tampering	1	0	0	0	0	0	0	1
Other – Malicious	1	0	1	5	0	0	0	7
Other – Withdrawal	0	0	0	1	0	0	0	1
Subtotal	2	0	1	6	0	0	0	9
Adverse reaction								
Adverse reaction – Drug	0	0	1	42	0	0	0	43
Adverse reaction – Other	0	0	0	2	0	0	0	2
Subtotal	0	0	1	44	0	0	0	45
Unknown								
Unknown reason	1	2	3	128	0	0	0	134
Subtotal	1	2	3	128	0	0	0	134
Total	12	13	46	1,311	0	4	2	1,388

^aIncludes cases with RCF of 1–Undoubtedly responsible, 2–Probably responsible, or 3–Contributory. This excludes reports with outcome of Death INDIRECT.

common, followed by cleanup of mercury (thermometers and other), and air quality.

Of all the information contacts, poison information comprised 11.4% of the requests with inquiries involving general toxicity the most common followed by questions involving

Table 9. Route of exposure for human exposure cases.

Route	Human exposures			Fatal exposures ^a		
	N	% of All Routes	% of All Cases	N	% of All Routes	% of All Cases
Ingestion	1,764,932	79.19	83.44	1,065	71.09	76.73
Dermal	153,009	6.87	7.23	11	0.73	0.79
Inhalation/nasal	133,867	6.01	6.33	120	8.01	8.65
Ocular	89,313	4.01	4.22	2	0.13	0.14
Bite/sting	41,825	1.88	1.98	4	0.27	0.29
Parenteral	21,365	0.96	1.01	100	6.68	7.20
Unknown	17,185	0.77	0.81	175	11.68	12.61
Other	2,770	0.12	0.13	6	0.40	0.43
Otic	1,657	0.07	0.08	0	0.0	0
Aspiration (with ingestion)	1,110	0.05	0.05	11	0.73	0.79
Vaginal	932	0.04	0.04	1	0.07	0.07
Rectal	827	0.04	0.04	3	0.20	0.22
Total Number of Routes	2,228,792	100.00	105.37	1,498	100.00	107.93 ^b

^aIncludes cases with RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory. This excludes reports with outcome of Death INDIRECT.

^bEach 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	1,385,895	65.5
Managed in healthcare facility		
Treated/evaluated and released	309,330	14.6
Admitted to critical care unit	101,849	4.8
Admitted to psychiatric facility	85,629	4.1
Patient lost to follow-up/left AMA	82,448	3.9
Admitted to noncritical care unit	76,979	3.6
Subtotal (managed in HCF)	656,235	31.0
Other	19,941	0.9
Refused referral	25,734	1.2
Unknown	27,381	1.3
Total	2,115,186	100.0

food preparation handling practices, safe use of household products, and food poisoning.

Exposure cases logged at poison centers

In 2017, the participating PCs logged 2,607,413 total encounters including 2,115,186 closed human exposure cases (Table 1A), 51,164 animal exposures (Table 1B), 435,540 information contacts (Table 1C), 5,424 human confirmed non-exposures, and 99 animal confirmed non-exposures. An additional 170 cases were still open at the time the database was locked. The cumulative AAPCC database now contains more than 68 million human exposure case records (Table 1A). A total of 19,250,405 information contacts have been logged into the AAPCC database since the year 2000.

Figure 1 shows the human exposures, information contacts 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 contacts 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 2,680,625 follow-up contacts in 2017. Follow-

up was performed in 47.0% of human exposure cases. One follow-up contact was made in 21.8% of human exposure cases and multiple follow-ups (range 2-160) were performed in 25.2% of cases. For human exposure cases in which follow-up contacts were documented, an average of 2.62 contacts per case were done.

Figure 3 shows a graphic summary and analyses of Health Care Facility (HCF) exposure and HCF information contacts. HCF exposure cases slightly departs from linearity but continues to increase at a steady rate, while the rate of HCF information contacts 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 2,115,186 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,

Table 11. Medical outcome of human exposure cases by patient age^a.

Outcome	<=5 y		6-12 y		13-19 y		>=20 y		Unknown child		Unknown adult		Unknown age		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
No effect	218,481	22.83	22,520	17.00	33,558	19.59	95,998	12.81	671	15.16	7819	8.97	1,723	12.5	380,770	18.00
Minor effect	78,521	8.21	19,712	14.88	49,175	28.71	176,228	23.52	409	9.24	11,452	13.14	1,998	14.5	337,495	15.96
Moderate effect	9,585	1.00	4,428	3.34	28,969	16.91	121,567	16.23	49	1.11	2,358	2.71	398	2.9	167,354	7.91
Major effect	891	0.09	320	0.24	3,149	1.84	22,382	2.99	4	0.09	161	0.18	42	0.3	26,949	1.27
Death	19	0.00	19	0.01	53	0.03	1,725	0.23	0	0.00	12	0.01	4	0.0	1,832	0.09
No follow-up, nontoxic	159,281	16.65	18,824	14.21	7,069	4.13	40,396	5.39	704	15.90	10,944	12.56	942	6.8	238,160	11.26
No follow-up, minimal toxicity	460,242	48.10	60,567	45.73	34,971	20.41	220,719	29.46	1,930	43.60	40,835	46.86	4,348	31.4	823,612	38.94
No follow-up, potentially toxic	17,213	1.80	3,087	2.33	10,137	5.92	38,490	5.14	545	12.31	9,906	11.37	3,948	28.6	83,326	3.94
Unrelated effect	12,632	1.32	2,970	2.24	4,182	2.44	30,349	4.05	115	2.60	3,648	4.19	416	3.0	54,312	2.57
Death, indirect report	6	0.00	4	0.00	40	0.02	1,305	0.17	0	0.00	12	0.01	9	0.1	1,376	0.07
Total	956,871	100.00	132,451	100.0	171,303	100.00	749,159	100.00	4,427	100.00	87,147	100.00	13,828	100.00	2,115,186	100.00

^aTotal number of cases where Death was an outcome (1,832 + 1,376) is greater than the number of fatalities (1,388) 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.

Outcome	Unintentional		Intentional		Other		Adverse reaction		Unknown		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
No effect	305,267	18.74	70,448	17.60	1,858	11.49	1,793	3.48	1,404	7.81	380,770	18.00
Minor effect	200,242	12.29	118,824	29.69	3,092	19.12	12,532	24.34	2,805	15.60	337,495	15.96
Moderate effect	43,298	2.66	110,868	27.71	1,270	7.85	7,248	14.08	4,670	25.96	167,354	7.91
Major effect	2,996	0.18	21,179	5.29	169	1.04	874	1.70	1,731	9.62	26,949	1.27
Death	181	0.01	1,290	0.32	14	0.09	72	0.14	275	1.53	1,832	0.09
Death, indirect report	44	0.00	1,191	0.30	1	0.01	5	0.01	135	0.75	1,376	0.07
No follow-up, nontoxic	231,302	14.20	4,112	1.03	1,172	7.25	1,326	2.58	248	1.38	238,160	11.26
No follow-up, minimal toxicity	769,023	47.20	30,149	7.53	5,845	36.14	16,507	32.06	2,088	11.61	823,612	38.94
No follow-up, potentially toxic	42,552	2.61	33,203	8.30	1,500	9.27	3,143	6.10	2,928	16.28	83,326	3.94
Unrelated effect	34,471	2.12	8,897	2.22	1,252	7.74	7,990	15.52	1,702	9.46	54,312	2.57
Total	1,629,376	100.00	400,161	100.00	16,173	100.00	51,490	100.00	17,986	100.00	2,115,186	100.00

^aTotal number of cases where Death was an outcome (1832 + 1376) is greater than the number of fatalities (1388) 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.

Duration of effect	Minor effect		Moderate effect		Major effect	
	N	%	N	%	N	%
<=2 hours	99,733	29.55	7140	4.27	864	3.21
>2 hours, <=8 hours	97,644	28.93	33,495	20.01	1,786	6.63
>8 hours, <=24 hours	65,138	19.30	61,298	36.63	5,897	21.88
>24 hours, <=3 days	20,725	6.14	34,855	20.83	9,171	34.03
>3 days, <=1 week	3,915	1.16	8,236	4.92	5,019	18.62
>1 week, <=1 month	1,134	0.34	1,548	0.92	1,393	5.17
>1 month	332	0.10	352	0.21	147	0.55
Anticipated permanent	422	0.13	166	0.10	453	1.68
Unknown	48,452	14.36	20,264	12.11	2,219	8.23
Total	337,495	100.00	167,354	100.00	26,949	100.00

Table 14. Decontamination and therapeutic interventions.

Therapy	N	%
Decontamination Only	1,012,714	47.9
Therapeutic Intervention Only	265,267	12.5
Decontamination and Therapeutic Intervention	118,881	5.6
Not Coded	718,324	34.0
Total	2,115,186	100.0

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 (87.9%) of all exposures. In contrast, only 43.1% of fatalities are single substance exposures (Table 5).

Tables 22A and 22B (Appendix E) tabulate 2,541,728 substance-exposures, of which 1,858,385 were single-substance exposures, including 954,802 (51.4%) non-pharmaceuticals and 903,583 (48.6 %) pharmaceuticals. In 23.2% of single-substance exposures that involved pharmaceutical substances, the reason for exposure was intentional, compared to only 4.14% when the exposure involved a nonpharmaceutical substance. Correspondingly, treatment in an HCF was provided in a higher percentage of exposures that involved pharmaceutical substances (34.2%) compared with nonpharmaceutical substances (17.4%). Exposures to pharmaceuticals also had more severe outcomes. Of single-substance exposure-related fatal cases, 1,009 (76.2%) were pharmaceuticals compared with 315 (23.8%) 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 33.6% of exposures and children ≤5 years accounted for approximately half of all human exposures (45.2%). 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 660/100,000 population (Table 3B). The highest rates of poison exposures are in 1-year-old children (8,083/100,000 population) and

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	327	132	1,690	2,966	0	16	3	5,134
Charcoal, multiple doses	55	13	293	626	0	0	0	987
Charcoal, single dose	5,688	914	11,944	20,346	4	83	19	38,998
Dilute/irrigate/wash	460,162	50,594	28,327	180,026	1,344	29,540	2,884	752,877
Food/snack	128,455	12,002	6,599	31,919	303	4,857	366	184,501
Fresh air	6,639	3,978	4,378	41,293	605	11,378	1,599	69,870
Ipecac	12	2	17	31	0	2	0	64
Lavage	26	11	239	774	0	6	1	1,057
Other emetic	6,727	630	1,354	5,328	14	427	54	14,534
Whole bowel irrigation	60	14	298	1,265	0	3	0	1,640
Other Therapies								
2-PAM	2	1	4	30	0	0	0	37
Alkalinization	143	108	2,340	9,714	0	22	4	12,331
Amyl nitrite	0	0	0	4	0	0	0	4
Antiarrhythmic	15	22	344	2,006	0	8	0	2,395
Antibiotics	1,723	775	1,303	14,273	9	449	46	18,578
Anticonvulsants ^a	88	24	222	1,323	1	4	0	1,662
Antiemetics	1,280	727	8,577	16,473	2	76	9	27,144
Antihistamines	1,673	1,207	1,651	9,151	18	789	82	14,571
Antihypertensives	18	16	164	2,909	0	7	1	3,115
Antivenin (fab fragment)	248	217	162	1,662	0	8	2	2,299
Antivenin/antitoxin ^b	31	25	34	272	0	1	0	363
Atropine	100	33	191	1,427	0	7	1	1,759
BAL	9	0	2	7	0	0	0	18
Benzodiazepines	1,131	610	7,469	32,721	0	151	33	42,115
Bronchodilators	381	234	352	4,657	10	146	13	5,793
Calcium	6,251	435	327	3,275	6	67	12	10,373
Cardioversion	7	3	20	284	0	1	0	315
CPR	54	20	129	1,592	0	13	3	1,811
Deferoxamine	8	0	37	38	0	1	0	84
ECMO	4	3	16	50	0	0	0	73
EDTA	22	3	2	11	0	0	0	38
Ethanol	1	0	2	40	0	2	0	45
Extracorp. procedure (other)	2	1	8	143	0	0	0	154
Fab fragments	6	13	20	523	0	0	0	562
Fluids, IV	6,163	2,908	36,870	130,084	7	476	110	176,618
Flumazenil	82	16	168	1,184	0	3	1	1,454
Folate	10	4	39	1,618	0	3	3	1,677
Fomepizole	94	19	86	1,836	2	4	3	2,044
Glucagon	28	8	132	2,122	0	7	0	2,297
Glucose, > 5%	452	49	436	4,325	0	17	4	5,283
Hemodialysis	4	6	125	2,487	2	5	0	2,629
Hemoperfusion	0	1	1	36	0	0	0	38
Hydroxocobalamin	4	9	3	102	0	0	0	118
Hyperbaric oxygen	19	39	31	282	0	11	2	384
Insulin	8	8	159	2,374	0	5	1	2,555
Intubation	499	173	2,077	20,633	3	96	30	23,511
Methylene blue	21	3	12	164	0	0	0	200
NAC, IV	196	287	6,228	16,021	2	47	12	22,793
NAC, PO	30	36	928	2,092	0	4	3	3,093
Nalmefene	0	1	2	22	0	1	0	26
Naloxone	1,152	209	2,135	22,718	1	136	42	26,393
Neuromuscular blocker	51	16	202	1,745	0	5	2	2,021
Octreotide	112	9	48	379	0	1	0	549
Other	24,774	6,394	12,106	72,554	98	3,100	576	119,602
Oxygen	1,416	736	3,875	43,859	12	288	119	50,305
Pacemaker	0	0	0	206	0	1	0	207
Penicillamine	0	0	0	2	0	0	0	2
Physostigmine	5	14	135	263	0	4	0	421
Phytonadione	18	3	76	612	0	2	0	711
Pyridoxine	4	6	32	524	0	0	0	566
Sedation (other)	529	242	2,518	21,426	3	84	22	24,824
Sodium nitrite	1	0	1	24	0	0	0	26
Sodium thiosulfate	0	1	1	31	0	0	0	33
Steroids	608	334	447	4,682	8	286	42	6,407
Succimer	105	14	6	61	2	1	0	189
Transplantation	0	1	4	8	0	0	0	13
Vasopressors	85	53	473	7,073	1	24	4	7,713
Ventilator	468	163	1,937	19,546	3	87	32	22,236

^aExcludes benzodiazepines.^bExcludes Fab fragments.

Table 16A. Decontamination trends (1985–2017).

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)	1,237 (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 (0.010)	13,930 (1.22)
2012	2,275,141	193 (0.0100)	57,888 (2.5)	1,102,307 (48.5)	83 (0.010)	11,284 (1.02)
2013	2,188,013	134 (0.0100)	50,459 (2.3)	1,049,475 (48.0)	42 (0.000)	9,334 (0.89)
2014	2,165,142	132 (0.0061)	46,030 (2.1)	1,031,927 (47.7)	41 (0.004)	7,977 (0.77)
2015	2,168,371	105 (0.0048)	42,712 (2.0)	1,017,369 (46.9)	29 (0.003)	6,965 (0.68)
2016	2,159,032	88 (0.0041)	40,633 (1.9)	1,002,344 (46.4)	22 (0.002)	6,333 (0.63)
2017	2,115,186	64 (0.0030)	39,985 (1.9)	956,871 (45.2)	12 (0.001)	5,743 (0.60)

Table 16B. Decontamination trends: Total human and pediatric exposures ≤5 years^a.

Therapy	Human exposures		Exposures children <=5 y	
	N	%	N	%
Activated charcoal administered	39,985	1.89	5,743	0.60
Cathartic	5,134	0.24	327	0.03
Ipecac administered	64	0.00	12	0.00
Lavage	1,057	0.05	26	0.00
Other Emetic	14,534	0.69	6,727	0.70
Whole Bowel Irrigation	1,640	0.08	60	0.01
Total	62,414	2.95	12,895	1.35

^aHuman exposures = 2,115,186; Pediatric exposures = 956,871.

2-year-old children (7,675/100,000 population). Rates declined with age from 448/100,000 population in children 6–12 to 345/100,000 population in adults ≥20 years.

Caller site and exposure site

As shown in Table 2, of the 2,115,186 human exposures reported, 67.5% of these encounters originated from a residence (own or other) but 92.7% actually occurred at a residence (own or other). Another 24.4% were made from an HCF. Beyond residences, exposures occurred in the workplace (1.84% of cases), schools (1.45%), HCF (0.335%), and restaurants or food services (0.174%).

Exposures in pregnancy

Exposure during pregnancy occurred in 6,795 women (0.321% of all human exposures). Of those with known

pregnancy duration (n=6,331), 37.1% occurred in the first trimester, 34.9% in the second trimester, and 28.0% in the third trimester. Most (72.5%) were unintentional exposures and 21.0% were intentional exposures. There were 2 deaths in pregnant females in 2017.

Chronicity

Most human exposures, 1,825,251 (86.3%), were acute cases (single, repeated or continuous exposure occurring over 8 hours or less) compared to 1,018 (31.7%) acute cases among the 3,208 fatalities. Chronic exposures (continuous or repeated exposures occurring over >8 hours) comprised 2.20% (46,611) of all human exposures. Acute-on-chronic exposures (single exposure that was preceded by a continuous, repeated, or intermittent exposure occurring over a period greater than 8 hours) numbered 209,778 (9.92%).

Reason for exposure

The reason category for most human exposures was unintentional (77.0%), including: unintentional general (50.7%), therapeutic error (12.8%), and unintentional misuse (6.68%) (Table 6A).

Scenarios

Of the total 271,112 therapeutic errors, the most common scenarios for all ages included: inadvertent double-dosing

Table 16C. Human exposures to drugs of abuse by generic code.

Drug of Abuse Generic Code	Increase (%/year)	Exposures (last 52 weeks)	Increase (Exposures/year)	95% confidence interval
Synthetic Tryptamines, Analogs and Precursors	316%	20	1.22	[0.578, 1.86]*
Synthetic Cathinones, Analogs and Precursors	312%	105	6.30	[4.38, 8.21]*
Synthetic Opioids, Analogs and Precursors	242%	25	1.17	[0.509, 1.82]*
Kratom	63.3%	529	6.44	[2.91, 9.98]*
Hallucinogenic Amphetamines	26.4%	828	4.20	[-0.195, 8.60]
Heroin	20.9%	4186	16.8	[4.05, 29.57]*
Methamphetamines	13.1%	3766	9.49	[-12.6, 31.5]
Cocaine	0.817%	1371	0.215	[-5.60, 6.03]

P*-value for slope <0.05.Table 17A.** Substance categories most frequently involved in human exposures (Top 25).

Substance (Major Generic Category)	All substances	% ^a	Single substance exposures	% ^b
Analgesics	283,784	11.08	178,069	9.58
Cleaning Substances (Household)	190,319	7.43	170,676	9.18
Cosmetics/Personal Care Products	172,968	6.76	166,145	8.94
Sedative/Hypnotics/Antipsychotics	146,943	5.74	53,419	2.87
Antidepressants	128,546	5.02	53,934	2.90
Antihistamines	111,181	4.34	76,152	4.10
Cardiovascular Drugs	108,614	4.24	46,207	2.49
Foreign Bodies/Toys/Miscellaneous	89,368	3.49	86,290	4.64
Pesticides	84,031	3.28	77,999	4.20
Alcohols	72,090	2.82	22,239	1.20
Stimulants and Street Drugs	69,979	2.73	38,148	2.05
Topical Preparations	66,702	2.61	64,886	3.49
Anticonvulsants	65,941	2.58	26,066	1.40
Vitamins	59,761	2.33	49,937	2.69
Cold and Cough Preparations	56,757	2.22	38,457	2.07
Hormones and Hormone Antagonists	56,673	2.21	36,962	1.99
Antimicrobials	53,667	2.10	42,882	2.31
Dietary Supplements/Herbals/Homeopathic	51,653	2.02	42,645	2.29
Gastrointestinal Preparations	48,714	1.90	35,117	1.89
Plants	46,782	1.83	44,089	2.37
Bites and Envenomations	46,513	1.82	45,688	2.46
Chemicals	43,688	1.71	37,406	2.01
Fumes/Gases/Vapors	33,615	1.31	30,829	1.66
Electrolytes and Minerals	30,446	1.19	24,641	1.33
Other/Unknown Nondrug Substances	30,102	1.18	27,657	1.49

^aPercentages are based on the total number of substances reported in all exposures (N = 2,560,308).^bPercentages are based on the total number of single substance exposures (N = 1,858,385).

(30.6%), wrong medication taken or given (16.7%), other incorrect dose (14.6%), doses given/taken too close together (11.2%), and inadvertent exposure to someone else's medication (9.03%). 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 18.9% of human exposures. Suicidal intent was suspected in 13.0% of cases, intentional misuse in 2.70%, and intentional abuse in 2.33%. Unintentional exposures outnumbered intentional exposures in all age groups with the exception of ages 13–19 years (Table 7). In contrast, of the 1,388 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 83.4% of cases (Table 9), followed in frequency by dermal (7.23%), inhalation/nasal (6.33%), and ocular routes (4.22%). For the 1,388 exposure-related fatalities, ingestion (76.7%), unknown (12.6%), inhalation/nasal

(8.65%), and parenteral (7.20%) 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 813,794 (38.5%) cases (17.7% had 1 effect, 9.88% had 2 effects, 5.32% had 3 effects, 2.56% had 4 effects, 1.26% had 5 effects, and 1.75% had >5 effects coded). Of clinical effects coded, 77.3% were deemed related to the exposure, 9.94% 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 (65.5%), 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 1.2% of cases were referred to a HCF but refused referral.

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

Substance (Major Generic Category)	Increase in serious exposures per year ^a		All substances in 2016
	Mean	95% CI ^b	
Sedative/Hypnotics/Antipsychotics	1,962	[1601, 2322]	50,933
Analgesics	1,785	[1528, 2041]	50,064
Antidepressants	1,367	[1230, 1503]	42,476
Cardiovascular Drugs	984	[948, 1020]	22,835
Alcohols	931	[872, 990]	25,003
Stimulants and Street Drugs	913	[660, 1167]	26,499
Anticonvulsants	721	[655, 786]	18,538
Antihistamines	657	[563, 751]	17,301
Muscle Relaxants	423	[365, 481]	10,409
Unknown Drug	405	[337, 473]	9,554
Hormones and Hormone Antagonists	253	[242, 265]	6,944
Cold and Cough Preparations	224	[166, 281]	7,813
Gastrointestinal Preparations	102	[83, 121]	3,495
Miscellaneous Drugs	78.1	[51, 105]	2,227
Diuretics	52.4	[44, 60]	1,546
Anticoagulants	49.3	[44, 55]	1,179
Electrolytes and Minerals	40.0	[35, 45]	1,090
Vitamins	36.3	[30, 42]	1,053
Anticholinergic Drugs	31.1	[23, 40]	1,017
Other/Unknown Nondrug Substances	25.3	[3, 48]	1,158
Weapons of Mass Destruction	19.2	[12, 27]	363
Antimicrobials	13.7	[-4, 31]	2,713
Narcotic Antagonists	11.9	[9, 15]	310
Tobacco/Nicotine/eCigarette Products	11.9	[6, 17]	355
Essential Oils	11.0	[9, 13]	236

^aSerious exposures have outcomes of Moderate, Major or Death..

^bIncrease and confidence intervals are based on least squares linear regression of the number of calls per year for 2000–2017..

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	125,838	12.59	123,019	13.26
Cleaning Substances (Household)	109,563	10.96	105,275	11.35
Analgesics	91,741	9.18	83,438	8.99
Foreign Bodies/Toys/Miscellaneous	63,916	6.39	62,266	6.71
Topical Preparations	48,342	4.84	47,367	5.11
Antihistamines	46,936	4.70	42,435	4.57
Vitamins	42,553	4.26	38,215	4.12
Pesticides	34,303	3.43	33,211	3.58
Dietary Supplements/Herbals/Homeopathic	34,265	3.43	32,000	3.45
Plants	28,029	2.80	26,889	2.90
Gastrointestinal Preparations	26,808	2.68	24,204	2.61
Antimicrobials	23,090	2.31	21,609	2.33
Cardiovascular Drugs	20,983	2.10	13,318	1.44
Cold and Cough Preparations	20,536	2.05	18,537	2.00
Arts/Crafts/Office Supplies	20,449	2.05	19,779	2.13
Electrolytes and Minerals	18,785	1.88	16,994	1.83
Hormones and Hormone Antagonists	17,646	1.77	13,830	1.49
Deodorizers	17,214	1.72	16,985	1.83
Essential Oils	16,142	1.61	15,249	1.64
Other/Unknown Nondrug Substances	12,524	1.25	11,865	1.28
Antidepressants	11,667	1.17	8,459	0.91
Tobacco/Nicotine/eCigarette Products	11,207	1.12	11,119	1.20
Chemicals	11,026	1.10	10,023	1.08
Sedative/Hypnotics/Antipsychotics	9,825	0.98	7,525	0.81
Alcohols	9,402	0.94	9,153	0.99

^aIncludes all children with actual or estimated ages ≤ 5 years old. Results do not include "Unknown Child" or "Unknown Age"..

^bPercentages are based on the total number of substances reported in pediatric exposures (N = 999,529).

^cPercentages are based on the total number of single substance pediatric exposures (N = 927,844).

Of the 656,235 cases managed in a HCF, 309,330 (47.1%) were treated and released, 101,849 (15.5%) were admitted to a critical care unit, 76,979 (11.7%) were admitted to a noncritical unit, and 85,629 (13.0%) were admitted directly to a psychiatric facility.

The percentage of patients treated in a HCF varied considerably with age. Only 12.9% of children ≤ 5 years and 18.4% of children between 6 and 12 years were managed in a HCF

compared to 66.7% of teenagers (13–19 years) and 50.2% of adults (age ≥ 20 years).

Medical outcome

Table 11 displays the medical outcome of human exposure cases distributed by age. Older age groups exhibit a greater number of severe medical outcomes. Table 12 compares

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	129,917	11.18	58,799	8.95
Sedative/Hypnotics/Antipsychotics	114,212	9.83	35,663	5.43
Antidepressants	83,753	7.21	29,034	4.42
Cardiovascular Drugs	74,293	6.40	26,036	3.96
Cleaning Substances (Household)	63,329	5.45	50,384	7.67
Alcohols	55,752	4.80	10,449	1.59
Anticonvulsants	49,298	4.24	16,881	2.57
Pesticides	41,807	3.60	37,492	5.71
Stimulants and Street Drugs	41,266	3.55	18,872	2.87
Antihistamines	38,228	3.29	17,761	2.70
Hormones and Hormone Antagonists	33,006	2.84	19,369	2.95
Bites and Envenomations	31,090	2.68	30,547	4.65
Cosmetics/Personal Care Products	30,454	2.62	27,662	4.21
Chemicals	25,213	2.17	20,840	3.17
Fumes/Gases/Vapors	24,378	2.10	22,260	3.39
Antimicrobials	21,769	1.87	15,364	2.34
Cold and Cough Preparations	20,913	1.80	11,171	1.70
Muscle Relaxants	20,550	1.77	7370	1.12
Hydrocarbons	17,304	1.49	15,868	2.42
Gastrointestinal Preparations	16,570	1.43	7,744	1.18
Unknown Drug	15,129	1.30	9,340	1.42
Topical Preparations	14,179	1.22	13,557	2.06
Other/Unknown Nondrug Substances	13,038	1.12	11,604	1.77
Foreign Bodies/Toys/Miscellaneous	12,256	1.06	11,222	1.71
Miscellaneous Drugs	12,235	1.05	6,219	0.95

^aIncludes all adults with actual or estimated ages ≥ 20 years old. Results also include "Unknown Adult" but do not include "Unknown Age".

^bPercentages are based on the total number of substances reported in adult exposures (N = 1,161,585).

^cPercentages are based on the total number of single substance adult exposures (N = 656,790).

Table 17E. Substance categories most frequently involved in pediatric (≤ 5 years) deaths^a.

Substance (Major Generic Category)	All substances	% ^b	Single substance exposures	% ^c
Analgesics	7	20.59	5	26.32
Unknown Drug	4	11.76	4	21.05
Antihistamines	3	8.82	0	0.00
Fumes/Gases/Vapors	3	8.82	1	5.26
Alcohols	2	5.88	1	5.26
Stimulants and Street Drugs	2	5.88	0	0.00
Anesthetics	1	2.94	0	0.00
Antidepressants	1	2.94	0	0.00
Batteries	1	2.94	1	5.26
Cardiovascular Drugs	1	2.94	1	5.26
Cosmetics/Personal Care Products	1	2.94	1	5.26
Deodorizers	1	2.94	1	5.26
Dietary Supplements/Herbals/Homeopathic	1	2.94	1	5.26
Electrolytes and Minerals	1	2.94	1	5.26
Gastrointestinal Preparations	1	2.94	0	0.00
Hydrocarbons	1	2.94	0	0.00
Pesticides	1	2.94	1	5.26
Sedative/Hypnotics/Antipsychotics	1	2.94	0	0.00
Weapons of Mass Destruction	1	2.94	1	5.26
Total	34	100.00	19	100.00

^aIncludes 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.

^bPercentages are based on the total number of substances reported in pediatric fatalities (N = 34).

^cPercentages are based on the total number of single substance pediatric fatalities (N = 19).

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 = 531,798; 25.1% 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 12 (0.00125%) pediatric exposures in 2017. The continued decrease in ipecac syrup use over the last 2 decades was likely a result of ipecac use guidelines issued in 1997 by the American Academy of Clinical Toxicology and the European Association of Poisons Centres and Clinical Toxicologists and updated in 2004 [5,6]. In a separate report,

Table 17F. Substance categories most frequently identified in drug identification calls (Top 25).

Substance (Major Generic Category)	All substances	% ^a
Analgesics	38,765	33.78
Sedative/Hypnotics/Antipsychotics	20,449	17.82
Unknown Drug	8,271	7.21
Cardiovascular Drugs	6,916	6.03
Antidepressants	5,704	4.97
Muscle Relaxants	5,069	4.42
Anticonvulsants	4,919	4.29
Stimulants and Street Drugs	4,271	3.72
Antihistamines	4,251	3.70
Antimicrobials	4,028	3.51
Hormones and Hormone Antagonists	2,593	2.26
Information Calls	2,514	2.19
Gastrointestinal Preparations	2,349	2.05
Diuretics	1,351	1.18
Miscellaneous Drugs	927	0.81
Cold and Cough Preparations	525	0.46
Anticholinergic Drugs	293	0.26
Vitamins	267	0.23
Anticoagulants	262	0.23
Asthma Therapies	261	0.23
Electrolytes and Minerals	249	0.22
Dietary Supplements/Herbals/Homeopathic	70	0.06
Other/Unknown Nondrug Substances	69	0.06
Narcotic Antagonists	56	0.05
Antineoplastics	55	0.05

^aPercentages are based on the total number of substances reported in all drug identification calls (N = 114,760).

the American Academy of Pediatrics concluded not only that ipecac should no longer be used routinely as a home treatment strategy, but also recommended disposal of home ipecac stocks [7]. A decline was also observed since the early 1990s for reported use of activated charcoal. While not as dramatic as the decline in use of ipecac, reported use of activated charcoal decreased from 3.66% of pediatric cases in 1993 to just 0.600% in 2017.

Top substances in human exposures

Table 17A presents the 25 most common substance categories, listed by frequency of human exposure for cases with more serious outcomes (moderate, severe, and death). 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 examined exposures with more serious outcomes per year over the last 17 years for the change over time for each of the 68 major generic categories via least squares linear regression. The serious outcome exposure cases per year over this period were increasing for 34, static for 5, and decreasing for 29 of the 68 categories with data for the entire time period. The change over time for the 17 yearly values was statistically significant ($p < 0.05$) for 48 of the 68 categories with data for the entire time period. Table 17B shows the 25 categories which were increasing the most rapidly. Statistical significance of the linear regressions can be verified by noting the 95% confidence interval on the rate of increase excludes zero for all but 1 of the 25 categories. Figure 4 shows

the change over time and linear regressions for the top 4 increasing categories in Table 17B.

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

Table 17E reports the 25 categories of substances most frequently involved in pediatric (≤ 5 years) fatalities in 2015.

Table 17F reports the 25 Drug ID categories most frequently queried in 2017, 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 contacts. Total encounters decreased 3.79% from 2,710,042 in 2016 to 2,607,413 in 2017. Information contacts decreased by 11.2% from 490,215 in 2016 to 435,540 in 2017, with a 30.2% decrease in drug identification contacts and a 0.264% decrease in HCF information contacts. Human exposures decreased by 2.03% from 2,159,032 to 2,115,186 cases over the same time period.

Figure 5 shows the year-to-year change through 2017 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 4.44% (95% CI [4.15%, 4.73%]) per year from 108,148 cases in 2000 to 196,135 cases in 2017. However, cases with less serious outcomes have decreased since 2008 by 2.48% [−2.96%, −1.99%] per year from 2,339,460 in 2008 to 1,917,675 cases in 2017. 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) and for more severe exposures (Figure 5), despite a decrease in cases involving less severe exposures.

Emerging trends – drugs of abuse

Cocaine-related mortality is increasing in the US. The same appears true for methamphetamine and other stimulants (Figure 6). Likewise, data from NPDS show the recent steady rise in poison center contacts leading up to and throughout 2017 (Figure 7).

Documented exposures to heroin continue to rise in NPDS data. Methamphetamine exposures steadily increased

in recent years, while cocaine dropped quickly and then plateaued. Other hallucinogenic amphetamine exposures appear to be downtrending. Interestingly, despite the creation of an active generic code in March, 2017 the Historical GC search strategy revealed that kratom shows steady activity preceding a marked increase in the number of cases late in this 10-year period. Synthetic cathinones showed early peaks, likely reflecting emergence as abused drugs with secondary peaks during outbreaks involving novel compounds with unique toxicities. Synthetic tryptamines show a very small presence in the NPDS database while synthetic opioids show a subtle increase toward the end of the period (Figure 7).

Table 16C details the increase in exposures for the 52-week period ending 30 Jul 2018 by linear regression. Of the 8 GC's examined over these 52 weeks, all were increasing (5 of 8 with $p < 0.05$), 3 of 8 at $>100\%$ /year. Trends in these data do not seem to reflect the timing of activation of GCs. Rather, peaks appear to reflect the emergence of new classes of abused drugs directly resulting in the development of new GCs. This highlights the value and timeliness of utilizing NPDS data to identify new trends as they emerge.

Moving forward, the Historical GC search should facilitate the identification of new, potentially harmful substances.

Distribution of suicides

Table 19A shows a modest variation in the distribution of suicides and pediatric deaths over the past 2 decades as reported to the NPDS national database. Within the last decade, the percent of exposures determined to be suspected suicides ranged from 29.7 to 50.5% and the percent of pediatric cases has ranged from 0.8 to 3.18%. The relatively large changes seen for 2011, 2012 and 2017 reflects the large increase in indirect death reports in those years (e.g. 1,376 in 2017). Analyses of suicides and pediatric deaths for Direct and Indirect reports are shown in Table 19B.

Plant exposures

Table 20 provides the number of times a specific plant was reported to NPDS ($N=46,782$). The 25 most commonly involved plant species and categories account for 40.6% of all reported plant exposures. Three of the top 5 categories in the table are essentially synonymous for unknown plant and comprise 10.6% (4,951/46,782) 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), *Phytolacca americana*, *Spathiphyllum* species, *Ilex* species, *Malus* species, *Solanum nigrum*, and *Caladium* species.

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

Table	Fatalities Included	RCF	N
4	Death only	1,2,3	1,388
5	Death only	1,2,3	1,388
8	Death only	1,2,3	1,388
9	Death only	1,2,3	1,388
11	Death and Death (indirect report)	All	3,208
12	Death and Death (indirect report)	All	3,208
17E	Pediatric Death and Death (indirect report)	All	25
18	Death only	1,2,3	1,388
19A	Death and Death (indirect report)	All	3,208
19B	Death and Death (indirect report)	All	3,208
21	Death and Death (indirect report)	1,2,3	2,682
22	Death and Death (indirect report) - Single substance deaths only	All	1,324

of the exposure (exposure-related fatalities). Tables 11, 12, and 19 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.

There were 1,376 deaths, indirect and 1,832 deaths. Of these 3,208 cases, 2,682 were judged exposure-related fatalities (RCF = 1 - Undoubtedly responsible, 2 - Probably responsible, or 3 - Contributory). The remaining 526 cases were judged as follows: 122 as RCF = 4 - Probably not responsible, 70 as RCF = 5 - Clearly not responsible, and 334 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 or more drugs or products. The exposure-related fatalities involved a single substance in 598 cases (43.1%), 2 substances in 327 cases (23.6%), 3 in 214 cases (15.4%), 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 1,294, 48.25% of cases), p = prehospital cardiac and/or respiratory arrest (occurred in 560, 20.9% of cases), h = hospital records reviewed (occurred in 1,007, 37.6% of cases), a = autopsy report reviewed (occurred in 1,690, 63.0% of cases). The distribution of NPDS RCF was: 1 = Undoubtedly responsible in 1,397 cases (52.1%), 2 = Probably responsible in 982 cases (36.6%), 3 = Contributory in 303 cases (11.3%). The denominator for these Table 21 percentages is 2,682.

All fatalities – all ages

Table 4 presents the age and gender distribution for the 1,388 exposure-related fatalities (excluding death, indirect). The age distribution of reported fatalities showed a slight decrease in deaths among children (<20 years old) compared

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	846	10.84	514	8.50
Cleaning Substances (Household)	660	8.46	485	8.02
Fumes/Gases/Vapors	539	6.91	503	8.32
Pesticides	505	6.47	479	7.92
Bites and Envenomations	375	4.80	337	5.57
Sedative/Hypnotics/Antipsychotics	296	3.79	139	2.30
Antidepressants	284	3.64	160	2.65
Antihistamines	282	3.61	181	2.99
Vitamins	275	3.52	217	3.59
Cosmetics/Personal Care Products	214	2.74	202	3.34
Chemicals	203	2.60	164	2.71
Foreign Bodies/Toys/Miscellaneous	203	2.60	191	3.16
Antimicrobials	199	2.55	157	2.60
Infectious and Toxin-Mediated Diseases	191	2.45	152	2.51
Hydrocarbons	180	2.31	174	2.88
Stimulants and Street Drugs	174	2.23	96	1.59
Hormones and Hormone Antagonists	155	1.99	139	2.30
Alcohols	132	1.69	53	0.88
Plants	131	1.68	117	1.93
Electrolytes and Minerals	122	1.56	88	1.46
Cold and Cough Preparations	117	1.50	79	1.31
Cardiovascular Drugs	115	1.47	66	1.09
Other/Unknown Nondrug Substances	114	1.46	103	1.70
Gastrointestinal Preparations	105	1.35	79	1.31
Paints and Stripping Agents	97	1.24	93	1.54

^aIncludes all patient classified as pregnant and all female patients with a 'duration of pregnancy' greater than 0.

^bPercentages are based on the total number of substances reported in pregnant exposures (N = 7,805).

^cPercentages are based on the total number of single substance pregnant exposures (N = 6,047).

to 2016, with 71 cases representing 5.1% of fatalities. This was an absolute decrease of 2 fatalities (2.74% decrease) in that age group. The age distribution of reported fatalities in adults (≥ 20 years) was similar to prior years with 1,315 of 1,388 (94.7%) fatal cases occurring in that age group actual percent 2 (0.144%) occurring in Unknown Age patients. While children ≤ 5 years old were involved in 45.2% of exposures, the 12 deaths in this group comprised just 0.865% of the exposure-related fatalities. The number of deaths in this age group decreased by 12 from 2016. Most (67.9%) of the fatalities occurred in 20 to 59-year-old individuals, a slightly increased percentage from prior years.

Table 21 (Appendix D) lists each of the 2,682 human fatalities (including death, indirect) along with all of the substances involved for each case. Please note, the substance listed in column 3 of Table 21 (alternate name) was chosen to be the most specific generic name based upon the Micromedex Poisindex[®] product name and generic code selected for that substance. Alternate names are maintained in the NPDS for each substance involved in a fatality. The cross-references at the end of each major category section in Table 21 list all cases that identify 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, opioids, miscellaneous stimulants and street drugs, and miscellaneous alcohols lead this list, followed by calcium antagonists, acetaminophen combinations, acetaminophen alone, beta blockers, miscellaneous antidepressants, miscellaneous unknown drug and selective serotonin reuptake inhibitors

(SSRIs). 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 2,314 (86.3%) of the 2,682 fatalities. These 2,314 first ranked pharmaceuticals included:

788 stimulants/street drugs (345 methamphetamine, 290 heroin, 90 cocaine, 25 amphetamine, 10 methylenedioxymethamphetamine (MDMA))

778 analgesics (215 fentanyl, 116 acetaminophen, 94 oxycodone, 58 morphine, 56 methadone, 42 acetaminophen/hydrocodone, 30 salicylate, 27 acetaminophen/oxycodone, 25 narcotic, other/unknown, 21 tramadol, 14 carfentanil, 13 acetaminophen/diphenhydramine, 10 hydrocodone, 10 hydromorphone)

254 cardiovascular drugs (80 amlodipine, 28 metoprolol, 21 diltiazem, 17 digoxin, 17 verapamil, 12 diltiazem [extended release], 12 propranolol, 9 calcium antagonist, 8 flecainide)

153 antidepressants (32 amitriptyline, 27 bupropion, 20 bupropion [extended release], 11 doxepin, 8 citalopram, 8 lithium, 8 venlafaxine, 7 nortriptyline)

97 sedative/hypnotic/antipsychotics (33 alprazolam, 15 quetiapine, 6 clonazepam, 6 zolpidem, 5 benzodiazepine, 5 diazepam)

The exposure was acute (A) in 783 (29.2%), acute or chronic (A/C) in 339 (12.6%), chronic (C) in 149 (5.56%), and unknown (U) in 1,411 (52.6%) of fatalities.

A total of 1,596 tissue concentrations for 1 or more related analytes were reported in 713 cases. Most of these (1,488) 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. These 1,488 analytes included: 231 acetaminophen, 162 ethanol, 68 fentanyl, 54 salicylate, 39 alprazolam, 37 benzoyllecgonine, 35

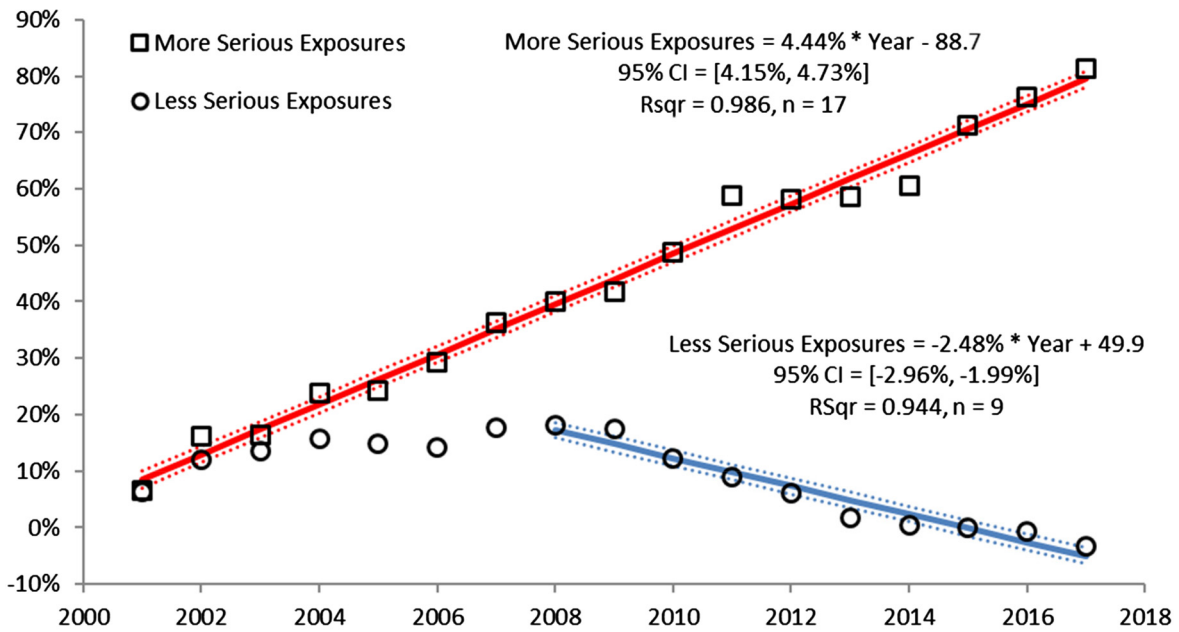


Figure 5. Change in encounters by outcome from Year 2000. The figure shows the percent change from baseline (year 2000) for human exposure cases divided among the 10 medical outcomes. The more serious exposures (major, moderate and death) increased. The less serious exposures (no effect, minor effect, 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.

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	404	12.38	14	2.34
Opioids	315	9.65	48	8.03
Miscellaneous Stimulants and Street Drugs	299	9.16	71	11.87
Miscellaneous Alcohols	202	6.19	15	2.51
Calcium Antagonist	170	5.21	31	5.18
Acetaminophen Combinations	142	4.35	28	4.68
Acetaminophen Alone	140	4.29	61	10.20
Beta Blockers	118	3.62	12	2.01
Miscellaneous Antidepressants	87	2.67	9	1.51
Miscellaneous Unknown Drug	87	2.67	26	4.35
Selective Serotonin Reuptake Inhibitors (SSRI)	84	2.57	1	0.17
Miscellaneous Antihistamines	82	2.51	14	2.34
Hypoglycemic, Single Agent	74	2.27	14	2.34
Tricyclic Antidepressants (TCA)	73	2.24	9	1.51
Miscellaneous Muscle Relaxants	72	2.21	11	1.84
Anticonvulsants: Gamma Aminobutyric Acid and Analogs	64	1.96	3	0.50
Miscellaneous Cardiovascular Drugs	60	1.84	17	2.84
Miscellaneous Fumes/Gases/Vapors	53	1.62	32	5.35
Acetylsalicylic Acid Alone	47	1.44	20	3.34
Miscellaneous Anticonvulsants	45	1.38	3	0.50
Nonsteroidal Antiinflammatory Drugs	42	1.29	6	1.00
Serotonin Norepinephrine Reuptake Inhibitors (SNRI)	40	1.23	2	0.33
Angiotensin Converting Enzyme Inhibitor	38	1.16	1	0.17
Cannabinoids and Analogs	37	1.13	2	0.33
Miscellaneous Chemicals	35	1.07	20	3.34

^aNumbers represent total exposures associated with 1,388 fatalities (with RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory); each fatality may have had exposure to more than one substance.

^bPercentages are based on the total number of substances reported in fatal exposures (N = 3,263).

^cPercentages are based on the total number of single substance fatal exposures (N = 598).

methamphetamine, 32 methadone, 31 morphine (free), 27 amphetamine, 26 carboxyhemoglobin, 25 oxycodone, 24 amlodipine, 21 7-aminoclonazepam, 20 morphine, 19 gabapentin, 19 ethylene glycol, 18 cocaine, 18 bupropion, 17 diphenhydramine, 17 methanol, 16 nortriptyline, 16 digoxin, and 16 clonazepam.

Route of exposure was: Ingestion only in 1,030 cases (38.4%), Inhalation/nasal in 118 cases (4.40%), and Parenteral in 97 cases (3.62%). Parenteral only cases increased by 22.8% from 2016. Most other exposures recorded a combination of routes or an unknown route.

The Intentional exposure reason was: Abuse in 1206 cases (45.0%), Suspected suicide in 829 cases (30.9%), Misuse

in 97 cases (3.62%), and Unknown in 89 cases (3.32%). Unintentional exposure reasons were: Environmental in 44 cases (1.64%), General in 30 cases (1.12%), Therapeutic error in 28 cases (1.04%), and Misuse in 27 cases (1.01%). Adverse drug reaction was the reason in 45 cases (1.68%).

Table 19A. Comparisons of death data (1985–2017)^a.

Year	Total fatalities		Suicides		Pediatric deaths ^b	
	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

^aHuman exposures with medical outcome of death or death, indirect regardless of RCF.

^bIncludes 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.

Pediatric fatalities – age ≤ 5 years

Although children younger than 6 years were involved in 45.2% of exposures, they comprised only 25 (0.779%) of the 3,208 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 12/956,871 (0.00125%). By comparison, 1,315/836,306 (0.157%) of all adult exposures involved a fatality. Of the 12 pediatric fatalities in which reason for exposure was documented, 9 (75.0%) were reported as unintentional, 1 (8.3%) as unknown, 1 (8.3%) as other – malicious, and 1 was coded as other – contamination/tampering (8.3%) (Table 8).

The 14 fatalities in children ≤ 5 years detailed in Appendix D (Table 21) (includes death, indirect reports and RCF 1-3) included 10 pharmaceuticals and 4 nonpharmaceuticals. The first ranked substances associated with these fatalities included: analgesics (4), fumes/gases/vapors (2), batteries (disc/button; 1), deodorizers (1), antihistamines (1), cardiovascular drugs (1), electrolytes and minerals (1), sedative/hypnotics/antipsychotics (1), stimulants and street drugs (1), and unknown drug (1).

Pediatric fatalities – ages 6–12 years

In the age range 6 to 12 years, 16 fatalities are listed in Appendix D (Table 21) (includes death, indirect reports and RCF 1-3) included: fumes/gases/vapors (7), pesticides (3), antidepressants (2), analgesics (1), anesthetics (1), cardiovascular drugs (1) and sedative/hypnotics/antipsychotics (1). For those in whom reason for exposure was recorded, there were 13 cases: 7 were unintentional – environmental, 3 were intentional – suspected suicide, 2 were unknown reason, and 1 was unintentional – therapeutic error (Table 8).

Adolescent fatalities – ages 13–19 years

In the age range 13 to 19 years, there were 46 reported fatalities with documented reason for exposure, an increase of 4

Table 19B. Comparisons of direct and indirect death data (2000–2017)^a.

Year	All deaths			Suicides				Pediatric deaths					
	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

^aHuman exposures with medical outcome of death or death, indirect regardless of RCF.

Table 20. Frequency of plant exposures (Top 25)^a.

	Botanical name or Category	AAPCC Generic Code Name	N
1	Cherry (Species unspecified)	Amygdalin and/or Cyanogenic Glycosides	2,006
2	Plants-general-unknown	Unknown Toxic Types or Unknown if Toxic	1,986
3	Unknown Botanical Name	Unknown Toxic Types or Unknown if Toxic	1,627
4	BOTANICAL TERMS	Unknown Toxic Types or Unknown if Toxic	1,338
5	<i>Phytolacca americana</i> (L.)	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	1,300
6	Plants-toxicodendrol	Skin Irritants (Excluding Oxalate Containing Plants)	1,131
7	<i>Spathiphyllum</i> spp.	Oxalates	862
8	Plants-pokeweed	Other Toxic Types	856
9	Plants-cardiac glycosides	Cardiac Glycosides (Excluding Drugs)	832
10	<i>Ilex</i> spp. (not otherwise specified)	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	745
11	Berry (not otherwise specified)	Unknown Toxic Types or Unknown if Toxic	572
12	<i>Malus</i> spp.	Amygdalin and/or Cyanogenic Glycosides	524
13	<i>Solanum nigrum</i>	Solanine	503
14	Plants-oxalates	Oxalates	472
15	<i>Caladium</i> spp.	Oxalates	461
16	<i>Euphorbia tirucalli</i> (L.)	Skin Irritants (Excluding Oxalate Containing Plants)	458
17	<i>Zantedeschia aethiopica</i>	Oxalates	444
18	<i>Philodendron</i> spp.	Oxalates	433
19	Unknown Botanical Name	Non-Toxic	417
20	<i>Solanum dulcamara</i>	Solanine	405
21	Mold, food related	Unknown Toxic Types or Unknown if Toxic	384
22	<i>Epipremnum areum</i>	Oxalates	381
23	<i>Solanum tuberosum</i>	Solanine	300
24	<i>Crassula argentea</i>	Unknown Toxic Types or Unknown if Toxic	276
25	<i>Taxus canadensis</i>	Other Toxic Types	265

^aNumber 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 = 46,782.

(9.52%) from 2016, and included 38 intentional, 3 unintentional, 3 unknown reason, 1 other, and 1 adverse reaction (Table 8). The 84 fatalities listed in Appendix D (Table 21) (includes death, indirect reports and RCF 1-3) included 72 pharmaceuticals and 12 nonpharmaceuticals. The first ranked pharmaceuticals associated with these fatalities included: analgesics (32), stimulants and street drugs (12), antidepressants (9), antihistamines (4), cardiovascular drugs (4), cold and cough preparations (2), hormones and hormone antagonists (2), sedative/hypnotics/antipsychotics (2), antimicrobials (1), dietary supplements/herbals/homeopathic (1), gastrointestinal preparations (1), narcotic antagonists (1) and unknown drug (1). The first ranked nonpharmaceutical associated with these fatalities included: fumes/gases/vapors (4), hydrocarbons (2), pesticides (2), alcohols (1), chemicals (1), plants (1), and tobacco/nicotine/e-cigarette products (1).

Pregnancy and fatalities

There were 2 deaths in pregnant women reported to NPDS in 2017. A total of 45 deaths of pregnant women have been reported between 2000 and 2017. The majority (37 of 45, 82.2%) 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, 30 PCs utilize NPDS as part of their surveillance programs. The CDC, FDA, 6 state health departments, 1 county health department and 1 state police department run surveillance definitions in NPDS. Since Surveillance Anomaly 1, generated at 2:00pm EDT on 17 September 2006, over

330,000 anomalies have been detected and reported. Close to 2,300 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.

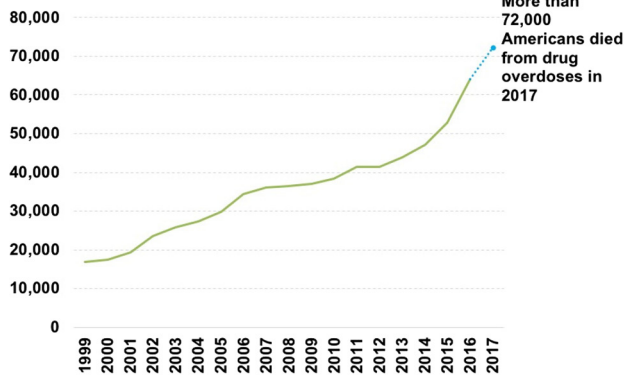
At the time of this report, 583 surveillance definitions run continuously, monitoring case and clinical effects volumes and a variety of case-based definitions from food poisoning to nerve agents. These definitions represent the surveillance work by many PCs, health departments, the AAPCC, the Health 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 [8]. 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 2017 do not reflect the full extent of PC efforts, which also include poison prevention activities and public and health care professional education programs.

Total U.S. Drug Deaths



Drugs Involved in U.S. Overdose Deaths, 1999 to 2017

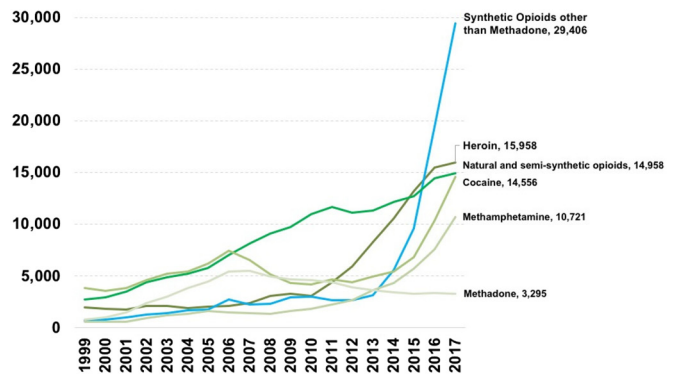


Figure 6. Deaths over time in the United States related to illicit use of drugs of abuse. Source: CDC WONDER [7].

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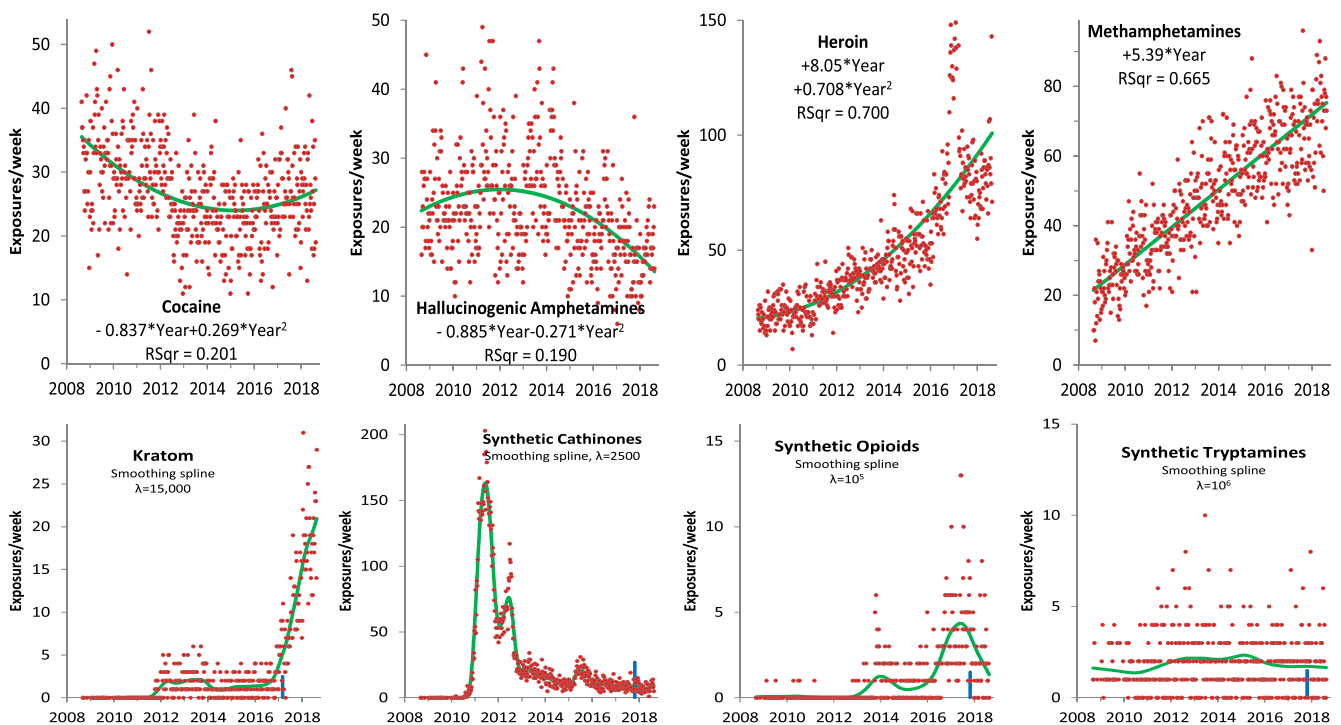


Figure 7. NPDS selected drugs of abuse over time.

Cocaine, hallucinogenic amphetamines and heroin were fit to second order (quadratic) regressions and methamphetamines with first order (linear) regression – all parameters had associated $p < 0.0001$. Kratom, synthetic cathinones, synthetic opioids, and synthetic tryptamines were fit to smoothing splines. The vertical blue mark indicates the date of the GC establishment for this substance.

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 2000–2017 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

≤ 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 all analgesic exposures, including opioids, and sedatives are increasing year over year. This trend is shown in [Table 17B](#) and [Figure 4](#). NPDS data mirrors CDC data that demonstrates similar findings [9]. Thus NPDS provides 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 cases 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 contacts.

Changes in 2017 encounters are shown in [Figures 1, 3, and 4](#), and include:

- Total encounters (all exposure and information contacts) decreased by 3.79%.
- All information contacts decreased 11.2%, Drug ID contacts decreased 30.2%, and human exposures decreased 2.03%.
- HCF information requests decreased 0.264% although managed exposure cases reported from an HCF increased 3.06%, consistent with the steady increase since 2000.
- Human exposures with less serious outcomes decreased 2.57% while those with more serious outcomes (moderate, major or death) increased 2.87% compared to an overall 4.44% yearly increase since 2000.
- The categories of substance exposures, resulting in more serious outcomes, most rapidly increasing was sedative/hypnotics/antipsychotics, followed by analgesics, antidepressants, and cardiovascular drugs.
- All 8 of the drugs of abuse examined under emerging trends (cocaine, hallucinogenic amphetamines, heroin, kratom, synthetic cathinones, synthetic opioids, and synthetic tryptamines) showed increases over for the last 52 weeks (ending 30-Jul-2018).

- The Historical GC search, a newly available NPDS tool, should facilitate the identification of new, potentially harmful products.

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, and the District of Columbia. Case 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.

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Appendix A: Acknowledgments

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Poison centers (PCs)

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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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The Lead and Peer review of the 2017 fatalities was carried out by the 47 individuals listed here including 6 who reviewed the pediatric cases [Peds]. The authors and the AAPCC wish to express our appreciation for their volunteerism, dedication, hard work and good will in completing this task in a limited time.

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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 (12/15/17, 21 cases): Utah Poison Control Center (Salt Lake City)
 Largest Number with Autopsy Reports (52 of 72 cases; 72%): Carolinas Poison Center (Charlotte)
 Highest Percentage with Autopsy Reports (79% of 39 cases): Banner Poison Control Center (Phoenix)
 Largest Number of Indirect cases (n = 1226; 96% of all Indirect cases): Banner Poison Control Center (Phoenix)
 Highest Overall Quality of Reports (5.38 out of possible 12 for 29 cases): Wisconsin Poison Center (Milwaukee)
 Greatest improvement in Overall Quality of Reports (1.69 increase from last year): West Virginia Poison Center (Charleston)
 Most Abstracts Published in the 2017 Annual report (5 of the 57 published narratives): Carolinas Poison Center (Charlotte)
 Most Helpful Regional Poison Center Staff (based on survey of AAPCC review team): Washington Poison Center (Seattle)
 Honorable mention: Wisconsin Poison Center (Milwaukee)
 Endurance Award (consistently great cases with the most autopsies and most published abstracts for the last 6 years): Carolinas Poison Center (Charlotte)

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).

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

Where:

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

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 2017. 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 133. Acute hydrofluoric acid ingestion: undoubtedly responsible

Scenario/Substances: A 53y/o developmentally delayed male was doing glass etching in a workshop when he swallowed ~3 oz of glass etching cream containing ammonium bifluoride and hydrofluoric acid. He vomited within 15 min and was transported to the ED.

Past Medical History: Developmental delay, deaf, mute, history of pica, seizures, hypothyroidism.

Physical Exam: In the ED he was alert but vomiting; BP 126/91, HR 86, RR 18, T 37°C, O₂ sat 94% (RA).

Laboratory/Diagnostic Findings: Na 146/K 5.2/Cl 112/CO₂ 17/BUN 12/ Cr 1.68/Glu 215, AG 217. ABG- pH 7.09. Mg 1.7, Ca 6.9, Ca (ionized) 2.1, troponin 2.67 (peak 89.5). ECHO: severely reduced RV systolic function; LV ejection fraction was 25-30%. ECG: new RBBB and prolonged QTc.

Clinical Course: Attempt to place an NG failed due to patient agitation. One h later he was sedated with haloperidol, lorazepam and diphenhydramine and an NGT was placed with clear aspirate obtained. He was then intubated for respiratory distress and became hypotensive. EKG: QRS widening with a new RBBB. He received Ca (4 g) and Mg (4 g), sodium bicarbonate and norepinephrine drips; BP 73/56, HR 111. Endoscopy was not performed because of concern for esophageal perforation and hemodynamic instability. Ceftriaxone and omeprazole were administered. CT chest: negative for perforation, airspace disease and multiple air fluid levels in the gut. Patient remained hypotensive at 60/40, HR 122. Ca <5 despite ~12g of Ca. He had a VF cardiac arrest and died, despite resuscitation efforts, 10 h after ED arrival.

Autopsy Findings: Cause of death: alkalinizing (barium-containing) toxicity; manner of death: accidental. Esophageal and gastric hemorrhage and perforations; barium staining of the peritoneum and mediastinum; microscopic evidence of myocardial infarction. Toxicologic report: barium in gastric contents and peripheral blood. [MSDS: product contained 1-2% hydrofluoric acid, 21-27% ammonium bifluoride and a small amount of barium sulfate. The PCC contacted the ME office and provided product information and that the death was likely due to hydrofluoric acid/ ammonium bifluoride toxicity; their report was not edited.]

Case 136. Acute methanol ingestion: undoubtedly responsible

Scenario/Substances: A 35 y/o male ingested 1 gallon of windshield deicer over the course of the day.

Past Medical History: Alcoholism.

Physical Exam: Unresponsive; SBP 170s, HR 120s, T 101 °F.

Laboratory/Diagnostic Findings: ABG- pH 7.1/pCO₂ 13/pO₂ 227. Na 140/K 4.9/Cl 100/CO₂ < 5/BUN 19/Cr 1.27/Glu 132/AG >35. AST 192, ALT 200, INR 1.0; WBC 4.8/Hgb 16.5. Serum osmolality >500, methanol: 620 mg/dL. Serum ethylene glycol, APAP, ethanol and salicylate not detected. UDS was negative.

Clinical Course: He was intubated in the ED, given metoprolol and started on fomepizole. HD was initiated within 4 h; repeat methanol levels were 57, 19 and then 11 mg/dL. CT head showed infarcted basal ganglia and diffuse cerebral edema. EEG showed suppressed brainwave activity. Diabetes insipidus with polyuria developed with hypotension requiring multiple vasopressors. Cerebral perfusion scan showed absent intracranial blood flow. Based on the prognosis, the family opted for institution of comfort measures and he died on Day 7.

Autopsy Findings: No autopsy results were provided.

Case 150. Acute Disc battery, ingestion: undoubtedly responsible

Scenario/Substances: A 2 y/o female ingested a button battery ~36 h prior.

Clinical Course: She presented at the ED following an episode of hematemesis at home. CxR: battery was in the esophagus. Endoscopic retrieval was unsuccessful, the child exsanguinated and died.

Autopsy Findings: No autopsy results were provided.

Case 151. Acute *Crotalinae* envenomation: undoubtedly responsible

Scenario/Substances: A 29 y/o male was bitten on the forearm by an unknown snake.

Physical Exam: 2 noticeable puncture wounds were visible on the forearm with edema to his axilla. He complained of abdominal pain.

Clinical Course: At Day 2 he developed rhabdomyolysis and hemoconcentration; INR 1.4, CK 30,000, WBC 50/Hgb 21/PLT 162. Swelling did not improve with the initial 6 vials of Fab antivenom, INR increased to 1.7. Pulses were only detectable on Doppler. Extremity was elevated, corticosteroids and another 6 vials of antivenom were given but the edema progressed into his torso and back. Urine output decreased. WBC 56/Hgb 22/Hct 65.1/PLT 15, CK 6,604, INR 2.3, PTT 38.9, lactate 3.48. CxR: pulmonary edema. The patient was intubated, 12 more vials of antivenom were given and CRRT was initiated. On Day 2: PT 13.3, PTT 43.5, fibrinogen 159, PLT 100, BUN 24, Cr 3.3; FFP was given. On Day 3: INR 2.1, PTT >200, PLT 92, ABG- pH 6.93/pCO₂ 23/HCO₃ 5. He continued to deteriorate and died on Day 3.

Autopsy Findings: No autopsy results were provided.

Case 152. Acute *Crotalinae* envenomation: undoubtedly responsible

Scenario/Substances: 31 y/o male was hiking when he was bitten by a rattlesnake on his left leg. He rapidly developed dyspnea with throat swelling and then became unresponsive. Bystander CPR was performed; EMS arrived ~30 min later. He had intermittent ROSC during ED transport.

Clinical Course: He arrived at the ED in cardiac arrest, was intubated and ACLS was continued. Ultrasound showed no cardiac activity and he was pronounced dead ~2 h after being envenomated.

Autopsy Findings: Two puncture wounds on the left lower leg with marked hemorrhage and edema. Diffuse petechiae and hemorrhage of epicardium and endocardium, visceral pleurae of the lungs, intercostal muscles and diffuse tissues. Cause of death: complications following rattlesnake envenomation.

Case 154. Acute fire ant bite/sting: contributory

Scenario/substance: A 53 y/o male was bitten by fire ants and collapsed soon after. He was given a dose of epinephrine via auto-injector but lost consciousness. EMS found the patient in PEA cardiac arrest; ~40 min resuscitation before ROSC.

Past Medical History: *Hymenoptera* (fire ant) hypersensitivity, last reaction 8 y prior.

Physical Exam: Unresponsive; bloody NGT fluids. Foot lesions consistent with ant bites. 91/77, HR 104, RR 24, O₂ sat 92%.

Laboratory/Diagnostic Findings: ABG- pH 7.04/pCO₂ 62/pO₂ 86/CO₂ 16/BE -13. Na 143/K 3.9/Cl 104/CO₂ 17/BUN 16/Cr 1.48/Glu 254, AG 22, AST 374 (12,700 peak), ALT 237 (5,600 peak), bilirubin 0.8 (peak 3.1). INR 1.9, CK (peak) 6,472, troponin (peak) 14.75. WBC 14.8 (peak 40.8)/Hgb 17.7/Hct 55/PLT 226. CT chest: bilateral aspiration; ECG: HR 117, QRS 84, QTc 477.

Clinical Course: In the ED he was intubated, cooled, placed on norepinephrine, vasopressin and epinephrine drips with fentanyl and midazolam for sedation. He had a second cardiac arrest after ICU arrival; antibiotics, bicarbonate, hydrocortisone and albumin were given. On Day 2, CRRT was started for acidosis and renal failure (Cr peaked at 4.46 on Day 6). He developed coagulopathy (fibrinogen <60, INR 2.5) and was given cryoprecipitate and vitamin K. MRI brain (Day 5) was consistent with severe hypoxic injury; he was unresponsive off sedation. Based on the prognosis, comfort measures were instituted and he died on Day 6.

Autopsy Findings: No autopsy results were provided.

Case 155. Acute calcium hydroxide dermal: undoubtedly responsible

Scenario/Substances: 59 y/o male sustained 50% TBSA chemical burn after falling into pit filled with fresh cement. He was extricated 2 h later; he was confused and combative. EMS decontaminated him prior to ED transfer.

Past Medical History: Alcoholism.

Physical Exam: HR 100, RR 18, T 36°C; alert but confused, GCS 14. Full thickness burns to back and all extremities.

Laboratory/Diagnostic Findings: WBC 7.4/Hgb 13.9/Hct 41.5%/PLT 117. CT head: unremarkable.

Clinical Course: On Day 2 he developed alcohol withdrawal and was treated with benzodiazepines and oral alcohol. Nutrition and burn care were initiated; skin grafts were performed. On Day 14 he developed tachydysrhythmias (ST, AF, SVT) and was treated with adenosine, metoprolol and amiodarone. On Day 29 he required intubation and norepinephrine for presumed sepsis. Based on the prognosis, comfort measures were instituted and he died on Day 40.

Autopsy Findings: Not performed.

Case 156. Acute silicone parenteral: undoubtedly responsible

Scenario/substance: A 19 y/o female injected silicone into her buttocks 3 d prior to hospital admission.

Past Medical History: Cocaine abuse, transgender on estrogen therapy.

Physical Exam: Palpable injection sites. BP 73/46, HR 132, RR 40s.

Laboratory/Diagnostic Findings: Na 146/K 4.2/Cl 104/CO₂ 15/BUN 14/Cr 1.7, AST 3,317, ALT 2,741. ECG: HR 136, QRS 79, QTc 440.

Clinical Course: Patient was admitted for possible alcohol withdrawal but then had 'bleeding' and two cardiac arrests. She was intubated and developed right ventricular strain, ARDS, diffuse alveolar hemorrhage and multiple seizures. She was treated with levetiracetam and albumin and started on norepinephrine, vasopressin and sodium bicarbonate drips. She remained hypotensive; aminocaproic acid was given for pulmonary hemorrhage. Based on her prognosis, comfort measures were initiated, and she died on Day 2.

Autopsy Findings: No autopsy results were provided.

Case 158. Acute parenteral cyanide exposure: undoubtedly responsible

Scenario/Substances: A 35 y/o female was reportedly injected into her gluteal area by her estranged husband. She was flaccid and unresponsive when EMS arrived.

Physical Exam: Upon ED arrival she was unresponsive, BP 130/83, HR 102.

Laboratory/Diagnostic Findings: ABG- pH 6.95, lactate 7.7.

Clinical Course: She was immediately intubated, repeat VS: SBP 72, HR 40s. Norepinephrine, hydroxocobalamin and sodium thiosulfate were given. Repeat ABG- pH 7.37/PCO₂ 25/PO₂ 357/HCO₃ 15.5, lactate 3.3. Vasopressin, sodium bicarbonate drips and CRRT were started. On Day 2 she remained unresponsive with no corneal reflexes. She was declared brain dead and died.

Autopsy Findings: Examination revealed dermal puncture in the gluteal area, cerebral ischemia with edema and uncal herniation. Blood cyanide was 3.4 mg/L.

Case 166. Acute tetramethyl ammonium hydroxide inhalation/nasal, ocular: undoubtedly responsible

Scenario/Substances: A 39 y/o male contractor was working on a job site when a pipe containing tetramethyl ammonium hydroxide burst and sprayed on him for 20 sec. He showered immediately but then collapsed with cardiac arrest; he was noted to be apneic in PEA. On site CPR was performed for 5 min. He was intubated and received epinephrine by EMS, with ROSC, and was then transported to the ED.

Past Medical History: Healthy, no medical problems.

Physical Exam: HR 90, SBP 110, O₂ sats 90%. Pt was initially combative and given midazolam. Skin was slightly red with petechiae and superficial erythema (partial thickness burns) but no blisters. Pupils were minimally reactive without corneal injury.

Laboratory Data: Electrolytes, Cr, INR and ABG 'normal.' Lactate 1.2, transaminases in the 100s. EKG: inferior ischemia. CxR: "fluffy" with pulmonary congestion.

Clinical Course: The patient was transferred to a tertiary care center and started on cooling protocol for post cardiac arrest. HR varied from 46 to 62, BP 98/60 then 124/88. 24 h later he was rewarmed, and sedation was weaned. He developed jerking motions which raised concern about anoxic

brain injury. Patient developed seizures without neurological improvement on Day 12, placed on comfort care, and died on Day 13.

Autopsy Findings: Cause of death: anoxic encephalopathy, hydroxide exposure, burn exposure 16% TBSA. Manner of death: accident; tetramethyl ammonium hydroxide exposure.

Case 174. Acute ethyl methacrylate ingestion: undoubtedly responsible

Scenario/Substances: A 52 y/o male, owner of a nail salon, was found unresponsive in his yard with an empty liter bottle of ethyl methacrylate. He was intubated by EMS prior to transport to an ED. Of note, he was recently arrested for a felony charge.

Physical Exam: BP 73/49, HR 84, RR 14, O₂sats 86% (100% FiO₂). Pupils were fixed and dilated, he had no brainstem reflexes.

Laboratory/Diagnostic Findings: ABG- pH 6.74/pCO₂ 51/pO₂ 71/HCO₃ 6/BE -35. Lactate 4.7, Ca 4.3, Na 141/K 5.7/Cl 120/CO₂ 9/BUN 9/Cr 1.2/Glu 197/AG 12. UDS was negative. WBC 22.4; CxR: bilateral infiltrates.

Clinical Course: He was treated with IV boluses of lactated ringers and drips of norepinephrine, vasopressin and sodium acetate, but died within 4 h of presentation. Prior to cardiac arrest his BP 30/14, HR 40 and O₂ sat <70% on 100% FiO₂.

Autopsy Findings: No autopsy results were provided.

Case 190. Acute hydrochloric acid ingestion: undoubtedly responsible

Scenario/Substances: A 68 y/o female intentionally ingested 16 oz of hydrochloric acid-containing toilet bowl cleaner. She arrived in the ED 2 h later with hematemesis and respiratory distress.

Past Medical History: Anxiety, bipolar disorder, chronic pain.

Physical Exam: In the ED: BP 185/86, HR 71, T 36°C, RR 30 (NRB). She was alert and oriented with bloody secretions in oropharynx. There were coarse wet rales throughout all lung fields; abdomen was diffusely tender.

Laboratory/Diagnostic Findings: ABG- pH 6.92/pO₂ 184/pCO₂ 43/HCO₃ 8. Na 143/K 5.1/Cl 118/CO₂ 15/BUN 14/Cr 0.95/Glu 221, AG 22. AST 173, ALT 57, bilirubin 1.6, INR 1.5, WBC 26/Hgb 16.2/Hct 50.7/PLT 186. Serum APAP, ethanol and salicylate not detected. CxR: right lung opacification. ECG: sinus rhythm at 82.

Clinical Course: She was intubated in the ED and had dark-brown aspirate from the ETT and NGT. Antibiotics were given. Upper endoscopy demonstrated ulceration in hypopharynx, severe esophagitis with necrosis, diffuse gastric necrosis. She received IVFs, vasopressors and CRRT but died 12 h after admission.

Autopsy Findings: Cause of death: complications from cleaning chemical ingestion; manner of death: suicide. Findings included hemorrhage and necrosis of esophagus, stomach and small intestine. Toxicology screens were negative for drugs of abuse.

Case 218. Acute deodorizer ingestion: probably responsible

Scenario/Substances: A 4 w/o 4 kg male was fed a bottle containing formula accidentally mixed with an industrial deodorizer (containing lemon verbena). He reportedly only took 1 drink and then started crying. MSDS lists nonyl phenol and propylene glycol ether.

Physical Exam: In the ED he was lethargic, HR 70s, O₂ sat 70% (RA).

Laboratory/Diagnostic Findings: ABG- pH <6.8/pCO₂ 92/pO₂ 31/HCO₃ 2. Na 153/K 5.4/Cl 124/BUN 7/Cr 0.26/Glu 45, AST 137, ALT 45, bilirubin 0.2. WBC 12.9/Hgb 8.5/Hct 30/PLT 118. CxR: atelectasis and lung opacities.

Clinical Course: Within 1 h he developed lethargy, hypoxia and periods of apnea. He was intubated and received CPR, epinephrine and atropine with initial improvement. He was reintubated at the tertiary care center and placed on an epinephrine drip but had cardiac arrest and died.

Autopsy Findings: No autopsy results were provided.

Case 220. Acute carbon monoxide inhalation/nasal: undoubtedly responsible

Scenario/Substances: A 4 y/o male was found in cardiac arrest after being extricated from a house fire. He had ROSC after 40 min of ACLS on scene but arrested again prior to ED arrival.

Physical Exam: Unresponsive in cardiac arrest. Soot in mouth and nasal passages, coarse lung sounds. Cyanosis of hands and feet; 53%

TBSA (35% partial, 18% full thickness burns). After ROSC: BP 75/40, HR 120, RR 30.

Laboratory/Diagnostic Findings: Glu 262, lactate 22.8, CO₂ 10, ALT 885, AST 1285, lipase 244, CK 16,091. VBg-pH <6.8, COHb 26%. CxR: extensive lung opacities, left > right. EKG: NSR with septal ST depression. CT head: diffuse cerebral and cerebellar edema.

Clinical Course: ROSC was obtained after 20 min of CPR, intubation, epinephrine and sodium bicarbonate. Sodium thiosulfate was given. On burn center arrival (on epinephrine and norepinephrine) BP 103/91, HR 8, O₂ sat 86%. Escharotomy was performed for pulse less left leg with circumferential burn. His BP and oxygenation decreased, acidosis increased. Based on the prognosis, comfort measures were instituted and he died 7 h after arrival.

Autopsy Findings: 50% TBSA burns, cerebral edema, bilateral pulmonary consolidation, airway inhalation injuries. Cause of death: medical complications of thermal and inhalation injuries. COHb 24%.

Case 230. Acute carbon monoxide inhalation: undoubtedly responsible

Scenario/Substances: A 16 y/o male was found in cardiac arrest inside a mobile home that had a generator running for heat. CPR was initiated with ROSC and he was transported to the ED. Two other adults were also found unconscious but survived.

Physical Exam: His pupils fixed and dilated; GCS 3.

Laboratory/Diagnostic Findings: Initial COHb 32.6% (then 7.5%), O₂ sat 64.8%. Na 146/K 3.4/Cl 103/CO₂ 14.8/BUN 12/Cr 1.8/Glu 414, AG 28, Ca 9.7, bilirubin 0.4, ALP 105, AST 235, ALT 228, lactate 25.2, troponin 86 (then 30.6), CK 2,700. WBC 17.8/Hgb 15.4/Hct 47.1/PLT 233, PTT 37.1, INR 1.3. Serum APAP, ethanol and salicylate not detected. ABG- (after 6 amps of sodium bicarbonate) pH 7.25/pCO₂ 60.2/HCO₃ 26.2.

Clinical Course: He was intubated and placed on 100% FIO₂, started on norepinephrine, epinephrine (and then amiodarone) drips for hypotension and a hypothermia protocol. He was transferred to a tertiary care center for HBO therapy, but the chamber was malfunctioning. He remained unresponsive with fixed and dilated pupils on Day 1. HR 106, BP 104/67 on vasopressors that were slowly weaned. On Day 2 his pupils were 8mm fixed; VS with re-warming: HR 83, BP 106/39, RR 29 (breathing slightly over the ventilator rate), O₂ sat 88%. He died on the evening of Day 2.

Autopsy Findings: No autopsy results were provided.

Case 268. Acute sulfur dioxide inhalation and ocular exposure: undoubtedly responsible

Scenario/Substances: 64 y/o male became trapped in a smelting area with high concentrations of sulfur dioxide. He became disoriented, took off his protective mask and was exposed for ~10 min.

Physical Exam: In the ED he complained on bilateral eye pain. BP 125/53, HR 82, RR 20, T 36.3°C, O₂ sat 89% (RA).

Laboratory/Diagnostic Findings: ABG- pH 7.26/pCO₂ 47. Na 145/K 3.9/Cl 112/CO₂ 22. CxR: mild infiltrate.

Clinical Course: In the ED his eyes were irrigated with 2 L NSS; conjunctival pH after irrigation was 7.0. Eye exam showed mild corneal haziness with diffuse fluorescein uptake. He became progressively short of breath and deteriorated despite albuterol. He was intubated and transported to a burn unit. Bronchoscopy showed friable, edematous and erythematous bronchopulmonary segments. CxR: diffuse patchy consolidation in all lung fields. BP 95/55, HR 120, T 37.4°C, BUN 32, Cr 3.47, lactate 4.0. He was started on veno-venous ECMO and CRRT, received sodium bicarbonate and an esmolol drip. Bedside ECHO showed normal ejection fraction. On Day 2 he developed severe acidosis, hematemesis, and abdominal distension with concern for ischemic bowel; Cr 4.26, BUN 38, lactate 12.7. He developed hypoxia and hypotension; repeat ECHO showed cardiogenic shock. Dobutamine was added. INR 2.1, PTT >150. Based on the prognosis, the family opted for institution of comfort measures and he died on Day 3.

Autopsy Findings: Pathologic findings: diffuse alveolar damages, corneal burns bilateral, peritoneal effusion, occlusive CAD 60 - 90% RCA/LAD/L circumflex. Toxicology (premortem blood): amphetamine 0.146 mcg/mL, ketamine 0.144 mcg/mL (ketamine presumed from hospital anesthetic).

Case 285. Acute arsenic and ethanol ingestion: probably responsible

Scenario/Substance: A 36 y/o male was brought to the ED after drinking alcohol and an unlabeled bottle with "the appearance of an antique bottle of Clorox." EMS found him confused, vomiting and incontinent of urine and feces. His blood glucose was 60 and he received D50.

Past Medical History: Drug abuse, recent suicidal ideation.

Physical Exam: BP 56/27, HR 126, RR 40 O₂ sats 72% (on 94% NRB), T 35.1 °C rectal. He was lethargic, pupils 3 mm and sluggishly reactive bilaterally.

Laboratory/Diagnostic Findings: ABG- pH 7.21/pCO₂ 24/pO₂ 185/HCO₃ 9/BE -17, Na 140/K 2.6/Cl 106/CO₂ 13/BUN 26/Cr 1.75/Glu 255/AG 22. Lactate 8.9, Ca 9.4. Serum ethanol 10 mg/dL. Serum salicylate and APAP not detected. Serum osmolality 312, CK 246, ammonia 190, troponin 0.26, Hgb 14.9, PLT 130. EKG: ST at 125, QRS 109, QTc 485, inferolateral ST depression.

Clinical Course: On arrival to the ED he was drowsy but arousable, complained of feeling cold. He was transiently responsive to IVFs and oxygen but remained tachypneic and tachycardic. He was started on norepinephrine and received both bolus doses and drip of sodium bicarbonate. His mental status declined. During intubation, he vomited and went into VF requiring defibrillation and ACLS. Electrolytes (Mg, K Ca) were replaced but he died ~3.5 h after presentation.

Autopsy Findings: Not performed. Of note: after death the antique bottle was obtained. Testing of a chalky gray residue, via water distillation and mass spectrometry, revealed 6,755 ppm arsenic.

Case 288. Acute arsenic, benzene and toluene ingestion: undoubtedly responsible.

Scenario/Substances: A 59 y/o male presented to the ED 19 h after ingesting 4 oz of an arsenic solution in either benzene or toluene. He was reportedly working with chemicals (which he had access to via employment) in his basement and confused the liquid with his orange juice.

Past Medical History: No reported depression but admitted to being stressed from caring for his father-in-law.

Physical Exam: Anxious with profuse vomiting, flank pain and dizziness. BP 90/73, HR 111, RR 24, O₂ sat 94% (RA), T 36 °C.

Laboratory/Diagnostic Findings: ABG- pH 7.24/pCO₂ 35/pO₂ 85/HCO₃ 14.9/BE -11.04, Na 134/K 3.8/Cl 93/BUN 44/Cr 3.6/Glu 236, AG 21. AST 52, ALT 43, bilirubin 0.6, INR 0.9, WBC 17.7/Hgb 16.8/Hct 48.3/PLT 321, troponin 0.465. Serum APAP 2, salicylate 1.7. UDS was positive for opiates. ECG: HR 100, QRS 84, QT/QTc 400/516. CxR: unremarkable. Specimens sent on Day 1 showed a 24 h urine arsenic of 19,418 ng/mL and a serum arsenic of 160 ng/mL.

Clinical Course: He presented with muscle cramps and emesis, he vomited 1.5 L and had no urine output. On Day 2 he developed 1st degree heart block. DMSA was initiated at 500 mg for arsenic poisoning, but the patient was switched to BAL on Day 3 as his condition continued to deteriorate. NAC was added when AST and ALT increased (378 and 201, respectively). On Day 3 he had several episodes of bloody diarrhea that tested positive for *C. difficile*. The patient developed sepsis with multiple organ dysfunction. His lactate was 5.9 (increasing to 17), troponin 1.22, AST 854, ALT 408. He was given IV metronidazole and vancomycin for suspected abdominal infection. He underwent an emergent open colectomy and acute blood loss post-surgery required treatment with packed RBCs. He developed renal failure, sepsis, GI bleeding and coagulopathy (INR 4.4). He received phenylephrine, norepinephrine, epinephrine and vasopressin. On Day 5 he developed asystole, with ROSC after 1 h of CPR. Based on the prognosis, the family opted for comfort measures and he died on Day 5.

Autopsy Findings: No autopsy results were provided.

Case 311. Acute fluorinated hydrocarbon inhalation: undoubtedly responsible

Scenario/Substances: A 36 y/o female was in a car when there was an explosion. Police found 8 cans of (fluorinated hydrocarbon-containing) keyboard duster, 1 of which exploded, at the scene.

Past Medical History: Illicit drug abuse including huffing.

Physical Exam: Presented with respiratory difficulty and 30% TBSA burns, including full thickness burns to face. SBP 110, HR 130s.

Laboratory/Diagnostic Findings: Arterial pH 7.1. ECG: ST with depressions in inferior leads, QTc 525.

Clinical Course: Pt was intubated in the ED and transferred to a burn unit. She had VF arrest during debridement; ACLS was initiated, including defibrillation, with intermittent ROSC. She received epinephrine, amiodarone, esmolol and overdrive pacing. Her QTc remained prolonged (506 ms). She died shortly after burn unit arrival.

Autopsy Findings: Postmortem blood toxicology: 1,1-difluoroethane, 35 mcg/ml; hydromorphone free 4.3 ng/ml; COHb 2%. No evidence of thermal injury or acute inflammation to upper and lower airway. Cause of death: complications of inhalant toxicity (cardiac arrhythmia) due to "huffing." Manner of death: accidental.

Case 323. Acute hydrocarbon, amphetamine, and methylenedioxy-methamphetamine (MDMA) ingestion: undoubtedly responsible

Scenario/Substances: A 27 y/o male was found unconscious next to a truck with a hose inside the fuel tank (apparently siphoning fuel into a container). There was fuel on and around the patient. He was transported to the ED with CNS and respiratory depression.

Physical Exam: On arrival in ED: BP 45/33, HR 124, RR 20, O₂ Sat 85% (RA), T 37 °C. Pupils 3 mm and reactive, gasping respirations, GCS 7, superficial burns to abdomen and hip.

Laboratory/Diagnostic Findings: Na 143/K 3.9/Cl 108/CO₂ 27/BUN 13/Cr 1.4/Glu 185. ABG- pH 7.17/pCO₂ 72.4/pO₂ 62/BE -4.6, COHb 0.3%. AST 25, ALT 27, WBC 12.9/Hgb 14.9/Hct 43.8/PLT 341. Serum APAP, ethanol and salicylate not detected. UDS was positive for amphetamines, MDMA and THC. ECG: unremarkable. CxR: bilateral opacities. CT head: unremarkable.

Clinical Course: On arrival in the ED he was intubated and admitted to the ICU. He developed hypotension, acidosis and hypoxia requiring multiple vasopressors, then became difficult to oxygenate (PEEP 24, FIO₂ 1.0) and was paralyzed. His condition deteriorated and he developed renal failure and shock liver. He was started on CRRT. Despite these interventions, he became more hypoxic, went into cardiac arrest and died on Day 2.

Autopsy Findings: Postmortem lungs showed evidence of pneumonitis with red-brown parenchyma and copious amounts of blood tinged fluid. Antemortem blood testing: d-methamphetamine 0.30 mg/L and d-amphetamine 0.03 mg/L. Tolmetin was detected. Cause of death: chemical pneumonitis due to inhalation of gasoline

Case 325. Acute-on-chronic botulism parenteral: contributory

Scenario/Substances: A 52 y/o male developed wound botulism after skin-popping. His initial symptoms included dysphagia, double vision and generalized weakness.

Past Medical History: Drug abuse.

Physical Exam: Generalized weakness; scab on chest; nodules under skin.

Clinical Course: The patient was intubated and admitted to the ICU. He received botulism antitoxin, propofol, fentanyl, benzodiazepines, antibiotics, n-acetylcysteine tablets and corticosteroids. On Day 12, he became agitated, extubated himself and was put on BiPAP. On Day 13, the patient died from respiratory arrest.

Autopsy Findings: No autopsy results were provided.

Case 333. Acute-on-chronic aluminum phosphide exposure: undoubtedly responsible

Scenario/Substances: [See case 10] A 9 y/o male involved in a mass casualty incident after her father placed large quantity of aluminum phosphide tablets under their home as a pesticide. Most household members had developed adverse GI effects and had been scene previously at a local hospital (history of chemical exposure was not provided) and the family members were diagnosed with gastroenteritis. That night the father attempted to get rid of the tablets by dissolving them with water from a garden hose.

Physical Exam: He presented to the ED awake but lethargic, initial VS: BP 112/80, HR 90.

Laboratory/Diagnostic Findings: ABG- pH of 6.8/pCO₂ 62/pO₂ 25/HCO₃ 10/BE -24. CO₂ 8, Mg 3.5, Glu 405, BUN 30, Cr. 1.64, CPK 48, AST 92, ALT

130, AG 36, troponin 0.14, BNP 196. CxR: (1 h after PICU admission) air bronchograms and densities in both lungs.

Clinical Course: In the ED he patient quickly became obtunded and hypotensive (BP 72/60). He was intubated but developed atrial flutter and lost pulses. He received CPR, IVFs and sodium bicarbonate with ROSC. In the PICU, he developed frothy pulmonary secretions and required increased ventilatory support. He developed acidosis (pH <6.5), hypercarbia (pCO₂ > 130), hypoxemia (pO₂ 21) and shock. Despite aggressive resuscitation efforts (IVFs, multiple doses of epinephrine, sodium bicarbonate, Ca, vasopressors and CPR) he died 2h after PICU admission.

Autopsy Findings: Pulmonary edema with pleural effusions. Cause of death: accidental phosphine gas poisoning.

Case 335. Acute-on-chronic aluminum phosphide inhalation: undoubtedly responsible

Scenario/Substances: A17 y/o female was involved in a mass casualty incident after her father placed large quantity of aluminum phosphide tablets under their home as a pesticide. Most household members developed adverse GI effects and had been seen previously at the ED (history of chemical exposure was not provided) and the family members were diagnosed with gastroenteritis. That night the father attempted to get rid of the tablets by dissolving them with water from a garden hose. Early the next morning, an older sibling awoke and found some family members to be quite ill. EMS was called and found 2 children in cardiac arrest. One was declared dead at the scene; the second failed to respond to ACLS interventions and was pronounced in the ED. A third sibling died 2 h after PICU arrival.

Physical Exam: In the ED she was lethargic with nausea, abdominal pain and dyspnea. BP 77/55, HR 107, RR 16, T 36°C, O₂ sat 100% (on oxygen).

Laboratory/Diagnostic Findings: K 3.1, CO₂ 14, AG 25, Mg 2.0, PO₄ 7.5, BUN 20, Cr 1.33, bilirubin 1.4, WBC 3.1, BNPT 161, troponin 0.05, ABG- pH 7.22/CO₂ 25/O₂ 49, COHb 0.8%, MetHgb 0.7%. Subsequent ABG- pH 7.0/CO₂ 29.8/O₂ 83 (intubated on 100% FiO₂).

Clinical Course: Ondansetron and IVFs were given, then norepinephrine, phenylephrine and dopamine for hypotension. She was intubated and received potassium, sodium bicarbonate and Mg. CxR: pulmonary edema. EKG: ST at 108, mild ST depression in inferior lateral leads. She went into cardiac arrest and died 3.5 h after arrival.

Autopsy Findings: Gastric mucosal hemorrhage and superficial ulceration, focal cerebral subarachnoid hemorrhages, pericardial, pleural and peritoneal effusions.

Case 345. Acute sulfuryl fluoride inhalation: undoubtedly responsible

Scenario/Substances: A 36 y/o male was found altered inside a residential structure which had been tented and fumigated with sulfuryl fluoride. Estimated time of exposure was 1-2 h.

Past Medical History: Polysubstance abuse.

Physical Exam: In the ED, he was alert and conversant; BP 128/9, HR 115-120, RR 29, T 36°C.

Laboratory/Diagnostic Findings: Cr 1.24, BUN 13. Ca 4.0, WBC 19.3, Hgb and Hct 'normal.' UDS was positive for methamphetamine.

Clinical Course: He gradually developed shortness of breath, was diagnosed with pulmonary edema and treated with BiPAP; he also received calcium. On Day 3, he was intubated after developing pneumonia and ARDS; liver function tests increased. He developed hypotension requiring vasopressors and died on Day 8.

Autopsy Findings: Cause of death: complications of ARDS secondary to sulfuryl fluoride fumigant exposure; manner of death: accidental.

Case 347. Acute dinitrophenol ingestion: undoubtedly responsible

Scenario/Substances: 42 y/o male took ~30 dinitrophenol (200 mg) tablets. He was found unresponsive by EMS.

Physical Exam: In the ED ~3 h after ingestion he was disoriented, anxious, diaphoretic, and became rigid. Initial BP 120/58, HR 117, RR 32, O₂ sat 98% (2 L/min O₂), T 36.8°C.

Laboratory/Diagnostic Findings: Initial blood pH 6.7, K 5, CK 600s.

Clinical Course: In the ED he was intubated, developed rigor and hyperthermia (T 38°C), then went into asystole. He received epinephrine,

sodium bicarbonate and Ca. Bedside echo showed no cardiac activity; he died 2 h after presentation.

Autopsy Findings: Blood 2, 4 dinitrophenol 91mg/L. Death classified as suicide.

Case 356. Acute paraquat ingestion: undoubtedly responsible

Scenario/Substances: A71 y/o male brought paraquat home from work in a drink bottle to spray on his flower. He left the paraquat in his refrigerator and accidentally drank it, vomited and immediately presented to the ED.

Laboratory/Diagnostic Findings: In the ICU: Cr 1.7, BUN 11, CO₂ 22. CxR was unremarkable. Repeat labs on Day 2: AST increased from 30 to 175, Cr 3.5, lactate 3.1, CO₂ 19. Solution was confirmed as being 30% paraquat.

Clinical Course: In the ED he was diaphoretic with blue/green emesis. He refused activated charcoal or NG tube placement. He was transferred to a tertiary care HCF; cyclophosphamide, methylprednisolone and IV NAC were started. On Day 2 he was alert and oriented; BP 123/62, HR 93, RR 21, O₂ sat >92%. CRRT was started for worsening renal function but complicated by clotting issues. He complained of odynophagia, and became agitated, uncooperative and hypoxic (O₂ sat 85%) He was intubated on Day 3 and started on vasopressin, norepinephrine and phenylephrine drips. Based on the prognosis, the family opted for comfort measures and he died on Day 5.

Autopsy Findings: Not performed.

Case 360. Acute Curcuma domestica parenteral: undoubtedly responsible

Scenario/Substances: A 30 y/o female received an infusion of turmeric in her naturopathic doctor's office. Within minutes she was unresponsive. The infusion was stopped, CPR was initiated and epinephrine IM administered while awaiting EMS.

Past Medical History: Eczema, hypothyroidism, obesity, pre-diabetes, and food allergies to soy protein, lactose and gluten.

Physical Exam: In the ED: BP 119/83, HR 58, O₂ sat 100% (intubated), T 35°C.

Laboratory/Diagnostic Findings: BMP 'normal', Phos 1.8, Mg 1.8.

Clinical Course: In the ED she was intubated with ROSC and placed her on a hypothermia protocol. CT head: edema. In the ICU she exhibited decerebrate posturing. Based on the prognosis, comfort measures were instituted and she died on Day 5.

Autopsy Findings: Toxicology (antemortem blood): diphenhydramine 0.22 mg/L, presumptive positive for cannabinoids. Cause of death: anoxic encephalopathy due to prolonged cardiopulmonary arrest due to adverse reaction to tumeric solution. Manner of death: accidental. No turmeric testing was performed on her blood or urine.

Case 361. Acute plant (cardiac glycoside) ingestion: undoubtedly responsible

Scenario/Substances: A 33 y/o female ingested an herbal supplement ("pong-pong" a nut from the *Cerbera odollam* tree) purchased on the internet for weight loss. She developed AMS and vomiting, and was transported to the ED.

Past Medical History: Depression, eating disorder, no reported suicidal ideation.

Physical Exam: In the ED she was diaphoretic and pale with continued nausea and vomiting. She soon became agitated and required restraints. SBP ~90, HR 30-40.

Laboratory/Diagnostic Findings: K 8.9, ECG: wide complexes with no p waves. Serum digoxin was 3.1 ng/mL.

Clinical Course: She was resuscitated with IVFs and vasopressors, was intubated and receive 10 vials of digoxin Fab fragments. Despite these efforts she died 3 h after presentation.

Autopsy Findings: Cause of death: "cardiac glycoside toxicity (cerberin and neriifolin); manner of death: accidental. Post mortem toxicology screening was positive for neriifolin and cerberin (2 cardiac glycosides) but negative for drugs of abuse. "Plants which contain these glycosides include *Cerbera odollam* and *Cerbera manghas*." Liver tissue extract showed 3 peaks on LC/MS suggestive of cardiac glycosides; neriifolin and cerberin were confirmed but no quantification data were reported.

Case 364. Acute-on-chronic nicotine inhalation/nasal: undoubtedly responsible

Scenario/Substances: A 19 y/o male was vaping at a mall using a 0.3% nicotine solution when he lost consciousness. EMS found patient in VF arrest. He received ACLS with ROSC after a 40-min downtime.

Physical Exam: In the ED he was intubated, cyanotic with pupils that were 6mm and sluggish; HR 160, T 38°C.

Laboratory/Diagnostic Findings: Na 143/K 3.7/Cl 100/CO₂ 19/BUN 15/ Cr 1.4/Glu 274, Mg 2.4, AST 245, ALT 348. ABG- pH 6.93/pCO₂ 69/pO₂ 98. Lactate 8.9, WBC 5.5/Hct47.9/PLT 223. Serum APAP, ethanol and salicylate not detected. UDS was negative. CxR: right mainstem intubation, complete opacification of left lung, areas of patchy infiltrates. ECG: ST at 124, right axis deviation, possible anterolateral infarct, QRS 96, QTc 459. CT head: anoxic injury. CT chest: ground glass consolidations and patchy infiltrates bilaterally. ECHO: moderate hypokinesis of LV.

Clinical Course: Patient was resuscitated and started on pressors and cooling protocol. He rapidly developed evidence of pulmonary edema with difficulty oxygenating; a chest tube was placed. He was resuscitated after a PEA arrest. Metoprolol was given for persistent tachycardia in the 160s. Nitric oxide inhalation was started and he was transferred for ECMO. On arrival at the tertiary care center a bronchoscopy showed inflamed lung with bloody irritation of the mainstem bronchi and sloughed mucosa. He was unresponsive off sedation. On Day 3, CT head: cerebral edema with loss of grey-white matter distinction. On Day 5, he was declared brain dead, died and underwent organ donation.

Autopsy Findings: Cause of death: sudden cardiac death while vaping nicotine, acute aspiration pneumonia, pulmonary thrombosis with infarction, splenic infarction; manner of death: accidental. The vaping liquid was analyzed and found to have nicotine and carrier oils. MSDS stated that ingredients were nicotine 0.3%, glycerin and propylene glycol. Excipients for scent and taste were not listed. Because of public health concerns, state public health agency and police were notified.

Case 365. Acute nicotine parenteral: undoubtedly responsible

Scenario/Substances: 20 y/o female was found by EMS in cardiac arrest after reportedly injecting a liquid nicotine product 50 min prior. She was intubated and received CPR, naloxone (no response) and IVFs prior to ED arrival.

Past Medical History: Asthma, thyroid disease, depression.

Physical Exam: Unresponsive; incontinent of stool. Pupils fixed and dilated. SBP 112, HR 190.

Laboratory/Diagnostic Findings: ABG- pH 7.09/pCO₂ 38/pO₂ 114/HCO₃ 11.2. Na 142/K 3.7/Cl 104/CO₂ 12/BUN 14/Cr 1.6/Glu 129. Mg 2.2, Phos 4.3, AST 140, ALT 102, bilirubin 1.0, INR 1.2, WBC 19/Hgb12.7/Hct 39.2/PLT 400. Serum APAP, ethanol and salicylate not detected. UDS was positive for amphetamine metabolites. Lactate 13.2, CK 200, troponin <0.015. CT brain: unremarkable. Day 3 blood: nicotine 1,000 ng/mL, cotinine 510 ng/mL.

Clinical Course: The patient's HR decreased to 109 after more IVFs, she remained unresponsive with posturing and myoclonic jerks. She began cooling protocol. On Day 2 she remained unresponsive with mydriasis and increased muscle tone. Off sedation her pupils were 2mm and unreactive, she received antibiotics for presumed pneumonia. On Day 6 she received benzodiazepines, valproate, levetiracetam and lacosamide for repeated seizures. On Day 8, MRI showed diffuse hypoxia brain injury. Based on the prognosis, the family opted for of comfort measures and she died on Day 20.

Autopsy Findings: No autopsy results were provided.

Case 368. Acute methadone, chlorpheniramine and diphenhydramine ingestion: undoubtedly responsible

Scenario/Substances: A 2 y/o male was put down for a nap and then found unresponsive 5.5 h later. Medications found in the home included: metoprolol, lisinopril, meloxicam, amlodipine, promethazine, tizanidine and baclofen.

Physical Exam: Lethargic in respiratory distress at ED arrival.

Laboratory/Diagnostic Findings: UDS was positive for methadone. Serum APAP, salicylate and ethanol not detected.

Clinical Course: Minimal response to naloxone; he was intubated, then started on IVFs and antibiotics. On Day 2 he became hypotensive (40/20) and started on a naloxone drip. He had multiple episodes of cardiac arrest, received IVF boluses, and dopamine and epinephrine drips. Pupils became fixed and dilated. An exterior ventricular drain was placed and he received 3% saline for cerebral edema, but died on Day 2.

Autopsy Findings: Toxicology report: naloxone positive; antemortem peripheral blood: methadone 400 ng/mL, EDDP 83 ng/mL, chlorpheniramine 41 ng/mL, diphenhydramine 180 ng/mL. Cause of Death: diffuse anoxic encephalopathy with diffuse cerebral edema and herniation due to combined effects of methadone, chlorpheniramine and diphenhydramine; manner of death: homicide.

Case 371. Acute ibuprofen ingestion: undoubtedly responsible

Scenario/Substances: A 13 y/o female intentionally ingested an unknown amount of ibuprofen. She was discovered unresponsive with emesis and bloody stool, ~ 10 h after last being seen at baseline. EMS administered naloxone, without effect, and transported her to the ED

Physical Exam: BP 101/32, HR 91, RR 10.

Laboratory/Diagnostic Findings: Arterial pH 7.3, lactate >20, Cr 1.9, Ca <2, K 6.4, HCO₃ 8, AG 30, BUN 22, Cr 1.8, Glu 82, WBC 38, AST 198, ALT 62. Post-transfusion Hgb 9.8/Hct 30. Serum APAP and salicylate not were detected. Repeat labs on Day 2: Na 173/K 2.6/Cl 110/CO₂ 31/BUN 39/Cr 2.3, lactate 15.4. ABG- pH 7.55/pCO₂ 38/pO₂ 43/HCO₃ 33.8/BE 12, Ca (ionized) 2.0, CPK 23,000. Day 3: Arterial pH 7.35, K 4.8, Cr 3.5, AST 999, ALT 240, INR 3.0, PTT 42, CPK 43,123.

Clinical Course: In the ED she was intubated and received sodium bicarbonate, calcium, antibiotics and NAC. CT head: unremarkable. She was transferred to a tertiary care center where she became hypotensive, bradycardic and then developed asystole. CPR was performed, and she received dopamine, norepinephrine and epinephrine drips. She received 2 units of FFP and 1 unit of PRBCs for rectal bleeding; BP 90/50, HR 137. On Day 2 she remained unresponsive; BP 99/47 and HR 86 on 3 vasopressors. She was cooled for hyperthermia. On Day 3 she had no purposeful movements, BP 80/30, HR 120, O₂ sat 80%. She died on Day 4 from a reported anoxic brain injury.

Autopsy Findings: Cause of death: ibuprofen intoxication; manner of death: suicide. Hospital blood ibuprofen level was 500 mcg/mL. The pulmonary parenchyma was erythematous and congested, brain showed hypoxic ischemia.

Case 1038. Unknown salicylate ingestion: undoubtedly responsible

Scenario/Substances: A 65 y/o male was brought to the ED by family for altered mental status.

Past Medical History: COPD, bipolar disorder, alcohol abuse, and chronic liver disease. Home medications: alprazolam, baclofen, fluticasone, lamotrigine, meloxicam, tamsulosin, tiotropium and zolpidem.

Physical Exam: BP 135/75, HR 92, RR 34, O₂ sat 99% (RA), T 37°C. Alert and oriented but was diaphoretic and appeared distressed.

Laboratory/Diagnostic Findings: Na 145/K 5.5/Cl 117/CO₂ 15/BUN 25/ Cr 1.43/Glu 117, AG 13, VBG-pH 7.41/pCO₂ 31.8/pO₂ 22/HCO₃ 26.2/BE -4. CK 175, lactate 0.7, AST 29, ALT 11, bilirubin 0.2. WBC 23.4/Hgb 16.7/Hct 50.1/PLT 289. Serum ethanol not detected. UDS was positive for benzodiazepines. CxR: left lower lobe opacity and effusion. CT head: unremarkable. ECG: HR 90, QRS 80, QTc 555.

Clinical Course: In the ED the suspected sepsis was treated with broad spectrum antibiotics. After 5 h with RR 30 to 34 he became obtunded and was intubated, then became bradycardic and hypotensive. ~ 45 min later he had a cardiac arrest; resuscitation efforts (CPR, atropine, epinephrine and naloxone) were unsuccessful and he died within 8 h after ED arrival.

Autopsy Findings: Premortem serum lamotrigine from the ED was subtherapeutic (1.5 mcg/mL), salicylate was 112 mg/dL. Cause of death: salicylate toxicity with intra-alveolar hemorrhage.

Case 1063. Acute-on-chronic colchicine ingestion: undoubtedly responsible

Scenario/Substances: A 68 y/o female ingested 86 tabs of colchicine in a suicide attempt. When EMS arrived she was lethargic, vomiting and incontinent.

Past Medical History: Anxiety and depression, asthma and HTN. Medications: colchicine, meloxicam, escitalopram, omeprazole, metoprolol, quetiapine, furosemide and fluticasone.

Physical Exam: In the ED 4 h after ingestion she was lethargic but arousable. BP 112/100, HR 118, RR 16, O₂ sat 100% (RA), T 37°C.

Laboratory/Diagnostic Findings: ABG- pH 7.09/pO₂ 20.8/HCO₃ 9.1/BE -20.3. Na 149/K 3.3/Cl 105/CO₂ 21/BUN 17/Cr 1.5/Glu 172. AST 464, ALT 131; WBC 29.5/Hgb 15.7/Hct 49.6/PLT 256. Serum APAP, salicylate and ethanol not detected. UDS was negative.

Clinical Course: In the ED she received activated charcoal and IVFs. Her BP dropped to 96/52 then 49/29, HR 110. ECG: accelerated junctional rhythm, QRS 82, QT 652. She was intubated and started on norepinephrine, and sodium bicarbonate drips. She developed renal dysfunction (Cr 3.5) and worsening hypotension; she died ~24 h after admission.

Autopsy Findings: Cardiomegaly, pulmonary edema, hepatomegaly, and nephrosclerosis. Cause of death: colchicine intoxication; manner of death: suicide.

Case 1091. Acute salicylate ingestion: undoubtedly responsible

Scenario/Substances: A 71 y/o female presented to an ED after taking handfuls of ASA, intermittently, for ~3 h.

Past Medical History: Hypertension, diabetes.

Physical Exam: In the ED: BP 179/103, HR 107, RR 23, O₂ sat 92% (RA), T 36.3°C.

Laboratory/Diagnostic Findings: Initial salicylate level was 70 mg/dL. ABG- pH 7.40/pCO₂ 33/pO₂ 182/HCO₃ 22.2. Na 138/K 4.8/Cl 166/CO₂ 15/BUN 18/Cr 0.9/Glu 186, AG 43, AST 116, ALT 172, bilirubin 0.2, CK 150, WBC 19.9/Hgb 15.8/Hct 47.6. Serum APAP and ethanol not detected. ECG: HR 108, QRS 114, QTc 479. CxR: atelectasis.

Clinical Course: In the ED she was alert and diaphoretic, complaining of nausea (with emesis) and fuzzy vision. Within several hours she developed tinnitus and her QTc prolonged to 500; she received IV Mag and K. Salicylate level increased to 105 mg/dL and CRRT was started. Repeat ABG- pH 7.64/pCO₂ 23/pO₂ 91/HCO₃ 28.9, bicarbonate drip was discontinued. ASA level decreased to 75 mg/dL and CRRT was stopped. BP 135/75, HR 121, RR 28, O₂ sat 95% (2 LPM). 4 h after stopping HD: Salicylate was 102, CO₂ 21, Cr 1.34, AG 29. She had increased agitation, confusion, diaphoresis and dry mucus membranes. ASA increased to 104 and HD was resumed; 1 h later she had a ventricular arrhythmia then asystole. She was intubated with CPR (achieved ROSC) and received sodium bicarbonate (boluses and drip), epinephrine, calcium, vasopressin, norepinephrine and mannitol for unequal pupils. CT head: no acute changes, K 5.9, CO₂ 19, Cr 1.81, Ca 7.2, and Glu 212. She was given sodium polystyrene sulfonate. HD was performed 2 more times which decreased salicylate level to 18. She received antibiotics for hyperthermia (T 41.3°C) and pantoprazole for coffee-ground emesis. EEG: no seizure activity. Repeat CT head: diffuse anoxic injury. Based on the prognosis, comfort measures were instituted and she died on Day 3.

Autopsy Findings: No autopsy results were provided.

Case 1148. Acute lidocaine, cleaner (cationic): undoubtedly responsible

Scenario/substance: An 11 y/o male did not have his usual solution to flush his cecal port, so his father asked the pharmacist for a saline solution that was not in stock. The father asked for a wound wash and was referred to topical solutions. He purchased a solution (2.5% lidocaine, 0.013% benzalkonium chloride) and instilled 177 mL into the port. He rapidly developed a seizure; EMS arrived, transported him to the ED, he developed cardiac arrest enroute and they intubated him.

Past Medical History: Spina bifida with chronic constipation, with a right lower quadrant cecal port (flushed daily with a combination saline and glycerin solution). Prescribed amphetamines.

Clinical Course: He was in cardiac arrest upon ED arrival. PALS was performed, he received naloxone and ILE without response. He was pronounced dead shortly after arrival.

Autopsy Findings: Femoral blood contained amphetamine 0.13 mg/L, lidocaine 15 mg/L, MEGX 2.7 mg/L. The cause of death: lidocaine toxicity; manner of death: accidental.

Case 1151. Acute lidocaine inhalation: undoubtedly responsible

Scenario/Substances: A 33 y/o male was inhaling lidocaine powder (imported from China) to treat GERD. He was found unresponsive surrounded by white powder.

Past Medical History: GERD.

Physical Exam: He was in cardiac arrest upon ED arrival, pupils 8mm and unresponsive.

Laboratory/Diagnostic Findings: ABG- pH < 6.8/pCO₂ 98/pO₂ 181/HCO₃ 8.9. Na 143/K 4.4/Cl 106/CO₂ 14/BUN 17/Cr 1.3/Glu 375. AG 28, AST 334, ALT 204, bilirubin 3.0. INR 0.9.WBC 9.4/Hgb 11.6/Hct 40.1/PLT 205. Serum APAP, ethanol and salicylate not detected. UDS was positive for benzodiazepines. EKG: NSR, QRS 148, QTc 485. CxR: widened mediastinum, distended stomach.

Clinical Course: After ROSC: BP 64/34, HR 73, RR 14, O₂ sat 92%. He was intubated and started on norepinephrine and dopamine drips for hypotension. He received sodium bicarbonate for QRS prolongation and ILE. The patient's BP stabilized to 104/52 and QRS narrowed to 120ms, but he remained unresponsive with fixed and dilated pupils. CT head showed anoxic brain injury with edema and herniation. He was declared brain dead and died on Day 2. The product involved tested positive for lidocaine (via gas chromatography/mass spectroscopy). Serum lidocaine was >12 mcg/mL.

Autopsy Findings: Cause of death: lidocaine toxicity; manner of death: accidental. Antemortem blood sample: lidocaine 18 mcg/mL; monoethylglycineylidide (MEGX): 11 mcg/mL.

Case 1174. Acute pregabalin and topiramate ingestion: undoubtedly responsible

Scenario/Substances: A 63 y/o male who had been taking extra pregabalin to sleep (per family) was found in cardiac arrest and transported to the ED. 90 pregabalin tablets were later found to be missing.

Past Medical History: Seizure disorder. Medications: topiramate, pregabalin.

Physical Exam: Intubated, sedated, unresponsive. BP 117/70, HR 120, T 37°C.

Laboratory/Diagnostic Findings: UDS was positive for opioids. EKG: incomplete RBBB, QRS 98, QTc 407. Day 2: Na 131/K 4.9/Cl 112/CO₂ 19/BUN 13/Cr 0.63/Glu 134, ABG-pH 7.45/pCO₂ 27/pO₂ 124/HCO₃ 18.

Clinical Course: BP 105/92, HR 88, RR 20, T 32°C (on hypothermia protocol). Remained intubated in the ICU, opened eyes to external rub and had myoclonic jerking without seizure activity. Day 2: BP 140/84, HR 113, RR 23, T 36.1°C, patient was being rewarmed. Patient went into cardiac arrest and died on Day 3.

Autopsy Findings: Cause of death: acute mixed drug intoxication (pregabalin and topiramate). Blood toxicology: pregabalin 43 mcg/mL, topiramate 6,300 ng/mL.

Case 1343. Acute diphenhydramine ingestion: undoubtedly responsible

Scenario/Substances: A 29 y/o female texted friends saying she wanted to harm herself and was then found unconscious in a car with a bottle diphenhydramine. There were 64 (50 mg) tablets missing. EMS found her to be tachycardic with seizure-like activity. She developed PEA enroute to the ED but had ROSC after CPR and epinephrine.

Laboratory/Diagnostic Findings: Glu 274, ABG- pH 6.7 (then 7.4 after 7 amps of sodium bicarbonate); pO₂ 350, Na 130, Hgb 14.4 PLT 326. UDS was negative. Serum salicylate, APAP and ethanol not detected. EKG: QRS 240, QTc 520.

Clinical Course: She was intubated upon ED arrival; BP 116/60, HR 120 (then 180). She received calcium and sodium bicarbonate and was then apparently hallucinating and picking at things in the air. QTc increased from 520 to 615. She received a total of 10 amps of sodium bicarbonate, 3 gm MgSO₄ and 280 ml 3% saline; Na 158, 3 h later BP 112/82, HR 99. EKG: QRS 40, QTc 601. Patient received piperacillin/tazobactam, albumin and potassium replacement. Day 2 her pupils were 6 mm and nonreactive. She was weaned from sedation for several hours and her exam became notable for gaze deviation up and to the left, no cough, gag or corneal reflexes, and pupils fixed and dilated. EEG was negative for seizures. Day 3 she was hypertensive, tachycardic and completely flaccid. Day 4 cerebral perfusion study confirmed brain death. She died on Day 5 and underwent organ donation.

Autopsy Findings: Cause of death: complications of acute diphenhydramine toxicity. Antemortem blood toxicology: diphenhydramine level: 5400 mcg/L.

Case 1369. Acute tilmicosin parenteral: undoubtedly responsible

Scenario/Substances: A 54 y/o female injected herself with tilmicosin in a suicide attempt. A coworker at a bovine facility reported a dispute with the woman and the saw her holding a syringe and applying a tourniquet on her arm, stating she was going to kill herself. The woman was soon found unresponsive and bystander CPR was started. She was transported to an ED by EMS, but was pronounced dead. Police found bottles of tilmicosin and syringes at the scene.

Past Medical History: Depression with suicidal ideation.

Physical Exam (postmortem): Tourniquet on right arm with bruising and marks on arm, not consistent with IV attempts by EMS. EMS rhythm strip showed 'dysrhythmia.'

Autopsy: Blood positive for tilmicosin (qualitative analysis only); cause of death: Intentional overdose of tilmicosin.

Case 1379. Chronic: methotrexate ingestion: contributory

Scenario/Substances: A 96 y/o female mistakenly received 1 tab (2.5mg) of methotrexate daily for 27 days (instead of 5 tablets once a week) at her nursing home.

Past Medical History: Rheumatoid arthritis, Alzheimer's disease, atrial fibrillation, cardiovascular disease.

Physical Exam: She presented with generalized weakness, nausea and confusion. Stomatitis with large wounds on her lips and buttocks. HR 62, RR 16, O₂ sat 96% (RA), afebrile.

Laboratory/Diagnostic Findings: Glomerular filtration rate 23 ml/min, AST 30, ALT 20, ALP 44, WBC 1.5/Hct 34/PLT 99. Initial methotrexate level 0.08 mmol/L.

Clinical Course: Patient received leucovorin, renal support and sodium bicarbonate. MTX level decreased to <0.04 mmol/L over 72 h; WBC nadir was 0.6. Her renal function improved over the next 4 d; bicarbonate drip was stopped, leucovorin was continued. She received antibiotics for a UTI. On Day 6 her WBC increased to 0.8 and PLT 31. She received blood and platelet transfusions. Patient died on Day 16. The chronic MTX toxicity was thought to have contributed to her death along with her pre-existing medical conditions.

Autopsy Findings: Per forensic pathologist, clinical symptoms, laboratory findings (myelosuppression) and underlying co-morbidities, the dosing error of methotrexate played a contributing role in the decedent's death. No post-mortem toxicology testing was performed.

Case 1439. Acute-on-chronic: flecainide ingestion: undoubtedly responsible

Scenario/Substances: A 47 y/o female was found with an empty bottle of flecainide. EMS performed cardioversion enroute to the ED.

Past Medical History: Atrial fibrillation, mitral valve prolapse and psychiatric disorder (NOS). Medications: flecainide, metoprolol, cyanocobalamin, oxycodone and ranitidine

Laboratory/Diagnostic Findings: Na 156/K 2.8/CO₂ 36/BUN 11/Cr 0.9, AG 18, Ca 7.1, AST 416, ALT 195. Serum ethanol 170. Serum APAP and salicylate not were detected. UDS was negative. ECG: multiple PVCs.

Clinical Course: In the ED she was responsive to verbal stimuli; SBP 90s, HR 130s with multiple PVCs. She was given multiple amps of sodium bicarbonate, atropine, magnesium, vasopressors, ILE and was transcutaneously paced. She had repeated cardiac arrests. EKG: HR 75, QRS 152 and QTC 625. She was taken to the catheterization lab for pacemaker placement and transferred to the ICU. She continued to have VF/VT and died early on Day 2.

Autopsy Findings: Cause of death: flecainide and ethanol intoxication. Hospital blood flecainide 3.82 mcg/mL.

Case 1456. Acute-on-chronic amlodipine ingestion: undoubtedly responsible

Scenario/Substances: A 50 y/o female took 90 (5 mg) tablets of amlodipine over several hours in a suicide attempt. She vomited multiple times and then presented to an ED 45 min later.

Past Medical History: Hypertension. Medications: amlodipine 5 mg.

Physical Exam: In the ED she was alert, oriented x 3. BP 80/40, HR 110, RR 20, O₂ sat 96% (RA).

Laboratory/Diagnostic Findings: Na 133/K 3.4/Cl 98/CO₂ 10/BUN 10/Cr 1.6/Glu 355, AG 25, Ca 9.6, ABG- pH 7.2/pCO₂ 20/pO₂ 64/HCO₃ 8. Lactate 8.6, INR 1.02, WBC 54. Serum APAP, ethanol and salicylate not detected. UDS was negative. CxR: left lower lobe infiltrate, ECG: HR 100, QRS 83, QTc 369. CT head: unremarkable.

Clinical Course: ~ 5 h after ED arrival she was started on an epinephrine drip and HIE (D10 and insulin at 104 U/h) for an MAP of 51. Epinephrine and insulin were increased, she developed respiratory distress 15 h after arrival and was intubated. She had persistent lactic acidosis, decreasing urine output, and hypotension (BP 75/39, HR 102). Pulmonary embolus was suspected and heparin was started. Ca, sodium bicarbonate and norepinephrine were administered. On Day 2 CRRT was started for oliguric renal failure and fluid overload; BP 98/59, HR 83. She became hypoglycemic (Glu69) and was started on D50 with HIE. Day 3: BP 95/49, HR 92, lactate ~10, on insulin and D50 drips. She remained unresponsive. Day 10: surgery evaluated her for a possible bowel perforation but due to critical illness did not recommend surgery. Based on the prognosis, comfort measures were instituted and she died on Day 10.

Autopsy Findings: Cause of death: amlodipine overdose; manner of death: suicide. Toxicology: amlodipine 840 ng/mL.

Case 1632. Acute nifedipine ingestion: undoubtedly responsible

Scenario/Substances: An 11 m/o female was found with an open bottle of nifedipine (30 mg tabs; at least one partially dissolved pill in her mouth) 1 h prior to ED arrival.

Clinical Course: The patient was given a dose of activated charcoal but subsequently vomited (including 1 intact pill). She was asymptomatic for 2 h but then developed atrial block, bradycardia and cardiac arrest. 50 min of resuscitation efforts were unsuccessful and she died.

Autopsy Findings: Peripheral blood: nifedipine concentration: 870 ng/mL. Visible pill residue within the stomach, duodenum, and proximal jejunum; petechial hemorrhages of the gastrointestinal mucosa. Cause of death: acute nifedipine toxicity; manner of death: accidental.

Case 1634. Acute benzonatate and meclizine ingestion: undoubtedly responsible

Scenario/Substances: A 17 y/o female was found seizing, several minutes after locking herself in a bathroom. EMS found her drowsy and shaking; benzonatate and meclizine bottles were found at the scene.

Laboratory/Diagnostic Findings: K 2.4, HCO₃ 15.6, BUN 11, Cr 1.35, Glu 367, AST 400, ALT 376, bilirubin 0.8.

Clinical Course: The patient was pulseless and apneic upon ED arrival; pupils were fixed and dilated. She was intubated, and resuscitated with CPR, defibrillation X 5, and sodium bicarbonate boluses with ROSC. BP 81/47, HR 85, O₂ sat 100% (100% FiO₂). ILE was given; gastric lavage returned pill fragments and she received activated charcoal and placed on hypothermic protocol. NAC was started for elevated LFTs. On Day 2 hepatic function improved but she remained comatose with decerebrate posturing. Levetiracetam was given for seizure activity on EEG. On Day 3 she received phenobarbital for increased seizure activity but then again showed decerebrate posturing. Based on the poor prognosis, comfort measures and organ donation were instituted, and she died on Day 10.

Autopsy Findings: Cause of death: complications of meclizine and benzonatate toxicity; manner of death: suicide. Blood toxicology (pre-mortem, 2.2h post ingestion): benzonatate 680 mcg/L; meclizine 150 mcg/L.

Case 1643. Acute iron ingestion: undoubtedly responsible

Scenario/Substances: A 47 y/o female ingested a large (unknown) number of iron tablets in a suicide attempt. She began vomiting and presented to the ED.

Physical Exam: Initial BP 133/94, HR 102, RR 20, O₂ sat 98% (RA).

Laboratory/Diagnostic Findings: Na 138/K 3.9/Cl 103/CO₂ 18.4/BUN 11/ Cr 0.68/Glu 98. ABG- pH 7.07/pCO₂ 20/pO₂ 127. WBC 9.2. Serum iron 562 mcg/dL (then >6,000 on Day 2).

Clinical Course: She was vomiting on ED arrival. Abdominal radiograph showed a radio-opaque mass but individual tablets were not visualized. She was treated with a sodium bicarbonate drip and deferoxamine (1 g IV then 1.5 g 5 h later). She developed shortness of breath, tachypnea and generalized body pain. The patient unwilling to drink PEG solution for WBI. She became hypotensive, was started on vasopressors, deferoxamine (2 g/h) and WBI. CRRT was initiated for worsening liver and kidney failure. She developed asystole requiring CPR with ROSC. Iron levels were decreasing but lactic acidosis increased and hypotension persisted despite vasopressors. She died in the ICU on Day 3.

Autopsy Findings: No autopsy results were provided.

Case 1646. Acute iron ingestion: undoubtedly responsible

Scenario/Substances: A 10 m/o male was taken by his mother to urgent care after a suspected ingestion of ferrous sulfate tablets; maximum exposure was 79 tablets of 325 mg.

Physical Exam: Lethargic, withdrawing to pain. BP 96/72, HR 136, RR 42, O₂ sat 98% (RA), T 35.8 °C.

Laboratory/Diagnostic Findings: VBG- pH 7.27/pCO₂ 36/pO₂ 70. Glu 199, fibrinogen 60, INR 4.3. Serum ethanol, APAP and salicylate not detected.

Clinical Course: The child was immediately transferred to a PICU where he was intubated. Abdominal x-ray showed 55 visible pills. An NGT was placed for WBI; IV deferoxamine was started at 15 mg/kg/hr. The child was taken for emergent endoscopy; 26 tablets were removed (4 from the esophagus, 22 from the stomach). His pH dropped to 6.81; a central line was placed for fluid resuscitation. ECG showed a bundle branch block. The deferoxamine drip was increased to 45 mg/kg/hr; he was started on exchange transfusion. The first serum iron concentration returned at 931 mcg/mL, repeated level was 7,739 mcg/mL. While preparing for ECMO the child went into cardiac arrest. He was resuscitated with CPR and ACLS, then cooled and started on dopamine (20 mcg/kg/min) and epinephrine (0.4 mcg/min) drips. ECMO was started along with CRRT for anuria; deferoxamine was continued. WBI was stopped due to oral secretions and decreased bowel sounds. He developed coagulopathy (d-dimer 69,000, PTT 70.8, fibrinogen 78) and acidosis (lactate 4.8). Serum iron concentration decreased to 1,175 mcg/mL, and then 475 mcg/mL (after 80 % exchange transfusion). He developed abdominal compartment syndrome and underwent abdominal fasciotomy. On Day 3 his repeat serum iron concentration was 246 mcg/mL; BP 75/40 and HR 145. Visual inspection of bowel and liver showed edema; arterial pH was 6.096. Based on his poor prognosis the family opted for comfort measure and he died.

Autopsy Findings: Not performed.

Case 1649. Acute loperamide, atropine/diphenoxylate, trazodone ingestion: undoubtedly responsible

Scenario/Substances: A 23 y/o female was found unresponsive and cyanotic by her mother who started CPR and called 911. EMS transported to the ED.

Past Medical History: Anxiety, depression, hypertension. Patient was in the ED the day before for using high quantities of loperamide and diphenoxylate/atropine for opioid dependency. She was discharged home with clonidine patches.

Laboratory/Diagnostic Findings: Na 140/K 4.5/Cl 104/CO₂ 13/Cr 0.9, AG 23, Mg 2.4, ALT 82, bilirubin 0.3. Serum APAP and salicylate not detected. CxR: pulmonary edema. CT head: diffuse ischemic injury with edema. Repeat labs: AST 227, ALT 1188, ALP 169, K 2.5.

Clinical Course: She arrived in the ED with a wide complex tachycardia (HR 100s, QRS 120) and "good" BP. She was intubated and received naloxone (no response), 2 amps of sodium bicarbonate, magnesium and amiodarone. She became hypotensive (72/39). Almost 15 h later she remained unstable on epinephrine, norepinephrine and vasopressin drips; she was unresponsive off sedation. On Day 3 the patient was declared brain dead and she was transferred to the OR for organ donation.

Autopsy Findings: Cause of death: mixed drug toxicity. Post-mortem blood toxicology: desmethylloperamide 58 ng/mL, mCPP 65 ng/mL, trazodone 2.4 mcg/mL. Post-mortem urine toxicology positive for trazodone. Autopsy: acute transmural myocardial infarction, global hypoxic-ischemic

brain injury, acute bronchopneumonia with diffused alveolar damage, bilateral, intrapulmonary arterial thromboembolism; recent organ/tissue procurement.

Case 1657. Acute loperamide ingestion: undoubtedly responsible

Scenario/Substances: A 41 y/o female presented to the ED with weakness, dizziness and dyspnea.

Past Medical History: Depression, anxiety, opioid and cocaine abuse. Medications: mirtazapine, buspirone and gabapentin.

Physical Exam: Unresponsive, pupils 2 mm and sluggish, myoclonus in extremities. BP 97/61, HR 90, RR 20, O₂ sat 94% (100% FiO₂), T 37 °C.

Laboratory/Diagnostic Findings: ABG- pH 7.39/pCO₂ 53/pO₂ 61/HCO₃ 31. Na 144/ K 4.0/Cl 105/CO₂ 31/BUN 23/Cr 1.6/Glu 151. AST 308, ALT 340, CK 11,112, lactate 8.5. Serum APAP, ethanol and salicylate not detected. ECG: HR 108, QRS 176, QTc 477.

Clinical Course: She went into cardiac arrest in the ED, had ROSC with ACLS but then lost pulses again, several times, over the next half hour. Thrombolytic was administered for presumptive pulmonary embolus. LE U/S was negative for deep vein thrombosis. Myoclonic jerking was noted, EEG revealed burst suppression. Bicarbonate drip was initiated (for QRS of 214 ms) and antibiotics were started. Her brother then reported that she was recently using 'a laxative' to get high, mother reportedly found empty loperamide boxes at home; a loperamide level was ordered (send out). On Day 2, myoclonus continued, QRS 120, QTc 594. On Day 3 MRI revealed diffuse ischemic injury and cerebral edema. Based on the prognosis, the family opted for comfort measures and she died on Day 11.

Autopsy Findings: Cause of death: anoxic encephalopathy due to loperamide intoxication. Loperamide and metabolite concentrations returned 'elevated.'

Case 1739. Acute diazepam, gabapentin, citalopram ingestion: undoubtedly responsible

Scenario/substance: A 12 y/o female was found unresponsive by family after last being seen normal the previous evening. She received 4 mg naloxone by EMS without response and was intubated on scene. Medications available at home: lorazepam, tramadol, gabapentin, losartan, hydrochlorothiazide, APAP, ibuprofen, atomoxetine, fluoxetine, montelukast and eszopiclone.

Physical Exam: BP 68/28, HR 98, RR 21, O₂ sat 31% on BVM, T 36.3 °C. She was unresponsive, pupils were 2 mm and sluggish. She had clonus in lower extremities with normal reflexes.

Laboratory/Diagnostic Findings: ABG- pH 7.11/pCO₂ 53/pO₂ 92/HCO₃ 17/BE -13. Na 141/K 3.4/Cl 107/CO₂ 19/BUN 19/Cr 1.72/Glu 243, AG 15. Lactate 7.3, AST 34, ALT 27, bilirubin 1.2. INR 1.3, ammonia 74. WBC 27.7/Hgb 12.5/Hct 37/PLT 424. Serum APAP, ethanol and salicylate not detected, UDS was positive for benzodiazepines. CxR and CT head were unremarkable. ECG: HR 120 with peaked T waves, QRS 84, QTc 497.

Clinical Course: The patient presented to the ED unresponsive and hypotensive with the ETT in her esophagus. She was re-intubated and started on vasopressors and IVFs, then transferred to a PICU. On arrival, the patient's HR was in the 140s; she was given sodium bicarbonate and antibiotics and placed on an EEG monitor. On Day 3, she developed episodes of bigeminy, increased oxygen requirements, fevers, acute kidney injury. The EEG was initially abnormal and then showed no brain activity. Brain MRI revealed severe anoxic brain injury. She was declared brain dead and died on Day 4.

Autopsy Findings: Urine collected in the ED showed diazepam 20 ng/mL, nordiazepam 68 ng/mL, oxazepam 32 ng/mL and temazepam 410 ng/mL. ED blood demonstrated gabapentin 1.5 mcg/mL. Antemortem peripheral blood drawn ~2 h from being found demonstrated citalopram 0.42 mg/L, diazepam 0.98 mg/L, gabapentin 24 mg/L, nordiazepam 0.067 mg/L; urine demonstrated benzodiazepines, caffeine, citalopram, gabapentin/pregabalin and ondansetron. Autopsy demonstrated cerebral edema with herniation, pulmonary edema and acute pneumonia. Cause of death: hypoxic ischemic encephalopathy due to respiratory failure due to diazepam and gabapentin toxicity.

Case 1879. Acute U-47700, para-fluorobutyl fentanyl and psychoactive benzodiazepines ingestion: undoubtedly responsible

Scenario/Substances: A 23 y/o male was seen somnolent and intermittently snoring. Later that day he was found apneic and cyanotic. CPR was started; EMS found him to be in PEA arrest. He was intubated, successfully resuscitated, and transported to the ED.

Past Medical History: 2 recent ED visits for headaches and back pain; he was discharged with prescriptions for hydrocodone and cyclobenzaprine.

Physical Exam: In the ED he was unresponsive, pupils were fixed and dilated. He had a frontal abrasion and hematoma. BP 60/40, HR 84, O₂ sat 100% (intubated), T 34°C.

Laboratory/Diagnostic Findings: VBG- pH 7.12/pCO₂ 58/pO₂ 67. Lactate 9.4, NA 146/K 6.7/CL 107/CO₂ 25/BUN 22/Cr 3.14/Glu 85, AG 14, AST 1,192, ALT 1,348, bilirubin 0.4, WBC 12.7/Hgb 11.6/Hct 39.4/PLT 225, troponin 1.9. UDS was positive for opiates, benzodiazepines and tricyclic antidepressants. CxR: aspiration pneumonia. CT head: cerebral edema with herniation.

Clinical Course: He was admitted to the ICU and required aggressive fluid resuscitation and vasopressors for hypotension. He was placed on a hypothermia protocol; his brainstem reflexes remained absent and he was declared brain dead. Based on the prognosis, comfort measures were instituted and he died on Day 2.

Autopsy Findings: Antemortem blood analysis: U-47700 5.2 ng/mL, flubromazepam 450 ng/mL, etizolam 29 ng/mL, delorazepam 82 ng/mL, diclazepam 33 ng/mL, para-fluorobutyl fentanyl/fluoroisobutyl fentanyl 5.8 ng/mL, oxycodone (free) 15 ng/mL. Cause of death: "U-47700 and para-fluorobutyl fentanyl/FIBF intoxication [and] psycho-active benzodiazepines."

Case 1943. Unknown carfentanil, alprazolam and cocaine exposure: probably responsible

Scenario/ Substances: A 26 y/o female was found in asystole by EMS. CPR, naloxone, epinephrine and bicarbonate were administered with ROSC prior to ED transport.

Past Medical History: Bipolar disorder, drug abuse.

Physical Exam: She was intubated with no spontaneous activity. Initial VS in the ICU: BP 105/92, HR 83, RR 22, O₂ Sat 100%, (FIO₂ 30%), T 31 °C (prior to cooling).

Laboratory/ Diagnostic Findings: ABG- pH 7.22/pO₂ 291/pCO₂ 35/HCO₃ 14. Na 142/K 4.8/Cl 97/CO₂ 15/BUN 16/Cr 1.7/Glu 478, AG 30, AST 320, ALT 220, WBC 39/Hgb 10.8/Hct 35/PLT 348. Serum APAP, ethanol and salicylate not detected. UDS was negative. ECG: HR 99, QRS 90, QTc 439. CxR: bilateral pleural effusions and perihilar opacities.

Clinical Course: The patient was intubated upon arrival and started on a hypothermia protocol in the ICU. She received IVFs, sodium bicarbonate, analgesics, antibiotics and vasopressors. On Day 3 rewarming was completed. A brain perfusion scan was consistent with brain death. Based on the prognosis, comfort measures were instituted and she died on Day 4.

Autopsy Findings: Cause of death: anoxic encephalopathy from carfentanil intoxication; manner of death: accidental. Antemortem urine was positive for alpha-hydroxyalprazolam, benzoylecgonine and carfentanil. Antemortem blood testing was positive for alprazolam 15 ng/ml.

Case 2034. Acute *mitragyna speciosa korthals* exposure: undoubtedly responsible

Scenario/Substances: A 31 y/o male reportedly purchased Kratom capsules and poured the powder into cups. He was found dead by Sheriff's deputies.

Autopsy Findings: Post-mortem toxicology found: mitragynine: 990 ng/mL; positive for cyclobenzaprine, tramadol, quetiapine, 7-aminoclonazepam, morphine/codeine/laudanoid.

Case 2060. Acute methamphetamine ingestion: probably responsible

Scenario/Substances: A 33 y/o male swallowed 3 g of methamphetamine to evade police detection. 2 d later he presented to the ED.

Past Medical History: Chronic substance abuse, prior overdose.

Physical Exam: He presented with paranoid ideation and agitated delirium. BP 128/86, HR 126, RR 24, T 37°C.

Laboratory/Diagnostic Findings: WBC 15, lactate 2.9, CK 215. UDS was positive for amphetamines, methamphetamines and benzodiazepines. Serum ethanol, salicylate and APAP were not detected. Subsequent labs: lactate 9.6, troponin 4.87, Cr 3.54, AST 815, ALT 326, CK 45,219, PLTs 43, fibrinogen <60, PTT >250, PT >120. EKG: ST at 128, QTc 580. CT head: negative. CxR: RUL infiltrate.

Clinical Course: He was treated with lorazepam 2 mg, haloperidol 8 mg and labetalol 20 mg IV. Just prior to transfer he was intubated with etomidate and rocuronium; received dextrose for a Glu of 7. He was transferred to a tertiary care center where he arrived with T 38.3°C, BP 84/50, HR 148 on norepinephrine drip at 4 mcg/h after 3 L NS. He also received activated charcoal, high dose insulin, methylene blue, Ca, sodium bicarbonate, vasopressin, epinephrine and phenylephrine, cryoprecipitate, fresh frozen plasma, PLTs and antibiotics. He developed acute respiratory failure with persistent hypotension, anuria, rhabdomyolysis and DIC. He was resuscitated from 2 cardiac arrests. Based on the prognosis, the family opted for institution of comfort measures and he died after a third cardiac arrest.

Autopsy Findings: A small (empty) plastic bag was found in the stomach. Cerebral and pulmonary edema were noted. Post mortem blood: methamphetamine 5.29 mg/L, amphetamines and etomidate detected, alprazolam 0.016 mg/L, midazolam 0.017 mg/L. Cause of death: methamphetamine toxicity.

Case 2131. Acute-on-chronic: cocaine rectal: undoubtedly responsible

Scenario/Substances: A 37-year-old male placed a bag containing ~1 g of cocaine into his rectum to evade police discovery. 6 h later, he tore the bag upon attempted removal and reported the event to authorities.

Past Medical History: Substance abuse.

Physical Exam: He was alert, calm and following commands upon ED arrival, with a surgery scar over his abdomen. Initial VS: BP 166/90, HR 86, RR 18, O₂ sat 96%, T 37°C.

Laboratory/Diagnostic Findings: Na 146/K 5.0/Cl 100/CO₂ 22/BUN 14/ Cr 1.57/Glu 71 /AG 24, AST 187, ALT 117.

Clinical Course: He initially refusal a rectal exam; received Mg citrate and remained asymptomatic. He was sleeping with normal VS 5 h later; no bowel movement. 2 h later, while on the commode, he was noted to be agitated with mumbling speech and spastic movements. He fell, striking his head, and developed repetitive seizures; he was treated with lorazepam. He developed wide complex PEA. He was intubated, received CPR, amiodarone, dextrose, calcium, bicarbonate and epinephrine, with ROSC after 20 minutes. He remained in status epilepticus and was treated with propofol, fosphenytoin and lorazepam. Numerous pieces of white chunky substance was removed from his rectum. He developed pulseless VT and died, ~15 h after insertion, despite resuscitation efforts.

Autopsy Findings: Two plastic bag fragments in lower bowel with white material adherent to rectal mucosa were found. Post mortem heart blood demonstrated benzodiazepines, cocaine metabolite, and levamisole. Post mortem iliac vein blood showed cocaine >2 mg/L, benzoylecgonine >4.0 mg/L, and lorazepam 0.067 mg/L. Cause of death: cocaine toxicity; manner of death: accidental.

Case 2141. Unknown methamphetamine ingestion: undoubtedly responsible

Scenario/Substances: A 37 y/o male ingested a large amount of methamphetamine for unknown reasons. Friends called EMS, who found him combative, diaphoretic and hyperthermic.

Past Medical History: Bipolar disorder, substance abuse, pancreatitis, GI bleed.

Physical Exam: BP 96.57, HR 180, RR 30, O₂ sat 90% (nasal catheter, 4L/min), T 40°C.

Laboratory/Diagnostic Findings: ABG- pH 7.24/pCO₂ 50/pO₂ 64/HCO₃ 22. K 7.3, CO₂ 18, BUN 23, Cr 2.88, AST 437, ALT 206, CK >22,000. UDS was positive for amphetamines and benzodiazepines.

Clinical Course: In the ED he was intubated and sedated with benzodiazepines, paralyzed and actively cooled, and received IVFs and empiric antibiotics. He developed multiple organ failure, rhabdomyolysis and shock liver (transaminases >1,000) and hypotension requiring vasopressors. CRRT was initiated for renal failure. Brain imaging demonstrated herniation and he died on Day 6.

Autopsy Findings: Blood analyses revealed the following: methamphetamine 4,600 ng/mL, amphetamine 170 ng/mL, lorazepam 22 ng/mL and lamotrigine 1.2 mcg/mL. Cause of death: "complications of methamphetamine abuse."

Case 2615. Acute methamphetamine/amphetamine and hydrocarbon ingestion and aspiration: undoubtedly responsible

Scenario/Substances: A 13 m/o male (7.7 kg) was found agitated and crying, with liquid on his face. Parents reported that he ingested aftershave.

Physical Exam: He presented to the ED somnolent with his eyes rolled back into his head. Initial VS: HR 132, RR 20, O₂ sat 98% (RA), T 36°C.

Laboratory/Diagnostic Findings: Na 133/K 4/CO₂ 20/BUN 6/Cr 0.2/Glu 194, AST 38, ALT 13, ALP 320. WBC 15/Hgb 11/Hct 33. Serum ethanol not detected. CxR: bilateral infiltrates.

Clinical Course: Upon arrival to the ED, he was tachypneic, foaming from his mouth, and developed multiple seizures unresponsive to lorazepam. He was intubated but became hypotensive and then went into cardiac arrest. He received CPR, IVFs, sodium bicarbonate and vasopressors. Resuscitation was unsuccessful and the patient died on Day 1.

Autopsy Findings: Blood toxicology: amphetamine 590 ng/mL, methamphetamine >1,000 ng/mL, lorazepam positive. No history of amphetamine prescription or exposure was reported by the parents.

Abbreviations & normal ranges for narratives. *Disclaimer* – all laboratories are different and provide their own normal ranges. Units and normal ranges are provided here for general guidance only. These values were taken from Harrison's [10], Goldfrank [11] or Dart [12].

Typical laboratory panels: ABG-pH/pCO₂/pO₂/HCO₃/BE
Basic metabolic panel: Na/K/Cl/CO₂/BUN/Cr/Glu/AG,
Complete blood count: WBC/Hgb/Hct/platelets,

ABBREVIATIONS & NORMAL RANGES

~	approximately 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 cardioverter/defibrillator
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 methylenedioxypropylvalerone [MDPV], 6-(2-aminopropyl)benzofuran [6-APB], butylone, desoxypipradrol [2-DPMP], ethylone, flephedrone, naphyrone, mephedrone, methylenedioxypropylvalerone, 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	cardio pulmonary resuscitation
Cr	creatinine [0.5–0.9] mg/dL females, [0.6–1.2] males,
CRRT	continuous renal replacement therapy
CSF	cerebrospinal fluid
CT	computed tomography (CAT scan)
CVA	cerebrovascular accident
CVVH	continuous venovenous hemodiafiltration
CxR	chest radiograph, chest xray
D10W	10% dextrose in water
D50W	50% dextrose in water
D5NS	5% dextrose in normal saline
D5W	5% dextrose in water
Day	when capitalized, Day = hospital day, i.e., days since admission to the initial hospital 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	MRI	Magnetic Resonance Imaging
ETT	endotracheal tube	MRSA	Methicillin-resistant Staphylococcus aureus
FFP	fresh frozen plasma	ms	milliseconds
FiO ₂	fraction of inspired oxygen (%)	MSDS	material safety data sheet
g	grams	Na	sodium [136–146] mEq/L
g/dL	grams per deciliter	NAC	n-acetyl cysteine
GCS	Glasgow Coma Score, ranges from 3 to 15	Narrative	
GERD	gastroesophageal reflux disease	Headers:	Scenario/Substances: concise narrative of EMS & pre-HCF events
GI	gastrointestinal		Past Medical History: available relevant past medical history
Glu	glucose, fasting [75–110] mg/dL		Physical Exam: initial physical exam if available
h	hours		Laboratory/Diagnostic Findings: initial results, give units except for units given in abbreviations
HBO	hyperbaric oxygen treatment/therapy		Clinical Course: concise narrative of HCF & beyond with outcome Autopsy Findings medical examiner and/or autopsy results
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	NG	nasogastric
HD	hemodialysis	ng/mL	nanograms per milliliter
Hgb	hemoglobin [12.0–15.8] g/dL females, [13.3–16.2] g/dL males	NOS	not otherwise specified
		not detected	analyte below the level of quantitation, negative
HIE	hyperinsulinemia-euglycemia therapy	NPO	nil per os, nothing by mouth
HIV	human immunodeficiency virus	NRB	non rebreathing mask for O ₂ delivery
Hour	when capitalized, Hour = hours since admission or since exposure as specified in the narrative	NS	normal saline
		NSTEMI	non-ST segment elevation myocardial infarction
HR	HR, beats per min	O ₂ sat	oxygen percent saturation [94–100] % at sea level
IABP	intraortic balloon pump	OG	serum osmol gap = measured serum osmolality – calculated serum osmolality [0 ± 10 mOsmol/kg]
ICP	intracranial pressure		operating room
ICU	intensive care unit	OR	osmole
IDDM	insulin dependent diabetes mellitus	Osm	pediatric advanced life support
IgE	immunoglobulin E	PALS	poison center (=PCC, or Poison Control Center)
ILE	intravenous lipid emulsion (20%)	PC	prothrombin complex concentrate
IM	intramuscular	PCC	primary care provider
INR	international normalized ratio (PT to control) [0.8–1.2]	PCP	pulseless electrical activity
IO	intraosseous	PEA	positive end expiratory pressure
IU/L	international units per Liter	PEEP	phosphate (phosphorous) [2.5–4.5] mg/dL
IV	intravenous	Phos	pediatric intensive care unit
IVF	intravenous fluid(s)	PICU	platelet count [150–400] × 10 ⁹ /L
K	potassium [3.5–5] mEq/L	PLT	per os (“by mouth” in Latin)
kg	kilogram	PO	parts per million
L	Liter	Ppm	P-R interval [120–200] msec on the ECG
lactate	lactic acid [4.5–14.4] mg/dL arterial, [4.5–19.8] mg/dL venous	PR	as needed
		PRN	prothrombin time, INR is preferred, but PT may be used if INR is not available
		PT	Prior to admission
LBBB	left bundle branch block on ECG	PTA	post-traumatic stress disorder
LFT	liver function tests	PTSD	partial thromboplastin time [26.3–39.4] sec
LVEF	left ventricular ejection fraction	PTT	premature ventricular contraction
m/o	months old	PVC	ECG QRS complex duration [60–100] msec
MAP	mean arterial pressure	QRS	Q to T interval on the ECG waveform, varies with HR
mcg/dL	micrograms per deciliter	QT	QT interval corrected for HR, usually QTcB = QT/RR ^{1/2}
mcg/L	micrograms per Liter	QTc	(Bazett correction) 1–15 y-o [<440] msec, adult male [<430] msec, adult female [<450] msec
mcg/min	micrograms per minute		right bundle branch block on ECG
mcg/mL	micrograms per milliliter		red blood cell(s)
mcmol/L	micromoles per liter		return of spontaneous circulation
MDA	3,4-methylenedioxymphetamine	RBBB	regional poison center
MDMA	methylenedioxymphetamine (ecstasy, molly)	RBC	respiratory rate, breaths per minute
ME	medical examiner	ROSC	status post
MetHgb	methemoglobin (RR $<1\%$)	RPC	aspirin, acetylsalicylic acid, therapeutic [15–30] mg/dL
Mg	magnesium [1.5–2.3] mg/dL	RR	systolic blood pressure
mg	milligrams	s/p	seconds
mg/dL	milligrams per deciliter	salicylate	sublingual
mg/kg	milligrams per kilogram	SBP	supraventricular tachycardia
mg/L	milligrams per Liter	sec	Temperature (oral) [36.4, 37.2] °C or
min	minutes	SL	Temperature (rectal) [36.4, 37.2] °C or
ml	milliliter	SVT	Temperature (tympanic) [36.4, 37.2] °C
mmol	millimoles	T (oral)	total body surface area
mmol/L	millimoles per Liter (previously mEq/L)	T (rectal)	tetrahydrocannabinol
mmol/L	millimoles per Liter	T (tympanic)	
mosm/kg	milliosmoles per kilogram	TBSA	
mosm/L	milliosmoles per Liter	THC	

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)	WBI WNL y/o	whole bowel irrigation within normal limits year old
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] $10^3/\text{mm}^3$		

APPENDIX D

APPENDIX E

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
Non-Pharmaceutical Exposures										
Alcohols										
1ai	18 y M	ethanol	1	1	U	Unk	Int-A	1		
2ai	23 y M	ethanol	1	1	U	Unk	Int-A	2		
3ha	24 y F	methanol	1	1	A	Ingst	Int-U	1		
4ai	24 y M	ethanol	1	1	U	Ingst	Int-A	3		
5ha	25 y M	methanol	1	1	U	Ingst + Par	Int-S	1	methanol	132 mg/dL In Plasma @ 33 h (pe)
		methanol	1	1					methanol	172 mg/dL In Plasma @ 24 h (pe)
		methanol	1	1					methanol	500 mg/dL In Plasma @ Unknown
		propofol	2	2						
6ai	25 y M	ethanol	1	1	C	Ingst + Unk	Int-A	1		
		caffeine	2	2						
7ai	26 y M	ethanol	1	1	U	Unk	Int-A	1		
		THC homolog, 5F-AMB-PICA	2	2						
8ai	27 y F	ethanol	1	1	U	Ingst + Unk	Int-A	3		
		methanol	2	2						
		diphenhydramine	3	3						
9ai	27 y F	ethanol	1	1	U	Ingst + Unk	Unk	2		
		oxycodone	2	2						
		hydrocodone	3	3						
10ai	28 y M	ethanol	1	1	U	Ingst + Unk	Int-A	1		
		oxycodone	2	2						
		oxymorphone	3	3						
11h	30 y F	ethanol	1	1	A	Ingst	Int-S	3	ethanol	511 mg/dL In Blood (unspecified) @ Unknown
		drug, unknown	2	2						
12h	31 y F	methanol	1	1	A	Oth	Int-S	1	methanol	11 mg/dL In Blood (unspecified) @ 3 d (pe)
		methanol	1	1					methanol	119 mg/dL In Blood (unspecified) @ 1 d (pe)
		methanol	1	1					methanol	190 mg/dL In Blood (unspecified) @ 26 h (pe)
		methanol	1	1					methanol	573 mg/dL In Blood (unspecified) @ 9 h (pe)
13ph	31 y M	ethanol	1	1	U	Unk	Unk	3		
14h	32 y M	ethanol	1	1	A	Ingst	Unk	3	ethanol	164 mg/dL In Serum @ 1 h (pe)
		drug, unknown	2	2						
15ai	32 y M	ethanol	1	1	U	Unk	Int-A	2		
16ai	32 y F	ethanol	1	1	U	Unk	Int-S	1		
		gabapentin	2	2						
		hydroxyzine	3	3						
17ai	34 y F	ethanol	1	1	U	Unk	Unk	2		
		fluoxetine	2	2						
		dextromethorphan	3	3						
18ai	35 y M	ethanol	1	1	U	Ingst + Unk	Int-A	2		
		methamphetamine	2	2						
		amphetamine	3	3						
21ai	36 y M	ethanol	1	1	U	Unk	Int-A	2		
		sertraline	2	2						
		oxycodone	3	3						
20ai	36 y F	ethanol	1	1	C	Ingst + Unk	Int-A	3		
		diphenhydramine	2	2						
		ibuprofen	3	3						
19ai	36 y F	ethanol	1	1	U	Unk	Int-A	1		
		diazepam	2	2						
		clonidine	3	3						
22ha	37 y M	methanol	1	1	A	Ingst	Int-S	1	methanol	152 mg/dL In Blood (unspecified) @ 10 h (pe)
		methanol	1	1					methanol	32 mg/dL In Blood (unspecified) @ 29 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
23ai	37 y M				U	Unk	Int-A	2		
24ai	37 y M	ethanol	1	1		Unk	Int-A	1		
		ethanol	1	1						
		cocaine	2	2						
		fentanyl	3	3						
25h	38 y M				C	Ingst	Unk	3		
26h	39 y M	ethanol	1	1		Ingst	Int-S	1	methanol	566 mg/dL In Blood (unspecified) @ Unknown
		methanol	1	1						
27ph	39 y M	ethanol (non-beverage)	2	2		Ingst	Int-A	2	ethanol	228 mg/dL In Blood (unspecified) @ 30 m (pe)
		ethanol	1	1						
28h	39 y F	narcotic, other/unknown	2	2		Ingst	Int-A	2	ethanol	416 mg/dL In Blood (unspecified) @ Unknown
		ethanol	1	1						
		hair spray	2	2						
		ethanol (non-beverage)	3	3						
29ai	39 y M				U	Unk	Int-A	2		
30ai	40 y M	ethanol	1	1		Unk	Int-A	2		
31ai	40 y M	ethanol	1	1		Ingst	Int-A	3		
32ai	40 y M	ethanol	1	1		Unk	Int-A	2		
33pha	41 y F				A/C	Ingst	Unk	2	ethanol	0.117 g/dL In Blood (unspecified) @ Autopsy
		ethanol	1	1					ethanol	165 mg/dL In Vitreous @ Autopsy
		ethanol	1	1					ethanol	372 mg/dL In Blood (unspecified) @ 1 h (pe)
		acetaminophen	2	2						
34	42 y M				A	Ingst + Inhal	Int-M	2		
		ethanol	1	1						
		cocaine	2	2						
35ai	43 y M				C	Ingst + Unk	Int-A	2		
		ethanol	1	1						
		chlordiazepoxide	2	2						
		diazepam	3	3						
36ai	43 y M				U	Unk	Int-A	1		
		ethanol	1	1						
		bupropion	2	2						
		carbamazepine	3	3						
38ai	43 y M				U	Unk	Int-A	1		
		ethanol	1	1						
		heroin	2	2						
		oxycodone	3	3						
39ai	43 y M				U	Unk	Int-A	2		
		ethanol	1	1						
		chlordiazepoxide	2	2						
40ai	43 y M				U	Unk	Int-A	1		
		ethanol	1	1						
37ai	43 y M				U	Unk	Int-M	3		
		ethanol	1	1						
41ai	44 y M				U	Unk	Int-A	1		
		ethanol	1	1						
		fentanyl	2	2						
		morphine	3	3						
42i	44 y F				C	Ingst	Int-A	2		
		ethanol	1	1						
43ai	44 y M				U	Unk	Int-A	1		
		ethanol (non-beverage)	1	1						
		oxycodone	2	2						
44ai	45 y F				U	Unk	Int-A	2		
		ethanol	1	1						
		hydrocarbon (fluorinated)	2	2						
46ai	45 y M				U	Unk	Int-A	2		
		ethanol	1	1						
		hydroxyzine	2	2						
		trazodone	3	3						
45ai	45 y M				U	Unk	Int-A	3		
		ethanol	1	1						
47ai	46 y F				U	Unk	Int-M	1		
		ethanol	1	1						
		alprazolam	2	2						
		morphine	3	3						
48ai	46 y M				C	Unk	Int-A	2		
		ethanol	1	1						
		citalopram	2	2						
49ai	47 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
50pha	47 y F	ethanol	1	1	A	Ingst	Int-A	1		
		heroin	2	2						
		methamphetamine	3	3						
51ha	48 y M	ethanol	1	1	A	Ingst	Int-U	2		380 mg/dL In Blood (unspecified) @ Autopsy
		ethanol	1	1						552 mg/dL In Serum @ 5 m (pe)
52h	48 y M	ethylene glycol	2	1	C	Ingst	Int-A	3		
		ethanol	1	1						
53ai	48 y M	acetaminophen	2	2	U	Ingst	Int-A	2		
54ai	48 y M	ethanol	1	1	U	Ingst	Int-A	1		
55ai	48 y M	alcohol, unknown	1	1	U	Unk	Int-A	1		
56ai	48 y M	ethanol	1	1	U	Unk	Int-A	1		
		hydrocodone	2	2						
		alprazolam	3	3						
57ph	49 y F	ethanol	1	1	A/C	Oth	AR-D	3		
		heroin	2	2						
60ai	49 y F	ethanol	1	1	U	Unk	Int-S	1		
59ai	49 y M	ethanol	1	1	C	Unk	Int-A	3		
		alprazolam	2	2						
61ai	49 y M	ethanol	1	1	U	Unk	Int-A	2		
62ai	49 y F	ethanol	1	1	U	Unk	Int-A	3		
		diphenhydramine	2	2						
58ai	49 y M	acetaminophen	2	2	U	Unk	Int-A	2		
63ai	50 y M	ethanol	1	1	U	Unk	Int-A	3		
64ai	51 y F	ethanol	1	1	U	Unk	Unk	2		
65ai	51 y M	methanol	1	1	U	Unk	Int-A	2		
		ethanol	2	2						
		fentanyl	3	3						
66ai	51 y M	ethanol	1	1	C	Unk	Int-A	3		
		diphenhydramine	2	2						
		promethazine	3	3						
67ai	51 y M	ethanol	1	1	U	Unk	Int-A	1		
68ai	51 y F	ethanol	1	1	A	Ingst + Unk	Int-A	1		
		benzodiazepine	2	2						
69pi	52 y M	ethanol	1	1	A	Ingst	Unk	2		
		fentanyl	2	2						
		oxycodone	3	3						
70ai	52 y M	ethanol	1	1	C	Ingst + Unk	Int-A	3	ethanol	412 mg/dL In Serum @ Unknown
71ai	52 y M	alcohol, unknown	1	1	U	Ingst	Unt-U	2		
		alprazolam	2	2						
		morphine	3	3						
72ai	52 y F	ethanol	1	1	A	Ingst	Int-A	3		
73ai	52 y M	ethanol	1	1	U	Unk	Int-A	2		
		isopropanol	1	1						
74h	52 y F	methamphetamine	2	2	A/C	Ingst	Int-S	3		
75h	53 y M	ethanol	1	1	A	Ingst	Int-S	2	ethanol	173 mg/dL In Serum @ Unknown
76ai	53 y M	ethanol	1	1	U	Unk	Int-A	3		
		ethanol	1	1						
77a	53 y F	ethanol	1	1	A/C	Ingst	Int-S	3	ethanol	135 mg/dL In Blood (unspecified) @ 30 m (pe)
78ai	53 y F				C	Ingst	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
80ai	53 y F	ethanol	1	1	U	Unk	Int-A	2		
79ai	53 y M	ethanol	1	1	U	Unk	Int-A	1		
		ethanol	1	1						
		fentanyl	2	2						
		cocaine	3	3						
81ai	53 y M	ethanol	1	1	C	Unk	Int-A	2		
82h	54 y M	ethanol	1	1	U	Ingst	Int-S	2		
		methanol	1	1						
84ai	54 y M	ethanol	1	1	U	Unk	Int-A	1		
		oxycodone	2	2						
83ai	54 y M	ethanol	1	1	U	Unk	Int-A	2		
85h	55 y M	ethanol	1	1	A	Ingst	Int-U	1		
		methanol	1	1					methanol	72 mg/dL In Blood (unspecified) @ Unknown
86ai	55 y M	ethanol	1	1	U	Unk	Int-A	3		
87ai	55 y M	ethanol	1	1	U	Unk	Int-A	2		
		ethanol	1	1						
		fentanyl	2	2						
		oxycodone	3	3						
88ai	56 y M	alcohol, unknown	1	1	U	Ingst	Int-A	1		
89ph	57 y F	ethanol	1	1	A	Ingst	Unk	1		
		methanol	1	1					methanol	432 mg/dL In Blood (unspecified) @ Unknown
		metformin	2	2						
90h	57 y F	ethanol	1	1	U	Ingst	Int-A	2		
		acetaminophen	2	2						
91ai	57 y M	ethanol	1	1	U	Unk	Int-A	2		
		alprazolam	2	2						
		diazepam	3	3						
94ai	58 y F	ethanol	1	1	C	Unk	Int-A	2		
93ai	58 y M	ethanol	1	1	U	Unk	Int-A	2		
		ethanol	1	1						
		oxycodone	2	2						
		methadone	3	3						
92hai	58 y M	ethanol	1	1	U	Unk	Int-A	1		
		fentanyl	2	2						
95ai	58 y F	ethanol	1	1	U	Unk	Int-A	3		
96ai	58 y M	ethanol	1	1	U	Unk	Int-S	2		
		ethanol	1	1						
		oxycodone	2	2						
		methamphetamine	3	3						
97ai	58 y M	ethanol	1	1	U	Unk	Int-A	3		
		alprazolam	2	2						
		trazodone	3	3						
98ai	59 y M	ethanol	1	1	U	Unk	Int-A	3		
99ai	59 y M	ethanol	1	1	U	Unk	Int-A	3		
		methamphetamine	2	2						
100ai	59 y F	ethanol	1	1	U	Ingst	Int-A	1		
101	60 y M	ethanol	1	1	A	Ingst	Unk	1		
		methanol	1	1					methanol	19 mg/dL In Blood (unspecified) @ 24 h (pe)
		methanol	1	1					methanol	191 mg/dL In Blood (unspecified) @ Unknown
		methanol	1	1					methanol	32 mg/dL In Blood (unspecified) @ 12 h (pe)
102ha	60 y M	ethanol	1	1	A	Ingst	Int-A	3	ethanol	40 mg/dL In Blood (unspecified) @ Unknown
103ph	60 y M	ethanol	1	1	C	Unk	Unk	2		
104ai	60 y F	ethanol	1	1	U	Unk	Int-A	2		
		ethanol	1	1						
		methamphetamine	2	2						
105ai	61 y M	ethanol	1	1	U	Ingst + Unk	Int-A	2		
		cocaine	2	2						
		tramadol	3	3						
107ai	61 y M	ethanol	1	1	U	Ingst + Unk	Int-A	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
106ai	61 y M	ethanol	1	1	C	Ingst	Int-A	3		
		hydromorphone	2	2						
		gabapentin	3	3						
108h	62 y M	ethanol	1	1	U	Unk	Unk	2		
		ethanol	1	1						
109ai	62 y M	narcotic, other/unknown	2	2	U	Unk	Int-A	3		
		ethanol	1	1						
110ai	62 y F	ethanol	1	1	U	Ingst	Int-A	3		
111ai	62 y F	ethanol	1	1	U	Unk	Int-M	3		
		ethanol	1	1						
112ha	62 y M	ethanol	1	1	U	Ingst	Unk	3		
		ethanol (denatured)	1	1						
113ai	62 y M	isopropanol	2	2	C	Unk	Unk	3		
		ethanol	1	1						
114ha	63 y F	alcohol, unknown	1	1	U	Ingst	Unk	3	ethanol	45 mg/dL In Blood (unspecified) @ Unknown
		alcohol, unknown	1	1						ethanol
115ai	63 y F	propofol	2	2	U	Unk	Int-A	1		
		drug, anticholinergic	3	3						
116ai	63 y M	ethanol	1	1	U	Ingst	Int-A	2		
		ethanol	1	1						
117ha	64 y M	ethanol	1	1	C	Ingst + Aspir	Int-A	3		
		hand sanitizer (ethanol)	2	2						
118ai	64 y F	ethanol	1	1	U	Unk	Int-S	2		
		drug, unknown	2	2						
120ai	65 y M	ethanol	1	1	C	Unk	Int-A	2		
		hydromorphone	2	2						
121ai	65 y M	carisoprodol	3	3	U	Unk	Int-A	2		
		ethanol	1	1						
119ai	65 y F	citalopram	2	2	U	Unk	Unk	2		
		ethanol	1	1						
122ai	66 y M	diazepam	2	2	U	Ingst + Unk	Int-A	2		
		methanol	1	1						
123ai	66 y M	isopropanol	2	2	C	Ingst	Int-A	3		
		amphetamine	3	3						
124ai	69 y F	ethanol	1	1	U	Unk	Int-A	3		
		citalopram	2	2						
125ai	70 y F	ethanol	1	1	U	Ingst + Unk	Int-S	1		
		morphine	2	2						
127ai	71 y M	ethanol	1	1	U	Unk	Int-M	3		
126ai	71 y F	ethanol	1	1	C	Unk	Int-A	3		
		ethanol	1	1						
128ai	73 y F	ethanol	1	1	U	Unk	Int-A	2		
		cyclobenzaprine	2	2						
129ai	73 y M	butalbital	3	3	C	Ingst	Int-A	3		
		ethanol	1	1						
131ai	75 y M	ethanol	1	1	U	Unk	Int-A	3		
		ethanol	1	1						
130ai	75 y M	ethanol	1	1	C	Unk	Int-A	3		
		ethanol	1	1						
132i	Unknown age F	ethanol	1	1	U	Ingst	Oth-M	2		
		methanol	1	1						

See Also case 135, 144, 147, 157, 178, 258, 260, 261, 263, 285, 286, 302, 329, 346, 355, 358, 363, 375, 386, 388, 402, 415, 418, 419, 429, 441, 461, 462, 476, 485, 487, 491, 492, 496, 508, 515, 516, 526, 533, 535, 539, 543, 548, 550, 566, 570, 579, 588, 589, 590, 591, 598, 606, 610, 632, 635, 641, 646, 648, 650, 661, 662, 668, 672, 673, 674, 676, 677, 682, 685, 686, 690, 697, 698, 712, 721, 723, 730, 735, 738, 740, 741, 746, 748, 750, 757, 764, 772, 774, 779, 792, 799, 805, 810, 819, 823, 824, 845, 850, 853, 863, 864, 868, 876, 879, 886, 889, 891, 897, 899, 914, 925, 932, 938, 941, 942, 947, 954, 957, 967, 969, 971, 974, 988, 989, 990, 992, 1025, 1043, 1052, 1056, 1057, 1062, 1068, 1076, 1077, 1084, 1090, 1106, 1145, 1153, 1160, 1161, 1162, 1163, 1164, 1191, 1204, 1207, 1215, 1217, 1220, 1227, 1228, 1231, 1235, 1240, 1247, 1252, 1254, 1255, 1257, 1259, 1261, 1274, 1276, 1277, 1279, 1283, 1288, 1293, 1301, 1305, 1312, 1314, 1327, 1335, 1336, 1347, 1354, 1362, 1364, 1365, 1371, 1386, 1389, 1390, 1400, 1412, 1417, 1418, 1423, 1424, 1428, 1435, 1438, 1439, 1443, 1446, 1458, 1462, 1486, 1489, 1494, 1497, 1498, 1499, 1500, 1504, 1507, 1512, 1513, 1530, 1533, 1534, 1536, 1559, 1629, 1642, 1648, 1651, 1654, 1664, 1669, 1686, 1687, 1706, 1711, 1714, 1721, 1723, 1725, 1742, 1744, 1753, 1757, 1759, 1763, 1764, 1767, 1770, 1780, 1783, 1794, 1803, 1808, 1809, 1854, 1855, 1859, 1885, 1890, 1893, 1894, 1898, 1901, 1918, 1920, 1923, 1932, 1937, 1952, 1971, 1972, 1974, 1984, 1999, 2014, 2015, 2032, 2035, 2045, 2046, 2051, 2061, 2081, 2085, 2096, 2097, 2105, 2108, 2111, 2121, 2123, 2126, 2135, 2137, 2146, 2156, 2164, 2166, 2171, 2172, 2182, 2184, 2187, 2190, 2193, 2200, 2202, 2204, 2208, 2215, 2226, 2234, 2236, 2240, 2256, 2259, 2261, 2264, 2266, 2278, 2286, 2287, 2298, 2308, 2314, 2326, 2327, 2329, 2330, 2332, 2336, 2337, 2340, 2351, 2359, 2375, 2389, 2390, 2393, 2396, 2399, 2404, 2405, 2407, 2412, 2414, 2420, 2425, 2430, 2440, 2441, 2444, 2466, 2479, 2487, 2502, 2525, 2529, 2530, 2535, 2537, 2542, 2551, 2558, 2567, 2570, 2587, 2593, 2595, 2596, 2606, 2609, 2611, 2640, 2644, 2647, 2653, 2659, 2662

Arts/Crafts/Office Supplies
[133ha] 53 y M

(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
Automotive/Aircraft/Boat Products										
134h	28 y M	hydrofluoric acid	1	1						
					A	Ingst	Int-S	1		
135	32 y M	ethylene glycol (antifreeze)	1	1	A	Ingst	Int-S	1	ethylene glycol	1408 mg/L In Serum @ Unknown
		ethylene glycol (antifreeze)	1	1					ethylene glycol	1000 mg/dL In Blood (unspecified) @ 34 h (pe)
[136h]	35 y M	ethanol	2	2	A	Ingst	Int-A	1		
		ethylene glycol/methanol	1	1					methanol	620 mg/dL In Blood (unspecified) @ Unknown
137pa	36 y M	ethylene glycol (antifreeze)	1	1	U	Ingst	Unk	1	ethylene glycol	0 mg/dL In Blood (unspecified) @ 1 h (pe)
138h	44 y M	ethylene glycol (antifreeze)	1	1	A	Ingst	Int-S	2		
139pai	48 y F	ethylene glycol (antifreeze)	1	1	U	Ingst	Int-S	1		
140ph	50 y M	ethylene glycol (antifreeze)	1	1	A	Ingst	Int-S	2		
141h	53 y M	ethylene glycol (antifreeze)	1	1	A/C	Ingst	Unk	3	ethylene glycol	13 mg/dL In Serum @ Unknown
		acetaminophen	2	2						
142	54 y F	ethylene glycol (antifreeze)	1	1	A	Ingst	Int-S	1	ethylene glycol	36 mg/dL In Blood (unspecified) @ Unknown
143ha	55 y M	ethylene glycol (antifreeze)	1	1	A	Ingst	Int-M	1	ethylene glycol	72 mg/dL In Blood (unspecified) @ Unknown
		methanol	2	2					methanol	289 mg/dL In Blood (unspecified) @ Unknown
144	57 y M	methanol	1	1	C	Ingst	Int-S	2		
		ethanol (non-beverage)	2	2						
145	65 y M	ethylene glycol (antifreeze)	1	1	A	Ingst	Unk	2		
146ha	68 y M	ethylene glycol (antifreeze)	1	1	A	Ingst	Int-S	2		
147	68 y M	ethylene glycol (antifreeze)	1	1	A	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
		venlafaxine	2	2						
		ethanol	3	3					ethanol	236 mg/dL In Serum @ Unknown
		glyphosate	4	4						
		drain cleaner (alkali)	5	5						
148h	69 y F	ethylene glycol (antifreeze)	1	1	A	Ingst	Int-S	1	ethylene glycol	225 mg/dL In Blood (unspecified) @ Unknown
149h	91 y F	ethylene glycol (antifreeze)	1	1	A	Ingst	Unt-G	3	ethylene glycol	11 mg/dL In Blood (unspecified) @ 1 h (pe)
See Also case 305										
Batteries										
[150h]	2 y F	battery, disc	1	1	A	Ingst	Unt-G	1		
Bites and Envenomations										
[151h]	29 y M	envenomation (crotalinae)	1	1	A	B-S	Unt-B	1		
[152pha]	31 y M	envenomation (crotalinae)	1	1	A	B-S	Unt-B	1		
153p	35 y M	sting (hymenoptera)	1	1	A	B-S	Unt-B	1		
[154ph]	53 y M	ant, fire ant	1	1	A	B-S	Unt-B	3		
Building and Construction Products										
[155h]	59 y M	calcium hydroxide	1	1	A	Derm	Unt-E	1		
Chemicals										
[156ha]	19 y M	silicone	1	1	A	Par + Oth	Int-M	1		
157	31 y F	ethylene glycol	1	1	A	Ingst	Int-S	2		
		ethanol	2	2						
[158a]	35 y F	cyanide	1	1	A	Par	Oth-M	1	cyanide	3.4 mcg/mL In Blood (unspecified) @ 1 h (pe)
		cyanide	1	1					cyanide	4.053 mg/L In Blood (unspecified) @ 4 h (pe)
159ai	35 y M	sodium azide	1	1	U	Unk	Int-S	1		
160h	36 y M	sulfuric acid	1	1	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
161pi	37 y M				U	Ingst	Int-S	2		
		sodium azide	1	1						
162ha	37 y M				A	Ingst	Int-S	1		
		sodium azide	1	1						
163ph	37 y M				A	Inhal	Int-A	2		
		ethyl chloride	1	1						
164h	38 y M				U	Ingst	Int-S	1		
		ethylene glycol	1	1					ethylene glycol	19 mg/dL In Serum @ Unknown
		acetaminophen/hydrocodone	2	2					hydrocodone	1000 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	2	2					acetaminophen (apap)	20.7 mcg/mL In Serum @ Unknown
		lorazepam	3	3						
		alprazolam	4	4						
		drug, unknown	5	5						
165h	39 y M				A	Ingst	Int-S	1		
		sodium hydroxide	1	1						
[166pha]	39 y M				A	Inhal + Oc	Unt-O	1		
		tetramethyl ammonium hydroxide	1	1						
167ph	42 y M				A	Inhal	Unt-E	2		
		cyanide	1	1						
168h	42 y F				A	Ingst	Int-S	1		
		acid, other	1	1						
169ai	44 y M				U	Unk	Int-S	1		
		ethylene glycol	1	1						
170h	44 y F				A	Ingst	Int-S	1		
		ethylene glycol	1	1					ethylene glycol	142 mg/dL In Serum @ Unknown
171ph	47 y M				U	Inhal	Unt-O	2		
		methylene chloride	1	1						
172ai	48 y F				U	Unk	Int-S	1		
		chemical, unknown	1	1						
173h	49 y M				A	Ingst	Int-S	1		
		ethylene glycol	1	1						
[174]	52 y M				A	Ingst	Int-S	1		
		ethyl methacrylate	1	1						
175h	53 y M				A	Ingst	Int-S	1		
		ethylene glycol	1	1					ethylene glycol	108 mg/dL In Blood (unspecified) @ Unknown
		barbiturate (short acting)	2	2						
		acetaminophen/butalbital/caffeine	3	3						
176ai	54 y M				U	Inhal	Int-M	1		
		ethyl chloride	1	1						
177ha	55 y M				A	Ingst	Int-S	1		
		ethylene glycol	1	1					ethylene glycol	180 mg/dL In Blood (unspecified) @ Unknown
178	58 y M				U	Ingst	Int-S	2		
		ethylene glycol	1	1						
		methanol	2	2						
179h	58 y M				A	Ingst	Int-S	1		
		hydrochloric acid	1	1						
180ph	59 y F				A	Inhal	Unt-E	3		
		cyanide	1	1						
181ha	60 y F				A	Ingst	Int-S	1		
		ethylene glycol	1	1					ethylene glycol	66 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	2	2					hydrocodone	1000 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/hydrocodone	2	2					acetaminophen (apap)	110 mcg/mL In Blood (unspecified) @ Autopsy
		acetaminophen/hydrocodone	2	2					hydromorphone	66 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/hydrocodone	2	2					acetaminophen (apap)	69.4 mcg/mL In Blood (unspecified) @ Unknown
182ph	60 y M				A	Ingst	Int-S	2		
		ethylene glycol	1	1					ethylene glycol	112 mg/dL In Blood (unspecified) @ Unknown
183h	62 y M				A	Ingst	Unk	1		
		ethylene glycol	1	1						
		alprazolam	2	2						
		buprenorphine/naloxone (sublingual film)	3	3						
184h	62 y F				U	Ingst	Int-S	1		
		ethylene glycol	1	1					ethylene glycol	73.5 mg/dL In Serum @ Unknown
185h	64 y M				U	Derm + Unk	Unk	3		
		acid, unknown	1	1						
186h	65 y F				U	Ingst	Unk	1		
		ethylene glycol	1	1					ethylene glycol	42 mg/dL In Blood (unspecified) @ 2 d (pe)
		non-powder, unknown	2	2						
187	66 y M				A	Inhal	Unt-G	2		
		sulfuric acid	1	1						
188ph	66 y F				A	Inhal	Unt-E	1		
		cyanide	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
189p	67 y F	carbon monoxide	2	2	A	Ingst	Int-S	1		
		carbon monoxide	3	3						
[190ha]	68 y F	oxalic acid	1	1	A	Ingst	Int-S	1		
191h	68 y M	hydrochloric acid	1	1	A	Ingst	Int-S	1	ethylene glycol	290 mg/dL In Blood (unspecified) @ Unknown
		ethylene glycol	1	1						
192h	73 y M	hydrochloric acid	1	1	A	Ingst	Int-S	1		
193ha	78 y M	propylene glycol	1	1	A	Ingst	Int-S	1		
		borate	2	2						
194	79 y M	ethylene glycol	1	1	U	Ingst	Unk	1	ethylene glycol	65 mg/dL In Blood (unspecified) @ Unknown
195	80 y F	hydrofluoric acid	1	1	A	Ingst	Unt-M	2		
196ha	82 y M	ethylene glycol	1	1	U	Unk	Unk	1	ethylene glycol	678 mg/dL In Serum @ Unknown
		ethylene glycol	1	1						
197h	89 y F	sodium hydroxide	1	1	A	Ingst	Unt-G	1		
See Also case 51, 279, 2035, 2061, 2098, 2102, 2614 Cleaning Substances (Household)										
198ha	26 y M	hypochlorite	1	1	A	Ingst + Derm	Oth-M	1		
199	46 y F	drain cleaner (sodium hydroxide/sodium hypochlorite/sodium silicate)	1	1	A	Ingst	Int-S	1		
		cleaner (cationic)	1	1						
200ha	50 y M	drain cleaner	1	1	A	Ingst	Unt-G	2		
201h	58 y M	drain cleaner (sulfuric acid)	1	1	A	Ingst	Int-S	1		
202h	59 y F	drain cleaner (alkali)	1	1	A	Ingst	Int-S	1		
203ha	65 y F	drain cleaner (anionic/nonionic)	1	1	A	Ingst	Int-S	1		
		Hypochlorite	2	2						
204p	67 y F	hypochlorite	1	1	A	Inhal	Unt-M	1		
205pha	69 y M	drain cleaner (sodium hydroxide/sodium hypochlorite/sodium silicate)	1	1	A	Inhal	Unt-M	2		
		hypochlorite	1	1						
206ha	71 y F	drain cleaner (sodium hydroxide/sodium hypochlorite/sodium silicate)	1	1	A	Ingst	Int-S	1		
207h	72 y F	hypochlorite	1	1	A	Ingst	Int-U	1		
208h	77 y M	laundry detergent (pods)	1	1	A	Ingst	Unt-G	1		
209h	78 y F	drain cleaner (aluminum dust/sodium chloride/sodium hydroxide/sodium nitrate)	1	1	A	Ingst	Unt-T	1		
		drain cleaner (sodium hydroxide/sodium hypochlorite/sodium silicate)	1	1						
210h	82 y M	drain cleaner (sodium hydroxide/sodium hypochlorite/sodium silicate)	1	1	A	Ingst	Int-U	1		
211h	84 y F	toilet bowl cleaner (acid)	1	1	A	Ingst	Int-S	1		
		cleaner (anionic/nonionic)	2	2						
		salicylate	3	3						
212	89 y F	cleaner (cationic)	1	1	A	Ingst	Unt-G	2		
213h	91 y F	drain cleaner (sulfuric acid)	1	1	A	Derm	Unt-M	1		
214	93 y M	laundry detergent	1	1	A	Ingst	Unt-G	2		
		laundry detergent	1	1						
See Also case 147, 363, 751, 1148, 1452, 2664 Cosmetics/Personal Care Products										
215h	44 y M	hand sanitizer (ethanol)	1	1	U	Ingst	Int-U	3		
216	74 y F	anionic/nonionic/citric acid/oxone/sodium carbonate/sodium percarbonate/sodium sulfate,	1	1	A	Ingst	AR-O	2		
		acetone	1	1						
217ha	92 y F	acetone	1	1	A	Ingst	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
See Also case 26, 28, 117, 1355										
Deodorizers										
[218h]	1 m M	deodorizer, unknown	1	1	A	Ingst	Oth-C	2		
Fumes/Gases/Vapors										
219pha	4 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		carbon monoxide	2	1					ethanol	0 mg/dL In Blood (unspecified) @ Autopsy
		carbon monoxide	2	1					carboxyhemoglobin	46 % In Blood (unspecified) @ Autopsy
[220pha]	4 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
221pha	6 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					ethanol	0 mg/dL In Blood (unspecified) @ Autopsy
		carbon monoxide	1	1					carboxyhemoglobin	49% In Blood (unspecified) @ Autopsy
		carbon monoxide	2	2					carboxyhemoglobin	49 % In Blood (unspecified) @ Autopsy
222pi	6 y M				A	Inhal	Unt-G	2		
		carbon monoxide	1	1						
223ph	7 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
224p	7 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	20 % In Whole Blood @ Unknown
225p	7 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
226pa	8 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	27 % In Blood (unspecified) @ Unknown
227pi	10 y F				C	Inhal	Unt-E	1		
		carbon monoxide	1	1						
228pi	13 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
229pi	16 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
[230ph]	16 y M				U	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	0.3 % In Blood (unspecified) @ Unknown
		carbon monoxide	1	1					carboxyhemoglobin	32.6 % In Blood (unspecified) @ Unknown
		carbon monoxide	1	1					carboxyhemoglobin	7.5 % In Blood (unspecified) @ Unknown
231pa	19 y F				A	Inhal	Oth-M	1		
		carbon monoxide	1	1					carboxyhemoglobin	60.001 % In Blood (unspecified) @ Autopsy
232pa	21 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	43 % In Blood (unspecified) @ Autopsy
233pi	21 y M				A	Inhal	Unt-G	2		
		carbon monoxide	1	1						
234pa	23 y M				A	Ingst	Int-S	1		
		nitrogen	1	1						
		clonazepam	2	2					clonazepam	0.1 mg/L In Blood (unspecified) @ Autopsy
235pi	24 y M				A	Inhal	Unt-O	1		
		hydrogen sulfide	1	1						
		methane	2	2						
236pha	24 y M				A	Inhal	Int-S	1		
		propane	1	1						
237p	24 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
238p	24 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		hurricane related	2	2						
239pa	25 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	54 % In Blood (unspecified) @ Autopsy
240pi	27 y F				A	Inhal	Unt-G	2		
		carbon monoxide	1	1						
241ph	28 y M				A	Inhal	Unk	2		
		carbon monoxide	1	1						
242pi	29 y M				U	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	47 % In Blood (unspecified) @ Autopsy
243pi	34 y M				A	Inhal	Unt-O	1		
		hydrogen sulfide	1	1						
		methane	2	2						
244pi	34 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
245pi	34 y F				U	Inhal	Unt-E	1		
		carbon monoxide	1	1						
246p	35 y M				A	Inhal	Int-S	1		
		helium	1	1						
247ph	37 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	75.4 % In Blood (unspecified) @ Unknown
248pa	40 y M				A	Inhal	Oth-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
249pa	40 y M	carbon monoxide	1	1					carboxyhemoglobin	60.001 % In Blood (unspecified) @ Autopsy
250pa	45 y M	hydrogen sulfide	1	1	A	Inhal	Unt-O	1		
251ph	46 y F	carbon monoxide	1	1	A	Inhal + Par	Unt-E	1	carboxyhemoglobin	50 % In Blood (unspecified) @ Autopsy
		carbon monoxide	1	1					carboxyhemoglobin	49.8 % In Blood (unspecified) @ Unknown
252pi	46 y M	sodium chloride	2	2	A	Inhal	Unt-E	2		
253p	47 y F	carbon monoxide	1	1	A	Inhal	Int-S	1	carboxyhemoglobin	46 % In Blood (unspecified) @ Unknown
254pa	48 y F	carbon monoxide	1	1	A	Ingst + Inhal	Int-S	1	carboxyhemoglobin	45 % In Blood (unspecified) @ Autopsy
255pi	49 y M	hydrocodone	2	2	A	Inhal	Unt-O	1		
256pa	49 y F	hydrogen sulfide	1	1	A	Inhal	Oth-M	1		
		methane	2	2						
		carbon monoxide	1	1					carboxyhemoglobin	60.001 % In Blood (unspecified) @ Autopsy
257p	49 y F	carbon monoxide	1	1	A	Inhal	Unt-E	2		
258ai	51 y F	carbon monoxide	1	1	A	Ingst + Inhal	Int-S	1		
		ethanol	2	2						
259pha	53 y F	carbon monoxide	1	1	A	Ingst	Int-S	1		
		oxycodone	2	2					oxycodone	0.513 mg/L In Serum @ Unknown
		oxycodone	2	2					oxymorphone	0.653 mg/L In Serum @ Unknown
		clonazepam	3	3					clonazepam	0.011 mg/L In Serum @ Unknown
		clonazepam	3	3					7-aminoclonazepam	0.02 mg/L In Serum @ Unknown
		gabapentin	4	4					gabapentin	7.18 mg/L In Serum @ Unknown
261ai	55 y M	carbon monoxide	1	1	A	Ingst + Inhal	Int-S	1		
		ethanol	2	2						
260i	55 y M	carbon monoxide	1	1	A	Inhal + Unk	Unk	1		
		clonazepam	2	2						
		ethanol	3	3						
262pa	55 y M	chlorine gas	1	1	A	Unk	Unk	1		
		carbon monoxide	2	2						
		methamphetamine	3	3					methamphetamine	1182 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	3	3					amphetamine	154 ng/mL In Blood (unspecified) @ Autopsy
		pseudoephedrine	4	4					pseudoephedrine	53.2 ng/mL In Blood (unspecified) @ Autopsy
		buprenorphine	5	5					buprenorphine	2.9 ng/mL In Blood (unspecified) @ Autopsy
		buprenorphine	5	5					norbuprenorphine	3.4 ng/mL In Blood (unspecified) @ Autopsy
		gabapentin	6	6					gabapentin	0.7 mcg/mL In Blood (unspecified) @ Autopsy
263ai	58 y F	carbon monoxide	1	1	A	Ingst + Inhal	Int-S	1		
		ethanol	2	2						
264pa	59 y M	carbon monoxide	1	1	A	Inhal	Unt-E	3	carboxyhemoglobin	14 % In Blood (unspecified) @ Autopsy
265ph	60 y F	carbon monoxide	1	1	A	Inhal	Unk	3		
266h	61 y M	carbon monoxide	1	1	A/C	Inhal + Derm	Unt-O	3		
267ai	62 y F	propane	1	1	U	Inhal + Unk	Int-S	1		
		carbon monoxide	1	1						
		cyclobenzaprine	2	2						
[268ha]	64 y M	sulfur dioxide	1	1	A	Inhal + Oc	Unt-O	1	ketamine	0.144 mcg/mL In Blood (unspecified) @ Unknown
		sulfur dioxide	1	1					amphetamine	0.146 mcg/mL In Blood (unspecified) @ Unknown
269h	64 y M	carbon monoxide	1	1	A	Inhal	Unt-E	3		
270p	66 y M	carbon monoxide	1	1	A	Inhal	Unt-E	2		
271hi	67 y M	carbon monoxide	1	1	A	Inhal	Unt-E	3		
272h	69 y M	carbon monoxide	1	1	A	Ingst + Inhal	Int-S	2	carboxyhemoglobin	19.4 % In Blood (unspecified) @ 1 h (pe)
		acetaminophen/hydrocodone	2	2					acetaminophen (apap)	1 mcg/mL In Serum @ 8 h (pe)
273h	70 y F	carbon monoxide	1	1	A	Inhal	Unt-E	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
274pha	73 y M	carbon monoxide	1	1	A	Inhal	Unt-E	3	carboxyhemoglobin	16 % In Whole Blood @ 1 h (pe)
		carbon monoxide	2	2						
275pa	75 y F	carbon monoxide	1	1	A	Inhal	Oth-M	1	carboxyhemoglobin	4 % In Blood (unspecified) @ Autopsy
		carbon monoxide	1	1						
276h	79 y F	carbon monoxide	1	1	A	Inhal	Unt-E	1		
277ph	81 y F	carbon monoxide	1	1	A	Inhal	Unt-E	3	carboxyhemoglobin	58 % In Blood (unspecified) @ Unknown
		carbon monoxide	1	1						
278ai	83 y M	helium	1	1	U	Unk	Int-S	1		
		diazepam	2	2						
		temazepam	3	3						
279h	85 y M	carbon monoxide	1	1	A	Inhal	Unt-E	2	carboxyhemoglobin	16.8 % In Blood (unspecified) @ 1 h (pe)
		carbon monoxide	2	2						
		cyanide	3	3						
280pa	96 y F	carbon monoxide	1	1	A	Inhal	Unt-E	1	carboxyhemoglobin	60 % In Blood (unspecified) @ Autopsy
281pi	Unknown age M	carbon monoxide	1	1	A	Inhal	Unt-O	1		
282p	Unknown age F	carbon monoxide	1	1	A	Inhal	Int-S	1		
		carbon monoxide	1	1						
See Also case 188, 295, 1233, 1783, 1958, 2347										
Heavy Metals										
283ha	26 y F	potassium chloride	1	1	U	Ingst	Int-U	1	potassium	7.6 mmol/L In Blood (unspecified) @ 1 h (pe)
		amitriptyline	2	2					amitriptyline	1400 ng/mL In Blood (unspecified) @ 1 h (pe)
		amitriptyline	2	2					nortriptyline	900 ng/mL In Blood (unspecified) @ 1 h (pe)
284	33 y F	lead	1	1	C	Unk	Unt-E	2	lead	123 mcg/dL In Serum @ Unknown
[285ha]	35 y M	arsenic	1	1	A	Ingst + Unk	Int-S	2		
		ethanol	2	2						
286p	40 y F	magnesium	1	1	C	Ingst	Unt-M	1		
		ethanol	2	2						
287h	55 y M	chromium	1	1	A	Inhal	Unt-O	2		
		nickel	2	2						
[288h]	59 y M	arsenic	1	1	A	Ingst	Int-S	1		
		benzene	2	2						
		toluene	3	3						
Hydrocarbons										
289ai	17 y M	hydrocarbon (fluorinated)	1	1	U	Inhal	Int-A	1		
290i	17 y M	hydrocarbon (fluorinated)	1	1	U	Unk	Unt-U	2		
291ai	20 y M	hydrocarbon (fluorinated)	1	1	C	Inhal	Int-A	3		
292h	23 y F	hydrocarbon (fluorinated)	1	1	A	Inhal	Unk	2		
293pha	25 y M	hydrocarbon (fluorinated)	1	1	A	Inhal	Int-A	2		
294ha	26 y M	hydrocarbon (fluorinated)	1	1	C	Inhal	Int-A	1		
295pha	27 y M	hydrocarbon (fluorinated)	1	1	A/C	Unk	Int-S	1	1,1-difluoroethane	19 mcg/mL In Blood (unspecified) @ Autopsy
		cocaine	2	2						
		nitric oxide	3	3						
		alprazolam	4	4						
		acetaminophen/hydrocodone	5	5						
296ph	27 y F	hydrocarbon (fluorinated)	1	1	A/C	Inhal	Int-A	1		
297	30 y F	hydrocarbon (fluorinated)	1	1	A	Inhal	Int-M	1		
298	31 y M	hydrocarbon (fluorinated)	1	1	A	Inhal	Int-A	1		
299pa	32 y M	hydrocarbon (fluorinated)	1	1	C	Inhal	Int-A	1	1,1-difluoroethane	51 mcg/mL In Blood (unspecified) @ Unknown
		hydrocarbon (inhalation)	2	1						
300ph	32 y M	hydrocarbon (inhalation)	2	1	A	Inhal	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
301	32 y M	hydrocarbon (fluorinated)	1	1	U	Inhal	Int-A	1		
302	32 y F	hydrocarbon (fluorinated)	1	1	A	Ingst + Inhal	Int-S	2		
303ai	33 y M	ethanol	2	2	U	Unk	Unk	1		
304	33 y M	hydrocarbon (fluorinated)	1	1	U	Inhal	Int-A	2		
305pa	34 y M	diphenhydramine	2	2	A	Inhal	Int-S	1		
306	34 y M	hydrocarbon	1	1	A	Inhal	Int-A	2		
307ph	34 y M	hydrocarbon (fluorinated)	1	1	A	Inhal	Int-A	1		
308ai	35 y M	hydrocarbon (fluorinated)	1	1	U	Unk	Unk	1		
309pha	36 y M	toluene	1	1	A	Inhal	Int-S	1		
310p	36 y F	hydrocarbon (fluorinated)	1	1	A/C	Inhal	Int-A	1		
[311ha]	36 y F	hydrocarbon (fluorinated)	1	1	A	Inhal	Int-A	1		
312ha	37 y M	hydrocarbon (fluorinated)	1	1	A	Inhal	Int-S	1		
313ai	37 y M	hydrocarbon (fluorinated)	1	1	U	Inhal + Unk	Int-A	1		
314ai	39 y M	oxycodone	2	2	U	Inhal	Int-A	1		
315ph	40 y M	sertraline	3	3	A	Inhal	Int-A	1		
316ai	41 y F	hydrocarbon (fluorinated)	1	1	U	Inhal + Unk	Int-A	2		
317p	42 y F	chlorpheniramine	2	2	U	Inhal	Int-M	1		
318ph	45 y F	clonazepam	3	3	A	Inhal	Unk	1		
319ph	49 y M	hydrocarbon (fluorinated)	1	1	A	Inhal	Int-A	1		
320ph	51 y F	hydrocarbon (fluorinated)	1	1	A	Inhal	Int-A	1		
321	59 y F	hydrocarbon (fluorinated)	1	1	A/C	Inhal	Int-A	2		
322ha	59 y M	hydrocarbon (fluorinated)	1	1	U	Ingst	Int-A	3		
[323ha]	Unknown adult (>=20 yrs) M	hydrocarbon	1	1	A	Ingst + Aspir	Unt-G	1		
		amphetamine	2	2					amphetamine	0.03 mg/L In Blood (unspecified) @ Unknown
		amphetamine	2	2					methamphetamine	0.3 mg/L In Blood (unspecified) @ Unknown
			3	3						methylenedioxymethamphetamine (MDMA)
See Also case 44, 288, 453, 627, 1326, 2285, 2615										
Industrial Cleaners										
324a	37 y M	hydrofluoric acid	1	1	A	Ingst	Unt-M	1		
Infectious and Toxin-Mediated Diseases										
[325h]	52 y M				A/C	Par	AR-O	3		
326h	64 y F	botulism	1	1	C	Ingst + Inhal	Unt-F	1		
		prion disease	1	1						
		melaleuca oil	2	2						
Mushrooms										
327ha	72 y F	mushroom (unknown)	1	1	A	Ingst	Int-S	2		
See Also case 2143										

(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
Other/Unknown Nondrug Substances										
328ph	49 y F				A	Unk	AR-D	3		
		fluorescein	1	1						
329ha	50 y M				U	Unk	Unk	3		
		substance (non-drug), unknown	1	1						
		ethanol	2	2					ethanol	97 mg/dL In Serum @ 0.25 h (pe)
330	72 y M				A	Ingst	Int-S	1		
		substance (non-drug), unknown	1	1						
See Also case 238, 553, 1923, 2566										
Paints and Stripping Agents										
331h	88 y M				A	Ingst + Derm	Int-S	2		
		paint-Varnish-lacquer	1	1						
Pesticides										
332pa	7 y M				C	Inhal	Unt-E	1		
		aluminum phosphide	1	1						
[333ha]	9 y M				U	Unk	Unk	1		
		aluminum phosphide	1	1						
334pha	11 y U				C	Inhal	Unt-E	1		
		aluminum phosphide	1	1						
[335ha]	17 y F				C	Inhal	Unt-E	1		
		aluminum phosphide	1	1						
336ha	19 y M				A	Ingst	Int-A	1		
		dinitrophenol	1	1						
337h	20 y M				A	Ingst	Int-S	1		
		dinitrophenol	1	1						
338p	22 y M				A	Ingst	Int-S	1		
		phosphine	1	1						
339ha	26 y M				A	Ingst	Int-S	1		
		dinitrophenol	1	1						
340pha	27 y M				A	Ingst	Int-S	1		
		dinitrophenol	1	1						
341h	27 y M				U	Ingst	Int-S	2		
		dinitrophenol	1	1						
342h	30 y M				A	Ingst + Unk	Unk	2		
		glyphosate	1	1						
		methamphetamine	2	2						
343h	31 y M				A	Inhal	Unt-O	2		
		methyl bromide	1	1						
344ha	35 y M				A	Ingst	Int-S	1		
		glyphosate	1	1						
[345ha]	36 y M				A	Inhal	Unt-E	1		
		sulfuryl fluoride	1	1						
346h	42 y M				A	Ingst	Int-S	2		
		chlorfenapyr	1	1						
		ethanol	2	2					ethanol	238 mg/dL In Blood (unspecified) @ Unknown
[347ha]	42 y M				A	Ingst	Int-S	1		
		dinitrophenol	1	1						
348p	47 y M				C	Inhal + Derm	Unt-E	2		
		pesticide, unknown	1	1						
349h	47 y M				A	Ingst	Int-S	1		
		organophosphate	1	1						
350pa	50 y M				A	Ingst	Int-U	3		
		glyphosate	1	1					amphetamine	31 ng/mL In Serum @ Autopsy
		glyphosate	1	1					methamphetamine	407 ng/mL In Serum @ Autopsy
351	55 y M				A	Ingst	Int-S	2		
		organophosphate	1	1						
352h	59 y M				U	Ingst	Int-S	2		
		rodenticide (anticoagulant) drug, unknown	1	1						
			2	2						
353pha	63 y M				A	Ingst	Int-U	3		
		cyhalothrin/prallethrin	1	1						
354h	69 y M				A	Ingst	Int-S	2		
		pesticide, unknown	1	1						
355h	70 y M				A	Ingst	Int-S	2		
		glyphosate	1	1						
		ethanol	2	2						
[356h]	71 y M				A	Ingst	Unt-M	1		
		paraquat	1	1						
357h	84 y M				A	Inhal	Unt-E	3		
		organophosphate	1	1						
		phosmet	2	2						
		captan	3	3						
See Also case 147										
Plants										
358a	18 y M				U	Ingst	Int-S	1		
		plant, cardiac glycoside	1	1						
		ethanol	3	2						
		methamphetamine	2	2						
359h	22 y F				A	Ingst	Int-S	1		
		plant, cardiac glycoside	1	1						
[360pha]	30 y F				A	Par	AR-D	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
[361ha]	33 y F	Curcuma domestica	1	1						
		plant, cardiac glycoside	1	1	A	Ingst	Unk	1		
362hai	56 y F	aconite	1	1	A	Ingst	AR-O	1	aconitine	5.6 ng/mL In Serum @ Unknown
363pha	75 y F	Conium maculatum	1	1	A	Ingst	Int-S	1		
		morphine	2	2					morphine	0.23 mg/L In Blood (unspecified) @ Autopsy
		benzodiazepine	3	3						
		ibuprofen	4	4						
		ethanol	5	5						
		drain cleaner (sodium hydroxide/sodium hypochlorite/sodium silicate)	6	6						
		citalopram	7	7					citalopram	0.11 mg/L In Blood (unspecified) @ Autopsy
		gabapentin	8	8					gabapentin	2.6 mg/L In Blood (unspecified) @ Autopsy
		nortriptyline	9	9					nortriptyline	0.01 mg/L In Blood (unspecified) @ Autopsy
See Also case 984, 1863, 2262 Tobacco/Nicotine/eCigarette Products										
[364pha]	19 y M	nicotine	1	1	A/C	Inhal	Unt-U	1		
[365ph]	20 y F	nicotine	1	1	A	Par	Int-S	1	nicotine	1000 ng/mL In Blood (unspecified) @ 3 d (pe)
		nicotine	1	1					cotinine	509.9 ng/mL In Blood (unspecified) @ 3 d (pe)
See Also case 2128 Weapons of Mass Destruction										
366ph	33 y F-Pregnant	non-powder, unknown	1	1	A	Inhal	Int-S	2		
367ha	51 y M	non-powder, unknown	1	1	U	Unk	Unk	3		
See Also case 186 Pharmaceutical Exposures Analgesics										
[368h]	2 y M	methadone	1	1	A	Ingst	Unt-G	1	methadone	400 ng/mL In Serum @ Unknown
		methadone	1	1					eddp (2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine)	83 ng/mL In Serum @ Unknown
		chlorpheniramine	2	2					chlorpheniramine	41 ng/mL In Serum @ Unknown
369p	2 y M	diphenhydramine	3	3	A	Ingst	Unt-G	1	diphenhydramine	180 ng/mL In Serum @ Unknown
		methadone	1	1					methadone	0.2 mg/L In Blood (unspecified) @ Autopsy
		methadone	1	1					methadone	0.5 mg/kg In Liver @ Autopsy
370pai	12 y M	fentanyl	1	1	A	Unk	Int-A	1	fentanyl	3.6 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl analog (acetyl fentanyl)	2	2						
		amphetamine	3	3					amphetamine	47 ng/mL In Blood (unspecified) @ Autopsy
[371ha]	13 y F	ibuprofen	1	1	A	Ingst + Aspir	Int-S	1		
372ph	14 y M	narcotic, other/unknown	1	1	A	Unk	Int-U	2		
373ph	15 y F	narcotic, other/unknown	1	1	A	Ingst	Int-A	1		
374ph	16 y F	oxycodone	1	1	A	Ingst	Int-S	2		
		acetaminophen/hydrocodone	2	2					acetaminophen (apap)	66.7 mcg/mL In Serum @ Unknown
		diazepam	3	3						
375pa	16 y F	fentanyl	1	1	U	Inhal	Int-A	1	fentanyl	0.17 mcg/g In Liver @ Autopsy
		fentanyl	1	1					fentanyl	12 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	2	2					cocaine	0.054 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					cocaethylene	0.13 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	2.3 mg/L In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	60 mg/dL In Blood (unspecified) @ Autopsy
376ai	16 y M	fentanyl	1	1	U	Unk	Int-A	1		
377ai	16 y M	fentanyl	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
378pha	17 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
379h	17 y F	tramadol	1	1	A	Ingst	Int-S	1		
380pai	17 y M	acetaminophen	1	1	A	Par	Int-A	1		
381pha	17 y F	fentanyl	1	1	A	Ingst+ Unk	Int-S	1		
		acetaminophen/oxycodone	1	1					oxycodone	162 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	2 mcg/mL In Blood (unspecified) @ Unknown
		alprazolam	2	2					alprazolam	146 ng/mL In Blood (unspecified) @ Unknown
382ai	17 y M	marijuana	3	3	A	Unk	Int-A	1		
		fentanyl	1	1						
383ai	17 y M	oxycodone	1	1	U	Unk	Int-S	1		
		alprazolam	2	2						
		marijuana	3	3						
384h	17 y F	acetaminophen	1	1	U	Ingst	Int-A	1		
385ai	18 y M	acetaminophen	1	1	A/C	Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
		cocaine	3	3						
386ai	18 y M	fentanyl	1	1	U	Unk	Int-A	1		
		ethanol	2	2						
388ai	18 y F	fentanyl	1	1	U	Unk	Int-A	1		
		ethanol	2	2						
389ai	18 y M	fentanyl	1	1	U	Unk	Int-A	1		
		alprazolam	2	2						
		dextromethorphan	3	3						
387ai	18 y M	fentanyl	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
393ai	18 y M	fentanyl	1	1	U	Unk	Int-A	1		
		alprazolam	2	2						
391ai	18 y M	fentanyl	1	1	U	Unk	Int-A	1		
		alprazolam	2	2						
394ai	18 y M	fentanyl	1	1	U	Unk	Int-A	1		
		tramadol	2	2						
		clonazepam	3	3						
392ai	18 y M	fentanyl	1	1	A	Unk	Int-A	1		
		cocaine	2	2						
		alprazolam	3	3						
390ai	18 y M	fentanyl	1	1	A	Unk	Int-A	1		
395ai	18 y M	morphine	1	1	U	Unk	Unk	1		
		diphenhydramine	2	2						
		doxylamine	3	3						
396ph	19 y F	fentanyl	1	1	A	Ingst+ Unk	Int-S	1		
		heroin	2	2						
		cocaine	3	3						
		alprazolam	4	4						
		codeine	5	5						
397p	19 y M	carfentanil	1	1	A	Unk	Unk	2		
398a	19 y F	acetaminophen	1	1	A	Ingst	Unk	1		
399pha	19 y M	acetaminophen	1	1	U	Unk	Int-A	2		
		fentanyl analog (alpha-methylfentanyl)	1	1						
		marijuana	2	2						
402ai	19 y M	fentanyl	1	1	U	Unk	Int-A	1		
		ethanol	2	2						
401ai	19 y M	fentanyl	1	1	U	Unk	Int-A	1		
		alprazolam	2	2						
		diazepam	3	3						
400ai	19 y M	fentanyl	1	1	U	Unk	Int-A	1		
		cocaine	2	2						
		levetiracetam	3	3						
403h	20 y F				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
404ai	20 y F	salicylate	1	1	U	Unk	Int-A	1	salicylate	87 mg/dL In Serum @ Unknown
		drug, unknown	2	2						
405ai	20 y M	oxycodone	1	1	U	Unk	Int-A	1		
		alprazolam	2	2						
406ai	20 y M	fentanyl	1	1	U	Unk	Int-A	1		
		cocaine	2	2						
		tramadol	3	3						
408ai	20 y M	fentanyl	1	1	U	Unk	Int-A	1		
		alprazolam	2	2						
		hydrocodone	3	3						
407ai	20 y M	fentanyl	1	1	U	Unk	Int-A	1		
		sertraline	2	2						
		alprazolam	3	3						
409ai	20 y F	fentanyl	1	1	U	Unk	Int-A	1		
		heroin	2	2						
		methamphetamine	3	3						
410ai	20 y M	fentanyl	1	1	U	Unk	Int-A	1		
		cocaine	2	2						
		alprazolam	3	3						
411pa	21 y F	methadone	1	1	A	Unk	Int-A	1	fentanyl	0.023 mg/L In Blood (unspecified) @ Autopsy
		methamphetamine	2	2						
412pa	21 y M	morphine	1	1	A	Unk	Int-A	1	morphine (free)	29 mcg/L In Whole Blood @ Unknown
413pa	21 y F	fentanyl	1	1	A	Inhal	Int-A	1	fentanyl	0.001 mg/L In Blood (unspecified) @ Autopsy
414pha	21 y F	fentanyl	1	1	A	Ingst	Int-A	1		
		benzodiazepine	2	2						
415p	21 y M	methadone	1	1	A	Unk	Unk	2		
		ethanol	2	2						
416pai	21 y M	ethanol	1	1	A	Par	Int-A	1	ethanol	134 mg/dL In Serum @ 1 h (pe)
417ai	21 y M	fentanyl	1	1	U	Unk	Int-A	1	fentanyl	13 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	2	2						
418ai	21 y M	alprazolam	3	3	U	Ingst + Unk	Int-A	3		
		fentanyl	1	1						
		alprazolam	2	2						
419ai	21 y F	ethanol	3	3	U	Unk	Int-S	1		
		morphine	1	1						
		ethanol	2	2						
420pha	22 y M	acetaminophen/oxycodone	1	1	A/C	Ingst	Int-U	1		
		antipsychotic (atypical)	2	2						
		hydrocodone	3	3						
		hydromorphone	4	4						
		morphine	5	5						
421pi	22 y M	carfentanil	1	1	A	Par	Int-A	1	morphine (free)	0.131 mg/L In Whole Blood @ Autopsy
422p	22 y M	fentanyl analog (acrylfentanyl)	1	1	A	Par	Int-A	1	acetyl fentanyl	0.84 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	2	2					norfentanyl	0.76 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	2	2					fentanyl	2.7 ng/mL In Blood (unspecified) @ Autopsy
		heroin	3	3					6-mam (6-monoacetylmorphine)	1.3 ng/mL In Blood (unspecified) @ Autopsy
		heroin	3	3					morphine	120 ng/mL In Blood (unspecified) @ Autopsy
		diphenhydramine	4	4					diphenhydramine	450 ng/mL In Blood (unspecified) @ Autopsy
423pa	22 y F	fentanyl	1	1	A	Par + Unk	Int-A	1	fentanyl	0.062 mcg/g In Liver @ Autopsy
		fentanyl	1	1					fentanyl	5.6 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl analog (furanlyfentanyl)	2	2					furanly fentanyl	0.37 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
		fentanyl analog (furanylfentanyl)	2	2					furanyl fentanyl	0.53 ng/mL In Blood (unspecified) @ Autopsy
		heroin	3	2					morphine	0.016 mcg/mL In Blood (unspecified) @ Autopsy
		oxycodone	4	4					oxycodone	0.095 mcg/mL In Blood (unspecified) @ Autopsy
424i	22 y M				U	Unk	Int-U	1		
		fentanyl	1	1						
		oxycodone	2	2						
		oxymorphone	3	3						
425ai	22 y M				U	Unk	Int-A	1		
		fentanyl analog (furanylfentanyl)	1	1						
		oxycodone	2	2						
426ph	22 y F	narcotic, other/unknown	1	1	A	Par	Int-A	2		
427pa	22 y F				U	Ingst + Par	Int-A	1		
		fentanyl	1	1					norfentanyl	0.4 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	1	1					fentanyl	1.2 ng/mL In Blood (unspecified) @ Unknown
		clozapine	2	2					clozapine	150 ng/mL In Blood (unspecified) @ Unknown
428	22 y M				A	Ingst	Unt-G	2		
		salicylate	1	1					salicylate	49 mg/dL In Whole Blood @ Unknown
429pa	22 y F				A	Ingst + Unk	Int-A	1		
		fentanyl	1	1					fentanyl	8.2 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	0.038 mg/L In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	140 mg/dL In Blood (unspecified) @ Autopsy
431ai	22 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		heroin	2	2						
430ai	22 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		heroin	2	2						
432h	22 y F	acetaminophen	1	1	A	Ingst	Int-S	1	acetaminophen (apap)	54 mcg/mL In Blood (unspecified) @ Unknown
433pha	23 y F	diphenhydramine	2	2	U	Unk	Int-A	1		
		fentanyl	1	1					norfentanyl	1.2 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	1	1					fentanyl	2.8 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	2	2					clonazepam	19 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	2	2					7-aminoclonazepam	56 ng/mL In Blood (unspecified) @ Unknown
		levetiracetam	3	3					levetiracetam	4.4 mcg/mL In Blood (unspecified) @ Unknown
434h	23 y F				U	Ingst + Par	Unk	2		
		acetaminophen	1	1						
		hydrocodone	2	2						
435ph	23 y M	narcotic, other/unknown	1	1	A	Unk	Int-M	1	morphine	612 ng/mL In Urine (quantitative only) @ 4 h (pe)
436h	23 y F	acetaminophen	1	1	U	Ingst	Int-S	1	acetaminophen (apap)	735 mcg/mL In Blood (unspecified) @ Unknown
437pi	23 y M	carfentanil	1	1	A	Unk	Int-A	1		
438pai	23 y M				A	Par	Int-A	1		
		fentanyl	1	1					norfentanyl	1.2 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	24 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	1000 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	2	2					cocaine	107 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	2	2					cocaethylene	152 ng/mL In Blood (unspecified) @ Autopsy
439pai	23 y M				A	Par	Int-A	1		
		fentanyl	1	1					fentanyl	40 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl analog (acetylfentanyl)	2	2						
440p	23 y F				A/C	Unk	Int-A	1		
		fentanyl analog (furanylfentanyl)	1	1					furanyl fentanyl	0.34 ng/mL In Blood (unspecified) @ Autopsy
		U-47700	2	2					u-47700	6.7 ng/mL In Blood (unspecified) @ Autopsy
		ketamine	3	3						
		alprazolam	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
441pa	23 y M	fentanyl	1	1	U	Unk	Int-A	1	fentanyl	0.006 mcg/g In Blood (unspecified) @ Autopsy
		cocaine	2	2					cocaine	0.033 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					cocaethylene	0.083 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	1.3 mg/L In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	140 mg/dL In Blood (unspecified) @ Autopsy
442pa	23 y F	fentanyl	1	1	U	Unk	Int-U	1	fentanyl	0.001 mg/L In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	0.003 mg/L In Serum @ Autopsy
443p	23 y F	fentanyl analog (furanyl/fentanyl) U-47700	1	1	A	Par	Int-A	1	furanyl fentanyl	0.34 ng/mL In Blood (unspecified) @ Autopsy
			2	2					u-47700	6.7 ng/mL In Blood (unspecified) @ Autopsy
444ai	23 y M	fentanyl	1	1	U	Unk	Int-A	1		
		morphine	2	2						
		midazolam	3	3						
445ai	23 y M	oxycodone	1	1	U	Unk	Int-A	1		
		alprazolam	2	2						
446pha	23 y F	fentanyl	1	1	A	Ingst	Int-S	1	fentanyl	6.4 ng/mL In Blood (unspecified) @ Unknown
452ai	23 y F	fentanyl	1	1	U	Ingst + Unk	Int-A	1		
		alprazolam	2	2						
453ai	23 y M	fentanyl	1	1	U	Unk	Int-S	2		
		hydrocodone	2	2						
		temazepam	3	3						
		gasoline	4	4						
450ai	23 y M	fentanyl	1	1	U	Unk	Int-A	1		
		oxycodone	2	2						
		alprazolam	3	3						
451ai	23 y M	fentanyl	1	1	U	Unk	Int-A	1		
449ai	23 y M	fentanyl	1	1	U	Unk	Int-A	1		
447ai	23 y M	fentanyl	1	1	U	Ingst + Unk	Int-A	2		
		alprazolam	2	2						
448ai	23 y F	fentanyl	1	1	U	Unk	Int-A	1		
		morphine	2	2						
456ai	23 y F	oxycodone	1	1	U	Unk	Int-A	3		
		bupropion	2	2						
		butalbital	3	3						
457ai	23 y F	oxycodone	1	1	U	Unk	Int-A	2		
455ai	23 y F	oxycodone	1	1	U	Unk	Int-A	1		
454ai	23 y F	oxycodone	1	1	U	Unk	Int-A	2		
458	23 y F	acetaminophen/diphenhydramine	1	1	C	Ingst	Int-S	1		
459pa	24 y F	fentanyl	1	1	A	Ingst + Unk	Int-A	1	fentanyl	14 ng/mL In Blood (unspecified) @ Autopsy
		heroin	2	2						
		alprazolam	3	3						
460pha	24 y M	fentanyl	1	1	U	Ingst + Inhal	Int-A	1	fentanyl	1.6 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	2	2					alprazolam	73.6 ng/mL In Blood (unspecified) @ Unknown
		marijuana	3	3					thc (tetrahydrocannabinol)	8.9 ng/mL In Blood (unspecified) @ Unknown
461a	24 y M	fentanyl	1	1	A/C	Ingst + Par	Int-A	1	fentanyl	13 ng/mL In Blood (unspecified) @ 4 h (pe)
		ethanol	2	2					ethanol	40 mg/dL In Blood (unspecified) @ Autopsy
462pha	24 y M	oxycodone	1	1	U	Ingst	Int-A	2	oxycodone (free)	310 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
		cocaine	2	2					benzoylecognine	210 ng/mL In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	337 mg/dL In Blood (unspecified) @ Unknown
463ai	24 y M	fentanyl	1	1	U	Unk	Int-A	1		
464ai	24 y M	fentanyl	1	1	U	Unk	Int-A	1		
		heroin	2	2						
		methamphetamine	3	3						
465ph	24 y F	fentanyl analog (acrlylfentanyl)	1	1	A	Par	Unk	1		
		heroin	2	2						
466	24 y F	acetaminophen/oxycodone	1	1	C	Ingst	Unk	3		
467ha	24 y M	salicylate	1	1	A	Ingst	Int-A	1	salicylate	110 ng/mL In Serum @ 7 d (pe)
468ai	24 y M	fentanyl	1	1	U	Ingst + Unk	Int-A	1		
		alprazolam	2	2						
		diphenhydramine	3	3						
469ai	24 y M	fentanyl	1	1	U	Unk	Int-A	1		
		marijuana	2	2						
470pha	25 y M	poppy seeds	1	1	A	Ingst	Int-S	2		
471h	25 y M	acetaminophen/ diphenhydramine	1	1	C	Ingst	Int-M	1	acetaminophen (apap)	18.9 mcg/mL In Blood (unspecified) @ Unknown
472ha	25 y F	acetaminophen	1	1	C	Ingst	Int-M	1	acetaminophen (apap)	131 mcg/mL In Serum @ 15 m (pe)
473ph	25 y M	narcotic, other/unknown	1	1	U	Unk	Unk	1		
474pai	25 y M		1	1	A/C	Ingst + Inhal + Par	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
		cocaine	3	3						
475ai	25 y M	fentanyl	1	1	U	Unk	Int-A	1		
			2	2						
		cocaine	3	3	A	Ingst	Int-S	1	salicylate	118 mg/dL In Blood (unspecified) @ Unknown
476	25 y F	salicylate	1	1					ethanol	141 mg/dL In Blood (unspecified) @ Unknown
		ethanol	2	2						
479ai	25 y M		1	1	U	Unk	Int-A	1		
		heroin	2	2						
		methamphetamine	3	3						
		THC homolog	4	4						
477ai	25 y F	fentanyl	1	1	U	Unk	Int-A	1		
		heroin	2	2						
478ai	25 y F	fentanyl	1	1	U	Unk	Int-A	1		
		alprazolam	2	2						
		lorazepam	3	3						
480ph	26 y M	methadone	1	1	A/C	Ingst	Int-M	2		
481h	26 y M	acetaminophen	1	1	A/C	Ingst	Unk	3		
482ph	26 y M		1	1	A	Inhal	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
484ai	26 y M	fentanyl	1	1	U	Unk	Int-M	1		
483ai	26 y M	fentanyl	1	1	U	Unk	Int-A	1		
		alprazolam	2	2						
485pai	26 y M	fentanyl	1	1	A	Inhal	Int-A	1	fentanyl	0.028 mg/L In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.05 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.08 % (wt/Vol) In Urine (quantitative only) @ Autopsy
		ethanol	2	2					ethanol	0.08 % (wt/Vol) In Vitreous @ Autopsy
486pa	26 y M	fentanyl	1	1	A	Par	Int-A	1	fentanyl	0.044 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			
487pai	26 y M	narcotic, other/unknown	2	2	A	Unk	Int-A	1					
		cocaine	3	3								cocaine	0.2 mg/L In Blood (unspecified) @ Autopsy
		cocaine	3	3								benzoylecognine	2.4 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	4	4								alprazolam	0.1 mg/L In Blood (unspecified) @ Autopsy
		fentanyl	1	1								fentanyl	0.004 mg/L In Blood (unspecified) @ Autopsy
		fentanyl analog (4-fluoroisobutyrfentanyl)	2	2									
		morphine	3	3								morphine (free)	21 mcg/L In Blood (unspecified) @ Autopsy
		ethanol	4	4								ethanol	0.14 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	4	4								ethanol	0.18 % (wt/Vol) In Vitreous @ Autopsy
		ethanol	4	4								ethanol	0.21 % (wt/Vol) In Urine (quantitative only) @ Autopsy
489ai	26 y M	cocaine	5	5	U	Unk	Unk	1		cocaine	0.3 mg/L In Blood (unspecified) @ Autopsy		
		cocaine	5	5						benzoylecognine	1.9 mg/L In Blood (unspecified) @ Autopsy		
490ai	26 y M	fentanyl	1	1	U	Unk	Int-A	1					
		alprazolam	2	2									
491ai	26 y M	fentanyl	1	1	U	Unk	Int-A	1					
		alprazolam	2	2									
		ethanol	3	3									
488ai	26 y M	fentanyl	1	1	A/C	Unk	Int-A	1					
		alprazolam	2	2									
492ai	26 y M	ethanol	3	3	U	Unk	Int-A	1					
		fentanyl	1	1									
		alprazolam	2	2									
493ai	26 y M	ethanol	3	3	U	Unk	Unk	1					
		hydromorphone	1	1									
		oxycodone	2	2									
494ai	26 y M	oxycodone	2	2	U	Unk	Unk	1					
		morphine	1	1									
		bupropion	2	2									
495ai	26 y M	benzodiazepine	3	3	U	Unk	Int-S	1					
		oxycodone	1	1									
		methylenedioxyamphetamine (MDMA)	2	2									
496ai	26 y M	diazepam	3	3	U	Unk	Unk	3					
		oxycodone	1	1									
		ethanol	2	2									
497p	27 y M	carfentanil	1	1	A	Inhal + Par	Int-A	1					
		diphenhydramine	2	2								diphenhydramine	100 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	3	3								amphetamine	6.9 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	3	3								methamphetamine	7.8 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	4	4								11-oh-thc (11-hydroxy-delta-9-tetrahydrocannabinol)	1 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	4	4								delta-9-carboxy-thc	10 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	5	5								7-aminoclonazepam	20 ng/mL In Blood (unspecified) @ Autopsy
		buprenorphine	1	1								buprenorphine	0.81 ng/mL In Serum @ 18 h (pe)
buprenorphine	1	1		norbuprenorphine	3.15 ng/mL In Serum @ 18 h (pe)								
499h	27 y M	bupropion	2	2	A	Ingst	Int-S	2		hydroxybupropion	916 ng/mL In Serum @ 18 h (pe)		
		acetaminophen	1	1									
500pa	27 y M	diphenhydramine	2	2	U	Par + Unk	Int-A	1					
		carfentanil	1	1								carfentanil	517 pg/mL In Blood (unspecified) @ Autopsy
501pa	27 y M	heroin	2	1	A	Unk	Int-A	1					
		morphine	1	1								morphine (free)	26 mcg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2								cocaine	0.05 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
502pai	27 y M	cocaine	2	2	A	Par	Int-A	1	benzoylcoognine	2.4 mg/L In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	5.6 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl analog (acetylfentanyl)	2	2						
503	27 y M	fentanyl analog (despropionyl fentanyl)	2	1	U	Ingst + Unk	Int-A	2		
		narcotic, other/unknown U-47700	3	1						
		drug, unknown stimulant or street drug	1	1						
			4	2						
504h	27 y M	salicylate	1	1	C	Ingst	Int-M	1	salicylate	110.4 mg/dL In Serum @ Unknown
		salicylate	1	1					salicylate	153 mg/dL In Serum @ Unknown
		salicylate	1	1					salicylate	77 mg/dL In Serum @ Unknown
506ai	27 y M	fentanyl	1	1	U	Unk	Int-A	1		
		heroin	2	2						
		methamphetamine	3	3						
		alprazolam	4	4						
505ai	27 y M	fentanyl	1	1	U	Unk	Int-A	1		
		alprazolam	2	2						
507	27 y F	acetaminophen/diphenhydramine	1	1	A	Ingst	Int-S	1	acetaminophen (apap)	218 mcg/mL In Serum @ 0 m (pe)
		acetaminophen/diphenhydramine	1	1					acetaminophen (apap)	24 mcg/mL In Serum @ 73 h (pe)
		acetaminophen/diphenhydramine	1	1					acetaminophen (apap)	64 mcg/mL In Serum @ 15 h (pe)
		diphenhydramine	2	2						
		diphenhydramine	3	3						
508ai	27 y M	fentanyl	1	1	U	Ingst + Unk	Int-A	1		
		ethanol	2	2						
510ai	27 y M	fentanyl	1	1	U	Unk	Int-A	1		
		heroin	2	2						
		cocaine	3	3						
511ai	27 y F	fentanyl	1	1	U	Unk	Int-A	1		
		heroin	2	2						
512ai	27 y M	fentanyl	1	1	U	Unk	Int-A	1		
		oxycodone	2	2						
509ai	27 y M	fentanyl	1	1	U	Unk	Int-A	1		
513ai	27 y F	methadone	1	1	U	Unk	Int-A	1		
		tramadol	2	2						
		clonazepam	3	3						
514h	28 y F	hydromorphone	1	1	A	Par + Vag	Int-A	1	hydromorphone	0.037 mg/L In Blood (unspecified) @ Autopsy
		hydromorphone	1	1					hydromorphone	0.12 mg/L In Vitreous @ Autopsy
		diphenhydramine	2	2						
515pa	28 y M	morphine	1	1	A	Unk	Int-A	1	morphine (free)	13 mcg/L In Blood (unspecified) @ Autopsy
		fentanyl analog	2	2						
		ethanol	3	3					ethanol	0.12 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	0.12 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	0.15 % (wt/Vol) In Vitreous @ Autopsy
		ethanol	3	3					ethanol	0.17 % (wt/Vol) In Urine (quantitative only) @ Autopsy
516pa	28 y F	promethazine	4	4	U	Unk	Int-A	1	promethazine	0.1 mg/L In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	39.3 ng/mL In Blood (unspecified) @ Autopsy
		heroin	2	2					morphine	138 ng/mL In Blood (unspecified) @ Autopsy
517pha	28 y M	heroin	2	2	A	Ingst	Int-A	1	6-mam (6-monoacetylmorphine)	7.9 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	111 mg/dL In Vitreous @ Autopsy
		ethanol	3	3					ethanol	92 mg/dL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					norfentanyl	1.6 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	1	1					fentanyl	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
518p	28 y F	fentanyl analog (acetyl fentanyl)	2	2	A	Par	Int-U	1	acetyl fentanyl	2.8 ng/mL In Blood (unspecified) ⓐ Unknown
		cocaine	3	3					benzoylceognine	197 ng/mL In Blood (unspecified) ⓐ Autopsy
520ai	28 y M	buprenorphine/naloxone (sublingual film)	1	1	U	Unk	Int-A	1		
519ai	28 y F	fentanyl	1	1	U	Unk	Int-A	1		
		cocaine	2	2						
		bupirone	3	3						
521i	28 y F	fentanyl	1	1	U	Ingst + Unk	Int-A	2		
522ai	28 y M	morphine	1	1	U	Unk	Int-S	1		
		acetaminophen/oxycodone	2	2						
		diphenhydramine	3	3						
523ph	28 y F	salicylate	1	1	A	Unk	Int-U	2		
		paroxetine	2	2						
		methamphetamine	3	3						
524pai	28 y M	narcotic, other/unknown	1	1	A	Inhal	Int-A	1		
525pa	28 y M	fentanyl	1	1	A	Par	Int-A	1	fentanyl	0.079 mg/L In Blood (unspecified) ⓐ Autopsy
		fentanyl analog (acetyl fentanyl)	2	2					acetyl fentanyl	0.006 mg/L In Blood (unspecified) ⓐ Autopsy
		fentanyl	1	1					fentanyl	0.004 mg/L In Blood (unspecified) ⓐ Autopsy
		heroin	2	2						
		dextromethorphan	3	3					dextromethorphan	1 mg/L In Blood (unspecified) ⓐ Autopsy
		dextromethorphan	3	3	dextromethorphan	1.3 mg/L In Blood (unspecified) ⓐ Autopsy				
527ai	28 y M				U	Unk	Int-A	1		
526ai	28 y M	fentanyl	1	1	U	Ingst + Unk	Int-A	1		
		phencyclidine	2	2						
		ethanol	3	3						
528ai	28 y F	morphine	1	1	U	Unk	Int-A	1		
529ai	28 y M	oxycodone	1	1	U	Unk	Int-S	1		
		diazepam	2	2						
530i	29 y F				A	Ingst	Int-S	1		
531pha	29 y M	acetaminophen/diphenhydramine	1	1	A	Ingst	Int-S	3		
		heroin	2	2						
532ha	29 y M	acetaminophen/hydrocodone	1	1	C	Ingst + Par	Int-M	3		
		benzodiazepine	2	2						
533pha	29 y F	acetaminophen drug, unknown	1	1	A/C	Ingst	Int-S	2		
		methadone	1	1						
		ethanol	2	2						
		barbiturate (short acting)	3	3						
		amphetamine	4	4						
		benzodiazepine	5	5						
534pai	29 y M				A	Par	Int-A	1		
535ha	29 y F	fentanyl	1	1	U	Ingst	Unk	1		
		methamphetamine	2	2						
		acetaminophen/oxycodone	1	1					oxycodone	133 ng/mL In Blood (unspecified) ⓐ Unknown
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	18 mcg/mL In Blood (unspecified) ⓐ Unknown
		acetaminophen/oxycodone	1	1					oxymorphone	6 ng/mL In Blood (unspecified) ⓐ Unknown
		ethanol	2	2					ethanol	305 mg/dL In Blood (unspecified) ⓐ Unknown
538ai	29 y M	cyclic antidepressant, unknown	3	3	U	Unk	Int-A	1		
536ai	29 y M	fentanyl	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
537ai	29 y M	fentanyl	1	1	U	Unk	Int-A	1		
		oxycodone	2	2						
		alprazolam	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																																																																																																																																																																																																																																																																																																																			
539h	29 y M	heroin	2	2	A	Ingst	Int-S	2																																																																																																																																																																																																																																																																																																																					
		methamphetamine	3	3							540ph	29 y M	salicylate	1	1	U	Unk	Int-A	1			ethanol	2	2	541pa	29 y F	hydrocodone	1	1	A	Par	Int-A	2			methamphetamine	2	2	diphenhydramine	3	3	542p	29 y F	fentanyl analog	1	1	A	Ingst	Int-S	3			methadone	2	2	543h	29 y F	oxycodone (extended release)	1	1	A	Ingst	Int-S	1			acetaminophen	1	1	544h	29 y F	ethanol	2	2	A/C	Ingst	Int-S	2			acetaminophen/oxycodone	1	1	545h	29 y M	acetaminophen/hydrocodone	2	2	A	Ingst	Int-S	1			quetiapine	3	3	lisdexamfetamine	4	4	zolpidem	5	5	alprazolam	6	6	colchicine	1	1	amlodipine	2	2	atenolol	3	3	warfarin	4	4	lisinopril	5	5	548ai	29 y M	benazepril/hydrochlorothiazide	6	6	U	Ingst + Unk	Int-A	2			prednisone	7	7	simvastatin	8	8	546ai	29 y M	lovastatin	9	9	U	Unk	Int-A	1			fentanyl	1	1	547ai	29 y F	methamphetamine	2	2	U	Unk	Int-A	1			ethanol	3	3	549ai	29 y M	cocaine	2	2	U	Unk	Int-A	1			fentanyl	1	1	550ai	29 y F	heroin	2	2	U	Unk	Int-M	1			ibuprofen	1	1	551a	30 y M	oxycodone	1	1	A	Ingst	Int-S	1			ethanol	2	2	cyclobenzaprine	3	3	552h	30 y F	methadone	1	1	U	Ingst	Int-S	1	methadone	0.06 mg/L In Blood (unspecified) ⓐ Autopsy	methadone	1	1	methadone	0.1 mg/L In Blood (unspecified) ⓐ Autopsy	fentanyl	2	2	fentanyl	0.005 mg/L In Blood (unspecified) ⓐ Autopsy	diazepam	3	3	nordiazepam	0.4 mg/L In Blood (unspecified) ⓐ Autopsy	553pa	30 y F	acetaminophen/diphenhydramine	1	1	A	Ingst	Int-S	1	diphenhydramine	1.1 mg/L In Blood (unspecified) ⓐ Unknown	acetaminophen/diphenhydramine	1	1	acetaminophen (apap)	28 mg/dL In Blood (unspecified) ⓐ Unknown	553pa	30 y F	oxycodone	1	1	A	Ingst	Int-S	1	oxycodone	1891 ng/mL In Blood (unspecified) ⓐ Unknown	acetaminophen/oxycodone	1	1	acetaminophen (apap)	220 mcg/mL In Blood (unspecified) ⓐ Unknown	clonazepam	2	2	7-aminoclonazepam	21.6 mcg/mL In Blood (unspecified) ⓐ Unknown	clonazepam	2	2	clonazepam	91.1 ng/mL In Blood (unspecified) ⓐ Unknown	trazodone	3	3	trazodone	15.9 mcg/mL In Blood (unspecified) ⓐ Unknown	ziprasidone	4	4			lamotrigine	5	5	lamotrigine	1.3 mcg/mL In Blood (unspecified) ⓐ Unknown	omeprazole	6	6			buspirone	7	7			olanzapine	8	8	olanzapine	752 ng/mL In Blood (unspecified) ⓐ Unknown			lorazepam	9	9			
540ph	29 y M	salicylate	1	1	U	Unk	Int-A	1																																																																																																																																																																																																																																																																																																																					
		ethanol	2	2							541pa	29 y F	hydrocodone	1	1	A	Par	Int-A	2			methamphetamine	2	2			diphenhydramine	3	3							542p	29 y F	fentanyl analog	1	1	A	Ingst	Int-S	3			methadone	2	2	543h	29 y F	oxycodone (extended release)	1	1	A	Ingst	Int-S	1			acetaminophen	1	1	544h	29 y F	ethanol	2	2	A/C	Ingst	Int-S	2			acetaminophen/oxycodone	1	1	545h	29 y M	acetaminophen/hydrocodone	2	2	A			Ingst	Int-S	1									quetiapine	3	3	lisdexamfetamine	4	4	zolpidem	5	5	alprazolam	6	6	colchicine	1	1	amlodipine	2	2	atenolol	3	3	warfarin	4	4	lisinopril			5	5	548ai							29 y M	benazepril/hydrochlorothiazide	6	6	U	Ingst + Unk	Int-A	2			prednisone	7	7	simvastatin	8	8	546ai	29 y M	lovastatin	9	9	U	Unk	Int-A	1			fentanyl	1	1	547ai	29 y F	methamphetamine	2	2	U	Unk	Int-A	1			ethanol	3	3	549ai	29 y M	cocaine	2	2	U	Unk	Int-A	1			fentanyl	1	1	550ai	29 y F	heroin	2			2	U	Unk							Int-M	1			ibuprofen	1			1	551a	30 y M					oxycodone	1	1	A	Ingst	Int-S	1			ethanol	2	2	cyclobenzaprine	3	3	552h	30 y F	methadone	1	1	U	Ingst	Int-S	1	methadone	0.06 mg/L In Blood (unspecified) ⓐ Autopsy	methadone	1	1	methadone	0.1 mg/L In Blood (unspecified) ⓐ Autopsy	fentanyl	2			2	fentanyl	0.005 mg/L In Blood (unspecified) ⓐ Autopsy					diazepam	3	3	nordiazepam	0.4 mg/L In Blood (unspecified) ⓐ Autopsy	553pa	30 y F	acetaminophen/diphenhydramine	1	1	A	Ingst	Int-S	1	diphenhydramine	1.1 mg/L In Blood (unspecified) ⓐ Unknown	acetaminophen/diphenhydramine	1	1	acetaminophen (apap)	28 mg/dL In Blood (unspecified) ⓐ Unknown	553pa	30 y F	oxycodone	1	1	A	Ingst	Int-S	1	oxycodone	1891 ng/mL In Blood (unspecified) ⓐ Unknown	acetaminophen/oxycodone	1	1	acetaminophen (apap)	220 mcg/mL In Blood (unspecified) ⓐ Unknown	clonazepam	2	2	7-aminoclonazepam	21.6 mcg/mL In Blood (unspecified) ⓐ Unknown	clonazepam	2	2	clonazepam	91.1 ng/mL In Blood (unspecified) ⓐ Unknown	trazodone	3	3	trazodone	15.9 mcg/mL In Blood (unspecified) ⓐ Unknown	ziprasidone	4	4
541pa	29 y F	hydrocodone	1	1	A	Par	Int-A	2																																																																																																																																																																																																																																																																																																																					
		methamphetamine	2	2																																																																																																																																																																																																																																																																																																																									
		diphenhydramine	3	3							542p	29 y F	fentanyl analog	1	1	A	Ingst	Int-S	3			methadone	2	2	543h	29 y F	oxycodone (extended release)	1	1	A	Ingst	Int-S	1			acetaminophen	1	1	544h	29 y F	ethanol	2	2	A/C	Ingst	Int-S	2			acetaminophen/oxycodone	1	1	545h	29 y M	acetaminophen/hydrocodone	2	2	A	Ingst	Int-S	1			quetiapine	3	3	lisdexamfetamine	4	4	zolpidem	5	5	alprazolam	6	6	colchicine	1			1	amlodipine	2															2	atenolol	3	3	warfarin	4	4	lisinopril	5	5	548ai	29 y M	benazepril/hydrochlorothiazide	6	6	U	Ingst + Unk	Int-A	2			prednisone	7	7	simvastatin	8	8	546ai	29 y M	lovastatin	9	9	U	Unk	Int-A	1			fentanyl	1	1	547ai	29 y F	methamphetamine	2	2	U	Unk	Int-A	1			ethanol	3	3	549ai	29 y M	cocaine	2	2	U	Unk	Int-A	1			fentanyl	1	1	550ai	29 y F	heroin	2	2	U	Unk	Int-M	1			ibuprofen	1	1	551a	30 y M	oxycodone	1	1	A	Ingst	Int-S	1			ethanol	2	2	cyclobenzaprine	3	3	552h	30 y F	methadone	1	1	U	Ingst	Int-S	1	methadone	0.06 mg/L In Blood (unspecified) ⓐ Autopsy	methadone	1	1	methadone	0.1 mg/L In Blood (unspecified) ⓐ Autopsy	fentanyl	2	2	fentanyl	0.005 mg/L In Blood (unspecified) ⓐ Autopsy	diazepam	3	3	nordiazepam	0.4 mg/L In Blood (unspecified) ⓐ Autopsy	553pa	30 y F	acetaminophen/diphenhydramine	1	1	A	Ingst	Int-S	1	diphenhydramine	1.1 mg/L In Blood (unspecified) ⓐ Unknown	acetaminophen/diphenhydramine	1			1	acetaminophen (apap)	28 mg/dL In Blood (unspecified) ⓐ Unknown					553pa	30 y F	oxycodone	1	1	A	Ingst	Int-S	1			oxycodone	1891 ng/mL In Blood (unspecified) ⓐ Unknown	acetaminophen/oxycodone					1	1	acetaminophen (apap)	220 mcg/mL In Blood (unspecified) ⓐ Unknown	clonazepam	2	2	7-aminoclonazepam	21.6 mcg/mL In Blood (unspecified) ⓐ Unknown	clonazepam	2	2	clonazepam	91.1 ng/mL In Blood (unspecified) ⓐ Unknown	trazodone	3	3	trazodone	15.9 mcg/mL In Blood (unspecified) ⓐ Unknown	ziprasidone	4			4							lamotrigine	5	5	lamotrigine	1.3 mcg/mL In Blood (unspecified) ⓐ Unknown	omeprazole	6	6			buspirone	7	7			olanzapine	8	8	olanzapine	752 ng/mL In Blood (unspecified) ⓐ Unknown			lorazepam	9	9
542p	29 y F	fentanyl analog	1	1	A	Ingst	Int-S	3																																																																																																																																																																																																																																																																																																																					
		methadone	2	2							543h	29 y F	oxycodone (extended release)	1	1	A	Ingst	Int-S	1			acetaminophen	1	1	544h	29 y F	ethanol	2	2	A/C	Ingst	Int-S	2			acetaminophen/oxycodone	1	1	545h	29 y M	acetaminophen/hydrocodone	2	2	A	Ingst	Int-S	1			quetiapine	3	3			lisdexamfetamine	4	4							zolpidem	5	5	alprazolam	6	6	colchicine	1	1	amlodipine	2	2	atenolol	3			3	warfarin	4															4	lisinopril	5	5	548ai	29 y M	benazepril/hydrochlorothiazide	6	6	U			Ingst + Unk	Int-A	2									prednisone	7	7	simvastatin	8	8	546ai	29 y M	lovastatin	9	9	U	Unk	Int-A	1			fentanyl	1	1	547ai	29 y F	methamphetamine	2	2	U	Unk	Int-A	1			ethanol	3	3	549ai	29 y M	cocaine	2	2	U	Unk	Int-A	1			fentanyl	1	1	550ai	29 y F	heroin	2	2	U	Unk	Int-M	1			ibuprofen			1	1	551a							30 y M	oxycodone	1	1	A	Ingst			Int-S	1							ethanol	2	2	cyclobenzaprine	3	3	552h	30 y F	methadone	1	1	U	Ingst	Int-S	1	methadone	0.06 mg/L In Blood (unspecified) ⓐ Autopsy	methadone	1	1	methadone	0.1 mg/L In Blood (unspecified) ⓐ Autopsy	fentanyl	2	2	fentanyl	0.005 mg/L In Blood (unspecified) ⓐ Autopsy	diazepam	3	3	nordiazepam	0.4 mg/L In Blood (unspecified) ⓐ Autopsy	553pa	30 y F	acetaminophen/diphenhydramine	1	1	A			Ingst	Int-S	1							diphenhydramine	1.1 mg/L In Blood (unspecified) ⓐ Unknown	acetaminophen/diphenhydramine					1	1	acetaminophen (apap)	28 mg/dL In Blood (unspecified) ⓐ Unknown	553pa	30 y F	oxycodone	1	1	A	Ingst	Int-S	1	oxycodone	1891 ng/mL In Blood (unspecified) ⓐ Unknown	acetaminophen/oxycodone	1	1	acetaminophen (apap)	220 mcg/mL In Blood (unspecified) ⓐ Unknown	clonazepam			2	2	7-aminoclonazepam					21.6 mcg/mL In Blood (unspecified) ⓐ Unknown	clonazepam	2	2	clonazepam	91.1 ng/mL In Blood (unspecified) ⓐ Unknown	trazodone	3	3	trazodone	15.9 mcg/mL In Blood (unspecified) ⓐ Unknown	ziprasidone	4	4			lamotrigine	5	5	lamotrigine	1.3 mcg/mL In Blood (unspecified) ⓐ Unknown	omeprazole	6	6	
543h	29 y F	oxycodone (extended release)	1	1	A	Ingst	Int-S	1																																																																																																																																																																																																																																																																																																																					
		acetaminophen	1	1																																																																																																																																																																																																																																																																																																																									
544h	29 y F	ethanol	2	2	A/C	Ingst	Int-S	2																																																																																																																																																																																																																																																																																																																					
		acetaminophen/oxycodone	1	1																																																																																																																																																																																																																																																																																																																									
545h	29 y M	acetaminophen/hydrocodone	2	2	A	Ingst	Int-S	1																																																																																																																																																																																																																																																																																																																					
		quetiapine	3	3																																																																																																																																																																																																																																																																																																																									
		lisdexamfetamine	4	4																																																																																																																																																																																																																																																																																																																									
		zolpidem	5	5																																																																																																																																																																																																																																																																																																																									
		alprazolam	6	6																																																																																																																																																																																																																																																																																																																									
		colchicine	1	1																																																																																																																																																																																																																																																																																																																									
		amlodipine	2	2																																																																																																																																																																																																																																																																																																																									
		atenolol	3	3																																																																																																																																																																																																																																																																																																																									
		warfarin	4	4																																																																																																																																																																																																																																																																																																																									
lisinopril	5	5																																																																																																																																																																																																																																																																																																																											
548ai	29 y M	benazepril/hydrochlorothiazide	6	6	U	Ingst + Unk	Int-A	2																																																																																																																																																																																																																																																																																																																					
		prednisone	7	7																																																																																																																																																																																																																																																																																																																									
		simvastatin	8	8																																																																																																																																																																																																																																																																																																																									
546ai	29 y M	lovastatin	9	9	U	Unk	Int-A	1																																																																																																																																																																																																																																																																																																																					
		fentanyl	1	1																																																																																																																																																																																																																																																																																																																									
547ai	29 y F	methamphetamine	2	2	U	Unk	Int-A	1																																																																																																																																																																																																																																																																																																																					
		ethanol	3	3																																																																																																																																																																																																																																																																																																																									
549ai	29 y M	cocaine	2	2	U	Unk	Int-A	1																																																																																																																																																																																																																																																																																																																					
		fentanyl	1	1																																																																																																																																																																																																																																																																																																																									
550ai	29 y F	heroin	2	2	U	Unk	Int-M	1																																																																																																																																																																																																																																																																																																																					
		ibuprofen	1	1																																																																																																																																																																																																																																																																																																																									
551a	30 y M	oxycodone	1	1	A	Ingst	Int-S	1																																																																																																																																																																																																																																																																																																																					
		ethanol	2	2																																																																																																																																																																																																																																																																																																																									
		cyclobenzaprine	3	3																																																																																																																																																																																																																																																																																																																									
552h	30 y F	methadone	1	1	U	Ingst	Int-S	1	methadone	0.06 mg/L In Blood (unspecified) ⓐ Autopsy																																																																																																																																																																																																																																																																																																																			
		methadone	1	1					methadone	0.1 mg/L In Blood (unspecified) ⓐ Autopsy																																																																																																																																																																																																																																																																																																																			
		fentanyl	2	2					fentanyl	0.005 mg/L In Blood (unspecified) ⓐ Autopsy																																																																																																																																																																																																																																																																																																																			
		diazepam	3	3					nordiazepam	0.4 mg/L In Blood (unspecified) ⓐ Autopsy																																																																																																																																																																																																																																																																																																																			
553pa	30 y F	acetaminophen/diphenhydramine	1	1	A	Ingst	Int-S	1	diphenhydramine	1.1 mg/L In Blood (unspecified) ⓐ Unknown																																																																																																																																																																																																																																																																																																																			
		acetaminophen/diphenhydramine	1	1					acetaminophen (apap)	28 mg/dL In Blood (unspecified) ⓐ Unknown																																																																																																																																																																																																																																																																																																																			
553pa	30 y F	oxycodone	1	1	A	Ingst	Int-S	1	oxycodone	1891 ng/mL In Blood (unspecified) ⓐ Unknown																																																																																																																																																																																																																																																																																																																			
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	220 mcg/mL In Blood (unspecified) ⓐ Unknown																																																																																																																																																																																																																																																																																																																			
		clonazepam	2	2					7-aminoclonazepam	21.6 mcg/mL In Blood (unspecified) ⓐ Unknown																																																																																																																																																																																																																																																																																																																			
		clonazepam	2	2					clonazepam	91.1 ng/mL In Blood (unspecified) ⓐ Unknown																																																																																																																																																																																																																																																																																																																			
		trazodone	3	3					trazodone	15.9 mcg/mL In Blood (unspecified) ⓐ Unknown																																																																																																																																																																																																																																																																																																																			
		ziprasidone	4	4																																																																																																																																																																																																																																																																																																																									
		lamotrigine	5	5					lamotrigine	1.3 mcg/mL In Blood (unspecified) ⓐ Unknown																																																																																																																																																																																																																																																																																																																			
		omeprazole	6	6																																																																																																																																																																																																																																																																																																																									
		buspirone	7	7																																																																																																																																																																																																																																																																																																																									
olanzapine	8	8	olanzapine	752 ng/mL In Blood (unspecified) ⓐ Unknown																																																																																																																																																																																																																																																																																																																									
		lorazepam	9	9																																																																																																																																																																																																																																																																																																																									

(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
554a	30 y F	substance (non-drug), unknown	10	10	A	Par	Unk	1		
		oxycodone	1	1					oxycodone	0.5 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	1	1					oxycodone	0.6 mg/L In Blood (unspecified) @ Autopsy
		methadone	2	2					methadone	0.1 mg/L In Blood (unspecified) @ Autopsy
		methadone	2	2					methadone	0.2 mg/L In Blood (unspecified) @ Autopsy
		fentanyl	3	3					fentanyl	0.002 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	4	4					alprazolam	0.036 mg/L In Blood (unspecified) @ Autopsy
tramadol	5	5	tramadol	0.3 mg/L In Blood (unspecified) @ Autopsy						
555h	30 y M	narcotic, other/unknown	1	1	A	Ingst	Int-A	1		
		lorazepam	2	2						
		alprazolam	3	3						
556pa	30 y M	fentanyl	1	1	A	Ingst	Int-A	1		
557ai	30 y M	fentanyl	1	1	U	Unk	Int-A	1		
		cocaine	2	2						
		alprazolam	3	3						
558ai	30 y M	morphine	1	1	U	Unk	Int-A	2		
		diazepam	2	2						
		dextromethorphan	3	3						
559ai	30 y M	oxycodone	1	1	U	Unk	Int-M	1		
		trazodone	2	2						
		sertraline	3	3						
560p	30 y M	narcotic, other/unknown	1	1	A	Unk	Int-M	2		
561ph	30 y M	fentanyl	1	1	A	Par	Int-A	1		
		heroin	2	2						
562ai	30 y M	acetaminophen	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		cocaine	3	3						
563ai	30 y M	fentanyl	1	1	U	Unk	Int-A	1		
		cocaine	2	2						
564ph	31 y M	acetaminophen/diphenhydramine	1	1	A	Ingst	Int-S	2		
565pha	31 y M	fentanyl	1	1	U	Ingst + Unk	Unk	1	norfentanyl	18.6 ng/mL In Blood (unspecified) @ 30 m (pe)
		fentanyl	1	1					fentanyl	6.74 ng/mL In Blood (unspecified) @ 30 m (pe)
		Mitragyna speciosa korthals	2	2					mitragynine	21 ng/mL In Blood (unspecified) @ 30 m (pe)
		clonazepam	3	3					clonazepam	12 ng/mL In Blood (unspecified) @ 30 m (pe)
		clonazepam	3	3					7-aminoclonazepam	83 ng/mL In Blood (unspecified) @ 30 m (pe)
		alprazolam	4	4					alprazolam	0.25 mg/L In Blood (unspecified) @ 30 m (pe)
		cocaine	5	5					ecgonine methyl ester	0.07 mg/L In Blood (unspecified) @ 30 m (pe)
		cocaine	5	5					benzoylecognine	0.31 mg/L In Blood (unspecified) @ 30 m (pe)
566pai	31 y M	diphenhydramine	6	6	A	Ingst + Unk	Int-A	1		
		carfentanil	1	1						
567ha	31 y F	ethanol	2	2	C	Ingst	Int-M	1		
568pa	31 y M	acetaminophen	1	1	A	Unk	Int-U	1	acetaminophen (apap)	80 mcg/mL In Plasma @ 30 m (pe)
		methadone	1	1					methadone	0.4 mg/L In Blood (unspecified) @ Autopsy
		morphine	2	2					morphine (free)	21 mcg/L In Blood (unspecified) @ Autopsy
		alprazolam	3	3					alprazolam	0.05 mg/L In Blood (unspecified) @ Autopsy
569ai	31 y M	fentanyl	1	1	U	Unk	Int-A	1		
		alprazolam	2	2						
570pa	32 y M	oxycodone	1	1	A	Unk	Int-A	1	oxycodone	0.1 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
		ethanol	2	2					ethanol	0.07 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.09 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.12 % (wt/Vol) In Vitreous @ Autopsy
		ethanol	2	2					ethanol	0.16 % (wt/Vol) In Urine (quantitative only) @ Autopsy
571ph	32 y F	acetaminophen/hydrocodone	1	1	A	Ingst	Int-S	1		
		benzodiazepine	2	2						
572pha	32 y M	U-47700	1	1	C	Unk	Unk	1	u-47700	0.37 mg/L In Blood (unspecified) @ 1 h (pe)
		alprazolam	2	2					alprazolam	0.025 mg/L In Blood (unspecified) @ 1 h (pe)
		clonazepam	3	3					clonazepam	0.003 mg/L In Blood (unspecified) @ 1 h (pe)
		clonazepam	3	3					7-aminoclonazepam	0.012 mg/L In Blood (unspecified) @ 1 h (pe)
		human chorionic gonadotrophin	4	4						
573	32 y F	acetaminophen	1	1	A	Ingst	Int-S	1		
574pa	32 y F	fentanyl	1	1	A	Unk	Int-A	1	fentanyl	0.007 mg/L In Blood (unspecified) @ Autopsy
575p	32 y M	narcotic, other/unknown	1	1	A	Ingst + Aspir + Par	Int-A	1		
576h	32 y F	carfentanil	1	1	A	Unk	Int-A	2		
577ai	32 y M	fentanyl	1	1	U	Unk	Int-M	2		
		alprazolam	2	2						
578ai	32 y M	methadone	1	1	U	Unk	Int-A	2		
		citalopram	2	2						
579ph	32 y M	methadone	1	1	A	Ingst	Int-A	1		
		ethanol	2	2					ethanol	210 mg/dL In Blood (unspecified) @ Autopsy
580pha	32 y F	carfentanil	1	1	A	Unk	Int-A	1	carfentanil	0.1 ng/mL In Blood (unspecified) @ 1 h (pe)
		fentanyl analog (furanyl/fentanyl)	2	2					furanyl fentanyl	0.12 ng/mL In Blood (unspecified) @ 1 h (pe)
		narcotic, other/unknown	3	3					despropionyl fentanyl (4-anpp)	0.57 ng/mL In Blood (unspecified) @ 1 h (pe)
		cocaine	4	4					cocaine	0.12 mg/L In Blood (unspecified) @ 1 h (pe)
		cocaine	4	4					benzoylecognine	2.84 mg/L In Blood (unspecified) @ 1 h (pe)
		trazodone	5	5					trazodone	0.1 mcg/mL In Blood (unspecified) @ 1 h (pe)
581h	32 y F-Pregnant	narcotic, other/unknown	1	1	A/C	Par	Int-S	2		
		alprazolam	2	2						
582ai	32 y M	fentanyl	1	1	U	Unk	Int-A	1		
583ai	32 y M	methadone	1	1	U	Unk	Int-A	1		
		alprazolam	2	2						
585ai	32 y M	methadone	1	1	U	Unk	Int-A	1		
		clonazepam	2	2						
		buprenorphine	3	3						
586ai	32 y M	methadone	1	1	U	Unk	Int-A	1		
584ai	32 y F	methadone	1	1	U	Unk	Int-A	1		
587h	32 y F	acetaminophen	1	1	C	Ingst	Unt-U	2		
588p	33 y M	fentanyl	1	1	A/C	Unk	Int-A	1	acetaminophen (apap)	64 mcg/mL In Serum @ 24 h (pe)
		heroin	2	2						
		ethanol	3	3						
589pai	33 y F	carfentanil	1	1	A	Ingst + Unk	Int-A	1		
		ethanol	2	2						
590pa	33 y M	fentanyl	1	1	U	Unk	Int-A	1	fentanyl	0.024 mg/L In Blood (unspecified) @ Autopsy
		fentanyl analog (4-fluoroisobutyrfentanyl)	2	2						
		ethanol	3	3					ethanol	0.18 % (wt/Vol) 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
591ai	33 y M	ethanol	3	3	U	Ingst + Unk	Int-A	1	ethanol	0.19 % (wt/Vol) In Vitreous @ Autopsy
		ethanol	3	3					ethanol	0.24 % (wt/Vol) In Urine (quantitative only) @ Autopsy
		fentanyl alprazolam ethanol	1 2 3	1 2 3						
592ai	33 y M	fentanyl	1	1	U	Unk	Int-A	2		
		oxycodone	2	2						
		cocaine	3	3						
593pai	33 y M	fentanyl analog	1	1	A	Unk	Int-A	1		
594h	33 y F	acetaminophen	1	1	C	Ingst	Int-M	2	acetaminophen (apap)	76 mg/L In Blood (unspecified) @ 30 m (pe)
595ai	33 y M	fentanyl	1	1	U	Unk	Int-A	1		
		diazepam	2	2						
		cocaine	3	3						
597ai	33 y M	fentanyl	1	1	U	Unk	Int-A	1		
		heroin	2	2						
		methamphetamine	3	3						
596ai	33 y M	fentanyl	1	1	U	Unk	Int-A	2		
598ph	33 y M	narcotic, other/unknown drug, unknown	1	1	A/C	Ingst	Int-A	2		
		ethanol	2	2						
		ethanol	3	3						
599pai	34 y M				A	Unk	Int-A	3	ethanol	370 mg/dL In Blood (unspecified) @ Unknown
		methadone	1	1					methadone	0.7 mg/L In Blood (unspecified) @ Autopsy
		methadone	1	1					methadone	0.8 mg/L In Blood (unspecified) @ Autopsy
600h	34 y F	acetaminophen	1	1	A	Ingst	Int-S	1	acetaminophen (apap)	142.8 mcg/mL In Blood (unspecified) @ Unknown
601h	34 y M	warfarin	2	2	U	Ingst	Int-S	2		
		drug, unknown	3	3						
		acetaminophen/diphenhydramine	1	1					acetaminophen (apap)	26 mcg/mL In Serum @ Unknown
602pha	34 y F				A/C	Unk	Int-U	1		
603pha	34 y M	fentanyl	1	1	A	Ingst	Int-S	1		
		alprazolam	2	2						
		acetaminophen	1	1					acetaminophen (apap)	699 mcg/mL In Blood (unspecified) @ Unknown
604pai	34 y F	venlafaxine	2	2	A	Unk	Int-A	1		
		trazodone	3	3						
		beta blocker	4	4						
		calcium antagonist	5	5						
		phenytoin	6	6						
		carfentanil	1	1						
605ph	34 y M	narcotic, other/unknown	1	1	U	Ingst + Unk	Int-A	2		
		benzodiazepine	2	2						
		drug, unknown stimulant or street drug	3	3						
606ai	34 y M	marijuana	4	4	U	Unk	Int-A	1		
		fentanyl	1	1						
		heroin	2	2						
607ai	34 y F	ethanol	3	3	U	Unk	Int-A	1		
		oxycodone	1	1						
		trazodone	2	2						
608pha	34 y F	gabapentin	3	3	A	Ingst	Int-S	2		
		promethazine	4	4						
		methadone	1	1						
		diazepam	2	2					nordiazepam	0.056 mg/L In Plasma @ Autopsy
		diazepam	2	2					oxazepam	0.559 mg/L In Urine (quantitative only) @ Autopsy
609h	34 y F	tramadol	3	3	A	Ingst	Int-S	1	tramadol	0.077 mg/L In Blood (unspecified) @ Autopsy
		temazepam	4	4					temazepam	0.102 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen/diphenhydramine	1	1					acetaminophen (apap)	168 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
611ai	34 y M	fentanyl	1	1	U	Unk	Int-A	1		
		heroin	2	2						
		methamphetamine	3	3						
610ai	34 y M	fentanyl	1	1	U	Ingst + Unk	Int-A	1		
		tramadol	2	2						
		ethanol	3	3						
612ai	34 y F	morphine	1	1	U	Unk	Int-A	2		
		fluoxetine	2	2						
		promethazine	3	3						
613ai	34 y M	oxycodone	1	1	U	Unk	Unk	2		
		hydrocodone	2	2						
		alprazolam	3	3						
614pa	35 y F	tramadol	1	1	U	Ingst	Int-S	2	tramadol	2900 ng/mL In Blood (unspecified) ⓐ Autopsy
		gabapentin	2	2					gabapentin	11.8 mcg/mL In Blood (unspecified) ⓐ Autopsy
		methadone	3	3						
		pregabalin	4	4						
615ha	35 y M	acetaminophen/hydrocodone	1	1	A	Ingst	Int-S	2	hydrocodone	0.12 mcg/mL In Blood (unspecified) ⓐ 3 d (pe)
		benzodiazepine	2	2						
		cyclic antidepressant, unknown	3	3						
616h	35 y F	acetaminophen	1	1	A/C	Ingst	Unt-M	1	acetaminophen (apap)	118 mcg/mL In Blood (unspecified) ⓐ Unknown
617ha	35 y F	acetaminophen	1	1	A	Ingst	Int-S	1	acetaminophen (apap)	143 mg/L In Plasma ⓐ Unknown
618	35 y F	tramadol	1	1	A/C	Ingst	Int-S	2		
		sodium oxybate	2	2						
619ai	35 y F	fentanyl	1	1	U	Unk	Int-M	1		
		clonazepam	2	2						
620ai	35 y M	fentanyl	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
			3	3						
621ai	35 y M	fentanyl	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		amphetamine	3	3						
622ai	35 y F	morphine	1	1	U	Unk	Int-A	2		
		oxycodone	2	2						
		clonazepam	3	3						
623ai	35 y M	salicylate	1	1	U	Unk	Int-U	1		
		sertraline	2	2						
624pai	35 y M	oxycodone	1	1	A	Unk	Int-A	1	oxycodone	0.9 mg/L In Blood (unspecified) ⓐ Autopsy
		oxycodone	1	1					oxycodone	1.1 mg/L In Blood (unspecified) ⓐ Autopsy
		fentanyl	2	2						
		fentanyl analog (4-fluoroisobutyrfentanyl)	3	3						
		amphetamine	4	4					amphetamine	0.2 mg/L In Blood (unspecified) ⓐ Autopsy
	5	5	cyclobenzaprine	0.1 mg/L In Blood (unspecified) ⓐ Autopsy						
625pi	35 y M	fentanyl	1	1	A	Par	Int-A	1		
626ai	35 y M	fentanyl	1	1	A	Unk	Int-A	1		
		oxycodone	2	2						
		alprazolam	3	3						
627ai	35 y M	methadone	1	1	U	Unk	Int-A	2		
		hydrocarbon (fluorinated)	2	2						
628ai	35 y F	morphine	1	1	U	Unk	Unk	2		
		gabapentin	2	2						
		cyclobenzaprine	3	3						
629ai	35 y F	oxycodone	1	1	U	Unk	Int-A	2		
		THC homolog	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
630ai	35 y M	oxycodone	1	1	U	Unk	Int-A	1		
		alprazolam	2	2						
		lorazepam	3	3						
631ai	35 y F	salicylate	1	1	U	Unk	Unt-M	2		
		diphenhydramine	2	2						
		trimethoprim	3	3						
632ai	35 y M	tramadol	1	1	U	Ingst+ Unk	Int-A	1		
		oxycodone	2	2						
		ethanol	3	3						
633p	36 y F	tramadol	1	1	A	Ingst	Int-S	2	tramadol	251 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	3	2					clonazepam	13 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	3	2					7-aminoclonazepam	87 ng/mL In Blood (unspecified) @ Autopsy
		trazodone	2	2					trazodone	971 ng/mL In Blood (unspecified) @ Autopsy
		lorazepam	4	3						
		buprenorphine	5	4						
634pi	36 y M	fentanyl	1	1	A	Par	Int-A	2		
635ph	36 y M	fentanyl (transdermal)	1	1	A	Ingst	Int-U	1		
		ethanol	2	2					ethanol	245 mg/dL In Serum @ Unknown
636a	36 y M	fentanyl	1	1	A	Unk	Int-A	1	fentanyl	0.001 mg/L In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	0.002 mg/L In Blood (unspecified) @ Unknown
		diphenhydramine	2	2					diphenhydramine	0.07 mg/L In Blood (unspecified) @ Autopsy
637pha	36 y M	acetaminophen/ butalbital/caffeine	1	1	U	Ingst	Unk	3	acetaminophen (apap)	16 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ butalbital/caffeine	1	1					butalbital	6.3 mcg/mL In Blood (unspecified) @ Unknown
		buprenorphine/naloxone (sublingual tablet)	2	2						
		marijuana	3	3					delta-9-thc	4.3 ng/mL In Blood (unspecified) @ Unknown
638	36 y F	acetaminophen	1	1	U	Ingst	Int-S	2	acetaminophen (apap)	33 mcg/mL In Blood (unspecified) @ Unknown
		bupropion	2	2						
639	36 y F	acetaminophen	1	1	U	Ingst	Unk	2	acetaminophen (apap)	48 mcg/mL In Blood (unspecified) @ Unknown
640ai	36 y M	fentanyl	1	1	U	Unk	Int-A	1		
		oxycodone	2	2						
		alprazolam	3	3						
641ai	36 y M	methadone	1	1	U	Unk	Int-A	2		
		ethanol	2	2						
642ai	36 y M	morphine	1	1	U	Unk	Int-A	1		
		oxycodone	2	2						
		amitriptyline	3	3						
643h	36 y F	acetaminophen/ diphenhydramine	1	1	U	Ingst	Int-S	2	acetaminophen (apap)	72 mg/L In Serum @ 1 h (pe)
		drug, unknown	2	2						
644ai	36 y M	fentanyl	1	1	U	Unk	Int-A	2		
		diazepam	2	2						
645ai	36 y M	fentanyl	1	1	U	Unk	Int-A	1		
		oxycodone	2	2						
		zolpidem	3	3						
646ai	36 y M	fentanyl	1	1	U	Unk	Int-A	1		
		ethanol	2	2						
647ai	36 y M	hydromorphone	1	1	U	Unk	Int-A	2		
		oxycodone	2	2						
648ai	36 y F	salicylate	1	1	U	Unk	Unk	1		
		isopropanol	2	2						
649ai	36 y F	salicylate	1	1	U	Unk	Unk	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
650h	37 y M	ibuprofen ethanol	1 2	1 2	A	Ingst	Int-S	2		
651	37 y M	acetaminophen/ diphenhydramine	1	1	A	Ingst	Int-S	2	ethanol	13.3 mg/dL In Blood (unspecified) @ Unknown
652h	37 y M	acetaminophen/oxycodone acetaminophen/oxycodone acetaminophen/oxycodone acetaminophen/oxycodone acetaminophen/oxycodone acetaminophen/oxycodone acetaminophen/oxycodone acetaminophen/hydrocodone	1 1 1 1 1 1 1 2	1 1 1 1 1 1 1 2	C	Ingst	Int-U	3	acetaminophen (apap) acetaminophen (apap) acetaminophen (apap) acetaminophen (apap) acetaminophen (apap) acetaminophen (apap) acetaminophen (apap)	20 mg/dL In Serum @ 26.5 h (pe) 21 mg/dL In Serum @ 32.5 h (pe) 27 mg/dL In Serum @ 22 h (pe) 41 mg/dL In Serum @ 17 h (pe) 44 mg/dL In Serum @ 15 h (pe) 49 mg/dL In Serum @ 12 h (pe) 89 mg/dL In Serum @ 5 m (pe)
653ai	37 y F	oxycodone diazepam baclofen fentanyl	1 2 3 4	1 2 3 4	U	Unk	Int-M	1		
654	37 y M	acetaminophen acetaminophen ibuprofen diphenhydramine	1 1 2 3	1 1 2 3	A	Ingst	Int-S	2	acetaminophen (apap) acetaminophen (apap)	39.5 mcg/mL In Blood (unspecified) @ 16 h (pe) 53 mcg/mL In Blood (unspecified) @ 1 h (pe)
655	37 y F	acetaminophen	1	1	A	Ingst	Int-S	1		
656	37 y F	acetaminophen	1	1	U	Ingst	Int-M	2	acetaminophen (apap)	116 mcg/mL In Blood (unspecified) @ Unknown
657ai	37 y M	fentanyl	1	1	U	Unk	Int-A	1		
658ai	37 y F	alprazolam methadone dextromethorphan doxylamine	2 1 2 3	2 1 2 3	U	Unk	Unk	3		
659ai	37 y F	methadone	1	1	U	Unk	Int-A	1		
660ai	37 y M	oxycodone alprazolam bupropion	1 2 3	1 2 3	U	Unk	Int-A	2		
661h	38 y M	acetaminophen ethanol	1 2	1 2	C	Ingst	Int-M	1	acetaminophen (apap)	64 mcg/mL In Serum @ Unknown
662h	38 y F	acetaminophen	1	1	C	Ingst	Int-M	2	acetaminophen (apap)	54 mcg/mL In Blood (unspecified) @ Unknown
663pa	38 y M	ethanol methadone	2 1	2 1	A	Unk	Unk	2	methadone	0.3 mg/L In Blood (unspecified) @ Autopsy
665ai	38 y M	fentanyl oxycodone gabapentin	1 2 3	1 2 3	U	Ingst + Unk	Int-U	2		
664ai	38 y M	fentanyl	1	1	U	Unk	Int-A	1		
666ai	38 y F	methadone sertraline	1 2	1 2	U	Unk	Int-A	1		
667	38 y F	acetaminophen	1	1	U	Ingst + Unk	Int-U	3	acetaminophen (apap)	28 mcg/mL In Blood (unspecified) @ Unknown
668ai	38 y M	acetaminophen ethanol hydrocodone	1 2 3	1 2 3	U	Unk	Int-A	1		
673ai	38 y M	fentanyl oxycodone ethanol	1 2 3	1 2 3	U	Unk	Int-A	2		
669ai	38 y M	fentanyl heroin	1 2	1 2	U	Unk	Int-A	1		
671ai	38 y F	fentanyl oxycodone dextromethorphan	1 2 3	1 2 3	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
672ai	38 y M	fentanyl	1	1	U	Ingst + Unk	Int-A	1		
		alprazolam	2	2						
		alcohol, unknown	3	3						
670ai	38 y M	fentanyl	1	1	U	Unk	Int-A	2		
		oxycodone	2	2						
674ai	38 y M	fentanyl	1	1	U	Unk	Int-A	1		
		benzodiazepine	2	2						
		ethanol	3	3						
675ai	38 y F	narcotic, other/unknown	1	1	U	Unk	Unk	2		
		benzodiazepine	2	2						
		skeletal muscle relaxant	3	3						
676ha	39 y M	tramadol	1	1	A	Ingst	Int-S	2		
		acetaminophen/hydrocodone	2	2						
		eszopiclone	3	3						
		alprazolam	4	4						
		ethanol	5	5						
677pha	39 y F	acetaminophen/hydrocodone	1	1	A	Ingst	Int-S	1	acetaminophen (apap)	247 mcg/mL In Serum @ Unknown
		brompheniramine/phenylpropanolamine	2	2						
		ethanol	3	3					ethanol	105 mg/dL In Blood (unspecified) @ Autopsy
678ph	39 y F	acetaminophen/oxycodone	1	1	A	Ingst	Unk	2		
		acetaminophen/hydrocodone	2	2						
		alprazolam	3	3						
		diphenhydramine	4	4						
		diphenhydramine	5	5						
679pha	39 y F	morphine	1	1	A	Ingst	Int-U	2	morphine	0.455 mcg/mL In Urine (quantitative only) @ Autopsy
		oxycodone	2	2					oxycodone	0.991 mcg/mL In Urine (quantitative only) @ Autopsy
		oxymorphone	3	3					oxymorphone	0.265 mcg/mL In Urine (quantitative only) @ Autopsy
		cocaine	4	4						
		cyclic antidepressant, unknown	5	5						
		benzodiazepine	6	6						
		vortioxetine	7	7						
684ai	39 y M	fentanyl	1	1	U	Unk	Int-A	1		
		baclofen	2	2						
		cyclobenzaprine	3	3						
680ai	39 y M	fentanyl	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
683ai	39 y M	fentanyl	1	1	U	Unk	Int-S	2		
		bupropion	2	2						
		ketamine	3	2						
		propofol	4	3						
681ai	39 y M	fentanyl	1	1	U	Unk	Int-A	1		
		alprazolam	2	2						
682ai	39 y M	fentanyl	1	1	U	Unk	Unk	1		
		oxycodone	2	2						
		ethanol	3	3						
685ai	39 y M	fentanyl	1	1	U	Ingst + Unk	Int-A	1		
		methamphetamine	2	2						
		ethanol	3	3						
686h	39 y M	acetaminophen	1	1	C	Ingst	Int-M	1	acetaminophen (apap)	120 mcg/mL In Serum @ Unknown
		ethanol	2	2						
687pha	40 y M	fentanyl	1	1	A	Unk	Int-A	1	fentanyl	9.2 mcg/mL In Blood (unspecified) @ 1 h (pe)
		morphine	2	2					morphine (free)	0.05 mg/L In Blood (unspecified) @ 1 h (pe)
		morphine	2	2					morphine	0.62 mg/L In Blood (unspecified) @ 1 h (pe)
		codeine	3	3					codeine	0.04 mg/L In Blood (unspecified) @ 1 h (pe)
688pa	40 y M	morphine	1	1	A	Unk	Int-U	1	morphine (free)	380 mcg/L In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	0.09 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
689pai	40 y M	fentanyl	1	1	A	Par	Int-A	1	fentanyl	0.034 mg/L In Blood (unspecified) @ Autopsy
690h	40 y F	acetaminophen	1	1	U	Ingst	Int-U	2		
691ai	40 y M	ethanol	2	2	U	Unk	Int-A	1		
692i	40 y F	fentanyl	1	1	U	Unk	Int-U	1		
		oxycodone	2	2						
		alprazolam	3	3						
693ai	40 y F	oxycodone	1	1	U	Unk	Int-S	1		
		oxymorphone	2	2						
		quetiapine	3	3						
694ai	40 y F	oxycodone	1	1	U	Unk	Unk	2		
		gabapentin	2	2						
		cyclobenzaprine	3	3						
		bupropion	4	4						
695ai	40 y F	oxymorphone	1	1	U	Unk	Unk	2		
		alprazolam	2	2						
		lorazepam	3	3						
696ai	40 y F	oxycodone	1	1	U	Unk	Int-S	1		
		gabapentin	2	2						
		cyclobenzaprine	3	3						
697ha	41 y M	acetaminophen	2	1	C	Ingst	Int-A	1	acetaminophen (apap)	59 mcg/mL In Serum @ 1 h (pe)
		ethanol	1	1					ethanol	110 mg/dL In Blood (unspecified) @ Autopsy
		ethanol	1	1					ethanol	173 mg/dL In Serum @ 1 h (pe)
		salicylate	3	3					salicylate	9.3 mg/dL In Serum @ 1 h (pe)
698h	41 y M	acetaminophen	1	1	A	Ingst	Int-S	2	acetaminophen (apap)	145 mcg/mL In Serum @ 2 d (pe)
		salicylate	2	2						
		ethanol	3	3						
699pai	41 y F	fentanyl	1	1	A	Par	Int-A	1		
		heroin	2	2						
700pai	41 y M	fentanyl	1	1	A	Par	Int-A	1		
701ai	41 y M	fentanyl	1	1	U	Unk	Int-A	1		
702ai	41 y M	fentanyl	1	1	U	Unk	Int-A	1		
		methadone	1	1						
		diazepam	2	2						
		oxycodone	3	3						
703pa	41 y M	fentanyl	1	1	A	Par	Int-A	1	fentanyl	8 ng/mL In Blood (unspecified) @ Autopsy
		heroin	2	2					6-mam (6-monoacetylmorphine)	4.3 ng/mL In Blood (unspecified) @ Autopsy
		heroin	2	2					morphine	47.6 ng/mL In Blood (unspecified) @ Autopsy
		gabapentin	3	3					gabapentin	10.8 mcg/mL In Blood (unspecified) @ Autopsy
704	41 y M	acetaminophen	1	1	A/C	Ingst	Int-S	1	acetaminophen (apap)	194 mcg/mL In Blood (unspecified) @ 1 d (pe)
		venlafaxine	2	2						
705	41 y F	salicylate	1	1	U	Unk	Int-S	2	salicylate	58 mg/dL In Blood (unspecified) @ Unknown
706ai	41 y F	fentanyl	1	1	U	Unk	Int-S	1		
		bupropion	2	2						
		fluoxetine	3	3						
707ai	41 y M	fentanyl	1	1	U	Unk	Int-A	1		
		heroin	2	2						
		methamphetamine	3	3						
708ai	41 y F	methadone	1	1	U	Unk	Int-A	2		
710ai	41 y F	methadone	1	1	U	Unk	Int-A	1		
		morphine	1	1						
		hydromorphone	2	2						
		butalbital	3	3						
711ai	41 y M	morphine	1	1	A	Unk	Unk	1		
		oxycodone	2	2						
		diphenhydramine	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
709ai	41 y F	morphine	1	1	U	Unk	Int-A	1		
		oxycodone	2	2						
		oxymorphone	3	3						
712h	41 y F	acetaminophen/hydrocodone	1	1	C	Ingst	Int-U	1	acetaminophen (apap)	10.1 mcg/mL In Blood (unspecified) @ 1 d (pe)
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	41 mcg/mL In Blood (unspecified) @ 5.5 h (pe)
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	54 mcg/mL In Blood (unspecified) @ 15 m (pe)
		ethanol	2	2					ethanol	94 mg/dL In Blood (unspecified) @ Unknown
		salicylate	3	3					salicylate	12.4 mg/dL In Blood (unspecified) @ Unknown
713ha	42 y F	acetaminophen	1	1	C	Ingst	Unt-M	1	acetaminophen (apap)	16 mcg/mL In Blood (unspecified) @ Unknown
714	42 y M	salicylate	1	1	A	Ingst	Int-S	1		
715h	42 y F	acetaminophen/oxycodone	1	1	A/C	Ingst	Int-S	2		
		diazepam	2	2						
716	42 y F	acetaminophen	1	1	U	Ingst	Unk	2	acetaminophen (apap)	3.1 mcg/mL In Blood (unspecified) @ Unknown
		warfarin	2	2						
717	42 y M	tramadol	1	1	U	Ingst	Int-S	2		
		oxcarbazepine	2	2						
718ai	42 y M	oxycodone	1	1	U	Unk	Int-A	1		
		diazepam	2	2						
		alprazolam	3	3						
719ai	42 y M	oxycodone	1	1	U	Unk	Int-M	1		
		clonazepam	2	2						
		quetiapine	3	3						
720ha	42 y F	acetaminophen/hydrocodone	1	1	C	Ingst	Unk	3	hydrocodone	24 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	290 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	323 mcg/mL In Blood (unspecified) @ Unknown
721ha	42 y F	tramadol	1	1	A/C	Ingst	Int-S	1		
		propranolol	2	2						
		escitalopram	3	3						
		gabapentin	4	4						
		ethanol	5	5						
722	42 y F	acetaminophen	1	1	U	Ingst	Int-S	2	acetaminophen (apap)	20 mcg/mL In Serum @ Unknown
		sumatriptan	2	2						
		diphenhydramine	3	3						
		benzodiazepine	4	4						
723ai	42 y F	fentanyl	1	1	U	Unk	Int-A	1		
		cocaine	2	2						
		ethanol	3	3						
724	43 y F	acetaminophen	1	1	A	Ingst	Int-S	1	acetaminophen (apap)	21.8 mcg/mL In Blood (unspecified) @ 3 d (pe)
725h	43 y F	oxycodone	1	1	A/C	Ingst	Int-A	2		
726pi	43 y F	carfentanil	1	1	A	Unk	Int-A	1		
727ai	43 y M	methadone	1	1	U	Unk	Unk	2		
		alprazolam	2	2						
		diazepam	3	3						
728ai	43 y M	fentanyl	1	1	U	Unk	Int-A	2		
729ai	43 y M	fentanyl	1	1	U	Unk	Int-A	1		
730ai	43 y M	morphine	1	1	U	Ingst + Unk	Int-A	1		
		methamphetamine	2	2						
		ethanol	3	3						
731pi	44 y F	fentanyl	1	1	A	Par	Int-A	2		
732pai	44 y M	fentanyl	1	1	A	Ingst + Par	Int-A	1	fentanyl	18.5 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	2	2					diazepam	0.47 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
733pa	44 y M	methadone	1	1	A	Unk	Unk	1	methadone	1.7 mg/L In Blood (unspecified) @ Autopsy
		methadone	1	1					methadone	4.5 mg/L In Blood (unspecified) @ Autopsy
734h	44 y F	acetaminophen	1	1	C	Ingst	Int-M	2	acetaminophen (apap)	0 mcg/mL In Blood (unspecified) @ Unknown
735ph	44 y F	oxycodone	1	1	A	Ingst	Int-S	2		
		methadone	2	2						
		zolpidem	3	3						
		ethanol	4	4						
736ai	44 y M	fentanyl	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		acetaminophen/hydrocodone	3	3						
737pa	44 y F	methadone	1	1	A	Unk	Int-A	1	methadone	0.4 mg/L In Blood (unspecified) @ Autopsy
		methadone	1	1					methadone	0.7 mg/L In Blood (unspecified) @ Autopsy
		hydroxyzine	2	2					hydroxyzine	2.1 mg/L In Blood (unspecified) @ Autopsy
		hydroxyzine	2	2					hydroxyzine	3.3 mg/L In Blood (unspecified) @ Autopsy
		trazodone	3	3					trazodone	3.3 mg/L In Blood (unspecified) @ Autopsy
		trazodone	3	3					trazodone	3.8 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	4	4					alprazolam	0.1 mg/L In Blood (unspecified) @ Autopsy
738h	44 y M	narcotic, other/unknown	1	1	U	Ingst	Int-S	2		
		ethanol	2	2					ethanol	100 mg/dL In Serum @ 30 m (pe)
739h	44 y F	acetaminophen	1	1	A	Ingst	Int-S	1	acetaminophen (apap)	614 mcg/mL In Blood (unspecified) @ Unknown
740ai	44 y M	temazepam	2	2	U	Ingst + Unk	Int-A	1		
		fentanyl	1	1						
		alprazolam	2	2						
		ethanol	3	3						
741ai	44 y F	morphine	1	1	U	Ingst + Unk	Unk	2		
		hydromorphone	2	2						
		ethanol	3	3						
742ai	44 y M	oxycodone	1	1	U	Unk	Unk	1		
		nortriptyline	2	2						
		morphine	3	3						
743ph	45 y M	narcotic, other/unknown	1	1	C	Par	Int-A	1		
744ai	45 y F	codeine	1	1	U	Unk	Int-S	1		
		acetaminophen	2	2						
		alprazolam	3	3						
745ai	45 y M	fentanyl	1	1	U	Unk	Int-A	2		
		oxycodone	2	2						
		methamphetamine	3	3						
746ai	45 y M	oxycodone	1	1	U	Unk	Unk	2		
		oxymorphone	2	2						
		ethanol	3	3						
747ai	45 y M	acetaminophen	1	1	U	Unk	Unk	2		
		citalopram	2	2						
		diphenhydramine	3	3						
748ai	45 y M	fentanyl	1	1	U	Unk	Int-A	1		
		ethanol	2	2						
749ai	45 y F	methadone	1	1	U	Unk	Unk	2		
		fluoxetine	2	2						
		paroxetine	3	3						
750ai	45 y M	oxycodone	1	1	U	Ingst + Unk	Int-A	1		
		alcohol, unknown	2	2						
751a	46 y F	acetaminophen	1	1	U	Ingst + Par	Int-S	1	acetaminophen (apap)	66 mcg/mL In Blood (unspecified) @ 1 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	80 mcg/mL 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
		venlafaxine	2	2					o-desmethyl-venlafaxine	0.21 mcg/mL In Blood (unspecified) @ 1 d (pe)
		venlafaxine	2	2					venlafaxine	0.87 mcg/mL In Blood (unspecified) @ 1 d (pe)
		olanzapine	3	3					olanzapine	0.066 mcg/mL In Blood (unspecified) @ 1 d (pe)
		drain cleaner	4	4						
752pha	46 y F	insulin	5	5						
		acetaminophen/hydrocodone	1	1						
		oxycodone	2	2						
753pha	46 y F				U	Ingst	Int-S	1		
		butalbital/caffeine/codeine/salicylate	1	1					salicylate	17 mg/dL In Serum @ Unknown
		butalbital/caffeine/codeine/salicylate	1	1					butalbital	2.6 mcg/mL In Serum @ Unknown
		clonazepam	2	2						
		drug, unknown	3	3						
754p	46 y F				A/C	Par	Int-A	1		
		carfentanil	1	1					carfentanil	1.2 ng/mL In Blood (unspecified) @ Autopsy
		methadone	2	2					methadone	110 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	3	3						
		methamphetamine	4	4						
755h	46 y M				A	Ingst	Unk	3		
		acetaminophen	1	1						
756pa	46 y F				A	Unk	Unk	1		
		fentanyl	1	1					fentanyl	0.017 mg/L In Blood (unspecified) @ Autopsy
757	46 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen (apap)	95.2 mcg/mL In Blood (unspecified) @ Unknown
		salicylate	2	2					salicylate	13.2 mg/dL In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	26 mg/dL In Blood (unspecified) @ Unknown
758ai	46 y F				U	Unk	Int-A	1		
		acetaminophen	1	1						
		methamphetamine	2	2						
		methadone	3	3						
760ai	46 y M				U	Unk	Int-A	1		
		fentanyl	1	1						
		tramadol	2	2						
		lorazepam	3	3						
761ai	46 y M				U	Unk	Int-A	2		
		fentanyl	1	1						
		cocaine	2	2						
		alprazolam	3	3						
759ai	46 y F				U	Ingst + Unk	Unt-M	2		
		fentanyl	1	1						
		oxycodone	2	2						
		nortriptyline	3	3						
762ai	46 y M				U	Unk	Int-A	2		
		hydrocodone	1	1						
		diazepam	2	2						
		hydromorphone	3	3						
763ai	46 y M				U	Unk	Int-A	1		
		oxycodone	1	1						
		alprazolam	2	2						
		carisoprodol	3	3						
765ai	46 y M				U	Unk	Int-A	2		
		oxycodone	1	1						
		alprazolam	2	2						
		diazepam	3	3						
764ai	46 y F				U	Ingst + Unk	Int-A	1		
		oxycodone	1	1						
		diazepam	2	2						
		alcohol, unknown	3	3						
766h	47 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	252 mcg/mL In Serum @ Unknown
		clonazepam	2	2						
767h	47 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	44.4 mcg/mL In Blood (unspecified) @ Unknown
768	47 y F				A	Ingst	Int-U	2		
		acetaminophen	1	1						
769ph	47 y F				U	Unk	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	108 mcg/mL In Blood (unspecified) @ Unknown
		oxycodone	2	2						
770	47 y F				C	Ingst	Int-U	1		
		acetaminophen	1	1					acetaminophen (apap)	166 mcg/mL In Serum @ Unknown
771pa	47 y F				A	Ingst + Unk	Int-A	1		
		methadone	1	1					methadone	0.5 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
		methadone	1	1					methadone	0.6 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoyllecognine	1.2 mg/L In Blood (unspecified) @ Autopsy
		cyclobenzaprine	3	3					cyclobenzaprine	0.09 mg/L In Blood (unspecified) @ Autopsy
772	47 y F	acetaminophen	1	1	A	Ingst	Int-S	1	acetaminophen (apap)	770 mcg/mL In Serum @ Unknown
		ethanol (non-beverage)	2	2						
773h	47 y F	oxycodone	1	1	U	Ingst	Int-S	2		
		lorazepam	2	2						
774pai	47 y M	oxycodone	1	1	A/C	Ingst + Inhal + Par	Int-A	1		
		lorazepam	2	2						
		fentanyl	1	1						
		cocaine	2	2						
		chlordiazepoxide	3	3						
		ethanol	4	4						
775ai	47 y F	oxycodone	1	1	U	Unk	Int-M	2		
		diltiazem	2	2						
776ai	47 y F	oxycodone	1	1	U	Unk	Unt-U	3		
		diphenhydramine	2	2						
		dicyclomine	3	3						
777	47 y F	acetaminophen	1	1	A/C	Ingst	Unt-T	3		
		nonsteroidal antiinflammatory drug	2	2						
778h	47 y F	acetaminophen/hydrocodone	1	1	A	Ingst	Int-U	2	acetaminophen (apap)	37.9 mcg/mL In Plasma @ Unknown
		acetaminophen/hydrocodone	1	1					hydrocodone	81 ng/mL In Whole Blood @ 9 h (pe)
		lorazepam	2	2						
		trazodone	3	3						
782ai	47 y M	oxycodone	1	1	U	Unk	Int-A	2		
		fentanyl	2	2						
		methamphetamine	3	3						
779ai	47 y M	oxycodone	1	1	U	Ingst + Unk	Unk	1		
		fentanyl	2	2						
		sertraline	3	3						
		ethanol	4	4						
781ai	47 y M	oxycodone	1	1	U	Unk	Int-A	2		
		fentanyl	2	2						
780ai	47 y M	oxycodone	1	1	A	Unk	Int-A	1		
		alprazolam	2	2						
783ai	47 y M	oxycodone	1	1	U	Unk	Int-A	1		
		dipyrone	2	2						
784ai	47 y F	methadone	1	1	U	Unk	Int-A	2		
		amphetamine	2	2						
785ai	47 y F	morphine	1	1	U	Unk	Unk	2		
		cocaine	2	2						
		lorazepam	3	3						
786ph	47 y M	oxycodone	1	1	U	Unk	Int-A	2		
		alprazolam	2	2						
		trazodone	3	3						
787h	48 y F	tramadol	1	1	C	Ingst	Int-M	1		
788ha	48 y M	acetaminophen	1	1	U	Ingst	Int-S	1		
		methadone	2	2						
789ha	48 y M	salicylate	1	1	U	Ingst	Int-S	1	salicylate	107 mg/dL In Blood (unspecified) @ Unknown
790	48 y F	salicylate	1	1	A/C	Ingst	Int-S	2		
791	48 y M	morphine (extended release)	1	1	A/C	Ingst	Int-S	2		
792ha	48 y F	acetaminophen/hydrocodone	1	1	C	Ingst	Int-M	3	acetaminophen (apap)	17.7 mcg/mL In Serum @ Unknown
		acetaminophen	1	1						
		ethanol	2	2						
793pi	48 y F	oxycodone	1	1	A	Par	Int-A	2		
		carfentanil	2	2					nortriptyline	147 ng/mL In Blood (unspecified) @ Autopsy
		amitriptyline	2	2					amitriptyline	321 ng/mL In Blood (unspecified) @ Autopsy
794pai	48 y F	amitriptyline	1	1	A	Par	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
795ai	48 y M	methadone	1	1	U	Unk	Int-A	1		
		amphetamine	2	2						
		methamphetamine	3	3						
796ai	48 y M	morphine	1	1	A	Unk	Int-S	1		
		oxycodone	2	2						
		clonazepam	3	3						
797h	48 y M	acetaminophen	1	1	C	Ingst	Unt-T	2	acetaminophen (apap)	45 mcg/mL In Serum @ Unknown
		nitroglycerin	2	2						
798ph	48 y M	acetaminophen/hydrocodone drug, unknown	1	1	A/C	Ingst	Int-S	2	acetaminophen (apap)	28 mcg/mL In Serum @ 30 m (pe)
			2	2						
799h	48 y M	acetaminophen	1	1	C	Ingst	Int-M	2	acetaminophen (apap)	30 mcg/mL In Blood (unspecified) @ 1 h (pe)
		ethanol	2	2					ethanol	192.2 mg/dL In Blood (unspecified) @ 1 h (pe)
800ai	48 y F	methadone	1	1	U	Unk	Int-A	2		
		sertraline	2	2						
		methamphetamine	3	3						
801ai	48 y M	morphine	1	1	U	Unk	Int-U	2		
802ai	48 y F	oxycodone	1	1	U	Unk	Unk	1		
		venlafaxine	2	2						
		clonazepam	3	3						
803pha	49 y M	fentanyl	1	1	A	Ingst	Int-U	1	fentanyl	18 ng/mL In Bile @ Autopsy
		fentanyl	1	1					fentanyl	3.9 ng/mL In Whole Blood @ Autopsy
		fentanyl	1	1					fentanyl	6.5 ng/mL In Whole Blood @ Autopsy
		hydrocodone	2	2					hydrocodone (free)	60 ng/mL In Bile @ Autopsy
		methamphetamine	3	3					methamphetamine	110 ng/mL In Bile @ Autopsy
804pai	49 y F	fentanyl	1	1	A	Par	Int-A	1	fentanyl	1.9 ng/mL In Blood (unspecified) @ Autopsy
805h	49 y M	acetaminophen	1	1	A/C	Ingst	Int-M	1	acetaminophen (apap)	68 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	80 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
806ph	49 y F	oxycodone	1	1	A/C	Ingst	Int-S	2		
807ai	49 y M	methadone	1	1	U	Unk	Int-M	1		
		alprazolam	2	2						
		venlafaxine	3	3						
808ai	49 y F	morphine	1	1	U	Unk	Unk	1		
		oxycodone	2	2						
		gabapentin	3	3						
809ai	49 y M	oxycodone	1	1	U	Unk	Int-A	1		
810ha	49 y F	acetaminophen	1	1	A	Ingst	Unt-M	1	acetaminophen (apap)	22 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	27 mg/L In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	48 mg/dL In Blood (unspecified) @ Unknown
		salicylate	3	3					salicylate	7.4 mg/dL In Blood (unspecified) @ Unknown
811pha	49 y M	narcotic, other/unknown	1	1	U	Unk	Int-A	1		
812pa	49 y F	methadone	1	1	A/C	Ingst	Int-S	1	methadone	130 ng/mL In Serum @ Unknown
		clonazepam	2	2					7-aminoclonazepam	5.5 ng/mL In Serum @ Unknown
		clozapine	3	3					clozapine	800 ng/mL In Serum @ Unknown
		zolpidem	4	4					zolpidem	92 ng/mL In Serum @ Unknown
		mirtazapine	5	5						
		propranolol	6	6						
		benztropine	7	7						
		lithium	8	8						
		loratadine	9	9						
		thiamine	10	10						
		melatonin	11	11						
813ph	49 y F	tramadol	1	1	A/C	Ingst	Int-S	2		
814ai	49 y F	hydromorphone	1	1	U	Unk	Unk	1		
		diphenhydramine	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
815ai	49 y F	narcotic, other/unknown	1	1	U	Unk	Unk	2		
		benzodiazepine	2	2						
		cyclic antidepressant, unknown	3	3						
816ai	49 y F	narcotic, other/unknown	1	1	U	Unk	Int-A	1		
		benzodiazepine	2	2						
		cyclic antidepressant, unknown	3	3						
818ai	49 y M	oxycodone	1	1	U	Unk	Int-A	2		
		cocaine	2	2						
817ai	49 y F	oxycodone	1	1	U	Unk	Int-A	2		
819h	50 y M	acetaminophen/oxycodone	1	1	A/C	Ingst	Int-S	2	acetaminophen (apap)	52.4 mg/L In Serum @ 1 h (pe)
		diazepam	2	2					ethanol	207 mg/dL In Serum @ 1 h (pe)
		ethanol	3	3						
820pa	50 y F	fentanyl	1	1	U	Ingst	Int-S	2		
		methamphetamine	2	2						
		citalopram	3	3						
		promethazine	4	4						
821	50 y F	acetaminophen/hydrocodone	1	1	U	Ingst	Int-U	2	acetaminophen (apap)	83 mcg/mL In Blood (unspecified) @ Unknown
		cyclobenzaprine	2	2						
822h	50 y F	acetaminophen/oxycodone	1	1	A	Ingst	Int-S	2		
		zolpidem	2	2						
		benzodiazepine	3	3						
823	50 y M	salicylate	1	1	A	Ingst	Int-S	1	salicylate	35.8 mg/dL In Blood (unspecified) @ 1 h (pe)
		salicylate	1	1					salicylate	58 mg/dL In Blood (unspecified) @ 6 h (pe)
		salicylate	1	1					salicylate	61.9 mg/dL In Blood (unspecified) @ 10 h (pe)
		salicylate	1	1					salicylate	68.2 mg/dL In Blood (unspecified) @ 3 h (pe)
		ibuprofen	2	2						
		ethanol	3	3					ethanol	53 mg/dL In Blood (unspecified) @ 1 h (pe)
824ha	50 y F	acetaminophen	1	1	A/C	Ingst	Int-S	1	acetaminophen (apap)	189 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
825	50 y M	acetaminophen/hydrocodone	1	1	A	Ingst	Int-S	1	acetaminophen (apap)	88 mcg/mL In Blood (unspecified) @ 30 m (pe)
826pha	50 y F	oxycodone	1	1	A	Ingst	Int-S	2		
		lorazepam	2	2						
		alprazolam	3	3						
		acetaminophen	4	4						
827ai	50 y M	fentanyl	1	1	U	Unk	Int-A	1		
		hydrocodone	2	2						
		diphenhydramine	3	3						
828ai	50 y M	tramadol	1	1	U	Unk	Int-S	1		
		methamphetamine	2	2						
829ha	50 y F	acetaminophen/oxycodone	1	1	A	Ingst	Int-S	3	oxymorphone	4 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/oxycodone	1	1					clonazepam	4.1 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/oxycodone	1	1					7-aminoclonazepam	44 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/oxycodone	1	1					oxycodone (free)	440 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/oxycodone	1	1					nortriptyline	45 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	52 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/oxycodone	1	1					pseudoephedrine	680 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	2	2						
		nortriptyline	3	3						
830h	50 y F	tramadol	1	1	A	Ingst	Int-S	2		
		acetaminophen/hydrocodone	2	2						
		baclofen	3	3						
831a	50 y F	morphine	1	1	U	Unk	Unk	2	morphine	28.1 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
832h	50 y M	gabapentin	2	2					gabapentin	44.2 mcg/mL In Blood (unspecified) @ Autopsy
		alprazolam	3	3					alprazolam	8.9 ng/mL In Blood (unspecified) @ Autopsy
833h	50 y F	acetaminophen	1	1	C	Ingst	Unt-T	3	acetaminophen (apap)	105.6 mcg/mL In Serum @ 15 m (pe)
		acetaminophen	1	1	U	Ingst	Int-S	1	acetaminophen (apap)	624 mcg/mL In Blood (unspecified) @ Unknown
836ai	50 y M				U	Unk	Unk	1		
835ai	50 y M	fentanyl	1	1						
		diazepam	2	2						
		citalopram	3	3						
834ai	50 y M	fentanyl	1	1						
		hydrocodone	2	2						
		oxycodone	3	3	U	Unk	Int-A	2		
837ai	50 y F	fentanyl	1	1						
		methamphetamine	2	2						
		alprazolam	3	3	U	Unk	Unk	2		
838ai	50 y M	oxycodone	1	1						
		hydrocodone	2	2						
		gabapentin	3	3	U	Unk	Int-S	1		
839p	51 y M	tramadol	1	1						
		methamphetamine	2	2						
		ranolazine	3	3	U	Unk	Int-S	1		
840h	51 y M	fentanyl	1	1					fentanyl	0.8 ng/mL In Blood (unspecified) @ Autopsy
		heroin	2	1						
		methamphetamine	3	2					methamphetamine	459 ng/mL In Blood (unspecified) @ Autopsy
		gabapentin	4	3					gabapentin	16 mcg/mL In Blood (unspecified) @ Autopsy
		marijuana	5	4					delta-9-carboxy-thc	3.7 ng/mL In Blood (unspecified) @ Autopsy
841ha	51 y F	acetaminophen	1	1	A	Ingst	Int-S	1	acetaminophen (apap)	201 mcg/mL In Blood (unspecified) @ Unknown
		escitalopram	2	2						
		doxepin	3	3						
		cough and cold preparation	4	4	U	Unk	Unk	2		
842h	51 y F	oxycodone	1	1						
		buprenorphine	2	2						
		potassium chloride	3	3						
		narcotic, other/unknown	4	4						
		amphetamine	5	5	C	Ingst	Unt-T	2	acetaminophen (apap)	56 mcg/mL In Blood (unspecified) @ Unknown
843ha	51 y M	acetaminophen	1	1	A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	42 mg/dL In Blood (unspecified) @ 1 h (pe)
		salicylate	1	1					salicylate	96.6 mg/dL In Blood (unspecified) @ 7 h (pe)
844h	51 y M	salicylate	1	1					salicylate	99.6 mg/dL In Blood (unspecified) @ 10 h (pe)
		oxycodone	1	1	A/C	Ingst	Int-S	3		
845h	51 y F				C	Ingst	Int-A	2		
846h	51 y F	buprenorphine/naloxone (sublingual tablet)	1	1						
		cocaine	2	2						
		ethanol	3	3					ethanol	11 mg/dL In Serum @ Unknown
847ai	51 y F	salicylate	1	1	U	Unk	Int-A	1	salicylate	23 mg/mL In Serum @ Unknown
848h	51 y F	morphine	1	1						
		oxycodone	2	2						
		clonazepam	3	3	A	Unk	Unk	2		
849	51 y M	narcotic, other/unknown	1	1	A/C	Ingst	Int-U	3		
850ai	51 y M	acetaminophen	1	1					acetaminophen (apap)	204 mcg/mL In Blood (unspecified) @ Unknown
		narcotic, other/unknown	1	1	U	Unk	Int-A	1		
851ai	51 y M	ethanol	2	2						
		oxycodone	1	1	U	Unk	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
852ai	51 y M	tapentadol	1	1	U	Unk	Unk	2		
		cyclobenzaprine	2	2						
		gabapentin	3	3						
853	51 y F	acetaminophen	1	1	C	Ingst	Int-M	1	acetaminophen (apap)	33 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	33 mg/dL In Blood (unspecified) @ Unknown
854ph	52 y F	acetaminophen/oxycodone	1	1	A/C	Ingst	Int-S	2		
855p	52 y F	oxycodone	1	1	A	Ingst	Int-S	3		
		morphine	2	2						
		tizanidine	3	3						
		quetiapine	4	4						
		acetaminophen/oxycodone	5	5						
		amphetamine	6	6						
		benzodiazepine	7	7						
		tramadol	8	8						
856	52 y F	acetaminophen/diphenhydramine	1	1	A	Ingst	Int-M	2		
		naproxen	2	2						
		drug, unknown	3	3						
857ph	52 y F	acetaminophen/diphenhydramine	1	1	A	Ingst	Int-S	2	acetaminophen (apap)	569 mcg/mL In Serum @ Unknown
858h	52 y M	acetaminophen	1	1	C	Ingst	Int-M	3	acetaminophen (apap)	29.1 mcg/mL In Serum @ Unknown
		ibuprofen	2	2						
859h	52 y F	acetaminophen/diphenhydramine	1	1	A	Ingst	Int-S	2	acetaminophen (apap)	53 mcg/mL In Blood (unspecified) @ 21 h (pe)
		acetaminophen/diphenhydramine	1	1					acetaminophen (apap)	82.3 mcg/mL In Blood (unspecified) @ Unknown
860ha	52 y F	acetaminophen/hydrocodone	1	1	A	Ingst	Int-S	2		
		acetaminophen/dextromethorphan/doxylamine	2	2						
		amitriptyline	3	3						
		alprazolam	4	4						
861ai	52 y M	oxycodone	1	1	U	Unk	Int-A	1		
		oxymorphone	2	2						
		quetiapine	3	3						
862h	52 y F	acetaminophen	1	1	C	Ingst	Int-S	3		
863ai	52 y M	methadone	1	1	U	Unk	Int-A	2		
		ethanol	2	2						
864ai	52 y M	fentanyl	1	1	U	Unk	Int-A	1		
		ethanol	2	2						
865ai	52 y M	methadone	1	1	U	Unk	Int-A	2		
		oxymorphone	2	2						
		alprazolam	3	3						
866ai	52 y F	oxycodone	1	1	U	Unk	Unk	1		
		methadone	2	2						
		clonazepam	3	3						
867	52 y F	acetaminophen/butalbital/caffeine	1	1	U	Ingst	Int-S	2	acetaminophen (apap)	155.3 mcg/mL In Blood (unspecified) @ Unknown
868ai	52 y M	fentanyl	1	1	U	Unk	Int-A	1		
		cocaine	2	2						
		ethanol	3	3						
869p	53 y F	morphine	1	1	A	Ingst	Int-S	2		
870	53 y M	acetaminophen	1	1	A/C	Ingst	Int-M	3	acetaminophen (apap)	103 mcg/mL In Serum @ 6 h (pe)
871a	53 y M	acetaminophen	1	1	A	Ingst	Int-S	1	acetaminophen (apap)	140 mcg/mL In Blood (unspecified) @ Unknown
872ph	53 y F	oxycodone	1	1	A	Ingst	Int-U	1		
		tramadol	2	2						
		morphine	3	3						
873pai	53 y M	fentanyl	1	1	C	Par	Int-A	1		
		heroin	2	2						
		fentanyl analog (acetyl fentanyl)	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
874ph	53 y F	acetaminophen/hydrocodone	1	1		Ingst	Int-S	1	acetaminophen (apap)	343 mcg/mL In Blood (unspecified) @ 10.5 h (pe)
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	92 mcg/mL In Blood (unspecified) @ 6.5 h (pe)
		morphine (extended release)	2	2						
		clonazepam	3	3						
		cyclobenzaprine	4	4						
875ai	53 y F	fentanyl	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		hydroxyzine	3	3						
		clonazepam	4	4						
876ai	53 y F	oxycodone	1	1	U	Ingst + Unk	Int-A	1		
		oxymorphone	2	2						
		ethanol	3	3						
877h	54 y F	acetaminophen/hydrocodone	1	1	A	Ingst	Int-S	1	acetaminophen (apap)	171 mcg/mL In Blood (unspecified) @ 17 h (pe)
		tramadol	2	2						
878	54 y M	acetaminophen	1	1	U	Ingst	Int-S	1	acetaminophen (apap)	118 mcg/mL In Serum @ Unknown
879	54 y M	acetaminophen	1	1	C	Ingst	Int-M	1	acetaminophen (apap)	164 mcg/mL In Blood (unspecified) @ 4 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	195 mcg/mL In Blood (unspecified) @ 3 d (pe)
		ethanol	2	2					ethanol	61 mg/dL In Blood (unspecified) @ 1 d (pe)
		salicylate	3	3						
		acetaminophen/oxycodone	4	4						
880ph	54 y M	acetaminophen/hydrocodone	1	1	A/C	Ingst	Int-S	1	acetaminophen (apap)	162 mcg/mL In Serum @ Unknown
881h	54 y F	salicylate	1	1	A/C	Ingst	Int-S	2	salicylate	65.3 mg/dL In Blood (unspecified) @ 1 h (pe)
		acetaminophen	2	2						
882h	54 y F	tramadol	1	1	A	Ingst	Int-S	2		
		acetaminophen/hydrocodone	2	2					acetaminophen (apap)	30 mg/L In Serum @ 30 m (pe)
883	54 y F	colchicine	1	1	A/C	Ingst	Int-S	1		
884ai	54 y F	fentanyl	1	1	U	Unk	Int-S	2		
		hydrocodone	2	2						
		phenobarbital	3	3						
885ai	54 y M	methadone	1	1	U	Unk	Int-S	1		
		morphine	2	2						
		hydrocodone	3	3						
886ai	54 y F	oxycodone	1	1	U	Unk	Int-A	2		
		quetiapine	2	2						
		ethanol	3	3						
887ai	54 y F	tramadol	1	1	U	Unk	Int-S	1		
		hydromorphone	2	2						
		oxycodone	3	3						
888p	55 y F	fentanyl	1	1	C	Ingst	Int-S	1		
		drug, unknown	2	2						
889pa	55 y M	morphine	1	1	A	Unk	Int-A	1	morphine (free)	78 mcg/L In Blood (unspecified) @ Autopsy
		fentanyl analog	2	2						
		ethanol	3	3					ethanol	0.06 % (wt/Vol) In Serum @ Unknown
890pha	55 y M	acetaminophen/oxycodone	1	1	U	Ingst	Int-M	2		
		benzodiazepine	2	2						
891pa	55 y F	fentanyl	1	1	A	Unk	Unk	1		
		morphine	2	2					morphine (free)	44 mcg/L In Blood (unspecified) @ Autopsy
		oxycodone	3	3					oxycodone	0.4 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	3	3					oxycodone	0.7 mg/L In Blood (unspecified) @ Autopsy
		ethanol	4	4					ethanol	0.01 mg/L In Blood (unspecified) @ Autopsy
		ethanol	4	4					ethanol	0.02 % (wt/Vol) In Blood (unspecified) @ Autopsy
		cyclobenzaprine	5	5					cyclobenzaprine	0.09 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
		amitriptyline	6	6					amitriptyline	1.8 mg/L In Blood (unspecified) @ Autopsy
		amitriptyline	6	6					amitriptyline	2.1 mg/L In Blood (unspecified) @ Autopsy
		nortriptyline	7	7					nortriptyline	0.4 mg/L In Blood (unspecified) @ Autopsy
		nortriptyline	7	7					nortriptyline	0.8 mg/L In Blood (unspecified) @ Autopsy
892	55 y F				A	Ingst	Int-S	1		
		acetaminophen/codeine	1	1					acetaminophen (apap)	140 mcg/mL In Serum @ 10 h (pe)
		acetaminophen/codeine	1	1					acetaminophen (apap)	27 mcg/mL In Serum @ 36 h (pe)
893pa	55 y F	clonazepam	2	2						
		methadone	1	1		Ingst	Int-S	1	methadone	0.3 mg/L In Blood (unspecified) @ Autopsy
		methadone	1	1					methadone	0.8 mg/L In Blood (unspecified) @ Autopsy
		benzodiazepine	2	2					7-aminoclonazepam	0.18 mg/L In Blood (unspecified) @ Autopsy
894ai	55 y F				U	Unk	Int-M	2		
		hydrocodone	1	1						
		fluoxetine	2	2						
		alprazolam	3	3						
895ai	55 y M				U	Unk	Unk	2		
		morphine	1	1						
		oxycodone	2	2						
		cyclobenzaprine	3	3						
896h	55 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen (apap)	507 mcg/mL In Blood (unspecified) @ Unknown
897	55 y F				A	Ingst	Int-A	2		
		acetaminophen	1	1					ethanol	355 mg/dL In Serum @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	6 mcg/mL In Serum @ Unknown
		ethanol	2	2					ethanol	355 mg/dL In Serum @ Unknown
898pa	55 y M				U	Derm	Int-S	2		
		fentanyl (transdermal)	1	1						
899ai	55 y M				U	Unk	Int-A	1		
		hydromorphone	1	1						
		oxycodone	2	2						
		ethanol	3	3						
900ai	55 y F				U	Unk	Int-A	1		
		methadone	1	1						
		methamphetamine	2	2						
		cocaine	3	3						
901ai	55 y F				U	Unk	Unk	2		
		morphine	1	1						
		alprazolam	2	2						
		citalopram	3	3						
902ai	55 y F				U	Unk	Int-A	2		
		opium	1	1						
903ai	55 y M				U	Unk	Unk	2		
		oxycodone	1	1						
		fluoxetine	2	2						
		cyclobenzaprine	3	3						
904ai	55 y M				U	Unk	Int-M	2		
		oxycodone	1	1						
		morphine	2	2						
		diazepam	3	3						
905ai	55 y F				U	Unk	Unk	1		
		oxycodone	1	1						
		butalbital	2	2						
		gabapentin	3	3						
906ai	55 y F				U	Unk	Unk	2		
		oxycodone	1	1						
		alprazolam	2	2						
		diphenhydramine	3	3						
907ai	56 y M				U	Ingst + Unk	Int-M	3		
		morphine	1	1						
		diazepam	2	2						
		carisoprodol	3	3						
908h	56 y F				U	Ingst	Unt-M	1		
		acetaminophen	1	1					acetaminophen (apap)	43.9 mcg/mL In Blood (unspecified) @ Unknown
909h	56 y F				A/C	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen (apap)	128 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	144 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	177.8 mg/dL In Blood (unspecified) @ Unknown
		ibuprofen	2	2						
		diphenhydramine/naproxen	3	3						
910i	56 y M				U	Unk	Unk	2		
		narcotic, other/unknown	1	1						
		clonazepam	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
911ai	56 y M	oxycodone	1	1	U	Unk	Int-M	1		
		hydromorphone	2	2						
		venlafaxine	3	3						
912pha	56 y M	acetaminophen/ diphenhydramine/ salicylate	1	1	A	Ingst	Unt-U	1	acetaminophen (apap)	247 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ diphenhydramine/ salicylate	1	1					salicylate	75 mg/dL In Blood (unspecified) @ Unknown
		hydrocodone	2	2						
		alprazolam	3	3						
913h	56 y M	acetaminophen	1	1	A	Ingst	Unk	2	acetaminophen (apap)	114 mcg/mL In Serum @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	53 mcg/mL In Serum @ Unknown
		narcotic, other/unknown	2	2						
914pa	56 y M	fentanyl analog	1	1	A	Ingst + Unk	Int-A	1		
		ethanol (non-beverage)	2	2					ethanol	0.13 % (wt/Vol) In Blood (unspecified) @ Autopsy
915ha	56 y F	acetaminophen	1	1	U	Ingst	Unk	2	acetaminophen (apap)	127 mcg/mL In Serum @ 30 m (pe)
916h	56 y F	acetaminophen	1	1	C	Ingst	Int-M	2	acetaminophen (apap)	102 mcg/mL In Blood (unspecified) @ 21.5 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	130.5 mcg/mL In Blood (unspecified) @ 18.5 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	149.7 mcg/mL In Blood (unspecified) @ 15.5 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	34.6 mcg/mL In Blood (unspecified) @ 51 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	80.6 mcg/mL In Blood (unspecified) @ 24 h (pe)
917h	56 y M	acetaminophen/oxycodone	1	1	A	Ingst	Int-S	1		
		alprazolam	2	2						
		drug, unknown	3	3						
918h	56 y F	acetaminophen	1	1	U	Ingst	Int-U	1	acetaminophen (apap)	600 mcg/mL In Blood (unspecified) @ Unknown
		benzodiazepine	2	2						
		narcotic, other/unknown	3	3						
921ai	56 y M	fentanyl	1	1	U	Unk	Int-A	1		
920ai	56 y M	fentanyl	1	1	U	Unk	Unk	2		
		methadone	2	2						
		oxycodone	3	3						
919ai	56 y F	fentanyl	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		clonazepam	3	3						
922ai	56 y F	methadone	1	1	U	Unk	Int-A	1		
		diazepam	2	2						
		oxycodone	3	3						
923ai	56 y F	tramadol	1	1	U	Unk	Int-S	1		
		alprazolam	2	2						
		gabapentin	3	3						
924pha	57 y F	acetaminophen/hydrocodone	1	1	U	Ingst + Unk	Int-S	1	acetaminophen (apap)	315 mcg/mL In Serum @ Unknown
		sertraline	2	2						
		diphenhydramine	3	3						
		diazepam	4	4						
		hydroxyzine	5	5						
925ha	57 y M	acetaminophen/hydrocodone	1	1	A/C	Ingst	Int-S	1	acetaminophen (apap)	71 mcg/mL In Blood (unspecified) @ 1 h (pe)
		alprazolam	2	2						
		ethanol	3	3					ethanol	92 mg/dL In Blood (unspecified) @ 1 h (pe)
926ha	57 y F	oxycodone	1	1	U	Unk	Unk	2	oxycodone	39 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	2	2					alprazolam	140 ng/mL In Blood (unspecified) @ Unknown
		amphetamine	3	3					amphetamine	16 ng/mL In Blood (unspecified) @ Unknown
		amitriptyline	4	4					amitriptyline	80 ng/mL In Blood (unspecified) @ Unknown
		amitriptyline	4	4					nortriptyline	91 ng/mL In Blood (unspecified) @ Unknown
		duloxetine	5	5					duloxetine	140 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
927ha	57 y F	aripiprazole	6	6					aripiprazole	140 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	1	1	U	Unk	Unk	1	acetaminophen (apap)	128 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	132.3 mg/L In Serum @ Unknown
		acetaminophen/hydrocodone	1	1					hydromorphone	2 ng/mL In Serum @ Unknown
		acetaminophen/hydrocodone	1	1					hydrocodone	213 ng/mL In Serum @ Unknown
928ph	57 y M	acetaminophen/hydrocodone	1	1	A	Ingst	Int-S	1	acetaminophen (apap)	51 mcg/mL In Blood (unspecified) @ Unknown
929pai	57 y M	benzodiazepine	2	2						
		fentanyl	1	1	A	Par	Int-A	1	fentanyl	12 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					norfentanyl	4.4 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl analog (acetylfentanyl)	2	2						
		cocaine	3	3					benzoylecognine	1000 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	3	3					cocaine	154 ng/mL In Blood (unspecified) @ Autopsy
930h	57 y M	acetaminophen/oxycodone	1	1	A/C	Ingst + Par	Int-S	1	acetaminophen (apap)	16 mcg/mL In Serum @ Unknown
		spironolactone	2	2						
		insulin (detemir)	3	3						
		insulin (aspart)	4	4						
931phi	57 y F	narcotic, other/unknown	1	1	U	Ingst + Unk	Int-S	2		
		temazepam	2	2						
		acetaminophen/chlorpheniramine/dextromethorphan	3	3					acetaminophen (apap)	60.3 mg/L In Blood (unspecified) @ 35 m (pe)
932pha	57 y M	fentanyl	1	1	U	Ingst + Par	Int-A	1	fentanyl	1.2 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	138 mg/dL In Blood (unspecified) @ Autopsy
		heroin	3	3						
		disulfiram	4	4						
933ai	57 y F	acetaminophen/hydrocodone	1	1	U	Unk	Unk	1		
934ai	57 y M	fentanyl	1	1	U	Unk	Int-A	2		
		cocaine	2	2						
		clonazepam	3	3						
935ai	57 y F	fentanyl	1	1	U	Unk	Unk	2		
		alprazolam	2	2						
		oxycodone	3	3						
937ai	57 y M	morphine	1	1	U	Unk	Unk	3		
		oxycodone	2	2						
		hydrocodone	3	3						
936ai	57 y M	morphine	1	1	U	Unk	Int-A	1		
		oxycodone	2	2						
		trazodone	3	3						
938ai	57 y M	narcotic, other/unknown	1	1	U	Ingst + Unk	Int-A	2		
		ethanol	2	2						
939ai	57 y F	oxycodone	1	1	U	Unk	Unk	2		
		cyclobenzaprine	2	2						
		duloxetine	3	3						
940h	57 y F	acetaminophen/hydrocodone	1	1	A	Ingst	Int-S	1	acetaminophen (apap)	149.6 mcg/mL In Serum @ Unknown
941pha	58 y F	oxycodone	1	1	A/C	Ingst	Int-S	1		
		ethanol	2	2					ethanol	11 mg/dL In Blood (unspecified) @ Unknown
942ha	58 y M	acetaminophen	1	1	U	Ingst	Unt-M	1	acetaminophen (apap)	49 mcg/mL In Serum @ 1 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	76 mcg/mL In Serum @ 0.5 h (pe)
		ethanol	2	2						
943h	58 y F	acetaminophen	1	1	A/C	Ingst	Unt-T	3		
944pai	58 y F	fentanyl	1	1	A	Par	Int-A	1	norfentanyl	1 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	3.2 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	1000 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
945ha	58 y M	cocaine	2	2	A	Ingst	Unt-G	3	cocaine	78 ng/mL In Blood (unspecified) @ Autopsy
		hydromorphone	1	1					hydromorphone	340 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	2	2					dihydrocodeine/hydrocodol (free)	25 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/hydrocodone	2	2					acetaminophen (apap)	28 mcg/mL In Blood (unspecified) @ Autopsy
		antihistamine	3	3					hydroxyzine	540 ng/mL In Blood (unspecified) @ Autopsy
levetiracetam	4	4	levetiracetam	7.1 mcg/mL In Blood (unspecified) @ Unknown						
946ha	58 y M	acetaminophen/hydrocodone	1	1	A/C	Ingst	Int-S	2	acetaminophen (apap)	119 mcg/mL In Serum @ Unknown
		zolpidem	2	2						
		tizanidine	3	3						
		clonazepam	4	4						
947ai	58 y M	oxycodone	1	1	U	Unk	Int-S	1		
		alprazolam	2	2						
		ethanol	3	3						
948ha	58 y M	salicylate	1	1	C	Ingst	Unk	1	salicylate	930 mg/L In Blood (unspecified) @ Autopsy
949pa	58 y M	fentanyl	1	1	A	Inhal	Int-A	1	fentanyl	0.009 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					cocaine	0.05 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	2.4 mg/L In Blood (unspecified) @ Autopsy
950ai	58 y F	fentanyl	1	1	U	Unk	Unk	1		
		oxycodone	2	2						
		alprazolam	3	3						
951ai	58 y F	hydromorphone	1	1	U	Unk	Int-S	1		
		cyclobenzaprine	2	2						
		gabapentin	3	3						
952ai	58 y M	morphine	1	1	U	Unk	Int-A	1		
		hydrocodone	2	2						
		amitriptyline	3	3						
953ai	58 y F	oxycodone	1	1	U	Unk	Int-A	1		
		morphine	2	2						
		diazepam	3	3						
954pa	59 y M	fentanyl	1	1	A	Unk	Int-A	1	fentanyl	0.01 mg/L In Blood (unspecified) @ Autopsy
		morphine	2	2					morphine (free)	31 mcg/L In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	0.04 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	0.05 % (wt/Vol) In Vitreous @ Autopsy
		ethanol	3	3					ethanol	0.06 % (wt/Vol) In Urine (quantitative only) @ Autopsy
		lamotrigine	4	4					lamotrigine	5.4 mg/L In Blood (unspecified) @ Autopsy
955	59 y F	acetaminophen	1	1	A	Ingst	Int-S	3	acetaminophen (apap)	23.1 mcg/mL In Blood (unspecified) @ Unknown
956pa	59 y M	methadone	1	1	A	Unk	Int-A	1	methadone	0.7 mg/L In Blood (unspecified) @ Autopsy
957ph	59 y M	acetaminophen/oxycodone	1	1	A/C	Ingst	Int-U	3	acetaminophen (apap)	3 mcg/mL In Blood (unspecified) @ 10 h (pe)
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	8 mcg/mL In Blood (unspecified) @ 1 h (pe)
		ethanol	2	2						
958ai	59 y F	hydromorphone	1	1	U	Unk	Int-M	1		
		hydrocodone	2	2						
		alprazolam	3	3						
959ai	59 y F	morphine	1	1	U	Unk	Unk	2		
		bupropion	2	2						
		diazepam	3	3						
961ai	59 y F	oxycodone	1	1	U	Unk	Int-M	1		
		alprazolam	2	2						
		citalopram	3	3						
960ai	59 y M	oxycodone	1	1	U	Unk	Unk	3		
		bupropion	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
962p	59 y M	acetaminophen	3	3						
		methadone	1	1	A	Ingst	Int-M	3	methadone	117.2 ng/mL In Blood (unspecified) @ Autopsy
963	59 y F	acetaminophen/oxycodone	1	1	C	Ingst	Unk	3		
964h	59 y F	oxycodone	1	1	C	Ingst	Int-A	3		
		acetaminophen/hydrocodone	2	2					acetaminophen (apap)	0 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/oxycodone	3	3						
965h	59 y F	acetaminophen/hydrocodone	1	1	A	Ingst	Int-S	2	acetaminophen (apap)	25 mg/L In Serum @ 1 h (pe)
966ph	59 y M	methadone	1	1	A/C	Ingst	Int-A	2		
		doxepin	2	2						
967	59 y M	acetaminophen/hydrocodone	1	1	A	Ingst	Int-S	3	acetaminophen (apap)	111 mcg/mL In Serum @ Unknown
		drug, unknown	3	2						
		ethanol	2	2					ethanol	90 mg/dL In Serum @ Unknown
968ai	59 y M	fentanyl	1	1	A/C	Unk	Int-A	1		
		methamphetamine	2	2						
970ai	59 y F	hydrocodone	1	1	U	Unk	Unk	2		
		hydromorphone	2	2						
		benzodiazepine	3	3						
969ai	59 y M	hydrocodone	1	1	U	Ingst + Unk	Int-A	1		
		alcohol, unknown	2	2						
		isopropanol	3	3						
971ai	59 y F	methadone	1	1	U	Unk	Int-A	2		
		ethanol	2	2						
972ai	59 y F	morphine	1	1	U	Unk	Int-A	1		
		oxycodone	2	2						
973ai	59 y F	oxycodone	1	1	U	Unk	Int-M	1		
		diazepam	2	2						
		temazepam	3	3						
974h	59 y M	acetaminophen	1	1	C	Ingst	Int-M	2		
		salicylate	2	2						
		ethanol	3	3						
975h	60 y F	acetaminophen/hydrocodone	1	1	A	Ingst	Int-U	3		
976h	60 y F	acetaminophen	1	1	U	Ingst	Int-S	1	acetaminophen (apap)	44 mcg/mL In Whole Blood @ Unknown
		salicylate	2	2					salicylate	44 mg/dL In Whole Blood @ Unknown
977	60 y F	acetaminophen/opioid	1	1	C	Ingst	Int-M	1		
978h	60 y F	acetaminophen	1	1	U	Ingst	Int-S	1	acetaminophen (apap)	69 mcg/mL In Serum @ Unknown
979pha	60 y M	fentanyl	1	1	A	Par	AR-D	2		
		propofol	2	2						
		epinephrine/lidocaine	3	3						
980h	60 y F	acetaminophen	1	1	U	Ingst	Int-S	1	acetaminophen (apap)	59.1 mcg/mL In Blood (unspecified) @ 1111.11 m (pe)
981h	60 y F	acetaminophen/hydrocodone	1	1	U	Ingst	Int-S	1	acetaminophen (apap)	47 mcg/mL In Serum @ Unknown
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	95 mcg/mL In Serum @ Unknown
		alprazolam	2	2						
983ai	60 y F	fentanyl	1	1	U	Unk	Int-M	1		
		hydrocodone	2	2						
		gabapentin	3	3						
982ai	60 y M	fentanyl	1	1	U	Unk	Int-A	1		
		heroin	2	2						
985ai	60 y M	fentanyl	1	1	U	Unk	Int-A	2		
		oxycodone	2	2						
		methamphetamine	3	3						
984ai	60 y F	fentanyl	1	1	U	Unk	Int-A	1		
		mitragyna	2	2						
986ai	60 y M	morphine	1	1	U	Unk	Unk	2		
		trazodone	2	2						
		buspirone	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
987ai	60 y F	morphine	1	1	U	Unk	Int-M	2		
		hydromorphone	2	2						
		cyclobenzaprine	3	3						
988ai	60 y F	oxycodone	1	1	U	Unk	Int-S	1		
		ethanol	2	2						
989h	61 y F	oxycodone	1	1	A	Ingst	Int-A	3		
		benzodiazepine	3	2						
		ethanol	2	2						
990h	61 y F	acetaminophen	1	1	U	Ingst	Unk	3	acetaminophen (apap)	0 mmol/L In Blood (unspecified) @ Unknown
		ethanol	2	2						
991ai	61 y F	morphine	1	1	U	Unk	Unk	3		
		cyclobenzaprine	2	2						
		diphenhydramine	3	3						
992ai	61 y M	oxycodone	1	1	U	Unk	Unk	2		
		alprazolam	2	2						
		ethanol	3	3						
993	61 y M	salicylate	1	1	A/C	Ingst	Int-S	1	salicylate	116.1 mg/dL In Serum @ 2.5 h (pe)
		salicylate	1	1					salicylate	120.7 mg/dL In Serum @ 6.5 h (pe)
		salicylate	1	1					salicylate	122 mg/dL In Serum @ 7.333 h (pe)
		sertraline	2	2						
		amphetamine/ dextroamphetamine	3	3						
994ha	62 y F	acetaminophen	1	1	C	Ingst	Unt-U	1	acetaminophen (apap)	22.8 mg/L In Serum @ 3 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	317 mg/L In Serum @ Unknown
995h	62 y F	methadone	1	1	A/C	Ingst	Unk	2		
		zolpidem	2	2						
		iron	3	3						
996ai	62 y M	fentanyl	1	1	U	Unk	Int-A	2		
		amitriptyline	2	2						
		oxycodone	3	3						
997ai	62 y M	morphine	1	1	U	Unk	Int-A	1		
		oxycodone	2	2						
		diltiazem	3	3						
998ai	62 y M	codeine	1	1	U	Unk	Unk	1		
		dextromethorphan	2	2						
		diphenhydramine	3	3						
999ai	62 y F	methadone	1	1	U	Unk	Int-A	2		
1000ai	62 y M	methadone	1	1	A	Unk	Int-A	2		
		diphenhydramine	2	2						
		cyclobenzaprine	3	3						
1001ai	62 y F	methadone	1	1	U	Unk	Unk	2		
		diazepam	2	2						
		diphenhydramine	3	3						
1002ai	62 y F	oxycodone	1	1	U	Unk	Unk	1		
		oxymorphone	2	2						
		carisoprodol	3	3						
1004ai	62 y F	oxycodone	1	1	U	Unk	Int-A	2		
		hydrocodone	2	2						
1003ai	62 y F	oxycodone	1	1	U	Unk	Unk	2		
		alprazolam	2	2						
1005ai	62 y F	oxymorphone	1	1	U	Unk	Int-A	2		
		paroxetine	2	2						
		tramadol	3	3						
1006ha	63 y F	acetaminophen/hydrocodone	1	1	U	Ingst	Int-S	2		
		alprazolam	2	2						
1007ph	63 y M	hydromorphone	1	1	C	Par	Int-A	2		
1008	63 y F	oxycodone	1	1	A/C	Ingst	Int-U	2		
1009pi	63 y M	carfentanil	1	1	A	Unk	Int-A	1		
		trazodone	2	2						
1010h	63 y M				U	Ingst	Int-M	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
1011ai	63 y M	ibuprofen	1	1						
		acetaminophen/oxycodone	1	1	U	Unk	Int-S	1		
1012ha	63 y F	lisinopril	2	2						
		acetaminophen	1	1	C	Ingst	Unk	2	acetaminophen (apap)	214 mmol/L In Blood (unspecified) @ Unknown
		beta blocker	2	1						
		lamotrigine	3	3						
		lithium	4	4						
1013hi	63 y M	methadone	1	1	U	Ingst + Aspir	Int-U	3		
1014ai	63 y F	fentanyl	1	1	U	Unk	Int-A	2		
1015ai	63 y M	methadone	1	1	U	Unk	Int-A	2		
		methamphetamine	2	2						
1016ai	63 y F	methadone	1	1	U	Unk	Unk	1		
		morphine	2	2						
		oxycodone	3	3						
1018ai	63 y F	oxycodone	1	1	U	Unk	Int-S	1		
		fluoxetine	2	2						
		clonazepam	3	3						
1017ai	63 y F	oxycodone	1	1	U	Unk	Int-S	1		
		fluoxetine	2	2						
		benzodiazepine	3	3						
1019ha	64 y F	acetaminophen/oxycodone	1	1	A/C	Ingst	Int-U	1	acetaminophen (apap)	15 mcg/mL In Serum @ 4 h (pe)
		acetaminophen/oxycodone	1	1					acetaminophen (apap)	17.9 mcg/mL In Serum @ 1 h (pe)
		salicylate	2	2					salicylate	17 mg/dL In Serum @ Unknown
		salicylate	2	2					salicylate	33 mg/dL In Serum @ 4 h (pe)
		salicylate	2	2					salicylate	35.3 mg/dL In Serum @ 1 h (pe)
1020h	64 y F	acetaminophen	1	1	C	Ingst	Int-M	3	acetaminophen (apap)	35 mcg/mL In Blood (unspecified) @ Unknown
1021h	64 y F	acetaminophen	1	1	A	Ingst	Int-M	1	acetaminophen (apap)	163.9 mcg/mL In Blood (unspecified) @ 30 m (pe)
		acetaminophen	1	1					acetaminophen (apap)	28.5 mcg/mL In Blood (unspecified) @ 2 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	37.9 mcg/mL In Blood (unspecified) @ 1 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	72.9 mcg/mL In Blood (unspecified) @ 12 h (pe)
1022ai	64 y F	fentanyl	1	1	U	Unk	Unk	1		
		oxycodone	2	2						
1023ai	64 y F	fentanyl	1	1	U	Ingst + Unk	Int-A	2		
		oxycodone	2	2						
		diazepam	3	3						
1026ai	64 y F	hydrocodone	1	1	U	Unk	Int-S	1		
		alprazolam	2	2						
		temazepam	3	3						
1024ai	64 y M	hydrocodone	1	1	A	Unk	Int-M	2		
		quetiapine	2	2						
1025ai	64 y F	hydrocodone	1	1	U	Unk	Int-M	2		
		methocarbamol	2	2						
		ethanol	3	3						
1027ai	64 y M	methadone	1	1	U	Unk	Int-A	2		
1028ai	64 y F	oxycodone	1	1	U	Unk	Int-A	1		
		alprazolam	2	2						
		fluoxetine	3	3						
1029ai	64 y M	oxycodone	1	1	A	Unk	Int-M	3		
1030ha	65 y F	acetaminophen	1	1	A	Ingst	Int-S	2		
1031h	65 y F	acetaminophen	1	1	U	Ingst	Unk	1	acetaminophen (apap)	195.4 mcg/mL In Serum @ Unknown
1032h	65 y F	acetaminophen	1	1	C	Ingst	Int-T	2	acetaminophen (apap)	195.4 mcg/mL In Serum @ Unknown
1033h	65 y F	colchicine	1	1	A	Ingst	Int-S	1	colchicine	1.1 ng/mL In Other @ Unknown
1034	65 y F	salicylate	1	1	A	Ingst	Int-S	1	salicylate	148 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		
1035	65 y F	acetaminophen/hydrocodone	1	1	A/C	Ingst	Int-S	2	acetaminophen (apap)	11 mcg/mL In Blood (unspecified) @ Unknown		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	47.8 mcg/mL In Blood (unspecified) @ 9.5 h (pe)		
		acetaminophen/hydrocodone	1	1					acetaminophen (apap)	67.8 mcg/mL In Blood (unspecified) @ 10 m (pe)		
1036h	65 y F	metoprolol	2	2	A/C	Ingst	Unk	1	acetaminophen (apap)	39 mcg/mL In Blood (unspecified) @ Unknown		
		clonazepam	3	3								
1037	65 y F	acetaminophen/opioid	1	1	C	Ingst	Int-S	1	acetaminophen (apap)	39 mcg/mL In Blood (unspecified) @ Unknown		
[1038ha]	65 y M	acetaminophen/oxycodone	1	1	U	Ingst	Unk	1	salicylate	112 mg/dL In Serum @ Unknown		
		clonazepam	2	2								
		diphenhydramine	3	3								
		prednisone	4	4								
1039ph	65 y F	salicylate	1	1	A	Ingst	Int-S	2	acetaminophen (apap)	123 mcg/mL In Blood (unspecified) @ Unknown		
1040ai	65 y F	acetaminophen/hydrocodone	1	1	U	Unk	Unk	3	acetaminophen (apap)	170 mcg/mL In Blood (unspecified) @ 30 m (pe)		
		mirtazapine	2	2								
1041a	66 y F	hydrocodone	1	1	A	Ingst	Int-S	1	hydrocodone (free)	300 ng/mL In Blood (unspecified) @ 30 m (pe)		
		salicylate	1	1							salicylate	113.4 mg/dL In Blood (unspecified) @ 1 h (pe)
1042h	66 y F	salicylate	1	1	U	Ingst + Inhal	Int-U	3	salicylate	880 mcg/mL In Whole Blood @ Unknown		
		acetaminophen/oxycodone	1	1								
1043ai	66 y M	cocaine	2	2	U	Unk	Int-A	1	methadone	340 ng/mL In Blood (unspecified) @ 30 m (pe)		
		methadone	1	1								
1044ha	66 y F	ethanol	2	2	U	Ingst	Int-S	1	eddp (2-ethylidene-1,5-dimethyl-3,3-diphenyl pyrrolidine)	50 ng/mL In Blood (unspecified) @ 30 m (pe)		
		acetaminophen/hydrocodone	1	1							acetaminophen (apap)	170 mcg/mL In Blood (unspecified) @ 30 m (pe)
		acetaminophen/hydrocodone	1	1							hydrocodone (free)	300 ng/mL In Blood (unspecified) @ 30 m (pe)
		acetaminophen/hydrocodone	1	1							dihydrocodeine/hydrocodol (free)	78 ng/mL In Blood (unspecified) @ 30 m (pe)
		oxycodone	2	2							hydromorphone	3.5 ng/mL In Blood (unspecified) @ 30 m (pe)
		methadone	3	3							methadone	340 ng/mL In Blood (unspecified) @ 30 m (pe)
1045a	66 y F	methadone	3	3	U	Ingst	Int-S	1	morphine	122 ng/mL In Blood (unspecified) @ 2 h (pe)		
		methadone	3	3								
1046ai	66 y M	acetaminophen/hydrocodone	1	1	U	Unk	Unk	1	morphine	122 ng/mL In Blood (unspecified) @ 2 h (pe)		
		acetaminophen/hydrocodone	1	1								
		acetaminophen/hydrocodone	1	1								
1047ha	67 y M	codeine	2	2	A	Ingst	Unk	1	acetaminophen (apap)	237 mcg/mL In Blood (unspecified) @ Unknown		
		hydromorphone	3	3								
		acetaminophen	1	1								
1048h	67 y F	acetaminophen	1	1	C	Ingst	Int-M	2	acetaminophen (apap)	34 mcg/mL In Blood (unspecified) @ Unknown		
1049	67 y F	acetaminophen	1	1	C	Ingst	Unt-T	1	acetaminophen (apap)	68 mcg/mL In Blood (unspecified) @ Unknown		
		acetaminophen	1	1								
1050p	67 y M	acetaminophen	1	1	U	Ingst	Int-S	2	acetaminophen (apap)	86 mcg/mL In Blood (unspecified) @ Unknown		
		acetaminophen/hydrocodone	1	1								
1051i	67 y M	cyclobenzaprine	2	2	U	Unk	Int-A	2	acetaminophen (apap)	221 mcg/mL In Blood (unspecified) @ Unknown		
		fentanyl	1	1								
		cocaine	2	2								
1052ai	67 y M	methamphetamine	3	3	U	Unk	Int-M	2	acetaminophen (apap)	53 mcg/mL In Blood (unspecified) @ Unknown		
		methadone	1	1								
		fluoxetine	2	2								
1053h	67 y F	ethanol	3	3	A	Ingst	Int-S	2	acetaminophen (apap)	221 mcg/mL In Blood (unspecified) @ Unknown		
		acetaminophen/hydrocodone	1	1								
1054h	67 y F	alprazolam	2	2	C	Ingst	Int-M	2	acetaminophen (apap)	53 mcg/mL In Blood (unspecified) @ Unknown		
		acetaminophen	1	1								
1055h	67 y F				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
1056ai	67 y M	oxycodone	1	1	U	Ingst + Unk	Int-A	2		
		baclofen	2	2						
		clonazepam	3	3						
		piroxicam	4	4						
1057ai	67 y M	codeine	1	1	U	Ingst + Unk	Int-A	1		
		hydrocodone	2	2						
		lorazepam	3	3						
		ethanol	4	4						
1058ai	67 y F	fentanyl	1	1	U	Unk	Unk	2		
		codeine	2	2						
		ethanol	3	3						
1059ai	67 y M	fentanyl	1	1	U	Unk	Int-A	1		
		amitriptyline	2	2						
		duloxetine	3	3						
1061ai	67 y F	methadone	1	1	U	Unk	Int-A	2		
		diphenhydramine	2	2						
		temazepam	3	3						
1060ai	67 y F	morphine	1	1	U	Unk	Int-A	2		
1062ai	67 y F	morphine	1	1	C	Ingst + Unk	Int-A	3		
		oxycodone	1	1						
		diazepam	2	2						
[1063ha]	68 y F	ethanol	3	3	A/C	Ingst	Int-S	1		
1064h	68 y M	colchicine	1	1	A	Ingst	Int-S	1		
		acetaminophen/tramadol	1	1						
1065h	68 y M	acetaminophen/tramadol	1	1	A/C	Ingst + Aspir	Int-S	3	acetaminophen (apap)	361 mcg/mL In Blood (unspecified) @ 17 h (pe)
		acetaminophen/tramadol	1	1						
		acetaminophen (apap)								
1066	68 y F	acetaminophen (apap)			U	Ingst	Int-S	2		500 mcg/mL In Blood (unspecified) @ 30 m (pe)
		tramadol	1	1						
		acetaminophen/hydrocodone	2	2						
1067	68 y M	clonazepam	3	3	C	Ingst	Unt-M	3	acetaminophen (apap)	32 mcg/mL In Serum @ Unknown
		morphine	1	1						
		alprazolam	2	2						
		misoprostol	3	3						
1068ha	68 y M	levothyroxine	4	4	A/C	Ingst	Int-S	1	acetaminophen (apap)	145 mcg/mL In Serum @ 1 h (pe)
		acetaminophen/oxycodone	1	1						
		metoprolol	2	2						
1069ph	68 y M	ethanol	3	3	A/C	Ingst + Aspir	Int-S	1	ethanol	258 mg/dL In Serum @ 1 h (pe)
		acetaminophen/codeine	1	1						
		clonazepam	2	2						
1070ai	68 y F	lisinopril	3	3	U	Unk	Int-S	1		
		hydrochlorothiazide/triamterene	4	4						
		fentanyl	1	1						
		oxycodone	2	2						
1071h	68 y F	diazepam	3	3	A	Ingst	Unk	2	acetaminophen (apap)	83 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1						
		acetaminophen	1	1						
1072h	69 y M	acetaminophen	1	1	U	Ingst	Unt-M	2		
1073ai	69 y F	acetaminophen	1	1	U	Unk	Unt-M	3		
		fentanyl	1	1						
		diphenhydramine	2	2						
1074h	69 y F	oxycodone	3	3	A/C	Ingst	Int-S	2	acetaminophen (apap)	39 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/hydrocodone	1	1						
		alprazolam	2	2						
		ondansetron	3	3						
1075h	69 y M	ibuprofen	4	4	A	Par	Unt-T	3		
		fentanyl	1	1						
		fentanyl	1	1						
1076ai	69 y M	codeine	2	2	U	Unk	Int-S	1		
		morphine	1	1						
		ethanol	3	3						
1077ai	69 y F	ethanol	3	3	U	Unk	Int-S	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
1078ai	69 y F	oxycodone	1	1	U	Unk	Int-S	1		
		baclofen	2	2						
		citalopram	3	3						
1079ai	69 y F	oxycodone	1	1	U	Unk	Unt-M	1		
		oxymorphone	2	2						
		hydrocodone	3	3						
1080h	69 y M	acetaminophen/oxycodone	1	1	A/C	Ingst	Unk	3		
1081h	70 y F	acetaminophen	1	1	A	Ingst	Int-S	3	acetaminophen (apap)	342 mcg/mL In Serum @ Unknown
1082	70 y M	acetaminophen	1	1	C	Ingst	Int-M	3	acetaminophen (apap)	43 mcg/mL In Serum @ Unknown
1083ha	70 y F	acetaminophen	1	1	C	Ingst	Unt-T	2	acetaminophen (apap)	140 mcg/mL In Serum @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	181 mg/L In Blood (unspecified) @ Unknown
1084h	70 y M	acetaminophen	1	1	C	Ingst	Int-M	1	acetaminophen (apap)	45 mcg/mL In Blood (unspecified) @ 1 h (pe)
1085ai	70 y M	ethanol	2	2	U	Unk	Int-A	3		
1086ph	70 y F	hydromorphone	1	1	A	Ingst	Int-S	2		
		tramadol	1	1						
		acetaminophen/hydrocodone	2	2						
1087	70 y F	acetaminophen	1	1	U	Ingst	Int-S	1	acetaminophen (apap)	326.6 mg/mL In Blood (unspecified) @ Unknown
1088ha	70 y F	narcotic, other/unknown	1	1	A	Ingst	Int-S	2		
		acetaminophen/diphenhydramine	2	2						
		acetaminophen	3	3					acetaminophen (apap)	29.9 mcg/mL In Serum @ 30 m (pe)
		ibuprofen	4	4						
1089ai	70 y F	acetaminophen	1	1	U	Unk	Int-S	1		
		benzodiazepine	2	2						
		oxycodone	3	3						
1090ph	71 y M	oxycodone	1	1	A/C	Ingst	Int-S	2		
		diazepam	2	2						
		acetaminophen	3	3					acetaminophen (apap)	48 mcg/mL In Serum @ Unknown
		baclofen	4	4						
		ethanol	5	5					ethanol	8 mg/dL In Serum @ Unknown
[1091h]	71 y F	salicylate	1	1	A	Ingst	Int-S	1	salicylate	104 mg/dL In Serum @ 22 h (pe)
1092p	71 y F	acetaminophen/hydrocodone	1	1	U	Ingst	Int-S	2	acetaminophen (apap)	285 mcg/mL In Serum @ Unknown
		lorazepam	2	2						
1093ha	71 y F	acetaminophen/hydrocodone	1	1	A	Ingst	Unt-T	2		
		acetaminophen	2	2						
1094h	71 y F	acetaminophen/hydrocodone	1	1	C	Ingst	AR-D	2		
1095ai	71 y F	acetaminophen	1	1	U	Unk	Unk	2		
1096pa	72 y M	acetaminophen/hydrocodone	1	1	U	Ingst	Int-U	1	hydrocodone	82.5 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/diphenhydramine	2	2						
		tizanidine	3	3						
		meloxicam	4	4						
		diazepam	5	5					nordiazepam	369 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	5	5					diazepam	524 ng/mL In Blood (unspecified) @ Autopsy
1097	72 y F	acetaminophen	1	1	U	Unk	Int-S	2	acetaminophen (apap)	156.6 mcg/mL In Blood (unspecified) @ Unknown
1098ai	72 y M	morphine	1	1	U	Unk	Int-S	1		
		alprazolam	2	2						
		lorazepam	3	3						
1099h	72 y M	salicylate	1	1	C	Ingst	Unk	1	salicylate	82.4 mg/dL In Blood (unspecified) @ 1 h (pe)
1100h	72 y F	acetaminophen	1	1	U	Ingst	Unk	1		
1101ai	72 y M	morphine	1	1	U	Unk	Int-S	2		
		alprazolam	2	2						
		lorazepam	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
1102p	73 y M	phenothiazine	4	4	A/C	Ingst	Int-S	2		
		morphine	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
1103ai	73 y F	acetaminophen/oxycodone	1	1	U	Unk	Int-U	2		
		gabapentin	2	2						
		trazodone	3	3						
1104ai	73 y F	morphine	1	1	U	Ingst + Unk	Int-S	1		
		oxycodone	2	2						
		diazepam	3	3						
1105ph	73 y F	oxycodone	1	1	A	Ingst	Int-S	3		
1106ai	73 y F	oxycodone	1	1	U	Unk	Int-M	2		
		ethanol	2	2						
1107h	74 y F	tramadol	1	1	A	Ingst	Int-S	2		
		antiplatelet drug	2	2						
		ropinirole	3	3						
1108h	75 y F	acetaminophen/hydrocodone	1	1	A/C	Ingst	Int-S	1		
		venlafaxine	2	2						
		benzodiazepine	3	3						
1109h	75 y M	acetaminophen/hydrocodone	1	1	A/C	Ingst	Int-S	2	acetaminophen (apap)	155.4 mcg/mL In Blood (unspecified) @ Unknown
		amitriptyline	2	2						
		tramadol	3	3						
		linezolid	4	4						
1110h	75 y M	morphine	1	1	A	Ingst	Int-S	1		
1111h	76 y F	acetaminophen	1	1	U	Ingst	Int-S	2	acetaminophen (apap)	123 mcg/mL In Blood (unspecified) @ Unknown
1112h	76 y F	acetaminophen	1	1	A	Ingst	Int-S	1		
1113ha	76 y M	salicylate	1	1	A	Ingst	Int-S	1	salicylate	1100 mg/L In Serum @ Autopsy
		salicylate	1	1					salicylate	137 mg/dL In Serum @ Unknown
1114	76 y M	oxycodone	1	1	A	Ingst	Int-S	2		
1115ai	76 y F	oxycodone	1	1	U	Unk	Int-U	2		
		fentanyl	1	1						
		acetaminophen/hydrocodone	2	2						
		baclofen	3	3						
1116ai	76 y F	morphine	1	1	U	Unk	Unk	2		
		cyclobenzaprine	2	2						
1117h	76 y F	tramadol	1	1	A	Ingst	Int-S	3		
		drug, unknown	2	2						
1118h	77 y F	acetaminophen	1	1	A	Ingst	Int-S	3	acetaminophen (apap)	181 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen (apap)	20 mcg/mL In Blood (unspecified) @ Unknown
		drug, unknown	2	2						
1119ai	77 y F	oxycodone	1	1	A	Unk	Int-S	1		
		zolpidem	2	2						
		lorazepam	3	3						
1120i	77 y F	acetaminophen/hydrocodone	1	1	A	Ingst	Int-S	2		
1121ha	78 y F	oxycodone	1	1	U	Ingst	Int-S	2	oxycodone	3225 ng/mL In Serum @ Unknown
		zolpidem	2	2						
		acetaminophen	3	3					acetaminophen (apap)	20 mcg/mL In Serum @ Unknown
1122ai	78 y F	acetaminophen/oxycodone	1	1	U	Ingst + Unk	Int-S	1		
		diazepam	2	2						
1123ha	79 y F	salicylate	1	1	A	Ingst	Int-S	1	salicylate	112 mg/dL In Plasma @ Unknown
		acetaminophen	2	2					acetaminophen (apap)	308 mg/L In Plasma @ Unknown
1124	79 y F	salicylate	1	1	U	Ingst	Int-U	1	salicylate	78.8 mg/dL In Blood (unspecified) @ Unknown
1125ai	79 y F	acetaminophen/opioid	1	1	A	Ingst	Int-M	1		
1126h	80 y M	salicylate	1	1	C	Ingst	Int-M	3	salicylate	21.8 mg/dL In Serum @ 22 h (pe)
		salicylate	1	1					salicylate	30.5 mg/dL In Serum @ 7 h (pe)
		salicylate	1	1					salicylate	55.2 mg/dL In Serum @ 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
1127h	80 y M	salicylate	1	1	A	Ingst	Int-S	1	salicylate	65.4 mg/dL In Serum @ Unknown
1128ai	81 y M	acetaminophen	1	1	U	Ingst + Unk	Int-S	1	acetaminophen (apap)	870 mcg/mL In Serum @ Unknown
1129ai	81 y M	morphine	1	1	U	Unk	Unk	2		
1130	82 y F	oxycodone	2	2	A	Ingst	Int-S	3		
1131ai	82 y M	diazepam	3	3	U	Unk	Int-M	2		
1132h	82 y M	morphine	1	1	C	Ingst	Unt-T	2		
1133h	82 y F	acetaminophen	1	1	C	Ingst	Int-A	3	acetaminophen (apap)	25.7 mcg/mL In Plasma @ Unknown
1134ai	82 y M	acetaminophen	1	1	U	Unk	Unk	2		
1135ai	83 y F	morphine	1	1	U	Unk	Int-S	1		
1136ha	88 y M	hydrocodone	1	1	A	Ingst	Int-S	1		
		lorazepam	2	2						
		tramadol	1	1					o-demethyl tramadol	200 ng/mL In Blood (unspecified) @ Unknown
		tramadol	1	1					tramadol	4400 ng/mL In Blood (unspecified) @ Unknown
1137pa	88 y M	acetaminophen/hydrocodone	2	2	A	Ingst	Int-S	1		
		morphine	1	1					morphine (free)	400 mcg/mL In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	0.1 mg/L In Blood (unspecified) @ Autopsy
		amlodipine	3	3					amlodipine	0.05 mg/L In Blood (unspecified) @ Autopsy
1138h	89 y M	acetaminophen	1	1	A	Ingst	Int-S	1	acetaminophen (apap)	136 mcg/mL In Serum @ 21 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	201 mcg/mL In Serum @ 8 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	250 mcg/mL In Serum @ 4 h (pe)
		acetaminophen	1	1					acetaminophen (apap)	282 mcg/mL In Serum @ 1 m (pe)
		acetaminophen	1	1					acetaminophen (apap)	85 mcg/mL In Serum @ 1 d (pe)
		acetaminophen	1	1					acetaminophen (apap)	95 mcg/mL In Serum @ 1 d (pe)
		beta blocker	2	2						
1139a	90 y F	salicylate	1	1	A/C	Ingst	Int-S	3		
1140h	91 y M	salicylate (extended release)	1	1	U	Ingst	Unt-G	3		
1141ai	92 y F	acetaminophen	1	1	U	Unk	Int-S	1		
1142h	94 y M	acetaminophen	1	1	A/C	Ingst	Int-S	2	acetaminophen (apap)	212 mg/dL In Blood (unspecified) @ 15 h (pe)
1143ai	9 m M	acetaminophen/oxycodone	1	1	U	Unk	Unk	2		
1144ha	11 m F	morphine	1	1	U	Ingst	Unk	1		
1145pha	30+ y M	oxycodone	1	1	A	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	55 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2						
1146p	Unknown adult (>=20 yrs) M	buprenorphine	3	3	A	Inhal	Int-A	2		
		droperidol/fentanyl	1	1						
		alprazolam	2	2						
1147p	Unknown age U				A	Unk	Int-A	1		
		narcotic, other/unknown	1	1						
See Also case 9, 10, 20, 21, 24, 27, 33, 38, 41, 43, 47, 52, 55, 62, 64, 68, 70, 79, 84, 87, 90, 92, 93, 96, 105, 107, 108, 120, 125, 141, 164, 175, 181, 183, 211, 254, 259, 262, 272, 295, 309, 313, 363, 1149, 1153, 1161, 1173, 1178, 1182, 1185, 1201, 1202, 1206, 1207, 1222, 1227, 1229, 1232, 1241, 1247, 1249, 1260, 1264, 1265, 1266, 1270, 1272, 1273, 1280, 1284, 1298, 1299, 1300, 1301, 1306, 1307, 1310, 1311, 1315, 1317, 1326, 1355, 1356, 1359, 1370, 1389, 1396, 1406, 1411, 1414, 1419, 1425, 1430, 1431, 1432, 1435, 1438, 1446, 1448, 1465, 1466, 1467, 1479, 1482, 1489, 1490, 1492, 1499, 1503, 1505, 1518, 1521, 1522, 1526, 1530, 1536, 1540, 1542, 1545, 1551, 1552, 1553, 1555, 1578, 1583, 1588, 1591, 1592, 1610, 1620, 1638, 1641, 1642, 1659, 1660, 1662, 1663, 1674, 1675, 1680, 1683, 1686, 1689, 1691, 1698, 1699, 1700, 1704, 1708, 1712, 1714, 1717, 1718, 1722, 1723, 1733, 1735, 1740, 1741, 1742, 1743, 1747, 1750, 1751, 1752, 1760, 1761, 1762, 1765, 1766, 1768, 1769, 1776, 1780, 1785, 1786, 1787, 1788, 1789, 1790, 1792, 1802, 1803, 1806, 1811, 1817, 1818, 1820, 1828, 1831, 1832, 1838, 1851, 1852, 1853, 1857, 1860, 1861, 1863, 1869, 1871, 1872, 1874, 1878, 1879, 1887, 1888, 1889, 1901, 1902, 1903, 1909, 1912, 1914, 1921, 1924, 1925, 1926, 1928, 1942, 1948, 1950, 1956, 1957, 1962, 1969, 1971, 1972, 1974, 1976, 1978, 1984, 1992, 1993, 1996, 1998, 1999, 2002, 2009, 2011, 2021, 2022, 2044, 2046, 2051, 2052, 2053, 2054, 2055, 2061, 2063, 2065, 2070, 2072, 2074, 2075, 2076, 2078, 2079, 2080, 2081, 2091, 2093, 2103, 2104, 2107, 2113, 2114, 2128, 2129, 2133, 2137, 2138, 2140, 2144, 2145, 2146, 2148, 2163, 2166, 2167, 2175, 2176, 2181, 2183, 2185, 2188, 2189, 2198, 2199, 2205, 2206, 2207, 2212, 2213, 2217, 2218, 2219, 2231, 2232, 2234, 2235, 2253, 2254, 2262, 2268, 2281, 2283, 2288, 2291, 2292, 2301, 2310, 2311, 2312, 2313, 2314, 2316, 2318, 2320, 2321, 2322, 2343, 2344, 2345, 2372, 2375, 2376, 2377, 2378, 2379, 2380, 2386, 2387, 2388, 2390, 2394, 2395, 2401, 2422, 2424, 2425, 2432, 2433, 2453, 2458, 2492, 2495, 2503, 2506, 2508, 2513, 2520, 2528, 2531, 2532, 2534, 2540, 2544, 2550, 2552, 2556, 2559, 2560, 2561, 2575, 2577, 2580, 2581, 2583, 2586, 2593, 2598, 2608, 2621, 2641, 2643, 2662, 2667, 2670, 2672, 2676										
Anesthetics										
[1148pha]	11 y M	lidocaine	1	1	A	Oth	Unt-T	1	lidocaine	15 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
		lidocaine	1	1					megx (monoethylglycinexylidide)	2.7 mg/L In Blood (unspecified) @ Autopsy
1149ph	22 y M	cleaner (cationic)	2	2	A	Ingst + Inhal	Int-A	3		
		nitrous oxide	1	1						
		codeine	2	2						
		acetaminophen	3	3						
		ibuprofen	4	4						
1150ph	29 y M	sevoflurane	1	1	A	Inhal	Int-S	1		
[1151pha]	33 y M	lidocaine	1	1	A	Inhal	Int-U	1	megx (monoethylglycinexylidide)	11 mcg/mL In Blood (unspecified) @ Unknown
		lidocaine	1	1					lidocaine	18 mcg/mL In Blood (unspecified) @ Unknown
See Also case 440, 683, 979, 1333, 1531, 2345										
Anticholinergic Drugs										
1152h	59 y M	benztropine	1	1	A	Ingst	Int-S	2		
		THC homolog	2	2						
		phencyclidine	3	3						
See Also case 114, 812, 1211, 1496, 1599, 2027, 2040, 2110, 2120, 2178, 2180, 2279										
Anticoagulants										
1153ha	48 y F	warfarin	1	1	A/C	Ingst	Int-S	1		
		quetiapine	2	2						
		diltiazem	3	3						
		ethanol	4	4					ethanol	30 mg/dL In Serum @ Unknown
		salicylate	5	5					salicylate	1.7 mg/dL In Serum @ Unknown
See Also case 545, 600, 716, 1107, 1280, 1293, 1310, 1411, 1464, 1500, 1509, 1545, 1553, 1563, 1574, 1596, 1610, 1701, 1706, 1722, 1724										
Anticonvulsants										
1154h	21 y M	valproic acid	1	1	A/C	Ingst	Int-S	1	valproic acid	300.001 mcg/mL In Serum @ Unknown
		quetiapine	2	2						
		risperidone	3	3						
1155h	22 y M	valproic acid	1	1	A	Ingst	Int-S	1	valproic acid	147 mcg/mL In Blood (unspecified) @ 4 d (pe)
		valproic acid	1	1					valproic acid	172.4 mcg/mL In Blood (unspecified) @ 3 h (pe)
		valproic acid	1	1					valproic acid	190.3 mcg/mL In Blood (unspecified) @ 7 h (pe)
		valproic acid	1	1					valproic acid	214 mcg/mL In Blood (unspecified) @ 3 d (pe)
		valproic acid	1	1					valproic acid	589 mcg/mL In Blood (unspecified) @ 36 h (pe)
		valproic acid	1	1					valproic acid	69.9 mcg/mL In Blood (unspecified) @ 15 m (pe)
		lacosamide	2	2						
		sertraline	3	3						
		oxcarbazepine	4	4						
		mirtazapine	5	5						
1156ha	25 y M	lamotrigine	1	1	A	Ingst	Int-S	1	lamotrigine	41 mcg/mL In Plasma @ Unknown
		citalopram	2	2					citalopram	0.63 ng/mL In Plasma @ Unknown
		diphenhydramine	3	3					diphenhydramine	0.12 ng/mL In Plasma @ Unknown
1157ph	26 y M	carbamazepine	1	1	A	Ingst	Int-S	1	carbamazepine	31 mcg/mL In Blood (unspecified) @ Unknown
1158ph	28 y F	oxcarbazepine	1	1	A	Ingst	Int-S	2		
		bupropion	2	2						
		ziprasidone	3	3						
1159	33 y F	lamotrigine	1	1	A/C	Ingst	Int-S	2		
1160ph	34 y F	gabapentin	1	1	A	Ingst	Unk	2		
		ethanol	2	2						
1161ph	36 y M	gabapentin	1	1	A	Ingst	Int-A	2		
		ethanol	2	2						
		narcotic, other/unknown	3	3						
		amphetamine	4	4						
		cocaine	5	5						
1162ai	37 y F	gabapentin	1	1	U	Ingst + Unk	Unk	1		
		ethanol	2	2						
1163hai	39 y F	gabapentin	1	1	U	Ingst + Unk	Unk	2		
		doxepin	2	2						
		ethanol	3	3						
1164ai	40 y F	valproic acid	1	1	U	Unk	Int-S	1		
		ethanol	2	2						
		methamphetamine	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
1165p	41 y F				A	Ingst	Int-U	2		
1166	45 y F	gabapentin	1	1	A	Ingst	Int-S	3		
1167ai	52 y F	gabapentin	1	1	U	Unk	Int-S	1		
		marijuana	2	2						
		amphetamine	3	3						
1168	54 y M	topiramate	1	1	U	Ingst	Unk	2		
		quetiapine	2	2						
		clonazepam	3	3						
1169ha	55 y F	gabapentin	1	1	A/C	Ingst	Int-S	2	valproic acid	300 mcg/mL In Blood (unspecified) @ Unknown
		baclofen	2	2						
1170ai	56 y F				U	Unk	Int-A	2		
1171h	61 y M	gabapentin	1	1	U	Ingst	Int-M	3		
		methamphetamine	2	2						
		quetiapine	3	3						
1172ph	61 y M	gabapentin	1	1	A/C	Ingst	Int-S	2		
1173ha	62 y F	gabapentin	1	1	A/C	Ingst + Unk	Int-S	1	gabapentin	58 mg/L In Blood (unspecified) @ Unknown
		oxycodone	2	2						
		acetaminophen/ diphenhydramine	3	3						
		acetaminophen/ diphenhydramine	3	3						
[1174pha]	63 y M				A	Ingst	Int-M	1		
		pregabalin	1	1			pregabalin	43 mcg/mL In Blood (unspecified) @ Unknown		
		topiramate	2	2			topiramate	6300 ng/mL In Blood (unspecified) @ Unknown		
1175pha	63 y F				A/C	Ingst	Int-S	2		
1176h	69 y F	gabapentin	1	1	A	Ingst	AR-D	3	phenytoin	55 mcg/mL In Whole Blood @ Unknown
		antipsychotic (atypical)	2	2						
1177	70 y F	phenytoin	1	1	U	Ingst	Int-M	2		
1178h	72 y F	lacosamide	1	1	A	Ingst	Unk	2		
		gabapentin	2	2						
1179p	82 y F	valproic acid	1	1	A/C	Ingst	Unk	1	valproic acid	152 mcg/mL In Blood (unspecified) @ 48 h (pe)
		acetaminophen	2	2						
		valproic acid	1	1						
		valproic acid	1	1						

See Also case 16, 36, 107, 259, 262, 363, 400, 433, 553, 603, 607, 614, 628, 665, 693, 696, 703, 717, 721, 808, 831, 833, 837, 839, 852, 905, 923, 945, 951, 954, 983, 1012, 1038, 1103, 1191, 1193, 1200, 1202, 1203, 1206, 1210, 1220, 1222, 1236, 1244, 1252, 1257, 1260, 1268, 1275, 1282, 1289, 1290, 1299, 1301, 1310, 1321, 1330, 1357, 1358, 1359, 1382, 1383, 1391, 1394, 1396, 1397, 1406, 1411, 1412, 1419, 1424, 1425, 1433, 1435, 1440, 1455, 1461, 1474, 1479, 1483, 1502, 1503, 1510, 1578, 1591, 1615, 1651, 1677, 1708, 1716, 1717, 1718, 1722, 1739, 1760, 1769, 1771, 1778, 1783, 1790, 1793, 1795, 1797, 1802, 1810, 1845, 1902, 1919, 2035, 2049, 2180, 2205, 2206, 2232, 2241, 2319, 2358, 2370, 2417, 2456, 2492, 2676

Antidepressants

1180h	12 y M	bupropion	1	1	A	Ingst	Int-S	1		
1181pha	12 y F	amitriptyline	1	1	U	Ingst	Int-S	1	nortriptyline	1.4 mcg/mL In Blood (unspecified) @ 1 h (pe)
		amitriptyline	1	1					amitriptyline	2.2 mcg/mL In Blood (unspecified) @ 1 h (pe)
1182ph	13 y F				A	Ingst	Int-S	2		
		escitaopram	1	1						
		acetaminophen/hydrocodone	2	2						
		acetaminophen/oxycodone	3	3						
1183ph	14 y F	alprazolam	4	4	A/C	Ingst	Int-S	1		
		bupropion	1	1						
1184ha	15 y M	fluoxetine	2	2	A/C	Ingst	Int-S	1	bupropion	184 ng/mL In Serum @ Unknown
		quetiapine	2	2						
1185	16 y F	bupropion (extended release)	1	1	U	Ingst	Int-S	2		
		duloxetine	1	1						
		cyclic antidepressant, unknown	2	2						
1186h	17 y F	acetaminophen	3	3	A/C	Ingst	Int-S	1	acetaminophen (apap)	343.9 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
1187ph	18 y M	bupropion (extended release)	1	1	A/C	Ingst	Int-S	1		
		cyanocrylate	2	2						
1188ai	18 y M	bupropion (extended release)	1	1	U	Unk	Int-S	1		
		bupropion	2	2						
1189h	19 y F	bupropion	1	1	A/C	Ingst	Int-S	1		
		citalopram	2	2						
1190ph	19 y M	venlafaxine (extended release)	1	1	A/C	Ingst	Int-S	1		
		escitalopram	2	2						
1191ha	20 y F	bupropion (extended release)	1	1	A/C	Ingst	Int-S	1		
		venlafaxine (extended release)	2	2						
		clonidine	3	3						
		paliperidone	4	4						
		trazodone	5	5						
1192pa	20 y M	bupropion	1	1	U	Ingst	Unk	1		
		bupropion	1	1						
		topiramate	2	2						
		lisdexamphetamine	3	3						
		alprazolam	4	4						
1193ha	22 y M	ethanol	5	5	A	Ingst	Int-S	1		
		bupropion (extended release)	1	1						
		methamphetamine	2	2						
		venlafaxine	3	3						
1194h	22 y M	citalopram	4	4	A	Ingst	Int-S	2		
		bupropion	1	1						
		dextromethorphan	2	2						
		chlorpheniramine	3	3						
		lamotrigine	4	4						
1195ph	23 y F	marijuana	5	5	U	Ingst	Int-S	2		
		amitriptyline	1	1						
		perphenazine	2	2						
		doxepin	1	1						
		ziprasidone	2	2						
		paroxetine	3	3						
		alprazolam	4	4						
		hydrochlorothiazide	5	5						
		fluoxetine	6	6						
olanzapine	7	7								
1196ph	23 y M	zolpidem	8	8	A/C	Ingst	Int-U	2		
		methocarbamol	9	9						
1197h	23 y M	bupropion (extended release)	1	1	A/C	Ingst	Int-S	2		
		bupropion (extended release)	1	1						
		escitalopram	2	2						
1198ph	23 y F	methylphenidate	3	3	U	Ingst	Int-U	2		
		doxepin	1	1						
		quetiapine	2	2						
1199h	24 y F	sertraline	3	3	A	Ingst	Int-S	2		
		bupropion (extended release)	1	1						
1200ai	25 y F	bupropion (extended release)	1	1	U	Unk	Int-M	2		
		fluoxetine	1	1						
		gabapentin	2	2						
1201pa	25 y F	bupropion	3	3	U	Ingst	Int-S	1		
		lithium	1	1						
		oxycodone	2	2						
		oxycodone	2	2						
		trazodone	3	3						
		trazodone	3	3						
		ondansetron	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
1202	25 y F	olanzapine	5	5					olanzapine	130 ng/mL In Blood (unspecified) @ 1 h (pe)
		amphetamine/ dextroamphetamine	6	6					amphetamine	1300 ng/mL In Blood (unspecified) @ 1 h (pe)
		ibuprofen	7	7						
		acetaminophen/ antihistamine/ decongestant/ dextromethorphan	8	8					chlorpheniramine	19 ng/mL In Blood (unspecified) @ 1 h (pe)
		sertraline	9	9					sertraline	280 ng/mL In Blood (unspecified) @ 1 h (pe)
		acetaminophen/salicylate	10	10					acetaminophen (apap)	390 mcg/mL In Blood (unspecified) @ 1 h (pe)
		acetaminophen/salicylate	10	10					salicylate	430 mcg/mL In Blood (unspecified) @ 1 h (pe)
		food coloring	11	11						
		fluoxetine	1	1	A/C	Ingst	Unk	1	norfluoxetine	10000 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	1	1					fluoxetine	13000 ng/mL In Blood (unspecified) @ Autopsy
		morphine	2	2					morphine (free)	200 ng/mL In Blood (unspecified) @ Autopsy
levothyroxine	3	3								
lamotrigine	4	4					lamotrigine	13 ng/mL In Blood (unspecified) @ Autopsy		
levetiracetam	5	5					levetiracetam	70 mcg/mL In Blood (unspecified) @ Autopsy		
risperidone	6	6								
omeprazole	7	7								
albuterol	8	8								
1203ph	26 y F	citalopram	1	1	A/C	Ingst	Int-S	2		
		olanzapine	2	2						
		lacosamide	3	3						
		alprazolam	4	4						
		temazepam	5	5						
		ondansetron	6	6						
1204pha	27 y M	doxepin	1	1	A/C	Ingst	Int-S	1	doxepin	410 ng/mL In Blood (unspecified) @ Unknown
		bupropion	2	2					bupropion	3200 ng/mL In Blood (unspecified) @ Unknown
		citalopram	3	3					citalopram	160 ng/mL In Blood (unspecified) @ Unknown
		ethanol	4	4					ethanol	94 mg/dL In Blood (unspecified) @ Unknown
1205h	28 y M	bupropion (extended release)	1	1	A	Ingst	Int-S	3		
1206h	29 y F	lithium	1	1	A	Ingst	Int-S	1	lithium	10 mEq/L In Blood (unspecified) @ Unknown
		lithium	1	1					lithium	8 mEq/L In Blood (unspecified) @ 30 m (pe)
1207	30 y M	alprazolam	2	2						
		lorazepam	3	3						
		acetaminophen	4	4						
		gabapentin	5	5	A	Ingst	Int-S	1		
		bupropion	1	1						
1208h	30 y F	ethanol	2	2					ethanol	115 mg/dL In Serum @ 4 h (pe)
		salicylate	3	3					salicylate	4.6 mg/dL In Serum @ 4 h (pe)
		amitriptyline	1	1	A	Ingst	Int-S	2		
1209ai	30 y F	amitriptyline	1	1	U	Unk	Int-S	1		
		trazodone	2	2						
		citalopram	3	3						
1210ph	32 y F	cyclic antidepressant, unknown	1	1	U	Ingst	Unk	2	tca (total tricyclic concentration)	2003 ng/mL In Serum @ Unknown
		valproic acid	2	2						
1211ha	32 y M	bupropion	1	1	A/C	Ingst + Unk	Int-S	1	amphetamine	90 ng/mL In Unknown @ Unknown
		methamphetamine	2	2					methamphetamine	790 ng/mL In Unknown @ Unknown
		bupropion	3	3						
		haloperidol	4	4						
		benztropine	5	5						
1212phi	32 y F	amitriptyline	1	1	A	Ingst	Int-S	1		
		cyclobenzaprine	2	2						
1213ai	33 y F	doxepin	1	1	U	Unk	Int-S	1		
		bupropion	2	2						
		trazodone	3	3						
1214ph	33 y F					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							
1215a	34 y M	bupropion (extended release)	1	1	A/C	Ingst	Int-S	1									
		drug, unknown	2	2													
		trazodone	3	3													
		bupropion	1	1													
		bupropion	1	1													
		ethanol	2	2													
		risperidone	3	3													
1216h	35 y M	risperidone	3	3	U	Ingst	Int-S	1		0.014 mcg/mL In Blood (unspecified) @ 1 h (pe)							
		risperidone	3	3						9-hydroxyrisperidone	0.034 mcg/dL In Blood (unspecified) @ 1 h (pe)						
		duloxetine	4	4						duloxetine	0.078 mcg/mL In Blood (unspecified) @ 1 h (pe)						
		bupropion	1	1													
		escitalopram	2	2													
		1217ha	35 y F	bupropion (extended release)						1	1	A/C	Ingst	Int-S	1		10 mcg/mL In Blood (unspecified) @ Autopsy
				bupropion (extended release)						1	1						bupropion
ethanol	2			2	ethanol	254 mg/dL In Blood (unspecified) @ Unknown											
1218ai	35 y F	imipramine	1	1	U	Unk	Unk	1									
		trazodone	2	2													
		clonazepam	3	3													
1219ha	37 y F	imipramine	1	1	A	Ingst	Int-S	2									
		risperidone	2	2													
1220pha	37 y F	doxepin	1	1	A/C	Ingst	Int-S	1			2.3 mg/L In Blood (unspecified) @ 4 h (pe)						
		clonazepam	2	2							clonazepam	0.011 mg/L In Serum @ 4 h (pe)					
		clonazepam	2	2							clonazepam	0.04 mg/L In Blood (unspecified) @ 4 h (pe)					
		clonazepam	2	2							7-aminoclonazepam	0.066 mg/L In Serum @ 4 h (pe)					
		clonazepam	2	2							7-aminoclonazepam	0.16 mg/L In Blood (unspecified) @ 4 h (pe)					
		ethanol	3	2							ethanol	136 mg/dL In Serum @ Unknown					
		alprazolam	4	4							alprazolam	0.01 mg/L In Blood (unspecified) @ 4 h (pe)					
		alprazolam	4	4							alprazolam	0.01 mg/L In Serum @ 4 h (pe)					
		gabapentin	5	5							gabapentin	12 mg/L In Blood (unspecified) @ 4 h (pe)					
		gabapentin	5	5							gabapentin	15 mg/L In Serum @ 4 h (pe)					
1221h	38 y M	lithium	1	1	A/C	Ingst	Int-S	1			1 mEq/L In Blood (unspecified) @ 11 h (pe)						
		lithium	1	1							lithium	1.5 mEq/L In Blood (unspecified) @ 8 h (pe)					
		lithium	1	1							lithium	2.3 mEq/L In Blood (unspecified) @ Unknown					
1222i	38 y F	venlafaxine	1	1	U	Ingst	Unk	2									
		lamotrigine	2	2													
		phencyclidine	3	3													
		diclofenac	4	4													
1223phi	39 y M	amitriptyline	1	1	U	Ingst	Int-S	2									
1224h	40 y M	lithium	1	1	A	Ingst	Int-S	1									
		quetiapine	2	2													
		lorazepam	3	3													
		zolpidem	4	4													
1225h	40 y F	nortriptyline	1	1	A/C	Ingst	Int-S	2									
		cyclobenzaprine	2	2													
		acetutolol	3	3													
1226h	41 y M	cyclic antidepressant, unknown	1	1	A/C	Ingst	Int-S	1									
1227pha	41 y F	citalopram	1	1	A/C	Ingst	Int-S	2			0.276 g/dL In Blood (unspecified) @ 3 h (pe)						
		citalopram	1	1							morphine (free)	140 mcg/L In Blood (unspecified) @ 3 h (pe)					
		citalopram	1	1							benzoylecognine	300 mcg/L In Blood (unspecified) @ 3 h (pe)					
		cocaine	2	2													
		ethanol	3	3							ethanol	316 mg/dL In Serum @ Unknown					
1228h	41 y F	morphine	4	4	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
1229	41 y F	lithium	1	1	U	Ingst	Int-S	2	lithium	1.77 mEq/L In Serum @ 4 h (pe)
		lithium	1	1					lithium	6 mEq/L In Serum @ Unknown
		lithium	2	2						
		quetiapine	3	3						
		ethanol	4	4					ethanol	227 mg/dL In Serum @ 4 h (pe)
1230pha	41 y F	nortriptyline	1	1	U	Ingst	Int-S	2		
		acetaminophen/ butalbital/caffeine	2	2						
1231ph	41 y M	cyclic antidepressant, unknown	1	1	U	Ingst	Int-S	2	nortriptyline	268 ng/mL In Blood (unspecified) @ Unknown
		cyclic antidepressant, unknown	1	1					amitriptyline	652 ng/mL In Blood (unspecified) @ Unknown
1232ph	41 y F	venlafaxine	1	1	A/C	Ingst	Int-S	2		
		quetiapine	2	2						
		diphenhydramine	3	3						
		ethanol	4	4						
1233h	42 y F	trazodone	1	1	A	Ingst	Int-S	2		
		zolpidem	2	2						
		acetaminophen/oxycodone	3	3						
		clonazepam	4	4						
1234h	42 y M	amitriptyline	2	1	A	Ingst	Int-S	2		
		tizanidine	1	1						
		famotidine	3	3						
		prednisone	4	4						
		natural gas	5	5						
1235ph	42 y M	amitriptyline	1	1	U	Ingst	Int-U	2		
		bupropion (extended release)	1	1						
		citalopram	2	2						
1236ha	42 y M	ethanol	3	3	A/C	Ingst	Int-S	1		
		venlafaxine	1	1					venlafaxine	4000 mcg/L In Blood (unspecified) @ Autopsy
		venlafaxine	1	1					norvenlafaxine	4000 mcg/L In Blood (unspecified) @ Autopsy
		metoprolol (extended release)	2	2						
1237ai	43 y F	gabapentin	3	3	U	Ingst + Unk	Int-S	1		
		atorvastatin	4	4						
		bupropion	1	1						
		citalopram	2	2						
1238pha	43 y M	trazodone	3	3	U	Ingst	Int-S	2		
		venlafaxine	1	1					venlafaxine	7.3 mg/L In Whole Blood @ 30 m (pe)
		doxepin	2	2						
		alprazolam	3	3					alprazolam	93 ng/mL In Plasma @ 30 m (pe)
1239ai	43 y M	zolpidem	4	4	U	Unk	Int-M	1		
		bupropion	1	1						
1240	44 y F	doxylamine	2	2	U	Ingst	Int-S	3		
		amitriptyline	1	1					ethanol	51 mg/dL In Blood (unspecified) @ Unknown
1241a	44 y F	ethanol	2	2	A	Ingst	Int-S	1		
		sertraline	3	3						
		doxepin	1	1					desmethyldoxepin	230 ng/mL In Blood (unspecified) @ Unknown
		doxepin	1	1					doxepin	710 ng/mL In Blood (unspecified) @ Unknown
		quetiapine	2	2					quetiapine	270 ng/mL In Blood (unspecified) @ Unknown
		sertraline	3	3					sertraline	140 ng/mL In Blood (unspecified) @ Unknown
		sertraline	3	3					desmethylsertraline	81 ng/mL In Blood (unspecified) @ Unknown
		mirtazapine	4	4					mirtazapine	190 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	5	5					methamphetamine	810 ng/mL In Blood (unspecified) @ Unknown
		amphetamine	6	6					amphetamine	48 ng/mL In Blood (unspecified) @ Unknown
1241a	44 y F	hydrocodone	7	7	A	Ingst	Int-S	1		
		acetaminophen/ butalbital/caffeine	8	8					acetaminophen (apap)	20 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/ butalbital/caffeine	8	8					butalbital	3.4 mcg/mL In Blood (unspecified) @ Unknown
		desvenlafaxine	9	9						
		bupropion	10	10						

(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		
1242ph	44 y M	lisinopril	11	11	A/C	Ingst	Int-S	2				
		alprazolam	12	12								
		metoprolol	13	13								
1243h	44 y M	cyclic antidepressant, unknown	1	1	A/C	Ingst	Int-S	2				
		sertraline	1	1								
1244h	45 y F	tizanidine	2	2	A	Ingst	Int-S	1				
		amitriptyline	1	1								
1245ai	45 y F	lithium	2	2	U	Unk	Int-S	1				
		gabapentin	3	3								
		melatonin	4	4								
		topiramate	5	5								
		amitriptyline	1	1								
1246h	46 y F	citalopram	2	2	U	Ingst	Int-S	2				
		duloxetine	3	3								
		bupropion	1	1								
1247pha	46 y F	clonazepam	2	2	A	Ingst	Int-S	2				
		venlafaxine	1	1								
		acetaminophen/diphenhydramine	2	2							diphenhydramine	2100 ng/mL In Blood (unspecified) @ 30 m (pe)
		acetaminophen/diphenhydramine	2	2							acetaminophen (apap)	235 mcg/mL In Blood (unspecified) @ 30 m (pe)
1248h	46 y F	ethanol	3	3	A/C	Ingst	Int-S	2		325 mg/dL In Whole Blood @ 30 m (pe)		
		trazodone	1	1								
1249ai	46 y F	bupropion	1	1	U	Ingst + Unk	Unk	1				
		clonazepam	2	2								
		diphenhydramine	3	3								
1250a	47 y F	venlafaxine (extended release)	1	1	A/C	Ingst	Int-S	1	venlafaxine	110 mg/L In Blood (unspecified) @ Autopsy		
		venlafaxine (extended release)	1	1						venlafaxine	120 mg/L In Blood (unspecified) @ Autopsy	
1251ai	47 y M	bupropion	1	1	U	Unk	Int-A	1				
		hydroxyzine	2	2								
1252h	48 y F	bupropion	1	1	A/C	Ingst	Int-S	1				
		lamotrigine	2	2								
		ethanol	3	3							ethanol	170 mg/dL In Blood (unspecified) @ Unknown
1253h	48 y F	velafaxine	1	1	U	Ingst	Unk	2				
1254ha	48 y F	doxepin	1	1	A	Ingst	Int-S	2				
		escitalopram	2	2								
		hydroxyzine	3	3								
		ethanol	4	4							ethanol	130 mg/dL In Blood (unspecified) @ Unknown
1255ai	48 y F	ethanol	2	2	U	Ingst + Unk	Unk	1				
		amitriptyline	1	1								
		diazepam	3	3								
1256ai	48 y M	citalopram	1	1	U	Unk	Unk	2				
		propranolol	2	2								
1257h	48 y M	doxepin	1	1	A/C	Ingst + Par	Int-S	1				
		haloperidol	2	2								
		clonazepam	3	3								
		insulin (glargine)	4	4								
		glipizide	5	5								
		metformin	6	6								
		ziprasidone	7	7								
		ethanol	8	8								
		vortioxetine	9	9								
		pregabalin	10	10								
1258	48 y F	bupropion (extended release)	1	1	A/C	Ingst	Int-S	2				
		carvedilol	2	2								
		clonazepam	3	3								
1259pai	49 y F	venlafaxine	1	1	A	Ingst	Int-A	1	venlafaxine	20 mg/L In Blood (unspecified) @ Autopsy		
		venlafaxine	1	1						venlafaxine	45 mg/kg In Liver @ Autopsy	
		ethanol (non-beverage)	2	2						ethanol	0.02 % (wt/Vol) 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
1260pha	49 y F	ethanol (non-beverage)	2	2	A/C	Ingst	Int-S	1	ethanol	0.04 % (wt/Vol) In Vitreous @ Autopsy
		ethanol (non-beverage)	2	2					ethanol	0.12 % (wt/Vol) In Urine (quantitative only) @ Autopsy
		bupropion (extended release)	1	1					bupropion	2300 ng/mL In Whole Blood @ Unknown
		trazodone	2	1						
		lurasidone	3	2						
		cyclobenzaprine	4	3						
		aripiprazole	5	4						
		gabapentin	6	5						
		amphetamine/ dextroamphetamine (extended release)	7	6						
		acetaminophen/hydrocodone	8	7						
1261ha	49 y F	fluoxetine	9	8	A/C	Ingst	Int-S	1		
		cephalexin	10	9						
		bupropion	1	1					bupropion	12.2 mcg/mL In Blood (unspecified) @ Autopsy
		verapamil	2	2					verapamil	2.3 mcg/mL In Blood (unspecified) @ 1 h (pe)
		escitalopram	3	3						
		ethanol	4	4						
		diphenhydramine	5	5						
1262h	49 y M	hydrochlorothiazide	6	6	A/C	Ingst	Int-S	3		
		lisinopril	7	7						
1263pha	49 y F	amitriptyline	1	1	A/C	Ingst + Unk	Int-S	1		
		cyclobenzaprine	2	2						
1264ai	49 y F	amitriptyline	1	1	U	Unk	Unk	3	amitriptyline	10.001 mg/L In Blood (unspecified) @ Autopsy
		amitriptyline	1	1					nortriptyline	100 mg/kg In Liver @ Autopsy
		amitriptyline	1	1					amitriptyline	160.001 mg/kg In Liver @ Autopsy
		amitriptyline	1	1					nortriptyline	5.7 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoyllecognine	0.029 mg/L In Blood (unspecified) @ Autopsy
1265ai	49 y M	methadone	2	2	U	Unk	Int-S	1		
		diphenhydramine	3	3						
		fluvoxamine	1	1						
1266ai	49 y M	oxycodone	2	2	U	Unk	Unk	1		
		oxymorphone	3	3						
		trazodone	1	1						
1267	50 y F	tramadol	2	2	U	Ingst	Int-S	2		
		morphine	3	3						
		doxepin	1	1						
1268h	50 y F	hydroxyzine	2	2	U	Ingst	Unk	3		
		fluoxetine	1	1						
		trazodone	2	2						
		topiramate	3	3						
1269ph	50 y F	alprazolam	4	4	A	Ingst	Int-S	1		
		bupropion	1	1						
		antidepressant (SNRI)	2	2						
		trazodone	1	1						
1270ai	50 y F	tramadol	2	2	U	Unk	Int-M	2		
		bupropion	3	3						
		amitriptyline	1	1						
1271p	51 y M	amitriptyline	1	1	A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
		amitriptyline	1	1						
1272ai	51 y F	fentanyl	2	2	U	Unk	Unk	1		
		morphine	3	3						
		amitriptyline	1	1						
1273p	51 y F	amitriptyline	1	1	A	Ingst	Int-S	2		
		doxepin	1	1						
		narcotic, other/unknown	2	2						
		benzodiazepine	3	3						
1274a	51 y F	cocaine	4	4	A/C	Ingst	Int-S	1		
		bupropion (extended release)	1	1					bupropion	13 mg/L In Blood (unspecified) @ Autopsy
		bupropion (extended release)	1	1					bupropion	20 mg/L In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	239 mg/dL In Blood (unspecified) @ Unknown
1275h	52 y F	nortriptyline	1	1	A	Ingst	Unk	2		
		nortriptyline	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		
1276ai	52 y F	topiramate	2	2	U	Unk	Unt-M	1				
		gabapentin	3	3								
		clonazepam	4	4								
		lamotrigine	5	5								
		quetiapine	6	6								
1277ph	52 y F	citalopram	1	1	U	Ingst	Int-S	2				
		ethanol	2	2								
		quetiapine	3	3								
1278	52 y F	bupropion	1	1	A/C	Ingst	Int-S	2				
		clonazepam	2	2								
		alcohol, unknown	3	3								
1279ai	52 y F	amitriptyline	1	1	U	Ingst + Unk	Int-S	2				
		trazodone	1	1								
		diphenhydramine	2	2								
1280	53 y F	alcohol, unknown	3	3	U	Ingst	Int-S	3				
		lithium	1	1								
		sodium citrate	2	2								
1281pha	54 y F	salicylate	3	3	A/C	Ingst	Int-S	1		6.6 mg/dL In Blood (unspecified) @ Unknown		
		bupropion	1	1								
		duloxetine	2	2								
1282ph	54 y F	clonazepam	3	3	A/C	Ingst	Int-U	2				
		amitriptyline	1	1								
		pregabalin	2	2								
1283ai	54 y M	diazepam	3	3	U	Ingst + Unk	Int-A	1				
		amitriptyline	1	1								
		ethanol	2	2								
1284ai	54 y F	bupropion	1	1	U	Unk	Int-M	3				
		oxycodone	2	2								
		trazodone	3	3								
1285h	54 y M	doxepin	1	1	A/C	Ingst	Int-S	1				
		zolpidem	2	2								
1286ha	55 y F	antidepressant, unknown	1	1	A	Ingst	Int-S	2				
		lorazepam	2	2								
1287h	55 y F	lithium	1	1	U	Ingst	Unk	3	lithium	2.39 mEq/L In Serum @ Unknown		
		drug, unknown	2	2								
1288ha	55 y F	bupropion (extended release)	1	1	A	Ingst	Int-S	2	bupropion	49 ng/mL In Blood (unspecified) @ Autopsy		
		clonazepam	2	2					7-aminoclonazepam	100 ng/mL In Blood (unspecified) @ Autopsy		
		clonazepam	2	2					clonazepam	810 ng/mL In Blood (unspecified) @ Autopsy		
		ethanol	3	3					ethanol	190 mg/dL In Serum @ Unknown		
1289pi	56 y F	bupropion	1	1	A/C	Ingst	Int-S	1				
		valproic acid	2	2								
		oxybutynin	3	3								
		clonazepam	4	4								
1290ai	56 y F	bupropion	1	1	U	Unk	Int-M	1				
		gabapentin	2	2								
1291h	56 y F	venlafaxine	1	1	A	Ingst	Int-S	2				
1292ai	57 y M	citalopram	1	1	U	Unk	Int-S	1				
		trazodone	2	2								
		alprazolam	3	3								
1293h	58 y F	bupropion	1	1	A/C	Ingst	Int-S	2				
		metoprolol	2	2								
		citalopram	3	3								
		lisinopril	4	4								
		antiplatelet drug	5	5								
		ethanol	6	6								
1294h	59 y F	nortriptyline	1	1	U	Ingst	Int-S	2				
1295ha	59 y F	venlafaxine	1	1	A	Ingst	Int-S	2				
		clonazepam	2	2								
		atenolol	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
1296ai	59 y M	atenolol/chlorthalidone	4	4	U	Unk	Unk	2		
		clomipramine	1	1						
		buspirone	2	2						
		dextromethorphan	3	3						
1297ha	59 y M	amitriptyline	1	1	A/C	Ingst	Int-S	3		
		clonidine	2	2						
1298	59 y F	mirtazapine	1	1	A/C	Ingst	Int-S	2		
		citalopram	2	2						
		oxycodone	3	3						
		clonazepam	4	4						
1299ha	59 y M	nortriptyline	1	1	U	Ingst	Int-U	2		
		morphine	2	2						
		tizanidine	3	3						
		lisinopril	4	4						
		gabapentin	5	5					gabapentin	74 mg/L In Blood (unspecified) @ 2 h (pe)
		alprazolam	6	6					alprazolam	0.037 mg/L In Blood (unspecified) @ 2 h (pe)
		pravastatin	7	7						
1300ai	59 y F	nortriptyline	1	1	U	Unk	Int-S	1		
		fluoxetine	2	2						
		morphine	3	3						
		clonazepam	4	4						
1301ha	60 y F	amitriptyline	1	1	A/C	Ingst	Int-S	1	nortriptyline	180 ng/mL In Gastric (stomach content) @ Autopsy
		amitriptyline	1	1					amitriptyline	71 ng/mL In Gastric (stomach content) @ Autopsy
		bupropion	2	2						
		ethanol	3	3						
		duloxetine	4	4						
		metformin	5	5						
		gabapentin	6	6						
		levothyroxine	7	7						
		zolpidem	8	8						
		salicylate	9	9						
		insulin	10	10						
		marijuana	11	11					delta-9-carboxy-thc	5.9 ng/mL In Gastric (stomach content) @ Autopsy
1302ai	60 y F	citalopram	1	1	U	Unk	Unk	3		
1303	61 y F	bupropion (extended release)	1	1	A	Ingst	Int-S	2		
		lorazepam	2	2						
1304a	61 y M	bupropion	1	1	A/C	Ingst	Int-S	2	bupropion	710 ng/mL In Blood (unspecified) @ Autopsy
		bupropion	1	1					bupropion	800 ng/mL In Serum @ Unknown
		trazodone	2	2						
1305ph	61 y M	amitriptyline	1	1	A/C	Ingst	Int-S	2		
		lisinopril	2	2						
		alprazolam	3	3						
		ethanol	4	4					ethanol	100 mg/dL In Serum @ Unknown
1306ai	61 y F	amitriptyline	1	1	U	Unk	Int-A	1		
		hydrocodone	2	2						
		alprazolam	3	3						
1307i	62 y F	amitriptyline	1	1	U	Unk	Unk	2		
		tramadol	2	2						
		lorazepam	3	3						
1308h	62 y F	bupropion	1	1	A	Ingst	Int-S	2		
1309ai	63 y F	fluoxetine	1	1	U	Unk	Unk	2		
		bupropion	2	2						
		diazepam	3	3						
1310h	64 y M	sertraline	1	1	A	Ingst	Int-S	2		
		sumatriptan	2	2						
		mercaptopurine	3	3						
		adalimumab	4	4						
		cyclobenzaprine	5	5						
		lamotrigine	6	6						
		lisinopril	7	7						
		lorazepam	8	8						
		pregabalin	9	9						
		metoprolol	10	10						

(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
1311p	64 y F	temazepam	11	11	A	Ingst	Int-S	2		
		rivaroxaban	12	12						
		omeprazole	13	13						
		corticosteroids	14	14						
		diuretic, unknown	15	15						
1312ai	64 y M	venlafaxine	1	1	U	Unk	Int-A	3		
		acetaminophen/oxycodone	2	2						
		salicylate	3	3						
		meloxicam	4	4						
		naproxen	5	5						
		ibuprofen	6	6						
		calcium	7	7						
1313ai	64 y F	sertraline	1	1	U	Unk	Int-S	2		
		ethanol	2	2						
		isopropanol	3	3						
1314h	66 y F	venlafaxine	1	1	A	Ingst	Int-S	1		
		mirtazapine	2	2						
		metoprolol	3	3						
1315ai	66 y M	amitriptyline	1	1	U	Unk	Int-S	1		
		ethanol	2	2						
1316h	67 y M	citalopram	1	1	A/C	Ingst	Int-S	1		
		carisoprodol	2	2						
		oxycodone	3	3						
		hydrocodone	4	4						
1317h	67 y F	bupropion (extended release)	1	1	A	Ingst	Int-S	2		
		risperidone	2	2						
		cyclobenzaprine	3	3						
		temazepam	4	4						
		fluorquinolone	5	5						
1318ai	67 y F	amitriptyline	1	1	U	Unk	Int-S	1		
		verapamil	2	2						
		lorazepam	3	3						
1319ai	67 y F	bupropion	1	1	U	Unk	Unk	3		
1320h	67 y F	amitriptyline	1	1	A	Ingst	Int-U	2		
1321ha	68 y F	cyclobenzaprine	2	2	A/C	Ingst	Int-S	2		
		nortriptyline	1	1						
1322pha	68 y M	olmesartan	2	2	A	Ingst	Int-S	3		
		eszopiclone	3	3						
		gabapentin	4	4						
		sertraline	5	5						
		pantoprazole	6	6						
		buspirone	7	7						
		metformin	8	8						
		lisinopril	9	9						
		bupropion	1	1						
alprazolam	2	2								
1323h	69 y M	bupropion	1	1	A	Ingst	Unk	3		
		bethanechol	2	2						
		risperidone	3	3						
		levothyroxine	4	4						
		drug, unknown	5	5						
		vitamin D	6	6						
1324h	70 y F	bupropion (extended release)	1	1	A/C	Ingst	Int-S	3		
1325ai	70 y F	fluoxetine	1	1	U	Unk	Int-S	1		
1326ai	70 y F	trazodone	1	1	U	Unk	Int-S	1		
		hydrocodone	2	2						
		toluene	3	3						
		benzene	4	4						
1327ai	75 y F	citalopram	1	1	U	Unk	Int-M	2		
		diazepam	2	2						
		ethanol	3	3						
1328ai	75 y M				U	Unk	Unk	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
1329pa	78 y F	cyclic antidepressant, unknown	1	1	A/C	Ingst	Int-S	1		
		cocaine	2	2						
		amphetamine	3	3						
		amitriptyline	1	1					nortriptyline	3.3 mg/L In Blood (unspecified) @ Autopsy
		amitriptyline	1	1					nortriptyline	3.6 mg/L In Blood (unspecified) @ Autopsy
		amitriptyline	1	1					amitriptyline	4.9 mg/L In Blood (unspecified) @ Autopsy
		amitriptyline	1	1					amitriptyline	6.2 mg/L In Blood (unspecified) @ Autopsy
1330	80 y F	diazepam	2	2	A	Ingst	Unt-G	2	nordiazepam	0.4 mg/L In Blood (unspecified) @ Autopsy
		diazepam	2	2					diazepam	0.7 mg/L In Blood (unspecified) @ Autopsy
1331a	84 y M	lithium	1	1	A/C	Ingst	Int-S	1	lithium	2.45 mEq/L In Serum @ 1 h (pe)
		valproic acid	2	2						
1332h	84 y M	bupropion (extended release)	1	1	A/C	Ingst	Unt-T	3	bupropion	1.2 mcg/mL In Blood (unspecified) @ Unknown
		sertraline	1	1						
See Also case 17, 21, 36, 46, 48, 97, 121, 124, 147, 283, 313, 363, 408, 456, 494, 498, 522, 535, 553, 559, 578, 580, 603, 607, 612, 615, 623, 633, 638, 642, 660, 666, 679, 683, 693, 704, 706, 721, 737, 742, 747, 749, 751, 759, 778, 779, 785, 793, 800, 802, 807, 812, 815, 816, 820, 829, 836, 840, 860, 891, 894, 901, 903, 911, 924, 926, 936, 939, 952, 959, 960, 961, 966, 986, 993, 996, 1005, 1009, 1012, 1017, 1018, 1028, 1052, 1058, 1077, 1078, 1103, 1108, 1109, 1155, 1156, 1158, 1163, 1344, 1357, 1359, 1382, 1384, 1385, 1394, 1396, 1400, 1406, 1409, 1411, 1412, 1413, 1419, 1420, 1423, 1424, 1425, 1426, 1427, 1428, 1432, 1433, 1440, 1443, 1452, 1453, 1455, 1461, 1465, 1468, 1473, 1474, 1479, 1481, 1483, 1489, 1490, 1491, 1501, 1503, 1512, 1514, 1517, 1518, 1524, 1525, 1526, 1531, 1546, 1551, 1552, 1559, 1561, 1566, 1568, 1569, 1571, 1573, 1580, 1591, 1610, 1616, 1622, 1636, 1649, 1660, 1661, 1665, 1667, 1674, 1679, 1680, 1681, 1683, 1710, 1712, 1717, 1720, 1723, 1738, 1739, 1746, 1757, 1758, 1760, 1763, 1768, 1770, 1782, 1786, 1789, 1793, 1799, 1801, 1805, 1806, 1811, 1815, 1832, 1845, 1858, 1879, 1914, 1946, 1972, 2027, 2037, 2050, 2110, 2120, 2135, 2149, 2180, 2221, 2232, 2237, 2296, 2297, 2331, 2358, 2363, 2370, 2374, 2379, 2412, 2452, 2489, 2492, 2517, 2525, 2544, 2546, 2556, 2561, 2599, 2676										
Antihistamines										
1333p	3 y M				A				Ingst + Inhal + Derm	Unt-G
1334	18 y M	hydroxyzine	1	1	A	Ingst	Int-S	1		
		lidocaine	2	2						
1335sai	18 y M	diphenhydramine	1	1	U	Unk	Int-S	1		
		ethanol	2	2						
1336gai	18 y M	diphenhydramine	1	1	U	Ingst	Int-S	1		
		ethanol	2	2						
1337h	19 y F	diphenhydramine	1	1	A	Ingst	Int-S	1		
1338ph	23 y F	diphenhydramine	1	1	A	Ingst	Int-S	1		
1339pha	26 y F	diphenhydramine	1	1	A	Ingst	Int-S	1		
1340h	27 y M	diphenhydramine	1	1	A/C	Par	Int-U	2		
1341pha	29 y F	diphenhydramine	1	1	A	Ingst	Int-S	2		
		hydroxyzine	1	1					hydroxyzine	9.3 mcg/mL In Blood (unspecified) @ Unknown
1342ha	29 y F	diphenhydramine	1	1	A	Ingst	Int-S	1		
[1343pha]	29 y F	diphenhydramine	1	1	A	Ingst	Int-S	1	diphenhydramine	5400 mcg/L In Blood (unspecified) @ 3 h (pe)
1344ha	30 y F	diphenhydramine	1	1	A	Ingst	Unk	1	diphenhydramine	26 mcg/mL In Whole Blood @ Autopsy
		diphenhydramine	1	1					diphenhydramine	38 mcg/mL In Whole Blood @ Autopsy
		quetiapine	2	2					quetiapine	2.3 mcg/mL In Whole Blood @ Autopsy
		quetiapine	2	2					quetiapine	2.4 mcg/mL In Whole Blood @ Autopsy
		fluoxetine	3	3					norfluoxetine	0.69 mcg/mL In Whole Blood @ Autopsy
		fluoxetine	3	3					norfluoxetine	0.94 mcg/mL In Whole Blood @ Autopsy
		bupropion	4	4					bupropion	0.32 mcg/mL In Whole Blood @ Autopsy
1345sai	31 y M				U	Unk	Int-S	1		
1346	33 y F	diphenhydramine	1	1	A	Ingst	Int-S	1		
1347ai	33 y F	diphenhydramine	1	1	U	Ingst + Unk	Int-S	1		
		diphenhydramine	1	1						
		alprazolam	2	2						
1348h	34 y F	ethanol	3	3	A/C	Ingst	Int-S	2		
		hydroxyzine	1	1						
		metoprolol	2	2						
1349h	36 y M	atorvastatin	3	3	A	Ingst	Int-S	2		
		diphenhydramine	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
1350hi	37 y M				U	Ingst	Int-S	2		
1351ph	38 y M	diphenhydramine	1	1	A	Ingst	Int-S	1		
1352ai	38 y M	diphenhydramine	1	1	U	Unk	Int-A	2		
		chlorpheniramine	2	1						
		methamphetamine	1	1						
1353h	39 y F	diphenhydramine	1	1	A	Ingst	Int-S	1	diphenhydramine	2.2 mg/L In Blood (unspecified) ⓐ Unknown
1354pai	42 y M	diphenhydramine	1	1	A	Ingst	Int-S	3	diphenhydramine	6500 ng/mL In Blood (unspecified) ⓐ Autopsy
		ethanol	2	2					ethanol	440 mg/dL In Blood (unspecified) ⓐ Autopsy
1355pa	45 y M	diphenhydramine	1	1	A	Ingst	Int-S	1	diphenhydramine	7084 ng/mL In Blood (unspecified) ⓐ Autopsy
		acetaminophen/ caffeine/salicylate	2	2						
		zolpidem	3	3						
		naproxen	4	4						
		ethanol (non-beverage)	5	5					ethanol	180 mg/dL In Blood (unspecified) ⓐ Unknown
1356ai	45 y F	diphenhydramine	1	1	U	Unk	Unk	2		
		acetaminophen	2	2						
		diazepam	3	3						
		salicylate	4	4						
1357ai	46 y M	diphenhydramine	1	1	U	Unk	Int-S	1		
		fluoxetine	2	2						
		lamotrigine	3	3						
1358ai	47 y M	hydroxyzine	1	1	U	Ingst	Int-S	1		
		cetirizine	2	2						
		lamotrigine	3	3						
1359ha	48 y F	diphenhydramine	1	1	A	Par	Int-A	1	diphenhydramine	555 ng/mL In Blood (unspecified) ⓐ Autopsy
		amitriptyline	2	2					amitriptyline	58.6 ng/mL In Blood (unspecified) ⓐ Autopsy
		gabapentin	3	3					gabapentin	1.9 mcg/mL In Blood (unspecified) ⓐ Autopsy
		hydromorphone	4	4					hydromorphone	2.8 ng/mL In Blood (unspecified) ⓐ Autopsy
1360h	51 y F	diphenhydramine	1	1	A	Ingst	Int-S	2		
1361ai	55 y M	diphenhydramine	1	1	U	Unk	Unk	3		
1362ai	57 y M	diphenhydramine	1	1	U	Ingst + Unk	Int-S	1		
		ethanol	2	2						
1363h	58 y M	diphenhydramine	1	1	A	Ingst	Int-S	2		
1364	61 y F	diphenhydramine	1	1	U	Ingst	Unk	2		
		ethanol	2	2					ethanol	381 mg/dL In Whole Blood @ 30 m (pe)
1365h	66 y F	hydroxyzine	1	1	A/C	Ingst + Unk	Int-S	2		
		alcohol, unknown	2	2						
		drug, unknown	3	3						
See Also case 8, 16, 20, 46, 61, 65, 303, 316, 368, 395, 422, 432, 468, 497, 499, 507, 514, 515, 521, 540, 565, 607, 612, 631, 636, 654, 678, 711, 722, 737, 747, 776, 812, 814, 820, 827, 875, 906, 924, 945, 991, 998, 1000, 1001, 1037, 1059, 1073, 1156, 1193, 1231, 1233, 1249, 1251, 1254, 1261, 1264, 1267, 1279, 1380, 1401, 1410, 1411, 1424, 1432, 1440, 1443, 1444, 1465, 1474, 1484, 1489, 1492, 1580, 1634, 1635, 1658, 1660, 1717, 1721, 1776, 1797, 1808, 1816, 1820, 1919, 1972, 2040, 2098, 2128, 2157, 2232, 2246, 2296, 2357, 2404, 2448, 2450, 2492, 2507, 2598, 2599, 2606										
Antimicrobials										
1366h	17 y F	hydroxychloroquine	1	1	C	Ingst	AR-D	2		
1367h	25 y F	sulfamethoxazole/ trimethoprim	1	1	A/C	Ingst	AR-D	2		
1368i	34 y F	cephalexin	1	1	U	Ingst	AR-D	2		
[1369pa]	47 y F	tilmicosin	1	1	A	Par	Unt-O	1		
1370h	52 y F	isoniazid	1	1	A	Ingst	AR-D	2		
		acetaminophen	2	2						
1371pha	59 y M	hydroxychloroquine	1	1	A	Ingst	Int-S	1		
		ethanol	2	2						
		isoniazid	3	3						
1372h	75 y M				A/C	Ingst	Unt-M	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
		sulfamethoxazole/ trimethoprim	1	1						
		pomalidomide	2	2						
		daratumumab	3	3						
		metformin	4	4						
		thyroxine	5	5						
		furosemide	6	6						
		atorvastatin	7	7						
		acylclovir	8	8						
		pantoprazole	9	9						
See Also case 631, 1109, 1260, 1316, 1413, 1463, 1503, 1661, 1722, 1868, 2260, 2535										
Antineoplastics										
1373h	46 y F				A	Par	Unt-T	1		
		methotrexate	1	1						
1374h	65 y F				A	Ingst	Int-M	2		
		methotrexate	1	1						
1375h	74 y F				A/C	Ingst	Unt-T	2		
		methotrexate	1	1					methotrexate	0.1 mmol/L In Blood (unspecified) @ 6 d (pe)
1376	74 y F				A/C	Ingst	Unk	2		
		methotrexate	1	1						
		metoprolol	2	2						
		drug, unknown	3	3						
1377	80 y F				C	Ingst	AR-D	1		
		methotrexate	1	1					methotrexate	0 mg/mL In Blood (unspecified) @ Unknown
1378h	82 y M				C	Ingst	Unt-T	1		
		methotrexate	1	1						
[1379ha]	96 y F				C	Ingst	Unt-T	3		
		methotrexate	1	1					methotrexate	0.04 mmol/L In Blood (unspecified) @ 36 h (pe)
		methotrexate	1	1					methotrexate	0.08 mmol/L In Blood (unspecified) @ 2 h (pe)
See Also case 1310, 1372										
Cardiovascular Drugs										
1380h	10 y F				A	Ingst	Int-S	2		
		flecainide	1	1						
		diphenhydramine	2	2						
1381	16 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		hydrochlorothiazide	2	2						
1382ha	17 y M				A	Ingst	Int-S	2		
		clonidine	1	1					clonidine	13 ng/mL In Serum @ Unknown
		topiramate	2	2					topiramate	34000 ng/mL In Serum @ Unknown
		lamotrigine	3	3					lamotrigine	8.4 mcg/mL In Serum @ Unknown
		citalopram	4	4					citalopram	3600 ng/mL In Serum @ Unknown
		olanzapine	5	5					olanzapine	870 ng/mL In Serum @ Unknown
		atomoxetine	6	6						
1383ha	19 y F				U	Ingst	Int-S	1		
		verapamil	1	1					verapamil	1300 ng/mL In Blood (unspecified) @ Unknown
		gabapentin	2	2						
		lorazepam	3	3						
1384	19 y M				A	Ingst	Int-S	2		
		metoprolol	1	1						
		duloxetine	2	2						
		zolpidem	3	3						
1385ha	20 y M				A/C	Ingst	Int-S	1		
		amlodipine/benazpril	1	1					amlodipine	190 ng/mL In Blood (unspecified) @ 17 h (pe)
		amlodipine/benazpril	1	1					amlodipine	36 ng/mL In Blood (unspecified) @ 24 h (pe)
		amlodipine/benazpril	1	1					amlodipine	40 ng/mL In Blood (unspecified) @ 19 h (pe)
		bupropion (extended release)	2	2						
		citalopram	3	3					citalopram	549 ng/mL In Blood (unspecified) @ Unknown
		citalopram	3	3					citalopram	635 ng/mL In Blood (unspecified) @ Unknown
		citalopram	3	3					citalopram	657 ng/mL In Blood (unspecified) @ Unknown
		duloxetine	4	4						
1386	24 y F				A	Ingst	Int-S	1		
		flecainide	1	1						
		beta blocker	2	2						
		ethanol	3	3						
1387h	26 y M				A	Ingst	Int-S	2		
		carvedilol	1	1						
		furosemide	2	2						
1388h	26 y M				A	Ingst	Int-S	1		
		nebivolol	1	1						
		hydrochlorothiazide/losartan	2	2						
1389ph	28 y F				U	Ingst	Int-S	2		
		beta blocker	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
1390ph	29 y F	acetaminophen/ caffeine/salicylate	2	2	A/C	Ingst	Int-S	2		
		ibuprofen	3	3						
		ethanol	4	4						
		flecainide	1	1						
1391h	31 y F	alprazolam	2	2	A	Ingst	Int-S	1		
		ethanol	3	3						
		amlodipine	1	1						
		clonidine	2	2						
1392h	32 y M	gabapentin	3	3	A/C	Ingst	Int-S	2		
		lisinopril	4	4						
		metoprolol	1	1						
		drug, unknown	2	2						
1393a	33 y M	propranolol	1	1	U	Ingst	Int-S	1	delta-9-carboxy-thc	18 ng/mL In Blood (unspecified) @ 1 m (pe)
		propranolol	1	1					aripiprazole	280 ng/mL In Blood (unspecified) @ 1 m (pe)
		propranolol	1	1					delta-9-thc	3 ng/mL In Blood (unspecified) @ 1 m (pe)
		propranolol	1	1					propranolol	3100 ng/mL In Blood (unspecified) @ 1 m (pe)
		propranolol	1	1					paroxetine	38 ng/mL In Blood (unspecified) @ 1 m (pe)
		propranolol	1	1					midazolam	70 ng/mL In Blood (unspecified) @ 1 m (pe)
		propranolol	1	1					amphetamine	76 ng/mL In Blood (unspecified) @ 1 m (pe)
1394h	33 y F	propranolol	1	1	A	Ingst	Int-S	2		
		escitaopram	2	2						
		methylphenidate (extended release)	3	3						
		lamotrigine	4	4						
		diazepam	5	5						
		melatonin	6	6						
		olanzapine	7	7						
1395h	35 y M	diltiazem	1	1	A	Ingst + Par	Int-S	1	diltiazem	0.041 mg/L In Blood (unspecified) @ 1 h (pe)
		methamphetamine	2	2					methamphetamine	0.29 mg/L In Blood (unspecified) @ 1 h (pe)
1396ha	35 y F	verapamil	1	1	A	Ingst	Int-S	1	verapamil	160 ng/mL In Whole Blood @ Unknown
		quetiapine	2	2					quetiapine	380 ng/mL In Whole Blood @ Unknown
		lamotrigine	3	3						
		cyclobenzaprine	4	4					cyclobenzaprine	168 ng/mL In Whole Blood @ Unknown
		tizanidine	5	5						
		fluoxetine	6	6					fluoxetine	1100 ng/mL In Whole Blood @ Unknown
		fluoxetine	6	6					norfluoxetine	520 ng/mL In Whole Blood @ Unknown
		trazodone	7	7					lamotrigine	2.4 ng/mL In Whole Blood @ Unknown
		methocarbamol	8	8						
hydrocodone	9	9	hydrocodone	28 ng/mL In Whole Blood @ Unknown						
1397a	35 y F	verapamil	1	1	A	Ingst	Int-S	1		
1398h	35 y F	gabapentin	2	2	A	Ingst	Int-S	2		
		amlodipine	1	1						
1399a	36 y F	propranolol	1	1	U	Ingst	Int-S	1		
		clonazepam	2	2					7-aminoclonazepam	23.1 ng/mL In Blood (unspecified) @ Autopsy
1400pha	37 y F	propranolol	1	1	A/C	Ingst	Int-S	1	propranolol	9800 ng/mL In Whole Blood @ Unknown
		ethanol	2	2					ethanol	129 mg/dL In Whole Blood @ Unknown
		fluoxetine	3	3					fluoxetine	1000 ng/mL In Whole Blood @ Unknown
		fluoxetine	3	3					norfluoxetine	900 ng/mL In Whole Blood @ Unknown
1401ha	37 y M	amlodipine	1	1	U	Ingst	Int-S	2		
		hydroxyzine	2	2						
		meclizine	3	3						
		estradiol	4	4						
		loratadine	5	5						
1402ha	37 y F	flecainide	1	1	A/C	Ingst	Int-S	2	flecainide	6.3 mcg/mL In Blood (unspecified) @ Unknown
1403h	37 y F	verapamil	1	1	A	Ingst	Int-S	1		
1404	38 y M	amlodipine	1	1	A/C	Ingst	Int-S	1		
1405ph	38 y M				U	Ingst	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
1406h	38 y F	calcium antagonist	1	1	A	Ingst	Int-S	2		
		propranolol	1	1						
		levetiracetam	2	2						
		escitalopram	3	3						
		gabapentin	4	4						
		acetaminophen/chlorzoxazone	5	5						
1407ha	39 y F	diltiazem	1	1	A	Ingst	Unk	1		
		lisinopril	2	2						
1408	39 y F	metoprolol (extended release)	1	1	A/C	Ingst	Int-S	2		
1409h	39 y F	metoprolol (extended release)	1	1	A	Ingst	Int-S	2		
		amlodipine	2	2						
		hydrochlorothiazide	3	3						
		quetiapine	4	4						
		potassium chloride	5	5						
		escitalopram	6	6						
1410h	40 y F	carvedilol	1	1	A	Ingst	Int-S	2		
		amlodipine	2	2						
		bumetanide	3	3						
		diphenhydramine	4	4						
		omeprazole	5	5						
1411ph	40 y M	carvedilol	1	1	A	Ingst	Int-S	2		
		bupropion	2	2						
		lamotrigine	3	3						
		cyclobenzaprine	4	4						
		hydroxyzine	5	5						
		haloperidol	6	6						
		lisinopril	7	7						
		acetaminophen/codeine	8	8						
		atorvastatin	9	9						
		rivaroxaban	10	10						
		omeprazole	11	11						
		metformin	12	12						
		lorazepam	13	13						
		lovastatin	14	14						
		levothyroxine	15	15						
1412ha	40 y F	amlodipine	1	1	U	Ingst	Int-S	1	amlodipine	0.069 mg/L In Serum @ Unknown
		amlodipine	1	1					amlodipine	0.99 mg/L In Blood (unspecified) @ Autopsy
		cyclobenzaprine	2	2					cyclobenzaprine	0.71 mg/L In Blood (unspecified) @ Autopsy
		duloxetine	3	3					duloxetine	0.22 mg/L In Blood (unspecified) @ Autopsy
		duloxetine	3	3					duloxetine	3.7 mg/kg In Liver @ Autopsy
		hydrochlorothiazide	4	4						
		ethanol	5	5					ethanol	224 mg/dL In Serum @ 15 m (pe)
		clonazepam	6	6						
		gabapentin	7	7					gabapentin	3.9 mg/L In Blood (unspecified) @ Autopsy
1413ph	40 y M	amlodipine	1	1	U	Unk	Int-S	3	amlodipine	45 ng/mL In Blood (unspecified) @ Unknown
		antimalarial (chloroquine type)	2	2						
		antidepressant (SSRI)	3	3						
1414h	40 y M	atenolol	1	1	A/C	Ingst	Int-S	2		
		acetaminophen/hydrocodone	2	2						
		clonazepam	3	3						
		zolpidem	4	4						
1415	41 y M	verapamil	1	1	A/C	Ingst	Int-S	2		
		amlodipine	2	2						
		glipizide	3	3						
		glipizide	4	4						
		lisinopril	5	5						
		carvedilol	6	6						
1416h	41 y M	amlodipine	1	1	A/C	Ingst	Int-S	1		
1417ph	41 y F	drotaverine	1	1	A/C	Ingst	Int-S	1		
		ethanol	2	2					ethanol	275 mg/dL In Blood (unspecified) @ 30 m (pe)
1418ph	42 y M	propafenone	1	1	A/C	Ingst	Int-S	1		
		ethanol	2	2						
1419ph	42 y F	amlodipine	1	1	A	Ingst + Aspir	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		
1420ha	42 y M	methadone	2	2	A	Ingst	Int-S	1				
		bupropion	3	3								
		gabapentin	4	4								
		salicylate	5	5								
		diltiazem (extended release)	1	1								
1421h	42 y F	hydralazine	2	2	A	Ingst	Int-S	2				
		citalopram	3	3								
		mycophenolate mofetil	4	4								
		tacrolimus	5	5								
		prednisone	6	6								
		amlodipine	1	1								
1422	43 y F	metoprolol	2	2	A	Ingst	Int-S	2				
		metoprolol	1	1								
1423	43 y F	metoprolol	1	1	A/C	Ingst	Int-S	1				
		amlodipine	1	1								
		trazodone	2	2								
		venlafaxine	3	3								
		alprazolam	4	4								
1424a	44 y F	ethanol	5	5	A/C	Ingst	Int-S	1				
		amlodipine	1	1							amlodipine	428 ng/mL In Blood (unspecified) @ 10 m (pe)
		duloxetine	2	2							duloxetine	671 ng/mL In Blood (unspecified) @ 10 s (pa)
		ethanol	3	3							ethanol	163 mg/dL In Blood (unspecified) @ 10 m (pe)
		lamotrigine	4	4							lamotrigine	3.5 mcg/mL In Blood (unspecified) @ 10 m (pe)
1425pi	44 y F	hydroxyzine	5	5	A	Ingst	Int-S	2				
		metoprolol (extended release)	1	1								
		doxepin	2	2								
		antipsychotic (atypical)	3	3								
		alprazolam	4	4								
		bupropion (extended release)	5	5								
		desvenlafaxine	6	6								
		acetaminophen/ butalbital/caffeine	7	7							acetaminophen (apap)	17 mcg/mL In Blood (unspecified) @ Unknown
		gabapentin	8	8								
		sertraline	9	9								
		lisinopril	10	10								
		mirtazapine	11	11								
		ibuprofen	12	12								
pantoprazole	13	13										
1426hi	44 y M	beta blocker	1	1	A/C	Ingst	Int-S	2				
		amitriptyline	2	2								
		bupirone	3	3								
1427a	44 y F	beta blocker	1	1	A	Ingst	Int-S	1				
		diltiazem	1	1							diltiazem	64 mg/L In Blood (unspecified) @ Autopsy
		diltiazem	1	1							diltiazem	88 mg/L In Blood (unspecified) @ Autopsy
		diazepam	2	2							nordiazepam	1 mg/L In Blood (unspecified) @ Autopsy
		diazepam	2	2							diazepam	1.4 mg/L In Blood (unspecified) @ Autopsy
		diazepam	2	2							nordiazepam	1.6 mg/L In Blood (unspecified) @ Autopsy
		carisoprodol	3	3							meprobamate	11 mg/L In Blood (unspecified) @ Autopsy
		carisoprodol	3	3							carisoprodol	22 mg/L In Blood (unspecified) @ Autopsy
		venlafaxine	4	4							venlafaxine	2.7 mg/L In Blood (unspecified) @ Autopsy
		venlafaxine	4	4							venlafaxine	3.1 mg/L In Blood (unspecified) @ Autopsy
		fluoxetine	5	5							fluoxetine	1.7 mg/L In Blood (unspecified) @ Autopsy
fluoxetine	5	5	fluoxetine	2 mg/L In Blood (unspecified) @ Autopsy								
1428a	45 y M	beta blocker	1	1	A	Ingst	Int-S	1				
		amlodipine	1	1							amlodipine	0.6 mg/L In Blood (unspecified) @ Autopsy
		metoprolol	2	2							metoprolol	0.7 mg/L In Blood (unspecified) @ Autopsy
		sertraline	3	3							sertraline	0.4 mg/L In Blood (unspecified) @ Autopsy
		sertraline	3	3							desmethylsertraline	0.4 mg/L In Blood (unspecified) @ Autopsy
lovastatin	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
		ethanol (non-beverage)	5	5					ethanol	0.09 % (wt/Vol) In Blood (unspecified) ⓐ Unknown
		ethanol (non-beverage)	5	5					ethanol	134 mg/dL In Blood (unspecified) ⓐ Unknown
1429h	45 y F	metoprolol	1	1	U	Ingst	Int-S	1		
		lorazepam	2	2						
1430ha	45 y F	metoprolol	1	1	A/C	Ingst + Oth + Unk	Int-S	1	metoprolol	3 ng/mL In Blood (unspecified) ⓐ Unknown
		hydrocodone	2	2					hydrocodone	67 ng/mL In Blood (unspecified) ⓐ Unknown
		insulin	3	3						
		lorazepam	4	4						
		angiotensin converting enzyme inhibitor	5	5						
1431ai	45 y F	metoprolol	1	1	U	Unk	Unk	2		
		hydrocodone	2	2						
		lorazepam	3	3						
1432h	46 y F	metoprolol	1	1	A/C	Ingst	Int-S	2		
		hydromorphone	2	2						
		ondansetron	3	3						
		hydroxyzine	4	4						
		tamsulosin	5	5						
		venlafaxine	6	6						
1433ha	46 y F	felodipine	1	1	A/C	Ingst	Int-S	2		
		metformin	2	2						
		fluoxetine	3	3						
		gabapentin	4	4						
		allopurinol	5	5						
1434ha	46 y M	metoprolol	1	1	A	Ingst	Int-S	1	metoprolol	5800 ng/mL In Blood (unspecified) ⓐ Unknown
		calcium antagonist	2	2					nifedipine	420 ng/mL In Blood (unspecified) ⓐ Unknown
1435pa	46 y F	amlodipine	1	1	A	Ingst	Int-S	2		
		cyclobenzaprine	2	2					cyclobenzaprine	23 ng/mL In Blood (unspecified) ⓐ 1 h (pe)
		cyclobenzaprine	2	2					cyclobenzaprine	92 ng/mL In Blood (unspecified) ⓐ Autopsy
		gabapentin	3	3						
		oxycodone	4	4					oxycodone (free)	100 ng/mL In Blood (unspecified) ⓐ 1 h (pe)
		oxycodone	4	4					morphine (free)	140 ng/mL In Blood (unspecified) ⓐ Autopsy
		oxycodone	4	4					oxycodone (free)	5.5 ng/mL In Blood (unspecified) ⓐ Autopsy
		ethanol	5	5					ethanol	191 mg/dL In Blood (unspecified) ⓐ 1 h (pe)
1436h	46 y F	amlodipine	1	1	A	Ingst	Int-S	1		
		atenolol	2	2						
1437h	46 y M	beta blocker	1	1	A	Ingst	AR-D	3		
1438h	46 y F	diltiazem	1	1	A/C	Ingst	Int-S	1		
		clonidine	2	2						
		acetaminophen/hydrocodone	3	3						
		clonazepam	4	4						
		ethanol	5	5						
		marijuana	6	6						
[1439ha]	47 y F	flecainide	1	1	A/C	Ingst	Int-S	1	flecainide	3.82 mcg/mL In Blood (unspecified) ⓐ Unknown
		ethanol	2	2					ethanol	170 mg/dL In Blood (unspecified) ⓐ Unknown
1440ha	47 y M	amlodipine	1	1	A/C	Ingst	Int-S	1		
		trazodone	2	2					trazodone	0.93 mcg/mL In Blood (unspecified) ⓐ Autopsy
		olanzapine	3	3					olanzapine	330 ng/mL In Blood (unspecified) ⓐ Autopsy
		hydroxyzine	4	4					hydroxyzine	630 ng/mL In Blood (unspecified) ⓐ Autopsy
		valproic acid	5	5					valproic acid	181 mcg/mL In Serum ⓐ Unknown
		fluoxetine	6	6					norfluoxetine	180 ng/mL In Blood (unspecified) ⓐ Autopsy
		fluoxetine	6	6					fluoxetine	790 ng/mL In Blood (unspecified) ⓐ Autopsy
1441h	47 y F	amlodipine	1	1	A/C	Ingst	Int-S	2		
		metoprolol (extended release)	2	2						
1442h	48 y M	amlodipine	1	1	A/C	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
1443h	48 y M	atenolol	2	2	U	Ingst	Int-S	2		
		lisinopril	3	3						
		simvastatin	4	4						
		amlodipine	1	1						
		hydrochlorothiazide/losartan	2	2						
		mirtazapine	3	3						
		ethanol	4	4						
1444h	48 y F	famotidine	5	5	U	Ingst	Int-S	1		
		vitamin B-1	6	6						
		folic acid	7	7						
		amlodipine	1	1						
		cyclobenzaprine	2	2						
		promethazine	3	3						
1445ai	48 y M	propranolol	1	1	U	Unk	Int-S	1		
		lorazepam	2	2						
		caffeine	3	3						
1446p	49 y F	metoprolol	1	1	U	Ingst	Int-S	2		
		acetaminophen/ diphenhydramine	2	2						
		ethanol	3	3						
1447h	49 y M	diltiazem	1	1	A	Ingst	Int-S	2		
1448a	49 y M	cardiac glycoside	1	1	A	Ingst	Int-S	1	digoxin	0.009 ng/mL In Blood (unspecified) ⓐ Unknown
		butalbital/caffeine/ codeine/salicylate	2	2					codeine	0.1 mg/L In Blood (unspecified) ⓐ Autopsy
		butalbital/caffeine/ codeine/salicylate	2	2					morphine (free)	15 mcg/L In Blood (unspecified) ⓐ Autopsy
		butalbital/caffeine/ codeine/salicylate	2	2					salicylate	28.6 mg/dL In Blood (unspecified) ⓐ Unknown
		butalbital/caffeine/ codeine/salicylate	2	2					butalbital	8.7 mg/L In Blood (unspecified) ⓐ Autopsy
		alprazolam	3	3						
1449	49 y M	nifedipine	1	1	U	Ingst	Int-S	2		
		metoprolol	2	2						
1450ha	49 y M	metoprolol	1	1	U	Ingst	Int-U	1	metoprolol	3.1 mg/L In Serum ⓐ Autopsy
1451a	49 y F	metoprolol	1	1	A/C	Ingst	Int-S	1	metoprolol	130 mg/L In Blood (unspecified) ⓐ Autopsy
		metoprolol	1	1					metoprolol	440 mg/kg In Liver ⓐ Autopsy
1452a	49 y F	metoprolol	1	1	A	Ingst	Int-S	2	metoprolol	4523 ng/mL In Blood (unspecified) ⓐ Autopsy
		toilet bowl cleaner (anionic/ borates/nonionic)	2	2						
		quetiapine	3	3					quetiapine	28213 ng/mL In Blood (unspecified) ⓐ Autopsy
		fluoxetine	4	4					fluoxetine	4778 ng/mL In Blood (unspecified) ⓐ Autopsy
		zolpidem	5	5					zolpidem	1000 ng/mL In Blood (unspecified) ⓐ Autopsy
		diazepam	6	6					diazepam	1990 ng/mL In Blood (unspecified) ⓐ Autopsy
		diazepam	6	6					nordiazepam	347 ng/mL In Blood (unspecified) ⓐ Autopsy
		buspirone	7	7						
1453ph	49 y F	propranolol	1	1	A/C	Ingst	Int-S	2		
		amitriptyline	2	2						
		benzodiazepine	3	3						
1454ai	49 y M	metoprolol	1	1	U	Ingst	Int-S	1		
1455ha	50 y F	amlodipine	1	1	A/C	Ingst	Int-S	2	amlodipine	610 ng/mL In Blood (unspecified) ⓐ Autopsy
		metoprolol	2	2						
		venlafaxine	3	3						
		clonazepam	4	4						
		zolpidem	5	5						
		gabapentin	6	6						
		levothyroxine	7	7						
		Medroxyprogesterone acetate	8	8						
[1456ha]	50 y F	amlodipine	1	1	C	Ingst	Int-S	1	amlodipine	840 ng/mL In Blood (unspecified) ⓐ Autopsy
1457ph	50 y M				A/C	Ingst	Int-S	2		
		metoprolol	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
1458	50 y M	drug, unknown	2	2	A	Ingst	Int-S	2		
		diltiazem	1	1						
		clonidine	2	2						
		ethanol	3	3					ethanol	25 mg/dL In Blood (unspecified) @ 1 h (pe)
1459p	50 y F				A/C	Ingst + Aspir	Int-S	1		
		diltiazem	1	1						
		amlodipine	2	2						
		losartan	3	3						
1460ai	50 y M				U	Unk	Int-A	3		
		clonidine	1	1						
		metoprolol	2	2						
1461h	51 y M				A/C	Ingst	Int-U	2		
		propranolol	1	1						
		amlodipine	2	2						
		quetiapine	3	3						
		primidone	4	4						
		trazodone	5	5						
		escitaopram	6	6						
1462ph	51 y M				A/C	Ingst	Int-S	1		
		propranolol	1	1						
		ethanol	2	2						
1463ha	51 y F				A	Ingst	Int-S	1	amlodipine	730 ng/mL In Blood (unspecified) @ Unknown
		amlodipine	1	1						
1464h	51 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		clopidogrel	2	2						
1465ha	52 y F				A/C	Ingst	Int-S	1		
		calcium antagonist	1	1					amlodipine	890 ng/mL In Whole Blood @ Autopsy
		atenolol	2	2					atenolol	4500 ng/mL In Blood (unspecified) @ Autopsy
		amlodipine	3	3					amlodipine	890 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	4	4					alprazolam	34 ng/mL In Blood (unspecified) @ Autopsy
		tramadol	5	5					tramadol	1100 ng/mL In Blood (unspecified) @ Autopsy
		tramadol	5	5					o-demethyl tramadol	64 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	6	6					norfluoxetine	72 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	6	6					fluoxetine	77 ng/mL In Blood (unspecified) @ Autopsy
		diphenhydramine	7	7					diphenhydramine	230 ng/mL In Blood (unspecified) @ Autopsy
1466p	52 y M				A/C	Ingst	Int-S	2		
		verapamil	1	1						
		acetaminophen/oxycodone	2	2						
		oxycodone	3	3						
		zolpidem (extended release)	4	4						
1467	52 y F				A	Ingst	Int-S	2		
		beta blocker	1	1						
		oxycodone	2	2						
1468h	52 y M				A	Ingst	Int-S	2		
		diltiazem (extended release)	1	1						
		glipizide	2	2						
		desipramine	3	3						
		metformin	4	4						
		ramipril	5	5						
		hydrochlorothiazide	6	6						
		temazepam	7	7						
		lorazepam	8	8						
1469ha	52 y F				A	Ingst	Int-S	1		
		labetolol	1	1						
		amlodipine	2	2						
		alprazolam	3	3					alprazolam	160 ng/mL In Blood (unspecified) @ Unknown
1470h	52 y M				A/C	Ingst	Int-S	1		
		verapamil	1	1						
1471	52 y M				A	Ingst	Int-S	3		
		amlodipine	1	1						
		clonazepam	2	2						
1472h	52 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
1473ha	52 y F				A	Ingst + Unk	Int-S	1		
		calcium antagonist	1	1						
		risperidone	2	2					risperidone	75 ng/mL In Blood (unspecified) @ Unknown
		bupropion	3	3						
1474	53 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		asenapine	2	2						
		valproic acid	3	3					valproic acid	122 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
1475	53 y F	antidepressant	4	4	A	Ingst	Int-S	2		
		hydroxyzine	5	5						
		omeprazole	6	6						
		alprazolam	7	7						
1476	53 y F	metoprolol	1	1	A	Ingst	Int-S	2		
		clonidine	2	2						
		cyclobenzaprine	3	3						
		benzodiazepine	4	4						
		zolpidem	5	5						
1477ai	53 y M	metoprolol	1	1	U	Unk	Int-S	1		
1478h	53 y F	digoxin	1	1	C	Ingst	AR-D	3		
1479h	53 y M	calcium antagonist	1	1	U	Ingst	Int-S	1		
		amitriptyline	2	2						
		lisinopril	3	3						
		acetaminophen/oxycodone	4	4						
		gabapentin	5	5						
1480	53 y M	hydralazine	1	1	A/C	Ingst	Int-S	2		
		prednisone	2	2						
		amlodipine	3	3						
		minoxidil	4	4						
		spironolactone	5	5						
1481h	53 y M	carvedilol	1	1	A/C	Ingst	Int-S	1		
		fluoxetine	2	2						
		sacubitril/valsartan	3	3						
1482h	54 y M	beta blocker	1	1	A/C	Ingst	Int-S	2		
		benzodiazepine	2	2						
		narcotic, other/unknown	3	3						
		acetaminophen	4	4						
1483ha	54 y F	diltiazem	1	1	A	Par	Int-S	2		
		insulin (aspart)	2	2						
		bupropion	3	3						
		lithium	4	4						
		lithium	4	4						
gabapentin	5	5								
1484ha	54 y M	verapamil	1	1	A/C	Ingst	Int-S	1		
		diphenhydramine	2	2						
1485h	54 y M	amlodipine	1	1	A/C	Ingst	Int-S	2		
1486h	54 y M	carvedilol	2	2	A/C	Ingst	Int-S	2		
		labetalol	1	1						
1487ha	55 y M	lisinopril	2	2	A/C	Ingst	Int-S	2	ethanol	248 mg/dL In Serum @ Unknown
		ethanol	3	3						
		metoprolol	1	1						
1488h	55 y M	amlodipine	2	2	A/C	Ingst	Int-S	1		
		diltiazem	1	1						
1489ha	55 y F	diltiazem	1	1	A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		quetiapine	2	2						
		hydroxyzine	3	3						
		cyclobenzaprine	4	4						
ethanol	5	5								
1490	55 y F	acetaminophen/hydrocodone	6	6	A	Ingst	Int-S	2	duloxetine	49 ng/mL In Whole Blood @ Autopsy
		duloxetine (extended release)	7	7						
		diltiazem (extended release)	1	1						
1491ha	56 y F	amitriptyline	2	2	A	Ingst	Int-S	1		
		buprenorphine/naloxone (sublingual film)	3	3						
		amlodipine	1	1						
		bupropion	2	2						
1491ha	56 y F	bupropion	2	2	A	Ingst	Int-S	1		
		bupropion	2	2						
		bupropion	2	2						
		diazepam	3	3						
1491ha	56 y F	amlodipine	1	1	A	Ingst	Int-S	1	amlodipine	110 ng/mL In Blood (unspecified) @ Unknown
		bupropion	2	2						
		bupropion	2	2						
		bupropion	2	2						
		diazepam	3	3						
1491ha	56 y F	amlodipine	1	1	A	Ingst	Int-S	1	hydroxybupropion	570 ng/mL In Blood (unspecified) @ Unknown
		bupropion	2	2						
		bupropion	2	2						
		bupropion	2	2						
		diazepam	3	3						
1491ha	56 y F	amlodipine	1	1	A	Ingst	Int-S	1	bupropion	66 ng/mL In Blood (unspecified) @ Unknown
		bupropion	2	2						
		bupropion	2	2						
		bupropion	2	2						
		diazepam	3	3						
1491ha	56 y F	amlodipine	1	1	A	Ingst	Int-S	1	oxazepam	0.01 mg/L In Blood (unspecified) @ Unknown
		bupropion	2	2						
		bupropion	2	2						
		bupropion	2	2						
		diazepam	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
1492h	56 y M	diazepam	3	3	A/C	Ingst	Int-S	2	diazepam	0.077 mg/L In Blood (unspecified) @ Unknown
		diazepam	3	3					nordiazepam	0.092 mg/L In Blood (unspecified) @ Unknown
		amlodipine/ hydrochlorothiazide/ valsartan	1	1						
		amlodipine	2	2						
		metoprolol (extended release)	3	3						
		diphenhydramine	4	4						
1493ha	56 y M	acetaminophen/hydrocodone	5	5	A	Ingst	Int-S	1	amlodipine	0.06 mg/L In Blood (unspecified) @ 1 h (pe)
		atorvastatin	6	6						
1494h	56 y M	amlodipine	1	1	A/C	Ingst	Int-S	2		
1495h	56 y F	propranolol	1	1	A/C	Ingst	Int-S	1	ethanol	166 mg/dL In Blood (unspecified) @ 30 m (pe)
		drug, unknown	2	2						
		ethanol	3	3						
1496h	56 y M	diltiazem (extended release)	1	1	A/C	Ingst	Int-S	1		
1497h	57 y M	amlodipine	1	1	A	Ingst	Int-S	2		
		benztropine	2	2						
1498h	57 y F	amlodipine	1	1	U	Ingst	Int-S	1		
		ethanol	2	2						
		metoprolol	1	1						
		nifedipine	2	2						
		amlodipine	3	3						
1499h	57 y F	clonidine	4	4	A	Ingst	Int-S	1	ethanol	260 mg/dL In Blood (unspecified) @ Unknown
		ethanol	5	5						
		amlodipine	1	1						
		butalbital/caffeine/salicylate	2	2						
		ethanol	3	3						
1500h	57 y F	ethanol	7	7	A	Ingst	Int-S	1		
		diltiazem (extended release)	1	1						
		sotalol	2	2						
		apixaban	3	3						
		losartan	4	4						
		cholecalciferol	5	5						
		folic acid	6	6						
1501ha	57 y F	ethanol	7	7	U	Ingst	Int-S	1	amlodipine	990 ng/mL In Whole Blood @ 1 h (pe)
		amlodipine	1	1						
		mirtazapine	2	2						
		temazepam	3	3						
1502ha	58 y F	cyclobenzaprine	4	4	A/C	Ingst	Int-S	1	propranolol	33 ng/mL In Blood (unspecified) @ Unknown
		propranolol	1	1						
		gabapentin	2	2						
1503h	58 y M	quetiapine	3	3	A/C	Ingst	Int-U	2	gabapentin	47 mcg/mL In Blood (unspecified) @ Unknown
		amlodipine	1	1						
		amlodipine	1	1						
1504h	58 y M	ethanol	2	2	A/C	Ingst	Int-S	1	ethanol	190 mg/dL In Serum @ Unknown
		amlodipine	1	1						
		lisinopril	2	2						
		hydralazine	3	3						
		tramadol	4	4						
		acetaminophen/oxycodone	5	5						
		gabapentin	6	6						
		mirtazapine	7	7						
		atorvastatin	8	8						
		ibuprofen	9	9						
		ritonavir	10	10						
emtricitabine/tenofovir	11	11								
1505h	58 y F	amlodipine	1	1	A	Ingst	Int-S	2		
		ethanol	2	2						
		amlodipine	1	1						
1506ha	58 y F	salicylate	2	2	A	Ingst	Int-S	1	amlodipine	770 ng/mL In Blood (unspecified) @ 1 h (pe)
		drug, unknown	3	3						
		amlodipine	1	1						
1507h	59 y M	amlodipine	1	1	A	Ingst	Int-S	1		
		diltiazem (extended release)	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
1508h	59 y F	digoxin metoprolol	1 2	1 2		Ingst + Unk	AR-D	3	digoxin	2.9 ng/mL In Serum @ Unknown
1509h	59 y M	metoprolol dabigatran	1 2	1 2	A/C	Ingst	Int-S	1		
1510ha	59 y M	amlodipine carvedilol hydralazine lamotrigine	1 2 4 3	1 2 3 3	A/C	Ingst	Int-S	1		
1511ai	59 y F	amlodipine cyclobenzaprine	1 2	1 2	U	Unk	Unk	1		
1512	60 y F	diltiazem (extended release) citalopram ethanol	1 2 3	1 2 3	A	Ingst	Int-S	1		
1513	60 y F	carvedilol ethanol	1 2	1 2	A/C	Ingst	Int-S	1	ethanol	258 mg/dL In Serum @ Unknown
1514ph	60 y F	amlodipine amitriptyline	1 2	1 2	A/C	Ingst	Int-S	2		
1515	60 y F	verapamil drug, unknown	1 2	1 2	A/C	Ingst	Int-S	2		
1516h	60 y F	amlodipine drug, unknown lisinopril	1 2 3	1 2 3	A	Ingst	Int-S	2		
1517	60 y F	amlodipine metoprolol hydrochlorothiazide clonazepam escitalopram	1 2 3 4 5	1 2 3 4 5	A/C	Ingst	Int-S	2		
1518	60 y M	amlodipine escitaopram zolpidem naproxen	1 2 3 4	1 2 3 4	U	Ingst	Int-S	2		
1519h	60 y F	digoxin	1	1	C	Ingst	AR-D	2	digoxin	3 ng/mL In Blood (unspecified) @ Unknown
1520hai	60 y M	amlodipine	1	1	A	Ingst	Int-S	1		
1521h	60 y F	amlodipine amphetamine alprazolam narcotic, other/unknown	1 2 3 4	1 2 3 4	U	Ingst	Int-S	2		
1522ha	61 y F	diltiazem (extended release) methadone methadone	1 2 2	1 2 2	A/C	Ingst	Int-S	1	diltiazem methadone eddp (2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine)	950 ng/mL In Whole Blood @ Autopsy 1500 ng/mL In Whole Blood @ Autopsy 450 ng/mL In Whole Blood @ Autopsy
1523h	61 y M	diltiazem alprazolam	1 2	1 2	A/C	Ingst	Int-S	1		
1524h	61 y F	diltiazem fluoxetine	1 2	1 2	A/C	Ingst	Int-S	1		
1525h	61 y M	verapamil beta blocker clonidine fluoxetine	1 2 3 4	1 2 3 3	A/C	Ingst	Int-S	2		
1526ai	61 y M	diltiazem bupropion hydromorphone	1 2 3	1 2 3	U	Unk	Int-S	1		
1527h	61 y M	amlodipine benzodiazepine lisinopril	1 2 3	1 2 3	A/C	Ingst	Unk	2		
1528h	61 y M	metoprolol	1	1	C	Ingst	AR-D	2		
1529h	62 y M	verapamil metoprolol lorazepam	1 2 3	1 2 3	A/C	Ingst	Int-S	1		
1530ha	62 y F				A/C	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
1531ha	62 y F	digoxin	1	1	A/C	Ingst	Int-S	1	digoxin	68 ng/mL In Serum @ Unknown
		ethanol	2	2					ethanol	310 g/dL In Blood (unspecified) @ 3.5 h (pe)
		salicylate	3	3					salicylate	5.6 mg/dL In Blood (unspecified) @ 3.5 h (pe)
		flecainide	1	1					flecainide	24.27 mcg/mL In Blood (unspecified) @ Autopsy
		citalopram	2	2						
1532h	62 y F	diazepam	3	3	U	Ingst	Int-S	1		
		furosemide	4	4						
		lidocaine	5	5						
		diltiazem (extended release)	1	1						
		lisinopril	2	2						
1533h	62 y M	amlodipine	1	1	A/C	Ingst	Unt-T	2		
		metoprolol	2	2						
		ethanol	3	3					ethanol	190 mg/dL In Serum @ Unknown
1534ai	62 y F	digoxin	1	1	U	Unk	Int-S	1		
		ethanol	2	2						
1535ha	62 y M	amlodipine	1	1	A/C	Ingst	Int-S	1		
		carvedilol	2	2						
1536ai	62 y F	digoxin	1	1	U	Ingst+Unk	Int-S	1		
		ethanol	2	2						
		salicylate	3	3						
1537h	63 y F	calcium antagonist	1	1	A/C	Ingst	Int-S	1		
1538ha	63 y F	carvedilol	1	1	A	Ingst	Unt-T	1		
		lisinopril	2	2						
		furosemide	3	3						
1539h	63 y F	amlodipine	1	1	A	Ingst	Int-S	1		
		levothyroxine	2	2						
		benzodiazepine	3	3						
1540ha	63 y F	amlodipine	1	1	A/C	Ingst	Int-S	1	amlodipine	0.047 mg/L In Blood (unspecified) @ 24 h (pe)
		acetaminophen/hydrocodone	2	2					hydrocodone	2.4 mg/L In Blood (unspecified) @ 27 h (pe)
		acetaminophen/hydrocodone	2	2					acetaminophen (apap)	258 mg/L In Serum @ Unknown
		acetaminophen/hydrocodone	2	2					acetaminophen (apap)	380 mg/L In Blood (unspecified) @ 24 h (pe)
1541	63 y F	amlodipine	1	1	A/C	Ingst	Int-S	2		
1542ai	63 y M	angiotensin converting enzyme inhibitor	1	1	U	Ingst+Unk	Int-S	1		
		acetaminophen/oxycodone	2	2						
1543h	63 y F	verapamil	1	1	A/C	Ingst	Int-S	2		
1544ha	63 y F	diltiazem	1	1	A/C	Ingst	Int-S	1	diltiazem	870 ng/mL In Blood (unspecified) @ Unknown
1545h	63 y F	amlodipine	1	1	A/C	Ingst+Derm	Int-S	1		
		metoprolol	2	2						
		fentanyl	3	3						
		warfarin	4	4						
		clonazepam	5	5						
1546h	63 y F	nifedipine	1	1	A/C	Ingst	Int-S	1		
		clonidine	2	2						
		citalopram	3	3						
1547h	64 y M	amlodipine	1	1	A/C	Ingst	Int-S	2		
		glipizide	2	2						
		metformin/sitagliptin	3	3						
		losartan	4	4						
1548a	64 y F	verapamil	1	1	U	Ingst	Int-S	1	verapamil	2200 ng/mL In Blood (unspecified) @ Autopsy
1549h	65 y F	verapamil (extended release)	1	1	A	Ingst	Int-S	2		
		spironolactone	2	2						
1550h	65 y M	digoxin	1	1	A/C	Ingst	Int-S	3	digoxin	3 ng/mL In Blood (unspecified) @ 1 d (pe)
		diltiazem (extended release)	2	2						
1551ha	66 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
1552ha	67 y F	amlodipine	1	1	A	Ingst	Int-S	1	citalopram	4000 mcg/L In Whole Blood @ 15 m (pe)
		citalopram	2	2						
		solifenacin	3	3						
		lorazepam	4	4						
		cyclobenzaprine	5	5						
		meloxicam	6	6						
		levothyroxine	7	7						
1553ha	67 y M	verapamil	1	1	A/C	Ingst	Int-S	1	nortriptyline	130 ng/mL In Blood (unspecified) @ Unknown
		amitriptyline	2	2						
		amitriptyline	2	2						
		benzodiazepine	3	3						
		acetaminophen	4	4						
1554i	67 y M	diltiazem	1	1	A/C	Ingst	Int-S	1	diltiazem	0.2 mg/L In Serum @ 35 m (pe)
		rivaroxaban	2	2						
		foreign body	3	3						
		narcotic, other/unknown	4	4						
1555h	67 y F	amlodipine	1	1	U	Ingst	Int-S	3		
		tizanidine	2	2						
		acetaminophen/ oxycodone	3	3						
		alprazolam	4	4						
1556h	68 y F	verapamil	1	1	A	Ingst	Unt-G	1		
		trandolapril/verapamil	1	1						
1557h	68 y F				A	Ingst	Unk	2		
1558ha	68 y F	calcium antagonist	1	1	A/C	Ingst	Int-S	2		
1559h	68 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		hydrochlorothiazide/lisinopril	2	2						
		sertraline	3	3						
		omeprazole	4	4						
1560h	68 y F	ethanol	5	5	A	Ingst	Int-S	1		
		diltiazem (extended release)	1	1						
1561	69 y M				A/C	Ingst	Int-S	2		
		metoprolol	1	1						
		amlodipine	2	2						
1562a	69 y M	venlafaxine	3	3	A	Ingst	Int-S	2		
		carvedilol	1	1						
1563h	69 y F				A	Ingst	Int-S	1		
		diltiazem (extended release)	1	1						
1564ai	69 y M	warfarin	2	2	U	Unk	Int-S	1		
		amlodipine	1	1						
1565	70 y F				A/C	Ingst	Int-S	1		
		diltiazem	1	1						
1566h	70 y F	digoxin	2	2	A	Ingst	Int-S	2	digoxin	4.501 ng/mL In Serum @ 1 h (pe)
		amlodipine	1	1						
		citalopram	2	2						
1567	70 y M	lisinopril	3	3	A	Ingst	Int-S	2		
		metoprolol (extended release)	1	1						
		olanzapine	2	2						
1568h	70 y F	clonazepam	3	3	A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		diltiazem (extended release)	2	2						
1569	70 y F	mirtazapine	3	3	A	Ingst	Int-S	2		
		atenolol	1	1						
		quetiapine	2	2						
		duloxetine	3	3						
		bupropion	4	4						
lorazepam	5	5								
1570ha	71 y F				A	Ingst	Int-S	1		
1571	71 y M	diltiazem	1	1	A/C	Ingst	Int-S	1		
		amlodipine	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		
1572ha	71 y F	sertraline	2	2	A	Ingst	Int-S	1				
		mirtazapine	3	3								
		bupirone	4	4								
		calcium antagonist	1	1							diltiazem	1583 ng/mL In Blood (unspecified) ⓐ Unknown
		risperidone	2	2							risperidone	146 ng/mL In Blood (unspecified) ⓐ Unknown
risperidone	2	2	9-hydroxyrisperidone	55.2 ng/mL In Blood (unspecified) ⓐ Unknown								
1573h	71 y F				A/C	Ingst	Int-S	2				
		amlodipine	1	1								
		citalopram	2	2								
1574ha	72 y M	lorazepam	3	3	A/C	Ingst	Int-S	2				
		tamsulosin	1	1								
1575	72 y F	cilostazol	2	2	C	Ingst	Unt-U	2				
		digoxin	1	1							digoxin	6 ng/mL In Blood (unspecified) ⓐ Unknown
1576h	72 y M	diltiazem	1	1	A	Ingst	Int-M	1				
1577ha	72 y F	diltiazem (extended release)	1	1	A	Ingst	Int-S	1	diltiazem	360 ng/mL In Blood (unspecified) ⓐ Unknown		
		sitagliptin	2	2								
		allopurinol	3	3								
		alprazolam	4	4							alprazolam	18 ng/mL In Blood (unspecified) ⓐ Unknown
		lorazepam	5	5							lorazepam	48 ng/mL In Blood (unspecified) ⓐ Unknown
1578ph	72 y F				A/C	Ingst	Unt-U	2				
		diltiazem	1	1								
		donepezil	2	2								
		morphine	3	3								
		lorazepam	4	4								
1579h	73 y M	gabapentin	5	5	A/C	Ingst	Int-M	3				
		amlodipine	1	1								
		carvedilol	2	2								
		metoprolol	1	1							metoprolol	1.8 mg/L In Blood (unspecified) ⓐ Autopsy
		metoprolol	1	1							metoprolol	4 mg/L In Blood (unspecified) ⓐ Autopsy
verapamil (extended release)	2	1	verapamil	2.3 mg/L In Blood (unspecified) ⓐ Autopsy								
verapamil (extended release)	2	1	verapamil	3.2 mg/L In Blood (unspecified) ⓐ Autopsy								
		meclizine	3	2								
		fluoxetine	4	3					fluoxetine	2.7 mg/L In Blood (unspecified) ⓐ Autopsy		
		fluoxetine	4	3					fluoxetine	4.3 mg/L In Blood (unspecified) ⓐ Autopsy		
		dextromethorphan	5	5								
		promethazine	6	6					promethazine	0.08 mg/L In Blood (unspecified) ⓐ Autopsy		
1581h	73 y F	amlodipine	1	1	U	Ingst	Int-S	1				
1582	74 y F	metoprolol	1	1	A/C	Ingst	Int-S	1				
1583h	74 y M				A	Ingst	Int-S	2				
		amlodipine	1	1								
		carvedilol	2	2								
		alprazolam	3	3								
acetaminophen/hydrocodone	4	4										
1584h	74 y M	amlodipine	1	1	A	Ingst	Int-S	1				
1585h	75 y M	cardiac glycoside	1	1	C	Ingst	AR-D	1				
1586h	75 y F	metoprolol	1	1	A/C	Ingst	Int-S	2				
1587h	75 y M				A	Ingst	AR-D	3				
		diltiazem	1	1								
		metoprolol	2	2								
amiodarone	3	3										
1588ai	75 y M				U	Unk	Int-S	1				
		amlodipine	1	1								
		salicylate	2	2								
metoprolol	3	3										
1589ha	75 y M				A/C	Ingst	Int-U	3				
		verapamil	1	1								
1590h	76 y F	pindolol	2	2	A/C	Ingst	AR-D	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
1591ha	76 y M	digoxin	1	1	A/C	Ingst	Int-S	1	digoxin	3.1 ng/mL In Blood (unspecified) @ Unknown
		amlodipine	1	1					amlodipine	0.4 mg/L In Blood (unspecified) @ 5.5 h (pe)
		duloxetine	2	2					benzoylecognine	2.7 mg/L In Blood (unspecified) @ 5 m (pe)
		cyclobenzaprine	3	3						
		cocaine	4	4						
		gabapentin	5	5						
		acetaminophen	6	6						
		oxybutynin	7	7						
		naproxen	8	8						
		atorvastatin	9	9						
		omeprazole	10	10						
		folic acid	11	11						
cyanocobalamin	12	12								
1592h	76 y F	amlodipine	1	1	U	Ingst	Int-S	1		
		carvedilol	2	2						
		diazepam	3	3						
		acetaminophen/codeine	4	4						
1593h	77 y M	calcium antagonist	1	1	A	Ingst	Int-S	3		
1594h	77 y F	digoxin	1	1	C	Ingst	AR-D	3	digoxin	2.8 ng/mL In Blood (unspecified) @ Unknown
1595ha	78 y M	amlodipine	1	1	A	Ingst	Int-S	1		
		diazepam	2	2						
1596h	78 y F	calcium antagonist	1	1	A	Ingst	Int-S	2		
		warfarin	2	2						
1597	79 y M	amlodipine	1	1	A/C	Ingst	Int-S	2		
1598	80 y F	losartan	2	2	C	Ingst	AR-D	3		
		digoxin	1	1						
1599h	80 y M	metoprolol	1	1	A/C	Ingst	Unt-G	3		
		benztropine	2	2						
		quetiapine	3	3						
		donepezil/memantine	4	4						
		levothyroxine	5	5						
1600h	80 y F	amlodipine	1	1	U	Ingst	Unt-T	1		
		carvedilol	2	2						
1601i	81 y F	nifedipine (extended release)	1	1	A/C	Ingst	Unt-T	1		
		metoprolol	2	2						
		simvastatin	3	3						
1602h	82 y M	propranolol	1	1	C	Ingst	AR-D	3		
		metoprolol	2	2						
1603h	82 y M	metoprolol	1	1	A/C	Ingst	Int-S	2		
		lisinopril	2	2						
1604h	83 y F	flecainide	1	1	U	Ingst	Unk	3		
1605h	84 y F	clonidine	1	1	A/C	Ingst	Int-S	2		
1606h	84 y F	verapamil	1	1	A/C	Ingst	Int-M	2		
1607	84 y F	flecainide	1	1	A/C	Par	AR-D	3		
		metoprolol	2	2						
		angiotensin receptor blocker	3	3						
1608ha	84 y M	amlodipine	1	1	A/C	Ingst	Unk	1	amlodipine	63 ng/mL In Blood (unspecified) @ Unknown
		carvedilol	2	2					triazolam	46 ng/mL In Blood (unspecified) @ Unknown
		triazolam	3	3						
1609	84 y F	atenolol	1	1	C	Ingst	AR-D	3		
1610h	84 y F	amiodarone	1	1	A/C	Ingst	Unk	2		
		carvedilol	2	2						
		nifedipine	3	3						
		acetaminophen/tramadol	4	4						
		antiplatelet drug	5	5						
		cilostazol	6	6						
		mirtazapine	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
1611h	85 y F	atorvastatin	8	8	A/C	Ingst	Int-S	2		
		hydrochlorothiazide	9	9						
1612h	85 y F	amlodipine	1	1	A	Ingst	Unt-G	3	digoxin	3.6 ng/mL In Blood (unspecified) @ Unknown
		hydrochlorothiazide/lisinopril	2	2						
1613	85 y F	digoxin	1	1	C	Ingst	AR-D	3		
1614h	85 y F	digoxin	1	1	A	Ingst	Int-S	2		
1615	85 y F	beta blocker	1	1	A	Ingst	Unk	2		
		calcium antagonist	2	2						
		amlodipine	1	1						
		metformin	2	2						
		losartan	3	3						
1616p	86 y F	gabapentin	4	4	A/C	Ingst	Int-S	2		
		atorvastatin	5	5						
		nifedipine (extended release)	1	1						
		diltiazem (extended release)	2	2						
		bupropion (extended release)	3	3						
1617h	86 y F	mirtazapine	4	4	C	Ingst	AR-D	3		
		metoprolol	1	1						
		carvedilol	2	2						
		amiodarone	3	3						
1618h	87 y F	amlodipine	1	1	A/C	Ingst	Int-S	2		
		nebivolol	2	2						
		clonazepam	3	3						
		dicyclomine	4	4						
		donepezil	5	5						
		nitroglycerin	6	6						
		linaclotide	7	7						
		quetiapine	8	8						
		valsartan	9	9						
1619	87 y F	atenolol	1	1	A	Ingst	Unk	3		
1620a	87 y M	atenolol	1	1	A/C	Ingst	Int-S	1	atenolol	1800 ng/mL In Blood (unspecified) @ Autopsy
		amlodipine	2	2						
1621h	87 y M	acetaminophen	3	3	A/C	Ingst	AR-D	3	acetaminophen (apap)	324 mcg/mL In Plasma @ Unknown
		digoxin	1	1						
1622	88 y F	digoxin	1	1	A/C	Ingst	Int-S	2	digoxin	2.51 ng/mL In Blood (unspecified) @ Unknown
		amlodipine	1	1						
		alprazolam	2	2						
		lisinopril	3	3						
1623	88 y M	escitalopram	4	4	U	Ingst	Unt-T	3		
		diltiazem	1	1						
		metoprolol	2	2						
		lisinopril	3	3						
1624hi	89 y M	digoxin	1	1	C	Ingst	AR-D	3	digoxin	3.9 ng/mL In Serum @ Unknown
1625h	89 y F	digoxin	1	1	C	Ingst	AR-D	3	digoxin	4.4 ng/mL In Serum @ 30 m (pe)
1626	90 y F	digoxin	1	1	C	Ingst	AR-D	3	digoxin	2.8 ng/mL In Blood (unspecified) @ Unknown
		cardiac glycoside	1	1						
1627	91 y F	digoxin	1	1	C	Ingst	AR-D	3	digoxin	5 ng/mL In Serum @ Unknown
1628h	92 y F	digoxin	1	1	A/C	Ingst	AR-D	1	diltiazem metoprolol	100 ng/mL In Serum @ Unknown 510 ng/mL In Serum @ Unknown
		diltiazem	1	1						
1629ha	93 y F	metoprolol	2	2	A	Ingst	Int-S	2	amlodipine	0.23 mg/L In Blood (unspecified) @ 2 h (pe)
		amlodipine	1	1						
1630	94 y F	ethanol	2	2	C	Ingst	AR-D	1	ethanol	43 mg/dL In Blood (unspecified) @ 2 h (pe)
		cardiac glycoside	1	1						
1631	94 y M	lisinopril	1	1	A/C	Ingst	Int-S	3		
[1632ha]	11 m F	nifedipine	1	1	A	Ingst	Unt-G	1	nifedipine	870 ng/mL In Blood (unspecified) @ Autopsy

See Also case 19, 545, 603, 721, 775, 797, 812, 838, 997, 1011, 1012, 1035, 1068, 1069, 1137, 1138, 1153, 1190, 1225, 1236, 1241, 1256, 1258, 1261, 1293, 1295, 1297, 1299, 1305, 1310, 1313, 1318, 1321, 1348, 1372, 1376, 1658, 1661, 1665, 1671, 1672, 1675, 1691, 1700, 1716, 1725, 1732, 1782, 1788, 1793, 1799, 1805, 1826, 1835, 1941, 2180, 2221, 2232, 2286, 2392, 2492, 2590

Cold and Cough Preparations

(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
1633pa	16 y F	benzonatate	1	1	A	Ingst	Int-S	2		
		caffeine	2	2						
[1634pha]	17 y F	benzonatate	1	1	A	Ingst	Int-S	1	benzonatate	680 mcg/L In Blood (unspecified) @ 2 h (pe)
		meclizine	2	2					meclizine	150 mcg/L In Blood (unspecified) @ 2 h (pe)
1635i	20 y M	dextromethorphan	1	1	A	Unk	Int-S	2		
		diphenhydramine	2	2						
1636h	43 y F	benzonatate	1	1	A/C	Ingst	Int-S	3		
		tizanidine	2	2						
		cyclic antidepressant, unknown	3	3						
1637h	47 y F	acetaminophen/antihistamine	1	1	A	Ingst	Int-A	3		
1638h	60 y F	acetaminophen/acetaminophen/dextromethorphan/doxylamine	1	1	A	Ingst	Int-M	3		
		ibuprofen	2	2						
See Also case 17, 262, 389, 395, 525, 558, 658, 671, 677, 840, 860, 931, 998, 1193, 1201, 1239, 1296, 1401, 1580, 1797, 1805, 1831, 1869, 1946, 2159, 2175, 2196, 2361, 2413, 2455 Dietary Supplements/Herbals/Homeopathic										
1639p	16 y M	energy drink	1	1	A	Ingst	Unk	2		
See Also case 812, 1244, 1394, 1799										
Diuretics										
1640	26 y M	diuretic, unknown	1	1	A	Ingst	Int-A	3		
See Also case 930, 1069, 1195, 1261, 1310, 1372, 1381, 1387, 1409, 1410, 1412, 1468, 1480, 1517, 1531, 1538, 1549, 1610, 1677, 1680, 1686										
Electrolytes and Minerals										
1641h	31 y M	iron	1	1	A	Ingst	Int-S	1	iron	356 mcg/dL In Serum @ 0 h (pe)
		iron	1	1					iron	4326 mcg/dL In Serum @ 11 h (pe)
		acetaminophen	2	2					acetaminophen (apap)	231 mcg/mL In Serum @ 11 h (pe)
		acetaminophen	2	2					acetaminophen (apap)	265.7 mcg/mL In Serum @ 255 m (pe)
		acetaminophen	2	2					acetaminophen (apap)	270 mcg/mL In Serum @ 0 m (pe)
1642ha	36 y M	iron	1	1	A	Ingst	Int-S	1	iron	671 mcg/dL In Plasma @ Unknown
		acetaminophen	2	2					acetaminophen (apap)	82 mg/L In Plasma @ Unknown
		amphetamine	3	3						
		ethanol	4	4					ethanol	138 mg/dL In Serum @ Unknown
[1643h]	47 y F	iron	1	1	A	Ingst	Int-S	1		
1644h	63 y F	magnesium hydroxide	1	1	C	Ingst	Int-M	3	magnesium	7.2 mEq/L In Serum @ Unknown
1645h	73 y M	cesium chloride	1	1	A/C	Ingst	Unt-T	3		
[1646h]	10 m M	iron	1	1	A	Ingst	Unt-G	1	iron	1034 mcg/mL In Blood (unspecified) @ 3 h (pe)
		iron	1	1					iron	246 mcg/mL In Blood (unspecified) @ 72 h (pe)
		iron	1	1					iron	475 mcg/mL In Blood (unspecified) @ 24 h (pe)
		iron	1	1					iron	7739 mcg/mL In Blood (unspecified) @ 16 h (pe)
		iron	1	1					iron	931 mcg/mL In Blood (unspecified) @ 1 h (pe)
See Also case 251, 841, 995, 1112, 1311, 1409										
Eye/Ear/Nose/Throat Preparations										
1647	90 y M	atropine	1	1	A	Ingst	Unt-T	3		
Gastrointestinal Preparations										
1648ai	19 y M	loperamide	1	1	U	Ingst + Unk	Int-A	1		
		clonazepam	2	2						
		ethanol	3	3						
[1649pha]	23 y F	loperamide	1	1	A	Ingst	Int-U	1	desmethylloperamide	56 ng/mL In Blood (unspecified) @ Unknown
		atropine/diphenoxylate	2	2						
		trazodone	3	3					trazodone	2.4 mcg/mL In Blood (unspecified) @ Unknown
		trazodone	3	3					mcpp (meta-chlorophenylpiperazine)	65 ng/mL In Blood (unspecified) @ Unknown
1650ph	30 y F	loperamide	1	1	A	Ingst + Aspir	Int-A	1	desmethylloperamide	160 ng/mL In Serum @ Unknown
		loperamide	1	1					loperamide	54 ng/mL In Serum @ Unknown
1651h	30 y M	loperamide	1	1	A	Ingst	Int-S	1		
		gabapentin	2	2						
		ethanol	3	3					ethanol	210 mg/dL In Serum @ 1 h (pe)
1652pha	31 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
1653ai	34 y M	loperamide	1	1	U	Unk	Unk	2		0.143 mg/L In Blood (unspecified) @ Unknown
		alprazolam	2	2						
1654ai	36 y M	loperamide	1	1	U	Unk	Int-A	3		
1655ph	39 y M	loperamide	1	1	A	Ingst	Int-U	2		
		ethanol	2	2						
1656ph	40 y F	loperamide	1	1	U	Unk	Unk	2		
		drug, unknown	2	2						
[1657ha]	41 y F	loperamide	1	1	A	Ingst	Int-A	1	loperamide	170 ng/mL In Blood (unspecified) @ Unknown
		loperamide	1	1					desmethylloperamide	410 ng/mL In Blood (unspecified) @ Unknown
1658ph	57 y F				U	Ingst + Par	Unt-T	2		
		amiodarone	4	1						
		metoclopramide	1	1						
		ondansetron	2	1						
1659h	66 y F	promethazine	3	1	U	Ingst	Int-S	2		
		ondansetron	1	1						
		oxycodone	2	2						
See Also case 553, 776, 1074, 1201, 1202, 1203, 1289, 1310, 1321, 1323, 1372, 1410, 1411, 1425, 1432, 1463, 1474, 1551, 1559, 1591, 1618, 1660, 2098										
Hormones and Hormone Antagonists										
1660h	14 y F				A	Ingst	Int-S	2		
1661pha	16 y F	metformin	1	1	U	Ingst	Int-S	2		
		acetaminophen	2	2						
		amitriptyline	3	3						
		naproxen	4	4						
		ranitidine	5	5						
		salicylate	6	6						
1662p	26 y F	metformin	1	1	A	Ingst + Par	Int-S	1		
		prazosin	3	1						
		quetiapine	2	1						
		sertraline	4	1						
		minocycline	5	2						
1663h	31 y F	insulin	1	1	A/C	Ingst	Int-S	2		
		alprazolam	2	2						
		tramadol	3	3						
1664h	33 y M	metformin	1	1	A	Ingst	Int-S	2		
		ibuprofen	2	2						
1665ha	35 y F	glipizide	1	1	A	Ingst + Par	Int-S	2		
		ethanol	2	2						
1666ai	35 y F	insulin	1	1	U	Par	Int-S	1		
		trazodone	2	2						
		lisinopril	3	3						
		sertraline	4	4						
		amphetamine	5	5						
1667h	36 y F	insulin	1	1	A/C	Ingst	Int-S	1		
		metformin	1	1						
1668h	38 y M	trazodone	2	2	A	Ingst	Int-S	1	trazodone	2740 ng/mL In Whole Blood @ Unknown
		metformin	1	1					metformin	260 mcg/mL In Blood (unspecified) @ 1 d (pe)
1669	39 y M	metformin	1	1	A	Ingst	Int-S	2	metformin	46 mcg/mL In Blood (unspecified) @ 3 d (pe)
		methylphenidate	2	2						
		glipizide	1	1						
		metformin	2	2						
1670h	40 y F				A/C	Ingst	Int-S	2		
1671h	41 y F	metformin	1	1	A/C	Ingst	Int-S	2		
		lisinopril	2	2						
1672ha	41 y F	metformin	2	1	A	Ingst	Int-S	1	metformin	100 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	1	1					methamphetamine	506 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						
1673h	46 y M	methamphetamine	1	1	U	Ingst	Int-S	2	amphetamine	63 ng/mL In Blood (unspecified) @ Unknown						
		alprazolam	3	3					alprazolam	14 ng/mL In Blood (unspecified) @ Unknown						
		hydrochlorothiazide/lisinopril	4	4												
		marijuana	5	5												
		metformin	1	1												
1674	46 y M	metformin	1	1	A/C	Ingst	Int-S	2								
		lithium	2	2					lithium	1.6 mEq/L In Blood (unspecified) @ Unknown						
1675ha	47 y M	acetaminophen	3	3	U	Ingst	Int-S	2	acetaminophen (apap)	75 mcg/mL In Blood (unspecified) @ Unknown						
		metformin/sitagliptin	1	1												
		acetaminophen/hydrocodone	2	2					acetaminophen (apap)	14.3 mcg/mL In Blood (unspecified) @ Unknown						
		acetaminophen/hydrocodone	2	2					acetaminophen (apap)	38.2 mcg/mL In Blood (unspecified) @ Unknown						
		lorazepam	3	3												
		losartan	4	4												
		probenecid	5	5												
1676ph	48 y M	zolidem	6	6	A	Par	Int-S	3								
		simvastatin	7	7												
		insulin (glargine)	1	1												
		insulin (lispro)	2	2												
		1677ha	49 y M	metformin					1	1	A	Ingst	Int-S	1	metformin	420 mcg/mL In Blood (unspecified) @ Unknown
				baclofen					2	2						
				gabapentin					3	3						
hydrochlorothiazide	4			4												
1678hi	52 y F	insulin (glargine)	1	1	A	Par	Int-S	1								
1679h	52 y M	insulin (glargine)	1	1	A/C	Ingst	Int-S	1								
		metformin	1	1												
		glipizide	2	2												
		imipramine	3	3												
		quetiapine	4	4												
		duloxetine	5	5												
		alprazolam	6	6												
		zolidem	7	7												
1680h	53 y F	metformin	1	1	A	Ingst	Int-S	2								
		acetaminophen/salicylate	2	2					salicylate	11 mg/dL In Blood (unspecified) @ 1 h (pe)						
		acetaminophen/salicylate	2	2					acetaminophen (apap)	34 mcg/mL In Blood (unspecified) @ 1 h (pe)						
		ibuprofen	3	3												
		olanzapine	4	4												
		bupropion (extended release)	5	5												
		lorazepam	6	6												
		cyclobenzaprine	7	7												
		hydrochlorothiazide/ triamterene	8	8												
		chlorthalidone	9	9												
1681h	54 y M	metformin	1	1	A/C	Ingst	Int-S	1								
		trazodone	2	2												
1682h	56 y F	metformin	1	1	C	Ingst	AR-D	3								
1683h	56 y F	metformin	1	1	U	Ingst	Int-S	2								
		glipizide	1	1												
		metformin	2	2												
		drug, unknown	3	3												
		amitriptyline	4	4												
		aripiprazole	5	5												
		duloxetine (extended release)	6	6												
		acetaminophen/codeine	7	7												
1684	57 y F	metformin	1	1	U	Ingst	Unk	2								
1685	58 y F	metformin	1	1	A/C	Ingst	Int-S	2								
1686ha	58 y F	metformin	1	1	A	Ingst	Int-S	1								
		metformin	1	1												
		glipizide	2	2												
		ibuprofen	3	3												
		hydrochlorothiazide	4	4												
1687a	59 y M	ethanol	5	5	A	Ingst	Int-S	2								
		metformin	1	1					metformin	44 mcg/mL In Blood (unspecified) @ Unknown						
		methanol	2	2												
1688h	61 y F				C	Ingst	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
1689a	61 y M	metformin	1	1	A	Ingst	Int-S	2		
		metformin	1	1						
		acetaminophen	2	2					acetaminophen (apap)	54 mcg/mL In Blood (unspecified) @ Unknown
		drug, unknown	3	3						
1690hi	65 y M	metformin	1	1	A/C	Ingst	Int-M	1		
1691h	67 y F	metformin	1	1	A/C	Ingst	Int-S	1		
		metformin	1	1						
		metoprolol	2	2						
		acetaminophen/hydrocodone	3	3					acetaminophen (apap)	45 mcg/mL In Serum @ 4 h (pe)
1692h	68 y F	metformin	1	1	C	Ingst	AR-D	2		
1693h	68 y M	metformin	1	1	C	Ingst	AR-D	3		
1694ph	70 y M	metformin	1	1	C	Ingst	AR-D	2		
		glimepiride	1	1						
1695h	70 y M	metformin	1	1	C	Ingst	AR-D	2		
1696ha	71 y F	metformin	1	1	A/C	Ingst	Int-S	3		
1697h	74 y F	metformin	1	1	C	Ingst	AR-D	3		
1698ha	74 y M	metformin	1	1	A	Ingst + Unk	Int-S	1		
		metformin	1	1						
		acetaminophen	2	2						
1699h	75 y F	metformin	1	1	U	Ingst	Int-U	2		
		acetaminophen	2	2					acetaminophen (apap)	48 mg/dL In Serum @ 1 m (pe)
1700h	76 y M	metformin	1	1	C	Ingst	Unt-T	3		
		colchicine	2	2						
		losartan	3	3						
1701h	78 y F	metformin	1	1	C	Ingst	Unk	3		
		warfarin	2	2						
1702h	79 y M	metformin	1	1	A/C	Ingst	Unt-G	3		
1703h	83 y M	metformin	1	1	A/C	Ingst	AR-D	2		
See Also case 89, 545, 572, 751, 930, 1037, 1039, 1066, 1202, 1233, 1257, 1301, 1310, 1321, 1323, 1372, 1401, 1411, 1415, 1420, 1430, 1433, 1455, 1468, 1480, 1483, 1539, 1547, 1551, 1577, 1599, 1615, 1744, 1776, 1793, 1825										
Miscellaneous Drugs										
1704h	28 y M				A	Par	AR-D	1		
		succinylcholine	1	1						
		methamphetamine	2	2						
		haloperidol	3	3						
		tramadol	4	4						
1705ai	40 y M	drug, unknown	1	1	U	Unk	Int-S	1		
1706ph	50 y F				A/C	Ingst	Int-S	1		
		ropinirole	1	1						
		clopidogrel	2	2						
		alprazolam	3	3						
		ethanol	4	4						
1707h	68 y M				A	Par + Unk	AR-D	3		
		rasburicase	1	1						
		drug, unknown	2	2						
See Also case 932, 1066, 1107, 1310, 1382, 1420, 1433, 1577, 1578, 1599, 1618, 1675, 1793, 2180										
Muscle Relaxants										
1708pa	23 y M				A	Ingst	Int-S	2		
		baclofen	1	1						
		homatropine/hydrocodone	2	2						
		gabapentin	3	3						
1709ph	25 y M	carisoprodol	1	1	U	Ingst	Unk	2		
1710h	32 y F				A	Ingst	Int-S	3		
		baclofen	1	1						
		clonazepam	2	2						
		doxepin	3	3						
1711ai	33 y M	baclofen	1	1	U	Unk	Int-A	1		
		ethanol	2	2						
1712p	34 y F	baclofen	1	1	U	Ingst	Int-S	2	baclofen	3777 ng/mL In Blood (unspecified) @ Unknown
		olanzapine	2	2						
		citalopram	3	3					citalopram	507 ng/mL In Blood (unspecified) @ Unknown
		lithium	4	4					lithium	0.5 mg/L In Blood (unspecified) @ Unknown
		methadone	5	5					methadone	756 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
1713ph	35 y M	marijuana	6	6					delta-9-carboxy-thc	5 ng/mL In Blood (unspecified) @ Unknown
1714h	36 y F	baclofen	1	1	A	Ingst	Int-S	2		
		cyclobenzaprine	1	1	A/C	Ingst	Int-S	2		
		ethanol	2	2					ethanol	48 mg/mL In Blood (unspecified) @ Unknown
1715p	39 y F	acetaminophen/hydrocodone	3	3	A	Ingst	Unk	2	acetaminophen (apap)	140 mcg/mL In Serum @ Unknown
1716ha	42 y M	baclofen	1	1	A/C	Ingst	Int-S	2		
		baclofen	1	1						
		propranolol	2	2						
		topiramate	3	3						
		drug, unknown	4	4						
1717ha	47 y F	metaxalone	1	1	U	Ingst	Int-S	3	metaxalone	28 mcg/mL In Serum @ 1 h (pe)
		fluoxetine	2	2					norfluoxetine	210 ng/mL In Serum @ 1 h (pe)
		fluoxetine	2	2					fluoxetine	360 ng/mL In Serum @ 1 h (pe)
		trazodone	3	3					trazodone	0.65 mcg/mL In Serum @ 1 h (pe)
		sumatriptan	4	4						
		oxycodone	5	5						
		carbamazepine	6	6						
		loratadine	7	7						
		cimetidine	8	8						
1718h	48 y M	baclofen	1	1	A	Ingst	Int-S	2		
		gabapentin	2	2						
		nonsteroidal antiinflammatory	3	3						
1719h	49 y F	baclofen	1	1	A	Ingst	Int-S	2		
1720pha	49 y F	baclofen	1	1	A	Ingst	Int-S	1	baclofen	1373 ng/mL In Blood (unspecified) @ 1 d (pe)
		fluoxetine	2	2					norfluoxetine	262 ng/mL In Blood (unspecified) @ 2 d (pe)
		fluoxetine	2	2					fluoxetine	665 ng/mL In Blood (unspecified) @ 2 d (pe)
1721ai	50 y F	carisoprodol	1	1	U	Unk	Unk	2		
		diphenhydramine	2	2						
		ethanol	3	3						
1722	51 y M	cyclobenzaprine	1	1	A/C	Ingst	Int-S	2		
		tramadol	2	2						
		pregabalin	3	3						
		clopidogrel	4	4						
		acetaminophen/codeine	5	5					acetaminophen (apap)	44 mg/mL In Blood (unspecified) @ 4 h (pe)
		phenytoin	6	6					phenytoin	6.4 mcg/mL In Blood (unspecified) @ 4 h (pe)
		sulfamethoxazole/trimethoprim	7	7						
1723h	53 y F	baclofen	1	1	U	Ingst	Int-S	2		
		amitriptyline	2	2						
		ethanol	3	3						
		naproxen	4	4						
1724h	54 y F	cyclobenzaprine	1	1	A/C	Ingst	Int-S	3		
		warfarin	2	2						
1725pha	57 y F	baclofen	1	1	A/C	Ingst	Int-S	1	hydroxyzine	180 mcg/L In Blood (unspecified) @ Unknown
		metoprolol	2	1					10-hydroxycarbazepine	19 mcg/mL In Blood (unspecified) @ Unknown
		metoprolol	2	1					midazolam	27 mcg/L In Blood (unspecified) @ Unknown
		metoprolol	2	1					fluoxetine	440 mcg/L In Blood (unspecified) @ Unknown
		metoprolol	2	1					norfluoxetine	710 mcg/L In Blood (unspecified) @ Unknown
		metoprolol	2	1					baclofen	9500 mcg/L In Blood (unspecified) @ Unknown
		ethanol	3	2						
1726h	58 y F	cyclobenzaprine	1	1	A	Ingst + Aspir	Int-S	2		
1727ha	61 y F	baclofen	1	1	C	Ingst	Int-S	1	baclofen	1189 ng/mL In Blood (unspecified) @ Unknown
		lorazepam	2	2					alprazolam	13.5 ng/mL In Blood (unspecified) @ Unknown
		zolpidem	3	3					zolpidem	114 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
1728h	62 y F	alprazolam	4	4	A/C	Ingst	Int-S	1		
		baclofen	1	1					baclofen	11 mg/L In Blood (unspecified) @ Autopsy
1729h	63 y F	baclofen	1	1	A/C	Ingst	Int-S	2		
1730pha	65 y F	carisoprodol	1	1	A/C	Ingst	Int-S	2		
1731h	68 y F	baclofen	1	1	A/C	Ingst	Unk	3		
1732ph	69 y F	baclofen	1	1	U	Ingst	Int-S	2		
		chlorzoxazone	1	1						
		quetiapine	2	2						
		zolpidem	3	3						
		lisinopril	4	4						
1733h	70 y M	baclofen	1	1	A/C	Ingst	Oth-W	3		
		salicylate	2	2						
1734ha	71 y M	baclofen	1	1	A/C	Ingst	Int-S	1	baclofen	2.9 mg/L In Blood (unspecified) @ 30 m (pe)
1735h	83 y F	baclofen	1	1	A/C	Ingst + Derm	Int-U	3		
		tapentadol	2	2						
		carisoprodol	3	3						
		fentanyl	4	4						
1736a	90 y F	baclofen	1	1	C	Ingst	Int-M	1		
See Also case 120, 128, 267, 550, 624, 628, 653, 675, 684, 693, 696, 763, 771, 821, 830, 852, 855, 874, 891, 895, 903, 907, 939, 946, 951, 987, 991, 1000, 1002, 1025, 1050, 1055, 1078, 1090, 1096, 1115, 1116, 1168, 1195, 1212, 1225, 1233, 1243, 1260, 1262, 1299, 1310, 1315, 1316, 1320, 1396, 1411, 1412, 1427, 1435, 1444, 1475, 1489, 1501, 1511, 1551, 1554, 1555, 1591, 1636, 1677, 1680, 1760, 1804, 1807, 2117, 2219, 2347, 2355, 2376, 2433, 2492, 2507, 2534, 2538, 2663, 2676										
Narcotic Antagonists										
1737ai	19 y M	nalmexone	1	1	U	Unk	Int-A	1		
See Also case 1955, 2439										
Sedative/Hypnotics/Antipsychotics										
1738pa	4 y M	quetiapine	1	1	A	Ingst	Oth-M	1	quetiapine	0.7 mg/mL In Gastric (stomach content) @ Autopsy
		quetiapine	1	1					quetiapine	9.4 mg/L In Blood (unspecified) @ Autopsy
		quetiapine	1	1					quetiapine	9.7 mg/L In Blood (unspecified) @ Autopsy
		trazodone	2	2					trazodone	0.11 mg/mL In Gastric (stomach content) @ Autopsy
		trazodone	2	2					trazodone	4 mg/L In Blood (unspecified) @ Autopsy
[1739ha]	12 y F	diazepam	1	1	A	Ingst	Unk	1	nordiazepam	0.067 mg/L In Blood (unspecified) @ 2 h (pe)
		diazepam	1	1					diazepam	0.98 mg/L In Blood (unspecified) @ 2 h (pe)
		diazepam	1	1					diazepam	20 ng/mL In Urine (quantitative only) @ 1 m (pe)
		diazepam	1	1					oxazepam	32 ng/mL In Urine (quantitative only) @ 1 m (pe)
		diazepam	1	1					temazepam	410 ng/mL In Urine (quantitative only) @ 1 m (pe)
		diazepam	1	1					nordiazepam	68 ng/mL In Urine (quantitative only) @ 1 m (pe)
		gabapentin	2	2					gabapentin	1.5 mcg/mL In Blood (unspecified) @ 1 m (pe)
		gabapentin	2	2					gabapentin	24 mg/L In Blood (unspecified) @ 2 h (pe)
		citalopram	3	3					citalopram	0.42 mg/L In Blood (unspecified) @ 2 h (pe)
1740ai	18 y M	alprazolam	1	1	U	Unk	Int-U	1		
		oxycodone	2	2						
		methadone	3	3						
1741ai	19 y F	alprazolam	1	1	U	Unk	Unk	1		
		oxycodone	2	2						
		estazolam	3	3						
1742ai	22 y M	alprazolam	1	1	U	Unk	Int-A	1		
		ethanol	2	2						
		oxycodone	3	3						
1743ai	22 y M	alprazolam	1	1	U	Unk	Int-A	1		
		cocaine	2	2						
		fentanyl	3	3						
1744p	23 y F	benzodiazepine	1	1	A	Ingst	Int-S	1		
		insulin (aspart)	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
1745p	23 y F	ethanol	3	3	A/C	Ingst	Int-S	3		
		clonazepam	1	1						
		alprazolam	2	2						
1746	24 y F	quetiapine	1	1	A	Ingst	Int-S	2		
		paroxetine	2	2						
		lorazepam	3	3						
1747ai	24 y M	alprazolam	1	1	U	Ingst + Unk	Int-A	1		
		fentanyl	2	2						
1748	25 y M	quetiapine	1	1	U	Ingst	Int-S	2		
1749ph	25 y M	alprazolam	1	1	A	Inhal	Int-A	1		
		heroin	2	2						
1750ph	25 y M	quetiapine	1	1	A/C	Unk	Int-U	1		
		fentanyl	2	2						
		heroin	3	3						
1751ai	25 y F	alprazolam	1	1	U	Ingst + Unk	Int-A	1		
		fentanyl	2	2						
1752ai	27 y M	alprazolam	1	1	U	Unk	Unk	1		
		methadone	2	2						
		oxycodone	3	3						
1753h	27 y F	quetiapine	1	1	A	Ingst	Int-S	1		
		ethanol	2	2					ethanol	156 mg/dL In Blood (unspecified) @ 2 h (pe)
		drug, unknown	3	3						
1754h	28 y F	quetiapine	1	1	A	Ingst	Int-S	2		
1755ai	28 y M	alprazolam	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		diazepam	3	3						
1756p	30 y M	clozapine	1	1	A	Ingst	Int-S	1		
1757	32 y M	quetiapine	1	1	A/C	Ingst	Int-S	2		
		doxepin	2	2						
		ethanol	3	3						
1758phi	32 y M	asenapine	1	1	A	Ingst	Unk	2		
		quetiapine	2	2						
		trazodone	3	3						
1759ai	33 y M	chlordiazepoxide	1	1	U	Unk	Int-A	2		
		diazepam	2	2						
		ethanol	3	3						
1760a	37 y F	olanzapine	1	1	A/C	Ingst	Int-S	2	olanzapine	0.17 mcg/mL In Blood (unspecified) @ 1 h (pe)
		metaxalone	2	2					metaxalone	0.54 mcg/mL In Blood (unspecified) @ 1 h (pe)
		quetiapine	3	3						
		lamotrigine	4	4					lamotrigine	27 mcg/mL In Blood (unspecified) @ 1 h (pe)
		vilazodone	5	5						
		triazolam	6	6						
		acetaminophen	7	7					acetaminophen (apap)	22 mcg/mL In Blood (unspecified) @ 1 h (pe)
1761pha	37 y M	alprazolam	1	1	A	Ingst	Int-A	3		
		narcotic, other/unknown	2	2						
1762ai	37 y M	alprazolam	1	1	U	Unk	Int-A	1		
		heroin	2	2						
		fentanyl	3	3						
1763ai	37 y F	alprazolam	1	1	U	Unk	Int-S	1		
		citalopram	2	2						
		ethanol	3	3						
1764	38 y M	quetiapine	1	1	A/C	Ingst	Int-S	3		
		ethanol	2	2					ethanol	207 mg/dL In Serum @ Unknown
1765ai	39 y M	alprazolam	1	1	U	Unk	Int-A	1		
		fentanyl	2	2						
1766phi	40 y M	alprazolam	1	1	U	Ingst + Unk	Int-A	2		
		narcotic, other/unknown	2	2						
		acetaminophen	3	3					acetaminophen (apap)	23 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
1767pha	44 y F	barbiturate (short or intermediate acting)	1	1	A	Ingst	Int-S	1	pentobarbital	59 mcg/mL In Blood (unspecified) @ Unknown
		alprazolam	2	2					alprazolam	69 mg/mL In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	18 mg/dL In Serum @ Unknown
1768ai	44 y M				U	Unk	Int-A	1		
		alprazolam	1	1						
		citalopram	2	2						
		methadone	3	3						
1769ph	44 y M				A/C	Ingst	Int-S	1		
		ziprasidone	1	1						
		valproic acid (extended release)	2	2						
		acetaminophen/hydrocodone	3	3						
1770ai	44 y M				U	Unk	Int-M	1		
		benzodiazepine	1	1						
		ethanol	2	2						
		citalopram	3	3						
1771ai	44 y F				U	Unk	Int-S	1		
		pentobarbital	1	1						
		phenytoin	2	2						
1772h	45 y M				A	Ingst	Int-S	1		
		quetiapine	1	1						
1773ha	45 y F				A/C	Ingst	Int-S	2		
		quetiapine (extended release)	1	1					quetiapine	6800 ng/mL In Blood (unspecified) @ Unknown
1774h	46 y M				A/C	Par	Unt-T	3		
		propofol	1	1						
1775h	46 y M				A	Ingst	Int-S	2		
		quetiapine (extended release)	1	1						
1776ha	48 y F				A/C	Ingst	Int-S	1		
		alprazolam	1	1					alprazolam	240 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/oxycodone	2	2					acetaminophen (apap)	15 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/oxycodone	2	2					oxycodone	170 ng/mL In Blood (unspecified) @ Autopsy
		zolpidem	3	3					zolpidem	640 ng/mL In Blood (unspecified) @ Autopsy
		hydroxyzine	4	4					hydroxyzine	18 ng/mL In Blood (unspecified) @ Autopsy
		insulin	5	5						
1777ha	48 y F				A/C	Ingst	Int-S	1		
		alprazolam	1	1					alprazolam	0.47 mg/L In Blood (unspecified) @ 7 h (pe)
		risperidone	2	2					9-hydroxyrisperidone	0.013 mg/L In Blood (unspecified) @ 21 h (pe)
		risperidone	2	2					risperidone	0.083 mg/L In Blood (unspecified) @ 21 h (pe)
		caffeine	3	3						
1778ai	48 y M				U	Unk	Int-A	1		
		alprazolam	1	1						
		diazepam	2	2						
		gabapentin	3	3						
1779p	48 y M				A	Ingst	Int-S	2		
		zolpidem	1	1						
1780ai	48 y M				U	Unk	Int-A	2		
		alprazolam	1	1						
		ethanol	2	2						
		oxycodone	3	3						
1781a	50 y M				A	Ingst	Int-S	1		
		midazolam	1	1					midazolam	170 ng/mL In Blood (unspecified) @ Autopsy
		buspirone	2	2						
1782a	51 y M				A	Ingst	Int-S	2		
		clonazepam	1	1					clonazepam	36 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	1	1					7-aminoclonazepam	890 ng/mL In Blood (unspecified) @ Autopsy
		clonidine	2	2					clonidine	73 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	3	3					fluoxetine	5000 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	3	3					norfluoxetine	73 ng/mL In Blood (unspecified) @ Autopsy
1783ph	51 y M				A/C	Ingst + Inhal	Int-S	2		
		diazepam	1	1						
		lorazepam	2	2						
		temazepam	3	3						
		gabapentin	4	4						
		chlordiazepoxide	5	5						
		ethanol	6	6						
		carbon monoxide	7	7						
1784p	52 y F				U	Unk	Int-U	2		
		alprazolam	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
1785ai	52 y M	alprazolam	1	1	U	Unk	Int-S	2		
		methylenedioxy-methamphetamine (MDMA)	2	2						
		oxycodone	3	3						
1786ph	53 y F	alprazolam	1	1	A/C	Ingst	Unk	2		
		tramadol	2	2						
		fluoxetine	3	3						
1787ph	53 y F	temazepam	1	1	A	Unk	Unk	2		
		codeine	2	2						
		cocaine	3	3						
1788ai	53 y M	alprazolam	1	1	U	Unk	Unk	1		
		methadone	2	2						
		propranolol	3	3						
1789ai	53 y F	benzodiazepine	1	1	U	Unk	Int-S	1		
		oxycodone	2	2						
		paroxetine	3	3						
1790pha	54 y M	zolpidem	1	1	C	Ingst	Unk	2		
		valproic acid	2	2						
		quetiapine	3	3						
		tramadol	4	4						
1791h	54 y M	zolpidem	1	1	A/C	Ingst	Int-S	2		
		clonazepam	2	2						
1792ha	55 y F	clonazepam	1	1	U	Ingst	Int-S	2		
		oxycodone	2	2						
1793h	55 y F	clonazepam	1	1	A/C	Ingst	Int-M	3		
		duloxetine (extended release)	2	2						
		propranolol	3	3						
		oxcarbazepine	4	4						
		quetiapine	5	5						
		dopamine agonist	6	6						
		topiramate	7	7						
		metformin	8	8						
		lisinopril	9	9						
		levothyroxine	10	10						
1794ai	55 y M	alprazolam	1	1	U	Unk	Int-A	1		
		ethanol	2	2						
1795ai	55 y F	buspirone	1	1	U	Unk	Int-S	1		
		gabapentin	2	2						
		lamotrigine	3	3						
		diazepam	4	4						
1796ai	55 y F	quetiapine	1	1	U	Unk	Unk	3		
1797pha	56 y F	quetiapine	1	1	U	Ingst	Int-S	1		
		clobazam	1	1					benzodiazepines	4000 ng/mL In Whole Blood @ Autopsy
		alprazolam	2	2					alprazolam	5 ng/mL In Whole Blood @ Autopsy
		sedative-hypnotic-antianxiety-antipsychotic drug	3	3						
		zolpidem	4	4						
		doxylamine	5	5					doxylamine	190 ng/mL In Whole Blood @ Autopsy
		lacosamide	6	6						
		diphenhydramine	7	7					diphenhydramine	840 ng/mL In Whole Blood @ Autopsy
1798ph	56 y M	quetiapine	1	1	A	Ingst	Int-S	2		
		lorazepam	2	2						
1799ha	56 y F	alprazolam	2	1	U	Ingst	Int-S	1	alprazolam	0.15 mg/L In Blood (unspecified) @ 5 m (pe)
		sertraline	3	1						
		verapamil	1	1						
		melatonin	4	4						
1800h	57 y M	quetiapine	1	1	A/C	Ingst	Int-S	2	quetiapine	840 ng/mL In Serum @ Unknown
		clonazepam	2	2					clonazepam	100 ng/mL In Serum @ Unknown
		clonazepam	2	2					7-aminoclonazepam	980 ng/mL In Serum @ Unknown
1801ai	57 y F	diazepam	1	1	U	Unk	Int-A	1		
		duloxetine (extended release)	2	2						
		heroin	3	3						
		paroxetine	4	4						
1802ai	58 y F	diazepam	1	1	U	Unk	Int-A	2		
		gabapentin	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
1803ai	59 y F	tramadol	3	3	U	Unk	Unk	1		
		diazepam	1	1						
		ethanol	2	2						
		oxycodone	3	3						
1804h	60 y F	zolpidem	1	1	A/C	Ingst	Int-U	2		
		cyclobenzaprine	2	2						
		drug, unknown	3	3						
1805h	60 y M	clonazepam	1	1	A/C	Ingst	Int-S	3		
		hydrochlorothiazide/lisinopril	2	2						
		venlafaxine	3	3						
		loratidine (extended release)	4	4						
1806ha	61 y M	alprazolam	1	1	A/C	Ingst	Int-S	1	alprazolam	0.45 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	2	2					oxycodone	0.15 mg/L In Blood (unspecified) @ Autopsy
		trazodone	3	2					trazodone	1.2 mg/L In Blood (unspecified) @ Autopsy
1807ai	61 y M	zolpidem	1	1	U	Unk	Int-A	1		
		alprazolam	2	2						
		cyclobenzaprine	3	3						
1808ai	63 y F	alprazolam	1	1	U	Ingst	Unt-M	1		
		ethanol	2	2						
		diphenhydramine	3	3						
1809	64 y M	alprazolam	1	1	C	Ingst	Int-M	3	alpha-oh-alprazolam	130 ng/mL In Urine (quantitative only) @ Unknown
		alprazolam	1	1					alprazolam	230 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	1	1					alprazolam	230 ng/mL In Urine (quantitative only) @ Unknown
		ethanol	2	2					ethanol	27 mg/dL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	89 mg/dL In Urine (quantitative only) @ Unknown
1810ha	65 y M	zopiclone	1	1	A	Ingst	Int-S	1	zopiclone	170 ng/mL In Blood (unspecified) @ Unknown
		gabapentin	2	2					gabapentin	85 mg/L In Blood (unspecified) @ Unknown
1811h	66 y F	zolpidem	1	1	U	Ingst	Int-S	3		
		lorazepam	2	2						
		marijuana	3	3						
		narcotic, other/unknown	4	4						
		phencyclidine	5	5						
		cyclic antidepressant, unknown drug, unknown	6	6						
		antidepressant, unknown drug, unknown	7	7						
1812h	66 y M	haloperidol	1	1	A	Ingst	AR-D	3		
1813h	67 y M	lorazepam	1	1	A/C	Ingst	Int-S	3		
		amphetamine	2	2						
1814pha	69 y M	quetiapine	1	1	U	Ingst	Int-S	1	quetiapine	1.8 mg/L In Serum @ 5 h (pe)
1815ha	70 y M	clonazepam	1	1	U	Ingst	Int-S	1	clonazepam	0.043 mg/L In Blood (unspecified) @ 1.5 h (pe)
		clonazepam	1	1					7-aminoclonazepam	0.16 mg/L In Blood (unspecified) @ 1.5 h (pe)
		sertraline	2	2					sertraline	0.27 mg/L In Blood (unspecified) @ 30 m (pe)
		sertraline	2	2					norsertaline	0.28 mg/L In Blood (unspecified) @ 30 m (pe)
		drug, unknown	3	3						
1816p	70 y F	antipsychotic (atypical)	1	1	A/C	Ingst	Int-S	2		
		antihistamine	2	2						
1817ai	72 y F	lorazepam	1	1	U	Unk	Unk	2		
		morphine	2	2						
1818ha	72 y F	quetiapine	1	1	A/C	Ingst	Int-S	2		
		methadone	2	2						
		benzodiazepine	3	3						
1819ha	74 y M	estazolam	1	1	U	Ingst	Int-S	1	etizolam	3500 ng/mL In Serum @ Unknown
		zolpidem	2	2					zolpidem	420 ng/mL In Serum @ Unknown
1820i	74 y F				U	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
1821ai	74 y F	quetiapine	1	1	U	Unk	Unk	2		
		diphenhydramine	2	2						
		ibuprofen	3	3						
1822ai	74 y F	benzodiazepine	1	1	U	Unk	Unk	2		
		barbiturate (long acting)	2	2						
1823ai	75 y M	benzodiazepine	1	1	U	Unk	Int-S	1		
		barbiturate (long acting)	2	2						
1824ai	76 y M	phenobarbital	1	1	U	Unk	Int-S	1		
1825h	78 y F	zopiclone	1	1	A/C	Ingst + Unk	Int-S	2		
		alprazolam	1	1						
		metformin	2	2						
1826ha	81 y F	insulin (glargine)	3	3	A/C	Ingst	Int-S	1		
		risperidone	1	1						
		lisinopril	2	2						
1827ai	84 y M	metoprolol	3	3	U	Unk	Int-S	1		
		lorazepam	1	1						
		hydromorphone	2	2						
1828h	85 y F	lorazepam	1	1	A	Ingst	Unk	3		
		hydromorphone	2	2						
1829a	87 y M	alprazolam	1	1	A/C	Ingst	Int-S	2	alprazolam	6300 ng/mL In Urine (quantitative only) @ Unknown
		alprazolam	1	1					alpha-oh-alprazolam	6300 ng/mL In Urine (quantitative only) @ Unknown
1830h	87 y M	alprazolam	1	1	A/C	Ingst	Int-U	2		
1831ha	89 y F	barbiturate (long acting)	1	1	A	Ingst	Int-S	1	phenobarbital	112 mg/L In Blood (unspecified) @ Unknown
		eszopiclone	1	1					eszopiclone	320 ng/mL In Blood (unspecified) @ Autopsy
		morphine	2	2					morphine	22.7 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	3	3					alprazolam	12.9 ng/mL In Blood (unspecified) @ Autopsy
		pseudoephedrine	4	4					pseudoephedrine	259 ng/mL In Blood (unspecified) @ Autopsy
1832pa	30 + y M				A	Par	Int-A	1	alpha-oh-alprazolam	14 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	1	1					alprazolam	370 ng/mL In Whole Blood @ Autopsy
		methadone	2	2					methadone	290 ng/mL In Whole Blood @ Autopsy
		clonazepam	3	3					7-aminoclonazepam	6.1 ng/mL In Whole Blood @ Autopsy
		mirtazapine	4	4					mirtazapine	39 ng/mL In Whole Blood @ Autopsy
		marijuana	5	5					11-oh-thc (11-hydroxy-delta-9-tetrahydrocannabinol)	1 ng/mL In Whole Blood @ Autopsy
		marijuana	5	5					delta-9-thc	1.7 ng/mL In Whole Blood @ Autopsy
marijuana	5	5	delta-9-carboxy-thc	27 ng/mL In Whole Blood @ Autopsy						
1833p	40 + y M	alprazolam	1	1	A	Ingst	Unk	3		
1834p	Unknown adult (>=20 yrs) F	alprazolam	1	1	U	Ingst	Int-S	2		

See Also case 5, 19, 35, 39, 47, 55, 60, 67, 70, 91, 97, 114, 119, 128, 164, 175, 183, 234, 259, 260, 278, 295, 309, 316, 363, 374, 381, 383, 385, 389, 391, 392, 393, 394, 396, 401, 404, 406, 408, 409, 414, 417, 418, 420, 427, 429, 433, 440, 444, 445, 447, 450, 452, 453, 456, 459, 460, 468, 478, 482, 483, 486, 489, 490, 491, 492, 494, 495, 497, 505, 506, 513, 520, 529, 531, 533, 536, 544, 551, 553, 554, 555, 557, 558, 565, 568, 569, 571, 572, 577, 581, 583, 585, 591, 595, 602, 605, 608, 613, 615, 619, 622, 626, 630, 633, 640, 644, 645, 653, 657, 660, 672, 674, 675, 676, 678, 679, 681, 683, 688, 691, 692, 694, 695, 702, 710, 715, 718, 719, 722, 727, 732, 735, 737, 739, 740, 744, 751, 753, 754, 760, 761, 762, 763, 764, 765, 766, 773, 774, 778, 781, 784, 785, 796, 802, 807, 812, 815, 816, 819, 822, 826, 829, 831, 834, 836, 847, 855, 860, 861, 865, 866, 874, 875, 884, 886, 890, 892, 893, 894, 901, 904, 905, 906, 907, 910, 912, 917, 918, 919, 922, 923, 924, 925, 926, 928, 931, 934, 935, 946, 947, 950, 953, 958, 959, 961, 970, 973, 979, 981, 986, 989, 992, 995, 1001, 1003, 1006, 1017, 1018, 1023, 1024, 1026, 1028, 1035, 1037, 1038, 1053, 1055, 1056, 1059, 1062, 1065, 1066, 1069, 1070, 1074, 1089, 1090, 1092, 1096, 1098, 1101, 1102, 1104, 1108, 1119, 1121, 1122, 1128, 1135, 1137, 1146, 1153, 1154, 1158, 1167, 1170, 1175, 1182, 1184, 1190, 1191, 1194, 1195, 1198, 1201, 1202, 1203, 1206, 1211, 1215, 1218, 1219, 1220, 1224, 1228, 1231, 1232, 1238, 1241, 1246, 1255, 1257, 1258, 1260, 1268, 1273, 1275, 1276, 1277, 1281, 1282, 1285, 1286, 1288, 1289, 1292, 1295, 1296, 1298, 1299, 1300, 1301, 1303, 1305, 1306, 1307, 1309, 1310, 1316, 1317, 1318, 1321, 1322, 1323, 1327, 1329, 1344, 1347, 1355, 1356, 1382, 1383, 1384, 1390, 1394, 1396, 1399, 1409, 1411, 1412, 1414, 1423, 1425, 1426, 1427, 1429, 1430, 1431, 1438, 1440, 1445, 1448, 1452, 1453, 1455, 1461, 1465, 1466, 1468, 1469, 1471, 1473, 1474, 1475, 1482, 1489, 1491, 1501, 1502, 1517, 1518, 1521, 1523, 1527, 1529, 1531, 1539, 1545, 1551, 1552, 1554, 1555, 1567, 1569, 1571, 1572, 1573, 1577, 1578, 1583, 1592, 1595, 1599, 1608, 1618, 1622, 1648, 1652, 1661, 1662, 1672, 1675, 1679, 1680, 1683, 1704, 1706, 1710, 1712, 1727, 1732, 1848, 1849, 1858, 1859, 1860, 1866, 1871, 1878, 1879, 1882, 1894, 1896, 1909, 1912, 1917, 1920, 1921, 1930, 1941, 1943, 1948, 1951, 1953, 1958, 1971, 1976, 2009, 2011, 2017, 2018, 2031, 2035, 2044, 2054, 2071, 2079, 2082, 2083, 2088, 2099, 2110, 2124, 2133, 2136, 2163, 2169, 2176, 2180, 2186, 2200, 2204, 2208, 2213, 2218, 2220, 2232, 2237, 2256, 2261, 2266, 2274, 2287, 2308, 2325, 2343, 2348, 2380, 2389, 2401, 2422, 2431, 2432, 2471, 2473, 2492, 2524, 2560, 2581, 2582, 2586, 2587, 2590, 2618, 2621, 2636, 2648, 2660, 2662

Stimulants and Street Drugs

1835ph	16 y M				A	Ingst + Par	Int-A	2		
		heroin	1	1					oxymorphone	149 ng/mL In Urine (quantitative only) @ 10 h (pe)
		heroin	1	1					codeine	48 ng/mL In Urine (quantitative only) @ 10 h (pe)
		heroin	1	1					morphine	551 ng/mL In Urine (quantitative only) @ 10 h (pe)
		methamphetamine	2	2					amphetamine	4934 ng/mL In Urine (quantitative only) @ 10 h (pe)
		methamphetamine	2	2					methamphetamine	56710 ng/mL In Urine (quantitative only) @ 10 h (pe)
		clonidine	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
1836ph	17 y F	heroin marijuana	1 2	1 2	A	Inhal + Par	Int-A	2		
1837pha	17 y F	heroin	1	1	U	Unk	Int-A	2		
1838pi	18 y M	heroin carfentanil	1 2	1 2	A	Par	Int-A	2		
1839ph	18 y M	methylenedioxy- methamphetamine (MDMA)	1	1	A	Unk	Int-A	2		
1840ha	18 y F	methamphetamine amphetamine/ dextroamphetamine cocaine	1 2 3	1 2 3	A	Ingst	Int-A	1		
1841ph	19 y M	heroin	1	1	A	Unk	Int-A	2		
1842ai	19 y M	heroin cocaine	1 2	1 2	U	Unk	Int-A	2		
1845ai	19 y F	heroin sertraline gabapentin	1 2 3	1 2 3	U	Unk	Int-A	1		
1843ai	19 y M	heroin	1	1	U	Unk	Int-A	1		
1844ai	19 y F	heroin methamphetamine	1 2	1 2	U	Unk	Int-A	1		
1846ai	19 y M	lysergic acid diethylamide (LSD)	1	1	U	Unk	Int-A	2		
1847ph	20 y M	methylenedioxy- methamphetamine (MDMA)	1	1	A	Unk	Int-S	2		
1848h	20 y F	heroin cocaine alprazolam	1 2 3	1 2 3	A	Inhal	Int-A	1		
1849ph	20 y M	methamphetamine methamphetamine benzodiazepine	1 1 2	1 1 2	U	Unk	Int-A	1	methamphetamine amphetamine	1600 ng/mL In Serum @ Unknown 95 ng/mL In Serum @ Unknown
1850ai	20 y M	cocaine	1	1	U	Unk	Int-A	1		
1851ai	20 y F	cocaine methamphetamine fentanyl	1 2 3	1 2 3	U	Unk	Int-A	1		
1853ai	20 y M	heroin codeine	1 2	1 2	U	Unk	Int-A	1		
1852ai	20 y M	heroin cocaine fentanyl	1 2 3	1 2 3	A	Unk	Int-A	1		
1854ai	20 y M	methylenedioxy- methamphetamine (MDMA)	1	1	U	Unk	Int-A	1		
1855ai	20 y M	isopropanol	2	2	U	Unk	Int-A	1		
1856ph	21 y F	methylenedioxy- methamphetamine (MDMA)	1	1	U	Unk	Int-A	2		
1857ai	21 y F	heroin cocaine fentanyl oxycodone	1 2 3	1 2 3	U	Unk	Int-A	1		
1858ai	21 y M	heroin alprazolam diazepam amitriptyline	1 2 3 4	1 2 3 4	U	Unk	Int-A	1		
1861ai	21 y M	heroin codeine	1 2	1 2	U	Unk	Int-A	1		
1859ai	21 y M				U	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
1860i	21 y M	heroin	1	1	U	Unk	Int-A	1		
		alprazolam	2	2						
		ethanol	3	3						
1862ph	21 y M	heroin	1	1	A	Ingst	Int-A	1		
		hydromorphone	2	2						
		alprazolam	3	3						
1863ai	21 y M	3,4-methylenedioxy-amphetamine (MDA)	1	1	U	Unk	Int-A	1		
1864ai	21 y M	fentanyl analog (carfentanil)	1	1	U	Unk	Int-A	1		
		oxycodone	2	2						
		mitragyna	3	3						
1865h	21 y M	heroin	1	1	A	Ingst	Int-M	2		
		methamphetamine	2	2						
1866phi	22 y F	amphetamine (hallucinogenic)	1	1	U	Unk	Int-A	2		
1867h	22 y M	heroin	1	1	A	Ingst	Unk	2		
		alprazolam	2	2						
1868h	22 y F	methylenedioxy-methamphetamine (MDMA)	1	1	C	Inhal + Par	Int-A	2		
		amphetamine	2	2						
		heroin	1	1						
1869ai	22 y M	cocaine	1	1	U	Unk	Int-A	1		
		levamisole	2	2						
		heroin	3	3						
1870h	22 y M	cocaine	1	1	A	Inhal	Int-A	2		
		fentanyl	2	2						
		dextromethorphan	3	3						
1871ai	22 y F	methamphetamine	1	1	U	Unk	Int-A	1		
		marijuana	2	2						
		drug, unknown	3	3						
1872ai	22 y M	heroin	1	1	U	Par	Int-S	1		
		methadone	2	2						
		alprazolam	3	3						
1873ph	22 y M	heroin	1	1	A	Par	Int-A	1		
1874ai	22 y F	heroin	1	1	U	Unk	Int-A	1		
		heroin	1	1						
		fentanyl	2	2						
1875ai	22 y F	alprazolam	3	3	U	Unk	Int-A	2		
		heroin	1	1						
		methamphetamine	2	2						
[1879pha]	23 y M	heroin	1	1	A	Ingst	Unk	1		
		U-47700	1	1						
		delorazepam	2	2						
1877ai	22 y F	diclazepam	3	3	U	Unk	Int-A	2		
		flubromazepam	4	4						
		etizolam	5	5						
1876ai	22 y F	heroin	1	1	A	Unk	Int-A	1		
		heroin	1	1						
		codeine	2	2						
1874ai	22 y F	hydromorphone	3	3	U	Unk	Int-A	1		
		heroin	1	1						
		codeine	2	2						
1875ai	22 y F	heroin	1	1	U	Unk	Int-A	2		
		heroin	1	1						
		codeine	2	2						
[1879pha]	23 y M	U-47700	1	1	A	Ingst	Unk	1	u-47700	5.2 ng/mL In Blood (unspecified) @ Unknown
		delorazepam	2	2					delorazepam	82 ng/mL In Blood (unspecified) @ Unknown
		diclazepam	3	3					diclazepam	33 ng/mL In Blood (unspecified) @ Unknown
		flubromazepam	4	4					flubromazepam	450 ng/mL In Blood (unspecified) @ Unknown
		etizolam	5	5					etizolam	29 mg/mL In Blood (unspecified) @ Unknown
		fentanyl analog (4-fluoroisobutyrylfentanyl)	6	6					fluoroisobutyryl fentanyl	5.8 ng/mL In Blood (unspecified) @ Unknown
		oxycodone	7	7					oxycodone (free)	15 ng/mL In Blood (unspecified) @ Unknown
		caffeine	8	8						
1880pi	23 y M	methylenedioxy-methamphetamine (MDMA)	1	1	U	Unk	Int-A	2		
1881ha	23 y M	methylenedioxy-methamphetamine (MDMA)	1	1	U	Unk	Int-A	1	mdma (3,4-methylenedioxy-methamphetamine)	1900 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
1882pa	23 y M	methylenedioxymethamphetamine (MDMA)	1	1	A	Unk	Int-U	2	mda (3,4-methylenedioxy-amphetamine)	67 ng/mL In Blood (unspecified) @ Unknown
		cocaine	2	2					benzoyllecognine	620 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	1	1						
1883h	23 y M	benzodiazepine drug, unknown	2	2	A	Ingst	Int-M	1	methamphetamine	12000 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	1	1					amphetamine	150 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	1	1					benzoyllecognine	86 ng/mL In Blood (unspecified) @ Autopsy
1884h	23 y M	cocaine	2	2	A	Ingst	Int-A	1		
1885ha	23 y M	methamphetamine	1	1	A	Ingst	Int-A	2		
1886gai	23 y M	methylenedioxymethamphetamine (MDMA)	1	1	U	Unk	Int-A	3		
		ethanol	2	2						
1887ai	23 y M	amphetamine	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
1889ai	23 y M	heroin	1	1	U	Unk	Int-A	1		
		oxycodone	2	2						
		codeine	3	3						
1888ai	23 y M	heroin	1	1	U	Unk	Int-A	1		
		codeine	2	2						
		morphine	3	3						
1890ai	23 y F	heroin	1	1	U	Unk	Int-A	3		
		codeine	2	2						
1891pa	23 y M	methamphetamine	1	1	A/C	Par	Int-A	1		
		ethanol	2	2						
		heroin	1	1					codeine	0.007 mg/L In Blood (unspecified) @ Autopsy
1892ai	23 y M	heroin	1	1	C	Par	Int-A	3	morphine	0.13 mg/L In Blood (unspecified) @ Autopsy
		drug, unknown stimulant or street drug	1	1						
1899ai	23 y M	heroin	1	1	U	Unk	Int-A	1		
1897ai	23 y F	methamphetamine	2	2	U	Unk	Int-A	2		
		heroin	1	1						
1898ai	23 y M	methamphetamine	2	2	U	Unk	Int-A	1		
		heroin	1	1						
1894ai	23 y M	ethanol	2	2	U	Ingst + Unk	Int-A	1		
		heroin	1	1						
1895ai	23 y M	alprazolam	2	2	A	Unk	Int-A	1		
		ethanol	3	3						
		heroin	1	1						
1893ai	23 y M	cocaine	2	2	U	Unk	Int-A	1		
		heroin	1	1						
1896gai	23 y M	ethanol	2	2	U	Unk	Int-A	1		
		heroin	1	1						
1900ai	23 y M	methamphetamine	2	2	U	Unk	Int-A	1		
		alprazolam	3	3						
		THC homolog	1	1						
1901ai	23 y M	cocaine	1	1	U	Unk	Int-A	1		
1902pa	24 y U	ethanol	2	2	U	Ingst	Int-S	1		
		heroin	2	2					methamphetamine	152 ng/mL In Blood (unspecified) @ 30 m (pe)
		fentanyl	3	3					fentanyl	5.9 ng/mL In Blood (unspecified) @ 30 s (pa)
1903pai	24 y F	gabapentin	4	4	U	Unk	Int-A	1	gabapentin	13.7 mcg/mL In Blood (unspecified) @ 30 s (pa)

(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
1904h	24 y M	methamphetamine	1	1	A	Inhal + Unk	Int-A	2	methamphetamine	1244 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	1	1					amphetamine	159 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	2	2					fentanyl	10.6 ng/mL In Blood (unspecified) @ Autopsy
		heroin	3	3						
		methylenedioxy-methamphetamine (MDMA)	1	1					mdma (3,4-methylenedioxy-methamphetamine)	1200 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	2	2					methamphetamine	120 ng/mL In Blood (unspecified) @ Unknown
1905h	24 y M	marijuana	3	3	A	Ingst	Int-U	2	delta-9-carboxy-thc	9.1 ng/mL In Blood (unspecified) @ Unknown
		cocaine	1	1						
1906	24 y F	drug, unknown	2	2	U	Unk	Unk	2		
1907ph	24 y F	heroin	1	1	A	Par	Int-A	1		
1908ai	24 y F	heroin	1	1	U	Unk	Int-A	2		
1909ai	24 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		heroin	1	1						
1910	24 y M	fentanyl	2	2	A	Ingst	Int-M	1		
		alprazolam	3	3						
		cocaine	1	1						
1912ai	24 y M	cocaine	1	1	U	Unk	Int-A	1		
1913ai	24 y M	cocaine	1	1	U	Unk	Int-A	1		
		fentanyl	2	2						
		alprazolam	3	3						
1911ai	24 y M	heroin	2	2	U	Unk	Int-A	1		
		cocaine	1	1						
1915ai	24 y M	cocaine	1	1	U	Unk	Int-S	1		
1914ai	24 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		heroin	1	1						
1918ai	24 y M	codeine	2	2	U	Unk	Int-A	2		
		trazodone	3	3						
		methamphetamine	1	1						
1916ai	24 y M	ethanol	2	2	U	Unk	Int-A	1		
1917ai	24 y M	methamphetamine	1	1	U	Unk	Int-A	2		
1919ph	25 y M	methamphetamine	1	1	A/C	Ingst + Inhal	Int-A	2		
		risperidone	2	2						
1920ph	25 y M	heroin	1	1	U	Ingst	Int-A	1		
		gabapentin	2	2						
		diphenhydramine	3	3						
		heroin	1	1						
1921pha	25 y M	benzodiazepine	2	2	A	Unk	Int-A	1		
		marijuana	3	3						
		ethanol	4	4						
		heroin	1	1					morphine	0.063 mg/L In Plasma @ 45 m (pe)
1922ha	25 y M	benzodiazepine	2	2	U	Ingst	Int-U	1		
		fentanyl	3	2						
		methamphetamine	1	1					methamphetamine	1000 ng/mL In Blood (unspecified) @ Autopsy
1923ha	25 y M	methamphetamine	1	1	U	Ingst + Oth + Unk	Int-A	1	amphetamine	590 ng/mL In Blood (unspecified) @ Autopsy
		lysergic acid diethylamide (LSD)	1	1						
		methamphetamine	2	2						
		phencyclidine	3	3						
		hyperthermia	4	4						
ethanol	5	5	ethanol	3 mg/dL In Blood (unspecified) @ Unknown						
1924ai	25 y M	heroin	1	1	U	Unk	Int-A	2		
		fentanyl	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
1925ai	25 y M	codeine	3	3	U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		oxycodone	3	3						
1926ai	25 y M	heroin	1	1	U	Unk	Int-A	2		
		codeine	2	2						
1928ai	25 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		codeine	3	3						
1927ai	25 y F	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
1929pha	25 y M	methamphetamine	1	1	A	Par	Int-A	1		
		heroin	2	2						
1930ph	25 y M	heroin	1	1	A	Ingst + Par	Int-A	2		
		alprazolam	2	2						
1931ai	25 y F	drug, unknown stimulant or street drug	1	1	C	Unk	Int-A	3		
1932ai	25 y M	heroin	1	1	U	Unk	Int-A	1		
		ethanol	2	2						
1933ai	25 y F	heroin	1	1	U	Unk	Int-A	1		
		cocaine	2	2						
1935ai	25 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
1934ai	25 y M	heroin	1	1	U	Unk	Int-A	1		
1938ai	25 y F	methamphetamine	1	1	U	Unk	Int-A	1		
		heroin	2	2						
1936ai	25 y M	methamphetamine	1	1	U	Unk	Int-A	2		
1937ai	25 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		ethanol	2	2						
1939ai	25 y M	methamphetamine	1	1	U	Unk	Int-A	2		
1940ph	26 y M	heroin	1	1	A	Par	Int-A	2		
		methamphetamine	2	2						
1941pha	26 y M	heroin	1	1	U	Par	Int-A	1		
		alprazolam	2	2					alprazolam	0.05 mg/L In Blood (unspecified) ⓐ Autopsy
		cocaine	3	3						
1942pa	26 y M	heroin	1	1	A	Par	Int-A	1	morphine (free)	50 mcg/mL In Blood (unspecified) ⓐ Autopsy
		fentanyl analog	2	2						
[1943pha]	26 y F	fentanyl analog (carfentanil)	1	1	U	Unk	Int-U	2		
		alprazolam	2	2					alprazolam	15 ng/mL In Blood (unspecified) ⓐ Unknown
		cocaine	3	3						
1944h	26 y M	methamphetamine	1	1	A	Unk	Unk	2		
		amphetamine	2	2						
1945ai	26 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
1946ai	26 y F	methamphetamine	1	1	U	Unk	Int-A	1		
		dextromethorphan	2	2						
		fluoxetine	3	3						
1947pha	26 y M	heroin	1	1	A	Par	Int-A	1		
1948pa	26 y M	cocaine	2	1	A/C	Ingst + Inhal + Par	Int-A	1	cocaine	0.023 mg/L In Blood (unspecified) ⓐ Autopsy
		cocaine	2	1					benzoyllecognine	1 mg/L In Blood (unspecified) ⓐ Autopsy
		fentanyl analog	1	1					4-fibf (4-fluoroisobutyryl fentanyl)	36 ng/mL In Blood (unspecified) ⓐ Autopsy
		alprazolam	3	2					alprazolam	0.05 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
1951ai	26 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		alprazolam	3	3						
1950ai	26 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		codeine	3	3						
1952ai	26 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		ethanol	3	3						
1953ai	26 y F	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		alprazolam	3	3						
1949ai	26 y M	heroin	1	1	U	Unk	Int-A	2		
1955ai	26 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		nalmexone	2	2						
1954ai	26 y M	methamphetamine	1	1	U	Unk	Int-A	1		
1956ai	27 y F	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		codeine	3	3						
1957ai	27 y M	heroin	1	1	U	Unk	Int-A	1		
		amphetamine	2	2						
		fentanyl	3	3						
1958ai	27 y M	cocaine	1	1	U	Inhal + Unk	Int-S	1		
		propane	2	2						
		diazepam	3	3						
1960ai	27 y M	heroin	1	1	U	Unk	Int-A	1		
1959ai	27 y F	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
1963ai	27 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
1964ai	27 y F	heroin	1	1	U	Unk	Int-A	1		
1962ai	27 y F	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		hydromorphone	3	3						
1961ai	27 y M	heroin	1	1	U	Unk	Int-A	1		
1965ai	27 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
1966ai	27 y F	heroin	1	1	U	Unk	Int-A	2		
		methamphetamine	2	2						
1969ai	27 y M	methamphetamine	1	1	A	Unk	Int-A	1		
		fentanyl	2	2						
1968ai	27 y M	methamphetamine	1	1	U	Unk	Int-A	1		
1967ai	27 y M	methamphetamine	1	1	U	Unk	Int-A	1		
1970pha	28 y F	heroin	1	1	U	Unk	Unk	3		
		cocaine	2	2						
1971pa	28 y M	heroin	1	1	U	Inhal	Int-A	1	morphine	29.8 ng/mL In Blood (unspecified) ⓐ Autopsy
		fentanyl	2	2					fentanyl	29.8 ng/mL In Blood (unspecified) ⓐ Autopsy
		clonazepam	3	3					7-aminoclonazepam	44.7 ng/mL In Blood (unspecified) ⓐ Autopsy
		ethanol	4	4					ethanol	75 mg/dL In Blood (unspecified) ⓐ Autopsy
		marijuana	5	5					thc (tetrahydrocannabinol)	2.3 ng/mL In Blood (unspecified) ⓐ Autopsy
		marijuana	5	5					carboxy-thc	38.1 ng/mL In Blood (unspecified) ⓐ Autopsy
1972pai	28 y M	heroin	1	1	A	Par	Int-A	1	morphine (free)	80 mcg/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
		fentanyl	2	2					fentanyl	0.007 mg/L In Blood (unspecified) @ Autopsy
		cocaine	3	3					benzoyllecognine	0.2 mg/L In Blood (unspecified) @ Autopsy
		ethanol	4	4					ethanol	0.01 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	4	4					ethanol	0.08 % (wt/Vol) In Blood (unspecified) @ Autopsy
		nortriptyline	5	5					nortriptyline	0.7 mg/L In Blood (unspecified) @ Autopsy
		sertraline	6	6					sertraline	0.1 mg/L In Blood (unspecified) @ Autopsy
		sertraline	6	6					desmethylsertraline	0.7 mg/L In Blood (unspecified) @ Autopsy
1973ai	28 y M	hydroxyzine	7	7						
		methamphetamine	1	1	U	Unk	Int-A	1		
1974pha	28 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		synthetic cathinones	1	1						
		ethanol	2	2					ethanol	64 mg/dL In Serum @ Unknown
		salicylate	3	3					salicylate	4.6 mg/dL In Serum @ Unknown
1975h	28 y M	methamphetamine	1	1	A	Ingst	Int-U	1		
1976ai	28 y M	methamphetamine	1	1	U	Unk	Unk	1		
		cocaine	1	1						
		alprazolam	2	2						
		oxycodone	3	3						
1977ai	28 y M	methamphetamine	1	1	U	Unk	Int-A	2		
1978ai	28 y M	heroin	1	1	U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
1979ph	28 y M	methamphetamine	1	1	U	Inhal	Int-A	2		
1980p	28 y M	cocaine	1	1	A	Unk	Int-M	2		
1981h	28 y M	methamphetamine	1	1	A	Par	Int-A	3		
1982ph	28 y M	cocaine	1	1	A	Ingst	Int-A	1		
		cocaine	1	1						
		amphetamine (hallucinogenic)	2	2						
		drug, unknown	3	3						
1983ai	28 y M	methamphetamine	1	1	U	Unk	Int-A	2		
1984ai	28 y M	cocaine	1	1	U	Unk	Int-A	1		
		cocaine	1	1						
		ethanol	2	2						
		fentanyl	3	3						
1985ai	28 y M	methamphetamine	1	1	U	Unk	Int-A	2		
1986ph	29 y F	methamphetamine	1	1	U	Par	Int-A	2		
1987ph	29 y M	heroin	1	1	A	Unk	Int-A	2		
1988h	29 y M	heroin	1	1	U	Unk	Int-A	2		
		methamphetamine	1	1						
1989ha	29 y M	methamphetamine	1	1	U	Par	Int-A	3		
		methamphetamine	1	1					methamphetamine	0.18 mcg/mL In Blood (unspecified) @ Unknown
		methamphetamine	1	1					methamphetamine	0.22 mcg/mL In Blood (unspecified) @ Unknown
1990ph	29 y F	methamphetamine	1	1	A	Inhal	Int-A	1		
1991ha	29 y M	heroin	1	1	A	Ingst	Int-U	1		
		methamphetamine	1	1					methamphetamine	170 mg/dL In Blood (unspecified) @ Autopsy
		methamphetamine	1	1					methamphetamine	1935 ng/mL In Urine (quantitative only) @ Unknown
1993ai	29 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		salicylate	3	3						
1995ai	29 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
1996i	29 y M	heroin	1	1	U	Unk	Int-A	2		
		methamphetamine	2	2						
		codeine	3	3						
1994ai	29 y F	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
1992ai	29 y M	heroin	1	1	U	Unk	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
1997ai	29 y F	heroin	1	1	U	Unk	Int-A	1		
		codeine	2	2						
		methamphetamine	3	3						
1998ai	29 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		heroin	2	2						
1999ai	29 y M	heroin	1	1	U	Ingst + Unk	Int-A	1		
		fentanyl	2	2						
2000ai	29 y M	heroin	1	1	U	Unk	Int-A	1		
		fentanyl	2	2						
		ethanol	3	3						
2002ai	29 y M	heroin	1	1	U	Unk	Int-A	1		
2003ai	29 y M	methamphetamine	1	1	U	Unk	Int-A	3		
		heroin	2	2						
		fentanyl	3	3						
2001ai	29 y F	methamphetamine	1	1	U	Unk	Int-A	2		
2004ai	29 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2005ha	30 y M	heroin	1	1	A	Ingst	Int-U	3		
2006pa	30 y M	amphetamine	1	1	A	Unk	Int-A	2		
2007pai	30 y F	methamphetamine	1	1	A	Par	Int-A	1		
		heroin	1	1						
2008ph	30 y M	cocaine	2	2	A	Ingst	Int-U	2		
		heroin	1	1						
2009ha	30 y F	cocaine	1	1	A	Ingst	Int-A	1	benzoylecognine	290 ng/mL In Blood (unspecified) ③ Unknown
		amphetamine	2	2					methamphetamine	24 ng/mL In Blood (unspecified) ③ Unknown
		marijuana	3	3					delta-9-carboxy-thc	24 ng/mL In Blood (unspecified) ③ Unknown
		narcotic, other/unknown	4	4					fentanyl	0.67 ng/mL In Blood (unspecified) ③ Unknown
		narcotic, other/unknown	4	4					norfentanyl	1 ng/mL In Blood (unspecified) ③ Unknown
		acetaminophen	5	5					acetaminophen (apap)	17 mcg/mL In Blood (unspecified) ⑧ 8 h (pe)
		acetaminophen	5	5					acetaminophen (apap)	9 mcg/mL In Blood (unspecified) ⑧ 30 m (pe)
		barbiturate	6	6					butalbital	0.74 mcg/mL In Blood (unspecified) ③ Unknown
		2010ai	30 y M	cocaine					1	1
2012ai	30 y F	amphetamine	2	2	U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2011ai	30 y M	cocaine	3	3	U	Unk	Int-A	1		
		heroin	1	1						
		oxycodone	2	2						
2013p	30 y M	alprazolam	3	3	A	Unk	Int-A	1		
		heroin	1	1						
2014ai	30 y M	heroin	1	1	U	Unk	Int-A	1		
2016ai	30 y M	cocaine	1	1	U	Unk	Int-A	1		
		ethanol	2	2						
2020ai	30 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
2018ai	30 y M	heroin	1	1	U	Unk	Int-A	1		
		heroin	1	1						
		diazepam	2	2						
2019ai	30 y M	oxazepam	3	3	U	Unk	Int-A	1		
		heroin	1	1						
2015ai	30 y M	methamphetamine	2	2	U	Unk	Int-A	3		
		heroin	1	1						
		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
2017ai	30 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		butalbital	3	3						
2021ai	30 y M	heroin	1	1	U	Unk	Int-A	1		
		oxycodone	2	2						
		fentanyl	3	3						
2022ai	30 y M	heroin	1	1	U	Unk	Int-A	2		
		methamphetamine	2	2						
		codeine	3	3						
2025ai	30 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2026ai	30 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2024ai	30 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		heroin	2	2						
2027ai	30 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		benztropine	2	2						
		fluoxetine	3	3						
2028ai	30 y F	methamphetamine	1	1	U	Unk	Int-A	1		
2029ai	30 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2023ai	30 y F	methamphetamine	1	1	U	Unk	Int-A	1		
2030ph	31 y M	heroin	1	1	A	Par	Int-A	2		
2031ph	31 y F	heroin	1	1	A	Unk	Int-A	2		
		benzodiazepine	2	2						
		cocaine	3	3						
2032pi	31 y M	amphetamine (hallucinogenic)	1	1	A	Ingst	Int-A	2		
		ethanol	2	2						
2033h	31 y M	methamphetamine	1	1	U	Unk	Int-S	1		
[2034p]	31 y M	Mitragyna speciosa korthals	1	1	A	Unk	Int-A	1	acetone	990 ng/mL In Whole Blood @ Autopsy
2035ha	31 y F	methamphetamine	1	1	U	Ingst + Unk	Int-A	2	methamphetamine	490 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	1	1					amphetamine	59 ng/mL In Blood (unspecified) @ Unknown
		quetiapine	2	2						
		chemical, unknown	3	3						
		ethanol	4	4						
		gabapentin	5	5						
2036ai	31 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
2038ai	31 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		amphetamine (hallucinogenic)	3	3						
2039ai	31 y M	heroin	1	1	U	Unk	Int-A	1		
2037ai	31 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		amitriptyline	3	3						
2040ai	31 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		benztropine	2	2						
		diphenhydramine	3	3						
2044ai	31 y F	methamphetamine	1	1	U	Unk	Int-S	1		
		methadone	2	2						
		alprazolam	3	3						
2041ai	31 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2043ai	31 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2042ai	31 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2045ai	31 y M	methamphetamine	1	1	U	Ingst + Unk	Int-A	2		
		THC homolog	2	2						
		ethanol	3	3						
2046pa	32 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
		heroin	1	1					morphine (free)	300 mcg/L In Blood (unspecified) @ Autopsy
		fentanyl	2	2					fentanyl	0.029 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	3	3					oxycodone	0.05 mg/L In Blood (unspecified) @ Autopsy
		ethanol	4	4					ethanol	0.08 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	4	4					ethanol	0.09 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	4	4					ethanol	0.1 % (wt/Vol) In Urine (quantitative only) @ Autopsy
		ethanol	4	4					ethanol	0.1 % (wt/Vol) In Vitreous @ Autopsy
		cocaine	5	5					benzoylcocaine	0.3 mg/L In Blood (unspecified) @ Autopsy
2047pha	32 y F				C	Unk	Int-S	1		
		heroin	1	1						
		drug, unknown	2	2						
2048ph	32 y M				A	Unk	Int-A	2		
		cocaine	1	1						
2049ai	32 y M				U	Unk	Int-A	1		
		amphetamine	1	1						
		methamphetamine	2	2						
		oxcarbazepine	3	3						
2050pa	32 y M	Mitragyna speciosa korthals	1	1	A	Unk	Int-U	2	mitragynine	280 ng/mL In Blood (unspecified) @ Autopsy
		caffeine	2	2						
		mirtazapine	3	3					mirtazapine	72 ng/mL In Blood (unspecified) @ Autopsy
		citalopram	4	4					citalopram	140 ng/mL In Blood (unspecified) @ Autopsy
2052ai	32 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		fentanyl	2	2						
2051ai	32 y F				U	Ingst + Unk	Int-A	1		
		cocaine	1	1						
		ethanol	2	2						
		fentanyl	3	3						
2055ai	32 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
2054ai	32 y M				U	Unk	Int-A	1		
		heroin	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
2053ai	32 y M				U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		codeine	3	3						
2058ai	32 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2059ai	32 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2056ai	32 y F	methamphetamine	1	1	U	Unk	Int-A	1		
2057ai	32 y M	methamphetamine	1	1	U	Unk	Int-A	1		
[2060ha]	33 y M	methamphetamine	1	1	A	Ingst	Int-A	2	methamphetamine	5.29 mg/dL In Whole Blood @ Autopsy
2061pai	33 y M	heroin	1	1	A	Par	Int-A	1	morphine (free)	24 mcg/L In Blood (unspecified) @ Autopsy
		fentanyl analog	2	2						
		ethanol	3	3					ethanol	0.27 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	0.29 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	0.35 % (wt/Vol) In Vitreous @ Autopsy
		ethanol	3	3					ethanol	0.36 % (wt/Vol) In Urine (quantitative only) @ Autopsy
		acetone	4	4					acetone	0.011 % (wt/Vol) In Blood (unspecified) @ Autopsy
		acetone	4	4					acetone	0.012 % (wt/Vol) In Blood (unspecified) @ Autopsy
		acetone	4	4					acetone	0.016 % (wt/Vol) In Urine (quantitative only) @ Autopsy
		acetone	4	4					acetone	0.017 % (wt/Vol) In Vitreous @ Autopsy
2062pha	33 y M	methamphetamine	1	1	U	Ingst	Unk	1	amphetamine	200 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	1	1					methamphetamine	8.71 mg/L In Serum @ Unknown
2063a	33 y M				A	Ingst	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
2064a	33 y M	cocaine	1	1					benzoylecognine	1800 ng/mL In Blood (unspecified) ⓐ Autopsy
		cocaine	1	1					cocaine	22 ng/mL In Blood (unspecified) ⓐ Autopsy
		morphine	2	2					morphine (free)	42 ng/mL In Blood (unspecified) ⓐ Autopsy
		drug, unknown	3	3						
2065ai	33 y M	amphetamine (hallucinogenic)	1	1	A	Ingst	Unk	2		
2066i	33 y M	methamphetamine	1	1						
		hydrocodone	2	2						
		amphetamine	3	3						
2067ai	33 y M	methamphetamine	1	1	U	Unk	Unk	2		
2071ai	33 y F	cocaine	1	1						
		heroin	1	1						
		methamphetamine	2	2						
2068ai	33 y M	alprazolam	3	3						
2070ai	33 y M	heroin	1	1	U	Unk	Int-A	2		
2069ai	33 y F	heroin	1	1						
		methadone	2	2						
		methamphetamine	3	3						
2072pha	34 y M	heroin	1	1	U	Unk	Int-A	1		
2073pha	34 y M	cocaine	1	1	A	Ingst	Int-S	2	benzoylecognine	1161 ng/mL In Blood (unspecified) ⓐ Autopsy
		morphine	2	2					morphine	21.4 ng/mL In Blood (unspecified) ⓐ Autopsy
		buprenorphine/naloxone (sublingual film)	3	3						
2074ai	34 y M	heroin	1	1	A	Par	Int-A	1		
2075ai	34 y M	amphetamine	1	1						
		acetaminophen/opioid	2	2						
2076ai	34 y F	heroin	1	1						
		oxycodone	2	2						
		methamphetamine	3	3						
2077ai	34 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		morphine	3	3						
2079ai	34 y M	heroin	1	1						
		methamphetamine	2	2						
		alprazolam	3	3						
2078ai	34 y F	oxycodone	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		morphine	3	3						
2080ai	34 y M	oxycodone	1	1						
		heroin	2	2						
2082ai	34 y M	cocaine	1	1						
		narcotic, other/unknown	2	2						
2083ai	34 y F	heroin	1	1						
		alprazolam	2	2						
		clonazepam	3	3						
2081ai	34 y M	heroin	1	1						
		amphetamine	2	2						
		temazepam	3	3						
2085ai	34 y M	heroin	1	1						
		codeine	2	2						
		ethanol	3	3						
2084ai	34 y F	heroin	1	1	U	Ingst + Unk	Int-A	1		
		methamphetamine	2	2						
2086ai	34 y M	ethanol	1	1						
		methamphetamine	2	2						
2087ai	34 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		heroin	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
2088pha	35 y M	amphetamine	1	1	A	Par + Unk	Int-A	2		
		benzodiazepine	2	2						
2089h	35 y M	amphetamine (hallucinogenic)	1	1	U	Ingst	Int-S	2		
		cocaine	2	2						
		heroin	3	3						
2090ph	35 y F	heroin	1	1	A	Par	Int-A	2		
2091pha	35 y F	THC homolog	1	1	U	Inhal + Unk	Int-A	2		
		oxycodone	2	2					oxycodone	37 ng/mL In Blood (unspecified) ⓐ Autopsy
2092p	35 y F	cocaine	1	1	U	Unk	Int-S	2		
		amphetamine	2	2						
2095ai	35 y F	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
2096ai	35 y M	heroin	1	1	U	Unk	Int-A	1		
		ethanol	2	2						
2094ai	35 y M	heroin	1	1	U	Unk	Int-A	1		
2093ai	35 y M	heroin	1	1	U	Unk	Int-A	1		
		codeine	2	2						
		methamphetamine	3	3						
2097ai	35 y F	methamphetamine	1	1	U	Unk	Int-A	2		
		ethanol	2	2						
2098ha	35 y M	heroin	1	1	U	Ingst + Unk	Unk	1	6-mam (6-monoacetylmorphine) morphine	1 ng/mL In Blood (unspecified) ⓐ Unknown 160 ng/mL In Blood (unspecified) ⓐ Unknown
		heroin	1	1						
		methamphetamine	2	2						
		nitrites	3	3						
		choline bitartate	4	4						
		diphenhydramine	5	5						
2099h	35 y M	heroin	1	1	U	Ingst	Unt-U	2		
		benzodiazepine	2	2						
2100p	35 y M	heroin	1	1	U	Par	Int-A	2		
2101h	35 y M	methamphetamine	1	1	A	Ingst	Int-U	1		
2103ai	35 y F	heroin	1	1	U	Unk	Int-A	1		
		hydrocodone	2	2						
		methadone	3	3						
2102ai	35 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		sodium nitrate	3	3						
2105ai	35 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		ethanol	2	2						
2104ai	35 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		heroin	2	2						
		oxycodone	3	3						
2106ai	35 y M	THC homolog, 5F-ADB	1	1	U	Unk	Int-A	2		
2108ai	36 y M	heroin	1	1	U	Ingst + Unk	Int-A	2		
		cocaine	2	2						
		ethanol	3	3						
2107ai	36 y M	heroin	1	1	U	Unk	Int-A	2		
		codeine	2	2						
		amphetamine	3	3						
2110ai	36 y M	methamphetamine	1	1	U	Unk	Int-S	1		
		bupropion	2	2						
		benztropine	3	3						
		buspirone	4	4						
2109ai	36 y M	methamphetamine	1	1	U	Unk	Int-A	3		
		amphetamine	2	2						
2111ai	36 y M	methamphetamine	1	1	U	Unk	Int-A	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
2112h	36 y M	amphetamine	3	3	A	Unk	Int-A	3		
2113ai	36 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2114ai	36 y M	amphetamine methadone	1 2	1 2	U	Unk	Int-A	1		
2115ai	36 y F	cocaine narcotic, other/unknown	1 2	1 2	U	Unk	Int-A	1		
2116ai	36 y M	heroin methamphetamine	1 2	1 2	U	Unk	Int-A	2		
2117ai	36 y F	heroin methamphetamine	1 2	1 2	U	Unk	Int-S	1		
2123ai	36 y M	heroin methamphetamine cyclobenzaprine	1 2 3	1 2 3	U	Unk	Int-A	2		
2125ai	36 y M	methamphetamine ethanol	1 2	1 2	U	Unk	Int-A	2		
2122ai	36 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2124ai	36 y M	methamphetamine benzodiazepine	1 2	1 2	A/C	Unk	Int-A	1		
2120ai	36 y M	methamphetamine bupropion bentropine	1 2 3	1 2 3	U	Unk	Int-S	1		
2121ai	36 y M	methamphetamine ethanol	1 2	1 2	U	Ingst + Unk	Int-A	1		
2126ai	36 y M	methamphetamine ethanol	1 2	1 2	U	Ingst + Unk	Int-A	1		
2119ai	36 y M	methamphetamine	1	1	U	Unk	Int-A	3		
2118ai	36 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2127p	37 y M	methamphetamine	1	1	A	Inhal	Int-A	2		
2128pha	37 y F	heroin	1	1	A	Par + Unk	Int-A	1		
		heroin	1	1					morphine (free)	21 ng/mL In Blood (unspecified) ⓐ Autopsy
		fentanyl	2	2					fentanyl	2 ng/mL In Blood (unspecified) ⓐ Autopsy
		fentanyl	2	2					norfentanyl	2.1 ng/mL In Blood (unspecified) ⓐ Autopsy
		hydroxyzine	3	3					hydroxyzine	19 ng/mL In Blood (unspecified) ⓐ Autopsy
		nicotine	4	4						
		caffeine	5	5						
2129pai	37 y M	fentanyl analog (carfentanil) oxycodone	1 2	1 2	A	Ingst + Par	Int-A	1		
									oxycodone	0.019 mg/L In Blood (unspecified) ⓐ Autopsy
2130pha	37 y M	cocaine marijuana	1 2	1 2	A	Ingst	Int-S	3		
[2131ha]	37 y M	cocaine	1	1	A/C	Rec	Int-M	1		
		cocaine	1	1					cocaine	2.001 mg/L In Blood (unspecified) ⓐ Autopsy
									benzoylcognine	4.001 mg/L In Blood (unspecified) ⓐ Autopsy
2132h	37 y M	methamphetamine	1	1	U	Ingst + Unk	Int-A	2		
2133pa	37 y F	fentanyl analog (carfentanil) fentanyl oxycodone hydrocodone clonazepam	1 2 3 4 5	1 2 3 4 5	A	Ingst + Par	Int-U	1		
									fentanyl	0.8 ng/mL In Blood (unspecified) ⓐ Autopsy
									oxycodone	0.026 mg/L In Blood (unspecified) ⓐ Autopsy
									hydrocodone	0.02 mg/L In Blood (unspecified) ⓐ Autopsy
									7-aminoclonazepam	0.01 mg/L In Blood (unspecified) ⓐ Autopsy
2134pai	37 y F	heroin	1	1	A	Par	Int-A	1		
		heroin	1	1					morphine	398 ng/mL In Blood (unspecified) ⓐ Unknown
									codeine	48 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
2135ha	37 y M	cocaine	2	2	U	Unk	Unk	1	benzoylecognine	2381 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	2	2					cocaine	25 ng/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					morphine (free)	32 ng/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	62 mg/dL In Blood (unspecified) @ Unknown
2136pa	37 y M	amitriptyline	3	3	A	Par	Int-A	1	amitriptyline	270 ng/mL In Blood (unspecified) @ Unknown
		heroin	1	1					norfentanyl	0.63 ng/mL In Blood (unspecified) @ Unknown
		heroin	1	1					morphine (free)	12 ng/mL In Blood (unspecified) @ Unknown
		heroin	1	1					fentanyl	4.8 ng/mL In Blood (unspecified) @ Unknown
		heroin	1	1					codeine (free)	69 ng/mL In Blood (unspecified) @ Unknown
		marijuana	2	2					11-oh-thc (11-hydroxy-delta-9-tetrahydrocannabinol)	3.7 ng/mL In Blood (unspecified) @ Unknown
		marijuana	2	2					delta-9-thc	5.2 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	3	3					alprazolam	17 ng/mL In Blood (unspecified) @ Unknown
2137ai	37 y F	cocaine	1	1	U	Unk	Int-A	1		
		tramadol	2	2						
		ethanol	3	3						
2139ai	37 y M	heroin	1	1	U	Unk	Int-A	1		
2138ai	37 y F	heroin	1	1	U	Unk	Int-A	1		
		codeine	2	2						
		methamphetamine	3	3						
2140ai	37 y M	heroin	1	1	U	Unk	Int-A	1		
		methadone	2	2						
		methamphetamine	3	3						
[2141ha]	37 y M	methamphetamine	1	1	U	Ingst	Int-M	1	methamphetamine	4600 ng/mL In Blood (unspecified) @ 4 h (pe)
2142pha	37 y F	methamphetamine	1	1	U	Unk	Int-A	2	methamphetamine	1100 ng/mL In Blood (unspecified) @ 30 m (pe)
		methamphetamine	1	1					amphetamine	65 ng/mL In Blood (unspecified) @ 30 m (pe)
2143h	37 y M	amphetamine (hallucinogenic)	1	1	U	Ingst	Int-S	2		
		lysergic acid diethylamide (LSD)	2	2						
		mushroom (unknown)	3	3						
2144ai	37 y M	cocaine	1	1	U	Unk	Int-A	1		
		hydromorphone	2	2						
2145ai	37 y F	cocaine	1	1	U	Unk	Int-A	1		
		oxycodone	2	2						
2146ai	37 y M	cocaine	1	1	U	Unk	Int-A	1		
		fentanyl	2	2						
		ethanol	3	3						
2147ai	37 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
2148ai	37 y M	heroin	1	1	U	Unk	Int-A	1		
		fentanyl	2	2						
		methamphetamine	3	3						
2152ai	37 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2153ai	37 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2157ai	37 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		diphenhydramine	2	2						
2151ai	37 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2156ai	37 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		ethanol	2	2						
2150ai	37 y M	methamphetamine	1	1	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
2154ai	37 y M				U	Unk	Int-A	2		
2158i	37 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2155ai	37 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2149ai	37 y F	methamphetamine	1	1	U	Unk	Int-A	1		
2159pa	38 y M	methamphetamine	1	1	A	Unk	Int-A	1	morphine (free)	88 mcg/L In Blood (unspecified) ⓐ Autopsy
		bupropion	2	2						
		heroin	1	1						
2160p	38 y M	doxylamine	2	2	A	Par	Int-A	2	doxylamine	0.05 mg/L In Blood (unspecified) ⓐ Autopsy
		heroin	1	1						
2161h	38 y F	heroin	1	1	A	Ingst	Int-A	1		
2162pa	38 y M	methamphetamine	1	1	A	Unk	Int-A	1	morphine (free)	680 mg/L In Blood (unspecified) ⓐ Autopsy
		heroin	1	1						
2163ph	38 y M	cocaine	1	1	U	Unk	Unk	2		
		narcotic, other/unknown	2	2						
		methamphetamine	3	3						
		marijuana	4	4						
		benzodiazepine	5	5						
2164ai	38 y M	methamphetamine	1	1	U	Ingst + Unk	Int-A	1		
		ethanol	2	2						
		amphetamine	3	3						
2165ph	38 y M	heroin	1	1	A/C	Par	Int-A	3		
2166ph	38 y F	heroin	1	1	A/C	Inhal	Int-A	1		
		methamphetamine	1	1						
		amphetamine	2	2						
		cocaine	3	3						
		fentanyl	4	4						
		morphine	5	5						
		oxycodone	6	6						
		marijuana	7	7						
ethanol	8	8								
2167ai	38 y M	ethanol			U	Unk	Int-A	1	ethanol	74 mg/dL In Blood (unspecified) ⓐ Unknown
		cocaine	1	1						
		fentanyl	2	2						
2169ai	38 y M	oxycodone	3	3	U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2168ai	38 y M	alprazolam	3	3	U	Unk	Int-A	3		
		heroin	1	1						
		methamphetamine	1	1						
2173ai	38 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2171ai	38 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		ethanol	2	2						
2170ai	38 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		methamphetamine	1	1						
2172ai	38 y M	methamphetamine	1	1	U	Ingst + Unk	Int-A	1		
		ethanol	2	2						
2174ai	38 y M	methamphetamine	1	1	A/C	Unk	Int-A	1		
2175pa	39 y F	methamphetamine	1	1	A	Par	Int-A	1	morphine (free)	260 mcg/L In Blood (unspecified) ⓐ Autopsy
		heroin	1	1						
		fentanyl analog (furanyl/fentanyl)	2	2						
		fentanyl analog (4-fluoroisobutyrfentanyl)	3	3						
		methadone	4	4						
		methadone	4	4						
		methadone	4	4						
		methadone	4	4						
		cocaine	5	5						
		cocaine	5	5						
dextromethorphan	6	6								
2176a	39 y M	methadone	4	4	A/C	Ingst	Int-S	2		
		amphetamine	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
2177p	39 y M	acetaminophen/oxycodone	3	3						
2178ai	39 y M	methamphetamine	1	1	U	Inhal	Int-A	2		
2179ai	39 y F	amphetamines methamphetamine benztropine	1 2 3	1 2 3	U	Unk	Int-A	2		
2180h	39 y M	heroin methamphetamine	1 2	1 2	U	Ingst + Par + Unk	Unk	2		
2181pa	39 y M	methamphetamine trazodone benztropine haloperidol bupropion succinylcholine oxcarbazepine prazosin	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	A	Par	Int-A	1	heroin fentanyl cocaine	11.1 ng/mL In Blood (unspecified) @ Autopsy 2.9 ng/mL In Blood (unspecified) @ Autopsy 1513 ng/mL In Blood (unspecified) @ Autopsy
2182ai	39 y M	heroin	1	1	U	Ingst + Unk	Int-A	1		
2184ai	39 y M	cocaine ethanol	1 2	1 2	U	Ingst + Unk	Int-A	1		
2183ai	39 y F	heroin ethanol	1 2	1 2	U	Unk	Int-A	1		
2185ai	39 y M	heroin methamphetamine methadone	1 2 3	1 2 3	U	Unk	Int-A	1		
2188ai	39 y F	heroin codeine	1 2	1 2	U	Unk	Int-A	1		
2187ai	39 y F	heroin oxycodone methamphetamine	1 2 3	1 2 3	U	Unk	Int-A	1		
2189ai	39 y F	heroin phentermine ethanol	1 2 3	1 2 3	U	Unk	Int-A	1		
2186ai	39 y F	heroin methamphetamine codeine	1 2 3	1 2 3	U	Unk	Int-A	1		
2191ai	39 y F	heroin methamphetamine lorazepam	1 2 3	1 2 3	U	Unk	Int-A	2		
2192ai	39 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2193ai	39 y M	methamphetamine ethanol	1 2	1 2	U	Unk	Int-A	1		
2190ai	39 y M	methamphetamine ethanol	1 2	1 2	U	Ingst + Unk	Int-A	1		
2196ai	39 y F	methamphetamine doxylamine	1 2	1 2	C	Unk	Int-A	3		
2194ai	39 y M	methamphetamine caffeine	1 2	1 2	U	Unk	Int-A	1		
2195ai	39 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2197ph	40 y F	heroin	1	1	A	Par	Int-A	1		
2202ai	40 y M	heroin ethanol	1 2	1 2	U	Unk	Int-A	1		
2198ai	40 y M	heroin oxycodone tramadol	1 2 3	1 2 3	U	Unk	Int-A	1		
2199ai	40 y M	heroin	1	1	U	Unk	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
2201ai	40 y M	codeine	2	2	U	Unk	Int-A	2		
		hydromorphone	3	3						
		heroin	1	1						
2200ai	40 y M	cocaine	2	2	U	Unk	Int-A	1		
		heroin	1	1						
		alprazolam	2	2						
2203ph	40 y F	ethanol	3	3	A	Ingst	Int-A	1		
		methamphetamine	1	1						
2204ai	40 y M				U	Ingst + Unk	Int-A	1		
		cocaine	1	1						
		zolpidem	2	2						
2205ai	40 y M	alcohol, unknown	3	3	U	Unk	Int-A	2		
		cocaine	1	1						
		gabapentin	2	2						
2206ai	40 y F	oxycodone	3	3	U	Unk	Int-A	2		
		cocaine	1	1						
		oxycodone	2	2						
2208ai	40 y F	gabapentin	3	3	U	Unk	Int-A	1		
		heroin	1	1						
		diazepam	2	2						
2207ai	40 y M	ethanol	3	3	U	Unk	Int-A	2		
		heroin	1	1						
		oxycodone	2	2						
2211ai	40 y M	tramadol	3	3	U	Unk	Int-A	3		
		methamphetamine	1	1						
2210ai	40 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2209ai	40 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2212ai	40 y F				U	Unk	Int-A	2		
		methamphetamine	1	1						
		narcotic, other/unknown	2	2						
2213a	41 y F				U	Inhal + Unk	Int-A	2		
		methamphetamine	2	1						
		morphine	1	1						
		cocaine	3	3						
2215ai	41 y M	alprazolam	4	4	U	Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
		isopropanol	3	3						
2214ai	41 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2216ai	41 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		heroin	2	2						
2217ai	41 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		oxycodone	2	2						
2218pa	42 y M				A/C	Ingst + Par	Int-A	1	morphine (total)	0.055 mg/L In Blood (unspecified) @ Autopsy
		heroin	1	1						
		cocaine	2	2						
		alprazolam	3	3						
		fentanyl	4	4						
		fentanyl	4	4						
2219i	42 y F				U	Unk	Int-A	1		
		cocaine	1	1						
		oxycodone	2	2						
2220ai	42 y M	cyclobenzaprine	3	3	U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2221ai	42 y F	alprazolam	3	3	U	Unk	Int-S	1		
		methamphetamine	1	1						
		clonidine	2	2						
2222ai	42 y M	citalopram	3	3	U	Unk	Int-A	2		
		methamphetamine	1	1						
		amphetamine	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
2223ai	42 y F				U	Unk	Int-A	2		
2227ai	42 y M	amphetamine	1	1	U	Unk	Int-A	2		
2224ai	42 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2229ai	42 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2228ai	42 y M	methamphetamine heroin	1 2	1 2	U	Unk	Int-A	3		
2230ai	42 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2225ai	42 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2226ai	42 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2231ha	43 y M	methamphetamine ethanol	1 2	1 2	U	Unk	Int-U	3		
2232pa	43 y M	methamphetamine oxycodone	1 2	1 1	A	Ingst	Int-S	1		
		amphetamine	1	1						
		barbiturate (long acting)	2	2					phenobarbital	0.841 mg/L In Whole Blood @ Autopsy
		oxycodone	3	3					oxycodone	1.033 mg/L In Whole Blood @ Autopsy
		acetaminophen	4	4					acetaminophen (apap)	153 mg/L In Whole Blood @ Autopsy
		acetaminophen	4	4					acetaminophen (apap)	194 mcg/mL In Whole Blood @ Unknown
		clonazepam	5	5					clonazepam	0.011 mg/L In Whole Blood @ Autopsy
		carbamazepine	6	6					carbamazepine	36.8 mg/L In Whole Blood @ Autopsy
		gabapentin	7	7					gabapentin	178 mg/L In Whole Blood @ Autopsy
		diphenhydramine	8	8					diphenhydramine	6.193 mg/L In Whole Blood @ Autopsy
		amlodipine	9	9					amlodipine	0.145 mg/L In Whole Blood @ Autopsy
		paroxetine	10	10					paroxetine	1.49 mg/L In Whole Blood @ Autopsy
2233h	43 y M	phencyclidine	1	1	U	Ingst + Inhal	Int-A	2		
		methylenedioxy-methamphetamine (MDMA)	2	2						
		THC homolog	3	3						
2234pa	43 y F	marijuana	4	4	A	Unk	Int-A	1		
		heroin	1	1						
		fentanyl	2	2					codeine	0.018 mg/L In Serum @ Unknown
		ethanol	3	3					morphine	0.21 mg/L In Serum @ Unknown
		ethanol	3	3					ethanol	125 mg/dL In Serum @ Unknown
		ethanol	3	3					fentanyl	2.1 mcg/L In Serum @ Unknown
2235ai	43 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		codeine	3	3						
2236ai	43 y F	heroin	1	1	U	Ingst + Unk	Int-A	1		
		ethanol	2	2						
2237ai	43 y M	heroin	1	1	U	Unk	Int-A	1		
		olanzapine	2	2						
		sertraline	3	3						
2238ai	43 y F	methamphetamine	1	1	U	Unk	Int-A	2		
		cocaine	2	2						
2239ai	43 y M	amphetamine	1	1	U	Unk	Int-A	2		
2240ai	43 y F	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		ethanol	3	3						
2241ai	43 y F	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		gabapentin	3	3						
2243ai	43 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		cocaine	2	2						
2245ai	43 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2244ai	43 y F	methamphetamine	1	1	U	Unk	Int-A	2		
2242ai	43 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2246ai	43 y F	methamphetamine	1	1	U	Unk	Int-A	1		
		diphenhydramine	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
2248ai	43 y M				U	Unk	Int-A	2		
2249ai	43 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2250ai	43 y M	methamphetamine	1	1	U	Unk	Int-A	3		
2247ai	43 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2251ai	43 y F	methamphetamine	1	1	U	Unk	Int-A	1		
2252ph	44 y M	heroin	1	1	A	Unk	Int-A	2		
2254ai	44 y M	THC homolog	1	1	U	Unk	Int-A	1		
		heroin	1	1						
		codeine	2	2						
2253ai	44 y M				U	Unk	Int-A	1		
		heroin	1	1						
		codeine	2	2						
		amphetamine	3	3						
2256ai	44 y F				U	Unk	Int-A	1		
		methamphetamine	1	1						
		diazepam	2	2						
		ethanol	3	3						
2255ai	44 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
		cocaine	2	2						
2257h	44 y M				A	Ingst	Int-U	3		
		capsicum/caffeine	1	1						
2258	44 y M				U	Ingst	Int-M	2		
		methamphetamine	1	1						
2260ai	44 y F				U	Unk	Int-A	1		
		cocaine	1	1						
		levamisole	2	2						
2259ai	44 y M				U	Unk	Int-A	1		
		cocaine	1	1						
		ethanol	2	2						
2262ai	44 y M				U	Unk	Int-A	2		
		heroin	1	1						
		mitragyna	2	2						
		oxycodone	3	3						
2261ai	44 y M				U	Unk	Int-A	1		
		heroin	1	1						
		diazepam	2	2						
		ethanol	3	3						
2263ai	44 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2264ai	44 y M				U	Ingst + Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
2265ai	44 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2267ai	44 y M				U	Unk	Int-M	1		
		methamphetamine	1	1						
2266ai	44 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
		benzodiazepine	3	3						
2268a	45 y M				U	Unk	Int-A	1		
		methamphetamine	1	1					methamphetamine	251 ng/mL In Blood (unspecified) ⓐ Unknown
		acetaminophen/hydrocodone	2	2					hydrocodone	12.5 ng/mL In Blood (unspecified) ⓐ Unknown
		amphetamine (hallucinogenic), alpha-PDP	3	3						
2269pai	45 y M				A/C	Inhal + Par	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
2271ai	45 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
2270ai	45 y M				U	Unk	Int-A	1		
		methamphetamine	1	1						
2273ai	45 y F				U	Unk	Int-A	1		
		cocaine	1	1						
		methamphetamine	2	2						
2272ai	45 y M				U	Unk	Int-A	1		
		cocaine	1	1						
2274ai	45 y M				U	Unk	Int-A	2		
		heroin	1	1						
		benzodiazepine	2	2						
2279ai	45 y M				U	Unk	Int-A	2		
		methamphetamine	1	1						
		amphetamine	2	2						
		benztropine	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
2276ai	45 y M				U	Unk	Int-A	2		
2275ai	45 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2277ai	45 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2280ai	45 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2278ai	45 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2281h	46 y F	methamphetamine	1	1	A/C	Ingst + Par	Int-A	3		
		cocaine	2	2						
		ethanol	3	3						
2283ai	46 y M	heroin	1	1	U	Unk	Int-A	1		
		buprenorphine	2	2						
		heroin	1	1						
2282ai	46 y M	codeine	2	2	U	Unk	Int-A	1		
		methamphetamine	3	3						
		heroin	1	1						
2284ai	46 y F	methamphetamine	1	1	U	Unk	Int-A	1		
		amphetamine	2	2						
2285ai	46 y M	methamphetamine	1	1	U	Inhal + Unk	Int-A	1		
		hydrocarbon (fluorinated)	2	2						
		amphetamine	3	3						
2286a	46 y M	cocaine	1	1	A/C	Ingst	Int-U	3	benzoylecognine	0.25 mg/L In Blood (unspecified) @ Unknown
		ethanol	2	2						
		metoprolol	3	3						
2287ai	46 y M	heroin	1	1	U	Ingst + Unk	Int-A	1		
		chlordiazepoxide	2	2						
		ethanol	3	3						
2288ai	46 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		codeine	3	3						
2294ai	46 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2293ai	46 y F	methamphetamine	1	1	U	Unk	Int-A	2		
2300ai	46 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2290ai	46 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2298ai	46 y M	methamphetamine	1	1	U	Ingst + Unk	Int-A	2		
		ethanol	2	2						
2299ai	46 y F	methamphetamine	1	1	U	Unk	Int-A	2		
		methamphetamine	1	1						
		amitriptyline	2	2						
2297ai	46 y F	diphenhydramine	3	3	U	Unk	Int-A	3		
		methamphetamine	1	1						
		fluoxetine	2	2						
2295ai	46 y F	methamphetamine	1	1	U	Unk	Int-A	2		
2289ai	46 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2291ai	46 y F	methamphetamine	1	1	U	Unk	Int-A	1		
2292ai	46 y F	methamphetamine	1	1	U	Unk	Int-A	2		
		heroin	2	2						
		fentanyl	3	3						
2301ai	46 y F	methamphetamine	1	1	U	Unk	Int-A	3		
		amphetamine	2	2						
		naproxen	3	3						
2302ph	47 y M	heroin	1	1	A	Unk	Int-A	2		
2303ph	47 y M	heroin	1	1	U	Par	Int-A	2		
2304pha	47 y F	heroin	1	1	U	Unk	Int-U	2	methamphetamine	0.19 mg/L In Blood (unspecified) @ Unknown
		methamphetamine	1	1						
2305ph	47 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	
2306ha	47 y F	heroin	1	1	U	Unk	Int-S	2			
		heroin	1	1						morphine	11 ng/mL In Blood (unspecified) ⓐ Unknown
		methamphetamine	2	2						methamphetamine	200 ng/mL In Blood (unspecified) ⓐ Unknown
2307ai	47 y M			U	Unk	Int-A	1				
2309ai	47 y M	cocaine	1	1	U	Unk	Int-A	1			
2308ai	47 y M	cocaine	1	1	U	Ingst + Unk	Int-A	1			
		cocaine	1	1							
		ethanol	2	2							
2311ai	47 y F	alprazolam	3	3	C	Unk	Int-A	2			
		methamphetamine	1	1							
		narcotic, other/unknown marijuana	2 3	2 3							
2310ai	47 y F	methamphetamine	1	1	U	Unk	Int-A	3			
		acetaminophen/opioid	2	2							
		THC homolog	3	3							
2313ai	47 y F	methamphetamine	1	1	U	Unk	Int-A	2			
		narcotic, other/unknown marijuana	2 3	2 3							
2312ai	47 y F	methamphetamine	1	1	U	Unk	Int-A	2			
		tramadol	2	2							
2314pa	47 y M	heroin	1	1	A	Unk	Int-A	1	morphine (free)	150 mcg/L In Blood (unspecified) ⓐ Autopsy	
		fentanyl	2	2					fentanyl	0.036 mg/L In Blood (unspecified) ⓐ Autopsy	
		oxycodone	3	3					oxycodone	0.05 mg/L In Blood (unspecified) ⓐ Autopsy	
		oxycodone	3	3					oxycodone	0.06 mg/L In Blood (unspecified) ⓐ Autopsy	
		ethanol	4	4					ethanol	0.05 % (wt/Vol) In Blood (unspecified) ⓐ Autopsy	
		ethanol	4	4					ethanol	0.07 % (wt/Vol) In Vitreous ⓐ Autopsy	
		ethanol	4	4					ethanol	0.09 % (wt/Vol) In Urine (quantitative only) ⓐ Autopsy	
2315pha	47 y M	cocaine	1	1	A	Inhal	Int-A	1	benzoylecognine	2684 ng/mL In Blood (unspecified) ⓐ Unknown	
		cocaine	1	1					cocaine	31 ng/mL In Blood (unspecified) ⓐ Unknown	
2316ai	47 y M			U	Unk	Int-A	1				
2320ai	47 y F	amphetamine	1	1	U	Unk	Int-A	2			
		methadone	2	2							
2319ai	47 y M	heroin	1	1	U	Unk	Int-A	2			
		methamphetamine	2	2							
		codeine	3	3							
2321ai	47 y M	heroin	1	1	U	Unk	Int-A	1			
		methamphetamine	2	2							
		gabapentin	3	3							
2322ai	47 y M	heroin	1	1	U	Unk	Int-A	1			
		fentanyl	2	2							
		oxycodone	3	3							
2318ai	47 y F	heroin	1	1	U	Unk	Int-A	1			
		methamphetamine	2	2							
		oxycodone	3	3							
2317ai	47 y F	heroin	1	1	U	Unk	Int-A	1			
		methamphetamine	2	2							
2327ai	47 y M	methamphetamine	1	1	U	Ingst + Unk	Int-A	1			
		ethanol	2	2							
2326ai	47 y M	methamphetamine	1	1	U	Unk	Int-A	3			
		ethanol	2	2							
2323ai	47 y M			U	Unk	Int-A	2				
2324ai	47 y F			U	Unk	Int-A	2				
2325ai	47 y F			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
2328pha	48 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		alprazolam	2	2						
		cocaine	1	1						
2329ai	48 y F			U	Unk	Int-A	2			
2330ai	48 y M	methamphetamine	1	1	A	Ingst + Unk	Int-A	3		
		isopropanol	2	2						
2331ai	48 y F	cocaine	1	1	U	Unk	Int-A	1		
		ethanol	2	2						
2332ai	48 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		fluoxetine	3	3						
2336ai	48 y F	heroin	1	1	U	Unk	Int-A	1		
		ethanol	2	2						
2335ai	48 y M	heroin	1	1	A/C	Unk	Int-A	2		
		methamphetamine	2	2						
		ethanol	3	3						
2333ai	48 y M	heroin	1	1	U	Unk	Int-A	1		
2334ai	48 y M	heroin	1	1	U	Unk	Int-A	2		
2339ai	48 y F	heroin	1	1	U	Unk	Int-A	3		
2337ai	48 y M	methamphetamine	1	1	A	Ingst + Unk	Int-A	3		
2338ai	48 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		ethanol	2	2						
2340ai	48 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2341pha	49 y F	methamphetamine	1	1	A	Inhal	Int-A	1		
		ethanol	2	2						
		cocaine	1	1						
		cocaine	1	1					benzoylecognine	2.1 mg/L In Blood (unspecified) @ Autopsy
2342ph	49 y F	heroin	1	1	A	Par + Rec	Int-A	2		
2343ph	49 y M	heroin	1	1	A	Par + Unk	Int-U	2		
2345ai	49 y M	heroin	1	1	U	Unk	Int-A	1		
		fentanyl	2	2						
		benzodiazepine	3	3						
		marijuana	4	4						
2346ai	49 y M	heroin	1	1	U	Unk	Int-A	1		
		fentanyl	2	2						
		pramoxine	3	3						
2344ai	49 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
2347ai	49 y M	heroin	1	1	U	Unk	Int-A	2		
		morphine	2	2						
		amphetamine	3	3						
2349ai	49 y F	methamphetamine	1	1	U	Unk	Int-S	1		
		carbon monoxide	2	2						
		cyclobenzaprine	3	3						
2348ai	49 y M	heroin	1	1	U	Unk	Int-A	2		
		methamphetamine	2	2						
2352ai	49 y M	heroin	1	1	U	Unk	Int-A	2		
		methamphetamine	2	2						
		diazepam	3	3						
2353ai	49 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2351ai	49 y M	methamphetamine	1	1	U	Ingst + Unk	Int-A	1		
		ethanol	2	2						
2350ai	49 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2354pha	50 y M	methamphetamine	1	1	U	Unk	Unk	1		
		amphetamine	2	2						
2357ai	50 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
2355ai	50 y F	methamphetamine	1	1	U	Unk	Int-A	2		
		diphenhydramine	2	2						
		amphetamine	3	3						
2356ai	50 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		amphetamine	2	2						
		cyclobenzaprine	3	3						
2358ph	50 y F	methamphetamine	1	1	A	Ingst + Unk	Int-S	2		
		cocaine	1	1						
		duloxetine	2	2						
2359ai	50 y M	gabapentin	3	3	U	Unk	Int-A	2		
		cocaine	1	1						
		methamphetamine	2	2						
2360ai	50 y M	ethanol	3	3	U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
2361ai	50 y F	methamphetamine	1	1	U	Unk	Int-A	2		
		phenylpropanolamine	2	2						
2362ai	50 y F	methamphetamine	1	1	C	Unk	Int-A	2		
		methamphetamine	1	1						
2370ai	50 y F	methamphetamine	1	1	U	Unk	Int-M	2		
		gabapentin	2	2						
		fluoxetine	3	3						
2371ai	50 y M	methamphetamine	1	1	U	Unk	Int-A	3		
		methamphetamine	1	1						
2363ai	50 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		bupropion	2	2						
2364ai	50 y F	methamphetamine	1	1	U	Unk	Int-A	2		
		methamphetamine	1	1						
2365ai	50 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		methamphetamine	1	1						
2367ai	50 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		methamphetamine	1	1						
2366ai	50 y M	methamphetamine	1	1	C	Unk	Int-A	3		
		methamphetamine	1	1						
2368ai	50 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		methamphetamine	1	1						
2372ai	50 y F	methamphetamine	1	1	U	Unk	Int-A	2		
		hydrocodone	2	2						
		hydromorphone	3	3						
2369ai	50 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		methamphetamine	1	1						
2373ph	50 y M	heroin	1	1	A	Unk	Int-A	2		
		heroin	1	1						
2374ai	51 y F	methamphetamine	1	1	U	Unk	Int-A	2		
		nortriptyline	2	2						
2376ai	51 y F	cocaine	1	1	U	Unk	Int-A	1		
		oxycodone	2	2						
		cyclobenzaprine	3	3						
2375ai	51 y M	cocaine	1	1	U	Unk	Int-A	1		
		ethanol	2	2						
		fentanyl	3	3						
2379ai	51 y F	heroin	1	1	U	Unk	Int-A	1		
		methadone	2	2						
		methamphetamine	3	3						
		nortriptyline	4	4						
2378ai	51 y M	heroin	1	1	U	Unk	Int-A	1		
		codeine	2	2						
2377ai	51 y M	heroin	1	1	U	Unk	Int-A	2		
		methamphetamine	2	2						
		hydromorphone	3	3						
2386ai	51 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		oxycodone	2	2						
2384ai	51 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		methamphetamine	1	1						
2381ai	51 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		methamphetamine	1	1						
2385ai	51 y F	methamphetamine	1	1	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
2380ai	51 y M	methamphetamine quetiapine hydrocodone	1 2 3	1 2 3	U	Unk	Int-A	2		
2383ai	51 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2382ai	51 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2387ph	52 y M	cocaine	1	1	U	Unk	Int-A	2	benzoylecognine	626 ng/mL In Blood (unspecified) @ Unknown
2388ha	52 y F	narcotic, other/unknown heroin fentanyl codeine	2 1 2 3	2 1 2 3	A	Unk	Unk	3	fentanyl codeine	3.1 mcg/mL In Whole Blood @ Autopsy 0.25 mg/L In Whole Blood @ Autopsy
2389ai	52 y M	cocaine ethanol zolpidem	1 2 3	1 2 3	U	Ingst + Unk	Int-A	2		
2392ai	52 y F	methamphetamine amphetamine diltiazem	1 2 3	1 2 3	U	Ingst + Unk	Int-A	1		
2393ai	52 y M	methamphetamine ethanol	1 2	1 2	U	Unk	Int-A	3		
2391ii	52 y F	methamphetamine amphetamine	1 2	1 2	U	Unk	Int-A	1		
2390ai	52 y F	methamphetamine ethanol oxycodone	1 2 3	1 2 3	U	Unk	Int-A	3		
2394ai	52 y F	methamphetamine amphetamine tramadol	1 2 3	1 2 3	U	Unk	Int-A	1		
2395ai	52 y M	heroin methamphetamine oxycodone	1 2 3	1 2 3	U	Unk	Int-A	1		
2396ai	52 y M	cocaine ethanol	1 2	1 2	U	Ingst + Unk	Int-A	2		
2398ai	52 y M	heroin methamphetamine	1 2	1 2	U	Unk	Int-A	1		
2397ai	52 y M	heroin methamphetamine	1 2	1 2	U	Unk	Int-A	3		
2399ai	52 y M	heroin methamphetamine ethanol	1 2 3	1 2 3	U	Unk	Int-A	1		
2401ai	52 y F	methamphetamine oxycodone diazepam	1 2 3	1 2 3	U	Unk	Int-A	1		
2406ai	52 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2400ai	52 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2404ai	52 y M	methamphetamine ethanol diphenhydramine	1 2 3	1 2 3	U	Ingst + Unk	Int-A	1		
2402ai	52 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2403ai	52 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2405ai	52 y M	methamphetamine ethanol	1 2	1 2	U	Unk	Int-A	1		
2407ai	52 y M	methamphetamine ethanol	1 2	1 2	U	Ingst + Unk	Int-A	2		
2409ai	53 y M	amphetamine methamphetamine	1 2	1 2	U	Unk	Int-A	3		
2408ai	53 y F	amphetamine	1	1	U	Unk	Int-A	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
2410ai	53 y F	methamphetamine	2	2	U	Unk	Int-A	1		
		heroin	1	1						
2411ai	53 y F	methamphetamine	2	2	U	Unk	Int-A	1		
		heroin	1	1						
		methamphetamine	2	2						
		amphetamine	3	3						
2412ai	53 y M	heroin	1	1	U	Ingst + Unk	Int-A	1		
		bupropion	2	2						
		ethanol	3	3						
2413ai	53 y F	methamphetamine	1	1	U	Unk	Int-A	2		
		amphetamine	2	2						
		dextromethorphan	3	3						
2414ph	53 y M	cocaine	1	1	U	Ingst + Unk	Int-A	3		
		methylenedioxy-methamphetamine (MDMA)	2	2						
		methamphetamine	3	3						
		lysergic acid diethylamide (LSD)	4	4						
		alcohol, unknown	5	5						
		marijuana	6	6						
2415i	53 y F	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		cocaine	3	3						
2416ai	53 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2419ai	53 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2418ai	53 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2417ai	53 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		gabapentin	2	2						
2420p	53 y M	heroin	1	1	A	Ingst + Unk	Int-A	2		
		ethanol	2	2					ethanol	269 mg/dL In Blood (unspecified) @ Unknown
2421ph	54 y F	heroin	1	1	U	Par	Int-A	1		
2422ph	54 y F	heroin	1	1	A/C	Ingst	Unt-M	2		
		acetaminophen/codeine	2	2						
		zolpidem (extended release)	3	3						
		alprazolam	4	4						
		tramadol	5	5						
2423h	54 y M	methamphetamine	1	1	U	Ingst	Int-A	2		
		amphetamine (hallucinogenic)	2	2						
2424pha	54 y M	heroin	1	1	A	Par	Int-A	1		
		fentanyl	2	2					fentanyl	6.4 ng/mL In Blood (unspecified) @ 30 m (pe)
		methamphetamine	3	3						
2425ai	54 y M	heroin	1	1	U	Unk	Int-A	1		
		ethanol	2	2						
		hydrocodone	3	3						
2426a	54 y M	methamphetamine	1	1	C	Unk	Int-U	1		
2427p	54 y F	methylenedioxy-methamphetamine (MDMA)	1	1	A	Ingst	Int-S	3		
2428ai	54 y M	methamphetamine	1	1	U	Unk	Int-A	3		
2429ai	54 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2430ai	54 y F	methamphetamine	1	1	U	Ingst + Unk	Int-A	2		
		cocaine	1	1						
		ethanol	2	2						
2431ai	54 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		diazepam	3	3						
2432ai	54 y M	heroin	1	1	U	Unk	Int-A	1		
		alprazolam	2	2						
		codeine	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
2433ai	54 y M	heroin	1	1	A/C	Unk	Int-A	1		
		methadone	2	2						
		baclofen	3	3						
2435ai	54 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2438ai	54 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		methamphetamine	1	1						
2437ai	54 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		methamphetamine	1	1						
		heroin	2	2						
2436ai	54 y M	cocaine	3	3	U	Unk	Int-A	1		
		methamphetamine	1	1						
		methamphetamine	1	1						
2434ai	54 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2444ai	54 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		methamphetamine	1	1						
2445ai	54 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		ethanol	2	2						
2442ai	54 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		methamphetamine	1	1						
2443ai	54 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		methamphetamine	1	1						
2441ai	54 y M	methamphetamine	1	1	U	Ingst + Unk	Int-A	2		
		ethanol	2	2						
2439ai	54 y F	methamphetamine	1	1	U	Unk	Int-A	2		
		nalmexone	2	2						
2440ai	54 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		ethanol	2	2						
2446h	54 y M	methamphetamine	1	1	A	Ingst	Int-S	2		
2447ai	54 y F	methamphetamine	1	1	C	Unk	Int-A	3		
		methamphetamine	1	1						
2448ai	55 y M	amphetamine	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		diphenhydramine	3	3						
2450ai	55 y M	amphetamine	1	1	U	Unk	Int-A	2		
		methamphetamine	2	2						
		hydroxyzine	3	3						
2449ai	55 y M	amphetamine	1	1	U	Unk	Int-A	2		
		methamphetamine	2	2						
2451ai	55 y M	cocaine	1	1	U	Unk	Int-A	1		
		cocaine	1	1						
2452ai	55 y F	cocaine	1	1	U	Ingst + Unk	Int-A	2		
		methamphetamine	2	2						
		fluoxetine	3	3						
2453i	55 y F	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		oxycodone	3	3						
2454i	55 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		heroin	2	2						
2456ai	55 y F	methamphetamine	1	1	U	Unk	Int-A	1		
		carbamazepine	2	2						
2455ai	55 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		amphetamine	2	2						
		phenylpropranolamine	3	3						
2457ai	55 y M	cocaine	1	1	U	Unk	Int-A	3		
		cocaine	1	1						
2458ai	55 y M	heroin	1	1	U	Unk	Int-A	2		
		methadone	2	2						
2459ai	55 y M	heroin	1	1	U	Unk	Int-A	1		
		heroin	1	1						
2463ai	55 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2460ai	55 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		methamphetamine	1	1						
2465ai	55 y M	methamphetamine	1	1	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
2462ai	55 y M				U	Unk	Int-A	2		
2461ai	55 y F	methamphetamine	1	1	A	Unk	Int-A	1		
2464ai	55 y M	methamphetamine heroin	1 2	1 2	U	Unk	Int-A	1		
2466ai	55 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2467ai	56 y M	methamphetamine ethanol	1 2	1 2	U	Unk	Int-A	2		
2468ai	56 y F	amphetamine methamphetamine	1 2	1 2	U	Unk	Int-A	2		
2469ph	56 y M	methamphetamine	1	1	A/C	Unk	Int-U	2		
2470ai	56 y M	heroin	1	1	U	Unk	Int-A	1		
2471ai	56 y M	cocaine	1	1	U	Unk	Int-A	1		
2472ai	56 y F	heroin diazepam	1 2	1 2	U	Unk	Int-A	3		
2473ai	56 y M	heroin methamphetamine	1 2	1 2	U	Unk	Int-A	1		
2477ai	56 y F	heroin methamphetamine alprazolam	1 2 3	1 2 3	U	Unk	Int-A	2		
2475ai	56 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2480ai	56 y M	methamphetamine	1	1	U	Unk	Int-A	3		
2481ai	56 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2478ai	56 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2482ai	56 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2483ai	56 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2484ai	56 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2485ai	56 y M	methamphetamine THC homolog	1 2	1 2	U	Unk	Int-A	2		
2476ai	56 y M	methamphetamine	1	1	U	Unk	Int-A	3		
2479ai	56 y M	methamphetamine cocaine	1 2	1 2	U	Unk	Int-A	2		
2474ai	56 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2486ai	56 y F	synthetic opiate	1	1	U	Unk	Int-A	1		
2487pi	57 y M	heroin ethanol	1 2	1 2	A	Par	Int-A	2	ethanol	160 mg/dL In Blood (unspecified) @ Autopsy
2488ai	57 y M	amphetamine methamphetamine	1 2	1 2	U	Unk	Int-A	3		
2489ai	57 y M	heroin methamphetamine trazodone	1 2 3	1 2 3	U	Unk	Int-A	1		
2490ai	57 y M	heroin methamphetamine amphetamine	1 2 3	1 2 3	U	Unk	Int-A	1		
2491ai	57 y M	heroin methamphetamine	1 2	1 2	U	Unk	Int-A	1		
2492h	57 y M	methamphetamine alprazolam duloxetine imipramine clonidine	1 2 3 4 5	1 2 3 4 5	A	Ingst+ Unk	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
		hydroxyzine	6	6						
		cyclobenzaprine	7	7						
		gabapentin	8	8						
		zolpidem	9	9						
		tamsulosin	10	10						
		meloxicam	11	11						
2493h	57 y M	THC homolog	1	1	A	Ingst	Int-A	2		
2494ai	57 y M	cocaine	1	1	U	Unk	Int-A	1		
2495ai	57 y M	heroin	1	1	U	Unk	Int-A	2		
		methadone	2	2						
		hydrocodone	3	3						
2496ai	57 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2499ai	57 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2498ai	57 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		heroin	2	2						
2500ai	57 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2501ai	57 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2497ai	57 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2502pai	58 y M	heroin	1	1	A	Inhal	Int-A	1	morphine (free)	130mcg/L In Serum @ Autopsy
		cocaine	2	2						
		ethanol	3	3					ethanol	0.2 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	0.21 % (wt/Vol) In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	0.21 % (wt/Vol) In Vitreous @ Autopsy
		ethanol	3	3					ethanol	0.27 % (wt/Vol) In Urine (quantitative only) @ Autopsy
2503pi	58 y F	cocaine	1	1	A	Par	Int-A	2		
		fentanyl	2	2						
2504ai	58 y M	cocaine	1	1	U	Unk	Int-A	1		
		phencyclidine	2	2						
2505ai	58 y M	amphetamine	1	1	U	Unk	Int-A	3		
		methamphetamine	2	2						
2506ai	58 y F	cocaine	1	1	U	Unk	Int-A	1		
		fentanyl	2	2						
		hydrocodone	3	3						
2508ai	58 y F	cocaine	1	1	U	Unk	Int-A	1		
		fentanyl	2	2						
		hydrocodone	3	3						
2507ai	58 y F	cocaine	1	1	U	Unk	Int-A	1		
		diphenhydramine	2	2						
		cyclobenzaprine	3	3						
2509ai	58 y F	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
2511ai	58 y M	methamphetamine	1	1	C	Unk	Int-A	3		
2510ai	58 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2512ai	58 y F	cocaine	1	1	U	Unk	Int-A	2		
2513ai	58 y F	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		codeine	3	3						
2514ai	58 y M	heroin	1	1	U	Unk	Int-A	1		
2515ai	58 y M	methamphetamine	1	1	U	Unk	Int-A	3		
2518ai	58 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2517ai	58 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		venlafaxine	2	2						
		doxepin	3	3						
2516ai	58 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2523ai	58 y M	methamphetamine	1	1	U	Unk	Int-A	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
2519ai	58 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2522ai	58 y M	methamphetamine	1	1	U	Unk	Int-A	3		
2520ai	58 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2521ai	58 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		oxycodone	2	2						
		codeine	3	3						
2524ai	59 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		heroin	1	1						
		alprazolam	2	2						
2525ai	59 y F	methamphetamine	1	1	U	Unk	Int-A	1		
		ethanol	2	2						
		citalopram	3	3						
2526pa	59 y F	heroin	1	1	A	Par	Int-A	1	morphine (free)	21 ng/mL In Blood (unspecified) ⓐ Unknown
		methamphetamine	2	2					methamphetamine	110 ng/mL In Blood (unspecified) ⓐ Unknown
		methamphetamine	2	2					amphetamine	26 ng/mL In Blood (unspecified) ⓐ Unknown
2528ai	59 y M	heroin	1	1	U	Unk	Int-A	1		
		codeine	2	2						
2527ai	59 y F	heroin	1	1	U	Unk	Int-A	2		
2533ai	59 y M	methamphetamine	1	1	U	Unk	Int-A	3		
2532ai	59 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		oxycodone	2	2						
2530ai	59 y M	methamphetamine	1	1	U	Ingst + Unk	Int-A	2		
		alcohol, unknown	2	2						
2531ai	59 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		fentanyl	2	2						
		hydromorphone	3	3						
2529ai	59 y M	methamphetamine	1	1	U	Ingst + Unk	Int-A	1		
		ethanol	2	2						
2534ai	60 y F	cocaine	1	1	U	Unk	Int-A	1		
		cyclobenzaprine	2	2						
		oxycodone	3	3						
2535ai	60 y F	heroin	1	1	U	Unk	Int-A	1		
		hydroxychloroquine	2	2						
		ethanol	3	3						
2536i	60 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2537ai	60 y F	methamphetamine	1	1	U	Unk	Int-A	2		
		ethanol	2	2						
2538ai	60 y M	heroin	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
		cyclobenzaprine	3	3						
2539ai	60 y M	heroin	1	1	U	Unk	Int-A	2		
		methamphetamine	2	2						
		cocaine	3	3						
2541ai	60 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2540ai	60 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		oxycodone	2	2						
2542ai	60 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		ethanol	2	2						
2544ai	61 y M	heroin	1	1	U	Unk	Int-A	1		
		sertraline	2	2						
		codeine	3	3						
2543ai	61 y M	heroin	1	1	U	Unk	Int-A	1		
2545ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2546ai	61 y F	methamphetamine	1	1	U	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																																																																																																																																																																																																																																																																																																																																																																																							
2547ai	61 y M	duloxetine	2	2	C	Unk	Int-A	3																																																																																																																																																																																																																																																																																																																																																																																									
		amphetamine	3	3							2548pa	61 y F	methamphetamine	1	1	A	Par	Int-A	1	morphine (free)	1000 mcg/L In Blood (unspecified) @ Autopsy	amphetamine	2	2	2549ai	61 y M	heroin	1	1	U	Unk	Int-A	1			cocaine	1	1	2552ai	61 y M	methamphetamine	2	2	U	Unk	Int-A	1			heroin	1	1	2550ai	61 y M	methamphetamine	2	2	U	Unk	Int-A	2			hydrocodone	3	3	heroin	1	1	2551ai	61 y F	oxycodone	2	2	U	Ingst + Unk	Int-S	1			methamphetamine	3	3	heroin	1	1	2556ai	61 y F	methamphetamine	2	2	U	Unk	Int-A	2			methadone	2	2	duloxetine	3	3	2553ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2554ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2555ai	61 y F	methamphetamine	1	1	U	Unk	Int-A	1			methamphetamine	1	1	2558ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	3			ethanol	2	2	2557ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	1			cocaine	2	2	2559ai	62 y M	phencyclidine	3	3	U	Unk	Int-S	1			heroin	1	1	codeine	2	2	2560ai	62 y M	amphetamine	3	3	U	Unk	Int-A	1			heroin	1	1	fentanyl	2	2	2561ai	62 y M	alprazolam	3	3	U	Unk	Int-A	2			methamphetamine	1	1	hydrocodone	2	2	2562ai	62 y M	citalopram	3	3	U	Unk	Int-A	2			methamphetamine	1	1	methamphetamine	1	1	2563ai	62 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2564ai	62 y M	methamphetamine	1	1	U	Unk	Int-A	1			methamphetamine	1	1	2565ai	62 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2566pha	63 y M	methamphetamine	1	1	A	Ingst + Unk	Unk	2	methamphetamine	1200 ng/mL In Blood (unspecified) @ Unknown	methamphetamine	1	1	amphetamine	160 ng/mL In Blood (unspecified) @ Unknown	gamma-hydroxybutyric acid	2	2	gamma-hydroxybutyric acid (ghb)	1800 mcg/mL In Blood (unspecified) @ Unknown	nondrug, unknown marijuana	3 4	3 4			2567ai	63 y M	heroin	1	1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2569ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2568ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2570ai	63 y F	methamphetamine	1	1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2571ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			amphetamine	1	1	2572ai	63 y M	heroin	2	2	U
2548pa	61 y F	methamphetamine	1	1	A	Par	Int-A	1	morphine (free)	1000 mcg/L In Blood (unspecified) @ Autopsy																																																																																																																																																																																																																																																																																																																																																																																							
		amphetamine	2	2							2549ai	61 y M	heroin	1	1	U	Unk	Int-A	1			cocaine	1	1	2552ai	61 y M	methamphetamine	2	2	U	Unk	Int-A	1			heroin	1	1	2550ai	61 y M	methamphetamine	2	2	U	Unk	Int-A	2			hydrocodone	3	3			heroin	1	1							2551ai	61 y F	oxycodone	2	2	U			Ingst + Unk	Int-S	1									methamphetamine	3	3	heroin			1	1	2556ai							61 y F	methamphetamine	2	2	U	Unk	Int-A	2			methadone	2	2	duloxetine	3	3	2553ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2554ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2555ai	61 y F	methamphetamine	1	1	U	Unk	Int-A	1			methamphetamine	1	1	2558ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	3			ethanol	2	2	2557ai	61 y M	methamphetamine	1			1	U	Unk							Int-A	1			cocaine	2			2	2559ai	62 y M							phencyclidine	3	3	U	Unk	Int-S			1									heroin	1	1	codeine	2	2			2560ai	62 y M	amphetamine							3	3	U	Unk	Int-A	1			heroin	1	1	fentanyl	2	2	2561ai	62 y M	alprazolam	3	3	U	Unk	Int-A	2			methamphetamine	1	1	hydrocodone	2	2	2562ai	62 y M	citalopram	3	3	U	Unk	Int-A	2			methamphetamine	1	1	methamphetamine	1	1			2563ai	62 y M	methamphetamine					1	1	U	Unk	Int-A	2			methamphetamine	1	1	2564ai	62 y M	methamphetamine	1	1	U	Unk	Int-A	1			methamphetamine	1	1	2565ai	62 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2566pha	63 y M	methamphetamine	1	1	A	Ingst + Unk	Unk	2	methamphetamine	1200 ng/mL In Blood (unspecified) @ Unknown	methamphetamine	1	1	amphetamine	160 ng/mL In Blood (unspecified) @ Unknown	gamma-hydroxybutyric acid	2	2	gamma-hydroxybutyric acid (ghb)	1800 mcg/mL In Blood (unspecified) @ Unknown	nondrug, unknown marijuana	3 4	3 4			2567ai	63 y M	heroin	1	1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2569ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1
2549ai	61 y M	heroin	1	1	U	Unk	Int-A	1																																																																																																																																																																																																																																																																																																																																																																																									
		cocaine	1	1							2552ai	61 y M	methamphetamine	2	2	U	Unk	Int-A	1			heroin	1	1	2550ai	61 y M	methamphetamine	2	2	U	Unk	Int-A	2			hydrocodone	3	3			heroin	1	1							2551ai	61 y F	oxycodone	2	2	U	Ingst + Unk	Int-S	1			methamphetamine	3	3			heroin	1	1		2556ai	61 y F				methamphetamine	2	2	U	Unk	Int-A			2			methadone	2	2	duloxetine	3		3	2553ai	61 y M	methamphetamine	1	1		U	Unk	Int-A							2			methamphetamine	1	1	2554ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2555ai	61 y F	methamphetamine	1	1	U	Unk	Int-A	1			methamphetamine	1	1	2558ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	3			ethanol	2	2	2557ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	1			cocaine	2	2	2559ai	62 y M	phencyclidine	3	3	U	Unk	Int-S	1			heroin	1	1	codeine	2	2	2560ai	62 y M	amphetamine	3	3	U	Unk			Int-A	1			heroin	1	1	fentanyl	2				2	2561ai				62 y M	alprazolam	3	3	U	Unk	Int-A	2			methamphetamine	1	1	hydrocodone			2	2	2562ai	62 y M	citalopram	3	3	U	Unk							Int-A	2			methamphetamine	1			1	methamphetamine	1							1	2563ai	62 y M	methamphetamine	1	1			U	Unk	Int-A							2			methamphetamine	1	1	2564ai	62 y M	methamphetamine	1	1	U	Unk	Int-A	1			methamphetamine	1	1	2565ai	62 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2566pha	63 y M	methamphetamine	1	1	A	Ingst + Unk	Unk	2	methamphetamine	1200 ng/mL In Blood (unspecified) @ Unknown	methamphetamine	1	1	amphetamine	160 ng/mL In Blood (unspecified) @ Unknown	gamma-hydroxybutyric acid	2	2	gamma-hydroxybutyric acid (ghb)			1800 mcg/mL In Blood (unspecified) @ Unknown	nondrug, unknown marijuana	3 4					3 4			2567ai	63 y M	heroin	1	1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2569ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2568ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1
2552ai	61 y M	methamphetamine	2	2	U	Unk	Int-A	1																																																																																																																																																																																																																																																																																																																																																																																									
		heroin	1	1							2550ai	61 y M	methamphetamine	2	2	U	Unk	Int-A	2			hydrocodone	3	3			heroin	1	1							2551ai	61 y F	oxycodone	2	2	U	Ingst + Unk	Int-S	1			methamphetamine	3	3			heroin	1	1							2556ai	61 y F	methamphetamine	2	2	U	Unk	Int-A	2					methadone	2	2	duloxetine				3	3				2553ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2554ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2555ai	61 y F	methamphetamine	1	1	U	Unk	Int-A	1			methamphetamine	1	1	2558ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	3			ethanol	2	2	2557ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	1			cocaine	2	2	2559ai	62 y M	phencyclidine	3	3	U	Unk	Int-S	1			heroin	1	1			codeine	2	2							2560ai	62 y M	amphetamine	3	3	U			Unk	Int-A	1									heroin	1	1	fentanyl	2	2	2561ai	62 y M	alprazolam		3	3	U		Unk	Int-A	2									methamphetamine	1	1	hydrocodone	2	2			2562ai	62 y M	citalopram			3	3	U	Unk	Int-A	2							methamphetamine	1	1	methamphetamine	1	1	2563ai	62 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2564ai	62 y M	methamphetamine	1	1	U	Unk	Int-A	1			methamphetamine	1	1	2565ai	62 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2566pha	63 y M	methamphetamine	1	1	A	Ingst + Unk	Unk	2	methamphetamine	1200 ng/mL In Blood (unspecified) @ Unknown	methamphetamine	1	1			amphetamine	160 ng/mL In Blood (unspecified) @ Unknown	gamma-hydroxybutyric acid					2	2	gamma-hydroxybutyric acid (ghb)	1800 mcg/mL In Blood (unspecified) @ Unknown	nondrug, unknown marijuana	3 4	3 4			2567ai	63 y M	heroin	1	1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2569ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2568ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2570ai	63 y F	methamphetamine	1	1	U	Ingst + Unk	Int-A	1			ethanol	2	2
2550ai	61 y M	methamphetamine	2	2	U	Unk	Int-A	2																																																																																																																																																																																																																																																																																																																																																																																									
		hydrocodone	3	3									heroin	1	1							2551ai	61 y F	oxycodone	2	2	U	Ingst + Unk	Int-S	1			methamphetamine	3	3			heroin	1	1							2556ai	61 y F	methamphetamine	2	2	U	Unk	Int-A	2			methadone	2	2			duloxetine	3	3					2553ai	61 y M			methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2554ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2555ai	61 y F	methamphetamine	1	1	U	Unk	Int-A	1			methamphetamine	1	1	2558ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	3			ethanol	2	2	2557ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	1			cocaine	2	2	2559ai	62 y M	phencyclidine	3	3	U	Unk	Int-S	1			heroin	1	1			codeine	2	2							2560ai	62 y M	amphetamine	3	3	U	Unk	Int-A	1			heroin	1	1			fentanyl	2	2		2561ai	62 y M				alprazolam	3			3	U	Unk	Int-A	2			methamphetamine	1	1			hydrocodone	2	2	2562ai		62 y M				citalopram	3	3	U	Unk	Int-A			2			methamphetamine	1	1	methamphetamine	1			1	2563ai	62 y M	methamphetamine	1					1	U	Unk	Int-A			2			methamphetamine	1	1	2564ai	62 y M	methamphetamine	1	1	U	Unk	Int-A	1			methamphetamine	1	1	2565ai	62 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2566pha	63 y M	methamphetamine	1	1	A	Ingst + Unk	Unk	2	methamphetamine	1200 ng/mL In Blood (unspecified) @ Unknown	methamphetamine	1	1			amphetamine	160 ng/mL In Blood (unspecified) @ Unknown	gamma-hydroxybutyric acid					2	2	gamma-hydroxybutyric acid (ghb)	1800 mcg/mL In Blood (unspecified) @ Unknown	nondrug, unknown marijuana	3 4	3 4			2567ai	63 y M	heroin	1	1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2569ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2568ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2570ai	63 y F	methamphetamine	1	1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2571ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			amphetamine	1	1
		heroin	1	1							2551ai	61 y F	oxycodone	2	2	U	Ingst + Unk	Int-S	1					methamphetamine	3	3							heroin	1	1	2556ai	61 y F	methamphetamine	2	2	U	Unk	Int-A	2					methadone	2	2							duloxetine	3	3	2553ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	2					methamphetamine	1	1							2554ai	61 y M	methamphetamine			1	1	U							Unk	Int-A	2					methamphetamine							1	1	2555ai			61 y F	methamphetamine	1							1	U	Unk			Int-A	1									methamphetamine	1			1	2558ai	61 y M							methamphetamine	1	1	U	Unk	Int-A	3			ethanol	2	2	2557ai	61 y M			methamphetamine	1	1							U	Unk	Int-A	1			cocaine	2	2			2559ai	62 y M	phencyclidine	3	3	U	Unk	Int-S							1			heroin	1	1	codeine	2		2		2560ai	62 y M	amphetamine	3	3	U				Unk	Int-A				1			heroin	1	1	fentanyl	2			2	2561ai	62 y M	alprazolam	3	3	U				Unk	Int-A				2					methamphetamine	1	1							hydrocodone	2	2			2562ai	62 y M	citalopram							3	3	U			Unk	Int-A	2							methamphetamine	1	1			methamphetamine	1	1					2563ai	62 y M	methamphetamine	1	1	U	Unk	Int-A	2					methamphetamine							1	1	2564ai			62 y M	methamphetamine	1							1	U	Unk			Int-A	1									methamphetamine	1			1	2565ai	62 y M							methamphetamine	1	1			U	Unk	Int-A							2		
2551ai	61 y F	oxycodone	2	2	U	Ingst + Unk	Int-S	1																																																																																																																																																																																																																																																																																																																																																																																									
		methamphetamine	3	3									heroin	1	1							2556ai	61 y F	methamphetamine	2	2	U	Unk	Int-A	2			methadone	2	2			duloxetine	3	3							2553ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2554ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2555ai	61 y F	methamphetamine	1	1	U	Unk	Int-A	1			methamphetamine	1	1	2558ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	3			ethanol	2	2	2557ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	1			cocaine	2	2	2559ai	62 y M	phencyclidine	3	3	U	Unk	Int-S	1			heroin	1	1	codeine	2	2	2560ai	62 y M	amphetamine	3	3	U	Unk	Int-A	1			heroin	1	1	fentanyl	2	2	2561ai	62 y M	alprazolam	3	3	U	Unk	Int-A	2			methamphetamine	1	1	hydrocodone	2	2	2562ai	62 y M	citalopram	3	3	U	Unk	Int-A	2			methamphetamine	1	1	methamphetamine	1	1	2563ai	62 y M	methamphetamine	1			1	U	Unk				Int-A	2			methamphetamine	1				1	2564ai	62 y M	methamphetamine	1	1	U	Unk			Int-A	1				methamphetamine	1			1	2565ai	62 y M				methamphetamine	1	1	U	Unk	Int-A	2					methamphetamine	1		1	2566pha	63 y M			methamphetamine	1	1				A	Ingst + Unk	Unk	2	methamphetamine	1200 ng/mL In Blood (unspecified) @ Unknown	methamphetamine	1	1	amphetamine	160 ng/mL In Blood (unspecified) @ Unknown	gamma-hydroxybutyric acid	2	2	gamma-hydroxybutyric acid (ghb)	1800 mcg/mL In Blood (unspecified) @ Unknown			nondrug, unknown marijuana	3 4	3 4			2567ai	63 y M	heroin	1													1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2569ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2568ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2570ai	63 y F	methamphetamine	1	1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2571ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			amphetamine	1	1	2572ai	63 y M	heroin	2	2	U	Unk	Int-A	2			heroin	2	2											
		heroin	1	1							2556ai	61 y F	methamphetamine	2	2	U	Unk	Int-A	2					methadone	2	2							duloxetine	3	3	2553ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	2					methamphetamine	1	1							2554ai	61 y M	methamphetamine			1	1	U							Unk	Int-A	2					methamphetamine							1	1	2555ai			61 y F	methamphetamine	1							1	U	Unk			Int-A	1									methamphetamine	1			1	2558ai	61 y M							methamphetamine	1	1	U	Unk	Int-A			3									ethanol	2	2	2557ai	61 y M	methamphetamine			1	1	U							Unk	Int-A	1			cocaine			2	2	2559ai							62 y M	phencyclidine	3	3	U	Unk			Int-S	1			heroin			1	1	codeine					2	2	2560ai	62 y M	amphetamine	3			3	U	Unk			Int-A	1							heroin	1	1	fentanyl			2	2	2561ai	62 y M	alprazolam	3						3	U		Unk	Int-A	2					methamphetamine	1	1	hydrocodone	2	2	2562ai					62 y M	citalopram	3	3	U	Unk	Int-A	2			methamphetamine	1	1	methamphetamine	1	1	2563ai	62 y M	methamphetamine			1	1	U	Unk	Int-A	2			methamphetamine	1	1	2564ai	62 y M	methamphetamine	1							1	U	Unk			Int-A	1									methamphetamine	1			1	2565ai	62 y M							methamphetamine	1	1			U	Unk	Int-A							2					methamphetamine	1	1							2566pha	63 y M	methamphetamine			1	1	A							Ingst + Unk	Unk	2	methamphetamine	1200 ng/mL In Blood (unspecified) @ Unknown	methamphetamine	1	1	amphetamine	160 ng/mL In Blood (unspecified) @ Unknown	gamma-hydroxybutyric acid	2	2	gamma-hydroxybutyric acid (ghb)
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		methadone	2	2									duloxetine	3	3							2553ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2554ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2555ai	61 y F	methamphetamine	1	1	U	Unk	Int-A	1			methamphetamine	1	1	2558ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	3			ethanol	2	2	2557ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	1			cocaine	2	2	2559ai	62 y M	phencyclidine	3	3	U	Unk	Int-S	1			heroin	1	1	codeine	2	2	2560ai	62 y M	amphetamine	3	3	U	Unk	Int-A	1			heroin	1	1	fentanyl	2	2	2561ai	62 y M	alprazolam	3	3	U	Unk	Int-A	2			methamphetamine	1	1	hydrocodone	2	2	2562ai	62 y M	citalopram	3	3	U	Unk	Int-A	2			methamphetamine	1	1	methamphetamine	1	1	2563ai	62 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine		1	1	2564ai	62 y M	methamphetamine	1		1	U	Unk			Int-A	1							methamphetamine	1	1	2565ai	62 y M	methamphetamine	1	1	U	Unk			Int-A	2			methamphetamine			1	1			2566pha	63 y M	methamphetamine		1		1	A	Ingst + Unk	Unk	2	methamphetamine	1200 ng/mL In Blood (unspecified) @ Unknown	methamphetamine			1	1	amphetamine	160 ng/mL In Blood (unspecified) @ Unknown	gamma-hydroxybutyric acid	2	2	gamma-hydroxybutyric acid (ghb)		1800 mcg/mL In Blood (unspecified) @ Unknown								nondrug, unknown marijuana	3 4	3 4			2567ai							63 y M	heroin	1							1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2569ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2568ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2570ai	63 y F	methamphetamine	1	1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2571ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			amphetamine	1	1	2572ai	63 y M	heroin	2	2	U	Unk	Int-A	2			heroin	2	2																																				
		duloxetine	3	3							2553ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	2					methamphetamine	1	1							2554ai	61 y M	methamphetamine			1	1	U							Unk	Int-A	2					methamphetamine							1	1	2555ai			61 y F	methamphetamine	1							1	U	Unk			Int-A	1									methamphetamine	1			1	2558ai	61 y M							methamphetamine	1	1	U	Unk	Int-A			3									ethanol	2	2	2557ai	61 y M	methamphetamine			1	1	U							Unk	Int-A	1			cocaine			2	2	2559ai							62 y M	phencyclidine	3	3	U	Unk			Int-S	1									heroin	1	1			codeine	2	2	2560ai			62 y M	amphetamine			3	3	U	Unk			Int-A	1					heroin	1			1	fentanyl					2	2	2561ai	62 y M	alprazolam	3	3			U	Unk	Int-A	2							methamphetamine	1	1	hydrocodone	2	2	2562ai	62 y M	citalopram	3	3	U	Unk	Int-A	2			methamphetamine	1	1	methamphetamine	1	1	2563ai	62 y M	methamphetamine		1	1	U	Unk	Int-A	2				methamphetamine	1	1	2564ai	62 y M	methamphetamine	1							1	U	Unk			Int-A	1									methamphetamine	1			1	2565ai	62 y M							methamphetamine	1	1			U	Unk	Int-A							2					methamphetamine	1	1							2566pha	63 y M	methamphetamine			1	1	A							Ingst + Unk	Unk	2	methamphetamine	1200 ng/mL In Blood (unspecified) @ Unknown	methamphetamine	1	1	amphetamine	160 ng/mL In Blood (unspecified) @ Unknown	gamma-hydroxybutyric acid			2	2	gamma-hydroxybutyric acid (ghb)	1800 mcg/mL In Blood (unspecified) @ Unknown	nondrug, unknown marijuana		3 4	3 4			2567ai	63 y M				heroin	1	1	U	Ingst + Unk	Int-A	1			ethanol	2
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		methamphetamine	1	1							2558ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	3			ethanol	2	2	2557ai	61 y M	methamphetamine	1	1	U	Unk	Int-A	1			cocaine	2	2	2559ai	62 y M	phencyclidine	3	3	U	Unk	Int-S	1			heroin	1	1			codeine	2	2							2560ai	62 y M	amphetamine	3	3	U	Unk	Int-A	1			heroin	1	1			fentanyl	2	2		2561ai	62 y M				alprazolam	3	3	U	Unk	Int-A			2			methamphetamine	1	1	hydrocodone	2		2	2562ai	62 y M	citalopram	3	3		U	Unk	Int-A			2						methamphetamine	1	1	methamphetamine	1		1	2563ai	62 y M	methamphetamine	1	1			U	Unk	Int-A							2			methamphetamine	1	1	2564ai	62 y M	methamphetamine	1	1	U	Unk	Int-A	1			methamphetamine	1	1	2565ai	62 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2566pha	63 y M	methamphetamine	1	1	A	Ingst + Unk	Unk	2	methamphetamine	1200 ng/mL In Blood (unspecified) @ Unknown	methamphetamine	1	1	amphetamine	160 ng/mL In Blood (unspecified) @ Unknown	gamma-hydroxybutyric acid		2	2	gamma-hydroxybutyric acid (ghb)		1800 mcg/mL In Blood (unspecified) @ Unknown	nondrug, unknown marijuana	3 4					3 4			2567ai	63 y M	heroin	1	1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2569ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2568ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2570ai	63 y F	methamphetamine	1	1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2571ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			amphetamine	1	1	2572ai	63 y M	heroin	2	2	U	Unk	Int-A	2			heroin	2	2																																																																																									
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		codeine	2	2							2560ai	62 y M	amphetamine	3	3	U	Unk	Int-A	1					heroin	1	1							fentanyl	2	2	2561ai	62 y M	alprazolam	3	3	U	Unk	Int-A	2					methamphetamine	1	1							hydrocodone	2	2	2562ai	62 y M	citalopram	3	3	U	Unk	Int-A	2					methamphetamine	1	1							methamphetamine	1	1	2563ai	62 y M	methamphetamine	1	1	U	Unk	Int-A	2					methamphetamine	1	1							2564ai	62 y M	methamphetamine			1	1	U							Unk	Int-A	1					methamphetamine							1	1	2565ai			62 y M	methamphetamine	1					1	U	Unk	Int-A	2					methamphetamine					1	1	2566pha	63 y M	methamphetamine	1	1	A	Ingst + Unk			Unk	2	methamphetamine							1200 ng/mL In Blood (unspecified) @ Unknown	methamphetamine	1			1	amphetamine	160 ng/mL In Blood (unspecified) @ Unknown							gamma-hydroxybutyric acid	2	2			gamma-hydroxybutyric acid (ghb)	1800 mcg/mL In Blood (unspecified) @ Unknown	nondrug, unknown marijuana							3 4	3 4					2567ai	63 y M							heroin	1	1			U	Ingst + Unk	Int-A							1					ethanol	2	2							2569ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2568ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2570ai	63 y F	methamphetamine	1	1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2571ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			amphetamine	1	1	2572ai	63 y M	heroin	2	2	U	Unk	Int-A	2			heroin	2	2																																																																
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		methamphetamine	1	1							2565ai	62 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2566pha	63 y M	methamphetamine	1	1	A	Ingst + Unk	Unk	2	methamphetamine	1200 ng/mL In Blood (unspecified) @ Unknown	methamphetamine	1	1			amphetamine	160 ng/mL In Blood (unspecified) @ Unknown	gamma-hydroxybutyric acid					2	2	gamma-hydroxybutyric acid (ghb)	1800 mcg/mL In Blood (unspecified) @ Unknown	nondrug, unknown marijuana	3 4	3 4			2567ai	63 y M	heroin	1	1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2569ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2568ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2570ai	63 y F	methamphetamine	1	1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2571ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			amphetamine	1	1	2572ai	63 y M	heroin	2	2	U	Unk	Int-A	2			heroin	2	2																																																																																																																																																																																																																																																					
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		methamphetamine	1	1							2566pha	63 y M	methamphetamine	1	1	A	Ingst + Unk	Unk	2	methamphetamine	1200 ng/mL In Blood (unspecified) @ Unknown	methamphetamine	1	1			amphetamine	160 ng/mL In Blood (unspecified) @ Unknown	gamma-hydroxybutyric acid					2	2	gamma-hydroxybutyric acid (ghb)	1800 mcg/mL In Blood (unspecified) @ Unknown	nondrug, unknown marijuana	3 4	3 4			2567ai	63 y M	heroin	1	1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2569ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2568ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2570ai	63 y F	methamphetamine	1	1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2571ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			amphetamine	1	1	2572ai	63 y M	heroin	2	2	U	Unk	Int-A	2			heroin	2	2																																																																																																																																																																																																																																																																			
2566pha	63 y M	methamphetamine	1	1	A	Ingst + Unk	Unk	2	methamphetamine	1200 ng/mL In Blood (unspecified) @ Unknown																																																																																																																																																																																																																																																																																																																																																																																							
		methamphetamine	1	1					amphetamine	160 ng/mL In Blood (unspecified) @ Unknown																																																																																																																																																																																																																																																																																																																																																																																							
		gamma-hydroxybutyric acid	2	2					gamma-hydroxybutyric acid (ghb)	1800 mcg/mL In Blood (unspecified) @ Unknown																																																																																																																																																																																																																																																																																																																																																																																							
		nondrug, unknown marijuana	3 4	3 4																																																																																																																																																																																																																																																																																																																																																																																													
2567ai	63 y M	heroin	1	1	U	Ingst + Unk	Int-A	1																																																																																																																																																																																																																																																																																																																																																																																									
		ethanol	2	2							2569ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2568ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2570ai	63 y F	methamphetamine	1	1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2571ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			amphetamine	1	1	2572ai	63 y M	heroin	2	2	U	Unk	Int-A	2			heroin	2	2																																																																																																																																																																																																																																																																																																																	
2569ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2																																																																																																																																																																																																																																																																																																																																																																																									
		methamphetamine	1	1							2568ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			methamphetamine	1	1	2570ai	63 y F	methamphetamine	1	1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2571ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			amphetamine	1	1	2572ai	63 y M	heroin	2	2	U	Unk	Int-A	2			heroin	2	2																																																																																																																																																																																																																																																																																																																															
2568ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2																																																																																																																																																																																																																																																																																																																																																																																									
		methamphetamine	1	1							2570ai	63 y F	methamphetamine	1	1	U	Ingst + Unk	Int-A	1			ethanol	2	2	2571ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			amphetamine	1	1	2572ai	63 y M	heroin	2	2	U	Unk	Int-A	2			heroin	2	2																																																																																																																																																																																																																																																																																																																																													
2570ai	63 y F	methamphetamine	1	1	U	Ingst + Unk	Int-A	1																																																																																																																																																																																																																																																																																																																																																																																									
		ethanol	2	2							2571ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2			amphetamine	1	1	2572ai	63 y M	heroin	2	2	U	Unk	Int-A	2			heroin	2	2																																																																																																																																																																																																																																																																																																																																																											
2571ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2																																																																																																																																																																																																																																																																																																																																																																																									
		amphetamine	1	1							2572ai	63 y M	heroin	2	2	U	Unk	Int-A	2			heroin	2	2																																																																																																																																																																																																																																																																																																																																																																									
2572ai	63 y M	heroin	2	2	U	Unk	Int-A	2																																																																																																																																																																																																																																																																																																																																																																																									
		heroin	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
2574ai	63 y M	cocaine	1	1						
		heroin	1	1	U	Unk	Int-A	2		
2573ai	63 y M	heroin	1	1	U	Unk	Int-A	2		
		amphetamine	2	2						
2576ai	63 y M	heroin	1	1	U	Unk	Int-A	2		
		methamphetamine	2	2						
2575ai	63 y M	heroin	1	1	U	Unk	Int-A	2		
		oxycodone	2	2						
		methamphetamine	3	3						
2577ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		methadone	2	2						
2578ai	63 y F	methamphetamine	1	1	C	Unk	Int-A	3		
2579ai	63 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2582ai	64 y M	methamphetamine	1	1	U	Unk	Int-A	3		
		heroin	1	1						
		alprazolam	2	2						
2581ai	64 y F	heroin	1	1	U	Unk	Int-S	1		
		oxycodone	2	2						
		alprazolam	3	3						
2580ai	64 y M	heroin	1	1	U	Unk	Int-A	1		
		methadone	2	2						
2583ai	64 y F	amphetamine	1	1	U	Unk	Int-A	2		
		methylenedioxy-methamphetamine (MDMA)	2	2						
		narcotic, other/unknown	3	3						
2584ai	64 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2585ai	64 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2586ai	64 y M	methamphetamine	1	1	A	Unk	Int-A	1		
		oxymorphone	2	2						
		alprazolam	3	3						
2587ai	65 y M	methamphetamine	1	1	U	Ingst + Unk	Int-A	1		
		cocaine	1	1						
		diazepam	2	2						
		ethanol	3	3						
2588ai	65 y M	methamphetamine	1	1	U	Unk	Int-A	3		
2589ai	65 y M	cocaine	1	1	U	Unk	Int-A	2		
2590ai	65 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		benzodiazepine	2	2						
		flecainide	3	3						
2591ai	65 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2592ai	66 y M	amphetamine	1	1	U	Unk	Int-A	1		
		methamphetamine	2	2						
2593ai	66 y M	heroin	1	1	U	Unk	Int-A	1		
		codeine	2	2						
		ethanol	3	3						
2594ai	66 y M	methamphetamine	1	1	C	Unk	Int-A	3		
		amphetamine	2	2						
2595ai	66 y M	methamphetamine	1	1	C	Unk	Int-A	2		
		amphetamine	2	2						
		isopropanol	3	3						
2596ai	66 y M	amphetamine	1	1	U	Unk	Int-A	3		
		methamphetamine	2	2						
		methanol	3	3						
2597ai	66 y M	heroin	1	1	U	Unk	Int-A	2		
		methamphetamine	2	2						
2598ai	66 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		diphenhydramine	2	2						
		acetaminophen	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
2599ai	67 y F	heroin	1	1	U	Unk	Int-A	1		
		amitriptyline	2	2						
		diphenhydramine	3	3						
2601ai	67 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2600ai	67 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2602ai	67 y M	methamphetamine	1	1	U	Unk	Int-A	1		
2603ai	68 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		cocaine	1	1						
2605ai	68 y M	methamphetamine	2	2	U	Unk	Int-A	2		
		cocaine	1	1						
2604ai	68 y M	cocaine	1	1	U	Unk	Int-A	2		
2606hai	68 y M	cocaine	1	1	U	Unk	Int-A	2		
		methamphetamine	1	1						
		ethanol	2	2						
		diphenhydramine	3	3						
2607ph	69 y M	heroin	1	1	U	Par	Int-A	1		
2608ph	69 y M	heroin	1	1	U	Unk	Unk	2		
		cocaine	1	1						
		narcotic, other/unknown	2	2						
2609ai	70 y M	methamphetamine	1	1	U	Unk	Int-A	1		
		cocaine	2	2						
		ethanol	3	3						
2610ai	71 y M	methamphetamine	1	1	U	Unk	Int-A	2		
2611ai	71 y M	cocaine	1	1	U	Unk	Int-A	2		
		ethanol	2	2						
2612ai	72 y M	methamphetamine	1	1	U	Unk	Int-A	2		
		amphetamine	2	2						
2613ai	73 y F	methamphetamine	1	1	U	Unk	Int-A	3		
		chlorophenhyli-perazine	2	2						
2614ha	82 y M	cocaine	1	1	A	Inhal	Int-A	1	benzoylceognine	0.37 mg/L In Serum @ 1 d (pe)
		sulfur	2	2						
[2615ha]	13 m M	amphetamine	1	1	A	Ingst + Aspir	Unt-G	1	amphetamine	590 ng/mL In Blood (unspecified) @ Autopsy
		methamphetamine	2	2					methamphetamine	1000 ng/mL In Blood (unspecified) @ Autopsy
		hydrocarbon	3	3						
2616ph	20 + y M	heroin	1	1	A	Unk	Int-A	2		
2617h	50 + y F	heroin	1	1	A/C	Par	Int-A	3		
		cocaine	2	2						
2618ha	Unknown adult (>=20 yrs) M	phencyclidine	1	1	A	Unk	Int-S	1		
		midazolam	2	2						
		marijuana	3	3						
2619pi	Unknown adult (>=20 yrs) U	heroin	1	1	U	Par	Int-A	1		
2620pi	Unknown age F	heroin	1	1	U	Par	Int-S	1		
2621i	Unknown age M	methamphetamine	1	1	A/C	Ingst + Inhal	Int-A	2		
		cocaine	2	2						
		acetaminophen/oxycodone	3	3						
		alprazolam	4	4						
See Also case 6, 7, 18, 24, 34, 38, 49, 56, 73, 79, 96, 99, 104, 105, 122, 262, 295, 323, 342, 358, 370, 375, 377, 381, 383, 385, 387, 392, 396, 399, 400, 405, 407, 409, 410, 417, 422, 423, 430, 431, 438, 441, 459, 460, 462, 464, 465, 469, 474, 475, 477, 479, 486, 487, 495, 497, 500, 501, 503, 506, 510, 511, 516, 517, 520, 522, 525, 526, 530, 533, 534, 537, 538, 540, 544, 546, 547, 548, 557, 561, 562, 563, 565, 580, 588, 592, 595, 597, 604, 605, 606, 611, 618, 620, 621, 624, 629, 637, 669, 679, 680, 685, 699, 703, 707, 723, 730, 736, 745, 754, 758, 761, 771, 774, 782, 783, 784, 795, 800, 803, 818, 820, 828, 834, 838, 839, 841, 845, 855, 868, 873, 875, 900, 919, 926, 929, 932, 934, 944, 949, 968, 982, 985, 993, 1015, 1042, 1051, 1147, 1152, 1161, 1164, 1166, 1170, 1191, 1192, 1193, 1197, 1201, 1211, 1222, 1227, 1241, 1260, 1263, 1273, 1301, 1328, 1352, 1394, 1395, 1438, 1445, 1521, 1591, 1633, 1642, 1665, 1668, 1672, 1704, 1712, 1743, 1749, 1750, 1755, 1762, 1777, 1785, 1787, 1801, 1811, 1813, 1832, 2625, 2626, 2641, 2647, 2652, 2654, 2669										
Unknown Drug										
2622ai	19 y F	drug, unknown	1	1	U	Unk	Int-A	2		
2623	20 y M	drug, unknown	1	1	U	Unk	Int-S	2		
2624ph	20 y M	drug, unknown	1	1	U	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
2625ph	21 y F	drug, unknown	1	1	A	Inhal	Int-A	1		
		heroin	2	1						
2626pha	21 y M	drug, unknown	1	1	U	Unk	Unk	1		
		methamphetamine	2	2					methamphetamine	100 ng/mL In Blood (unspecified) @ Unknown
		methamphetamine	2	2					amphetamine	28 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	3	3					delta-9-thc	1.6 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	3	3					delta-9-carboxy-thc	28 ng/mL In Blood (unspecified) @ Autopsy
2627pha	22 y M	drug, unknown	1	1	U	Unk	Unk	2		
2628h	24 y F	drug, unknown	1	1	A	Ingst	Unk	2		
2629ph	25 y F	drug, unknown	1	1	A	Par	Int-A	2		
2630a	25 y M	drug, unknown	1	1	A	Unk	Int-A	2		
2631h	25 y M	drug, unknown	1	1	A	Ingst	Int-A	1		
2632p	26 y M	drug, unknown	1	1	A	Ingst	Int-A	2		
2633ai	27 y F	drug, unknown	1	1	U	Unk	Int-A	1		
2634pha	27 y F	drug, unknown	1	1	U	Ingst	Int-U	2		
2635h	28 y M	drug, unknown	1	1	A	Ingst	Int-A	2		
2636	28 y M	drug, unknown	1	1	U	Unk	Unt-U	2		
		benzodiazepine	2	2						
2637ai	29 y F	drug, unknown	1	1	U	Unk	Unk	3		
2638ph	30 y F	drug, unknown	1	1	U	Unk	Unk	2		
2639p	30 y M	drug, unknown	1	1	A	Ingst + Rec	Unk	2		
2640ph	30 y M	drug, unknown	1	1	U	Ingst + Par	Int-U	2		
		ethanol	2	2					ethanol	166 mg/dL In Serum @ 30 m (pe)
2641	31 y M	drug, unknown	1	1	U	Unk	Int-A	2		
		methylenedioxy-methamphetamine (MDMA)	2	2						
		cocaine	3	3						
		amphetamine	4	4						
		methadone	5	5						
2642ph	31 y M	drug, unknown	1	1	A	Par	Int-A	1		
2643p	31 y M	drug, unknown	1	1	U	Ingst	Int-S	2		
		acetaminophen/hydrocodone	2	2					acetaminophen (apap)	297 mcg/mL In Plasma @ Unknown
2644pha	32 y M	drug, unknown	1	1	U	Ingst	Unk	3		
		ethanol	2	2					ethanol	18 mg/dL In Serum @ Unknown
2645ha	33 y M	drug, unknown	1	1	A	Ingst	Int-S	2		
2646ph	33 y M	drug, unknown	1	1	A	Par	Int-A	2		
2647pai	34 y F	drug, unknown	1	1	U	Ingst	Int-S	2		
		drug, unknown	1	1					benzoylcoagnine	1500 mcg/L In Blood (unspecified) @ Autopsy
		drug, unknown	1	1					cocaine	260 mcg/L In Blood (unspecified) @ Autopsy
		drug, unknown	1	1					cocaethylene	40 mcg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2						
		ethanol	3	3						
2648a	35 y F	drug, unknown	1	1	A	Ingst	Int-S	1		
		zopiclone	2	2						
2649p	36 y M	drug, unknown	1	1	A	Ingst + Unk	Unk	2		
2650ai	36 y M	drug, unknown	1	1	U	Unk	Int-A	3		
2651ph	37 y M	drug, unknown	1	1	A	Par	Int-A	1		
2652p	37 y F	drug, unknown	1	1	A/C	Unk	Int-A	2		
		heroin	1	1						
		heroin	2	1						
2653p	38 y M				A/C	Ingst + Unk	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																																																																																																																																																																																																																																																																																																																																																																																		
2654p	38 y M	drug, unknown	1	1	A	Inhal	Int-A	2	ethanol	156 mg/dL In Blood (unspecified) @ 1 h (pe)																																																																																																																																																																																																																																																																																																																																																																																		
		ethanol	2	2							2655ai	38 y F	drug, unknown marijuana	1 2	1 2	U	Unk	Int-A	3			2656p	39 y M	drug, unknown	1	1	U	Par	Int-A	2			2657pi	40 y F	drug, unknown	1	1	A/C	Ingst	Int-S	3			2658i	40 y M	drug, unknown	1	1	A	Unk	Int-S	2			2659ph	41 y M	drug, unknown	1	1	A	Ingst	Int-S	2			2660p	44 y F	drug, unknown ethanol	1 2	1 2	U	Ingst	Int-S	2			drug, unknown clonazepam	1 2	1 2	2661h	49 y F	drug, unknown	1	1	A/C	Ingst	Int-S	2			2662phi	50 y F	drug, unknown	1	1	U	Unk	Unk	2			2663p	51 y M	drug, unknown ethanol	1 2	1 2	A	Ingst	Int-S	2			drug, unknown morphine	3	3	benzodiazepine	4	4	carisoprodol	2	2	2664ha	52 y M	drug, unknown	1	1	A	Ingst	Int-S	3			2665i	52 y F	drug, unknown hypochlorite	1 2	1 2	U	Ingst	Unk	3			drug, unknown	1	1	2666	54 y M	drug, unknown	1	1	A	Ingst	Int-S	2			2667pi	54 y M	drug, unknown	1	1	U	Ingst + Unk	Int-S	2			2668p	55 y F	drug, unknown salicylate	1 2	1 2	A	Ingst	Int-S	2			drug, unknown	1	1	2669ph	57 y M	drug, unknown	2	1	U	Unk	Unk	3			2670h	57 y F	drug, unknown methamphetamine	1	1	A	Ingst	Int-U	3			drug, unknown acetaminophen/diphenhydramine	2	2	2671	58 y M	drug, unknown	1	1	A	Ingst	AR-D	1		35.2 mcg/mL In Blood (unspecified) @ Unknown	2672h	59 y M	drug, unknown narcotic, other/unknown	1 2	1 2	U	Unk	Int-A	3			2673h	60 y M	drug, unknown	1	1	U	Ingst	Int-S	3			2674ai	62 y M	drug, unknown	1	1	U	Unk	Int-A	3			2675ai	62 y M	drug, unknown	1	1	C	Unk	Int-A	2			2676p	62 y M	drug, unknown	1	1	A/C	Ingst	Int-A	2			bupropion	2	2	gabapentin	3	3	oxycodone	4	4	meloxicam	5	5	citalopram	6	6	cyclobenzaprine	7	7	naproxen	8	8	2677p	63 y F	drug, unknown	1	1	A	Ingst	Int-S	2			2678ha	66 y F	drug, unknown	1	1	A/C	Ingst	Int-S	3			drug, unknown	1	1	2679ai	66 y M	drug, unknown	1	1	U	Unk	Int-A	3			2680ai	1 d M	drug, unknown	1	1	U	Unk	Unk	3			2681h	30 + y F	drug, unknown	1	1	U	Unk	Int-S	2			drug, unknown	1	1	See Also case 11, 14, 118, 164, 352, 403, 532, 598, 600, 643, 753, 798, 856, 888, 917, 967, 1117, 1118, 1214, 1287, 1323, 1365, 1376, 1392, 1457, 1494, 1505, 1515, 1516, 1656, 1683, 1689, 1716, 1753, 1804, 1811, 1815, 1870, 1882, 1905, 1982, 2047, 2063											Vitamins											2682ha	66 y M	vitamin D
2655ai	38 y F	drug, unknown marijuana	1 2	1 2	U	Unk	Int-A	3																																																																																																																																																																																																																																																																																																																																																																																				
2656p	39 y M	drug, unknown	1	1	U	Par	Int-A	2																																																																																																																																																																																																																																																																																																																																																																																				
2657pi	40 y F	drug, unknown	1	1	A/C	Ingst	Int-S	3																																																																																																																																																																																																																																																																																																																																																																																				
2658i	40 y M	drug, unknown	1	1	A	Unk	Int-S	2																																																																																																																																																																																																																																																																																																																																																																																				
2659ph	41 y M	drug, unknown	1	1	A	Ingst	Int-S	2																																																																																																																																																																																																																																																																																																																																																																																				
2660p	44 y F	drug, unknown ethanol	1 2	1 2	U	Ingst	Int-S	2																																																																																																																																																																																																																																																																																																																																																																																				
		drug, unknown clonazepam	1 2	1 2							2661h	49 y F	drug, unknown	1	1	A/C	Ingst	Int-S	2			2662phi	50 y F	drug, unknown	1	1	U	Unk	Unk	2			2663p	51 y M	drug, unknown ethanol	1 2	1 2	A	Ingst	Int-S	2			drug, unknown morphine	3	3	benzodiazepine	4	4	carisoprodol	2	2	2664ha	52 y M	drug, unknown	1	1	A	Ingst	Int-S	3			2665i	52 y F	drug, unknown hypochlorite	1 2	1 2	U	Ingst	Unk	3			drug, unknown	1	1	2666	54 y M	drug, unknown	1	1	A	Ingst	Int-S	2			2667pi	54 y M	drug, unknown	1	1	U	Ingst + Unk	Int-S	2			2668p	55 y F	drug, unknown salicylate	1 2	1 2	A	Ingst	Int-S	2			drug, unknown	1	1	2669ph	57 y M	drug, unknown	2	1	U	Unk	Unk	3			2670h	57 y F	drug, unknown methamphetamine	1	1	A	Ingst	Int-U	3			drug, unknown acetaminophen/diphenhydramine	2	2	2671	58 y M	drug, unknown	1	1	A	Ingst	AR-D	1		35.2 mcg/mL In Blood (unspecified) @ Unknown	2672h	59 y M	drug, unknown narcotic, other/unknown	1 2	1 2	U	Unk	Int-A	3			2673h	60 y M	drug, unknown	1	1	U	Ingst	Int-S	3			2674ai	62 y M	drug, unknown	1	1	U	Unk	Int-A	3			2675ai	62 y M	drug, unknown	1	1	C	Unk	Int-A	2			2676p	62 y M	drug, unknown	1	1	A/C	Ingst	Int-A	2			bupropion	2	2	gabapentin	3	3	oxycodone	4	4	meloxicam	5	5	citalopram	6	6	cyclobenzaprine	7	7	naproxen	8	8	2677p	63 y F	drug, unknown	1	1	A	Ingst	Int-S	2			2678ha	66 y F	drug, unknown	1	1	A/C	Ingst	Int-S	3			drug, unknown	1	1	2679ai	66 y M	drug, unknown	1	1	U	Unk	Int-A	3			2680ai			1 d M	drug, unknown	1							1	U	Unk	Unk	3			2681h	30 + y F	drug, unknown	1	1	U	Unk	Int-S	2			drug, unknown	1	1	See Also case 11, 14, 118, 164, 352, 403, 532, 598, 600, 643, 753, 798, 856, 888, 917, 967, 1117, 1118, 1214, 1287, 1323, 1365, 1376, 1392, 1457, 1494, 1505, 1515, 1516, 1656, 1683, 1689, 1716, 1753, 1804, 1811, 1815, 1870, 1882, 1905, 1982, 2047, 2063											Vitamins											2682ha	66 y M	vitamin D	1	1	C	Ingst	AR-D	3																																																							
2661h	49 y F	drug, unknown	1	1	A/C	Ingst	Int-S	2																																																																																																																																																																																																																																																																																																																																																																																				
2662phi	50 y F	drug, unknown	1	1	U	Unk	Unk	2																																																																																																																																																																																																																																																																																																																																																																																				
2663p	51 y M	drug, unknown ethanol	1 2	1 2	A	Ingst	Int-S	2																																																																																																																																																																																																																																																																																																																																																																																				
		drug, unknown morphine	3	3																																																																																																																																																																																																																																																																																																																																																																																								
		benzodiazepine	4	4																																																																																																																																																																																																																																																																																																																																																																																								
		carisoprodol	2	2																																																																																																																																																																																																																																																																																																																																																																																								
2664ha	52 y M	drug, unknown	1	1	A	Ingst	Int-S	3																																																																																																																																																																																																																																																																																																																																																																																				
2665i	52 y F	drug, unknown hypochlorite	1 2	1 2	U	Ingst	Unk	3																																																																																																																																																																																																																																																																																																																																																																																				
		drug, unknown	1	1																																																																																																																																																																																																																																																																																																																																																																																								
2666	54 y M	drug, unknown	1	1	A	Ingst	Int-S	2																																																																																																																																																																																																																																																																																																																																																																																				
2667pi	54 y M	drug, unknown	1	1	U	Ingst + Unk	Int-S	2																																																																																																																																																																																																																																																																																																																																																																																				
2668p	55 y F	drug, unknown salicylate	1 2	1 2	A	Ingst	Int-S	2																																																																																																																																																																																																																																																																																																																																																																																				
		drug, unknown	1	1																																																																																																																																																																																																																																																																																																																																																																																								
2669ph	57 y M	drug, unknown	2	1	U	Unk	Unk	3																																																																																																																																																																																																																																																																																																																																																																																				
2670h	57 y F	drug, unknown methamphetamine	1	1	A	Ingst	Int-U	3																																																																																																																																																																																																																																																																																																																																																																																				
		drug, unknown acetaminophen/diphenhydramine	2	2																																																																																																																																																																																																																																																																																																																																																																																								
2671	58 y M	drug, unknown	1	1	A	Ingst	AR-D	1		35.2 mcg/mL In Blood (unspecified) @ Unknown																																																																																																																																																																																																																																																																																																																																																																																		
2672h	59 y M	drug, unknown narcotic, other/unknown	1 2	1 2	U	Unk	Int-A	3																																																																																																																																																																																																																																																																																																																																																																																				
2673h	60 y M	drug, unknown	1	1	U	Ingst	Int-S	3																																																																																																																																																																																																																																																																																																																																																																																				
2674ai	62 y M	drug, unknown	1	1	U	Unk	Int-A	3																																																																																																																																																																																																																																																																																																																																																																																				
2675ai	62 y M	drug, unknown	1	1	C	Unk	Int-A	2																																																																																																																																																																																																																																																																																																																																																																																				
2676p	62 y M	drug, unknown	1	1	A/C	Ingst	Int-A	2																																																																																																																																																																																																																																																																																																																																																																																				
		bupropion	2	2																																																																																																																																																																																																																																																																																																																																																																																								
		gabapentin	3	3																																																																																																																																																																																																																																																																																																																																																																																								
		oxycodone	4	4																																																																																																																																																																																																																																																																																																																																																																																								
		meloxicam	5	5																																																																																																																																																																																																																																																																																																																																																																																								
		citalopram	6	6																																																																																																																																																																																																																																																																																																																																																																																								
		cyclobenzaprine	7	7																																																																																																																																																																																																																																																																																																																																																																																								
		naproxen	8	8																																																																																																																																																																																																																																																																																																																																																																																								
2677p	63 y F	drug, unknown	1	1	A	Ingst	Int-S	2																																																																																																																																																																																																																																																																																																																																																																																				
2678ha	66 y F	drug, unknown	1	1	A/C	Ingst	Int-S	3																																																																																																																																																																																																																																																																																																																																																																																				
		drug, unknown	1	1																																																																																																																																																																																																																																																																																																																																																																																								
2679ai	66 y M	drug, unknown	1	1	U	Unk	Int-A	3																																																																																																																																																																																																																																																																																																																																																																																				
2680ai	1 d M	drug, unknown	1	1	U	Unk	Unk	3																																																																																																																																																																																																																																																																																																																																																																																				
2681h	30 + y F	drug, unknown	1	1	U	Unk	Int-S	2																																																																																																																																																																																																																																																																																																																																																																																				
		drug, unknown	1	1																																																																																																																																																																																																																																																																																																																																																																																								
See Also case 11, 14, 118, 164, 352, 403, 532, 598, 600, 643, 753, 798, 856, 888, 917, 967, 1117, 1118, 1214, 1287, 1323, 1365, 1376, 1392, 1457, 1494, 1505, 1515, 1516, 1656, 1683, 1689, 1716, 1753, 1804, 1811, 1815, 1870, 1882, 1905, 1982, 2047, 2063																																																																																																																																																																																																																																																																																																																																																																																												
Vitamins																																																																																																																																																																																																																																																																																																																																																																																												
2682ha	66 y M	vitamin D	1	1	C	Ingst	AR-D	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
See Also case 812, 1323, 1443, 1500, 1591										
Listing of 2,682 (1,388 Direct +1,294 Indirect) fatalities classified as Relative Contribution to Fatality category = 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).										
Annual Report ID: Bracketed [case number] = Narrative provided for this case in Appendix C .										
i = Indirect case; identified through other sources (news feeds, medical examiner data, or other) about which no inquiry to the PC was made, p = prehospital cardiac and/or respiratory arrest, h = hospital records reviewed, a = autopsy report reviewed.										
Age Gender: y = years, m = months, d = days, F = female, M = male, F-Pregnant = pregnant, U = unknown.										
Chronicity: C = chronic exposure, A = acute exposure, A/C = acute on chronic, U = unknown.										
Route: Aspir = Aspiration (with ingestion), B-S = Bite/sting, Derm = Dermal, Ingst = Ingestion, Inhal = Inhalation/nasal, Oc = Ocular, Ot = Otic, Oth = Other, Par = Parenteral, Rec = Rectal, Unk = Unknown, Vag = Vaginal.										
Reason: AR-D = Adverse reaction – Drug, AR-F = AR – Food, AR-O = AR – Other, Int-A = Intentional – Abuse, Int-M = Int – Misuse, Int-S = Int – Suspected Suicide, Int-U = Int – Unknown, Oth-C = Other – Contamination/tampering, Oth-M = Oth – Malicious, Oth-W = Oth – Withdrawal, Unk = Unknown reason, Unt-B = Unintentional – Bite/sting, Unt-E = Unt – Environmental, Unt-F = Unt – Food poisoning, Unt-G = Unt – General, Unt-M = Unt – Misuse, Unt-O = Unt – Occupational, Unt-T = Unt – Therapeutic error, Unt-U = Unt – Unknown.										
RCF (Relative Contribution to Fatality): 1 = Undoubtedly responsible, 2 = Probably responsible, 3 = Contributory. Provided by the RPC for Indirect cases and the AAPCC Fatality Review Team for the direct (non-Indirect) cases.										

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

	No. of Case Mentions	No. of Single Exposure	Age							Reason				Outcome					
			Age							Reason				Outcome					
			≤5	6-12	13-19	≤20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rtn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Nonpharmaceuticals																			
Adhesives/Glues																			
Miscellaneous Adhesives/Glues	4,381	4,316	1,887	354	265	1,424	15	322	49	4,141	117	21	23	1,185	634	858	130	2	0
Cyanoacrylates (Superglues, etc)	630	583	164	14	18	317	2	62	6	556	8	4	12	182	87	141	55	1	0
Epoxy	1,224	965	560	247	70	60	4	21	3	890	63	6	3	48	95	51	5	0	0
Non-Toxic Adhesives/Glues (White Glue, Paper Glue, etc)	253	236	103	7	10	97	0	15	4	219	13	0	3	48	33	45	8	0	0
Toluene/Xylene (Adhesives Only)	4,248	3,868	1,603	407	205	1,207	8	394	44	3,605	163	34	52	583	585	556	101	7	0
Unknown Types of Adhesive, Glue, Cement or Paste	10,736	9,968	4,317	1,029	568	3,105	29	814	106	9,411	364	65	93	2,046	1,434	1,651	299	10	0
Alcohols																			
Miscellaneous Alcohols	54,446	8,151	1,976	196	941	4,513	13	418	94	2,628	4,850	328	159	4,449	979	2,059	1,300	253	66
Ethanol (Beverages)	3,067	2,244	1,442	119	94	520	2	55	12	1,922	259	33	14	326	402	243	62	14	0
Ethanol (Non-Beverage, Non-Rubbing)	120	92	37	6	3	40	0	6	0	84	6	0	0	30	16	18	10	0	0
Higher Alcohols (Butanol, Amyl Alcohol, Propanols, etc)	3,935	3,409	1,439	146	194	1,420	3	187	20	2,557	770	30	25	1,026	626	677	311	40	0
Isopropanol (Excluding Rubbing Alcohols and Cleaning Agents)	675	551	105	8	40	342	1	48	7	477	52	8	4	224	120	97	24	12	7
Methanol (Excluding Automotive Products and Cleaning Agents)	189	168	107	7	7	40	0	5	2	156	9	0	3	31	46	15	4	1	0
Other Types of Alcohol	1,032	277	63	9	34	141	3	17	10	112	131	5	7	127	25	56	34	22	5
Rubbing Alcohols																			
Rubbing Alcohols: Ethanol with Methyl Salicylate	5	4	2	0	0	2	0	0	0	4	0	0	0	1	2	1	1	0	0
Rubbing Alcohols: Ethanol without Methyl Salicylate	181	169	105	6	8	48	0	2	0	154	11	1	2	20	43	26	3	0	0
Rubbing Alcohols: Isopropanol with Methyl Salicylate	204	198	148	9	2	36	0	3	0	179	15	3	1	66	65	37	4	0	0
Rubbing Alcohols: Isopropanol without Methyl Salicylate	7,624	6,908	3,703	261	327	2,257	14	314	32	5,692	1,094	64	22	1,578	1,389	1,121	371	28	0
Rubbing Alcohols: Unknown	87	68	26	1	6	31	0	4	0	50	16	0	0	30	10	14	7	2	0
Category Total:	71,565	22,239	9,153	768	1,656	9,390	36	1,059	177	14,015	7,213	472	237	7,908	3,723	4,364	2,131	372	78
Miscellaneous Arts/Crafts/Office Supplies																			
Office Supplies																			
Artist Paints (Non-Water Color)	3,502	3,405	2,549	264	139	370	7	67	9	3,288	77	14	25	116	375	143	13	4	0
Artist Paints (Water Color)	1,578	1,538	1,281	141	41	59	5	9	2	1,494	36	5	2	24	160	26	4	0	0
Chalks	1,662	1,622	1,519	52	19	22	4	5	1	1,601	16	1	2	36	192	37	3	0	0
Clays	2,475	2,415	2,008	238	66	83	12	6	2	2,348	50	4	7	113	228	94	4	2	0
Crayons	1,811	1,733	1,464	137	32	81	11	6	2	1,691	40	1	0	47	137	42	1	0	0
Glazes	106	105	44	22	16	18	0	5	0	93	6	6	0	7	14	9	0	0	0
Office Supplies: Miscellaneous	87	84	48	12	4	18	0	2	0	81	3	0	0	7	13	8	1	0	0
Other Types of Arts/Crafts/ Writing Products	6,702	6,300	4,499	766	249	583	44	139	20	6,001	227	36	25	284	826	265	21	2	1
Pencils	1,229	1,170	541	442	102	54	11	14	4	1,029	111	17	4	42	109	41	3	0	0
Pen or Ink	8,687	8,445	5,442	1,870	649	302	43	108	31	7,907	440	40	41	255	1,018	209	16	2	0
Typewriter Correction Fluids	530	516	319	71	45	64	2	9	6	468	39	6	1	50	111	34	5	0	0
Unknown Types of Arts/Crafts/ Writing Products	113	109	65	31	6	6	0	1	0	106	3	0	0	8	20	8	0	0	0
Category Total:	28,482	27,442	19,779	4,046	1,368	1,660	139	371	79	26,107	1,048	130	107	989	3,203	916	71	10	1
Automotive/Aircraft/Boat Products																			
Automotive Products																			

(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				Outcome					
		Age							Reason				Outcome					
		≤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
922	844	209	10	51	489	3	73	9	784	47	6	1	306	139	240	37	5	1
6,144	5,583	485	120	458	3,968	11	469	72	4,601	772	139	9	2,270	1,086	998	417	112	10
137	127	33	6	6	71	0	9	2	116	8	1	0	37	35	19	4	1	1
1,980	1,853	573	47	100	966	2	150	15	1,732	88	11	11	616	353	564	103	3	0
1,220	1,149	173	32	91	709	2	130	12	1,054	75	13	0	359	286	233	34	7	0
161	153	63	8	5	65	1	9	2	147	2	4	0	35	30	21	4	1	0
13	10	5	0	0	4	0	1	0	9	0	1	0	3	2	1	0	0	0
1,336	1,274	451	43	77	598	0	94	11	1,215	31	8	15	402	227	347	78	3	0
194	175	35	8	21	89	0	17	5	161	8	4	1	82	29	51	16	1	0
12,107	11,168	2,027	274	809	6,959	19	952	128	9,819	1,031	187	37	4,110	2,187	2,474	693	133	12
480	466	266	51	25	101	1	19	3	443	12	2	8	329	221	56	16	0	0
255	185	85	22	15	61	0	2	0	133	34	1	13	152	62	33	46	7	0
4	4	3	0	0	1	0	0	0	4	0	0	0	3	4	0	0	0	0
7	5	3	0	0	2	0	0	0	4	1	0	0	1	1	0	0	0	0
9	7	4	1	1	1	0	0	0	7	0	0	0	5	4	0	0	0	0
42	42	20	5	0	15	0	1	1	39	1	1	0	25	25	3	0	0	0
2,398	2,331	1,487	299	67	424	14	35	5	2,231	72	15	5	1,791	1,101	148	42	7	1
328	314	127	21	2	158	0	6	0	309	4	1	0	193	208	16	3	5	0
565	556	30	16	32	392	2	76	8	540	8	3	4	208	65	156	52	1	0
358	336	49	12	98	112	3	56	6	309	23	0	4	52	125	40	13	0	0
5,176	4,989	2,914	494	278	1,014	19	244	26	4,487	414	62	11	1,000	1,233	500	91	2	0
87	81	30	11	10	27	0	3	0	67	7	4	1	200	19	14	3	0	0
9,709	9,316	5,018	932	528	2,308	39	442	49	8,573	576	89	46	3,782	3,068	966	266	22	1
572	566	22	41	65	384	1	46	7	553	3	2	8	268	15	197	84	3	0
189	188	25	46	28	70	1	17	1	187	0	0	1	43	3	66	18	0	0
259	252	121	30	13	72	1	14	1	239	6	3	2	45	26	34	12	0	0
1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0
19	19	0	0	2	16	0	0	1	19	0	0	0	13	0	6	3	0	0
54	50	2	1	4	39	0	3	1	50	0	0	0	35	3	10	17	2	0
534	493	169	39	29	194	0	58	4	476	0	16	1	69	10	116	27	2	1
3,629	3,542	592	342	169	2,018	11	358	52	3,535	3	3	1	628	29	1,172	261	8	1
2,114	2,110	517	288	154	973	11	141	26	2,064	16	3	24	328	41	660	105	0	0
497	492	120	31	25	277	0	33	6	491	0	1	0	75	18	160	28	0	0
252	112	27	5	4	65	0	10	1	112	0	0	0	21	2	25	3	0	0
4,810	4,648	1,039	311	246	2,448	16	531	57	4,524	18	73	23	890	157	999	290	2	0
12,669	12,645	1,394	1,380	952	8,319	12	457	131	12,642	1	1	0	1,526	73	8,319	569	26	0
871	837	210	88	35	367	15	115	7	831	2	1	1	158	36	115	18	2	0
685	675	83	81	65	361	5	73	7	672	1	0	0	441	116	83	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					Outcome				
		≤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
687	681	56	60	53	431	3	64	14	680	0	0	0	0	479	4	306	34	0
2,472	2,461	336	467	274	1,229	9	111	35	2,459	1	0	1	1,965	19	1,223	181	6	0
21	21	1	1	2	15	0	1	1	21	0	0	0	13	2	9	0	0	0
24	24	1	1	1	1	0	6	0	21	0	2	0	13	0	7	1	0	0
641	636	65	74	46	344	4	84	19	611	6	5	5	359	65	169	14	0	0
120	120	9	8	16	71	0	6	10	118	2	0	0	74	14	37	2	0	0
925	907	232	132	79	351	11	90	12	841	4	57	3	283	58	179	26	1	0
8	8	1	1	0	4	0	2	0	8	0	0	0	7	0	4	0	0	0
248	246	35	30	13	127	2	34	5	237	2	0	6	102	6	84	20	0	0
315	311	108	54	29	93	3	18	6	295	11	0	2	68	25	86	12	0	0
1,902	1,842	463	122	97	940	4	179	37	1,819	3	12	4	364	53	427	89	4	0
645	640	55	85	99	377	0	22	2	636	3	0	0	428	32	336	40	1	0
1,922	1,894	138	221	224	1,244	2	50	15	1,889	4	0	0	1,679	45	860	615	28	0
2,035	2,008	67	159	185	1,571	1	22	3	2,003	5	0	0	1,947	16	584	1,214	46	0
80	79	2	6	13	53	1	2	2	78	1	0	0	70	5	41	15	2	0
255	251	7	11	22	209	0	2	0	251	0	0	0	242	4	85	122	10	0
753	739	31	39	45	604	0	15	5	732	4	1	1	698	13	199	370	56	1
1,028	998	51	78	102	753	0	14	0	994	1	2	1	958	15	237	560	79	1
1,346	1,330	95	69	111	977	1	70	7	1,324	0	1	2	739	48	448	289	9	0
898	886	69	52	63	565	3	113	21	882	1	1	1	411	22	194	202	15	1
85	84	18	7	6	43	0	9	1	83	1	0	0	19	4	16	8	0	0
2,906	2,873	319	173	195	1,843	6	302	35	2,858	7	3	4	652	53	707	183	3	0
20	19	0	2	1	14	0	2	0	19	0	0	0	8	0	8	0	0	0
46,491	45,688	6,483	4,536	3,467	27,473	123	3,074	532	45,255	106	187	92	16,119	1,032	18,208	5,444	305	5
355	320	41	29	11	173	4	59	3	304	0	9	7	39	63	25	6	1	0
497	455	196	48	26	144	2	35	4	430	12	2	8	105	55	73	16	0	0
122	119	47	6	4	49	0	12	1	113	3	1	2	30	10	17	6	1	0
412	388	261	12	11	78	1	22	3	375	9	0	2	50	69	38	14	0	0
7	7	1	0	0	6	0	0	0	6	1	0	0	0	0	2	1	0	0
2,347	2,278	1,471	98	50	525	5	110	19	2,216	29	6	18	191	444	194	21	1	0
1,175	1,138	348	29	45	624	1	78	13	1,107	9	3	12	438	131	236	167	10	1
2,220	2,056	1,018	74	67	720	3	150	24	1,981	46	8	13	438	351	342	98	12	0
173	170	44	4	12	99	0	6	5	163	3	1	3	54	31	47	15	0	0
138	74	25	0	2	36	0	11	0	71	1	1	1	19	13	18	5	0	0
7,446	7,005	3,452	300	228	2,454	16	483	72	6,766	113	31	66	1,364	1,167	992	349	25	1
1,839	1,515	80	54	164	1,056	2	126	33	1,441	41	9	12	686	127	527	193	11	3
676	579	7	5	37	483	0	41	6	565	6	0	5	456	55	231	136	6	1

(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				Outcome			
		≤20					≥20					Unint	Int	Other	Adv Rxn	Treated in Health Care Facility			Death
		≤5	6-12	13-19	20-29	≥30	Unknown	Child	Adult	Unknown	Age					None	Minor	Moderate	
4,678	3,920	577	244	272	2,321	15	432	59	3,647	165	36	38	1,491	458	1,173	391	26	3	
154	128	9	7	10	85	0	15	2	119	4	2	0	71	5	35	22	3	1	
1,352	1,160	400	46	82	550	1	68	13	1,049	70	15	11	336	159	298	49	7	0	
3,671	3,231	487	113	281	1,959	4	318	29	3,029	91	37	51	1,646	281	968	599	42	2	
2,675	1,846	367	97	137	1,032	10	188	15	1,678	96	43	18	673	230	524	194	15	0	
7,333	6,832	2,448	1,247	535	2,113	27	405	57	6,380	214	138	75	862	1,122	639	54	2	1	
28	20	2	0	7	8	0	3	0	15	1	4	0	11	2	5	5	1	0	
225	154	3	4	6	121	1	16	3	111	12	19	2	99	39	29	18	2	3	
8	7	0	0	0	3	0	3	1	4	0	2	1	2	0	3	0	0	0	
798	626	52	29	38	454	1	43	9	385	178	19	2	381	117	91	92	61	15	
642	579	43	22	71	357	6	68	12	519	23	12	19	235	69	195	39	3	0	
333	286	69	3	11	176	1	25	1	276	5	1	2	135	49	97	38	1	0	
164	138	20	3	4	89	0	19	3	134	2	0	1	56	12	34	14	0	1	
1,011	934	272	216	107	264	12	56	7	733	166	13	14	222	204	130	36	9	0	
12,469	10,704	4,125	827	678	4,039	41	818	176	9,765	418	146	332	2,503	1,635	1,927	485	36	9	
1	1	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	
743	573	215	37	33	250	1	34	3	507	28	11	24	152	97	105	19	2	1	
276	261	32	6	17	180	0	24	2	247	8	2	4	127	35	71	49	4	0	
31	19	7	1	1	7	0	2	1	11	3	3	2	7	4	2	0	1	0	
477	441	102	24	18	248	1	46	2	422	14	1	3	136	61	96	27	0	0	
3,717	3,452	706	195	206	1,771	22	483	69	2,768	126	344	116	1,164	432	771	233	9	2	
43,301	37,406	10,023	3,180	2,715	17,606	145	3,234	503	33,806	1,671	857	732	11,452	5,193	7,951	2,693	241	42	
2,336	2,326	2,188	25	21	78	0	14	0	2,308	5	13	0	123	539	383	7	0	0	
2,082	2,044	1,679	33	26	230	7	64	5	2,007	14	17	6	129	363	246	15	2	0	
6,663	6,624	6,247	55	46	228	4	38	6	6,597	9	14	0	412	1,402	1,092	34	0	0	
465	458	408	11	4	29	1	5	0	454	1	1	0	45	114	68	10	0	0	
1,626	1,587	1,298	28	24	190	2	38	7	1,569	9	9	0	138	351	230	31	1	0	
3,003	2,980	2,767	32	24	134	2	20	1	2,955	11	11	2	146	730	304	9	0	0	
946	915	730	9	9	142	3	21	1	902	6	5	1	90	177	149	17	0	0	
1,695	1,656	1,385	21	26	184	2	33	5	1,626	11	16	3	98	254	190	11	1	0	
592	467	191	20	33	183	0	30	10	407	43	9	6	131	82	114	16	0	0	
40,302	33,446	12,699	1,375	2,814	13,857	81	2,274	346	29,493	2,903	566	315	9,364	4,822	9,538	1,169	50	3	
267	226	71	11	22	108	0	10	4	183	30	5	5	57	40	54	9	1	0	
713	601	202	28	56	281	1	28	5	503	66	26	5	212	62	164	27	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					Outcome								
		≤20					21-65					66-99					Treated in Health Care Facility					Outcome			
		≤5	6-12	13-19	20-39	40-59	60-79	80-89	90-99	Unknown	Child	Adult	Unknown	Age	Unint	Int	Other	Adv Rxn	None	Minor	Moderate	Major	Death		
1,984	1,833	1,368	45	43	310	0	59	8	1,760	43	17	13	177	405	173	15	0	0	0	0	0	0	0		
2,827	2,522	1,536	78	105	659	5	127	12	2,344	98	51	16	475	426	377	60	2	0	0	0	0	0	0		
2,559	2,147	945	83	86	829	9	177	18	1,997	86	22	29	561	257	541	108	3	0	0	0	0	0	0		
6,007	5,622	3,177	349	250	1,508	7	283	48	5,242	219	61	81	696	1,091	1,054	99	2	1	1	1	1	1	1		
673	630	357	74	45	123	0	27	4	559	50	14	4	83	126	92	9	1	0	0	0	0	0	0		
3,786	3,251	1,666	120	137	1,140	10	155	23	3,015	152	47	20	596	747	626	55	2	0	0	0	0	0	0		
95	71	7	4	2	47	0	11	0	64	3	2	2	25	5	16	12	0	0	0	0	0	0	0		
2,882	2,403	387	57	83	1,532	6	296	42	2,210	143	13	29	770	312	626	246	34	5	5	5	5	5	5		
18	12	3	0	0	8	0	1	0	12	0	0	0	3	3	4	1	0	0	0	0	0	0	0		
933	691	122	16	27	414	1	100	11	632	39	10	5	208	93	150	62	4	1	1	1	1	1	1		
442	351	33	17	9	247	1	42	2	340	4	1	5	137	26	102	71	4	2	2	2	2	2	2		
29	24	22	0	0	2	0	0	0	24	0	0	0	2	6	1	0	0	0	0	0	0	0	0		
98	96	79	3	2	8	0	3	1	91	3	1	1	4	23	9	0	0	0	0	0	0	0	0		
11	9	9	0	0	0	0	0	0	9	0	0	0	0	2	1	0	0	0	0	0	0	0	0		
14	13	8	0	1	2	0	2	0	12	1	0	0	0	1	1	0	0	0	0	0	0	0	0		
10	8	6	0	1	1	0	0	0	7	1	0	0	1	2	2	0	0	0	0	0	0	0	0		
899	816	578	33	28	148	2	25	2	759	29	8	19	106	174	88	7	0	0	0	0	0	0	0		
2	2	1	0	1	0	0	0	0	2	0	0	0	1	0	1	0	0	0	0	0	0	0	0		
683	665	546	25	4	62	1	22	5	635	15	6	9	24	109	30	3	0	0	0	0	0	0	0		
1,513	1,366	1,006	59	89	172	3	32	5	1,252	95	15	2	140	342	167	6	0	0	0	0	0	0	0		
92	79	49	3	1	20	0	6	0	73	4	2	0	6	7	6	1	0	0	0	0	0	0	0		
1,516	1,378	988	60	67	215	2	41	5	1,295	58	21	3	134	288	150	17	1	0	0	0	0	0	0		
1,524	1,350	888	63	98	238	6	51	6	1,199	123	24	1	186	308	186	19	0	0	0	0	0	0	0		
5,649	4,895	2,935	302	137	1,253	10	243	15	4,618	95	128	47	422	591	890	57	0	0	0	0	0	0	0		
2,233	1,903	1,106	101	75	514	3	94	10	1,815	23	55	7	151	198	263	17	1	0	0	0	0	0	0		
64	61	28	0	3	26	1	3	0	55	2	0	1	11	10	7	1	0	0	0	0	0	0	0		
23	22	12	2	1	4	0	3	0	22	0	0	0	4	6	3	0	0	0	0	0	0	0	0		
488	458	230	77	23	114	0	12	2	431	10	16	1	48	112	60	7	2	0	0	0	0	0	0		
1,292	1,226	1,041	39	29	93	1	17	6	1,194	19	6	5	119	257	125	16	0	0	0	0	0	0	0		
53	52	29	8	1	12	0	1	1	45	3	3	1	6	10	10	1	0	0	0	0	0	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				Outcome						
		≤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
338	326	234	17	5	57	1	12	0	318	6	1	1	61	67	71	8	0	0
2,454	2,331	1,645	111	84	393	4	84	10	2,217	76	23	10	349	389	403	27	0	0
233	231	207	7	1	11	1	4	0	228	3	0	0	86	42	80	11	1	0
12,286	12,091	10,431	632	196	652	24	139	17	11,913	132	17	20	4,361	2,332	5,060	664	23	1
6,677	6,287	4,335	269	222	1,228	4	205	24	5,992	219	56	9	1,018	1,047	1,170	124	3	2
248	227	125	12	17	59	1	12	1	208	11	3	5	67	47	41	15	0	0
176	151	107	8	7	27	0	2	0	142	5	1	2	29	34	33	5	0	0
178	169	145	7	0	14	0	2	1	167	1	0	1	18	28	33	1	0	0
240	227	192	4	5	19	1	5	1	219	7	0	1	23	37	35	4	0	0
1	1	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0
72	71	65	1	1	4	0	0	0	69	2	0	0	6	17	6	0	0	0
189	184	143	3	3	30	0	4	1	180	3	1	0	27	59	28	2	0	0
1,552	1,484	1,270	35	31	120	0	25	3	1,449	25	7	2	124	281	233	25	0	0
1,887	1,790	1,386	39	39	268	1	48	9	1,747	18	10	12	183	329	316	23	0	0
32	30	25	0	0	4	0	1	0	30	0	0	0	3	5	4	1	0	0
60	56	44	0	2	8	1	1	0	55	0	0	1	8	7	6	2	0	0
1,351	1,181	442	36	44	563	3	85	8	1,106	35	31	9	321	242	300	72	2	0
7,214	6,316	3,678	198	251	1,802	17	319	51	5,944	240	70	40	1,390	1,222	1,171	288	18	0
5,008	4,523	2,915	183	152	1,038	13	202	20	4,309	131	52	24	622	731	633	76	0	0
2,780	2,553	1,414	112	143	756	3	110	15	2,373	130	19	24	432	425	481	82	2	0
531	502	338	25	13	89	2	14	1	489	7	3	2	41	103	64	3	0	0
406	371	227	16	15	85	2	25	1	344	17	4	5	59	76	53	4	1	0
1,827	1,710	1,072	176	88	284	5	79	6	1,574	96	26	10	140	280	194	16	2	0
25	23	11	0	2	8	1	1	0	23	0	0	0	4	5	6	1	0	0
4,714	4,262	2,359	268	193	1,180	14	199	49	3,948	196	72	31	809	767	847	114	7	0
9	8	2	0	0	5	0	1	0	8	0	0	0	4	2	3	1	0	0
669	489	147	24	25	240	2	42	9	429	45	6	9	126	83	118	25	3	0
3,176	2,954	2,049	86	60	651	1	99	8	2,860	40	17	33	382	528	478	46	4	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					Outcome					
		≤5	6-12	13-19	≤20	Unknown		Unint	Int	Other	Adv Rxn	Treated in Health Care Facility			None	Minor	Moderate	Major	Death
						Child	Adult					Unkn Age	Unkn Care	Facility					
51	48	7	1	5	32	0	3	0	45	2	0	1	36	4	21	13	1	0	
247	233	172	17	6	30	1	6	1	223	5	4	1	13	39	15	3	0	0	
5	5	1	1	0	1	0	2	0	5	0	0	0	0	1	0	0	0	0	
2,002	1,920	322	58	152	1,120	16	223	29	1,846	26	28	17	691	180	543	261	13	0	
2	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	
296	265	53	5	19	150	2	30	6	245	5	10	4	85	19	71	26	0	0	
315	271	80	6	9	147	0	26	3	255	8	4	4	51	51	60	10	0	0	
12	11	2	0	0	7	0	2	0	10	1	0	0	6	0	2	2	0	0	
216	209	33	2	6	144	0	24	0	198	7	4	0	106	47	58	23	0	0	
166	150	32	2	5	88	0	20	3	138	3	2	3	29	14	31	11	0	0	
129	121	95	2	2	20	1	1	0	120	1	0	0	15	21	17	2	0	0	
85	82	53	5	4	19	0	1	0	80	1	0	0	11	14	19	2	0	0	
44	44	26	3	2	11	0	1	1	42	1	0	1	7	11	9	2	0	0	
21	21	16	1	0	3	0	0	1	21	0	0	0	2	6	3	1	0	0	
367	343	184	7	11	113	1	26	1	334	4	2	3	75	66	84	11	0	0	
112	107	76	3	2	19	0	7	0	102	3	1	1	16	16	21	0	0	0	
5	5	4	0	0	1	0	0	0	5	0	0	0	2	1	1	0	0	0	
2,658	2,195	1,262	51	67	677	4	122	12	2,089	83	8	12	440	597	517	82	12	0	
3,979	3,687	3,036	55	77	427	9	72	11	3,589	77	5	14	517	1,043	524	51	1	0	
3,941	3,632	3,151	59	49	300	5	64	4	3,573	46	4	8	335	915	284	37	2	0	
1,423	1,192	725	31	44	310	1	77	4	1,131	42	7	10	194	262	246	28	1	0	
6,650	5,923	3,769	210	223	1,434	15	238	34	5,586	219	49	56	1,144	1,158	1,416	206	6	0	
8,195	7,265	4,502	251	289	1,928	12	255	28	6,854	301	61	22	1,301	1,493	1,104	115	4	1	
2,377	2,119	1,433	96	76	429	1	79	5	2,001	84	22	5	289	407	362	44	0	2	
298	270	197	9	13	42	0	7	2	256	2	10	1	24	61	35	1	1	0	
906	825	614	20	14	144	2	29	2	794	17	6	6	83	161	96	2	0	0	
470	438	346	11	17	52	1	11	0	423	7	6	2	25	118	53	1	0	0	
1,605	1,459	1,027	42	40	292	2	50	6	1,396	49	3	8	225	320	241	29	2	0	
189,999	170,676	105,275	6,484	7,184	42,880	345	7,504	1,004	160,422	6,865	1,870	1,074	32,456	31,084	35,994	4,848	222	18	
2,322	2,298	264	43	36	1,729	0	210	16	2,224	36	7	24	131	380	152	12	0	1	

(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				Outcome						
		Age						Reason				Outcome						
		≤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
1,469	1,402	484	96	66	617	0	128	11	1,257	57	5	80	134	215	163	21	0	0
15,030	14,636	12,704	445	286	936	18	227	20	14,211	203	51	155	268	2,343	712	16	1	0
1,695	1,636	1,435	36	25	111	1	26	2	1,601	15	4	16	21	202	47	2	0	0
42	38	33	0	2	3	0	0	0	36	1	0	1	9	10	6	2	0	0
2,078	1,994	958	48	114	711	5	140	18	1,735	40	7	205	390	302	389	89	1	0
572	561	490	12	8	38	4	9	0	554	4	1	1	65	115	51	5	1	0
196	194	134	2	6	43	1	6	2	182	2	0	9	95	46	58	26	2	0
38	35	26	3	1	4	0	1	0	35	0	0	0	12	5	8	2	0	0
335	332	233	7	7	69	0	12	4	315	3	0	13	158	48	99	36	1	0
2,020	1,885	1,591	63	48	148	3	29	3	1,826	39	3	16	147	329	164	18	0	0
1,162	1,058	649	64	52	240	6	41	6	933	107	5	8	137	190	161	27	1	0
2,607	2,495	1,815	70	83	396	5	113	13	2,352	39	8	93	355	433	335	48	1	0
133	130	72	1	6	42	0	9	0	115	1	0	14	47	22	35	8	0	0
5,675	5,318	3,932	298	194	726	13	135	20	5,019	195	16	77	497	592	897	70	4	0
19,411	18,898	14,393	1,786	715	1,726	37	216	25	16,941	1,555	317	26	1,604	4,567	1,439	220	25	1
188	184	145	9	3	25	1	1	0	168	14	1	0	21	49	16	3	0	0
1,948	1,902	1,482	163	67	153	6	25	6	1,802	93	5	0	99	330	109	8	2	0
602	566	347	90	43	68	6	11	1	483	55	22	3	79	114	66	11	1	1
1,474	1,412	1,266	31	17	79	1	15	3	1,392	8	2	6	121	278	129	12	0	0
3,092	3,017	2,663	196	37	104	3	12	2	2,962	27	5	20	140	530	245	7	0	0
20,946	20,089	16,399	680	474	2,033	31	408	64	19,189	273	53	548	735	2,534	1,097	101	2	0
14,685	14,482	12,855	319	473	659	20	133	23	13,973	336	49	109	498	1,799	890	45	1	0
691	668	219	15	82	274	1	65	12	453	50	7	153	179	81	167	75	0	0
43	43	25	2	2	2	1	3	0	38	1	0	3	11	6	0	0	0	0
1,436	1,371	1,134	31	40	133	1	22	10	1,313	13	2	42	82	177	95	15	0	0
851	831	722	39	24	35	0	7	4	802	24	0	5	13	142	38	0	0	0
4,485	4,353	3,843	146	63	223	5	36	37	4,045	63	7	232	86	517	315	21	0	0
7,547	7,255	5,739	404	352	627	11	98	24	6,830	302	86	17	661	1,449	1,212	51	2	0
6,863	6,318	2,057	309	357	2,924	10	577	84	5,798	288	50	158	1,162	782	1,477	214	14	0
1,454	1,414	1,260	36	29	69	3	16	1	1,369	30	4	7	95	202	213	12	2	0
1,595	1,558	1,235	49	49	169	5	47	4	1,490	43	14	11	216	273	286	28	3	0
13,082	12,363	8,731	669	467	2,097	28	312	59	11,632	384	111	209	870	1,452	1,642	102	2	0
8,216	8,073	6,871	474	126	469	18	102	13	7,870	56	21	122	304	918	785	23	0	0
5,764	5,158	1,371	394	394	2,576	4	383	36	4,134	963	9	14	951	702	575	198	20	1
5,195	5,127	3,419	981	97	537	5	81	7	5,026	68	4	22	80	829	152	3	0	0
1,511	1,461	573	137	66	598	0	86	1	1,358	76	1	23	64	211	70	2	0	0
208	183	47	12	13	89	0	16	6	147	31	0	2	36	29	19	5	1	0
915	909	341	147	117	253	7	38	6	883	19	1	5	394	90	254	69	0	0
219	212	159	2	18	31	0	1	1	207	1	0	4	65	45	51	10	0	0
10	10	8	0	0	2	0	0	0	10	0	0	0	4	2	2	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				Outcome																				
		≤5		6-12		13-19		≤20		Unknown		Adult		Unknown		Age		Unknown		Adv Rxn		Treated in Health Care Facility		None		Minor		Moderate		Major		Death	
		6-12	13-19	≤20	Unknown Child	Unknown Adult	Unknown	Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death															
Miscellaneous Nail Products	671	443	39	16	124	3	23	2	616	22	3	9	121	147	111	17	1	0															
Nail Polish Removers (Acetone Containing)	2,000	1,933	77	84	369	6	60	5	1,826	76	15	11	231	412	304	19	0	1															
Nail Polishes	5,855	5,121	249	107	288	13	71	6	5,744	87	9	10	424	1,011	644	19	0	0															
Other Nail Polish Removers	658	643	25	34	80	1	19	3	615	21	3	4	60	161	104	2	0	0															
Unknown Nail Polish Removers	5,426	3,516	280	312	893	11	164	19	4,937	193	44	4	715	968	772	47	2	0															
Category Total: Deodorizers	172,618	123,019	8,979	5,612	23,531	294	4,131	579	156,448	5,914	952	2,491	12,579	26,044	16,562	1,722	90	5															
Air Freshener	2,095	1,334	165	86	360	5	89	14	1,942	59	23	28	161	378	342	20	4	0															
Air Fresheners: Aerosols	9,352	8,126	237	147	571	10	124	13	9,063	91	55	15	615	1,722	1,266	41	0	0															
Air Fresheners: Liquids	1,968	1,696	91	31	108	2	16	1	1,912	23	9	0	169	370	120	11	0	0															
Air Fresheners: Solids	1,732	1,451	58	29	139	6	25	3	1,670	20	9	11	168	348	207	12	0	0															
Air Fresheners: Unknown Form	12	11	0	0	2	0	0	0	11	0	0	0	0	1	1	0	0	0															
Diaper Pail Deodorizers (Excluding Moth Repellants)	5,703	3,906	234	156	937	12	174	23	5,230	122	58	23	548	1,105	738	49	5	1															
Other Types of Deodorizer (Not For Personal Use)	488	473	403	8	41	1	10	3	465	7	1	0	52	112	42	6	0	0															
Toilet Bowl Deodorizers	80	79	60	4	11	0	3	0	76	2	1	0	8	19	9	0	0	0															
Unknown Types of Deodorizer (Not For Personal Use)	21,430	20,942	16,985	797	457	2,169	36	441	20,369	324	156	77	1,721	4,055	2,725	139	9	1															
Dyes	369	357	246	38	14	49	0	9	344	4	3	5	23	90	14	2	0	0															
Miscellaneous Dyes	870	781	639	89	19	27	6	1	743	34	0	4	21	122	33	2	0	0															
Dyes: Fabrics	70	67	44	4	4	9	0	5	65	1	0	0	5	17	2	0	0	0															
Dyes: Leathers	488	455	200	90	54	2	15	4	423	20	3	8	35	73	23	4	0	0															
Dyes: Other	53	45	30	4	5	0	1	0	40	4	0	1	7	11	3	1	0	0															
Dyes: Unknown	1,850	1,705	1,159	225	132	144	8	31	1,615	63	6	18	91	313	75	9	0	0															
Category Total: Essential Oils	642	575	374	60	23	95	0	21	491	41	5	37	56	174	6	0	0	0															
Miscellaneous Essential Oil	605	556	356	14	12	146	1	25	505	19	0	32	101	109	139	10	1	0															
Cinnamon Oil	1,502	1,341	864	54	27	325	6	56	1,274	35	6	18	254	286	207	19	1	0															
Clove Oil	16,020	15,248	11,458	587	283	2,347	29	504	14,516	291	80	333	1,113	2,940	2,375	104	2	0															
Miscellaneous Essential Oils	24	22	5	2	1	12	0	2	15	3	0	4	6	6	2	1	1	0															
Pennyroyal Oil	4,597	4,326	2,192	136	207	1,478	3	283	3,980	208	22	90	530	983	453	38	1	0															
Tea Tree Oil	23,390	22,068	15,249	853	553	4,403	39	891	20,781	597	113	514	2,060	4,379	3,350	178	6	0															
Category Total: Fertilizers	1,391	1,338	720	91	44	405	4	68	1,298	26	12	1	62	214	49	7	1	0															
Miscellaneous Fertilizers	1,502	1,370	853	104	40	291	3	67	1,323	19	10	17	124	233	95	16	0	0															
Household Plant Foods (Generally for Indoor Plants)	1,835	1,722	1,096	114	40	390	7	69	1,666	22	8	23	119	315	122	16	0	0															
Other Types of Fertilizer	59	50	18	1	0	26	0	5	47	0	3	3	8	4	0	0	0	0															
Outdoor Fertilizers	106	97	38	11	4	34	0	8	93	2	2	0	10	13	8	0	1	0															
Plant Hormones	4,893	4,577	2,725	321	128	1,146	14	217	4,427	69	32	44	318	783	278	39	2	0															
Unknown Types of Fertilizer	2,772	2,701	239	395	325	1,040	95	313	2,406	65	195	15	639	562	726	121	0	0															
Category Total: Fire Extinguishers	2,772	2,701	239	395	325	1,040	95	313	2,406	65	195	15	639	562	726	121	0	0															
Miscellaneous Fire Extinguisher	323	293	236	11	2	31	0	12	286	3	2	2	15	45	17	2	0	0															
Miscellaneous Fire Extinguishers	3,292	3,242	2,928	184	51	61	2	12	3,190	45	2	2	157	371	474	16	1	0															
Category Total: Foreign Bodies/Toys/Miscellaneous																																	
Miscellaneous Foreign Bodies/Toys/Miscellaneous																																	
Category Total: Miscellaneous																																	
Miscellaneous																																	
Category Total: Ashes																																	
Miscellaneous																																	
Category Total: Bubble Blowing Solutions																																	
Miscellaneous																																	

(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				Outcome					
		≤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
738	616	417	29	30	108	0	24	8	556	21	4	30	53	79	38	10	0	0
269	265	207	13	5	25	2	13	0	258	6	0	1	1	50	16	1	0	0
2,749	2,679	2,182	402	34	41	4	12	4	2,615	57	3	0	960	664	260	27	1	0
18,718	18,559	15,256	1,248	342	1,265	76	310	62	18,156	245	122	17	924	2,203	162	7	1	0
5,417	4,708	3,687	152	90	540	19	186	34	4,553	30	93	23	184	573	138	14	1	0
3,839	3,752	880	209	189	1,514	39	836	85	3,605	40	70	31	251	560	180	13	1	0
15,491	15,459	11,881	2,829	309	268	52	93	27	15,279	160	9	4	716	1,618	2,838	50	0	0
191	186	140	4	6	19	1	14	2	178	2	4	1	13	35	11	2	0	0
23,875	22,646	15,251	2,519	792	2,904	86	959	135	21,425	663	288	216	1,956	3,563	973	125	6	0
494	488	208	100	38	112	3	26	1	451	28	6	2	33	95	17	0	0	0
2,325	2,060	1,379	134	37	398	2	99	11	1,982	27	11	36	176	229	139	24	0	1
8,214	8,122	6,213	1,434	201	176	18	68	12	7,845	190	34	47	538	1,226	506	24	1	0
1,462	1,418	959	224	61	136	4	32	2	1,348	47	9	7	100	179	69	11	3	0
Thermometers																		
1,032	1,020	211	127	74	330	17	232	29	996	9	7	4	75	170	14	1	0	0
682	669	211	93	44	204	8	96	13	649	8	8	3	39	128	30	1	0	0
108	108	20	10	10	48	0	18	2	107	0	1	0	9	12	1	0	0	0
89,219	86,290	62,266	9,722	2,315	8,180	333	3,042	432	83,479	1,581	673	426	6,218	11,800	5,883	328	15	1
Fumes/Gases/Vapors																		
425	403	32	34	55	212	3	56	11	367	24	2	7	96	69	101	26	0	0
12,846	11,508	14,79	917	852	6,425	148	1,418	269	11,003	341	46	29	5,751	2,273	3,166	1,237	203	44
2,230	2,115	80	40	119	1,529	7	316	24	2,000	96	7	11	370	241	664	152	4	0
4,305	4,039	328	286	275	2,544	36	525	45	3,869	114	10	37	1,130	355	1,331	488	9	1
2,284	2,166	102	68	123	1,561	7	293	12	2,074	85	0	3	479	313	816	236	5	0
Household Acid is Mixed with Hypochlorite																		
739	646	45	29	26	411	3	116	16	632	7	2	2	283	61	197	81	7	1
4,738	4,467	895	361	266	2,129	50	681	85	4,430	15	13	0	973	1,171	804	134	3	3
1,551	1,426	174	62	83	826	11	249	21	1,325	62	11	22	364	245	307	104	6	1
Other Types of Fume, Gas or Vapor																		
5	5	0	1	0	2	1	1	0	5	0	0	0	1	0	1	0	0	0
2,618	2,357	221	279	201	1,298	23	305	30	2,104	209	15	13	810	376	615	182	12	3
1,776	1,697	96	56	65	917	21	446	96	1,618	15	34	12	471	154	352	123	5	0
33,517	30,829	34,52	2,133	2,065	17,854	310	4,406	609	29,427	968	140	136	10,728	5,258	8,354	2,763	254	53
Heavy Metals																		
Miscellaneous Heavy Metals																		
762	690	417	33	34	157	0	46	3	647	14	12	13	48	91	44	9	0	0
837	737	127	21	19	462	1	94	13	467	13	114	19	376	113	58	37	9	1
23	15	0	1	6	7	0	1	0	11	0	2	2	5	3	2	1	0	0
91	62	3	1	2	48	0	7	1	45	2	4	0	36	5	7	3	1	0
657	545	85	42	88	244	4	74	8	486	24	16	13	166	62	147	30	1	0
Fireplace Flame Colors																		
2	18	7	3	2	5	0	1	0	16	0	2	0	3	1	3	0	0	0
2	2	1	0	0	1	0	0	0	2	0	0	0	0	0	1	0	0	0
2,397	2,219	1,099	179	97	606	29	184	25	2,032	28	56	13	1,052	585	144	78	4	1
55	38	8	6	3	17	0	4	0	33	0	1	2	17	3	4	1	0	0
150	136	17	3	7	88	0	16	5	101	6	11	4	41	24	15	2	1	0
1,045	973	85	75	76	498	8	193	38	827	45	30	46	250	227	39	18	1	0
Mercury, Elemental (Excluding Thermometer)																		
307	279	16	3	16	217	0	25	2	252	11	1	15	112	13	78	36	0	0
3,527	2,297	910	143	100	920	5	195	24	1,847	175	51	196	407	335	193	65	6	0
27	18	0	1	0	11	0	6	0	5	0	9	0	10	1	3	1	0	0
62	59	7	5	5	29	0	11	2	36	2	8	6	4	1	7	0	0	0
9,960	8,088	2,782	516	455	3,310	47	857	121	6,807	320	317	339	2,559	1,468	738	288	23	2
Hydrocarbons																		
Miscellaneous Hydrocarbons																		

(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				Outcome					
		Age							Reason				Outcome					
		≤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
66	46	3	1	4	29	0	9	0	39	3	4	0	23	9	6	5	0	0
38	36	1	0	1	24	0	9	1	35	0	0	0	0	13	7	0	0	0
696	649	120	8	37	399	2	74	9	608	31	6	0	183	103	178	38	0	0
4,671	4,437	308	219	338	2,917	21	550	84	3,382	969	49	12	1,762	687	1,035	549	39	26
9,331	8,891	1,711	531	725	4,941	23	879	81	8,090	640	99	29	2,132	1,192	2,742	352	13	0
719	663	299	31	26	242	2	56	7	626	18	11	4	228	140	193	47	4	1
1,123	1,096	749	48	26	223	2	44	4	1,055	22	13	4	426	262	563	109	10	0
2,191	2,038	1,049	58	98	693	11	117	12	1,877	95	48	8	723	387	547	129	10	0
3,494	3,267	1,780	161	133	1,023	5	150	15	3,107	90	60	5	625	833	513	79	4	0
24	24	11	0	3	6	0	3	1	22	1	1	0	5	4	4	1	0	0
1,546	1,428	398	35	84	789	4	107	11	1,327	59	27	12	533	233	407	108	7	0
219	187	32	5	13	117	0	19	1	167	13	3	4	81	21	64	13	2	0
3,984	3,625	1,674	164	146	1,375	12	233	21	3,451	117	30	16	1,010	696	764	178	13	1
620	525	75	11	16	351	0	46	26	489	21	5	7	230	73	170	49	3	1
331	290	46	9	20	172	1	39	3	219	54	10	3	94	52	52	20	1	0
467	411	136	14	22	204	0	28	7	362	35	2	6	141	79	98	38	5	0
29,520	27,613	8,392	1,295	1,692	13,505	83	2,363	283	24,856	2,168	368	110	8,209	4,782	7,043	1,715	111	29
Industrial Cleaners																		
Miscellaneous Industrial Cleaners																		
2,164	1,991	142	81	159	1,306	3	265	35	1,802	149	17	16	634	194	643	171	7	0
1,466	1,337	352	40	93	716	4	119	13	1,227	56	38	12	514	200	415	101	9	0
1,819	1,521	357	28	65	915	2	130	24	1,443	44	22	8	510	188	438	124	9	1
2,785	2,609	470	70	164	1,670	2	208	25	2,466	82	39	18	1,409	259	917	452	22	0
624	550	219	22	32	225	2	45	5	521	26	3	0	134	69	123	19	0	0
731	650	125	40	64	396	2	55	9	612	60	11	4	258	101	236	32	1	0
9,589	8,699	1,665	281	577	5,228	15	822	111	8,071	417	130	58	3,450	1,011	2,772	899	48	1
Infectious and Toxin-Mediated Diseases																		
Botulinum Toxins																		
262	241	55	7	2	131	2	37	7	158	4	2	68	88	31	17	15	15	1
Ichthyosarcotoxins																		
151	145	2	3	6	120	0	8	6	108	1	1	35	69	2	32	27	3	0
19	17	0	2	0	15	0	0	0	15	0	0	1	2	0	1	1	0	0
192	171	4	4	12	132	0	17	2	140	2	1	24	65	3	40	23	1	0
114	109	4	8	8	75	0	11	3	86	1	0	21	32	11	17	20	3	0
191	181	12	5	8	112	1	37	6	126	0	5	50	48	8	50	26	1	0
135	130	23	27	9	62	0	7	2	118	7	1	3	17	17	14	4	1	0
Infectious Diseases																		
397	376	93	27	23	154	3	70	6	317	1	17	35	66	30	51	26	3	0
2,445	2,370	674	229	153	1,043	10	240	21	2,076	8	150	135	42	275	87	7	0	0
49	47	16	4	2	20	0	5	0	40	1	3	3	4	3	4	3	0	0
Other Types of Bacterial Food Poisoning																		
(Salmonella, Shigella, Vibrio, Staphylococcus, Streptococcus, etc)																		
17	13	1	1	0	8	0	3	0	12	1	0	0	1	2	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
171	166	22	7	9	111	0	17	0	155	0	5	5	22	3	19	9	0	0
Unknown Types of Bacterial Food Poisoning																		
9,700	9,458	1,713	680	611	5,163	32	1,132	127	8,810	41	114	460	848	521	1,460	320	8	0
Unknown Types of Suspected Food Poisoning																		
309	160	16	10	4	95	0	27	8	136	1	11	7	70	7	7	4	0	0
14,153	13,584	2,635	1,014	847	7,241	48	1,611	188	12,297	68	310	847	1,374	913	1,799	485	35	1
Viral Diseases																		
Category Total:																		
7,485	5,485	2,774	416	257	1,518	25	451	44	4,510	275	309	357	535	732	703	80	5	0
Information Calls About Food Products, Additives or Supplements																		
4,854	4,737	1,182	433	295	2,198	9	568	52	4,295	18	128	280	184	461	298	66	1	0
Information Calls About Possibly Spoiled Foods																		
12,339	10,222	3,956	849	552	3,716	34	1,019	96	8,805	293	437	637	719	1,193	1,001	146	6	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					Outcome					
		Age							Reason					Outcome					
		≤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	
Lacrimators																			
Miscellaneous Lacrimators																			
Lacrimators: Capsicum Defense Sprays	3,320	3,277	608	794	608	892	45	231	99	2,615	128	377	31	833	191	1,584	141	4	0
Lacrimators: CN (Chloroacetophenone)	497	488	104	106	106	147	3	26	7	381	19	65	9	125	13	226	31	0	0
Lacrimators: CS (O-Chlorobenzylidene Malonitrile)	12	2	0	0	0	10	0	0	0	9	0	2	0	11	0	9	1	1	0
Lacrimators: Other	66	4	3	1	23	0	5	5	0	34	1	1	1	13	2	9	3	0	0
Lacrimators: Unknown	112	102	12	12	46	0	7	3	75	7	11	3	3	33	3	48	10	0	0
Category Total:	4,007	3,915	731	913	727	1,118	48	269	109	3,114	155	456	43	1,015	209	1,876	186	5	0
Matches/Fireworks/Explosives																			
Miscellaneous Matches/Fireworks/Explosives																			
Explosives	175	162	92	14	16	30	0	9	1	140	16	5	0	47	35	25	7	1	0
Fireworks	883	878	756	61	21	27	0	6	7	858	12	3	1	90	257	61	12	0	0
Matches	436	433	380	12	6	26	1	7	1	425	7	0	1	23	72	8	1	0	0
Other Types of Match, Firework, or Explosive	83	82	56	11	5	9	0	1	0	79	2	1	0	12	21	9	6	0	0
Unknown Types of Match, Firework, or Explosive	10	10	6	0	0	3	0	0	1	9	1	0	0	1	4	0	1	0	0
Category Total:	1,587	1,565	1,290	98	48	95	1	23	10	1,511	38	9	2	173	389	103	27	1	0
Miscellaneous Foods																			
Miscellaneous Foods																			
Capicum Peppers	2,229	2,121	511	261	367	718	27	205	32	1,516	232	42	300	215	40	858	81	5	0
Food Additives	441	403	154	35	27	149	1	33	4	298	14	7	81	51	50	55	22	0	0
Food Products	8,553	7,890	3,723	663	342	2,194	48	781	139	6,210	238	247	1,159	570	831	668	132	1	0
Other Adverse Reactions to Food	1,153	1,078	183	95	84	511	6	177	22	446	18	44	554	182	49	235	93	2	0
Category Total:	12,376	11,492	4,571	1,054	820	3,572	82	1,196	197	8,470	502	340	2,094	1,018	970	1,816	328	8	0
Mushrooms																			
Miscellaneous Mushrooms																			
Group 1 Mushrooms	58	56	16	1	4	31	0	2	2	38	12	0	5	38	18	12	7	3	0
Cyclopeptides	34	31	9	0	3	19	0	0	0	17	12	1	1	23	4	5	12	2	0
Group 2 Mushrooms: Muscimol (Ibotenic Acid)	26	24	2	3	2	16	0	0	1	19	3	0	2	15	7	5	3	1	0
Group 3 Mushrooms: Monomethylhydrazine (MMH)	36	36	1	0	2	31	0	2	0	25	5	0	6	26	1	24	2	0	0
Group 4 Mushrooms: Muscarine and Histamine	10	9	5	1	0	3	0	0	0	8	1	0	0	5	2	2	0	0	0
Group 5 Mushrooms: Coprine	446	296	23	4	96	151	1	16	5	54	231	1	8	229	10	61	128	6	0
Group 6 Mushrooms: Hallucinogenics (Psilocybin and Psilocin)	189	178	64	6	13	90	0	5	0	131	36	1	10	84	36	54	30	0	0
Group 7 Mushrooms: Gastrointestinal Irritants	119	107	50	12	4	34	0	7	0	85	5	0	16	25	26	16	3	1	0
Miscellaneous: Miscellaneous, Non-Toxic	148	133	45	12	11	52	0	12	1	103	6	0	23	34	37	26	9	2	0
Mushrooms: Other Potentially Toxic	5,070	4,911	3,229	405	226	905	23	96	27	4,187	529	13	148	1,528	1,920	630	254	19	2
Mushrooms: Unknown	6,136	5,781	3,444	444	361	1,332	24	140	36	4,667	840	16	219	2,007	2,061	835	448	34	2
Category Total:	23,732	21,666	10,724	2,035	892	5,937	127	1,569	382	19,542	736	645	506	3,180	4,128	3,282	523	32	3
Other/Unknown Nondrug Substances	6,243	5,991	1,141	272	230	3,334	30	764	220	4,453	167	858	177	1,577	561	670	250	54	8
Miscellaneous Other/Unknown Nondrug Substances	29,975	27,657	11,865	2,307	1,122	9,271	157	2,333	602	23,995	903	1,503	683	4,757	4,689	3,952	773	86	11
Other Non-Drug Substances	435	416	176	19	17	158	4	37	5	391	5	1	19	80	74	74	14	1	1
Unknown Substances Unlikely to be Drug Products	4,894	4,615	3,018	219	151	922	19	254	32	4,445	79	29	50	543	670	319	67	3	0
Category Total:																			
Paints and Stripping Agents																			
Miscellaneous Paints and Stripping Agents																			
Other Types of Paint, Varnish or Lacquer																			
Unknown Types of Paint, Varnish or Lacquer																			

(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					Outcome						
		Age							Reason					Outcome						
		≤5	6–12	13–19	20–29	30–39	40–49	≥50	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major
Varnishes and Lacquers	869	811	212	26	31	402	4	128	8	778	8	6	17	156	96	190	46	1	0	0
Paints	18	16	0	2	11	0	0	2	0	16	0	0	0	4	3	2	1	0	0	0
Anti-Algae Paints	49	42	6	1	31	0	0	2	0	42	0	0	0	12	3	16	2	0	0	0
Anti-Corrosion Paints	1,977	1,852	484	153	1,118	878	10	175	34	1,724	63	13	45	379	253	406	80	3	1	1
Oil-Base Paints	2,608	2,534	1,865	84	70	403	7	86	19	2,466	32	4	32	190	373	194	21	0	0	0
Water Base Paints (Acrylic, Latex, etc)	725	681	302	15	21	270	3	68	2	645	10	7	18	101	135	122	17	0	0	0
Stripping Agents	350	340	51	14	13	231	0	31	0	319	12	2	6	152	24	126	46	5	0	0
Methylene Chloride Stripping Agents	486	445	90	11	19	287	1	35	2	423	8	4	8	191	38	132	78	1	0	0
Other Types of Stripping Agent	64	59	7	1	8	41	0	2	0	59	0	0	0	24	3	22	9	0	0	0
Unknown Types of Stripping Agent	12,475	11,811	6,212	543	452	3,634	48	820	102	11,308	217	66	195	1,832	1,672	1,603	381	14	2	2
Pesticides	81	74	3	3	9	49	0	10	0	67	3	1	1	55	7	27	7	3	6	6
Fumigants	21	18	1	0	0	17	0	0	0	18	0	0	0	10	1	4	4	0	1	1
Aluminum Phosphide	42	38	4	1	1	22	0	9	1	35	0	0	3	12	5	9	1	0	0	0
Methyl Bromide	308	278	31	33	16	163	0	28	7	260	1	9	8	38	27	34	4	0	1	1
Other Fumigants	112	109	16	2	6	73	0	12	0	97	6	1	3	40	10	29	10	0	0	0
Sulfury Fluoride	80	54	15	2	4	31	1	1	0	51	1	0	2	21	8	15	5	0	0	0
Unknown Fumigants	84	81	6	3	2	59	0	11	0	80	1	0	0	12	13	17	1	0	0	0
Carbamate Fungicides	1	1	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0
Copper Compound Fungicides	604	474	109	24	14	270	1	50	6	455	8	2	9	72	87	73	19	2	0	0
Mercurial Fungicides	35	23	8	3	2	9	0	1	0	22	0	1	0	4	5	4	0	0	0	0
Other Types of Non-Medicinal Fungicide	50	31	9	1	0	19	0	2	0	28	1	1	0	9	4	6	3	0	0	0
Phthalimide Fungicides	138	132	20	7	2	90	1	11	1	131	1	0	0	24	12	18	3	0	0	0
Wood Preservatives	3	3	0	0	0	3	0	0	0	3	0	0	0	2	0	2	0	0	0	0
Herbicides (Including Algaecides, Defoliants, Desiccants, Plant Growth Regulators)	1,828	1,557	394	58	27	896	6	157	19	1,484	22	11	35	276	315	349	36	2	0	0
Carbamate Herbicides (Excluding Metam Sodium)	447	408	99	8	4	246	2	42	7	382	9	6	11	61	103	73	13	0	1	1
Chlorophenoxy Herbicides	3,550	3,167	645	110	72	1,954	6	355	25	3,001	40	34	79	561	624	719	82	4	4	4
Diquat	1,430	1,131	249	34	30	694	2	112	10	1,071	19	14	22	224	205	272	28	1	2	2
Glyphosate	122	105	2	0	5	80	0	14	4	94	1	3	0	54	20	24	10	3	1	1
Other Types of Herbicide	207	145	29	6	3	91	1	13	2	139	2	0	4	41	26	35	7	0	0	0
Paraquat	492	409	87	30	10	227	2	45	8	369	16	9	11	107	47	83	14	1	1	1
Triazine Herbicides	38	22	7	2	0	12	0	1	0	19	3	0	0	3	7	3	0	0	0	0
Unknown Types of Herbicide	1,485	1,378	425	84	47	654	9	140	19	1,263	63	27	21	310	292	221	50	2	0	0
Urea Herbicides	189	181	27	6	9	106	0	26	7	173	2	1	3	27	22	30	6	0	0	0
Insecticides (Including Insect Growth Regulators, Molluscicides, Nematicides)	163	147	55	4	2	64	0	19	3	130	10	1	5	44	27	23	2	2	0	0
Carbamate Insecticides Alone	188	183	42	5	10	95	0	27	4	165	3	0	15	37	21	52	11	0	0	0
Chlorinated Hydrocarbon Insecticides in Combination with Other Insecticides	182	91	34	3	1	37	0	13	3	86	2	0	3	12	12	12	1	0	0	0
Chlorinated Hydrocarbon Insecticides Alone	42	41	17	0	1	22	0	1	0	39	0	2	0	6	12	7	1	0	0	0
Insect Growth Regulators	32	27	14	0	3	6	0	4	0	24	2	0	0	3	7	0	0	0	0	0
Metalddehyde	2,326	2,126	623	96	65	1,089	19	208	26	1,954	88	14	50	585	524	374	109	24	4	4
Nicotine (Excluding Tobacco Products)	35	28	7	0	0	14	0	6	1	26	0	0	2	5	9	3	1	0	0	0
Organophosphate Insecticides Alone																				
Organophosphate Insecticides in Combination with Carbamate Insecticides																				

(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					Outcome				
		Age							Reason					Outcome				
		≤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
493	472	85	21	17	287	3	53	6	448	13	3	6	87	69	125	17	0	0
9,717	9,019	4,659	379	205	2,943	22	672	139	8,667	108	42	179	902	1,679	930	95	6	4
2	2	0	0	1	1	0	0	0	2	0	0	0	1	0	0	0	0	0
5,813	5,493	1,616	387	213	2,654	26	541	56	5,039	178	29	228	1,209	620	1,398	278	9	0
23,081	21,732	5,487	1,113	764	11,744	80	2,232	312	19,965	715	184	795	4,091	3,014	5,713	814	28	3
32	31	5	0	1	15	0	10	0	28	2	0	1	7	4	9	1	0	0
4,848	4,408	1,073	229	164	2,216	20	616	90	3,885	144	174	146	1,238	536	897	206	16	4
3	3	1	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0
Miscellaneous Pesticides																		
17	17	8	0	1	6	0	2	0	16	0	1	0	0	4	1	0	0	0
6,805	6,705	5,832	155	56	511	9	119	23	6,618	36	24	20	457	1,210	175	23	0	0
2	2	0	0	0	2	0	0	0	2	0	0	0	2	0	1	1	0	0
Repellents																		
467	446	121	33	11	218	0	56	7	422	8	4	12	68	52	97	9	0	0
3,960	3,893	2,012	535	184	915	13	200	34	3,553	83	43	206	363	532	1,028	76	3	0
1,456	1,417	1,034	110	29	1,974	4	33	10	1,362	10	7	38	94	225	239	17	0	0
1,202	1,180	725	63	19	268	5	95	5	1,136	27	3	13	193	307	83	27	1	0
5	4	1	0	0	2	0	1	0	4	0	0	0	1	2	1	0	0	0
122	122	76	4	2	28	0	9	3	115	5	0	2	22	30	9	1	1	0
177	167	98	13	8	34	1	11	2	159	3	1	4	31	19	26	7	0	0
1,965	1,930	1,092	69	37	506	11	196	19	1,844	54	9	19	285	473	161	30	0	0
Rodenticides																		
1,198	1,132	856	25	17	172	2	44	16	1,065	49	11	4	446	433	38	4	1	0
4	3	1	1	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
4,990	4,810	3,850	143	46	575	8	144	44	4,612	106	55	22	1,356	1,260	93	18	2	1
622	599	393	31	8	119	4	38	6	572	17	4	4	107	115	36	16	0	0
48	43	6	2	3	26	0	4	2	29	4	6	1	19	15	2	3	1	0
1,746	1,602	1,029	42	30	353	7	104	37	1,368	107	89	10	585	422	64	15	2	1
196	187	143	7	2	28	1	4	2	179	5	3	0	52	54	2	0	0	0
124	117	29	7	2	64	0	11	4	108	5	2	1	43	51	18	2	1	0
83,412	77,999	33,211	3,894	2,165	30,979	266	6,513	971	72,871	1,983	830	1,999	14,317	13,575	13,671	2,088	115	34
Photographic Products																		
Miscellaneous Photographic Products																		
93	83	23	0	25	30	0	4	1	78	3	0	2	16	15	14	2	0	0
274	252	164	25	7	43	0	9	4	243	8	0	1	16	47	21	3	0	0
6	6	4	1	0	1	0	0	0	6	0	0	0	1	0	1	0	0	0
2	2	0	0	0	1	0	1	0	2	0	0	0	2	0	0	0	0	0
375	343	191	26	32	75	0	14	5	329	11	0	3	35	62	36	5	0	0
Plants																		
Miscellaneous Plants																		
4,902	4,812	2,428	620	195	1,223	14	286	46	4,411	169	28	194	316	849	186	22	2	0
563	528	290	43	23	143	3	19	7	431	63	12	19	107	137	53	38	4	0
1,691	1,642	854	204	68	423	5	77	11	1,489	105	2	35	270	397	112	26	7	3
20	17	7	3	0	6	0	0	1	13	2	0	2	5	4	4	1	0	0
225	174	113	9	8	38	0	6	0	131	20	2	19	36	43	15	4	0	0
6,629	6,335	4,531	608	170	814	12	180	20	5,867	247	14	194	506	1,231	542	56	4	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				Outcome								
		Age							Reason				Outcome								
		≤5	6-12	13-19	20-70	159	2	31	Unknown Adult	Unknown Child	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
447	351	66	20	70	159	2	31	3	157	146	6	36	159	33	81	68	5	0	0	0	0
159	147	68	19	4	47	0	9	0	127	10	0	8	49	26	39	15	1	0	0	0	0
4,551	4,166	2,697	600	105	558	21	152	33	3,746	165	14	233	254	525	325	33	4	0	0	0	0
4,744	4,394	2,767	549	127	781	12	140	18	3,840	340	19	174	640	829	360	147	24	1	1	1	1
4,921	4,844	3,557	563	146	467	9	92	10	4,508	277	5	48	398	882	960	46	0	0	0	0	0
5,286	4,865	1,893	442	245	1,788	31	423	43	4,379	159	22	288	852	474	807	238	3	1	1	1	1
1,787	1,746	1,111	138	33	367	1	90	6	1,578	55	7	103	138	438	109	13	0	0	0	0	0
467	436	105	51	18	201	2	53	6	379	45	2	8	105	122	35	7	1	0	0	0	0
275	262	92	17	15	119	0	18	1	205	40	10	4	105	72	41	13	2	0	0	0	0
9,912	9,370	6,310	1,119	247	1,270	58	301	65	8,656	399	20	260	739	1,670	725	116	5	0	0	0	0
46,579	44,089	26,889	5,005	1,474	8,404	170	1,877	270	39,917	2,242	163	1,625	4,679	7,732	4,394	843	62	5	5	5	5
363	341	201	9	10	92	3	25	1	325	9	2	4	49	63	46	3	1	0	0	0	0
1,307	1,254	1,050	35	19	114	2	32	2	1,224	16	11	3	97	348	163	10	1	0	0	0	0
1,883	1,808	1,272	56	39	340	7	72	22	1,734	40	9	22	185	351	168	28	0	0	0	0	0
3,553	3,403	2,523	100	68	546	12	129	25	3,283	65	22	29	331	762	377	41	2	0	0	0	0
1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0
59	58	7	1	0	29	0	19	2	49	0	1	5	21	6	3	1	0	0	0	0	0
93	72	1	8	1	38	1	11	4	70	0	1	15	14	3	0	0	0	0	0	0	0
86	56	5	2	1	22	0	21	5	43	4	5	3	30	12	7	0	0	0	0	0	0
17	17	1	1	1	7	0	7	0	14	0	0	3	4	3	1	0	0	0	0	0	0
3	3	0	0	0	1	0	1	1	3	0	0	0	2	0	0	0	0	0	0	0	0
3	3	1	0	1	1	0	0	0	3	0	0	0	3	0	0	2	0	0	0	0	0
1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
21	21	0	0	0	16	0	3	2	18	3	0	0	0	0	1	4	1	0	0	0	0
14	14	0	0	0	12	0	1	1	12	0	0	1	9	3	0	0	0	0	0	0	0
10	10	0	0	0	8	0	2	0	8	0	0	1	8	0	4	1	0	0	0	0	0
12	11	1	0	0	8	0	2	0	10	0	0	1	6	0	4	1	0	0	0	0	0
7	7	1	1	0	5	0	0	0	6	1	0	0	0	2	1	0	0	0	0	0	0
327	274	26	13	4	148	1	67	15	238	8	7	15	100	44	25	5	0	0	0	0	1
50	50	36	5	4	5	0	0	0	46	3	1	0	0	8	0	0	0	0	0	0	0
25	24	14	4	3	2	0	1	0	21	2	1	0	0	1	1	1	0	0	0	0	0
3	3	0	0	1	2	0	0	0	2	1	0	0	0	0	2	0	0	0	0	0	0
14	13	6	1	0	5	0	1	0	12	0	1	0	3	4	2	0	0	0	0	0	0
284	272	150	22	16	69	2	10	3	238	16	12	3	81	76	34	4	0	0	0	0	0
10	10	3	2	0	3	0	1	1	10	0	0	0	3	0	4	0	0	0	0	0	0
1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0
387	373	209	34	24	87	2	13	4	330	22	15	3	88	89	43	6	0	0	0	0	0
1,073	1,026	300	122	57	458	1	77	11	988	20	3	15	220	116	332	67	0	0	0	0	0
1,029	973	738	48	26	121	3	32	5	950	11	8	4	64	220	57	2	1	0	0	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					Outcome					
		Age							Reason					Outcome					
		≤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	
52	47	19	8	2	15	0	3	0	45	1	0	0	1	6	10	17	1	0	0
2,608	2,476	490	339	158	1,273	14	188	14	2,379	47	5	42	772	148	880	299	8	0	0
1,293	1,193	357	152	70	508	3	78	25	1,119	20	3	51	267	171	427	58	4	0	0
118	107	53	5	14	31	0	3	1	103	2	2	0	13	21	18	2	0	0	0
6,173	5,822	1,957	674	327	2,406	21	381	56	5,584	101	21	113	1,342	686	1,731	429	13	0	0
255	249	162	10	22	42	0	11	2	208	27	1	13	83	84	39	10	2	0	0
105	103	76	3	9	15	0	0	0	94	7	0	1	28	37	21	4	0	0	0
1,029	995	685	46	93	140	0	23	8	885	75	5	28	374	343	188	37	1	0	0
628	611	408	14	48	118	2	18	3	551	43	7	10	271	211	142	17	0	0	0
292	289	216	10	11	47	1	3	1	271	17	0	1	90	121	66	3	1	0	0
161	157	109	3	8	30	1	5	1	146	7	2	2	54	60	26	6	0	0	0
1,535	1,514	1,388	30	24	59	4	9	0	1,482	22	5	5	317	442	415	23	1	0	0
6,697	6,536	6,168	43	41	225	15	35	9	6,403	69	28	34	797	2,107	943	45	2	0	0
179	167	130	4	7	22	0	3	1	150	7	0	10	21	52	23	5	0	0	0
9	7	7	0	0	0	0	0	0	7	0	0	0	2	2	1	0	0	0	0
63	60	56	0	0	2	0	2	0	60	0	0	0	5	30	4	0	0	0	0
152	137	88	1	7	32	0	8	1	113	15	0	9	37	23	30	10	0	0	0
509	498	428	7	12	44	1	6	0	471	18	1	7	88	150	133	6	0	0	0
1,902	1,801	1,198	55	104	346	5	78	15	1,567	136	9	78	589	492	357	85	6	2	2
13,516	13,124	11,119	226	386	1,122	29	201	41	12,408	443	58	198	2,756	4,154	2,388	251	13	2	2
191	182	85	11	15	62	1	8	0	167	3	3	8	33	35	34	11	0	0	0
81	75	43	1	2	25	0	2	2	71	0	0	4	19	15	17	6	0	0	0
3	3	1	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0
41	38	19	1	1	13	0	4	0	37	1	0	0	10	7	8	0	0	0	0
316	298	148	13	18	102	1	14	2	278	4	3	12	62	57	59	17	0	0	0
6	5	0	0	0	4	0	1	0	4	0	1	0	2	1	0	0	0	0	0
3	2	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0
4	3	2	0	0	0	0	1	0	3	0	0	0	0	0	0	0	0	0	0
30	29	1	1	2	20	0	0	5	7	0	21	1	27	5	1	21	0	0	0
206	191	30	17	8	107	1	26	2	119	15	48	2	83	35	33	16	2	0	0
2,387	2,198	485	126	118	1,018	12	372	67	1,314	119	432	76	868	196	365	185	41	7	7
60	57	7	9	0	28	0	12	1	36	2	14	2	31	23	11	3	0	0	0
2,696	2,485	525	153	128	1,178	13	413	75	1,483	136	517	81	1,011	260	410	225	43	7	7
1,068,976	954,802	514,962	64,426	42,389	269,371	3,122	52,480	8,052	883,748	39,504	11,743	15,510	166,414	152,063	158,141	31,679	2,335	315	315

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 Facility				Outcome		
		Age							Unint	Int	Other	Adv Rxn	Care	Facility	None	Minor	Moderate	Major	Death
		≤5	6-12	13-19	≤20	Unknown	Child	Adult											
Analgesics																			
39,059	25,264	6,487	1,050	6,319	10,621	17	645	125	12,168	12,390	15	374	15,472	7,226	3,940	2,240	625	63	
19,622	17,879	16,320	1,203	158	164	13	15	6	17,525	251	7	70	2,529	3,954	280	54	13	0	
10,483	6,211	1,866	274	1,371	2,512	12	139	37	3,059	2,903	6	85	3,824	1,551	917	627	173	24	
5,812	3,235	794	116	1,223	1,039	1	47	15	1,189	1,928	5	67	2,182	805	845	451	48	2	
42	32	25	6	1	0	0	0	0	31	0	0	1	3	9	1	0	0	0	
3,782	1,742	246	68	315	1,024	2	76	11	696	871	0	147	1,045	433	383	172	26	0	
6,908	4,070	593	93	828	2,412	1	114	29	1,146	2,822	1	43	2,999	772	974	949	136	11	
15,202	6,431	1,047	216	837	4,009	12	259	51	2,934	3,064	16	305	3,766	1,696	1,379	659	149	15	
376	183	31	4	15	124	0	8	1	72	94	1	11	124	47	41	27	6	4	
7,611	3,282	519	68	282	2,216	2	165	30	1,334	1,658	14	195	2,150	772	767	509	123	5	
55	26	5	1	3	14	0	2	1	11	12	1	2	14	8	4	1	1	0	
5,562	3,175	1,355	138	645	982	0	47	8	1,764	1,322	3	50	1,752	809	467	437	47	6	
689	372	230	31	36	67	0	8	0	280	82	0	7	131	102	33	22	1	0	
11,838	5,596	1,800	258	1,136	2,272	0	101	29	2,557	2,763	6	106	3,521	1,287	918	1,099	152	17	
1,240	840	243	55	85	434	0	19	4	432	362	1	29	458	160	168	138	25	0	
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10	1	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	
49	25	7	0	1	17	0	0	0	7	15	0	2	17	5	3	4	3	0	
1	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	1	0	0	0	1	0	0	0	0	1	0	0	1	0	1	0	0	0	
202	154	88	4	11	47	2	2	0	130	12	0	11	39	31	14	10	0	0	
832	578	220	20	65	244	1	23	5	350	202	2	21	231	106	126	52	7	0	
1	1	0	0	1	0	0	0	0	1	0	0	0	1	0	1	0	0	0	
1,084	897	613	32	31	204	1	16	0	800	47	0	48	225	278	79	32	2	0	
1	1	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	
179	75	14	1	21	27	0	7	5	24	42	1	6	44	16	12	12	0	1	
356	245	50	2	8	168	1	16	0	185	30	1	24	124	61	41	31	3	3	
772	382	124	9	18	195	1	32	3	341	28	0	12	62	93	13	6	0	0	
81,129	61,547	41,138	3,481	8,069	7,924	49	687	199	49,029	11,862	20	490	14,318	14,024	4,258	1,007	88	4	
2,737	1,706	374	43	327	898	0	57	7	844	835	0	16	897	347	335	239	22	0	
86	46	7	5	8	22	1	2	1	25	18	0	2	24	11	12	5	1	0	
416	230	68	10	19	117	2	14	2	148	56	0	24	82	65	29	5	0	0	
39	16	7	1	5	3	0	0	0	11	5	0	0	8	8	2	0	0	0	
13,321	7,501	2,361	270	1,866	2,635	8	309	52	4,326	2,928	2	211	3,092	2,019	1,073	245	9	1	
7,352	3,913	1,362	180	306	1,814	7	215	29	3,168	576	3	148	902	970	319	54	4	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	Child	Unknown	Unknown	Adult	Age	Unint	Int	Other	Adv Rxn	Health Facility	Care Facility	None	Minor	Moderate	Major	Death
8	6	0	0	0	1	0	0	0	0	5	0	0	0	1	2	2	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3,885	2,243	1,068	36	72	915	3	116	0	0	3,358	649	58	131	1,742	374	665	442	67	1	0	0
54	34	8	0	2	20	0	3	1	24	1	24	0	1	19	3	8	3	0	0	0	0
1,652	1,107	352	143	109	458	1	39	5	872	183	5	35	304	268	123	38	1	1	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,780	793	58	6	32	648	0	45	4	225	496	12	38	588	96	116	193	121	41	0	0	0
1,810	740	153	42	67	405	2	59	12	432	231	2	52	311	158	125	66	6	1	0	0	0
1,205	468	41	11	17	358	0	36	5	244	182	3	30	275	90	102	72	16	2	0	0	0
10	5	1	0	0	4	0	0	0	3	1	0	1	3	1	1	1	0	0	0	0	0
85	34	10	0	1	19	0	4	0	17	12	0	5	22	8	8	3	2	0	0	0	0
2,611	1,054	173	19	39	764	2	47	10	426	465	39	69	862	143	178	304	149	16	0	0	0
2,959	1,352	173	11	54	996	0	106	12	755	493	9	66	838	310	211	207	66	16	0	0	0
17	11	1	1	0	9	0	0	0	4	2	0	5	10	0	2	4	0	0	0	0	0
2,525	1,014	65	2	40	815	2	72	18	179	660	72	37	866	72	143	333	215	25	0	0	0
7,437	3,168	595	131	197	2,034	6	172	33	1,576	1,328	31	150	1,974	621	679	491	177	19	0	0	0
387	164	16	2	6	123	1	15	1	57	94	2	9	111	29	37	33	11	0	0	0	0
24	16	2	0	2	12	0	0	0	7	7	0	2	12	2	5	4	0	0	0	0	0
15	2	1	0	1	0	0	0	0	0	0	0	0	2	0	1	1	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
274	146	13	5	7	114	0	7	0	81	44	2	13	89	33	32	17	2	0	0	0	0
10,952	4,903	907	120	525	3,128	4	193	26	2,153	2,390	33	249	3,294	1,249	1,106	765	152	5	0	0	0
6,729	4,345	1,547	169	1,162	1,346	3	91	27	2,211	2,000	1	110	2,253	1,030	913	464	18	0	0	0	0
205	136	37	4	13	80	0	2	0	59	67	1	7	80	19	23	34	4	0	0	0	0
338	167	64	18	19	60	0	6	0	130	21	0	15	58	50	26	8	0	0	0	0	0
947	503	152	35	66	224	1	21	4	352	84	0	65	194	137	67	48	1	0	0	0	0
282,784	178,069	83,438	8,394	26,441	54,740	156	4,059	841	115,759	56,598	375	3,598	73,949	42,362	22,006	12,618	2,672	283	0	0	0
259	205	18	26	34	114	1	11	1	62	110	2	23	141	24	46	47	5	0	0	0	0
98	81	8	2	4	50	1	15	1	70	8	0	3	43	8	23	9	1	1	0	0	0
1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
31	26	23	1	0	2	0	0	0	24	0	0	2	7	10	0	0	0	0	0	0	0
1,636	1,410	536	80	82	593	2	99	18	1,135	95	8	157	348	318	197	71	13	1	0	0	0
3,450	3,232	1,991	152	112	822	8	137	10	2,838	130	13	244	487	828	362	81	27	0	0	0	0
250	129	11	3	12	90	0	11	2	40	70	6	11	110	4	24	53	12	0	0	0	0
27	20	7	0	0	9	0	4	0	17	0	0	3	3	7	3	0	0	0	0	0	0
6	6	2	0	1	1	0	1	1	2	0	2	1	2	1	1	1	0	0	0	0	0
5,758	5,110	2,597	264	245	1,681	12	278	33	4,188	413	31	445	1,141	1,200	656	262	58	2	0	0	0
6,761	4,394	232	58	108	3,470	6	487	33	3,958	285	13	110	583	593	216	167	12	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	Adult	Age	Unint	Int	Other	Adv Rxn	None	Minor	Moderate	Major	Death
6,761	4,394	232	58	108	3,470	6	487	33	3,958	285	13	110	583	593	216	167	12	0
Anticoagulants																		
		5	0	0	5	0	0	0	4	0	0	1	4	1	1	1	0	0
		195	7	3	132	1	21	2	165	13	1	15	78	35	10	22	3	0
		2,831	14	13	1,051	1	81	3	972	48	0	29	198	252	26	16	5	0
		3,965	13	12	1,602	4	147	16	1,923	132	2	81	449	439	52	55	11	0
		12	0	1	4	0	1	0	4	2	1	1	4	1	0	1	0	0
		2,604	9	24	921	2	78	3	1,052	153	0	31	383	206	58	99	12	2
		9,662	844	43	3,361	8	328	24	4,120	348	4	158	1,116	934	147	194	31	2
Anticonvulsants																		
		1,674	38	109	1,285	0	55	8	643	793	3	172	1,225	299	438	401	59	1
		1,813	359	244	736	2	26	6	976	782	1	43	1,057	413	475	234	27	0
		7,574	1,239	528	5,282	2	305	65	3,317	3,860	32	229	4,520	1,929	1,823	726	83	7
		1,262	269	18	821	1	53	11	601	579	17	41	751	297	289	184	21	0
		5	1	0	3	0	0	0	4	0	0	1	4	1	0	2	1	0
		1,456	67	23	1,306	2	38	10	527	351	1	472	1,198	181	438	414	59	2
		61	11	3	10	0	1	1	26	1	0	0	10	5	3	1	1	0
		3,952	544	198	2,305	1	151	27	2,339	1,427	4	149	2,004	666	930	567	71	1
		5,128	918	261	1,102	2	69	3	2,056	477	2	50	795	705	314	95	10	0
		1,079	82	31	224	0	11	5	301	62	0	16	146	97	49	41	9	0
		360	9	2	100	0	4	0	83	16	1	17	52	19	28	16	0	0
		166	67	30	14	0	0	0	107	12	0	2	38	45	13	3	0	0
		4,870	452	188	420	1	38	6	971	744	4	66	1,040	529	371	214	17	0
		3	1	0	0	0	1	0	2	1	0	0	1	0	0	0	0	0
		2,963	276	142	2,022	3	88	17	1,182	1,211	3	413	2,016	612	659	536	81	4
		647	313	30	41	0	14	2	264	36	0	9	77	83	37	10	2	0
		65,701	4,572	1,350	16,027	14	854	161	13,359	10,352	68	1,680	14,934	5,881	5,867	3,444	441	15
Antidepressants																		
		3,827	110	73	3,098	6	84	22	948	1,344	9	1,291	3,271	572	906	1,355	180	2
		68	2	6	4	0	0	3	3	9	0	1	12	5	4	1	0	0
		14,204	774	183	4,078	2	250	33	3,421	2,893	6	155	4,382	1,284	1,042	1,619	442	8
		365	6	3	103	0	1	0	27	100	8	4	121	25	46	36	5	1
		21,330	589	230	5,187	2	204	48	1,842	5,998	8	102	6,358	1,644	2,786	1,625	73	1
		1	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
		87	2	0	33	0	3	1	34	2	0	3	10	12	1	5	1	0
		27	1	0	10	0	1	0	6	3	0	3	9	2	3	3	0	0
		35	0	0	14	0	1	0	5	5	0	4	6	1	5	0	1	0
		44	19	0	16	0	2	0	9	7	0	3	14	1	2	8	0	0
		8,533	734	161	1,413	1	101	16	1,531	1,712	7	81	2,000	950	664	460	62	1
		8,172	663	202	1,384	1	95	20	1,575	1,981	9	124	2,294	1,085	742	511	24	0
		13,048	851	371	2,388	2	99	35	2,027	3,109	6	74	3,367	1,788	1,113	445	32	2
		490	156	7	89	1	6	1	93	48	2	12	63	34	27	14	2	0
		4,757	494	90	643	3	45	17	921	1,004	0	54	1,236	617	472	208	12	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	Adult	Age	Unint	Int	Other	Adv Rxn	Care Facility	None	Minor	Moderate	Major
3,514	1,417	317	49	275	709	1	53	13	697	654	11	43	811	368	307	169	4	0
18,740	8,945	2,115	477	3,128	2,960	6	208	51	3,974	4,656	13	242	5,436	2,376	2,217	1,082	31	2
5,431	1,887	498	62	242	988	1	82	14	1,090	673	10	105	974	476	396	191	11	0
30	13	2	0	0	10	0	1	0	8	3	0	1	3	1	2	1	0	0
624	260	72	16	44	119	0	9	0	168	69	1	18	132	79	45	32	1	0
6,611	2,543	519	64	431	1,423	2	85	19	1,313	1,107	13	96	1,582	667	522	396	54	4
6	3	0	0	1	1	0	0	1	2	1	0	0	1	1	1	0	0	0
4,842	1,462	190	52	238	922	1	47	12	500	890	1	54	1,020	323	452	229	13	0
6,005	2,732	336	108	511	1,694	4	61	18	928	1,643	4	86	2,075	418	604	819	246	8
11	7	0	0	1	6	0	0	0	2	5	0	0	5	0	2	2	1	0
216	108	11	2	10	77	0	7	1	64	34	0	9	56	24	17	16	4	0
50	23	3	1	2	16	0	1	0	10	12	0	1	16	5	5	4	3	0
1,585	631	50	25	46	494	0	9	7	187	408	1	22	482	91	139	185	58	0
245	116	29	16	19	47	0	4	1	66	35	1	11	66	26	28	17	3	0
111	29	0	1	2	26	0	0	0	6	22	0	1	22	3	5	11	3	0
1,192	482	58	11	66	326	0	19	2	223	224	1	26	295	77	110	91	26	1
447	181	17	5	17	138	0	2	2	34	103	10	10	156	21	27	64	21	3
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	4	0	0	0	4	0	0	0	2	2	0	0	2	0	1	0	1	0
15	2	1	0	0	1	0	0	0	1	1	0	0	2	1	1	0	0	0
14	3	0	0	0	3	0	0	0	0	1	0	0	3	0	0	1	0	0
3	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
128,088	53,934	8,459	2,209	13,862	27,554	33	1,480	337	21,718	28,758	121	2,637	36,282	12,977	12,695	9,600	1,314	33
8,786	6,238	4,647	249	221	954	4	155	8	5,870	266	1	93	520	1,365	224	24	0	0
26,550	19,152	10,459	1,249	2,466	4,619	18	276	65	13,147	5,568	18	275	7,532	4,052	2,759	2,353	262	5
1,354	838	280	53	160	322	2	15	6	413	393	1	22	464	156	150	176	28	3
17,526	11,746	5,427	755	1,950	3,373	5	185	51	7,070	4,381	9	183	5,488	2,390	1,966	1,909	240	10
55,617	38,178	21,622	4,971	3,566	7,175	49	687	108	32,138	5,442	19	446	7,442	8,666	2,742	1,110	72	3
109,833	76,152	42,435	7,277	8,363	16,443	78	1,318	238	58,638	16,050	48	1,019	21,446	16,629	7,841	5,572	602	21
22	20	11	2	1	5	0	1	0	20	0	0	0	0	3	0	0	0	0
30	17	0	0	1	13	1	1	1	8	6	0	0	11	1	5	2	1	0
1,848	1,727	940	161	36	485	7	86	12	1,578	70	4	69	232	430	153	25	1	1
188	176	113	11	3	40	0	8	1	165	9	0	2	20	47	14	1	0	0
15	14	7	0	0	5	0	2	0	14	0	0	0	0	1	1	0	0	0
30,569	24,109	11,034	2,323	1,612	7,794	33	1,179	134	20,384	1,426	14	2,220	3,345	3,894	1,770	324	22	5
5,234	5,009	3,497	224	95	923	10	229	31	4,818	60	9	118	170	725	205	13	0	0
276	193	91	14	14	51	0	18	5	150	14	0	28	24	20	19	1	0	0
1,183	936	445	55	46	332	1	50	7	814	28	3	91	125	168	74	9	4	0
6,875	6,540	4,312	224	112	1,504	16	341	31	6,283	60	14	170	405	948	435	34	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	Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	None	Minor	Moderate	Major	Death	
25	22	6	2	1	12	0	1	0	18	1	0	3	6	0	4	2	0	0
		Unknown Types of Antifungal Preparation																
		Antiparasitics																
850	499	122	51	43	261	1	19	2	398	57	0	43	197	128	62	50	8	1
1,035	609	140	7	52	349	1	53	7	476	50	0	82	105	110	56	17	1	0
27	22	10	2	2	8	0	0	0	22	0	0	0	7	6	1	0	0	0
		Other Types of Antiparasitic Antituberculars																
135	93	13	9	19	50	0	1	1	42	21	0	25	59	8	6	20	17	0
24	7	1	0	1	5	0	0	0	5	0	0	2	2	1	0	2	0	0
71	47	11	0	2	30	0	4	0	34	4	0	8	14	8	9	2	1	0
		Other Types of Antitubercular Antivirals																
311	101	20	14	18	47	0	2	0	76	18	1	6	38	23	6	13	2	1
793	433	58	4	22	296	0	48	5	339	77	0	16	132	69	47	21	1	0
846	762	254	187	89	193	2	32	5	673	9	0	77	77	125	48	16	1	0
1,335	956	262	22	45	550	2	65	10	812	78	0	62	166	199	72	24	4	0
		Systemic Antiviral Preparations (Oral, Intravenous, Intramuscular)																
139	135	72	10	2	38	0	12	1	129	1	0	4	5	26	7	1	0	0
		Topical Antiviral Preparations (Dermal, Otic, Ophthalmic, Nasal)																
496	314	111	15	20	151	1	16	0	265	33	0	16	58	62	21	2	0	0
		Unknown Types of Antiviral Preparations																
		Miscellaneous Antimicrobials																
138	133	76	2	2	40	0	12	1	125	3	0	5	15	37	9	0	1	0
13	8	3	0	1	2	0	0	2	5	1	0	2	2	2	0	1	0	0
52,478	42,882	21,609	3,339	2,239	13,184	75	2,180	256	37,653	2,026	45	3,049	5,215	7,041	3,024	580	64	8
		Category Total: Antineoplastics																
2,252	1,704	296	50	56	1,136	2	144	20	1,536	57	3	101	581	357	176	69	18	6
2,252	1,704	296	50	56	1,136	2	144	20	1,536	57	3	101	581	357	176	69	18	6
		Category Total: Asthma Therapies																
4,218	3,781	2,037	627	292	697	5	105	18	3,143	440	8	177	537	712	481	224	5	0
109	73	7	0	4	60	0	2	0	45	6	0	20	37	16	13	19	3	0
6,557	4,758	3,258	802	190	429	3	71	5	4,519	211	0	17	527	1,070	98	9	1	0
4,531	4,497	2,079	1,134	196	942	11	123	12	4,371	93	6	20	1,210	291	1,988	346	6	0
316	223	63	22	6	118	0	13	1	178	14	0	29	65	43	26	17	5	0
1,062	872	141	100	41	509	1	72	8	768	67	2	32	112	140	77	51	2	0
3	2	0	1	1	0	0	0	0	0	1	1	0	0	0	2	0	0	0
16,796	14,206	7,585	2,686	730	2,755	20	386	44	13,024	832	17	295	2,488	2,272	2,685	666	22	0
		Category Total: Cardiovascular Drugs																
1,283	699	277	43	31	331	0	15	2	624	66	0	9	221	236	38	15	0	0
2	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
15,170	6,111	2,435	310	235	2,914	4	195	18	5,258	764	5	65	1,985	2,183	247	207	5	2
1,102	605	128	17	24	407	0	26	3	571	27	0	5	110	170	33	7	0	0
77	35	8	2	1	20	0	4	0	33	2	0	0	10	16	0	1	0	0
7,850	3,547	862	105	88	2,305	3	172	12	3,249	253	0	42	798	1,062	163	64	2	0
31	14	6	0	0	7	0	1	0	14	0	0	0	0	2	0	0	0	0
12,214	4,411	1,733	144	128	2,138	5	250	13	4,079	225	2	101	566	814	128	26	1	0
4,946	2,757	782	1,144	494	302	1	28	6	2,235	434	4	63	1,505	867	414	484	19	1
6	5	3	0	0	2	0	0	0	4	0	0	0	3	0	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 Facility			Outcome				
		≤5	6–12	13–19	≤20	Child	Unknown	Adult	Age	Unint	Int	Other	Adv Rxn	Care Facility	None	Minor	Moderate	Major	Death
Beta Blockers																			
Beta Blocker in Combination with Diuretic	205	101	23	7	2	61	0	8	0	96	5	0	0	0	25	36	3	5	0
Beta Blocker in Combination with Other Drugs (Excluding Calcium Antagonists)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beta Blocker, Alone	26,225	10,552	2,709	370	486	6,523	5	419	40	8,411	1,841	7	229	4,441	3,770	628	1,042	109	18
Calcium Antagonist																			
Calcium Antagonist in Combination with Angiotensin Converting Enzyme Inhibitor	217	101	16	9	6	67	0	3	0	95	6	0	0	35	37	7	4	1	0
Calcium Antagonist in Combination with Angiotensin Receptor Blocker	98	57	11	3	1	38	0	3	1	52	4	0	1	19	17	5	0	0	0
Calcium Antagonist in Combination with Antihyperlipidemic	19	9	4	0	0	4	0	1	0	7	1	0	1	2	3	0	0	0	0
Calcium Antagonist in Combination with Diuretic	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Calcium Antagonist in Combination with Other Drugs	58	31	2	1	0	27	0	1	0	29	2	0	0	10	9	2	0	0	0
Calcium Antagonist, Alone	13,468	5,396	1,296	163	200	3,483	2	222	30	4,623	623	2	113	2,720	2,116	367	450	85	37
Miscellaneous Cardiovascular Drugs																			
Alpha Blockers	5,219	1,568	249	31	177	1,016	3	82	10	1,003	497	0	62	668	401	241	140	5	0
Antiarrhythmics	2,086	1,174	146	17	13	945	0	51	2	1,077	35	1	56	548	432	62	114	27	3
Cardiac Glycosides	1,851	1,234	69	14	9	1,124	0	15	3	482	47	0	631	1,010	136	104	519	126	25
Clonidine	10,463	5,295	1,672	1,193	992	1,368	5	50	15	3,361	1,760	19	92	3,805	958	1,063	1,845	160	2
Hydralazine	1,352	468	113	9	27	308	1	10	0	362	91	0	11	225	149	59	55	1	0
Long-Acting Nitrates	856	265	50	3	5	189	1	16	1	233	23	0	9	80	69	25	21	1	0
Nitroglycerin	969	582	317	18	12	207	1	21	6	482	79	2	14	224	237	42	17	1	0
Nitroprusside	18	15	1	0	0	14	0	0	0	7	0	0	8	12	2	0	1	2	0
Other Types of Cardiovascular Drug	563	244	56	6	8	158	0	16	0	219	19	0	6	76	63	16	16	1	0
Other Types of Vasodilator	1,040	688	272	26	24	321	3	34	8	526	80	4	74	273	201	57	51	4	0
Unknown Types of Cardiovascular Drug	46	12	2	0	0	8	0	2	0	5	5	1	0	9	3	0	0	0	0
Unknown Types of Vasodilator	15	8	1	0	0	4	0	1	1	6	1	0	0	4	0	1	1	0	0
Vasopressors	262	222	75	37	12	86	0	12	0	203	8	0	10	87	18	77	29	2	0
Category Total:	107,673	46,207	13,318	3,673	2,975	24,378	34	1,658	171	37,347	6,898	47	1,602	19,471	14,010	3,782	5,114	552	88
Cold and Cough Preparations																			
Acetaminophen and Acetylsalicylic Acid with Decongestant and/or Antihistamine	17	8	2	1	3	1	0	1	0	2	5	0	1	5	1	0	3	0	0
Acetaminophen and Acetylsalicylic Acid with Antihistamine without Opioids	22	18	6	2	5	5	0	0	0	12	4	0	2	8	4	1	1	1	0
Acetaminophen and Acetylsalicylic Acid with Decongestant and Antihistamine without Opioids	6	2	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Acetaminophen, Acetylsalicylic Acid, and with Decongestant without Opioids	17	11	9	1	0	1	0	0	0	8	2	0	1	5	4	0	1	0	0
Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan with Antihistamine	18	13	8	1	2	1	0	1	0	11	2	0	0	2	2	1	0	0	0
Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan with Decongestant	9	7	5	2	0	0	0	0	0	6	1	0	0	1	1	0	0	0	0
Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan with Decongestant and Antihistamine	1	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
Opioid with Decongestant	2	2	2	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0
Acetaminophen, Acetylsalicylic Acid, and Opioid with Decongestant and Antihistamine	4	1	0	0	0	1	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	5	3	0	2	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0
Obsolete: Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine																			

(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	Child	Adult	Unknown	Age	Unint	Int	Other	Adv Rxn	None	Minor	Moderate	Major	Death
2	2	0	0	0	2	0	0	0	1	1	0	0	0	1	0	1	0	0
		4	3	0	1	0	0	0	3	1	0	0	0	1	0	0	0	0
5	4	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
2	1	3	1	0	1	0	0	0	2	1	0	0	0	2	0	1	0	0
12	3	797	152	465	821	2	58	18	1,235	986	1	72	1,075	468	408	212	13	0
4,869	2,313	1,173	175	291	506	2	64	9	1,719	366	1	116	531	514	230	72	7	0
4,199	2,220	840	169	256	421	2	20	7	1,172	473	1	51	614	376	227	110	7	0
3,099	1,715	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
3	1	423	92	111	190	1	6	2	146	262	1	7	286	77	91	99	3	1
608	423	709	411	68	77	141	10	1	557	112	0	30	187	157	80	43	8	0
1,135	709	608	333	52	60	149	13	1	482	92	1	29	118	125	46	24	1	0
1,037	608	5	3	1	1	0	0	0	4	0	0	1	1	1	0	0	0	0
7	5	38	18	7	6	0	0	0	27	10	0	1	13	3	7	2	0	0
47	38	1	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0
4	1	7	4	0	3	0	0	0	5	0	0	1	2	1	0	0	0	0
13	7	1	0	0	1	0	0	0	0	1	0	0	1	1	0	0	0	0
1	1	1	1	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0
1	1	2	2	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0
4	2	8	5	2	1	0	0	0	7	1	0	0	1	0	1	0	0	0
9	8	19	15	0	3	0	0	0	18	0	0	1	1	6	1	0	0	0
31	19	6	1	0	3	0	0	0	2	4	0	0	5	1	0	3	0	0
8	6	101	67	13	10	0	4	1	88	1	0	10	3	22	8	0	0	0
143	101	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
3	1	3	0	1	1	1	0	0	1	0	0	2	0	0	1	0	0	0
3	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	20-29	30-39	40-49	≥50	Unint	Int	Other	Adv Rxn	Care Facility	None	Minor	Moderate	Major	Death	
1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
84	65	29	9	5	21	0	1	0	51	11	0	2	21	17	15	2	1	0	0
3,040	2,569	1,878	405	99	1,559	3	18	7	2,400	114	1	49	389	601	261	58	4	0	0
15	9	1	1	0	7	0	0	0	7	1	0	1	2	1	1	0	0	0	0
4,141	3,308	2,155	417	181	509	1	40	5	3,058	175	1	65	535	746	293	80	8	0	0
614	441	123	40	53	207	0	16	2	314	105	1	16	141	103	84	32	1	0	0
3,924	3,051	685	204	867	1,249	2	37	7	1,087	1,892	4	39	1,989	434	686	927	49	1	0
172	135	31	10	9	78	1	6	0	99	28	0	7	42	33	27	5	2	0	0
1,799	1,060	590	44	112	293	1	17	3	762	267	2	18	437	327	148	74	12	2	0
46	31	11	4	3	11	0	2	0	25	2	1	3	3	5	3	0	0	0	0
1,882	1,471	970	233	71	184	2	10	1	1,295	129	2	33	238	362	103	48	1	0	0
25	14	7	1	3	3	0	0	0	11	2	0	8	8	4	1	2	0	0	0
4,321	2,900	1,509	202	267	810	2	104	6	2,531	254	1	109	427	646	219	75	5	0	0
4	3	1	1	1	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0
108	90	22	6	15	45	0	2	0	32	56	0	0	66	21	25	24	0	0	0
53	45	31	10	1	3	0	0	0	45	0	0	0	7	18	2	0	0	0	0
132	78	39	11	11	14	1	2	0	56	20	0	1	23	18	9	6	0	0	0
3,269	2,263	1,623	116	152	319	1	43	9	1,845	331	5	65	478	425	194	103	9	0	0
11,931	8,986	3,351	1,177	1,274	2,969	5	186	24	5,869	2,743	9	285	3,364	1,457	1,506	1,219	61	0	0
503	389	226	57	26	78	0	2	0	306	62	0	15	102	85	38	30	0	0	0
2,069	1,349	574	81	99	489	1	97	8	1,165	132	0	49	154	205	48	18	1	0	0
1,824	1,247	486	87	149	470	2	44	9	979	198	0	67	533	412	202	31	6	0	0
1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
14	11	3	1	3	4	0	0	0	10	1	0	0	2	6	1	0	0	0	0
1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
244	99	31	5	23	34	0	3	3	40	53	0	4	66	18	23	13	2	0	0
5	5	4	0	0	1	0	0	0	4	1	0	0	1	1	1	0	0	0	0
4	3	1	0	0	2	0	0	0	2	1	0	0	1	2	0	0	0	0	0
1	1	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
1	1	1	0	0	0	0	0	0	1	0	0	0	1	0	0	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		
		≤20					Unknown					Unint	Int	Other	Adv Rxn	None	Minor	Moderate	Major	Death	
		≤5	6-12	13-19	13-19	20	Child	Adult	Age	Unknown	Unknown	Unint	Int	Other	Adv Rxn	None	Minor	Moderate	Major	Death	
	1	1	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Non-Acetylsalicylic Acid Salicylates with Antihistamine without Opioid	5	4	3	1	0	0	0	0	0	4	0	0	0	0	0	3	0	0	0	0	
Non-Acetylsalicylic Acid Salicylates with Decongestant and Antihistamine without Opioid	4	2	2	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	
Non-Acetylsalicylic Acid Salicylates with Decongestant without Opioid	3	2	2	0	0	0	0	0	0	2	0	0	0	0	0	0	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	0	0	1	0	0	0	0	
Phenylpropanolamine Containing Preparations	34	25	12	2	5	6	0	0	0	14	10	0	1	11	7	3	3	1	0	0	
Acetaminophen and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	9	7	6	0	0	0	0	0	0	7	0	0	0	0	0	2	0	0	0	0	
Acetaminophen, Acetylsalicylic Acid, and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine	22	18	7	4	1	6	0	0	0	13	2	0	3	6	3	1	0	0	0	0	
Acetaminophen, Acetylsalicylic Acid, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	37	30	19	4	3	4	0	0	0	25	3	0	0	3	2	3	1	0	0	0	
Acetaminophen, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
Acetaminophen, Phenylpropanolamine, and Other Opioid Combinations with Decongestant and/or Antihistamine	17	13	8	1	3	1	0	0	0	11	2	0	0	3	3	1	1	0	0	0	
Acetylsalicylic Acid and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	4	4	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	
Acetylsalicylic Acid, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	5	4	2	0	1	1	0	0	0	4	0	0	0	0	1	0	0	0	0	0	
Antihistamine and/or Decongestant with Phenylpropanolamine and Codeine	164	131	89	21	5	16	0	0	0	117	11	0	3	22	20	11	2	0	0	0	
Antihistamine and/or Decongestant with Phenylpropanolamine and Dextromethorphan	4	4	3	1	0	0	0	0	0	4	0	0	0	1	2	0	0	0	0	0	
Antihistamine and/or Decongestant with Phenylpropanolamine and Other Opioid	192	129	88	21	11	8	0	1	0	114	14	0	0	38	41	11	2	0	0	0	
Other Phenylpropanolamine Preparations (Excluding Street Drugs and Diet Aids)	226	195	100	1	5	80	0	9	0	194	1	0	0	12	65	2	3	0	0	0	
Category Total:	56,305	38,457	18,537	3,848	4,748	10,353	30	818	123	28,042	8,948	32	1,160	11,994	7,869	5,027	3,330	203	4	4	
Diagnostic Agents																					
Miscellaneous Diagnostic Agents	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
Diagnostic Tablets for Glucose or Ketones	353	298	56	15	11	173	2	32	9	252	4	0	41	125	58	52	12	4	0	0	
Other Types of Diagnostic Agent	6	4	0	0	1	3	0	0	0	2	0	0	2	3	0	1	0	0	0	0	
Unknown Types of Diagnostic Agent	360	303	57	15	12	176	2	32	9	255	4	0	43	128	58	53	12	4	0	0	
Dietary Supplements/Herbals/Homeopathic Amino Acids																					
Creatine	171	124	75	5	12	30	0	2	0	98	7	0	19	38	29	11	10	1	0	0	
Other Amino Acid Dietary Supplements	683	464	268	23	21	133	1	15	3	370	37	1	54	86	86	45	16	2	0	0	
Botanical Products																					
Citrus Aurantium (Single Ingredient)	27	19	8	1	2	6	0	2	0	16	2	0	1	3	2	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 Facility				Outcome			
		≤5	6-12	13-19	≤20	Unknown		Unint	Int	Other	Adv Rxn	Care	None	Minor	Moderate	Major	Death			
						Child	Adult											Age		
136	102	67	14	2	14	0	4	1	91	6	0	0	5	13	24	6	0	0		
85	52	23	5	2	18	0	4	0	38	8	0	0	6	9	10	4	3	0		
79	50	27	1	2	18	0	0	2	37	6	0	0	6	13	12	4	4	0		
106	75	17	2	4	48	0	2	2	28	26	0	0	19	40	11	16	9	1		
16	12	1	0	2	8	0	1	0	3	4	0	0	4	8	0	4	4	0		
48	40	21	2	2	14	0	1	0	27	7	0	0	6	17	6	6	4	1		
66	49	24	0	6	17	0	2	0	29	16	0	0	3	22	10	9	10	1		
1,584	1,271	766	74	65	335	3	23	5	934	134	5	0	191	316	239	141	87	4		
3,208	2,465	1,394	101	89	710	7	152	12	2,025	161	7	0	261	369	418	253	50	5		
219	140	84	4	13	34	0	4	1	111	18	0	0	10	22	35	10	2	0		
215	100	28	10	15	44	0	3	0	57	25	0	0	16	35	22	14	3	0		
140	99	15	3	4	72	0	5	0	28	18	0	0	52	70	9	15	41	1		
107	92	43	8	6	34	0	1	0	61	5	1	0	23	46	14	15	7	0		
10	7	4	0	0	3	0	0	0	6	0	1	0	0	3	3	1	1	0		
8	8	4	2	0	2	0	0	0	4	0	0	0	4	5	1	1	3	0		
83	64	31	5	2	25	0	1	0	44	12	0	0	8	29	5	10	6	3		
1,193	966	572	79	109	186	0	19	1	708	137	2	0	118	210	186	167	69	0		
886	665	427	65	54	108	1	8	2	522	81	4	0	53	99	118	78	29	0		
150	39	8	0	10	17	0	4	0	10	18	0	0	9	15	4	8	9	0		
2	1	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0		
1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0		
26	25	17	3	1	4	0	0	0	21	2	0	0	2	2	5	2	0	0		
464	335	157	42	56	67	1	10	2	221	64	0	0	45	91	56	74	28	0		
293	230	110	12	27	75	0	6	0	136	41	0	0	50	96	46	50	24	2		
123	95	62	2	2	27	0	2	0	74	6	1	0	14	20	20	4	6	0		
48	40	29	3	1	5	0	1	1	37	1	0	0	2	4	2	3	1	0		
27,799	23,627	18,611	2,505	1,393	944	25	113	36	21,385	2,022	17	0	136	3,319	5,071	2,272	52	1		
59	48	24	1	3	17	0	2	1	34	5	0	0	7	9	9	2	2	1		
8,603	8,034	7,117	322	86	420	12	66	11	7,758	92	5	0	166	628	1,393	251	33	7		
1,938	1,553	914	92	62	415	1	58	11	1,181	80	4	0	270	340	285	177	65	13		
358	347	73	61	41	126	9	36	1	334	2	3	0	6	68	69	80	6	0		
2	2	1	1	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0		
591	405	302	9	7	71	0	13	3	384	8	1	0	11	30	83	14	2	0		
1,834	999	674	63	32	188	2	35	5	871	49	1	0	71	112	175	59	12	3		
51,361	42,645	32,000	3,520	2,133	4,235	62	595	100	37,687	3,100	53	0	1,648	6,187	8,462	3,808	598	46		
3,324	1,038	380	25	23	571	0	37	2	949	67	1	0	21	273	238	124	40	1		
2,555	940	332	56	53	453	0	40	6	800	97	0	0	40	244	231	74	35	1		
4,214	1,423	568	80	58	675	0	41	1	1,265	128	2	0	25	371	367	81	39	1		
256	92	38	3	10	39	0	1	1	74	14	0	0	3	30	28	8	3	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					Unknown			Reason			Treated in Health Facility			Outcome		
		≤5	6–12	13–19	≥20	Child	Adult	Age Unknown	Unint	Int	Other	Adv Rxn	Care Facility	None	Minor	Moderate	Major	Death
Category Total:	10,349	1,318	164	144	1,738	0	119	10	3,088	306	3	89	918	864	287	117	4	1
Electrolytes and Minerals																		
Miscellaneous Electrolytes and Minerals																		
Calcium and Calcium Salts	11,957	9,282	516	137	465	12	80	10	10,213	222	4	57	382	1,776	168	30	0	0
Chromium, Trivalent	205	171	9	7	66	0	28	6	161	7	0	3	29	30	12	3	0	0
Colloidal Silver	1,118	103	2	4	55	0	10	1	60	21	0	22	46	16	7	8	0	0
Fluoride (Excluding Vitamins, Hydrofluoric Acid & Mouthwashes)	1,474	1,412	144	24	76	2	19	4	1,326	12	4	67	80	249	81	7	0	0
Iron and Iron Salts (Excluding Vitamins with Iron)	6,033	4,400	142	516	1,387	6	142	26	3,500	601	6	271	1,229	920	566	153	8	2
Magnesium and Magnesium Salts	1,843	1,486	85	68	567	1	81	11	1,223	132	5	114	212	288	156	28	2	1
Multi-Mineral and Multi-Herbal Dietary Supplement	696	536	318	65	118	0	7	3	369	119	0	46	219	147	64	63	1	1
Multi-Mineral Dietary Supplements	177	129	78	4	37	0	4	0	105	8	1	14	13	16	9	4	1	0
Other Types of Electrolyte or Mineral	39	31	10	3	16	0	2	0	29	0	0	2	7	5	3	1	1	1
Potassium and Potassium Salts	1,186	480	154	9	272	0	33	3	396	57	1	25	95	113	18	17	1	0
Selenium and Selenium Salts	100	77	20	6	44	0	6	1	62	4	0	8	24	13	9	5	1	0
Sodium and Sodium Salts	5,298	4,282	451	181	939	5	182	13	3,673	440	43	111	631	758	598	71	2	0
Unknown Types of Electrolyte or Mineral	7	6	3	0	2	0	1	0	6	0	0	0	2	2	1	0	0	0
Vanadium and Vanadium Salts	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Zinc and Zinc Salts	1,236	1,026	535	31	352	1	49	6	843	63	2	113	113	102	139	15	0	0
Category Total:	30,370	24,641	16,994	1,429	4,396	27	644	84	21,966	1,686	66	853	3,082	4,435	1,831	405	17	5
Eye/Ear/Nose/Throat Preparations																		
Miscellaneous Eye/Ear/Nose/Throat Preparations	2,069	1,758	821	56	462	5	92	12	1,629	65	2	60	52	273	107	7	1	0
Topical Steroids For Eye/Nose/Throat Nasal Preparations	1,966	1,861	763	86	770	2	107	8	1,608	95	10	145	255	432	225	44	3	0
Other Nasal Decongestants or Sympathomimetics (Excluding Tetrahydrozoline)	493	471	266	10	141	1	31	7	442	5	4	20	23	74	43	2	0	0
Other Types of Nasal Preparation	22	22	13	1	5	0	2	1	19	1	1	4	4	2	4	0	0	0
Tetrahydrozoline, Nasal Preparation	12	11	2	0	7	0	0	0	8	0	1	2	1	1	3	0	0	0
Unknown Types of Nasal Preparation																		
Ophthalmic Preparations																		
Contact Lens Products	2,170	2,048	1,003	64	748	4	124	5	1,988	25	11	24	388	188	377	85	0	0
Glaucoma Medications	424	362	89	6	220	1	33	3	326	6	1	28	46	74	30	8	0	0
Other Ophthalmic Sympathomimetics	1,013	973	608	35	234	4	51	4	850	32	61	27	223	352	60	16	1	0
Other Types of Ophthalmic Preparation	1,906	1,815	996	71	542	2	136	16	1,691	31	13	75	128	279	82	14	0	1
Tetrahydrozoline, Ophthalmic Preparation	715	694	428	18	169	1	33	4	598	31	49	13	174	258	43	7	2	0
Unknown Types of Ophthalmic Preparation	50	43	14	2	13	0	6	0	26	2	7	5	8	9	8	2	0	0
Otic Preparations																		
Combination Products	939	929	384	110	317	5	69	5	918	4	0	7	90	137	217	13	0	0
Other Types of Otic Preparation	2,266	2,245	664	90	1,174	4	226	19	2,202	13	1	26	343	208	740	65	1	0
Unknown Types of Otic Preparation	36	35	6	2	22	0	4	1	35	0	0	0	9	3	12	2	0	0
Throat Preparations																		
Other Types of Throat Preparation	395	374	89	41	156	3	37	4	332	28	3	10	35	64	35	5	0	0
Throat Lozenges with Local Anesthetics	268	239	107	20	67	1	21	1	214	15	0	9	23	52	14	2	0	0
Throat Lozenges without Local Anesthetics	899	827	676	62	17	1	10	0	787	32	0	8	15	135	33	1	0	0
Unknown Types of Throat Preparation	5	5	4	0	1	0	0	0	4	1	0	0	1	1	0	0	0	0
Category Total:	15,648	14,712	6,933	932	5,109	33	982	90	13,677	386	164	460	1,818	2,542	2,033	273	8	1
Gastrointestinal Preparations																		
Antacids																		
Antacids: Other Types	3,696	3,418	2,986	167	195	3	31	8	3,323	65	1	26	76	419	47	4	0	0
Antacids: Proton Pump Inhibitors	9,738	4,352	2,132	144	1,578	3	239	22	3,911	338	3	89	533	854	134	19	1	0
Antacids: Salicylate-Containing	2,649	2,369	1,889	213	193	5	29	3	2,217	90	2	53	207	492	66	13	0	0
Antidiarrheals																		
Antidiarrheals: Diphenoxylate and Atropine Containing	249	126	45	5	68	0	1	0	84	31	0	10	79	50	12	14	3	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 Facility				Outcome		
		≤5	6-12	13-19	≥20	Unknown	Child	Adult	Age	Unint	Int	Other	Adv Rxn	Care	None	Minor	Moderate	Major
1,583	1,162	483	35	37	556	0	43	8	723	374	6	44	519	329	107	123	56	4
33	23	17	1	1	4	0	0	0	23	0	0	0	1	3	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2,845	1,246	474	74	126	508	1	54	9	926	213	2	92	472	353	181	108	9	1
262	117	24	7	1	80	0	4	1	104	7	0	6	26	33	8	2	0	0
14,471	12,447	8,746	669	436	2,155	19	383	39	11,379	545	65	433	1,209	1,691	1,256	142	4	0
9,437	7,912	6,117	331	144	1,044	16	207	53	7,250	196	19	438	575	1,302	404	78	7	0
29	18	14	1	0	1	0	2	0	16	1	0	1	4	4	0	0	0	0
3,265	1,925	1,275	146	126	338	0	31	9	1,679	166	1	69	554	645	153	61	3	0
5	2	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
48,263	35,117	24,204	1,793	1,177	6,720	47	1,024	152	31,637	2,026	99	1,261	4,255	6,175	2,368	564	83	6
260	147	29	2	7	100	0	8	1	138	5	0	3	27	44	10	3	1	0
20	11	7	0	0	3	0	1	0	11	0	0	0	0	4	0	0	0	0
83	41	18	0	2	20	0	1	0	33	6	0	1	27	16	1	10	0	0
465	394	26	3	2	325	1	35	2	335	19	0	38	98	94	48	23	1	0
126	64	17	1	2	40	0	4	0	57	4	0	3	18	28	4	3	0	0
6,974	5,824	162	74	147	5,028	4	379	30	5,009	684	5	85	2,529	2,417	313	953	47	2
41	24	16	0	0	8	0	0	0	23	1	0	8	8	7	1	1	0	0
9,402	4,061	916	120	361	2,458	2	186	18	3,211	715	2	102	1,244	924	343	250	58	21
955	352	107	12	5	207	0	19	2	315	21	0	15	91	120	15	10	3	0
76	30	13	1	1	15	0	0	0	28	0	0	2	16	9	2	3	0	0
563	277	89	8	10	140	1	29	0	243	12	0	19	69	96	10	13	1	0
3,642	1,471	693	56	44	645	1	29	3	1,240	134	1	71	1,119	501	69	442	38	2
339	101	46	3	2	46	0	4	0	90	6	0	5	38	31	9	6	0	0
427	346	93	14	14	186	0	34	5	264	39	3	39	79	59	46	11	2	1
11,291	9,157	3,889	788	361	3,521	14	545	39	8,493	196	10	446	640	1,234	340	63	1	0
1,246	828	432	39	65	248	3	33	8	727	65	2	34	71	118	49	5	0	0
3,523	2,824	1,874	99	352	409	4	71	15	2,409	352	0	54	292	428	159	9	0	0
588	453	153	20	24	219	1	30	6	415	24	0	12	68	89	14	8	0	0
803	562	188	71	49	218	2	32	2	497	42	1	19	143	147	34	17	1	0
1,243	1,016	569	46	56	278	1	56	10	901	35	3	76	97	155	39	7	1	0
290	162	48	13	3	85	0	13	0	154	6	0	2	19	43	5	3	0	0
13,363	8,807	4,439	388	283	3,270	7	389	31	8,384	328	6	77	1,241	1,593	165	58	4	0
13	10	6	0	1	2	0	0	1	10	0	0	0	0	2	1	0	0	0
55,733	36,962	13,830	1,758	1,791	17,471	41	1,898	173	32,987	2,694	33	1,103	7,934	8,159	1,677	1,898	158	26
27	10	1	1	0	8	0	0	0	8	2	0	0	7	4	0	0	0	0
4	3	1	1	0	1	0	0	0	2	1	0	0	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 Facility		Outcome			
		≤5	6–12	13–19	20	Child	Unknown Adult	Unknown Age	Unit	Int	Other	Adv Rxn	Care	None	Minor	Moderate	Major	Death
		142	11	7	141	0	8	1	291	9	1	8	41	81	12	4	0	0
901	310	142	11	7	141	0	8	291	9	1	8	41	81	12	4	0	0	
4	4	0	0	0	4	0	0	3	0	0	1	3	0	1	0	0	0	
184	43	6	0	1	27	0	9	16	11	1	13	19	1	5	7	1	0	
46	29	11	1	0	13	0	2	22	0	0	6	12	5	4	1	0	0	
2	2	1	0	0	1	0	0	1	0	0	1	1	0	1	0	0	0	
28	17	0	1	0	12	0	4	13	0	2	2	10	4	1	0	4	0	
1,582	1,496	947	150	27	319	4	45	1,357	68	1	60	261	422	203	39	0	0	
15,473	9,870	3,761	552	482	4,481	13	513	8,552	665	26	566	2,429	2,051	1,208	446	45	7	
Parkinson Drugs																		
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1,473	809	169	5	6	591	0	35	708	67	0	26	245	184	124	54	6	0	
1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	
19	8	4	0	0	4	0	0	6	1	0	1	2	1	2	0	0	0	
19,745	12,602	5,043	722	523	5,603	17	616	10,979	824	31	684	3,032	2,754	1,562	554	57	7	
Muscle Relaxants																		
Miscellaneous Muscle Relaxants																		
5,200	2,200	270	55	213	1,613	0	40	652	1,301	24	114	1,792	290	457	736	241	12	
2,236	901	49	3	43	785	0	15	145	713	1	12	794	82	347	252	50	2	
10,429	4,248	1,008	219	472	2,381	4	132	2,089	2,034	1	66	2,642	929	1,040	731	97	1	
412	205	27	3	21	135	0	18	113	84	0	6	104	37	48	30	3	0	
2,253	904	116	13	130	610	0	26	403	464	0	27	550	214	267	100	8	0	
574	228	35	5	20	158	0	6	102	110	0	13	141	48	59	31	4	0	
4,577	1,889	274	44	125	1,356	2	74	829	921	16	92	1,288	274	413	584	74	0	
219	30	5	0	3	18	0	3	6	22	0	0	22	2	9	5	2	0	
25,900	10,605	1,784	342	1,027	7,056	7	314	4,339	5,649	42	330	7,333	1,876	2,640	2,469	479	15	
Narcotic Antagonists																		
Miscellaneous Narcotic Antagonists																		
991	410	31	14	18	294	1	48	203	72	21	105	188	51	74	64	6	2	
991	410	31	14	18	294	1	48	203	72	21	105	188	51	74	64	6	2	
Radiopharmaceuticals																		
Miscellaneous Radiopharmaceutical																		
47	38	6	3	2	21	0	6	29	0	0	9	15	4	5	1	0	0	
47	38	6	3	2	21	0	6	29	0	0	9	15	4	5	1	0	0	
Sedative/Hypnotics/Antipsychotics																		
Barbiturates																		
1,462	850	214	30	32	532	2	35	631	172	1	25	303	191	119	67	24	2	
152	61	3	3	3	43	0	8	34	22	0	4	34	6	13	10	3	0	
31	8	1	0	2	4	0	0	1	5	0	0	7	0	0	2	0	0	
Miscellaneous Sedative/Hypnotics/Antipsychotics																		
44,251	17,121	1,713	895	3,151	10,781	9	456	5,399	10,697	47	724	13,258	2,921	5,001	4,192	547	9	
69,506	25,070	3,990	652	3,346	15,898	13	912	7,438	16,429	336	395	18,884	4,958	8,929	3,519	416	14	
6,218	1,914	329	67	369	1,072	0	62	749	1,071	1	74	1,228	597	517	159	6	1	
13	9	7	0	1	1	0	0	5	1	1	2	6	2	4	1	0	0	
2	2	0	0	0	2	0	0	1	1	0	0	2	0	1	1	0	0	
1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	
24	12	0	0	4	8	0	0	0	12	0	0	10	1	3	5	0	0	
4	3	0	0	0	3	0	0	0	2	0	1	3	0	1	0	0	0	
13,579	5,356	587	270	456	3,836	5	160	1,894	3,212	30	113	3,812	814	1,999	813	90	5	
Other Types of Sedative/Hypnotic/Anti-Anxiety or Anti-Psychotic Drug																		
4,333	1,655	182	44	167	1,172	1	80	679	761	5	180	1,168	332	359	439	20	2	
1,939	1,254	494	20	202	515	0	18	591	648	0	5	733	319	250	233	22	0	
Sleep Aids, Over the Counter Only (Excluding Diphenhydramine)																		
292	103	5	1	28	57	1	7	12	86	1	1	89	12	24	30	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 Facility			Outcome				
		≤5	6–12	13–19	20–29	≥30	Child	Unknown Adult	Unknown Age	Unit	Int	Other	Adv Rxn	Care	None	Minor	Moderate	Major	Death
141,807	53,419	7,525	1,982	7,761	33,925	31	1,738	457	17,434	33,120	422	1,524	39,537	10,153	17,219	9,472	1,128	33	
Serums, Toxoids, Vaccines																			
Miscellaneous Serums, Toxoids, Vaccines																			
1,562	1,389	241	89	108	791	7	128	25	1,104	3	1	277	458	114	302	83	2	0	
Miscellaneous Serums, Toxoids and Vaccines																			
1,562	1,389	241	89	108	791	7	128	25	1,104	3	1	277	458	114	302	83	2	0	
Category Total:																			
Stimulants and Street Drugs																			
Cannabinoids and Analogs																			
15	14	2	0	4	6	0	2	0	6	8	0	0	8	2	7	0	0	0	
eCigarettes: Marijuana Device Flavor Unknown																			
1	1	0	0	1	0	0	0	0	0	1	0	0	1	0	1	0	0	0	
eCigarettes: Marijuana Device With Added Flavors																			
1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	
eCigarettes: Marijuana Device Without Added Flavors																			
13	13	7	0	2	3	1	0	0	10	3	0	0	6	2	6	0	0	0	
eCigarettes: Marijuana Liquid Flavor Unknown																			
2	2	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	
eCigarettes: Marijuana Liquid With Added Flavors																			
2	1	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	
eCigarettes: Marijuana Liquid Without Added Flavors																			
292	216	31	7	65	98	0	14	1	58	105	16	34	149	16	80	54	7	0	
Marijuana: Concentrated Extract (Including Oils and Tinctures)																			
7,333	2,891	681	166	753	1,108	10	143	30	1,146	1,313	98	237	2,053	237	889	654	59	2	
Marijuana: Dried Plant																			
714	624	202	75	99	217	0	22	9	357	182	16	60	417	73	244	107	7	0	
Marijuana: Edible Preparation																			
18	12	2	1	1	8	0	0	0	4	2	0	6	8	1	6	2	0	0	
Marijuana: Oral Capsule or Pill Preparation																			
214	80	18	3	18	37	1	2	1	23	48	1	5	70	4	32	30	1	0	
Marijuana: Other or Unknown Preparation																			
68	45	14	5	22	0	3	0	23	13	13	1	8	26	9	14	9	0	0	
Marijuana: Pharmaceutical Preparation																			
6	5	2	0	0	3	0	0	0	4	1	0	0	3	2	2	0	0	0	
Marijuana: Topical Preparation																			
26	10	0	0	4	4	0	2	0	4	2	1	2	5	3	5	1	0	0	
Marijuana: Undried Plant																			
1,959	1,295	13	12	269	961	2	28	10	60	1,151	19	18	1,183	63	418	500	103	5	
Synthetic Cannabinoids, Analogs and Precursors																			
Diet Aids																			
5	4	1	1	0	1	0	1	0	2	2	0	0	2	0	0	0	0	1	
Diet Aids: Phenylpropanolamine and Caffeine Combinations																			
4	2	0	0	0	2	0	0	0	2	0	0	0	1	0	0	1	0	0	
Diet Aids: Phenylpropanolamine Only																			
160	118	64	1	11	38	0	3	1	83	14	0	21	48	28	17	14	0	0	
Other Types of Diet Aid, Over the Counter Only																			
23	15	6	0	0	7	0	2	0	9	4	0	2	9	3	2	3	1	0	
Other Types of Diet Aid, Prescription Only																			
47	30	14	1	5	8	0	2	0	17	9	0	4	13	7	2	3	1	0	
Unknown Types of Diet Aid																			
Miscellaneous Stimulants and Street Drugs																			
16,569	10,162	3,531	1,835	1,862	2,691	7	184	52	6,926	2,748	46	279	5,274	2,469	1,739	1,756	124	3	
Amphetamines and Related Compounds																			
154	130	24	3	4	95	0	3	1	61	68	0	0	63	20	25	21	2	1	
Amyl or Butyl Nitrites (Street Drugs)																			
3,765	2,842	1,173	114	399	1,028	1	106	21	1,731	650	14	416	887	451	534	301	11	0	
Caffeine																			
6,008	1,427	74	15	73	1,130	2	93	40	152	1,191	27	10	1,229	224	241	426	94	30	
Cocaine																			
149	105	52	5	5	37	0	4	2	71	27	3	2	38	26	13	16	3	0	
Ephedrine																			
519	323	6	3	18	270	0	16	10	56	208	26	7	273	21	55	123	66	0	
gamma-Hydroxybutyric Acid including Analogs or Precursors																			
1,908	871	35	2	188	594	0	38	14	93	738	20	7	745	60	173	350	68	6	
Hallucinogenic Amphetamines																			
8,784	4,923	23	6	141	4,583	0	119	51	158	4,564	124	18	4,419	377	819	1,828	1,087	66	
Heroin																			
372	240	9	1	13	210	0	6	1	27	167	15	27	196	18	63	89	20	1	
Kratom																			
1,018	594	10	5	343	208	1	18	9	51	513	14	3	518	27	112	323	29	1	
Lysergic acid diethylamide (LSD)																			
48	35	7	4	2	21	0	1	0	22	9	1	3	12	1	7	8	1	0	
Mescaline/Peyote																			
7,519	3,503	239	50	163	2,779	4	206	62	526	2,770	87	32	2,904	324	645	1,199	256	191	
Methamphetamines																			
9,589	6,562	1,630	2,602	1,421	820	8	64	17	5,258	1,140	12	106	2,241	1,628	944	689	25	0	
Methylphenidate																			
102	70	0	0	25	43	0	2	0	5	61	1	2	62	2	11	41	4	0	
Other Hallucinogens																			
458	258	74	5	16	148	0	15	0	156	55	2	41	117	56	44	36	2	0	
Other Stimulants (Excluding Amphetamines)																			
509	294	18	3	27	225	1	15	5	30	243	11	1	248	10	36	137	29	3	
Other Street Drugs																			
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other Synthetic Street Drugs																			
540	220	11	3	14	172	0	12	8	32	160	5	4	193	11	43	101	16	1	
Phencyclidine (PCP)																			
7	4	0	0	0	4	0	0	0	0	3	1	0	4	1	1	1	0	0	
Synthetic Cathinones, Analogs and Precursors																			
10	3	0	0	0	3	0	0	0	1	2	0	0	2	0	0	0	2	1	
Synthetic Opioids, Analogs and Precursors (Excluding Pharmaceutical Preparations)																			
1	1	0	0	0	1	0	0	0	0	1	0	0	1	0	1	0	0	0	
Synthetic Tryptamines, Analogs and Precursors																			
13	5	0	0	1	3	0	1	0	0	5	0	0	4	0	0	3	0	0	
Unknown Hallucinogens																			

(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 Facility			Outcome		
		≤5	6–12	13–19	≥20	Child	Unknown Adult	Unknown Age	Unit	Int	Other	Adv Rxn	Care Facility	None	Minor	Moderate	Major	Death
297	197	3	4	31	410	0	17	3	12	160	9	7	176	8	29	65	38	5
69,243	38,148	7,979	4,928	5,983	17,728	38	1,144	348	17,179	18,342	570	1,362	23,608	6,185	7,262	8,891	2,056	317
Unknown Stimulants or Street Drugs																		
Category Total:																		
Topical Preparations																		
Miscellaneous Topical Preparations																		
1,994	1,911	1,005	124	262	410	1	103	6	1,777	49	3	81	129	307	210	18	1	0
120	115	27	3	6	70	0	7	2	105	1	0	9	11	24	10	1	0	0
1,962	1,901	1,328	63	23	436	7	41	3	1,885	12	0	2	125	259	170	4	0	0
10,211	9,975	8,252	229	159	1,107	12	199	17	9,742	135	20	67	1,142	2,635	1,089	65	8	0
1,195	1,175	948	26	15	1,130	1	14	1	1,130	15	1	27	129	323	143	2	1	0
21,969	21,562	20,475	208	142	585	39	100	13	21,490	19	12	31	472	2,703	591	15	0	0
20	17	10	2	0	3	0	2	0	13	1	0	2	1	2	3	0	0	0
5,879	5,612	1,906	302	272	2,667	7	425	33	5,342	174	32	47	545	575	905	71	0	0
1,007	888	195	48	62	501	13	59	10	736	79	5	63	179	171	171	26	2	0
33	28	14	1	0	10	0	3	0	23	1	0	4	7	5	6	0	0	0
5,971	5,875	4,118	253	116	1,131	6	240	11	5,668	47	16	135	582	1,175	818	40	3	0
166	159	59	2	2	85	0	11	0	141	7	2	8	41	30	12	7	1	0
3,463	3,385	2,433	94	55	664	7	120	12	3,140	29	8	205	188	532	503	28	1	0
2,001	1,932	945	74	88	688	2	121	14	1,804	70	8	43	265	298	220	33	3	0
46	41	12	5	0	22	0	2	0	34	2	0	5	7	3	5	0	0	0
103	87	21	3	25	25	0	12	1	65	2	4	15	20	8	20	3	0	0
8,515	8,285	4,573	639	180	2,364	13	481	35	8,159	38	2	82	177	1,002	285	9	1	0
798	774	364	55	16	285	4	46	4	738	6	2	27	56	103	120	2	0	0
1,179	1,164	682	91	38	288	3	60	2	1,086	17	6	51	177	204	186	32	3	0
66,632	64,886	47,367	2,222	1,461	11,511	115	2,046	164	63,078	704	121	904	4,257	10,359	5,467	356	24	0
Category Total:																		
Unknown Drug																		
Miscellaneous Unknown Drug																		
25,411	17,075	4,310	720	2,287	8,536	75	804	343	6,344	6,786	778	575	12,867	3,088	2,843	3,799	1,383	130
25,411	17,075	4,310	720	2,287	8,536	75	804	343	6,344	6,786	778	575	12,867	3,088	2,843	3,799	1,383	130
Veterinary Drugs																		
Miscellaneous Veterinary Drugs																		
5,792	5,359	1,123	124	132	3,410	4	503	63	5,243	48	9	49	554	1,244	516	82	3	0
5,792	5,359	1,123	124	132	3,410	4	503	63	5,243	48	9	49	554	1,244	516	82	3	0
Category Total:																		
Vitamins																		
Miscellaneous Vitamins																		
Other Types of Vitamin																		
699	518	394	40	15	58	2	8	1	479	20	1	16	63	120	20	3	0	0
700	491	358	63	18	41	3	6	2	451	28	0	10	48	96	19	3	0	0
Multiple Vitamin Liquids: Adult Formulations																		
10	8	6	1	1	0	0	0	0	7	1	0	0	1	0	0	0	0	0
Multiple Vitamin Liquids: Adult Formulations with Fluoride (No Iron)																		
172	133	79	7	4	38	0	5	0	116	8	0	9	15	27	11	0	0	0
Multiple Vitamin Liquids: Adult Formulations with Iron (No Fluoride)																		
8	5	3	0	0	2	0	0	0	5	0	0	0	0	0	1	0	0	0
Multiple Vitamin Liquids: Adult Formulations with Iron and Fluoride																		
444	349	254	43	10	38	0	2	2	310	31	0	8	34	57	9	3	0	0
Multiple Vitamin Liquids: Pediatric Formulations																		
86	83	77	5	0	1	0	0	0	81	1	0	0	1	13	1	0	0	0
Multiple Vitamin Liquids: Pediatric Formulations with Fluoride (No Iron)																		
431	410	387	16	2	4	0	1	0	397	5	2	6	27	81	19	0	0	0
Multiple Vitamin Liquids: Pediatric Formulations with Iron (No Fluoride)																		
27	26	26	0	0	0	0	0	0	26	0	0	0	0	5	3	0	0	0
Multiple Vitamin Liquids: Pediatric Formulations with Iron and Fluoride																		

(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 Facility			Outcome			
		≤5	6–12	13–19	8	10	Unknown		Unit	Int	Other	Adv Rxn	Care	None	Minor	Moderate	Major	Death	
							Child	Adult											
808	771	632	116	8	10	1	3	1	742	25	2	1	35	120	19	1	0	0	
		Multiple Vitamin Liquids: Pediatric Formulations without Iron or Fluoride																	
		Multiple Vitamin Tablets: Adult Formulations																	
121	111	91	11	2	6	0	1	0	108	3	0	0	7	20	1	1	0	0	
		Multiple Vitamin Tablets: Adult Formulations with Fluoride (No Iron)																	
5,005	4,096	3,156	120	105	613	7	78	17	3,867	167	4	54	396	858	156	17	1	0	
		Multiple Vitamin Tablets: Adult Formulations with Iron (No Fluoride)																	
24	16	13	1	0	1	0	1	0	15	1	0	0	5	2	0	0	0	0	
		Multiple Vitamin Tablets: Adult Formulations with Iron and Fluoride																	
77	64	38	6	4	15	0	0	1	56	6	0	2	14	17	3	0	0	0	
		Multiple Vitamin Tablets: Adult Formulations with Iron Carbonyl (No Fluoride)																	
6,768	5,527	4,022	660	218	524	10	86	7	5,091	314	5	114	373	1,083	186	13	1	0	
		Multiple Vitamin Tablets: Pediatric Formulations																	
169	163	146	17	0	0	0	0	0	162	0	1	0	11	32	4	0	0	0	
		Multiple Vitamin Tablets: Pediatric Formulations with Fluoride (No Iron)																	
4,076	3,892	3,481	317	50	30	6	5	3	3,823	59	1	7	388	748	243	16	0	0	
		Multiple Vitamin Tablets: Pediatric Formulations with Iron (No Fluoride)																	
23	23	23	0	0	0	0	0	0	23	0	0	0	4	4	1	0	0	0	
		Multiple Vitamin Tablets: Pediatric Formulations with Iron and Fluoride																	
21	20	17	2	1	0	0	0	0	18	2	0	0	1	1	3	0	0	0	
		Multiple Vitamin Tablets: Pediatric Formulations with Iron Carbonyl (No Fluoride)																	
19,516	18,811	14,824	3,370	367	182	38	25	5	18,027	745	4	20	819	3,001	354	9	0	0	
		Multiple Vitamin Tablets: Pediatric Formulations without Iron or Fluoride																	
		Multiple Vitamins, Unspecified Adult Formulations																	
10	9	5	3	0	1	0	0	0	8	0	0	1	1	1	1	0	0	0	
		Multiple Vitamins, Unspecified Adult Formulations with Fluoride (No Iron)																	
1,267	866	623	39	39	135	0	25	5	807	42	0	15	93	149	42	4	0	0	
		Multiple Vitamins, Unspecified Adult Formulations with Iron (No Fluoride)																	
7	4	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	
		Multiple Vitamins, Unspecified Adult Formulations with Iron and Fluoride																	
457	400	306	56	8	27	0	2	1	367	30	0	3	18	65	7	0	0	0	
		Multiple Vitamins, Unspecified Adult Formulations without Iron or Fluoride																	
		Multiple Vitamins, Unspecified Pediatric Formulations																	
15	14	11	3	0	0	0	0	0	14	0	0	0	0	4	0	0	0	0	
		Multiple Vitamins, Unspecified Pediatric Formulations with Fluoride (No Iron)																	
82	77	68	6	0	2	1	0	0	72	3	0	2	8	10	8	0	0	0	
		Multiple Vitamins, Unspecified Pediatric Formulations with Iron (No Fluoride)																	
8	8	8	0	0	0	0	0	0	8	0	0	0	2	4	0	0	0	0	
		Multiple Vitamins, Unspecified Pediatric Formulations with Iron and Fluoride																	
857	824	650	150	18	2	1	1	2	781	38	0	1	23	186	16	1	0	0	
		Multiple Vitamins, Unspecified Pediatric Formulations without Iron or Fluoride																	
		Other Vitamins																	
5,901	4,047	3,244	218	101	394	10	70	10	3,815	137	1	88	282	714	63	8	0	0	
		Other B Complex Vitamins																	
422	343	202	27	6	89	0	17	2	311	15	2	13	35	49	20	5	0	0	
		Vitamin A																	
1,188	939	311	28	76	463	0	54	7	483	183	1	268	263	65	299	74	1	0	
		Vitamin B3 (Niacin)																	
377	206	144	12	4	39	0	6	1	183	11	0	11	20	40	6	2	0	0	
		Vitamin B6 (Pyridoxine)																	
1,505	978	720	106	24	110	2	13	3	886	65	0	26	56	121	54	6	0	0	
		Vitamin C																	
7,544	5,292	3,581	323	171	1,036	9	161	11	5,035	123	2	114	510	843	174	27	3	1	
		Vitamin D																	
622	413	311	16	10	62	0	13	1	380	14	0	15	31	75	9	0	0	0	
		Vitamin E																	
59,447	49,937	38,215	5,782	1,262	3,923	90	583	82	46,958	2,077	26	804	3,584	8,611	1,752	193	6	1	
		Category Total:																	
1,472,752	903,583	412,882	59,730	90,429	307,725	1,065	27,214	4,538	653,569	209,392	3,243	27,934	308,955	187,259	115,821	71,447	11,453	1,009	
		Pharmaceuticals Total:																	
25,417,728	18,583,885	927,844	1,241,156	132,818	577,096	4,187	79,694	12,590	1,537,317	248,896	14,986	43,444	475,369	339,322	273,962	103,126	13,788	1,324	
		(Nonpharmaceuticals + Pharmaceuticals):																	