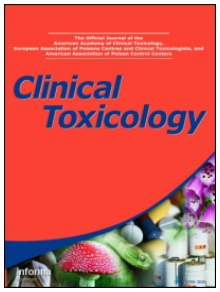

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James B. Mowry, Daniel A. Spyker, Daniel E. Brooks, Ashlea Zimmerman & Jay L. Schauben

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NPDS REPORT 2015

2015 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS): 33rd Annual Report

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ABSTRACT

Introduction: This is the 33rd Annual Report of the American Association of Poison Control Centers' (AAPCC) National Poison Data System (NPDS). As of 1 January 2015, 55 of the nation's poison centers (PCs) uploaded case data automatically to NPDS. The upload interval was 9.52 [7.40, 13.6] (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. Poison center cases with medical outcomes of death were evaluated by a team of medical and clinical toxicologist reviewers using an ordinal scale of 1-6 to assess the Relative Contribution to Fatality (RCF) of the exposure.

Results: In 2015, 2,792,130 closed encounters were logged by NPDS: 2,168,371 human exposures, 55,516 animal exposures, 560,467 information calls, 7657 human confirmed nonexposures, and 119 animal confirmed nonexposures. US PCs also made 2,695,699 follow-up calls in 2015. Total encounters showed a 3.42% decline from 2014, while health care facility (HCF) human exposure cases increased by 5.09% from 2014. All information calls decreased by 15.5% but HCF information calls increased 2.67%, and while medication identification requests (Drug ID) decreased 31.7%, human exposures reported to US PCs were essentially flat, increasing by 0.149%. Human exposures with less serious outcomes have decreased 2.95% per year since 2008 while those with more serious outcomes (moderate, major or death) have increased by 4.34% per year since 2000.

The top 5 substance classes most frequently involved in all human exposures were analgesics (11.1%), household cleaning substances (7.54%), cosmetics/personal care products (7.41%), sedatives/hypnotics/antipsychotics (5.83%), and antidepressants (4.58%). Sedative/Hypnotics/Antipsychotics exposures as a class increased the most rapidly (2597 calls (11.4%)/year) over the last 14 years for cases showing more serious outcomes. The top 5 most common exposures in children age 5 years or less were cosmetics/personal care products (13.6%), household cleaning substances (11.2%), analgesics (9.12%), foreign bodies/toys/miscellaneous (6.45%), and topical preparations (5.33%). Drug identification requests comprised 35.0% of all information calls. NPDS documented 1831 human exposures resulting in death with 1371 human fatalities judged related (RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).

Conclusions: These data support the continued value of PC expertise and need for specialized medical toxicology information to manage more serious exposures, despite a decrease in calls involving less serious exposures. Unintentional and intentional

exposures continue to be a significant cause of morbidity and mortality in the US. The near real-time, always current status of NPDS represents a national public health resource to collect and monitor US exposure cases and information calls. The continuing mission of NPDS is to provide a nationwide infrastructure for surveillance for all types of exposures (e.g., foreign body, viral, bacterial, venomous, chemical agent, or commercial product), the identification of events of public health significance, resilience, response and situational awareness tracking. NPDS is a model system for the real-time surveillance of national and global public health.

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

Introduction

This is the 33rd Annual Report of the American Association of Poison Control Centers' (AAPCC; http://www.aapcc.org) National Poison Data System (NPDS).[1] On 1 January 2015, 55 regional poison centers (PCs) serving the entire population of the 50 United States, American Samoa, District of Columbia, Federated States of Micronesia, Guam, Puerto Rico, and the US Virgin Islands submitted information and exposure case data collected during the course of providing telephonic patient tailored exposure management and poison information.

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

The NPDS Products Database

The NPDS products database contains over 427,000 products ranging from viral and bacterial agents to commercial chemical and drug products. The products database is maintained and continuously updated by data analysts at the Micromedex Poisindex® System (Micromedex Healthcare Series [Internet database]. Greenwood Village, CO: Truven Health Analytics). A robust generic coding system categorizes the product data into 1103 generic codes. These generic codes collapse into Non-Pharmaceutical (575) and Pharmaceutical (528) groups. These two groups are divided into Major (68) and Minor (178) categories. The generic coding schema undergoes continuous improvement through the work of the AAPCC – Micromedex Joint Coding Group. The group consists of AAPCC members and editorial and lexicon staff working to meet best terminology practices. The generic code system provides enhanced report granularity as reflected in Table 22. The following 9 new generic codes were introduced in 2015.

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

Generic Codes Added in 2015

1	Oral Hypoglycemics: Alpha-Glucosidase Inhibitors
2	Oral Hypoglycemics: Dipeptidyl Peptidase-4 (DPP-4) Inhibitors
3	Oral Hypoglycemics: Glucagon-Like Peptide-1 (GLP-1) Receptor Agonists
4	Oral Hypoglycemics: Meglitinides
5	Oral Hypoglycemics: Sodium Glucose Co-Transporter 2 Inhibitor (SGLT2) Inhibitors
6	Serotonin 5-HT 1B,1D Receptor Agonists: Other or Unknown
7	Serotonin 5-HT 1B,1D Receptor Agonists: Sumatriptan
8	Serotonin 5-HT3 Receptor Antagonists: Ondansetron
9	Serotonin 5-HT3 Receptor Antagonists: Other or Unknown

Methods

Characterization of Participating Poison Centers and Population Served

All 55 US PCs submitted data to AAPCC through 31 December 2015. Fifty-three centers (96.4%) were accredited by AAPCC as of 1 July 2015. The entire population of the 50 United States, American Samoa, the District of Columbia, Federated States of Micronesia, Guam, Puerto Rico, and the US Virgin Islands was served by the US PC network in 2015.[2–4]

The average number of human exposure cases managed per day by all US PCs was 5941. Similar to other years, higher volumes were observed in the warmer months, with a mean of 6333 cases per day in June compared with 5424 per day in December. On average, US PCs received a call about an actual human exposure every 14.5 seconds.

Call Management – Specialized Poison Exposure Emergency Providers

Poison center Managing Directors are primarily responsible for patient care/information service operations, clinical education, and staff instruction. Most are PharmDs or registered nurses (RN) with American Board of Applied Toxicology (ABAT) board certification in clinical toxicology. Medical direction is provided by Medical Directors who are board-certified physician medical

toxicologists. At some PCs, the Managing and Medical Director roles are held by the same person.

Calls received at US PCs are managed by healthcare professionals who have received specialized training in toxicology to allow for assessment, triage, management and monitoring of toxic exposure emergencies. These providers include medical and clinical toxicologists, RNs, pharmacists (PharmD or BS), physicians and physician assistants (PA). Most commonly, registered nurses and pharmacists make up the contingent of "Specialists in Poison Information" (SPIs) or "Certified Specialists in Poison Information" (CSPIs) in the US who triage lay public calls to the most appropriate level of care and provide health care professional callers with the most up-to-date management recommendations to care for their poisoned/overdosed patients. In order for a SPI to become nationally certified as a CSPI, they must log a minimum of 2000 human exposure calls and 2000 hours in the PC as a care provider to become eligible to take the national CSPI examination. Of note, while the only individuals eligible to sit for the CSPI examination are nurses, pharmacists, physicians and PA's, there is a lack of an appropriate toxicology core training within these health professional training curriculums to allow for them to be prepared for PC patient management operations. These SPIs must receive significant additional training above their degree programs to become SPIs/CSPIs. Such training is only offered within the PCs. "Poison Information Providers" (PIPs) are allied healthcare professionals who are allowed to manage information-type and low acuity (non-hospital) calls while working under the supervision of a CSPI. Poison centers undergo a rigorous accreditation process administered by the AAPCC and must submit an annual accreditation report and an extensive reaccreditation application every ten 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 collecting near real-time data since 2002, NPDS was launched on 12 April 2006. NPDS is the data repository for all of the US PCs and includes all case information collected by its predecessor. In 2015, 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 calls contemporaneously in 1 of 4 case data management systems. Each PC uploads case data automatically. The average time to upload data for all PCs is 9.52 [7.40, 13.6] (median [25%, 75%]) minutes creating a real-time national exposure database and surveillance system.

The web-based NPDS software facilitates detection, analysis, and reporting of NPDS surveillance anomalies. System software offers a myriad of surveillance uses allowing AAPCC, its member centers and public health agencies to utilize NPDS exposure data. Users are able to access local and regional data for their own areas and view national aggregate data. Custom surveillance definitions are available, along with ad hoc reporting tools. Information in the NPDS database is dynamic. Each year the database is locked prior to extraction of annual report data to prevent inadvertent changes and ensure consistent, reproducible reports. Additional information including autopsy data on fatalities may now be added after the lock date as an addenda to the fatality narrative. The 2015 database was locked on 4 August 2016 at 20:25 EDT.

Annual Report Case Inclusion Criteria

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

Statistical Methods

All tables except Tables 3(B) and 17(B) were generated directly by the NPDS web-based application and can thus be reproduced by each PC. The analyses for Figures 1–4 and Table 17(B) were done using SAS JMP® version 12.0.1 (SAS Institute, Cary, NC) and summary counts were generated by the NPDS web-based application.

NPDS Surveillance

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

adverse event monitoring, surveillance, resilience, response and situational awareness.

Surveillance definitions can be created to monitor a variety of parameters, i.e., volume; case based; 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 427,000 entries ranging from viral and bacterial agents to commercial chemical and drug products. Surveillance definitions may be constructed using volume or case based definitions with a variety of mathematical options and historical baseline periods from 1 to 14 years. NPDS surveillance tools include:

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

Incoming data is monitored continuously and anomalous signals generate an automated email alert to the AAPCC's surveillance team, designated PC or public health agency staff. These anomaly alerts are reviewed daily by the AAPCC surveillance team, the PC, or the public health agency that created the surveillance definition. When reports of potential public health significance are detected, additional information is obtained from reporting PCs via the NPDS surveillance correspondence system or phone as appropriate. The PC then alerts their respective 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 as granted by their respective PCs, also have the ability to create surveillance definitions for routine surveillance tasks or to respond to emerging public health events.

Fatality Case Review and Narrative Selection

NPDS fatality cases are recorded as DEATH or DEATH (INDIRECT REPORT). Medical outcome of death is by direct report. Deaths (indirect reports) are deaths that the PC acquired from medical examiners or media, but did not

Table 1(A). AAPCC Population Served and Reported Exposures (1983-2015)

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
Total			**64,458,716**	

[a]As of 1 July 2010 there were 60 Participating Centers.
[b]AAPCC Total as of 1 July Mid Year US Census (2012 data for 50 United States, District of Columbia and Puerto Rico; 2011 data for Guam; 2010 data for American Samoa, Federated States of Micronesia, and the US Virgin Islands)
[c]As of 1 July 2011 there were 57 Participating Centers.
[d]One Participating Center closed in September 2013. Its data is included in the 2013 totals but not in the 2014 data.
[e]AAPCC Total as of 1 July Mid Year US Census (2013 data for 50 United States, District of Columbia and Puerto Rico, Guam, American Samoa, Federated States of Micronesia, and the US Virgin Islands)
[f]AAPCC Total as of 1 July Mid Year US Census (2014 data for 50 United States, District of Columbia and Puerto Rico, Guam, American Samoa, Federated States of Micronesia, and the US Virgin Islands)
[g]One Participating Center closed in July 2014. Its data is included in the 2014 totals but not in the 2015 data.
[h]AAPCC Total as of 1 July Mid Year US Census (2015 data for 50 United States, District of Columbia and Puerto Rico, Guam, American Samoa, Federated States of Micronesia, and the US Virgin Islands) [2,3]

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

Animal	N	%
Dog	49,913	89.91
Cat	4812	8.67
Bird	175	0.32
Rodent/lagomorph	145	0.26
Horse	98	0.18
Cow	51	0.09
Sheep/goat	47	0.08
Aquatic	23	0.04
Other	252	0.45
Total	55,516	100.00

Table 1(C). Distribution of Information Calls

Information call type	N	% of Info. calls
Drug identification		
Public inquiry: Drug sometimes involved in abuse	81,646	14.57
Public inquiry: Drug not known to be abused	40,533	7.23
Public inquiry: Unknown abuse potential	1767	0.32
Public inquiry: Unable to identify	17,684	3.16
HCP inquiry: Drug sometimes involved in abuse	1292	0.23
HCP inquiry: Drug not known to be abused	2271	0.41
HCP inquiry: Unknown abuse potential	88	0.02
HCP inquiry: Unable to identify	932	0.17
Law Enf. Inquiry: Drug sometimes involved in abuse	29,388	5.24
Law Enf. Inquiry: Drug not known to be abused	15,479	2.76
Law Enf. Inquiry: Unknown abuse potential	596	0.11
Law Enf. Inquiry: Unable to identify	3480	0.62
Other drug ID	799	0.14
Subtotal	**195,955**	**34.96**
Drug information		
Adverse effects (no known exposure)	8337	1.49
Brand / generic name clarifications	997	0.18
Calculations	119	0.02
Compatibility of parenteral medications	169	0.03
Compounding	277	0.05
Contraindications	1257	0.22
Dietary supplement, herbal, and homeopathic	454	0.08
Dosage	10,281	1.83
Dosage form / formulation	1419	0.25
Drug use during breast-feeding	1881	0.34
Drug-drug interactions	20,684	3.69
Drug-food interactions	1441	0.26
Foreign drug	151	0.03
Generic substitution	260	0.05
Indications / therapeutic use	6987	1.25
Medication administration	4687	0.84
Medication availability	421	0.08
Medication disposal	2241	0.40
Pharmacokinetics	1579	0.28
Pharmacology	986	0.18
Regulatory	2118	0.38
Stability / storage	2007	0.36
Therapeutic drug monitoring	398	0.07
Other drug info	17,966	3.21
Subtotal	**87,117**	**15.54**
Environmental information		
Air quality	1410	0.25
Carbon monoxide - no known patient(s)	583	0.10
Carbon monoxide alarm use	580	0.10
Chem / bioterrorism / weapons (suspected or confirmed)	4	0.00
Clarification of media reports of environmental contamination	23	0.00
Clarification of substances involved in a HAZMAT incident - no known victim(s)	105	0.02
General questions about contamination of air and / or soil	300	0.05
HAZMAT planning	97	0.02
Lead - no known patient(s)	366	0.07
Mercury thermometer cleanup	1127	0.20
Mercury (excluding thermometers) cleanup	2458	0.44
Notification of a HAZMAT incident - no known patient(s)	762	0.14
Pesticide application by a professional pest control operator	514	0.09
Pesticides (other)	2251	0.40
Potential toxicity of chemicals in the environment	1015	0.18
Radiation	68	0.01
Safe disposal of chemicals	1113	0.20
Water purity / contamination	580	0.10
Other environmental	3346	0.60
Subtotal	**16,702**	**2.98**
Medical information		
Dental questions	90	0.02
Diagnostic or treatment recommendations for diseases or conditions - non-toxicology	6306	1.13
Disease prevention	425	0.08
Explanation of disease states	658	0.12
General first-aid	898	0.16
Interpretation of non-toxicology laboratory reports	111	0.02
Medical terminology questions	66	0.01
Rabies - no known patient(s)	248	0.04
Sunburn management	36	0.01
Other medical	50,850	9.07
Subtotal	**59,688**	**10.65**

(*continued*)

Table 1(C). Continued

Information call type	N	% of Info. calls
Occupational information		
Occupational treatment / first-aid guidelines - no known patient(s)	27	0.00
Information on chemicals in the workplace	95	0.02
MSDS interpretation	36	0.01
Occupational MSDS requests	517	0.09
Routine toxicity monitoring	32	0.01
Safe handling of workplace chemicals	72	0.01
Other occupational	202	0.04
Subtotal	**981**	**0.18**
Poison information		
Analytical toxicology	792	0.14
Carcinogenicity	60	0.01
Food poisoning - no known patient(s)	2058	0.37
Food preparation / handling practices	5573	0.99
General toxicity	21,399	3.82
Mutagenicity	28	0.00
Plant toxicity	1854	0.33
Recalls of non-drug products (including food)	261	0.05
Safe use of household products	3709	0.66
Toxicology information for legal use / litigation	159	0.03
Other poison	17,229	3.07
Subtotal	**53,122**	**9.48**
Prevention / Safety / Education		
Confirmation of poison center number	13,455	2.40
General (non-poison) injury prevention requests	386	0.07
Media requests	225	0.04
Poison prevention material requests	6641	1.18
Poison prevention week date inquiries	23	0.00
Professional education presentation requests	215	0.04
Public education presentation requests	277	0.05
Other prevention	685	0.12
Subtotal	**21,907**	**3.91**
Teratogenicity information		
Teratogenicity	1085	0.19
Subtotal	**1085**	**0.19**
Other information		
Other	47,883	8.54
Subtotal	**47,883**	**8.54**
Substance Abuse		
Drug screen information	2967	0.53
Effects of illicit substances - no known patient(s)	177	0.03
New trend information	194	0.03
Withdrawal from illicit substances - no known patient(s)	144	0.03
Other substance abuse	511	0.09
Subtotal	**3993**	**0.71**
Administrative		
Expert witness requests	28	0.00
Faculty activities	37	0.01
Funding	16	0.00
Personnel issues	227	0.04
Poison center record request	170	0.03
Product replacement / malfunction (issues intended for the manufacturer)	2500	0.45
Scheduling of poison center rotations	65	0.01
Other administration	20,309	3.62
Subtotal	**23,352**	**4.17**
Caller Referred		
Immediate referral - animal poison center or veterinarian	17,070	3.05
Immediate referral - drug identification	2966	0.53
Immediate referral - drug information	169	0.03
Immediate referral - health department	9196	1.64
Immediate referral - medical advice line	646	0.12
Immediate referral - pediatric triage service	230	0.04
Immediate referral - pesticide hotline	280	0.05
Immediate referral - pharmacy	523	0.09
Immediate referral - poison center	3288	0.59
Immediate referral - private physician	2010	0.36
Immediate referral - psychiatric crisis line	82	0.01
Immediate referral - teratology information program	103	0.02
Other call referral	12,119	2.16
Subtotal	**48,682**	**8.69**
Total	**560,467**	**100.00**

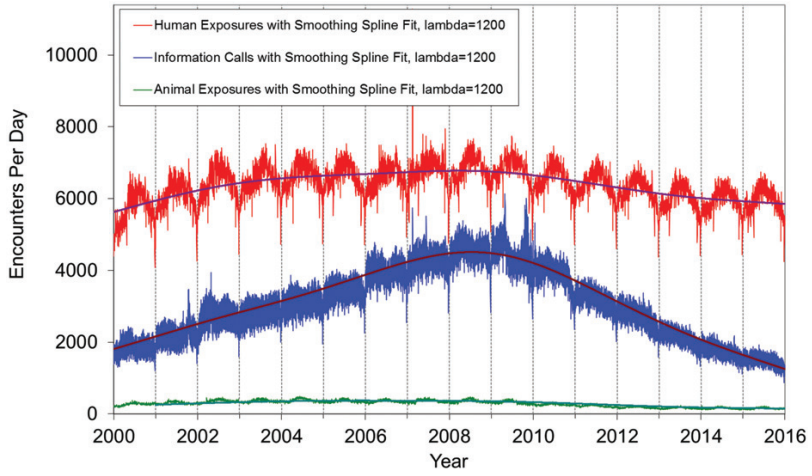

Figure 1. Human Exposure Cases, Information Calls and Animal Exposure Cases by Day since 1 January 2000
Smoothing Spline Fits using lambda =1200 for Human Exposures had associated RSqr =0.410, Information Calls RSqr =0.874 and Animal Exposures RSqr =0.841.

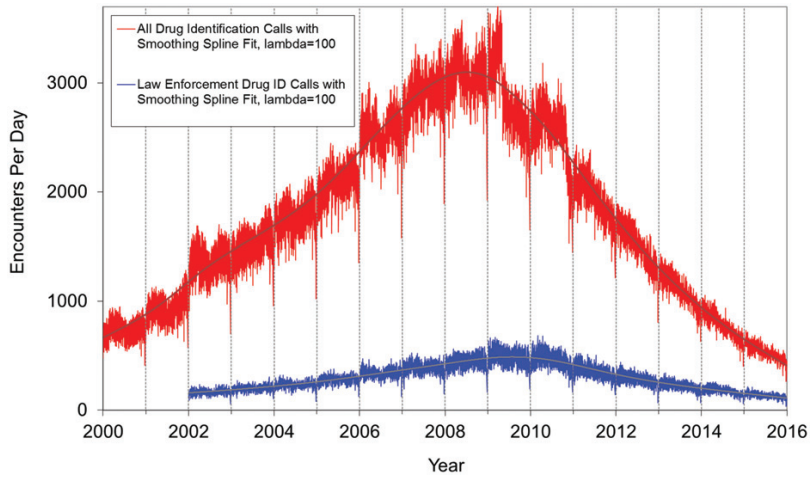

Figure 2. All Drug Identification and Law Enforcement Drug Identification Calls by Day since 1 January 2000
Smoothing Spline Fits used lambda =100, All Drug Identification Calls had associated RSqr =0.954 and Law Enforcement Drug ID Calls RSqr =0.826.

manage or answer any questions related specifically to that case.

Although PCs may report death as an outcome, the death may not be a direct result of the exposure. We define exposure-related fatality as a death judged by the AAPCC Fatality Review Team to be at least contributory to the exposure. The definitions used for the Relative Contribution to Fatality (RCF) classification are defined in Appendix B and the methods to select narratives 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 on finding commonality which might inform efforts at prevention. The reviewed pediatric fatality cases exhibited a bimodal age distribution. Exposures causing death in children $\leq$5 years of age were mostly coded as "Unintentional-General," while those in ages $>$13 years were mostly "Intentional." Often the Reason Code did not capture the complexities of the case. For example, there were few mentions of details such as the involvement of law enforcement or child protective services. While there were some complete and informative reports, in many narratives the circumstances which preceded the exposure thought responsible for the death were unclear or absent. In response to these findings, the pediatric fatality review team developed and distributed Pediatric Narrative Guidelines, with specific attention to the root cause of these cases. Poison centers are requested to heed these guidelines and the need for a more in-depth investigation of "causality."

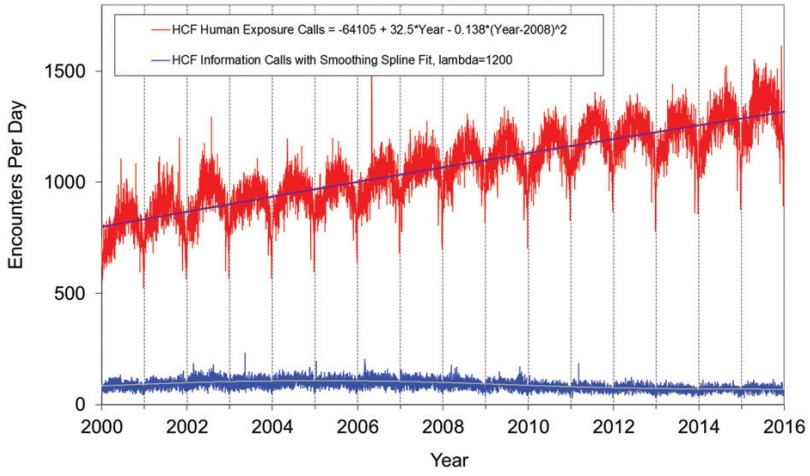

Figure 3. Health Care Facility (HCF) Exposure Cases and HCF Information Calls by Day since 1 January 2000
Both linear and second order (quadratic) terms were statistically significant for regression of HCF Human Exposure with associated RSqr =0.716. Smoothing Spline fit with lambda =1200 for HCF Information Calls had associated RSqr =0.337.

Results

Information Calls to Poison Centers

Data from 560,467 information calls to PCs in 2015 (Table 1(C)) was transmitted to NPDS, including calls in optional reporting categories such as prevention/safety/education (21,907), administrative (23,352) and caller referral (48,682).

Figure 2 shows that all Drug ID calls have decreased dramatically since mid-2008 through 2015. Law enforcement Drug ID Calls also showed a decline. The most frequent information call was for Drug ID, comprising 195,955 calls to PCs during the year. Of these, 112,336 (57.3%) were identified as drugs with known abuse potential; however, these cases were categorized based on the drug's abuse potential without knowledge of whether abuse was actually intended.

While the number of Drug Information calls decreased 4.59% from 2014 (91,306 calls) to 2015 (87,117 calls), the distribution of these call types slightly increased to 15.5% of all information request calls. The most common drug information requests were about drug-drug interactions, followed by other drug information, questions about dosage, inquiries of adverse effects (without a known exposure) and therapeutic use and indications. Environmental inquiries comprised 2.98% of all information calls. Of these environmental inquiries, specific questions related to cleanup of mercury (thermometers and other) remained the most common followed by questions involving pesticides and air quality.

Of all the information calls, poison information comprised 9.48% of the requests with inquiries involving general toxicity the most common followed by questions involving food preparation practices/food poisoning, safe use of household products and plant toxicity.

Exposure Calls to Poison Centers

In 2015, the participating PCs logged 2,792,130 total encounters including 2,168,371 closed human exposure cases (Table 1(A)), 55,516 animal exposures (Table 1(B)), 560,467 information calls (Table 1(C)), 7657 human confirmed non-exposures, and 119 animal confirmed non-exposures. An additional 280 calls were still open at the time the database was locked. The cumulative AAPCC database now contains more than 64 million human exposure case records (Table 1(A)). A total of 18,324,650 information calls have been logged into the AAPCC database since the year 2000.

Figure 1 shows the human exposures, information calls and animal exposures by day since 1 January 2000. Smoothing spline fit of these data shows departure from linearity (declining rate of calls since mid-2007) for Human Exposure Cases with some flattening over the last 2 years. Information Calls 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 the figure was the result of 602 children in a Midwest school reporting a noxious odor which caused anxiety, but resolved without sequelae.

A hallmark of PC case management is the use of follow-up calls to monitor case progress and medical outcome. US PCs made 2,695,699 follow-up calls in 2015. Follow-up calls were done in 46.8% of human exposure cases. One follow-up call was made in 22.1% of human exposure cases, and multiple follow-up calls (range 2-122) were placed in 24.7% of cases. For human exposure cases in which follow up calls were documented, an average of 2.57 calls per case were done.

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

Table 22(A) (Nonpharmaceuticals) and Table 22(B) (Pharmaceuticals) provide summary demographic data on patient age, reason for exposure, medical outcome, and use of a HCF for all 2,168,371 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: No. of Case Mentions (all exposures), displays the number of times the specific generic code was reported in any human exposure case. If a human exposure case has multiple instances of a specific generic code it is only counted once.

Column 3: No. of Single Exposures displays the number of human exposure cases that identified only one substance (one case, one substance).

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

Table 22(A) and 22(B) restrict the breakdown columns to single-substance cases. Prior to 2007, when multi-substance exposures were included, a relatively innocuous substance could be mentioned in a death column when, for example, the death was attributed to an antidepressant, opioid, or cyanide. This subtlety was not always appreciated by the user of this table. The restriction of the breakdowns to single-substance exposures should increase precision and reduce misrepresentation of the results in this unique by-substance table. Single substance cases reflect the majority (88.6%) of all exposures. In contrast, only 41.3% of fatalities are single substance exposures (Table 5).

Table 22(A) and 22(B) tabulate 2,572,910 substance-exposures, of which 1,921,098 were single-substance exposures,

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

	Site of caller		Site of exposure	
Site	N	%	N	%
Residence				
Own	1,485,467	68.51	1,974,206	91.05
Other	29,653	1.37	47,548	2.19
Workplace	23,352	1.08	36,354	1.68
Health care facility	482,317	22.24	6522	0.30
School	9517	0.44	28,759	1.33
Restaurant / food service	473	0.02	5326	0.25
Public area	7210	0.33	21,082	0.97
Other	124,992	5.76	26,035	1.20
Unknown	5390	0.25	22,539	1.04

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

Age Group	Exposures/ 100k population	Number of Exposures[a]	Population[b]
Children (<20)			
<1	2820	113,467	4,024,125
1	8243	330,931	4,014,769
2	7903	317,114	4,012,827
3	3513	141,253	4,020,406
4	1735	70,565	4,066,745
5	1031	41,943	4,066,570
Child 6-12	450	131,406	29,174,948
Teen 13-19	557	165,800	29,776,872
Subgroup	**1586**	**1,319,044**	**83,157,262**
Adults (≥20			
20-29	410	187,749	45,761,657
30-39	353	150,285	42,555,240
40-49	291	120,856	41,583,375
50-59	265	118,283	44,655,294
60-69	237	84,330	35,581,422
70-79	251	50,015	19,899,746
80-89	293	28,692	9,793,808
90+	270	6626	2,454,291
Subgroup	**345**	**835,269**	**242,284,833**
Overall Total	**666**	666	**325,442,095**

[a]Number of Exposures excludes UNKNOWN ages from the individual age categories, but includes them in the Subtotals and Overall Total (see Table 3(A))
[b]AAPCC Total as of 1 July 2015 325,442,095 (see Table 1(A)).[3–5]

Table 3(A). Age and Gender Distribution of Human Exposures

	Male		Female		Unknown gender		Total		Cumulative total	
Age (y)	N	% of age group total	N	% of age group total	N	% of age group total	N	% of total exposures	N	%
Children (<20)										
<1	59,004	52.00	54,081	47.66	382	0.34	113,467	5.23	113,467	5.23
1	172,640	52.17	157,791	47.68	500	0.15	330,931	15.26	444,398	20.49
2	165,325	52.13	151,249	47.70	540	0.17	317,114	14.62	761,512	35.12
3	77,578	54.92	63,334	44.84	341	0.24	141,253	6.51	902,765	41.63
4	39,776	56.37	30,557	43.30	232	0.33	70,565	3.25	973,330	44.89
5	23,865	56.90	17,901	42.68	177	0.42	41,943	1.93	1,015,273	46.82
Unknown ≤5	938	44.75	878	41.89	280	13.36	2096	0.10	1,017,369	46.92
Child 6-12	75,197	57.22	55,146	41.97	1063	0.81	131,406	6.06	1,148,775	52.98
Teen 13-19	63,930	38.56	101,265	61.08	605	0.36	165,800	7.65	1,314,575	60.63
Unknown Child	1590	35.58	1462	32.71	1417	31.71	4469	0.21	1,319,044	60.83
Subtotal	**679,843**	**51.54**	**633,664**	**48.04**	**5,537**	**0.42**	**1,319,044**	**60.83**	**1,319,044**	**60.83**
Adults (≥20)										
20-29	87,720	46.72	99,835	53.17	194	0.10	187,749	8.66	1,506,793	69.49
30-39	66,125	44.00	84,049	55.93	111	0.07	150,285	6.93	1,657,078	76.42
40-49	50,134	41.48	70,643	58.45	79	0.07	120,856	5.57	1,777,934	81.99
50-59	47,793	40.41	70,409	59.53	81	0.07	118,283	5.45	1,896,217	87.45
60-69	32,495	38.53	51,767	61.39	68	0.08	84,330	3.89	1,980,547	91.34
70-79	18,183	36.36	31,798	63.58	34	0.07	50,015	2.31	2,030,562	93.64
80-89	9716	33.86	18,948	66.04	28	0.10	28,692	1.32	2,059,254	94.97
≥90	2031	30.65	4590	69.27	5	0.08	6626	0.31	2,065,880	95.27
Unknown adult	34,178	38.65	52,277	59.11	1978	2.24	88,433	4.08	2,154,313	99.35
Subtotal	**348,375**	**41.71**	**484,316**	**57.98**	**2578**	**0.31**	**835,269**	**38.52**	**2,154,313**	**99.35**
Other										
Unknown age	4656	33.12	6382	45.40	3020	21.48	14,058	0.65	2,168,371	100.00
Total	1,032,874	47.63	1,124,362	51.85	11,135	0.51	2,168,371	100.00	2,168,371	100.00

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

Age (y)	Male	Female	Unknown	Total (%)	Cumulative total (%)
<1 year	1	4	0	5 (0.4%)	5 (0.4%)
1 year	2	4	0	6 (0.5%)	11 (0.9%)
2 years	3	5	0	8 (0.6%)	19 (1.5%)
3 years	0	1	0	1 (0.1%)	20 (1.6%)
4 years	2	0	0	2 (0.2%)	22 (1.8%)
5 years	1	0	0	1 (0.1%)	23 (1.8%)
Unknown <=5 years	0	0	1	1 (0.1%)	24 (1.9%)
Child 6-12 years	3	5	0	8 (0.6%)	32 (2.6%)
Teen 13-19 years	27	31	0	58 (4.6%)	90 (7.2%)
20-29 years	94	80	0	174 (13.9%)	264 (21.0%)
30-39 years	103	85	0	188 (15.0%)	452 (36.0%)
40-49 years	100	124	0	224 (17.8%)	676 (53.8%)
50-59 years	118	136	0	254 (20.2%)	930 (74.0%)
60-69 years	72	87	1	160 (12.7%)	1090 (86.8%)
70-79 years	32	53	0	85 (6.8%)	1175 (93.6%)
80-89 years	23	35	0	58 (4.6%)	1233 (98.2%)
>= 90 years	4	8	0	12 (1.0%)	1245 (99.1%)
Unknown adult	3	3	0	6 (0.5%)	1251 (99.6%)
Unknown age	3	1	1	5 (0.4%)	1256 (100.0%)
Total	**591**	**662**	**3**	**1256 (100.0%)**	**1256 (100.0%)**

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

Table 5. Number of Substances Involved in Human Exposure Cases

	Human exposures		Fatal exposures [a]	
No. of Substances	N	%	N	%
1	1,921,098	88.60	519	41.32
2	155,481	7.17	319	25.40
3	51,303	2.37	171	13.61
4	21,144	0.98	99	7.88
5	9225	0.43	62	4.94
6	4383	0.20	39	3.11
7	2404	0.11	11	0.88
8	1304	0.06	11	0.88
>=9	2029	0.09	25	1.99
Total	**2,168,371**	**100.00**	**1256**	**100.00**

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

including 989,204 (51.5%) nonpharmaceuticals and 931,894 (48.5%) pharmaceuticals. In 21.5% of single-substance exposures that involved pharmaceutical substances, the reason for exposure was intentional, compared to only 3.6% when the exposure involved a nonpharmaceutical substance. Correspondingly, treatment in a HCF was provided in a higher percentage of exposures that involved pharmaceutical substances (32.0%) compared with nonpharmaceutical substances (16.6%). Exposures to pharmaceuticals also had more severe outcomes. Of single-substance exposure-related fatal cases, 649 (71.4%) were pharmaceuticals compared with 260 (28.6%) nonpharmaceuticals.

Age and Gender Distributions

The age and gender distribution of human exposures is outlined in Table 3(A). Children younger than 3 years of age were involved in 35.1% of exposures and children ≤5 years accounted for approximately half of all human exposures (46.9%). 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 is 666/100,000 population (Table 3(B)). The highest rates of poison exposures are in children aged one (8243/100,000 population) and two (7903/100,000 population) and decline progressively as the age rises, resulting in a rate of 345/100,000 population in adults ≥20 years.

Table 6(A). Reason for Human Exposure Cases

Reason	N	% Human exposures
Unintentional		
Unintentional - General	1,137,838	52.5
Unintentional - Therapeutic error	275,979	12.7
Unintentional - Misuse	130,847	6.0
Unintentional - Environmental	56,798	2.6
Unintentional - Bite / sting	46,604	2.1
Unintentional - Occupational	27,565	1.3
Unintentional - Food poisoning	21,423	1.0
Unintentional - Unknown	3708	0.2
Subtotal	**1,700,762**	**78.4**
Intentional		
Intentional - Suspected suicide	252,959	11.7
Intentional - Misuse	56,820	2.6
Intentional - Abuse	51,673	2.4
Intentional - Unknown	20,050	0.9
Subtotal	**381,502**	**17.6**
Adverse Reaction		
Adverse reaction - Drug	37,074	1.7
Adverse reaction - Other	10,517	0.5
Adverse reaction - Food	5121	0.2
Subtotal	**52,712**	**2.4**
Unknown		
Unknown reason	16,931	0.8
Subtotal	**16,931**	**0.8**
Other		
Other - Malicious	7440	0.3
Other - Contamination / tampering	7432	0.3
Other - Withdrawal	1592	0.1
Subtotal	**16,464**	**0.8**
Total	**2,168,371**	**100.0**

Caller Site and Exposure Site

As shown in Table 2, of the 2,168,371 human exposures reported, 69.9% of calls originated from a residence (own or other) but 93.2% actually occurred at a residence (own or other). Another 22.2% of calls were made from a HCF. Beyond residences, exposures occurred in the workplace

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

Scenario	N	<=5 y (Row %)	6-12 y (Row %)	13-19 y (Row %)	>=20 y (Row %)	Unknown child (Row %)	Unknown adult (Row %)	Unknown age (Row %)
Inadvertently took/given medication twice	83,171	16.25	12.46	5.87	59.16	0.06	5.88	0.31
Wrong medication taken/given	46,636	15.51	11.92	6.17	60.50	0.05	5.46	0.39
Other incorrect dose	40,278	31.79	12.12	6.65	45.15	0.11	3.88	0.31
Medication doses given/taken too close together	31,191	16.76	9.77	6.41	59.91	0.08	6.72	0.34
Inadvertently took/given someone else's medication	23,407	15.62	20.27	6.97	52.25	0.04	4.59	0.25
Other/unknown therapeutic error	16,226	19.84	10.66	6.69	55.04	0.20	6.89	0.68
Incorrect dosing route	14,157	7.58	4.16	3.14	73.17	0.11	11.19	0.65
Confused units of measure	9456	57.36	19.75	3.91	17.30	0.02	1.48	0.17
Incorrect formulation or concentration given	5795	47.20	16.03	4.16	29.51	0.09	2.80	0.22
Dispensing cup error	5787	65.61	19.37	2.71	11.27	0.12	0.85	0.07
Health professional/iatrogenic error (pharmacist/nurse/physician)	5473	24.78	11.04	6.43	51.84	0.18	4.82	0.91
More than 1 product containing same ingredient	4581	11.15	15.96	13.84	52.85	0.02	5.81	0.37
Drug interaction	2275	6.55	7.91	8.44	61.49	0.09	15.08	0.44
10-fold dosing error	1234	60.21	9.16	2.59	26.74	0.00	1.05	0.24
Incorrect formulation or concentration dispensed	1056	44.70	16.29	4.73	30.11	0.09	3.79	0.28
Exposure through breast milk	148	93.92	0.00	0.00	4.05	1.35	0.68	0.00

[a]All cases with a scenario category of therapeutic error regardless of reason.
[b]Of the human exposure cases reported to U.S. Poison Centers in 2015, 406,003 (18.7%) were coded to 1 or more of 54 scenarios.

Table 7. Distribution of Reason for Exposure by Age

	<=5 y		6-12 y		13-19 y		>=20 y		Unknown child		Unknown adult		Unknown age		Total	
Reason	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %	N	%
Unintentional	1,011,720	62.16	114,021	7.01	58,675	3.60	434,435	26.69	3951	0.24	69,131	4.25	8,829	0.54	1,700,762	78.44
Intentional	110	0.03	12,486	3.37	99,413	26.79	255,886	68.96	169	0.05	10,292	2.77	3146	0.85	381,502	17.59
Adverse reaction	3331	7.12	2544	5.43	3883	8.29	36,139	77.20	137	0.29	5761	12.31	917	1.96	52,712	2.43
Unknown	836	5.33	853	5.44	1796	11.45	11,334	72.27	65	0.41	1184	7.55	863	5.50	16,931	0.78
Other	1372	9.63	1502	10.54	2033	14.26	9042	63.44	147	1.03	2065	14.49	303	2.13	16,464	0.76
Total	1,017,369	49.02	131,406	6.33	165,800	7.99	746,836	35.98	4469	0.22	88,433	4.26	14,058	0.68	2,168,371	100.00

(1.68% of cases), schools (1.33%), HCF (0.301%), and restaurants or food services (0.246%).

Exposures in Pregnancy

Exposure during pregnancy occurred in 6932 women (0.320% of all human exposures). Of those with known pregnancy duration (n = 6470), 31.2% occurred in the first trimester, 38.0% in the second trimester, and 30.8% in the third trimester. Most (73.8%) were unintentional exposures and 19.9% were intentional exposures. There were 3 deaths in pregnant females in 2015.

Chronicity

Most human exposures, 1,889,845 (87.2%), were acute cases (single, repeated or continuous exposure occurring over 8 hours or less) compared to 953 acute cases among the 1831 fatalities (52.1%). Chronic exposures (continuous or repeated exposures occurring over >8 hours) comprised 2.05% (44,369) 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 202,680 (9.35%).

Reason for Exposure

The reason category for most human exposures was unintentional (78.4%), including: unintentional general (52.5%), therapeutic error (12.7%) and unintentional misuse (6.03%) (Table 6(A)).

Scenarios

Of the total 275,979 therapeutic errors, the most common scenarios for all ages included: inadvertent double-dosing (30.1%), wrong medication taken or given (16.9%), other incorrect dose (14.6%), doses given/taken too close together (11.3%) and inadvertent exposure to someone else's medication (8.48%). The types of therapeutic errors observed are different for each age group and are summarized in Table 6(B).

Reason by Age

Intentional exposures accounted for 17.6% of human exposures. Suicidal intent was suspected in 11.7% of cases, intentional misuse in 2.62% and intentional abuse in 2.38%. Unintentional exposures outnumbered intentional exposures in all age groups with the exception of ages 13–19 years (Table 7). In contrast, of the 1256 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 83.6% of cases (Table 9), followed in frequency by dermal (6.96%), inhalation/nasal (6.32%), and ocular routes (4.23%). For the 1256 exposure-related fatalities, ingestion (80.2%), inhalation/nasal (9.39%), unknown (8.84%) and parenteral (6.29%) were the predominant exposure routes. Each exposure case may have more than one route.

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	14	1	1	19	0	1	0	36
Unintentional - Environmental	4	5	5	35	0	0	1	50
Unintentional - Occupational	0	0	0	3	0	0	0	3
Unintentional - Therapeutic error	1	0	0	22	0	0	0	23
Unintentional - Misuse	0	0	0	7	0	0	0	7
Unintentional - Bite / sting	0	0	0	5	0	0	0	5
Unintentional - Unknown	0	0	0	6	0	0	0	6
Subtotal	19	6	6	97	0	1	1	130
Intentional								
Intentional - Suspected suicide	0	1	31	629	0	2	3	666
Intentional - Misuse	0	0	0	33	0	0	0	33
Intentional - Abuse	0	0	16	148	0	2	0	166
Intentional - Unknown	0	0	2	76	0	0	0	78
Subtotal	0	1	49	886	0	4	3	943
Other								
Other - Malicious	0	0	0	5	0	0	0	5
Other - Withdrawal	0	0	0	1	0	0	0	1
Subtotal	0	0	0	6	0	0	0	6
Adverse reaction								
Adverse reaction - Drug	1	0	0	37	0	0	0	38
Adverse reaction - Other	0	0	0	1	0	0	0	1
Subtotal	1	0	0	38	0	0	0	39
Unknown								
Unknown reason	4	1	3	128	0	1	1	138
Subtotal	4	1	3	128	0	1	1	138
Total	24	8	58	1155	0	6	5	1256

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

Table 9. Route of Exposure for Human Exposure Cases

	Human exposures			Fatal exposures[a]		
Route	N	% of All Routes	% of All Cases	N	% of All Routes	% of All Cases
Ingestion	1,813,334	79.56	83.63	1007	74.93	80.18
Dermal	150,886	6.62	6.96	8	0.60	0.64
Inhalation/nasal	136,989	6.01	6.32	118	8.78	9.39
Ocular	91,809	4.03	4.23	0	0.00	0.00
Bite/sting	46,571	2.04	2.15	5	0.37	0.40
Parenteral	19,423	0.85	0.90	79	5.88	6.29
Unknown	12,962	0.57	0.60	111	8.26	8.84
Other	2356	0.10	0.11	5	0.37	0.40
Otic	1900	0.08	0.09	0	0.00	0.00
Aspiration (with ingestion)	1121	0.05	0.05	10	0.74	0.80
Vaginal	911	0.04	0.04	1	0.07	0.08
Rectal	825	0.04	0.04	0	0.00	0.00
Total Number of Routes	**2,279,087**	**100.00**	**105.11**[b]	**1344**	**100.00**	**107.01**[b]

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

Table 10. Management Site of Human Exposures

Site of management	N	%
Managed on site, nonhealth care facility	1,459,251	67.3
Managed in healthcare facility		
Treated/evaluated and released	299,870	13.8
Admitted to critical care unit	101,785	4.7
Patient lost to follow-up / left AMA	86,067	4.0
Admitted to psychiatric facility	73,579	3.4
Admitted to noncritical care unit	73,460	3.4
Subtotal (managed in HCF)	**634,761**	**29.3**
Other	20,530	1.0
Refused referral	29,861	1.4
Unknown	23,968	1.1
Total	**2,168,371**	**100.0**

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 816,476 (37.7%) cases (17.7% had 1 effect, 9.58% had 2 effects, 5.30% had 3 effects, 2.40% had 4 effects, 1.15% had 5 effects, and 1.53% had >5 effects coded). Of clinical effects coded, 77.5% were deemed related to the exposure, 9.90% were considered not related, and 12.6% were coded as unknown if related.

Case Management Site

The majority of cases reported to PCs were managed outside of a HCF (67.3%), usually at the site of exposure, primarily the patient's own residence (Table 10). Treatment in a HCF was rendered in 29.3% of cases. Only 1.38% of cases were referred to a HCF but refused referral.

Of the 634,761 cases managed in a HCF, 299,870 (47.2%) were treated and released, 101,785 (16.0%) were admitted

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

	<=5 y		6-12 y		13-19 y		>=20 y		Unknown child		Unknown adult		Unknown age		Total	
Outcome	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
No effect	239,084	23.50	23,107	17.58	31,305	18.88	94,389	12.64	1114	24.93	8695	9.83	1355	9.6	399,049	18.40
Minor effect	86,400	8.49	19,571	14.89	46,078	27.79	174,537	23.37	430	9.62	12,637	14.29	2020	14.4	341,673	15.76
Moderate effect	10,308	1.01	4252	3.24	26,808	16.17	115,381	15.45	57	1.28	2599	2.94	463	3.3	159,868	7.37
Major effect	845	0.08	280	0.21	2860	1.72	19,529	2.61	8	0.18	192	0.22	45	0.3	23,759	1.10
Death	34	0.00	10	0.01	70	0.04	1530	0.20	0	0.00	15	0.02	11	0.1	1670	0.08
No follow-up, nontoxic	181,533	17.84	19,350	14.73	7540	4.55	44,731	5.99	490	10.96	10,962	12.40	946	6.7	265,552	12.25
No follow-up, minimal toxicity	466,718	45.87	58,903	44.83	36,356	21.93	224,563	30.07	1775	39.72	38,351	43.37	4510	32.1	831,176	38.33
No follow-up, potentially toxic	18,794	1.85	2996	2.28	10,793	6.51	41,755	5.59	490	10.96	11,459	12.96	4282	30.5	90,569	4.18
Unrelated effect	13,645	1.34	2936	2.23	3975	2.40	30,293	4.06	105	2.35	3519	3.98	421	3.0	54,894	2.53
Death, indirect report	8	0.00	1	0.00	15	0.01	128	0.02	0	0.00	4	0.00	5	0.0	161	0.01
Total	**1,017,369**	**100.00**	**131,406**	**100.0**	**165,800**	**100.00**	**746,836**	**100.00**	**4469**	**100.00**	**88,433**	**100.00**	**14,058**	**100.00**	**2,168,371**	**100.00**

[a]Total number of cases where Death was an outcome (1670 + 161) is greater than the number of fatalities (1256) judged to be exposure-related (RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).

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

	Unintentional		Intentional		Other		Adverse reaction		Unknown		Total	
Outcome	N	%	N	%	N	%	N	%	N	%	N	%
Death	164	0.01	1139	0.30	17	0.10	76	0.14	274	1.62	1670	0.08
Death, indirect report	26	0.00	106	0.03	5	0.03	2	0.00	22	0.13	161	0.01
Major effect	2708	0.16	18,493	4.85	172	1.04	860	1.63	1526	9.01	23,759	1.10
Minor effect	211,639	12.44	111,850	29.32	2879	17.49	12,547	23.80	2758	16.29	341,673	15.76
Moderate effect	43,822	2.58	102,900	26.97	1303	7.91	7663	14.54	4180	24.69	159,868	7.37
No effect	329,846	19.39	64,234	16.84	2179	13.23	1522	2.89	1268	7.49	399,049	18.40
No follow-up, nontoxic	258,873	15.22	4219	1.11	1163	7.06	1014	1.92	283	1.67	265,552	12.25
No follow-up, minimal toxicity	773,088	45.46	32,825	8.60	5864	35.62	17,471	33.14	1928	11.39	831,176	38.33
No follow-up, potentially toxic	45,118	2.65	37,301	9.78	1668	10.13	3493	6.63	2989	17.65	90,569	4.18
Unrelated effect	35,478	2.09	8435	2.21	1214	7.37	8064	15.30	1703	10.06	54,894	2.53
Total	**1,700,762**	**100.00**	**381,502**	**100.00**	**16,464**	**100.00**	**52,712**	**100.00**	**16,931**	**100.00**	**2,168,371**	**100.00**

[a]Total number of cases where Death was an outcome (1670 + 161) is greater than the number of fatalities (1256) judged to be exposure-related (RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).

Table 13. Duration of Clinical Effects by Medical Outcome

	Minor effect		Moderate effect		Major effect	
Duration of effect	N	%	N	%	N	%
<=2 hours	109,250	31.98	7357	4.60	467	1.97
>2 hours, <=8 hours	93,816	27.46	31,641	19.79	1208	5.08
>8 hours, <=24 hours	64,360	18.84	57,644	36.06	5206	21.91
>24 hours, <=3 days	22,278	6.52	33,108	20.71	8102	34.10
>3 days, <=1 week	3974	1.16	8382	5.24	4616	19.43
>1 week, <=1 month	1180	0.35	1633	1.02	1385	5.83
>1 month	411	0.12	364	0.23	140	0.59
Anticipated permanent	517	0.15	197	0.12	408	1.72
Unknown	45,887	13.43	19,542	12.22	2227	9.37
Total	**341,673**	**100.00**	**159,868**	**100.00**	**23,759**	**100.00**

Table 14. Decontamination and Therapeutic Interventions

Therapy	N	%
Decontamination Only	1,044,939	48.2
Therapeutic Intervention Only	261,306	12.1
Decontamination and Therapeutic Intervention	133,664	6.2
Not Coded	728,462	33.6
Total	**2,168,371**	**100.0**

for critical care, 73,460 (11.6%) were admitted to a noncritical unit, and 73,579 (11.6%) were admitted to a psychiatric facility.

The percentage of patients treated in a HCF varied considerably with age. Only 12.8% of children ≤5 years and only 17.0% of children between 6 and 12 years were managed in a HCF compared to 62.8% of teenagers (13-19 years) and 47.9% of adults (age ≥20 years).

Medical Outcome

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

The duration of effect is required for all cases which report at least one clinical effect and have a medical outcome of minor, moderate or major effect (n = 525,300; 24.2% 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 Table 16(A) and 16(B). Ipecac was administered in only 29 (0.003%) pediatric exposures in 2015. 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 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	495	127	1881	3978	0	25	4	6510
Charcoal, multiple doses	59	11	328	711	0	4	1	1114
Charcoal, single dose	6906	856	11,394	22,292	5	131	14	41,598
Dilute/irrigate/wash	490,625	50,115	29,413	182,100	1164	29,357	2730	785,504
Food/snack	125,600	11,153	6006	30,631	155	4383	338	178,266
Fresh air	6506	3952	5256	40,116	759	10,582	1121	68,292
Ipecac	29	9	23	39	0	3	2	105
Lavage	50	14	402	1264	0	13	2	1745
Other emetic	6966	617	1195	5076	7	375	74	14,310
Whole bowel irrigation	53	14	330	1284	0	2	0	1683
Other Therapies								
2-PAM	3	0	3	43	0	0	0	49
Alkalinization	109	87	2082	9334	0	35	4	11,651
Amyl nitrite	0	0	0	4	0	0	0	4
Antiarrhythmic	13	11	235	1592	0	5	1	1857
Antibiotics	1727	711	1285	13,447	6	519	68	17,763
Anticonvulsants[a]	82	20	170	1112	0	4	0	1388
Antiemetics	1316	565	6884	14,206	1	95	8	23,075
Antihistamines	1924	1248	1697	9072	18	795	97	14,851
Antihypertensives	16	5	140	2706	0	8	3	2878
Antivenin (fab fragment)	181	170	175	1427	0	12	3	1968
Antivenin/antitoxin[b]	73	38	31	265	0	6	0	413
Atropine	127	36	142	1302	1	4	2	1614
BAL	12	2	3	9	0	0	0	26
Benzodiazepines	1116	552	6980	30,097	1	177	34	38,957
Bronchodilators	441	276	356	4260	2	169	11	5515
Calcium	7917	568	299	2789	5	81	6	11,665
Cardioversion	3	2	28	224	0	1	1	259
CPR	52	7	117	1166	0	10	5	1357
Deferoxamine	3	3	27	32	0	0	0	65
ECMO	5	2	10	26	0	0	0	43
EDTA	29	1	4	11	0	1	0	46
Ethanol	0	0	5	118	0	3	0	126
Extracorp. procedure (other)	2	1	6	42	0	0	0	51
Fab fragments	19	14	16	564	0	2	1	616
Fluids, IV	6728	2541	32,868	123,641	9	672	93	166,552
Flumazenil	100	19	163	1442	0	9	2	1735
Folate	10	4	28	1364	0	4	1	1411
Fomepizole	74	21	82	1665	0	8	0	1850
Glucagon	35	12	97	2021	0	8	1	2174
Glucose, > 5%	433	49	363	3789	0	11	0	4645
Hemodialysis	5	7	111	2528	0	11	1	2663
Hemoperfusion	0	0	4	45	0	0	0	49
Hydroxocobalamin	14	4	2	63	0	2	2	87
Hyperbaric oxygen	23	27	44	335	0	3	8	440
Insulin	11	10	147	2000	0	1	0	2169
Intubation	527	144	2067	19,973	2	155	31	22,899
Methylene blue	11	5	15	133	0	2	0	166
NAC, IV	207	216	5180	14,624	0	55	16	20,298
NAC, PO	49	36	1077	2690	0	10	0	3862
Nalmefene	1	0	0	9	0	0	0	10
Naloxone	1193	172	1827	18,602	0	113	26	21,933
Neuromuscular blocker	59	8	193	1491	0	6	0	1757
Octreotide	106	5	37	334	0	2	0	484
Other	34,023	7488	12,566	76,539	98	3878	880	135,472
Oxygen	1504	757	3949	43,529	4	370	91	50,204
Pacemaker	2	0	5	181	0	1	0	189
Penicillamine	0	0	1	3	0	0	0	4
Physostigmine	8	13	133	210	0	1	0	365
Phytonadione	17	2	62	649	0	2	0	732
Pyridoxine	5	4	43	463	0	2	0	517
Sedation (other)	411	146	2089	17,644	1	99	11	20,401
Sodium nitrite	1	0	0	25	0	1	0	27
Sodium thiosulfate	2	4	3	34	0	1	1	45
Steroids	678	331	452	4455	8	298	39	6261
Succimer	120	8	11	55	0	2	0	196
Transplantation	1	0	6	12	0	0	0	19
Vasopressors	92	34	423	6170	1	33	3	6756
Ventilator	480	138	1951	19,000	2	136	26	21,733

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

Table 16(A). Decontamination Trends (1985-2015)

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	9284 (0.3875)	140,412 (5.9)	1,245,584 (52.0)	7310 (0.5869)	28,888 (2.32)
2004	2,438,643	4701 (0.1928)	135,969 (5.6)	1,250,536 (51.3)	3366 (0.2692)	28,335 (2.27)
2005	2,424,180	3027 (0.1249)	123,263 (5.1)	1,233,695 (50.9)	1999 (0.1620)	26,338 (2.13)
2006	2,403,539	2176 (0.0905)	111,351 (4.6)	1,223,815 (50.9)	1337 (0.1092)	23,843 (1.95)
2007	2,482,041	1740 (0.0701)	106,010 (4.3)	1,271,595 (51.2)	1052 (0.0827)	22,829 (1.80)
2008	2,491,049	1205 (0.0484)	97,297 (3.9)	1,292,754 (51.9)	641 (0.0496)	21,286 (1.65)
2009	2,479,355	658 (0.0265)	84,805 (3.4)	1,290,784 (52.1)	330 (0.0256)	19,168 (1.48)
2010	2,384,825	360 (0.0200)	74,431 (3.1)	1,207,575 (50.6)	163 (0.0100)	16,581 (1.37)
2011	2,334,004	262 (0.0100)	66,770 (2.9)	1,144,729 (49.1)	98 (0.0100)	13,930 (1.22)
2012	2,275,141	193 (0.0100)	57,888 (2.5)	1,102,307 (48.5)	83 (0.0100)	11,284 (1.02)
2013	2,188,013	134 (0.0100)	50,459 (2.3)	1,049,475 (48.0)	42 (0.0000)	9334 (0.89)
2014	2,165,142	132 (0.0061)	46,030 (2.1)	1,031,927 (47.7)	41 (0.0040)	7977 (0.77)
2015	2,168,371	105 (0.0048)	42,712 (2.0)	1,017,369 (46.9)	29 (0.0029)	6965 (0.68)

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

	Human exposures		Exposures children <=5 y	
Therapy	N	%	N	%
Activated charcoal administered	42,712	1.97	6965	0.68
Cathartic	6510	0.30	495	0.05
Ipecac administered	105	0.00	29	0.00
Lavage	1745	0.08	50	0.00
Other Emetic	14,310	0.66	6966	0.68
Whole Bowel Irrigation	1683	0.08	53	0.01
Total	67,065	3.09	14,558	1.43

[a]Human exposures =2,168,371; Pediatric exposures =1,017,369

the American Academy of Pediatrics concluded not only that ipecac should no longer be used routinely as a home treatment strategy, but also recommended disposal of home ipecac stocks.[7] A decline was also observed since the early 1990s for reported use of activated charcoal. While not as dramatic as the decline in use of ipecac, reported use of activated charcoal decreased from 3.7% of pediatric cases in 1993 to just 0.684% in 2015.

Top Substances in Human Exposures

Table 17(A) presents the most common 25 substance categories, listed by frequency of human exposure for cases with more serious outcomes (moderate, severe and death). This ranking provides an indication where 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 15 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 3 and decreasing for 30 of the 67 categories with data for the entire time period. The change over time for the 15 yearly values was statistically significant ($p < 0.05$) for 48 of the 67 categories with data for the entire time period. Table 17(B) 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 17(B).

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

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

Table 17(F) reports the 25 Drug ID categories most frequently queried in 2015, highlighting the value of Drug ID information to the AAPCC, public health, public safety, and regulatory agencies. Internet based resources do not afford the

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

Substance (Major Generic Category)	All substances	%[a]	Single substance exposures	%[b]
Analgesics	287,843	11.11	183,390	9.55
Cleaning Substances (Household)	195,974	7.56	177,667	9.25
Cosmetics/Personal Care Products	192,596	7.43	185,584	9.66
Sedative/Hypnotics/Antipsychotics	151,433	5.84	55,443	2.89
Antidepressants	118,812	4.58	49,452	2.57
Antihistamines	105,457	4.07	74,278	3.87
Cardiovascular Drugs	103,339	3.99	46,131	2.40
Foreign Bodies/Toys/Miscellaneous	94,820	3.66	91,725	4.77
Pesticides	84,129	3.25	78,568	4.09
Topical Preparations	76,101	2.94	74,283	3.87
Alcohols	70,218	2.71	21,763	1.13
Stimulants and Street Drugs	67,879	2.62	39,171	2.04
Vitamins	66,661	2.57	57,169	2.98
Cold and Cough Preparations	60,281	2.33	42,266	2.20
Anticonvulsants	60,210	2.32	24,763	1.29
Antimicrobials	57,839	2.23	47,329	2.46
Hormones and Hormone Antagonists	57,721	2.23	38,906	2.03
Bites and Envenomations	51,409	1.98	50,721	2.64
Gastrointestinal Preparations	48,565	1.87	36,121	1.88
Dietary Supplements/Herbals/Homeopathic	47,995	1.85	39,544	2.06
Plants	46,597	1.80	44,021	2.29
Chemicals	40,614	1.57	34,111	1.78
Fumes/Gases/Vapors	34,261	1.32	31,590	1.64
Other/Unknown Non-drug Substances	31,157	1.20	27,322	1.42
Hydrocarbons	30,445	1.17	28,578	1.49

[a]Percentages are based on the total number of substances reported in all exposures (N = 2,591,955)
[b]Percentages are based on the total number of single substance exposures (N = 1,921,098)

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

	Increase in serious exposures per year[a]		
Substance (Major Generic Category)	Mean	95% CI[b]	All substances in 2015
Sedative/Hypnotics/Antipsychotics	2217	[1837, 2597]	49,941
Analgesics	1941	[1655, 2228]	47,433
Antidepressants	1261	[1124, 1397]	38,337
Cardiovascular Drugs	977	[932, 1023]	20,393
Alcohols	929	[852, 1006]	23,230
Stimulants and Street Drugs	807	[499, 1115]	25,373
Anticonvulsants	658	[605, 711]	16,042
Antihistamines	576	[490, 662]	14,860
Muscle Relaxants	462	[400, 525]	10,034
Unknown Drug	341	[285, 396]	7892
Cold and Cough Preparations	265	[205, 325]	8180
Hormones and Hormone Antagonists	249	[235, 264]	6342
Miscellaneous Drugs	93	[62, 125]	2278
Gastrointestinal Preparations	82	[70, 94]	2891
Diuretics	53	[43, 63]	1363
Anticoagulants	52	[46, 58]	1156
Electrolytes and Minerals	41	[35, 48]	1069
Vitamins	39	[32, 46]	1020
Anticholinergic Drugs	37	[29, 46]	1091
Other/Unknown Non-drug Substances	35	[7, 62]	1156
Antimicrobials	16	[-6, 38]	2592
Weapons of Mass Destruction	15	[6, 24]	333
Automotive/Aircraft/Boat Products	12	[1, 24]	1181
Essential Oils	11	[9, 13]	273
Tobacco/Nicotine/eCigarette Products	10	[3, 17]	429

[a]Serious exposures have outcomes of Moderate, Major or Death.
[b]Increase and confidence intervals are based on least squares linear regression of the number of calls per year for 2000–2015.

caller the option to speak with a health care professional if needed. Proper resources to continue this vital public service are essential, especially since the top 10 substance categories include antibiotics as well as drugs with widespread use and abuse potential such as opioids and benzodiazepines.

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

Changes Over Time

Total encounters peaked in 2008 at 4,333,012 calls with 2,491,049 human exposure cases and 1,703,762 information calls. Total encounters decreased 3.42% from 2,890,909 in 2014 to 2,792,130 in 2015. Information calls decreased by 15.5% from 663,305 calls in 2014 to 560,467 in 2015, with a 31.7% decrease in drug identification calls and a 2.67% increase in HCF information calls. Human exposures remained

Table 17(C). 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	144,396	13.62	141,139	14.29
Cleaning Substances (Household)	118,346	11.16	114,031	11.55
Analgesics	96,720	9.12	88,320	8.94
Foreign Bodies/Toys/Miscellaneous	68,371	6.45	66,589	6.74
Topical Preparations	56,455	5.33	55,375	5.61
Vitamins	48,898	4.61	44,600	4.52
Antihistamines	46,469	4.38	42,187	4.27
Pesticides	35,198	3.32	34,163	3.46
Dietary Supplements/Herbals/Homeopathic	32,072	3.03	29,819	3.02
Plants	28,213	2.66	27,084	2.74
Gastrointestinal Preparations	27,860	2.63	25,333	2.57
Antimicrobials	25,829	2.44	24,332	2.46
Cold and Cough Preparations	22,669	2.14	20,667	2.09
Cardiovascular Drugs	21,653	2.04	13,984	1.42
Arts/Crafts/Office Supplies	20,550	1.94	19,946	2.02
Hormones and Hormone Antagonists	19,286	1.82	15,138	1.53
Electrolytes and Minerals	18,186	1.72	16,488	1.67
Deodorizers	17,143	1.62	16,930	1.71
Other/Unknown Non-drug Substances	13,820	1.30	12,182	1.23
Tobacco/Nicotine/eCigarette Products	12,397	1.17	12,280	1.24
Essential Oils	11,657	1.10	11,044	1.12
Antidepressants	11,020	1.04	7899	0.80
Sedative/Hypnotics/Antipsychotics	10,972	1.04	8456	0.86
Chemicals	10,235	0.97	9502	0.96
Alcohols	10,060	0.95	9805	0.99

[a]Includes all children with actual or estimated ages ≤5 years old. Results do not include "Unknown Child" or "Unknown Age".
[b]Percentages are based on the total number of substances reported in pediatric exposures (N = 1,059,993)
[c]Percentages are based on the total number of single substance pediatric exposures (N = 987,501)

Table 17(D). 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	132,452	11.56	60,459	9.13
Sedative/Hypnotics/Antipsychotics	118,279	10.32	37,003	5.59
Antidepressants	79,072	6.90	27,214	4.11
Cardiovascular Drugs	69,819	6.09	25,702	3.88
Cleaning Substances (Household)	61,901	5.40	49,995	7.55
Alcohols	53,669	4.68	9481	1.43
Anticonvulsants	44,363	3.87	15,730	2.37
Pesticides	40,798	3.56	36,892	5.57
Stimulants and Street Drugs	38,564	3.36	19,237	2.90
Antihistamines	35,207	3.07	16,979	2.56
Bites and Envenomations	34,553	3.01	34,118	5.15
Hormones and Hormone Antagonists	32,748	2.86	19,969	3.01
Cosmetics/Personal Care Products	31,429	2.74	28,741	4.34
Fumes/Gases/Vapors	24,650	2.15	22,500	3.40
Chemicals	23,868	2.08	19,668	2.97
Antimicrobials	23,217	2.03	16,932	2.56
Muscle Relaxants	20,727	1.81	7334	1.11
Cold and Cough Preparations	20,680	1.80	11,321	1.71
Hydrocarbons	17,257	1.51	15,960	2.41
Gastrointestinal Preparations	15,934	1.39	7783	1.17
Topical Preparations	15,228	1.33	14,689	2.22
Unknown Drug	13,215	1.15	8348	1.26
Foreign Bodies/Toys/Miscellaneous	12,995	1.13	12,041	1.82
Miscellaneous Drugs	12,972	1.13	6611	1.00
Other/Unknown Non-drug Substances	12,652	1.10	10,981	1.66

[a]Includes all adults with actual or estimated ages ≥20 years old. Results also include "Unknown Adult" but do not include "Unknown Age".
[b]Percentages are based on the total number of substances reported in adult exposures (N = 1,146,122)
[c]Percentages are based on the total number of single substance adult exposures (N = 662,475)

essentially level, increasing by 0.149% from 2,165,142 to 2,168,371 cases over the same time period.

Figure 5 shows the year-to-year change through 2015 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 4.34% (95% CI 3.97%, 4.71%]) per year from 108,148 cases in 2000 to 185,297 cases in 2015. However, cases with less serious outcomes have decreased since 2008 by 2.95% (95% CI [-3.75%, −2.16%]) per year from 2,339,460 in 2008 to 1,982,913 cases in 2015. This has driven the overall decrease in human exposures since 2008.

Thus we see a consistent increase in exposure cases from HCFs (Figure 3) and for more severe exposures (Figure 5), despite a decrease in calls involving less severe exposures.

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

Substance (Major Generic Category)	All substances	%[b]	Single substance exposures	%[c]
Analgesics	13	27.08	7	19.44
Batteries	5	10.42	5	13.89
Fumes/Gases/Vapors	5	10.42	4	11.11
Stimulants and Street Drugs	4	8.33	2	5.56
Unknown Drug	4	8.33	4	11.11
Cardiovascular Drugs	3	6.25	3	8.33
Chemicals	2	4.17	1	2.78
Electrolytes and Minerals	2	4.17	1	2.78
Anticonvulsants	1	2.08	1	2.78
Antimicrobials	1	2.08	1	2.78
Cold and Cough Preparations	1	2.08	1	2.78
Deodorizers	1	2.08	1	2.78
Essential Oils	1	2.08	1	2.78
Eye/Ear/Nose/Throat Preparations	1	2.08	1	2.78
Industrial Cleaners	1	2.08	1	2.78
Other/Unknown Non-drug Substances	1	2.08	1	2.78
Pesticides	1	2.08	1	2.78
Sedative/Hypnotics/Antipsychotics	1	2.08	0	0.00
Total	**48**	**100.00**	**36**	**100.00**

[a]Includes all children with actual or estimated ages ≤5 years old. Results do not include "Unknown Child" or "Unknown Age". Includes death and death, indirect regardless of RCF.
[b]Percentages are based on the total number of substances reported in pediatric fatalities (N = 48)
[c]Percentages are based on the total number of single substance pediatric fatalities (N = 36)

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

Substance (Major Generic Category)	All substances	%[a]
Analgesics	84,201	36.53
Sedative/Hypnotics/Antipsychotics	41,027	17.80
Unknown Drug	13,287	5.76
Cardiovascular Drugs	13,221	5.74
Antidepressants	11,411	4.95
Muscle Relaxants	11,378	4.94
Antihistamines	8765	3.80
Anticonvulsants	8150	3.54
Stimulants and Street Drugs	7509	3.26
Antimicrobials	7077	3.07
Information Calls	5955	2.58
Hormones and Hormone Antagonists	4692	2.04
Gastrointestinal Preparations	4674	2.03
Diuretics	2805	1.22
Miscellaneous Drugs	1753	0.76
Cold and Cough Preparations	994	0.43
Anticholinergic Drugs	637	0.28
Anticoagulants	520	0.23
Electrolytes and Minerals	497	0.22
Asthma Therapies	464	0.20
Vitamins	451	0.20
Other/Unknown Non-drug Substances	216	0.09
Dietary Supplements/Herbals/Homeopathic	165	0.07
Antineoplastics	127	0.06
Narcotic Antagonists	112	0.05

[a]Percentages are based on the total number of substances reported in all drug identification calls (N = 230,516)

Distribution of Suicides

Table 19(A) shows a modest variation in the distribution of suicides and pediatric deaths over the past 2 decades as reported to the NPDS national database. Within the last decade, the percent of exposures determined to be suspected suicides ranged from 30.3 to 50.5% and the percent of pediatric cases has ranged from 1.52 to 3.18%. The relatively large change seen for 2011 and 2012 reflects the large increase in indirect death reports in those years. Analyses of suicides and pediatric deaths for Direct and Indirect reports are shown in Table 19(B).

Plant Exposures

Table 20 provides the number of times the specific plant was reported to NPDS (N= 46,597). The 25 most commonly involved plant species and categories account for 41.1% of all plant exposures reported. Three of the top 4 categories in the table are essentially synonymous for unknown plant and comprise 11.6% (5390/46,597) of all plant exposures. For a variety of reasons it was not possible to make a precise identification in these 3 groups. The top most frequent plant exposures where positive plant identification was made were (descending order): *Phytolacca americana* (L.), *Cherry* (Species unspecified), *Spathiphyllum* species, *Ilex* species, *Malus* species, *Caladium* species, *Philodendron* species, *mold* (food-related), *Solanum nigrum,* and *Zantedeschia aethiopica.*

Deaths and Exposure-related Fatalities

A listing of cases (Table 21) and summary of cases (Tables 4, 5, 8, 9, 18 and 22) are provided for fatal cases for which there exists reasonable confidence that the death was a result of that exposure (exposure-related fatalities). Tables 11, 12, and 19 consider all deaths, irrespective of the RCF. Beginning in 2010, deaths recorded as Indirect Report were not further reviewed by the AAPCC fatality review team and the RCF was determined by the reporting PC.

Table	Fatalities Included	RCF	N
4	Death only	1,2,3	1256
5	Death only	1,2,3	1256
8	Death only	1,2,3	1256
9	Death only	1,2,3	1256
11	Death and Death (indirect report)	All	1831
12	Death and Death (indirect report)	All	1831
17E	Pediatric Death and Death (indirect report)	All	42
18	Death only	1,2,3	1256
19A	Death and Death (indirect report)	All	1831
19B	Death and Death (indirect report)	All	1831
21	Death and Death (indirect report)	1,2,3	1371
22	Death and Death (indirect report) - Single substance deaths only	All	909

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

Substance (Major Generic Category)	All substances	%[b]	Single substance exposures	%[c]
Analgesics	888	11.23	559	8.95
Cleaning Substances (Household)	666	8.42	533	8.53
Pesticides	591	7.47	561	8.98
Fumes/Gases/Vapors	524	6.63	487	7.79
Bites and Envenomations	380	4.81	379	6.06
Vitamins	307	3.88	230	3.68
Sedative/Hypnotics/Antipsychotics	293	3.71	139	2.22
Foreign Bodies/Toys/Miscellaneous	266	3.36	258	4.13
Antihistamines	262	3.31	150	2.40
Antidepressants	240	3.03	140	2.24
Cosmetics/Personal Care Products	224	2.83	201	3.22
Infectious and Toxin-Mediated Diseases	200	2.53	194	3.10
Antimicrobials	192	2.43	151	2.42
Chemicals	174	2.20	145	2.32
Other/Unknown Non-drug Substances	165	2.09	155	2.48
Hydrocarbons	153	1.93	137	2.19
Hormones and Hormone Antagonists	152	1.92	123	1.97
Stimulants and Street Drugs	150	1.90	83	1.33
Gastrointestinal Preparations	140	1.77	105	1.68
Electrolytes and Minerals	126	1.59	90	1.44
Cardiovascular Drugs	123	1.56	82	1.31
Cold and Cough Preparations	122	1.54	80	1.28
Plants	119	1.50	109	1.74
Information Calls	117	1.48	102	1.63
Anticonvulsants	106	1.34	58	0.93

[a]Includes all patient classified as pregnant and all female patients with a 'duration of pregnancy' greater than 0.
[b]Percentages are based on the total number of substances reported in pregnant exposures (N = 7908)
[c]Percentages are based on the total number of single substance pregnant exposures (N = 6249)

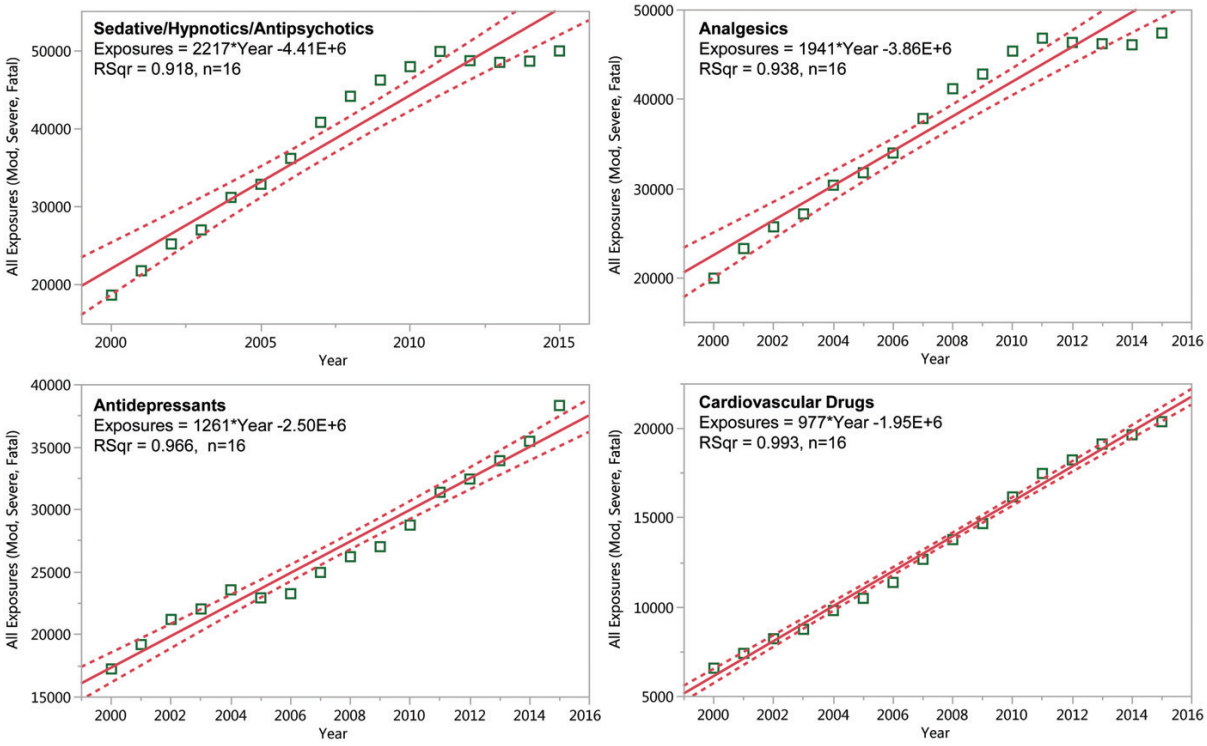

Figure 4. Substance Categories with the Greatest Rate of Exposure Increase since 1 January 2000 for More Severe Outcomes (Top 4)
Solid lines show least-squares linear regressions for the Human Exposure Cases per year for that category (□).
Broken lines show 95% confidence interval on the regression.

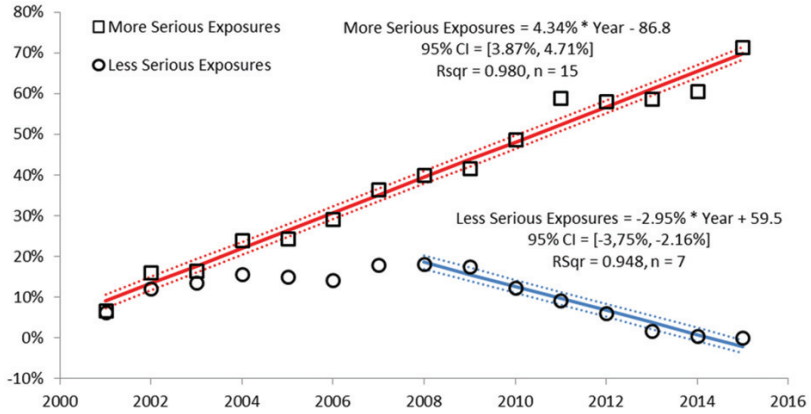

Figure 5. Change in Encounters by Outcome from Year 2000
The figure shows the percent change from baseline (year 2000) for Human Exposure Cases divided among the 10 Medical Outcomes. The More Serious Exposures (major, moderate and death) increased. The Less Serious Exposures (no effect, minor effect, 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	406	13.34	20	3.85
Miscellaneous Cardiovascular Drugs	379	12.45	51	9.83
Opioids	257	8.45	28	5.39
Miscellaneous Stimulants and Street Drugs	225	7.39	54	10.40
Miscellaneous Alcohols	203	6.67	26	5.01
Acetaminophen Alone	143	4.70	52	10.02
Acetaminophen Combinations	135	4.44	28	5.39
Miscellaneous Antidepressants	111	3.65	11	2.12
Selective Serotonin Reuptake Inhibitors (SSRI)	96	3.15	0	0.00
Miscellaneous Fumes/Gases/Vapors	72	2.37	44	8.48
Tricyclic Antidepressants (TCA)	64	2.10	11	2.12
Miscellaneous Antihistamines	61	2.00	7	1.35
Miscellaneous Unknown Drug	61	2.00	21	4.05
Anticonvulsants: Gamma Aminobutyric Acid and Analogs	59	1.94	1	0.19
Nonsteroidal Antiinflammatory Drugs	58	1.91	8	1.54
Serotonin Norepinephrine Reuptake Inhibitors (SNRI)	57	1.87	3	0.58
Miscellaneous Muscle Relaxants	54	1.77	1	0.19
Acetylsalicylic Acid Alone	49	1.61	18	3.47
Oral Hypoglycemic	46	1.51	5	0.96
Miscellaneous Anticonvulsants	45	1.48	4	0.77
Miscellaneous Chemicals	40	1.31	18	3.47
Cannabinoids and Analogs	34	1.12	4	0.77
Miscellaneous Hormones and Hormone Antagonists	32	1.05	1	0.19
Miscellaneous Diuretics	27	0.89	0	0.00
Miscellaneous Anticoagulants	26	0.85	5	0.96

[a]Numbers represent total exposures associated with 1256 fatalities (with RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory); each fatality may have had exposure to more than one substance.
[b]Percentages are based on the total number of substances reported in fatal exposures (N = 3043)
[c]Percentages are based on the total number of single substance fatal exposures (N = 519)

There were 161 deaths, indirect and 1670 deaths. Of these 1831 cases, 1371 were judged exposure-related fatalities (RCF = 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory). The remaining 460 cases were judged as follows: 90 as RCF = 4-Probably not responsible, 64 as 5 = Clearly not responsible, and 306 as 6 = Unknown.

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

As shown in Table 5, a single substance was implicated in 88.6% of reported human exposures, and 11.4% of patients were exposed to 2 or more drugs or products. The exposure-related fatalities involved a single substance in 519 cases (41.3%), 2 substances in 319 cases (25.4%), 3 in 171 cases (13.6%) and 4 or more in the balance of the cases.

In Table 21, the Annual Report ID number [bracketed] indicates that the narrative for that case is included in Appendix C. The letters following the Annual Report ID number indicate: i = Death, Indirect report (occurred in 235, 16.7% of cases), p = prehospital cardiac and/or respiratory

Table 19(A). Comparisons of Death Data (1985-2015)[a]

	Total fatalities		Suicides		Pediatric deaths[b]	
Year	N	% of cases	N	% of deaths	N	% of deaths
1985	328	0.036	174	53.0	20	6.1
1986	406	0.037	223	54.9	15	3.7
1987	398	0.034	227	57.0	22	5.5
1988	544	0.040	296	54.4	30	5.5
1989	590	0.037	323	54.7	24	4.1
1990	553	0.032	320	57.9	21	3.8
1991	764	0.042	408	53.4	44	5.8
1992	705	0.038	395	56.0	29	4.1
1993	626	0.036	338	54.0	27	4.3
1994	766	0.040	410	53.5	26	3.4
1995	724	0.036	405	55.9	20	2.8
1996	726	0.034	358	49.3	29	4.0
1997	786	0.036	418	53.2	25	3.2
1998	775	0.035	421	54.3	16	2.1
1999	873	0.040	472	54.1	24	2.7
2000	921	0.042	477	51.8	20	2.2
2001	1085	0.048	553	51.0	27	2.5
2002	1170	0.049	635	54.3	27	2.3
2003	1109	0.046	592	53.4	35	3.2
2004	1190	0.049	642	53.9	27	2.3
2005	1438	0.059	674	46.9	32	2.2
2006	1515	0.063	705	46.5	39	2.6
2007	1597	0.064	737	46.1	47	2.9
2008	1756	0.070	797	45.4	39	2.2
2009	1544	0.062	779	50.5	37	2.4
2010	1730	0.072	779	45.0	55	3.2
2011	2765	0.118	865	31.3	42	1.5
2012	2937	0.129	890	30.3	46	1.6
2013	2477	0.113	785	31.7	51	2.1
2014	1835	0.085	790	43.1	34	1.9
2015	1831	0.084	814	44.5	42	2.3

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

Table 19(B). Comparisons of Direct and Indirect Death Data (2000-2015)[a]

	All deaths			Suicides					Pediatric deaths				
Year	Total	Direct	Indirect	Total	% of deaths	Direct	% of direct	Indirect	Total	% of deaths	Direct	% of direct	Indirect
2000	864	845	19	448	51.85	443	52.43	5	18	2.08	18	2.13	0
2001	1066	952	114	542	50.84	503	52.84	39	26	2.44	24	2.52	2
2002	850	739	111	455	53.53	436	59.00	19	24	2.82	15	2.03	9
2003	867	826	41	464	53.52	454	54.96	10	29	3.34	22	2.66	7
2004	955	898	57	516	54.03	501	55.79	15	25	2.62	21	2.34	4
2005	1423	1332	91	666	46.80	656	49.25	10	32	2.25	26	1.95	6
2006	1515	1415	100	705	46.53	687	48.55	18	39	2.57	32	2.26	7
2007	1597	1502	95	737	46.15	712	47.40	25	47	2.94	41	2.73	6
2008	1756	1535	221	797	45.39	750	48.86	47	39	2.22	32	2.08	7
2009	1544	1452	92	779	50.45	748	51.52	31	37	2.40	31	2.13	6
2010	1730	1455	275	779	45.03	732	50.31	47	55	3.18	47	3.23	8
2011	2765	1503	1262	865	31.28	758	50.43	107	42	1.52	31	2.06	11
2012	2937	1507	1430	890	30.30	759	50.36	131	46	1.57	30	1.99	16
2013	2477	1552	925	785	31.69	698	44.97	87	51	2.06	43	2.77	8
2014	1835	1559	276	790	43.05	757	48.56	33	34	1.85	23	1.48	11
2015	1831	1670	161	814	44.46	784	46.95	30	42	2.29	34	2.04	8

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

arrest (occurred in 468 of 1371, 34.1% of cases), h = hospital records reviewed (occurred in 835, 60.9% of cases), a = autopsy report reviewed (occurred in 427, 31.1% of cases). The distribution of NPDS RCF was: 1 = Undoubtedly responsible in 647 cases (47.2%), 2 = Probably responsible in 534 cases (39.0%), 3 = Contributory in 190 cases (13.9%). The denominator for these Table 21 percentages is 1371.

All Fatalities – All Ages

Table 4 presents the age and gender distribution for these 1256 exposure-related fatalities (excluding death, indirect). The age distribution of reported fatalities showed a slight increase in deaths among children (<20 years old) compared to 2014, with 90 cases representing 7.16% of fatalities. This was an absolute increase of 2 fatalities with a 2.27% increase in that age group. The age distribution of reported fatalities in adults (≥20 years) is similar to prior years with 1161 of 1256 (92.4%) fatal cases occurring in that age group and 5 (0.398%) occurring in Unknown Age patients. While children ≤5 years old were involved in the majority of exposures, the 24 deaths in this group comprised just 1.91% of the exposure-related fatalities, but showed a 50% increase from 2014

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

	Botanical name or Category	AAPCC Generic Code Name	N
1	Plants-general-unknown	Unknown Toxic Types or Unknown if Toxic	2210
2	Unknown Botanical Name	Unknown Toxic Types or Unknown if Toxic	1713
3	*Phytolacca americana* (L.)	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	1524
4	BOTANICAL TERMS	Unknown Toxic Types or Unknown if Toxic	1467
5	Plants-toxicodendrol	Skin Irritants (Excluding Oxalate Containing Plants)	1451
6	Cherry (Species unspecified)	Amygdalin and/or Cyanogenic Glycosides	1366
7	Plants-pokeweed	Other Toxic Types	910
8	*Spathiphyllum* spp.	Oxalates	773
9	*Ilex* spp (not otherwise specified)	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	697
10	Plants-cardiac glycosides	Cardiac Glycosides (Excluding Drugs)	636
11	*Malus* spp.	Amygdalin and/or Cyanogenic Glycosides	539
12	*Caladium* spp.	Oxalates	514
13	*Philodendron* spp.	Oxalates	509
14	Mold (not otherwise specified)	Unknown Toxic Types or Unknown if Toxic	503
15	Berry (not otherwise specified)	Unknown Toxic Types or Unknown if Toxic	499
16	*Solanum nigrum*	Solanine	492
17	*Zantedeschia aethiopica*	Oxalates	477
18	*Solanum dulcamara*	Solanine	455
19	Plants-oxalates	Oxalates	423
20	*Euphorbia tirucalli* (L.)	Skin Irritants (Excluding Oxalate Containing Plants)	389
21	*Epipremnum areum*	Oxalates	374
22	*Narcissus pseudonarcissus* (L.)	Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	320
23	*Solanum tuberosum*	Solanine	318
24	Unknown Botanical Name	Non-Toxic	310
25	*Taxus canadensis*	Other Toxic Types	301

[a]Number of substances related to a human exposure with a Major Generic Category of Plant. Unknown Botanical Name represents substances with a Major Generic Category of Plant and a NULL substance code. Total = 46,597

with 8 additional fatalities. Most (66.8%) of the fatalities occurred in 20 to 59 year-old individuals, a slightly increased percentage from prior years.

Table 21 lists each of the 1371 human fatalities (including death, indirect report) along with all of the substances involved for each case. Please note: the substance listed in column 3 of Table 21 (alternate name) was chosen to be the most specific generic name based upon the Micromedex Poisindex product name and generic code selected for that substance. Alternate names are maintained in the NPDS for each substance involved in a fatality. The cross-references at the end of each major category section in Table 21 list all cases that identify 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 Table 22).

Table 18 lists the top 25 minor generic substance categories associated with reported fatalities and the number of single substance exposure fatalities for that category: miscellaneous sedative/hypnotics/antipsychotics, miscellaneous cardiovascular drugs, opioids, and miscellaneous stimulants and street drugs lead this list followed by miscellaneous alcohols, acetaminophen alone, acetaminophen combinations, miscellaneous antidepressants, selective serotonin reuptake inhibitors (SSRIs) and miscellaneous fumes/gases/vapors. Note that Table 18 is sorted by all substances to which a patient was exposed (i.e., a patient exposed to an opioid may have also been exposed to 1 or more other products) and shows single substance exposures in the right hand column.

The first ranked substance (Table 21) was a pharmaceutical in 1108 (80.8%) of the 1371 fatalities. These 1108 first ranked pharmaceuticals included:

399 analgesics (106 acetaminophen, 62 fentanyl, 36 acetaminophen/hydrocodone, 26 methadone, 25 salicylate, 25 acetaminophen/oxycodone, 20 oxycodone, 13 hydrocodone, 11 acetaminophen/diphenhydramine, 10 acetaminophen/codeine)

209 cardiovascular drugs (49 amlodipine, 29 verapamil, 18 propranolol, 17 digoxin, 14 metoprolol, 12 diltiazem, 9 diltiazem (extended release), 8 flecainide)

143 stimulants/street drugs (61 heroin, 22 methamfetamine, 19 cocaine, 8 amfetamine (hallucinogenic), 8 amfetamine, 4 THC Homolog, 4 THC homolog/K2)

116 antidepressants (24 amitriptyline, 23 bupropion, 18 bupropion (extended release), 16 venlafaxine, 9 doxepin)

88 sedative/hypnotic/antipsychotics (22 quetiapine, 20 alprazolam, 6 benzodiazepine, 6 clonazepam, 6 diazepam, 5 zolpidem)

The exposure was acute (A) in 743 (54.2%), acute on chronic (A/C) in 329 (24.0%), chronic (C) in 70 (5.11%) and unknown (U) in 229 (16.7%).

A total of 1381 tissue concentrations for 1 or more related analytes were reported in 621 cases. Most of these (1282) involved fatalities with RCF of 1-3, and are listed in Table 21, while all tissue concentrations are available to the PCs through the NPDS Enterprise Reports. These 138 analytes included: 199 acetaminophen, 109 ethanol, 68 salicylate, 66 fentanyl, 41 carboxyhemoglobin, 34 alprazolam, 31 norfentanyl, 29 morphine, 23 bupropion, 20 benzoylecgonine, 20 diphenhydramine, 19 ethylene glycol, 19 7-aminoclonazepam, 19 oxycodone, 18 hydromorphone, 17 digoxin, 17 methanol, 17 verapamil, 16 methadone, 16 methamfetamine, 15 hydrocodone, 13 amfetamine, 13 codeine, 13 morphine, and 13 tramadol.

Route of exposure was: Ingestion only in 973 cases (71.0%), Inhalation/nasal in 108 cases (7.88%) and Parenteral in 106 cases (7.73%). Parenteral cases increased by a factor of 2.04 from 2014. Most other exposures recorded a combination of routes or an unknown route.

The Intentional exposure reason was: Abuse in 220 cases (16.1%), Suspected suicide in 687 cases (50.1%), Unknown in 83 cases (6.05%) and Misuse in 35 cases (2.55%).

Table 21. 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										
[1ha]	17 y F				U	Ingst	Int-U	1		
		methanol	1	1					methanol	212 mg/dL In Whole Blood @ 5 m (pe)
2ph	19 y M				A	Ingst	Unk	2		
		ethanol	1	1					ethanol	359 mg/dL In Blood (unspecified) @ Unknown
3a	20 y M				A	Ingst	Unt-G	1		
		isopropanol	1	1					acetone	121 mg/dL In Blood (unspecified) @ Unknown
		isopropanol	1	1					isopropanol	83 mg/dL In Blood (unspecified) @ Unknown
4a	24 y M				A	Ingst	Int-S	1		
		ethanol	1	1						
		ethanol	2	2					ethanol	0.17 g/dL In Serum @ Autopsy
		bupropion	3	3						
		duloxetine	4	4						
		vortioxetine	5	5						
		darunavir	6	6						
		benzonatate	7	7						
		guaifenesin	8	8						
5	28 y F-Pregnant				A	Ingst	Int-S	1		
		methanol	1	1						
6p	30 y M				U	Ingst	Int-U	2		
		ethanol	1	1					ethanol	462 mg/dL In Serum @ Unknown
7pha	32 y M				A	Ingst	Int-A	3		
		ethanol	1	1					ethanol	0.36 g/dL In Unknown @ Unknown
		cocaine	2	2						
8ha	34 y M				U	Inhal	Unk	2		
		ethanol	1	1					ethanol	60 mg/dL In Serum @ 5 m (pe)
9ph	35 y M				A	Ingst	Unk	2		
		isopropanol	1	1						
10h	35 y M				C	Ingst	Unk	2		
		ethanol	1	1						
11i	36 y M				A	Ingst	Int-U	1		
		methanol	1	1					methanol	332 mmol/L In Blood (unspecified) @ Unknown
12ha	37 y M				A	Ingst	Int-S	1		
		methanol	1	1					methanol	527 mg/dL In Serum @ 1 h (pe)
		ethylene glycol (antifreeze)	2	2					ethylene glycol	15 mg/dL In Serum @ 1 h (pe)
13h	39 y M				A	Ingst	Int-S	1		
		methanol	1	1					methanol	152 mg/dL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	0 mg/dL In Blood (unspecified) @ 12 h (pe)
14h	41 y M				C	Ingst	Int-M	2		
		ethanol	1	1						
		acetaminophen	2	2						
15h	41 y M				A/C	Ingst	Int-S	1		
		methanol	1	1					methanol	30.4 mg/dL In Blood (unspecified) @ Unknown
16h	42 y F				A	Ingst	Int-S	1		
		methanol	1	1					methanol	287 mg/dL In Whole Blood @ Unknown
[17ha]	44 y M				A	Ingst	Int-S	1		
		methanol	1	1					methanol	509 mg/dL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
18	47 y M				A	Ingst	Int-S	1		
		methanol	1	1						
19ph	47 y F				U	Ingst	Int-S	2		
		ethanol	1	1						
		trazodone	2	2						
		duloxetine	3	3						
20	48 y M				A	Ingst	Int-U	1		
		methanol	1	1					methanol	473 mg/dL In Blood (unspecified) @ Unknown
21p	48 y F				U	Ingst	Unk	2		
		ethanol	1	1						
		cyclobenzaprine	2	2						
		carisoprodol	3	3						
22h	48 y M				C	Ingst	Int-A	3		
		ethanol (non-beverage)	2	1						
		ethanol	1	1						
23h	48 y M				A	Ingst	Int-S	3		
		ethanol	1	1					ethanol	88 mg/dL In Serum @ Unknown
24	50 y M				C	Ingst	Int-A	1		
		ethanol	1	1						
25ph	51 y M				A/C	Ingst	Int-A	3		
		ethanol	1	1					ethanol	296.7 mg/dL In Blood (unspecified) @ Unknown
26h	52 y M				A/C	Ingst	Int-S	3		
		ethanol	1	1					ethanol	249 mg/dL In Blood (unspecified) @ Unknown
		carbamazepine (extended release)	2	2					carbamazepine	16 mcg/mL In Blood (unspecified) @ Unknown
		carbamazepine (extended release)	2	2					carbamazepine	36 mcg/mL In Blood (unspecified) @ Unknown
27h	52 y M				C	Ingst	Int-A	3		
		ethanol	1	1						
28h	53 y M				U	Ingst + Unk	Unk	2		
		alcohol, unknown, NOS	1	1						
29ph	53 y F				A/C	Ingst	Unk	3		
		ethanol	1	1					ethanol	271 mg/dL In Serum @ 30 m (pe)
		oxymorphone (extended release)	2	2						
30h	53 y F				A/C	Ingst	Int-S	3		
		ethanol	1	1					ethanol	393 mg/dL In Blood (unspecified) @ 1 h (pe)
		acetaminophen/ hydrocodone	2	2						
		drug, unknown	3	3						
31ha	54 y F				C	Unk	Unk	2		
		ethanol	1	1						
32ph	54 y F				A	Ingst	Int-S	1		
		methanol	1	1					methanol	437 mg/dL In Blood (unspecified) @ Unknown
		methanol	1	1					methanol	89 mg/dL In Blood (unspecified) @ Unknown
33p	54 y M				A/C	Ingst	Int-A	2		
		ethanol	1	1					ethanol	12 mg/dL In Blood (unspecified) @ Autopsy
		isopropanol	2	2					isopropanol	15 mcg/dL In Blood (unspecified) @ Autopsy
		isopropanol	2	2					acetone	18 mg/dL In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
34h	55 y F				C	Ingst	Int-A	2		
		ethanol	1	1						
		acetaminophen/ hydrocodone	2	2						
35h	57 y M				U	Ingst	Int-A	3		
		ethanol	1	1					ethanol	278 mg/dL In Plasma @ Unknown
36ph	57 y F				U	Ingst	Int-A	3		
		isopropanol	1	1					isopropanol	85 mg/dL In Serum @ Unknown
		acetone	2	2						
37h	57 y M				U	Ingst	Int-S	2		
		ethanol	1	1						
		acetaminophen	2	2						
38ph	57 y M				A	Ingst	Int-U	1		
		methanol	1	1					methanol	152 mg/dL In Blood (unspecified) @ 28 h (pe)
		methanol	1	1					methanol	22 mg/dL In Blood (unspecified) @ 42 h (pe)
		methanol	1	1					methanol	61 mg/dL In Blood (unspecified) @ 30 h (pe)
		methanol	1	1					methanol	672 mg/dL In Blood (unspecified) @ 0.5 h (pe)
39ph	57 y M				U	Ingst	Oth-W	3		
		ethanol	1	1						
40ha	60 y M				A	Ingst	Int-S	1		
		methanol	1	1					methanol	123 mg/dL In Blood (unspecified) @ Unknown
		methanol	1	1					ethanol	160 mg/dL In Blood (unspecified) @ Unknown
41h	62 y F				A	Ingst + Aspir + - Unk	Unk	3		
		ethanol	1	1						
42ph	62 y M				A	Ingst	Int-S	2		
		ethanol	1	1					ethanol	204 mg/dL In Serum @ Unknown
43h	63 y M				U	Ingst	Int-A	3		
		isopropanol	1	1					isopropanol	100 mg/L In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	2550 mg/L In Blood (unspecified) @ Unknown
44h	64 y M				U	Ingst	Int-A	3		
		ethanol	1	1					ethanol	230 mg/dL In Blood (unspecified) @ Unknown
See also case 78, 79, 83, 88, 105, 106, 113, 151, 155, 168, 174, 237, 239, 246, 273, 281, 282, 285, 287, 296, 305, 309, 320, 325, 327, 333, 372, 379, 380, 390, 395, 407, 420, 425, 434, 443, 444, 446, 452, 459, 461, 463, 476, 486, 489, 494, 511, 514, 515, 535, 538, 542, 545, 553, 555, 566, 577, 584, 586, 591, 597, 641, 684, 685, 699, 704, 715, 716, 718, 723, 726, 731, 733, 749, 761, 763, 765, 767, 775, 778, 781, 788, 789, 791, 798, 817, 821, 824, 828, 849, 855, 856, 868, 870, 877, 879, 884, 892, 898, 899, 902, 910, 912, 913, 915, 919, 920, 925, 927, 933, 944, 954, 967, 969, 978, 993, 999, 1051, 1054, 1067, 1070, 1075, 1078, 1087, 1091, 1095, 1096, 1100, 1105, 1106, 1113, 1114, 1115, 1117, 1133, 1137, 1145, 1156, 1197, 1219, 1232, 1236, 1250, 1257, 1264, 1270, 1296, 1297, 1301, 1308, 1309, 1314, 1317, 1332, 1340, 1341, 1364, 1366, 1367										
Arts/Crafts/Office Supplies										
[45pha]	6 y F				A	Ingst	Unt-G	1		
		aluminum sulfate/ borax/calcium chloride	1	1						
Automotive/Aircraft/Boat Products										
46h	21 y M				A	Ingst	Int-S	1		
		methanol	1	1					methanol	65 mg/dL In Whole Blood @ 1 d (pe)
47	44 y F				U	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1						
[48]	48 y M				A	Ingst	Int-U	1		
		methanol	1	1						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
49	48 y M				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	439.1 mcg/mL In Blood (unspecified) @ Unknown
50h	52 y M				U	Ingst	Int-U	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	128.2 mg/dL In Blood (unspecified) @ Unknown
51p	53 y M				A	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
52a	53 y F				A	Ingst	Unk	2		
		ethylene glycol (antifreeze)	1	1						
53ha	54 y M				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	165 mg/dL In Urine (quantitative only) @ Unknown
		methamfetamine	2	2					methamfetamine	0.26 mcg/mL In Blood (unspecified) @ Unknown
54pha	56 y M				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1						
55ha	60 y M				A	Ingst	Oth-M	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	15 mg/dL In Blood (unspecified) @ 3 d (pe)
		ethylene glycol (antifreeze)	1	1					ethylene glycol	22 mg/dL In Blood (unspecified) @ 2 d (pe)
		ethylene glycol (antifreeze)	1	1					ethylene glycol	223 mg/dL In Blood (unspecified) @ 0 d (pe)
		metformin	2	2						
56ph	61 y F				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1						
57	62 y F				A	Ingst	Int-S	1		
		methanol	1	1						
[58pha]	63 y M				A	Ingst	Int-U	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	238 mg/mL In Serum @ Unknown
		ethylene glycol (antifreeze)	1	1					ethylene glycol	489 mg/dL In Serum @ Unknown
Batteries										
59	2 y F				A	Ingst	Unt-G	1		
		disc battery	1	1						
60hai	4 y M				A	Ingst	Unt-G	1		
		battery (button)	1	1						
61i	3 m M				A	Ingst	Unt-G	1		
		disc battery, lithium	1	1						
[62ha]	14 m F				A	Ingst	Unt-G	1		
		battery (button)	1	1						
63ha	17 m F				A	Ingst	Unt-G	1		
		battery (button)	1	1						
Bites and Envenomations										
[64pha]	36 y M				A	B-S	Unt-B	1		
		envenomation (crotalid)	1	1						
[65h]	58 y F				U	B-S	Unt-B	1		
		envenomation (crotalid)	1	1						
[66ph]	59 y M				A	B-S	Unt-B	2		
		envenomation (crotalid)	1	1						
67pai	60 y M				A	B-S	Unt-B	1		
		envenomation (crotalid)	1	1						
[68]	81 y M				A	B-S	Unt-B	3		
		sting (hymenoptera)	1	1						
69h	87 y M				A	B-S	Unt-B	3		
		envenomation (agkistrodon)	1	1						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
Chemicals										
70h	2 y M				A	Ingst	Unt-G	2		
		hydrofluoric acid/phosphoric acid	1	1						
71h	23 y M				A	Ingst	Unk	1		
		ethylene glycol (antifreeze)	1	1						
72a	24 y M				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	132 mg/dL In Serum @ 1 h (pe)
		bupropion (extended release)	2	2					bupropion	19 ng/mL In Serum @ 1 h (pe)
		venlafaxine	3	3					venlafaxine	44 ng/mL In Serum @ 1 h (pe)
		venlafaxine	3	3					o-desmethyl-venlafaxine	68 ng/mL In Serum @ 1 h (pe)
73h	24 y M				A	Inhal	Int-S	1		
		sodium azide	1	1						
74h	27 y M				U	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	158 mg/dL In Blood (unspecified) @ Unknown
		ethylene glycol (antifreeze)	1	1					ethylene glycol	63 mg/dL In Blood (unspecified) @ Unknown
75p	35 y M				A	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
76	35 y M				A	Ingst	Int-S	1		
		furfuryl alcohol	1	1					methanol	236 mg/dL In Blood (unspecified) @ Unknown
77a	36 y F				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1						
78ha	41 y M				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1						
		ethanol	2	2						
79h	44 y F				A	Ingst + Par	Int-S	2		
		diethylene glycol	1	1						
		ethanol	2	2						
		insulin	3	3						
[80ph]	44 y M				A	Inhal	Unt-O	1		
		toluene diisocyanate	1	1						
		toluene-xylene	2	2						
[81]	44 y M				A	Ingst	Int-S	1		
		hydrofluoric acid	1	1						
82ha	45 y F				A	Ingst	Int-A	2		
		ethylene glycol (antifreeze)	1	1						
		diethylene glycol	2	2						
83h	47 y M				A	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
		ethanol	2	2					ethanol	118 mg/dL In Blood (unspecified) @ Unknown
84p	48 y M				A	Ingst	Int-S	2		
		cyanide	1	1						
[85pha]	49 y F				A	Ingst	Int-S	1		
		sodium azide	1	1						
[86ha]	49 y M				A	Unk	Int-A	1		
		borate	1	1						
87ph	52 y M				U	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	20 mg/dL In Blood (unspecified) @ Unknown
		ethylene glycol (antifreeze)	1	1					ethylene glycol	47 mg/dL In Blood (unspecified) @ Unknown
		drug, unknown	2	2						
		clonazepam	3	3						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
88ha	52 y F				A	Ingst	Int-U	1		
		chemical, unknown	1	1						
		acetaminophen/ hydrocodone	2	2					hydrocodone	0.07 mg/L In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	2	2					acetaminophen	138 mcg/mL In Serum @ 1 h (pe)
		ethanol	3	2					ethanol	0.12 g/dL In Blood (unspecified) @ Unknown
		lorazepam	4	4					lorazepam	0.04 mg/L In Blood (unspecified) @ Unknown
89h	52 y F				U	Ingst	Int-A	2		
		ethylene glycol (antifreeze)	1	1						
90h	53 y F				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1						
		drug, unknown	2	2						
91h	53 y F				A	Ingst	Int-S	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	175 mg/dL In Unknown @ Unknown
92	55 y F				A	Ingst	Int-S	1		
		borate	1	1						
93p	56 y M				A	Ingst + Inhal	Unt-O	2		
		methylene chloride	1	1						
94h	59 y M				U	Ingst	Unk	2		
		ethylene glycol (antifreeze)	1	1						
95ph	61 y M				A	Ingst	Unk	2		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	59 mg/dL In Blood (unspecified) @ Unknown
96h	63 y M				A	Ingst	Int-S	1		
		hydrochloric acid	1	1						
[97ha]	64 y F				A	Ingst	Unk	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	2298 mg/L In Blood (unspecified) @ Unknown
		ethylene glycol (antifreeze)	1	1					ethylene glycol	42 mg/dL In Blood (unspecified) @ Unknown
98h	64 y F				A	Ingst	Int-S	1		
		hydrochloric acid	1	1						
99	Unknown adult (>=20 yrs) M				A	Ingst	Int-S	2		
		ethylene glycol (antifreeze)	1	1						
100a	Unknown adult (>=20 yrs) M				A	Ingst	Unt-G	1		
		ethylene glycol (antifreeze)	1	1					ethylene glycol	670 mg/dL In Blood (unspecified) @ Unknown
		paint	2	2						
[101pa]	Unknown age M				A	Ingst	Int-S	1		
		cyanide	1	1					cyanide	6.1 mcg/mL In Blood (unspecified) @ Autopsy
102pi	Unknown age U				U	Unk	Unk	3		
		ethylene glycol (antifreeze)	1	1						
		carbon monoxide	2	2						
See also case 12, 36, 129, 133, 148, 154, 183, 186, 475, 681, 928										
Cleaning Substances (Household)										
[103ha]	22 y M				A	Ingst	Int-S	1		
		drain cleaner (alkali)	1	1						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
104h	25 y F				A	Ingst + Derm	Oth-M	1		
		hypochlorite	1	1						
[105h]	43 y F				A	Ingst	Int-S	1		
		drain cleaner (sulfuric acid)	1	1						
		ethanol	2	2						
106	48 y M				A	Ingst	Int-S	1		
		drain cleaner	1	1						
		ethanol	2	2						
		acetaminophen	3	3						
107h	51 y M				A	Ingst	Unt-G	2		
		laundry detergents: granules	1	1						
		salicylate	2	2						
		beta blocker	3	3						
		angiotensin converting enzyme inhibitor	4	4						
108hi	53 y M				A	Ingst	Int-S	1		
		toilet bowl cleaner (acid)	1	1						
109	54 y F				A	Ingst	Int-S	2		
		hypochlorite	1	1						
110	59 y M				A	Ingst	Int-S	2		
		hypochlorite	1	1						
111	60 y F				A	Ingst	Int-S	1		
		sulfuric acid	1	1						
112	70 y F				A	Ingst + Derm	Int-S	3		
		hypochlorite	1	1						
		levothyroxine	2	2						
		hydroxyzine	3	3						
		acetaminophen	4	4					acetaminophen	33.7 mcg/mL In Serum @ 5 m (pe)
		lighter fluid, NOS	5	5						
113h	72 y M				A	Ingst	Int-S	2		
		cleaner (household)	1	1						
		ethanol	2	2						
114h	74 y M				A	Ingst	Unt-G	2		
		laundry detergent, liquid	1	1						
115h	75 y F				A	Ingst	Int-S	1		
		drain cleaner (alkali)	1	1						
[116]	81 y F				A	Ingst	Unt-G	2		
		laundry detergent (pod)	1	1						
117ph	88 y F				A	Ingst	Unt-G	2		
		laundry additive	1	1					tramadol	620 ng/mL In Blood (unspecified) @ Autopsy
		laundry additive	1	1					o-demethyl tramadol	78 ng/mL In Blood (unspecified) @ Autopsy
		tramadol	2	2						
118	93 y F				A	Ingst	Unt-G	2		
		toilet bowl cleaner (acid)	1	1						
See also case 228, 250										
Cosmetics/Personal Care Products										
119ph	30 y M				A/C	Ingst	Int-A	2		
		ethanol	1	1					ethanol	532 mg/dL In Blood (unspecified) @ 3 h (pe)
120h	31 y M				A	Par	Int-S	2		
		ethanol	1	1					ethanol	0.039 mg/dL In Whole Blood @ Unknown
		ethanol	1	1					ethanol	40 mg/dL In Vitreous @ Autopsy
		ethanol	1	1					acetone	5.5 mg/dL In Vitreous @ Autopsy
121ha	73 y M				A	Ingst	Int-U	2		
		ethanol (non-beverage)	1	1					ethanol	390 mg/dL In Serum @ Unknown

(*continued*)

Table 21. Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
See also case 22, 876										
Deodorizers										
122	66 y M				A	Ingst	Unt-G	2		
		deodorizer, NOS	1	1						
Essential Oils										
[123p]	4 y M				A	Ingst + Aspir	Unt-G	2		
		cinnamon	1	1						
Fertilizers										
[124h]	58 y M				A	Ingst	Int-S	1		
		preservative, microbiocide	1	1						
		diphenhydramine	2	2						
Fumes/Gases/Vapors										
125pha	2 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	66 % In Whole Blood @ Autopsy
[126pha]	2 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	30.5 % In Blood (unspecified) @ Unknown
127pha	5 y M				A	Inhal	Unt-E	3		
		carbon monoxide	1	1						
128p	6 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
129ph	7 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	40 % In Blood (unspecified) @ Unknown
		cyanide	2	2						
130p	7 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
131pi	7 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
132ph	8 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
133ph	8 y F				A	Ingst + Inhal	Unt-E	1		
		carbon monoxide	1	1						
		cyanide	2	2						
134i	13 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
135i	13 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
136p	13 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
137ph	13 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	11.2 % In Blood (unspecified) @ 4 h (pe)
		carbon monoxide	1	1					carboxyhemoglobin	45.2 % In Blood (unspecified) @ 1 h (pe)
138i	14 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
139pha	17 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	55 % In Blood (unspecified) @ Unknown
		carbon monoxide	2	2						
140ph	17 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
141p	17 y M				A	Inhal	Int-A	1		
		butane	1	1						
142p	18 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	26.8 % In Blood (unspecified) @ Unknown
143pi	18 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
144pi	21 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
145pi	22 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
146pi	23 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
147p	24 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
148ph	26 y F				A	Inhal	Int-S	1		
		hydrogen sulfide	1	1						
		hydrochloric acid	2	2						
		sulfur	3	3						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
149p	27 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
150pha	27 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
		drug, unknown	2	1						
151pha	31 y F				A	Inhal	Int-S	1		
		carbon monoxide	1	1					ethanol	258 mg/dL In Blood (unspecified) @ Unknown
		carbon monoxide	1	1					carboxyhemoglobin	68 % In Blood (unspecified) @ Unknown
		ethanol	2	2						
152pi	32 y M				A	Inhal	Unt-O	1		
		hydrogen sulfide	1	1						
153p	34 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
154ph	37 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	70.3 % In Blood (unspecified) @ Unknown
		cyanide	2	2						
		carbon monoxide	3	3						
155ph	38 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	62 % In Serum @ 1 h (pe)
		carbon monoxide	2	2						
		ethanol	3	3					ethanol	110 mg/dL In Blood (unspecified) @ 1 h (pe)
[156pa]	38 y M				A	Inhal + Derm	Int-S	1		
		hydrogen sulfide	1	1					thiosulfate	9 mg/L In Whole Blood @ Autopsy
157p	38 y F				A	Inhal	Int-A	2		
		butane	1	1						
158pa	39 y F				A	Inhal + Derm	Oth-M	3		
		carbon monoxide	1	1					carboxyhemoglobin	13 % In Blood (unspecified) @ Autopsy
		gasoline	2	2						
159p	40 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	50 % In Blood (unspecified) @ Unknown
160ha	40 y M				A	Inhal	Int-S	3		
		carbon monoxide	1	1					carboxyhemoglobin	5 % In Blood (unspecified) @ Autopsy
161pi	41 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
162ph	44 y M				A	Inhal	Int-M	1		
		carbon monoxide	1	1						
[163h]	44 y M				A	Inhal	Unt-O	1		
		chlorine gas	1	1						
164pha	45 y F				A	Inhal	Unt-E	3		
		carbon monoxide	1	1					carboxyhemoglobin	62 % In Blood (unspecified) @ Unknown
165	45 y M				A	Ingst + Inhal + - Aspir	Int-S	1		
		carbon monoxide	1	1					carboxyhemoglobin	35 % In Whole Blood @ 1 h (pe)
		atenolol	2	2						
		diphenhydramine	3	3						
		sertraline	4	4						
166ph	49 y M				A	Inhal	Int-S	1		
		helium	1	1						
167ph	52 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	47.7 % In Serum @ 5 m (pe)
		carbon monoxide	2	2					carboxyhemoglobin	47.7 % In Blood (unspecified) @ Unknown
168pa	52 y M				A	Ingst + Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	55 % In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	260 mg/dL In Blood (unspecified) @ Autopsy
169pi	53 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
170pa	53 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	55 % In Blood (unspecified) @ Autopsy
171p	53 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
172pi	56 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
173p	56 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
174pha	56 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	28 % In Whole Blood @ Unknown
		carbon monoxide	2	2						
		ethanol	3	3					ethanol	190 mg/dL In Blood (unspecified) @ Unknown
175ph	58 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	45.6 % In Serum @ 30 m (pe)
176p	58 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1					carboxyhemoglobin	43 % In Plasma @ 1 h (pe)
		carbon monoxide	2	2						
177pi	58 y M				A	Inhal	Unt-O	1		
		hydrogen sulfide	1	1						
178ph	61 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	36.9 % (wt/Vol) In Blood (unspecified) @ Unknown
179a	64 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	13 % In Blood (unspecified) @ Autopsy
180ha	64 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						
181pha	64 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	41 % In Serum @ 10 m (pe)
182pa	65 y F				A	Ingst + Inhal	Unt-E	3		
		carbon monoxide	1	1					carboxyhemoglobin	11 % In Blood (unspecified) @ Autopsy
		diphenhydramine	2	2					diphenhydramine	0.29 mg/L In Blood (unspecified) @ Autopsy
183ph	66 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1					carboxyhemoglobin	13 % In Blood (unspecified) @ 5 m (pe)
		carbon monoxide	1	1					carboxyhemoglobin	52 % In Blood (unspecified) @ Unknown
		cyanide	2	2						
184p	67 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	31.8 % In Blood (unspecified) @ 1 h (pe)
185p	69 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	34 % In Serum @ 60 m (pe)
		carbon monoxide	1	1					carboxyhemoglobin	46 % In Serum @ 10 m (pe)
		carbon monoxide	2	2						
186h	69 y F				A	Inhal + Derm	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	26.6 % In Whole Blood @ 5 m (pe)
		cyanide	2	2						
187pa	70 y M				A	Inhal	Unt-E	3		
		carbon monoxide	1	1						
		carbon monoxide	2	2					carboxyhemoglobin	15.9 % In Blood (unspecified) @ 30 m (pe)
188pha	73 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	23 % In Blood (unspecified) @ 6 h (pe)
		carbon monoxide	1	1					carboxyhemoglobin	30 % In Blood (unspecified) @ 1 h (pe)
189h	80 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
190ha	80 y M				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	20 % In Blood (unspecified) @ 1.5 h (pe)
191pha	82 y F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	53 % In Blood (unspecified) @ Unknown
192p	83 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
193	85 y F				A/C	Inhal	Unt-G	1		
		carbon monoxide	1	1						
194p	87 y F				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
195p	88 y M				A	Inhal	Unt-E	2		
		carbon monoxide	1	1					carboxyhemoglobin	30 % In Blood (unspecified) @ Unknown
196p	<=5 y U				A	Inhal	Unt-E	2		
		carbon monoxide	1	1						
197p	Unknown adult (>=20 yrs) F				A	Inhal	Int-S	2		
		hydrogen sulfide	1	1						
198pai	Unknown adult (>=20 yrs) M				A	Inhal	Unt-G	1		
		hydrogen sulfide	1	1					thiosulfate	3.8 mcg/mL In Blood (unspecified) @ Autopsy
199pha	Unknown age F				A	Inhal	Unt-E	1		
		carbon monoxide	1	1					carboxyhemoglobin	25.3 % In Blood (unspecified) @ Unknown
200	Unknown age M				A	Inhal	Unk	2		
		carbon monoxide	1	1					carboxyhemoglobin	50 % In Blood (unspecified) @ Unknown
201p	Unknown age M				A	Inhal	Int-S	2		
		carbon monoxide	1	1						
See also case 102, 219										
Heavy Metals										
[202ha]	31 y F				A	Unk	Unk	1		
		thallium	1	1					thallium	18 mcg/mL In Blood (unspecified) @ 31 d (pe)
		thallium	1	1					thallium	800 mcg/L In Urine (quantitative only) @ 16 d (pe)
		thallium	1	1					thallium	800 mcg/L In Urine (quantitative only) @ 17 d (pe)
		thallium	1	1					thallium	900 mcg/mL In Blood (unspecified) @ Unknown
203p	46 y M				A	Ingst	Int-S	1		
		Arsenic	1	1						
		acetaminophen	2	2						
[204]	67 y F				A	Oth	AR-D	3		
		aluminum	1	1					aluminum	2000 ng/mL In Blood (unspecified) @ 5 d (pe)
See also case 637, 860										
Hydrocarbons										
205ph	20 y F				A	Inhal	Int-A	1		
		fluorinated hydrocarbon	1	1						
206ha	22 y M				C	Inhal + Unk	Int-A	1		
		fluorinated hydrocarbon	1	1						
		heroin	2	1					codeine	0.029 mg/L In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		heroin	2	1					morphine	0.83 mg/kg In Blood (unspecified) @ Unknown
207h	25 y M				A	Inhal	Int-A	2		
		fluorinated hydrocarbon	1	1						
208ha	26 y M				A	Ingst	Unt-E	3		
		diesel fuel	1	1						
209ph	29 y M				A	Inhal	Int-A	1		
		fluorinated hydrocarbon	1	1						
210ph	30 y F				C	Inhal	Int-A	1		
		fluorinated hydrocarbon	1	1						
211	30 y M				A/C	Inhal	Int-A	1		
		fluorinated hydrocarbon	1	1						
212ph	30 y M				A/C	Inhal	Int-A	2		
		hydrocarbon, halogenated	1	1						
213pha	30 y M				A	Inhal	Int-A	3		
		fluorinated hydrocarbon	1	1						
		cocaine	2	2						
		cough and cold preparation	3	3						
214p	33 y M				A/C	Inhal	Int-A	2		
		fluorinated hydrocarbon	1	1						
215p	34 y M				U	Inhal	Int-U	2		
		fluorinated hydrocarbon	1	1						
216p	37 y M				A/C	Inhal	Int-A	1		
		fluorinated hydrocarbon	1	1					1,1-difluoroethane	21 mcg/mL In Blood (unspecified) @ Autopsy
[217pa]	41 y F				A/C	Inhal	Int-A	1		
		fluorinated hydrocarbon	1	1					1,1-difluoroethane	64 mg/L In Blood (unspecified) @ Autopsy
218pha	48 y M				A	Inhal	Int-A	2		
		mineral spirits	1	1					1,1-difluoroethane	25 mg/L In Blood (unspecified) @ 4 d (pe)
219h	54 y M				A	Inhal + Derm	Int-S	3		
		gasoline	1	1						
		carbon monoxide	2	2					carboxyhemoglobin	8.7 % In Blood (unspecified) @ Unknown
220h	55 y M				C	Inhal	Int-A	1		
		fluorinated hydrocarbon	1	1						
221h	76 y F				A	Ingst	Unt-G	1		
		kerosene	1	1						
See also case 80, 112, 158, 250, 828										
Industrial Cleaners										
222h	31 y F				A	Inhal	Int-M	2		
		hydrocarbon (fluorinated)	1	1						
223h	88 y F				A	Ingst	Unt-G	2		
		M9 cleaner	1	1						
224	18 m M				A	Ingst	Unt-G	2		
		disinfectant	1	1						
Infectious and Toxin-Mediated Diseases										
[225ha]	82 y F				A	Oth	Unt-E	1		
		Tetanus	1	1						
Other/Unknown Non-drug Substances										
226h	25 y M				U	Unk	Unk	2		
		non-drug, unknown	1	1						
227ha	27 y M				A	Ingst	Int-S	2		
		substance (non-drug), unknown	1	1						
		methamfetamine	2	2					methamfetamine	150 ng/mL In Plasma @ Unknown
		methamfetamine	2	2					amfetamine	27 ng/mL In Plasma @ Unknown

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
Paints and Stripping Agents										
228h	69 y F				A	Ingst	Unt-M	1		
		stripping agent	1	1						
		cleaner (anionic/alkali)	2	2						
See also case 100										
Pesticides										
[229h]	21 y F				A	Ingst	Int-S	1		
		strychnine	1	1						
230i	22 y F				A	Ingst	Int-S	2		
		rodenticide, unknown	1	1						
231p	29 y M				A	Inhal	Int-A	1		
		organophosphate	1	1						
232h	33 y F				A	Ingst	Int-S	1		
		moth balls	1	1						
[233ha]	33 y F				A	Ingst	Int-S	1		
		paraquat	1	1					paraquat	10000 ng/mL In Whole Blood @ Autopsy
234h	35 y M				A	Ingst	Int-S	2		
		diquate/glyphosate	1	1						
		salicylate	2	2					salicylate	27 mg/mL In Unknown @ Unknown
		salicylate	2	2					salicylate	34.8 mg/dL In Blood (unspecified) @ Unknown
		diphenhydramine	3	3						
235h	36 y M				A	Ingst	Int-S	1		
		phosphine	1	1						
[236ha]	38 y F				A	Ingst	Int-U	1		
		diquat	1	1						
237ha	39 y M				A	Ingst	Int-S	2		
		diquat/glyphosate	1	1						
		ethanol	2	2						
[238]	40 y M				A	Unk	Int-A	2		
		dinitrophenol	1	1						
239h	40 y M				A	Ingst	Int-S	2		
		herbicide	1	1						
		ethanol	2	2						
240pha	43 y M				A	Ingst	Unk	3		
		glyphosate	1	1						
		clomipramine	2	2					desmethylclomipramine	350 ng/mL In Blood (unspecified) @ Autopsy
		clomipramine	2	2					clomipramine	4500 ng/mL In Blood (unspecified) @ Autopsy
		fluvoxamine	3	3					fluvoxamine	660 ng/mL In Blood (unspecified) @ Autopsy
241ha	46 y F				A	Ingst	Int-S	1		
		borate pesticide, NOS	1	1						
[242h]	48 y F				U	Ingst	Int-S	3		
		rodenticide (antocoagulant)	1	1						
		marijuana	2	2						
[243h]	51 y M				A	Ingst + Inhal	Oth-M	1		
		paraquat	1	1						
244	52 y M				A	Ingst	Unt-M	2		
		glyphosate	1	1						
245h	54 y M				A	Inhal	AR-O	3		
		2,4-D (2,4-dichlorophenoxyacetic acid)	1	1						
		pendimethalin	2	2						
[246ha]	55 y M				A	Ingst	Int-S	1		
		organophosphate	1	1						
		ethanol	2	2						
[247ph]	58 y F				A	Ingst	Int-S	2		
		malathion	1	1						
[248pha]	60 y M				A	Ingst	Int-S	2		
		deltametherin/ imiprothrin	1	1						
249h	82 y M				A	Ingst	Int-S	1		
		carbamate insecticide	1	1						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
250h	88 y M				A	Ingst	Int-S	3		
		2,4-D (2,4-dichlorophenoxyacetic acid)	1	1						
		2,4-D (2,4-dichlorophenoxyacetic acid)	2	2						
		lighter fluids, petroleum distillate	3	3						
		lambda-cyhalothrin	4	4						
		cleaner (household)	5	5						
251h	91 y M				A	Ingst	Unt-G	1		
		paraquat	1	1						
252p	Unknown age U				A	Ingst	Int-S	1		
		aluminum phosphide	1	1						
See also case 397										
Photographic Products										
253	23 y F				A	Ingst	Int-S	1		
		hydroquinone	1	1						
Plants										
[254a]	19 y M				A	Ingst	Int-S	1		
		Taxus baccata	1	1						
255ph	22 y F				A	Ingst	Int-S	1		
		Taxus baccata	1	1						
		citalopram	2	2						
[256h]	69 y F				A	Ingst	Unk	1		
		cardiac glycoside	1	1						
See also case 658, 1101										
Sporting Equipment										
257p	55 y M				U	Ingst	Unk	2		
		selenious acid	1	1						
Tobacco/Nicotine/eCigarette Products										
258p	24 y F				A	Unk	Int-S	1		
		nicotine	1	1						
See also case 868, 1187										
Weapons of Mass Destruction										
259ph	27 y F				U	Inhal	Int-A	2		
		non-powder, unknown	1	1						
		marijuana	2	2						
Pharmaceutical Exposures										
Analgesics										
[260]	1 y M				A	Ingst	Unt-G	1		
		salicylate	1	1						
[261ha]	2 y M				A	Ingst	Unt-G	1		
		oxycodone (extended release)	1	1					oxycodone	245 ng/mL In Serum @ 2.8 h (pe)
		oxycodone (extended release)	1	1					oxycodone	840 ng/mL In Serum @ Autopsy
[262pha]	2 y F				A	Ingst	Unt-G	1		
		methadone	1	1					methadone	114 ng/mL In Serum @ 9 h (pe)
263ph	2 y M				U	Ingst	Unt-G	1		
		methadone	1	1						
264pa	2 y F				A	Ingst	Unk	2		
		oxycodone	1	1					oxycodone	0.24 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen/ diphenhydramine	2	2					diphenhydramine	0.19 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen/ diphenhydramine	2	2					diphenhydramine	2.3 mg/kg In Liver @ Autopsy
		acetaminophen/ diphenhydramine	2	2					acetaminophen	55 mg/L In Blood (unspecified) @ Autopsy
265ph	13 y M				A/C	Ingst	Int-S	2		
		oxycodone	1	1						
266pha	14 y F				A	Ingst	Int-S	2		
		acetaminophen/ oxycodone	1	1						
		dextromethorphan/ guaifenesin	2	2						
		amino acid (dietary)	3	3						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
267h	14 y F				A	Unk	Unk	3		
		tramadol	1	1						
268h	14 y M				A	Ingst	Unt-G	3		
		colchicine	1	1						
269	14 y F				A	Ingst	Int-S	1		
		salicylate	1	1						
		acetaminophen	2	2						
270h	14 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1						
		hydrocodone	2	2						
271ph	15 y F				A	Ingst	Int-S	1		
		tramadol	1	1					tramadol	4876 mg/mL In Blood (unspecified) @ Unknown
		cyclobenzaprine	2	2						
		meloxicam	3	3						
272pha	16 y M				U	Ingst	Int-A	2		
		fentanyl (transdermal)	1	1						
273pha	17 y M				A	Ingst	Int-A	1		
		hydrocodone	1	1					6-monoacetylmorphine	434 ng/mL In Urine (quantitative only) @ Unknown
		hydrocodone	1	1					morphine (free)	46 ng/mL In Blood (unspecified) @ Unknown
		hydrocodone	1	1					codeine (free)	5.6 ng/mL In Blood (unspecified) @ Unknown
		hydrocodone	1	1					morphine	582 ng/mL In Urine (quantitative only) @ Unknown
		hydrocodone	1	1					codeine	79 mg/dL In Urine (quantitative only) @ Unknown
		ethanol	2	2					ethanol	147 mg/dL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	190 mg/dL In Blood (unspecified) @ Unknown
274pha	17 y M				U	Inhal + Unk	Int-A	1		
		fentanyl	1	1					fentanyl	2.6 ng/mL In Blood (unspecified) @ Unknown
		adhesive, unknown	2	2						
275pha	18 y M				A	Par	Int-A	2		
		opioid	1	1						
		marijuana	2	2						
276h	19 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	190 mcg/mL In Serum @ Unknown
		lorazepam	2	2						
277ai	19 y F				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	6.7 ng/mL In Blood (unspecified) @ Autopsy
278pai	19 y F				A	Par	Int-A	1		
		fentanyl	1	1					fentanyl	6.7 ng/mL In Blood (unspecified) @ Autopsy
		heroin	2	2					morphine	38 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	3	3					cocaine	0.08 mcg/mL In Blood (unspecified) @ Autopsy
279ha	19 y M				A	Ingst + Inhal	Int-A	2		
		oxymorphone	1	1						
		clonazepam	2	2						
		marijuana	3	3						
280	20 y F				A	Ingst	Int-S	2		
		salicylate	1	1						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
281pha	20 y M				A	Unk	Int-A	1		
		hydrocodone	1	1						
		benzodiazepine	2	2					alprazolam	45 ng/mL In Serum @ 15 m (pe)
		drug, unknown	3	3						
		ethanol	4	4					ethanol	0.01 g/dL In Serum @ 5 m (pe)
		cocaine	5	5					benzoylecognine	45 ng/mL In Serum @ 5 m (pe)
282pha	20 y M				A	Ingst	Unk	2		
		fentanyl	1	1						
		benzodiazepine	2	2					lorazepam	21 ng/mL In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	0.126 % In Blood (unspecified) @ Unknown
283pha	20 y M				A	Ingst	Int-A	3		
		fentanyl	1	1					fentanyl	2.2 ng/mL In Blood (unspecified) @ Autopsy
284ai	20 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	2.2 ng/mL In Blood (unspecified) @ Autopsy
285ha	20 y F				A	Ingst	Int-S	1		
		oxymorphone	1	1					oxymorphone	0.041 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	2	2					oxycodone	0.282 mg/L In Blood (unspecified) @ Unknown
		hydrocodone	3	3						
		tramadol	4	4					tramadol	2.01 mg/L In Blood (unspecified) @ Unknown
		naproxen	5	5						
		ibuprofen	6	6						
		acetaminophen	7	7					acetaminophen	612 mg/L In Serum @ Unknown
		acetaminophen	7	7					acetaminophen	663 mg/dL In Serum @ Unknown
		ethanol	8	8					ethanol	47 mg/dL In Serum @ Unknown
286hai	21 y F				A	Ingst	Int-S	2		
		diphenhydramine/ ibuprofen	1	1						
		sertraline	2	2						
287pha	21 y M				U	Ingst	Int-A	1		
		methadone	1	1						
		codeine/promethazine	2	2						
		ethanol	3	3					ethanol	0.02 g/dL In Blood (unspecified) @ Unknown
288h	21 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	161 mcg/mL In Blood (unspecified) @ Unknown
		drug, unknown	2	2						
289ha	21 y M				U	Unk	Int-U	2		
		hydromorphone	1	1					hydromorphone	180 ng/mL In Blood (unspecified) @ Autopsy
		Lorazepam	2	2						
		marijuana	3	3					delta-9-carboxy-thc	18 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	3	3					delta-9-thc	3.1 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	4	4						

(*continued*)

Table 21. Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
289ha	21 y M				U	Unk	Int-U	2		
		hydromorphone	1	1					hydromorphone	180 ng/mL In Blood (unspecified) @ Autopsy
		Lorazepam	2	2						
		marijuana	3	3					delta-9-carboxy-thc	18 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	3	3					delta-9-thc	3.1 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	4	4						
290pha	21 y M				U	Ingst + Unk	Int-U	1		
		methadone	1	1					methadone	376 ng/mL In Blood (unspecified) @ 1 h (pe)
		oxycodone	2	2					oxycodone	23.8 ng/mL In Blood (unspecified) @ 1 h (pe)
		cocaine	3	3					eddp (2-ethylidene-1,5-dimethyl-3,3-diphenyl pyrrolidine)	43.8 ng/mL In Blood (unspecified) @ 1 h (pe)
		clonazepam	4	4					7-aminoclonazepam	26.7 ng/mL In Blood (unspecified) @ 1 h (pe)
291pi	22 y M				A	Ingst	Unk	2		
		methadone	1	1						
292pha	22 y M				A/C	Unk	Int-S	1		
		fentanyl	1	1						
		heroin	2	2						
		amfetamine (hallucinogenic)	3	3						
		cocaine	4	4						
293ha	22 y F				U	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen	96.7 mg/L In Serum @ Unknown
294ha	22 y M				U	Unk	Unk	1		
		buprenorphine/naloxone (sublingual film)	1	1						
		alprazolam	2	2					alprazolam	8.9 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	3	3					7-aminoclonazepam	22 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	3	3					clonazepam	4 ng/mL In Blood (unspecified) @ Unknown
		amitriptyline	4	4						
		gabapentin	5	5					gabapentin	18.3 mcg/mL In Blood (unspecified) @ Unknown
		hydromorphone	6	6					hydromorphone	5 ng/mL In Vitreous @ Autopsy
		hydroxyzine	7	7						
295pa	22 y M				A/C	Unk	Int-A	1		
		buprenorphine	1	1					norbuprenorphine	0.014 mg/kg In Liver @ Autopsy
		buprenorphine	1	1					buprenorphine	0.017 mg/kg In Liver @ Autopsy
		buprenorphine	1	1					norbuprenorphine	1.6 ng/mL In Blood (unspecified) @ Autopsy
		benzodiazepine	2	2					etizolam	0.066 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	3	3					alprazolam	0.015 mg/L In Blood (unspecified) @ Autopsy
		heroin	4	4						
296	22 y F				A	Ingst	Unk	3		

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminophen	1	1					acetaminophen	42 ng/mL In Blood (unspecified) @ 20 m (pe)
		ethanol	2	2					ethanol	33 mg/dL In Blood (unspecified) @ 20 m (pe)
297h	22 y F				U	Ingst	Int-S	1		
		oxycodone (extended release)	1	1						
		diphenhydramine	2	2						
298	22 y M				A	Ingst	Int-S	2		
		methadone	1	1						
		benzodiazepine	2	2						
		cocaine	3	3						
299ph	22 y M				A	Ingst	Int-A	1		
		fentanyl	1	1						
[300ha]	23 y M				A	Ingst	Int-S	1		
		colchicine	1	1					colchicine	0.054 mcg/mL In Blood (unspecified) @ 1 h (pe)
301h	23 y M				A	Ingst	Int-S	1		
		acetaminophen/ salicylate	1	1						
		naproxen	2	2						
302ha	23 y F				U	Ingst	Unk	1		
		oxycodone	1	1						
		drug, unknown	2	2						
		marijuana	3	3						
303ai	24 y M				A	Par	Int-A	2		
		fentanyl	1	1					norfentanyl	0.75 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	5.5 ng/mL In Blood (unspecified) @ Autopsy
304ai	24 y F				A	Par	Int-A	2		
		fentanyl	1	1					norfentanyl	1.5 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	2.9 ng/mL In Blood (unspecified) @ Autopsy
305h	24 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1						
		ethanol (non-beverage)	2	1						
306ai	24 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	12 ng/mL In Blood (unspecified) @ Autopsy
307	24 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	65 mcg/mL In Plasma @ 4 h (pe)
		acetaminophen	1	1					acetaminophen	89 mcg/mL In Blood (unspecified) @ 1 h (pe)
308ai	24 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	19 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					norfentanyl	4.4 ng/mL In Blood (unspecified) @ Autopsy
309pha	25 y M				U	Ingst	Int-U	1		
		oxymorphone	1	1					oxymorphone	0.29 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	0.12 mg/L In Blood (unspecified) @ Autopsy
		hydrocodone	3	3					hydrocodone	0.011 mg/L In Blood (unspecified) @

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										Autopsy
		ethanol	4	4						
		amfetamine/ dextroamfetamine	5	5						
310ai	25 y F				A	Par	Int-A	2		
		fentanyl	1	1					norfentanyl	0.5 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	13 ng/mL In Blood (unspecified) @ Autopsy
311h	25 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
312pa	25 y F				A	Ingst	Int-S	1		
		methadone	1	1					methadone	0.3 mg/L In Blood (unspecified) @ Autopsy
		paroxetine	2	2					paroxetine	0.5 mg/L In Blood (unspecified) @ Autopsy
		paroxetine	3	3						
		pregabalin	4	4						
		benzodiazepine	5	5						
		sertraline	6	6					sertraline	0.2 mg/L In Blood (unspecified) @ Autopsy
		sertraline	6	6					desmethylsertraline	0.8 mg/L In Blood (unspecified) @ Autopsy
313ai	25 y M				A	Par	Int-A	2		
		fentanyl	1	1					norfentanyl	1 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	13 ng/mL In Blood (unspecified) @ Autopsy
314p	25 y F				A/C	Unk	Int-A	2		
		oxycodone	1	1						
		alprazolam	2	2						
		gabapentin	3	3						
		ketorolac	4	4						
		marijuana	5	5						
315ph	25 y F				A	Ingst	Int-A	2		
		methadone	1	1						
		benzodiazepine	2	2						
316ph	25 y F				A	Par	Int-A	2		
		hydrocodone	1	1						
317	25 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	31 mcg/mL In Blood (unspecified) @ Unknown
318ai	26 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	7.1 ng/mL In Blood (unspecified) @ Autopsy
319h	26 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
320i	26 y M				U	Ingst + Unk	Int-S	2		
		morphine	1	1						
		alprazolam	2	2						
		cocaine	3	3						
		ethanol	4	4						
321	26 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	208 mg/L In Serum @ 11 h (pe)
		ibuprofen	2	2						
322	26 y M				A/C	Ingst	Int-S	2		
		hydrocodone	1	1						
		sertraline	2	2						
323p	27 y M				A	Par	Int-A	1		
		fentanyl	1	1					fentanyl	480 ng/mL In Blood

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										(unspecified) @ Autopsy
		buprenorphine	2	2					buprenorphine	0.96 ng/mL In Blood (unspecified) @ Autopsy
		buprenorphine	2	2					norbuprenorphine	23 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	3	3					alprazolam	98 ng/mL In Blood (unspecified) @ Autopsy
324ai	27 y F				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	20 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					norfentanyl	5.7 ng/mL In Blood (unspecified) @ Autopsy
325p	27 y M				A	Ingst	Int-S	2		
		oxycodone	1	1						
		lorazepam	2	2						
		olanzapine	3	3						
		gabapentin	4	4						
		ethanol	5	5					ethanol	27 mg/dL In Blood (unspecified) @ Unknown
326ph	27 y F				A	Ingst	Int-A	3		
		acetaminophen/ oxycodone	1	1					acetaminophen	20 mg/L In Serum @ 30 m (pe)
327p	27 y M				A/C	Ingst	Int-M	1		
		methadone	1	1					methadone	1400 ng/mL In Liver @ Autopsy
		acetaminophen/ hydrocodone	2	2					hydrocodone	900 ng/mL In Liver @ Autopsy
		alprazolam	3	3					alprazolam	230 ng/mL In Liver @ Autopsy
		oxymorphone	4	4					oxymorphone	33 ng/mL In Liver @ Autopsy
		ethanol	5	5					ethanol	73 ng/mL In Liver @ Autopsy
		fluoxetine	6	6					norfluoxetine	1600 ng/mL In Liver @ Autopsy
		citalopram	7	7					citralopram	150 ng/mL In Liver @ Autopsy
328pha	27 y M				U	Ingst + Unk	Int-U	1		
		hydrocodone	1	1					hydrocodone	0.04 mg/L In Blood (unspecified) @ 1 h (pe)
		alprazolam	2	2						
		cocaine	3	3					benzoylecognine	0.55 mg/L In Blood (unspecified) @ Unknown
329pa	28 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	218 mcg/mL In Serum @ 1 h (pe)
		clonidine	2	2						
		benzodiazepine	3	3						
		selegiline	4	4						
330ph	28 y F				A/C	Ingst	Unk	2		
		tramadol	1	1						
		clonazepam	2	2						
		benzodiazepine	3	3						
		hydrocodone	4	4						
331pha	28 y M				A	Ingst + Derm	Int-A	1		
		fentanyl	1	1						
		oxycodone	2	2						
332p	28 y F				U	Unk	Int-S	1		
		opioid	1	1						
		cocaine	2	2						
		benzodiazepine	3	3						
333pha	28 y M				A	Ingst + Par	Int-A	1		
		droperidol/fentanyl	1	1						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		ethanol	2	2					ethanol	146 mg/dL In Serum @ 1 h (pe)
334ph	28 y M				U	Unk	Unk	1		
		morphine	1	1					morphine	401 ng/mL In Blood (unspecified) @ 20 m (pe)
		droperidol/fentanyl	2	2					fentanyl	5.01 ng/mL In Blood (unspecified) @ 20 m (pe)
		droperidol/fentanyl	2	2					norfentanyl	51.6 ng/mL In Blood (unspecified) @ 20 m (pe)
		hydromorphone	3	3					hydromorphone	16 ng/mL In Blood (unspecified) @ 20 m (pe)
		codeine	4	4					codeine	12 ng/mL In Blood (unspecified) @ 20 m (pe)
335ai	28 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	4.8 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					norfentanyl	6.3 ng/mL In Blood (unspecified) @ Autopsy
336h	28 y F				A	Ingst	Int-S	1		
		acetaminophen/codeine	1	1					acetaminophen	193 mcg/mL In Blood (unspecified) @ Unknown
337ai	28 y F				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	3.1 ng/mL In Blood (unspecified) @ Autopsy
338pha	28 y M				U	Inhal	Int-A	2		
		fentanyl	1	1					norfentanyl	2 ng/mL In Urine (quantitative only) @ Autopsy
		fentanyl	1	1					fentanyl	7 ng/mL In Urine (quantitative only) @ Autopsy
339ai	29 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	2.4 ng/mL In Blood (unspecified) @ Autopsy
340ai	29 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	26 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					norfentanyl	5.9 ng/mL In Blood (unspecified) @ Autopsy
		heroin	2	2						
341	29 y M				A	Inhal + Unk	Int-A	1		
		fentanyl	1	1						
		gabapentin	2	2						
[342a]	29 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	56 mg/dL In Blood (unspecified) @ 4 h (pe)
		salicylate	1	1					salicylate	57 mg/dL In Blood (unspecified) @ 7.6 h (pe)
		salicylate	1	1					salicylate	67.4 mg/dL In Blood (unspecified) @ 6 h (pe)
		salicylate	1	1					salicylate	70.2 mg/dL In Blood (unspecified) @ 11 h (pe)
		salicylate	1	1					salicylate	930 mcg/mL In Blood (unspecified) @ Autopsy
343ha	29 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	65.5 mg/dL In Blood

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										(unspecified) @ Autopsy
		salicylate	1	1					salicylate	95.7 mg/dL In Blood (unspecified) @ Unknown
344a	29 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	21.8 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen	31.9 mcg/mL In Blood (unspecified) @ Autopsy
		acetaminophen	1	1					acetaminophen	37.2 mcg/mL In Blood (unspecified) @ Unknown
		venlafaxine	2	2					venlafaxine	1088 ng/mL In Blood (unspecified) @ Autopsy
345	29 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	107 mg/dL In Blood (unspecified) @ 5 h (pe)
		clonazepam	2	2						
346h	29 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	78.6 mcg/mL In Blood (unspecified) @ Unknown
347h	30 y M				A/C	Unk	Unk	1		
		methadone	1	1					eddp (2-ethylidene-1,5-dimethyl-3,3-diphenyl pyrrolidine)	150 ng/mL In Blood (unspecified) @ Autopsy
		methadone	1	1					methadone	930 ng/mL In Blood (unspecified) @ Autopsy
		methamfetamine	2	2					amfetamine	33 ng/mL In Blood (unspecified) @ Autopsy
		methamfetamine	2	2					methamfetamine	620 ng/mL In Blood (unspecified) @ Autopsy
348ai	30 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	15 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					norfentanyl	4.5 ng/mL In Blood (unspecified) @ Autopsy
349ai	30 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	11 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					norfentanyl	7 ng/mL In Blood (unspecified) @ Autopsy
350ha	30 y M				A	Ingst	Int-S	1		
		acetaminophen/caffeine/salicylate	1	1					salicylate	35.8 mg/dL In Blood (unspecified) @ 7 h (pe)
		acetaminophen/caffeine/salicylate	1	1					acetaminophen	840 mcg/mL In Blood (unspecified) @ 7 h (pe)
		acetaminophen/diphenhydramine	2	2						
351ai	30 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	10 ng/mL In Blood (unspecified) @ Autopsy
352ha	30 y F				U	Ingst	Unk	1		
		acetaminophen/hydrocodone	1	1					acetaminophen	103 mg/L In Blood (unspecified) @ Unknown
		methadone	2	2						
		lithium	3	3					lithium	2.61 mEq/L In Blood (unspecified) @

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										Unknown
353ai	30 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	4.8 ng/mL In Blood (unspecified) @ Autopsy
354ha	30 y M				U	Ingst + Unk	Int-S	1		
		acetaminophen	1	1					acetaminophen	200 mg/L In Blood (unspecified) @ 1 h (pe)
		hydromorphone	2	2					hydromorphone	0.11 mg/L In Serum @ 1 h (pe)
355	31 y M				A	Ingst	Int-A	1		
		buprenorphine/naloxone (sublingual film)	1	1						
		doxepin	2	2						
		duloxetine	3	3						
		alprazolam	4	4						
356h	31 y F				A	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1					acetaminophen	143 mcg/mL In Blood (unspecified) @ Unknown
357ph	31 y M				U	Unk	Int-A	2		
		hydrocodone	1	1						
358ai	31 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	1.2 ng/mL In Blood (unspecified) @ Autopsy
359ai	31 y M				A	Par	Int-A	1		
		fentanyl	1	1					fentanyl	23 ng/mL In Blood (unspecified) @ Autopsy
		heroin	2	2					morphine	32 ng/mL In Blood (unspecified) @ Autopsy
		benzodiazepine	3	3						
360ai	31 y F				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	10 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					norfentanyl	8.3 ng/mL In Blood (unspecified) @ Unknown
361ha	31 y F				A	Ingst	Int-S	1		
		acetaminophen/ oxycodone	1	1					acetaminophen	46 mcg/mL In Blood (unspecified) @ Unknown
362	31 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	155 mg/dL In Blood (unspecified) @ Unknown
363ai	31 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	12 ng/mL In Blood (unspecified) @ Autopsy
364pa	31 y M				U	Ingst	Unk	1		
		fentanyl	1	1					fentanyl	36.6 ng/mL In Blood (unspecified) @ Autopsy
		heroin	2	2					6-monoacetylmorphine	120 ng/mL In Urine (quantitative only) @ Autopsy
		heroin	2	2					codeine	209 ng/mL In Urine (quantitative only) @ Autopsy
		heroin	2	2					hydromorphone	351 ng/mL In Urine (quantitative only) @ Autopsy
		heroin	2	2					morphine	61.1 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	3	3					benzoylecognine	121 ng/mL In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		cocaine	3	3					benzoylecognine	6560 ng/mL In Urine (quantitative only) @ Autopsy
		alprazolam	4	4					alprazolam	20.8 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	4	4					alprazolam	240 ng/mL In Urine (quantitative only) @ Autopsy
		alprazolam	4	4					alpha-oh-alprazolam	740 ng/mL In Urine (quantitative only) @ Autopsy
365pha	31 y F				A	Ingst	Int-S	1		
		methadone	1	1					methadone	0.21 mg/L In Serum @ Unknown
		clonazepam	2	2					7-aminoclonazepam	0.2 mg/L In Serum @ Unknown
		acetaminophen/ hydrocodone	3	3						
366ha	31 y M				A/C	Ingst	Int-A	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	5.7 mcg/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	1	1					acetaminophen	9.6 mcg/mL In Blood (unspecified) @ 1 h (pe)
		morphine	2	2					morphine (free)	9.6 ng/mL In Blood (unspecified) @ Autopsy
		topiramate	3	3					topiramate	2600 ng/mL In Blood (unspecified) @ Autopsy
		mirtazapine	4	4						
		phenytoin	5	5					phenytoin	6.1 mcg/mL In Blood (unspecified) @ Autopsy
		meperidine	6	6					normeperidine	0.04 mcg/mL In Blood (unspecified) @ Autopsy
		meperidine	6	6					meperidine	0.062 mcg/mL In Blood (unspecified) @ Autopsy
367ai	32 y F				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	14 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					norfentanyl	4.4 ng/mL In Blood (unspecified) @ Autopsy
368p	32 y M				A/C	Par	Int-A	2		
		hydrocodone	1	1						
369pha	32 y M				A	Par	Int-U	2		
		acetaminophen/ oxycodone	1	1						
370p	32 y F				A	Unk	Unk	2		
		acetaminophen/codeine	1	1					acetaminophen	70 mcg/mL In Blood (unspecified) @ Unknown
		diazepam	2	2						
		citalopram	3	3						
		naproxen	4	4						
371ph	32 y M				A	Unk	Int-S	2		
		methadone	1	1						
372p	32 y M				A/C	Ingst	Int-M	2		
		acetaminophen	1	1					acetaminophen	65 mcg/mL In Serum @ Unknown
		salicylate	2	2					salicylate	26 mg/dL In Serum @ Unknown
		ethanol	3	3					ethanol	186 mg/dL In Blood (unspecified) @ Unknown
373a	32 y F				A/C	Ingst	Unk	2		
		acetaminophen/ hydrocodone	1	1						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
374ai	32 y F				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	14 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					norfentanyl	8 ng/mL In Blood (unspecified) @ Unknown
375ai	32 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	19 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					norfentanyl	5.9 ng/mL In Blood (unspecified) @ Unknown
376ai	32 y M				A	Par	Int-A	2		
		fentanyl	1	1					norfentanyl	0.99 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	7.9 ng/mL In Blood (unspecified) @ Autopsy
377	32 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	26 mcg/mL In Serum @ Unknown
		acetaminophen	1	1					acetaminophen	7 mcg/mL In Serum @ Unknown
378ha	32 y M				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
		skeletal muscle relaxant	2	2						
379h	32 y F				U	Ingst	Int-U	2		
		acetaminophen	1	1						
		ethanol	2	2						
380h	33 y F				A	Ingst	Int-A	1		
		acetaminophen	1	1						
		ethanol	2	2						
381ai	33 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	2.5 ng/mL In Blood (unspecified) @ Autopsy
382ai	33 y F				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	4.2 ng/mL In Blood (unspecified) @ Autopsy
383	33 y F				A/C	Ingst + Par	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	0 mcg/mL In Blood (unspecified) @ Unknown
		methocarbamol	2	2						
		fluoxetine	3	3						
		acetaminophen/ hydrocodone	4	4						
		orphenadrine	5	5						
		amitriptyline	6	6						
		clonazepam	7	7						
		gabapentin	8	8						
		drug, unknown	9	9						
384ha	33 y F				U	Ingst	Int-U	3		
		acetaminophen	1	1						
385pa	33 y M				C	Ingst	Int-U	1		
		oxycodone	1	1					oxycodone	0.24 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	0.1 mg/L In Blood (unspecified) @ Autopsy
		gabapentin	3	3						
386ha	33 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	390 mg/L In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		drug, unknown	2	2						
387ha	33 y F				A/C	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen	194 mcg/mL In Blood (unspecified) @ 20 m (pe)
		laxative	2	2						
388h	33 y F				A	Ingst + Inhal	Int-S	1		
		hydrocodone	1	1						
		cocaine	2	2						
389	34 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	92.2 mg/dL In Blood (unspecified) @ Unknown
390ph	34 y M				A	Ingst	Int-A	2		
		buprenorphine/ naloxone (sublingual film)	1	1						
		ethanol	2	2						
391	34 y F				A/C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen	120 mcg/mL In Serum @ Unknown
392ai	35 y M				A	Par	Int-A	2		
		fentanyl	1	1					norfentanyl	1.3 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	12 ng/mL In Blood (unspecified) @ Autopsy
393ai	35 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	30 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					norfentanyl	4.7 ng/mL In Blood (unspecified) @ Autopsy
394h	35 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	144 mcg/mL In Blood (unspecified) @ 48 h (pe)
395p	35 y M				A	Unk	Unk	1		
		hydrocodone	1	1						
		ethanol	2	2					ethanol	232 mg/dL In Blood (unspecified) @ Unknown
396pha	35 y F				A	Unk	Int-A	1		
		fentanyl	1	1					fentanyl	1 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	2	2					oxycodone (free)	143 ng/mL In Blood (unspecified) @ Autopsy
397hai	35 y M				U	Unk	Int-U	1		
		tapentadol	1	1					hydromorphone	1.7 ng/mL In Blood (unspecified) @ Autopsy
		tapentadol	1	1					tapentadol	26000 ng/mL In Blood (unspecified) @ Autopsy
		tapentadol	1	1					diphenhydramine	360 ng/mL In Blood (unspecified) @ Autopsy
		tapentadol	1	1					o-desmethyl-venlafaxine	60 ng/mL In Blood (unspecified) @ Autopsy
		tapentadol	1	1					morphine (free)	90 ng/mL In Blood (unspecified) @ Autopsy
		hydromorphone	2	2						
		venlafaxine	3	3						
		diphenhydramine	4	4						
		hydrocodone	5	5						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		pentachlorophenol	6	6						
		fentanyl	7	7						
		caffeine	8	8						
		cotinine	9	9						
		naloxone	10	10						
398ai	36 y F				A	Par	Int-A	2		
		fentanyl	1	1					norfentanyl	2.5 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	22 ng/mL In Blood (unspecified) @ Autopsy
399pha	36 y M				A	Ingst	Unk	2		
		methadone	1	1						
400ha	36 y F				A	Ingst	Int-M	3		
		diclofenac	1	1						
401h	36 y F				A	Ingst	Int-S	1		
		ibuprofen	1	1						
		rivaroxaban	2	2						
		baclofen	3	3						
402a	37 y M				U	Unk	Int-U	2		
		methadone	1	1						
		cocaine	2	2						
		benzodiazepine	3	3						
		methamfetamine	4	4						
		amfetamine	5	5						
403ai	37 y M				A	Par	Int-A	2		
		fentanyl	1	1					norfentanyl	4 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	9 ng/mL In Blood (unspecified) @ Autopsy
404a	37 y F				A	Ingst	Int-U	2		
		hydromorphone	1	1					hydromorphone	0.21 mg/L In Blood (unspecified) @ Autopsy
		methadone	2	2					methadone	0.3 mg/L In Blood (unspecified) @ Autopsy
		methadone	2	2					methadone	0.6 mg/L In Blood (unspecified) @ Autopsy
		morphine	3	3					morphine (free)	190 mcg/L In Blood (unspecified) @ Autopsy
		zolpidem	4	4					zolpidem	0.09 mg/L In Blood (unspecified) @ Autopsy
405ai	37 y M				A	Par	Int-A	2		
		fentanyl	1	1					norfentanyl	1.4 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	40 ng/mL In Blood (unspecified) @ Autopsy
406ph	37 y M				U	Ingst	Int-U	2		
		acetaminophen/ hydrocodone	1	1						
		oxycodone	2	2						
		methadone	3	3						
		clonazepam	4	4						
407pha	37 y M				A/C	Ingst + Inhal + - Unk	Int-A	1		
		fentanyl	1	1					fentanyl	0.049 mg/kg In Liver @ Autopsy
		fentanyl	1	1					fentanyl	2 ng/mL In Blood (unspecified) @ 30 m (pe)
		cocaine	2	2					cocaethylene	0.02 mg/L In Blood (unspecified) @ 30 m (pe)
		cocaine	2	2					cocaine	0.032 mg/L In Blood

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										(unspecified) @ 30 m (pe)
		cocaine	2	2					benzoylecognine	0.47 mg/L In Blood (unspecified) @ 30 m (pe)
		ethanol	3	3					ethanol	130 mg/dL In Blood (unspecified) @ Autopsy
408h	38 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	297 mg/L In Serum @ Unknown
		drug, unknown	2	2						
409a	38 y M				A	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1					acetaminophen	561 mcg/mL In Serum @ 1 h (pe)
410ai	38 y F				A	Par	Int-A	2		
		fentanyl	1	1					norfentanyl	1.6 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	14 ng/mL In Blood (unspecified) @ Autopsy
411ai	38 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	11 ng/mL In Blood (unspecified) @ Autopsy
412h	38 y F				C	Ingst	Int-M	2		
		salicylate	1	1					salicylate	28 mg/dL In Serum @ 43 h (pe)
		salicylate	1	1					salicylate	39 mg/dL In Serum @ 31 h (pe)
		salicylate	1	1					salicylate	66 mg/dL In Serum @ 20 h (pe)
		salicylate	1	1					salicylate	79 mg/dL In Serum @ 9 h (pe)
		salicylate	1	1					salicylate	94 mg/dL In Serum @ 1 h (pe)
413h	39 y M				A	Ingst	Int-S	1		
		acetaminophen/aspirin/ caffeine	1	1					acetaminophen	249 mcg/mL In Blood (unspecified) @ 3 h (pe)
		acetaminophen/aspirin/ caffeine	1	1					acetaminophen	346 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen/aspirin/ caffeine	1	1					salicylate	50 mg/dL In Blood (unspecified) @ 3 h (pe)
414h	39 y M				A/C	Ingst	Int-S	2		
		oxycodone	1	1						
		amitriptyline	2	2						
415h	39 y F				A	Ingst	Int-S	1		
		methadone	1	1						
		oxycodone	2	2						
		alprazolam	3	3						
416h	39 y F				A	Ingst	Unt-T	3		
		acetaminophen/ oxycodone	1	1						
417ai	40 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	22 ng/mL In Blood (unspecified) @ Autopsy
418h	40 y F				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	99 mcg/mL In Blood (unspecified) @ Unknown
419pha	40 y F				A/C	Ingst	Int-S	2		
		fentanyl	1	1						
		heroin	2	2						
		alprazolam	3	3					alprazolam	22 ng/mL In Blood

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										(unspecified) @ 1 d (pe)
420pha	40 y M				A/C	Ingst	Int-U	2		
		acetaminophen/ oxycodone	1	1					acetaminophen	42 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	13 mg/dL In Blood (unspecified) @ Unknown
421ha	40 y M				C	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	262 mcg/dL In Serum @ Unknown
		quetiapine	2	2						
422ai	40 y F				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	21 ng/mL In Blood (unspecified) @ Autopsy
423a	40 y F				A	Ingst	Int-S	1		
		hydromorphone	1	1					hydromorphone	0.023 mg/L In Blood (unspecified) @ Autopsy
		hydromorphone	1	1					hydromorphone	0.088 mg/L In Blood (unspecified) @ Unknown
		lisdexamfetamine	2	2					amfetamine	0.2 mg/L In Blood (unspecified) @ Autopsy
		zolpidem	3	3						
		diazepam	4	4					nordiazepam	0.07 mg/L In Blood (unspecified) @ Autopsy
		diazepam	4	4					diazepam	0.1 mg/L In Blood (unspecified) @ Autopsy
424	41 y M				U	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	119 mcg/mL In Blood (unspecified) @ 3 h (pe)
		acetaminophen	1	1					acetaminophen	92 mcg/mL In Blood (unspecified) @ 10 h (pe)
425h	41 y F				A	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen	32.2 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
426h	41 y F				U	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1						
427ai	41 y M				A	Par	Int-A	2		
		fentanyl	1	1					norfentanyl	0.75 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	9.2 ng/mL In Blood (unspecified) @ Autopsy
428pa	41 y F				A/C	Ingst	Int-U	1		
		acetaminophen/ hydrocodone	1	1					dihydrocodeine	0.02 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	1	1					hydrocodone	0.136 mg/L In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	1	1					acetaminophen	16.7 mcg/mL In Serum @ Unknown
		gabapentin	2	2					gabapentin	35.9 mg/L In Blood (unspecified) @ Autopsy
		citalopram	3	3						
429h	41 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1						
430ha	41 y M				U	Ingst	Int-S	1		
		tramadol	1	1					nortramadol	1175 ng/mL In Blood

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										(unspecified) @ Unknown
		tramadol	1	1					tramadol	2936 ng/mL In Blood (unspecified) @ Unknown
		tramadol	1	1					tramadol	50000 ng/mL In Urine (quantitative only) @ Unknown
		tramadol	1	1					nortramadol	50000 ng/mL In Urine (quantitative only) @ Unknown
		baclofen	2	2					baclofen	1631 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	3	3					clonazepam	35.9 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	3	3					7-aminoclonazepam	620 ng/mL In Urine (quantitative only) @ Unknown
		clonazepam	3	3					7-aminoclonazepam	81.9 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	4	4					hydrocodone	5000 ng/mL In Urine (quantitative only) @ Unknown
		acetaminophen/ hydrocodone	4	4					hydromorphone	587 ng/mL In Urine (quantitative only) @ Unknown
		acetaminophen/ hydrocodone	4	4					hydrocodone	76.7 ng/mL In Blood (unspecified) @ Unknown
		escitalopram	5	5					citalopram	753 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	6	6						
431ha	41 y M				A	Ingst	Int-U	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	188 mcg/mL In Serum @ Unknown
432p	41 y M				A	Ingst	Int-A	2		
		methadone	1	1						
		clonidine	2	2						
		alprazolam	3	3						
		promethazine	4	4						
433a	42 y M				A	Ingst	Int-S	2		
		acetaminophen/ oxycodone	1	1						
		dexamethasone	2	2						
		ondansetron	3	3						
		gabapentin	4	4						
		levetiracetam	5	5						
		doxycycline	6	6						
434	42 y M				A	Ingst	Int-S	2		
		acetaminophen/codeine	1	1					acetaminophen	60.7 mcg/mL In Blood (unspecified) @ Unknown
		ibuprofen	2	2						
		ethanol (non-beverage)	3	3						
435p	42 y F				A	Inhal	Int-A	1		
		acetaminophen/ hydrocodone	1	1						
436	42 y F				A/C	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1						
		tramadol	2	2						
		buspirone	3	3						
437h	43 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	111 mcg/mL In Blood (unspecified) @ 10 h (pe)
438	43 y F				A/C	Ingst	Int-U	3		
		diphenhydramine/ ibuprofen	1	1						
439ai	43 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	29 ng/mL In Blood

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
										(unspecified) @ Autopsy
440pha	43 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
		drug, unknown	2	1					acetaminophen	24.9 mg/L In Serum @ Unknown
		drug, unknown	2	1					ibuprofen	47 mg/L In Serum @ Unknown
		ibuprofen	3	3						
441h	43 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ oxycodone	1	1						
		amitriptyline	2	2						
442ai	44 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	4.2 ng/mL In Blood (unspecified) @ Autopsy
443h	44 y F				A	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen	14 mcg/mL In Serum @ 1 d (pe)
		acetaminophen	1	1					acetaminophen	33 mcg/mL In Serum @ 1 h (pe)
		ethanol	2	2					ethanol	39 mg/dL In Serum @ 1 h (pe)
444pa	44 y M				U	Ingst + Unk	Int-A	1		
		fentanyl	1	1					fentanyl	53 mcg/L In Liver @ Autopsy
		fentanyl	1	1					fentanyl	9 mcg/mL In Blood (unspecified) @ Autopsy
		heroin	2	2					6-monoacetylmorphine	0.029 mg/L In Urine (quantitative only) @ Autopsy
		methamfetamine	3	3					methamfetamine	0.27 mg/L In Blood (unspecified) @ Autopsy
		ethanol	4	4						
445ha	44 y F				U	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen	60 mcg/mL In Blood (unspecified) @ Unknown
		salicylate	2	2					salicylate	16 mg/dL In Blood (unspecified) @ Unknown
[446ha]	44 y F				A	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1					diphenhydramine	0.49 mcg/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ diphenhydramine	1	1					acetaminophen	192.2 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	0.375 g/dL In Blood (unspecified) @ Unknown
447ph	44 y M				A	Ingst	Int-A	2		
		methadone	1	1						
448ha	44 y F				A/C	Ingst	Int-S	1		
		acetaminophen/ oxycodone	1	1					acetaminophen	44.9 mg/L In Serum @ 30 m (pe)
		acetaminophen/ oxycodone	1	1					acetaminophen	82 mg/L In Serum @ Unknown
		bupropion (extended release)	2	2						
		diazepam	3	3						
		carisoprodol	4	4						
		topiramate	5	5						
		fentanyl	6	6						
		cetirizine	7	7						
449	44 y F				A/C	Ingst	Int-S	1		
		colchicine	1	1						
450p	44 y M				A	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen	49 mcg/mL In Serum @ Unknown

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
451h	44 y F				A/C	Ingst	Int-U	1		
		acetaminophen/ diphenhydramine	1	1					acetaminophen	145 mcg/mL In Blood (unspecified) @ Unknown
		cyclobenzaprine	2	2						
452h	44 y F				U	Ingst	Unk	2		
		acetaminophen/ hydrocodone	1	1						
		acetaminophen	2	2					acetaminophen	28.9 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	3	3						
453h	45 y F				A	Ingst	Int-S	2		
		acetaminophen/codeine	1	1					acetaminophen	106 mcg/mL In Blood (unspecified) @ Unknown
		alprazolam	2	2						
		gabapentin	3	3						
454h	45 y M				A	Ingst	Int-M	1		
		salicylate	1	1					salicylate	115.5 mg/dL In Serum @ Unknown
		salicylate	1	1					salicylate	82 mg/dL In Serum @ Unknown
		acetaminophen	2	2						
		ibuprofen	3	3						
455h	45 y F				A	Ingst	Unk	2		
		hydromorphone	1	1						
456ha	45 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	230 mcg/mL In Whole Blood @ 1 d (pe)
		acetaminophen	1	1					acetaminophen	64.5 mcg/mL In Whole Blood @ 2 d (pe)
		acetaminophen	1	1					acetaminophen	698 mcg/mL In Whole Blood @ Unknown
457	45 y M				A	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen	24 mcg/mL In Serum @ Unknown
[458ha]	46 y F				U	Ingst	Int-S	1		
		tapentadol (extended release)	1	1					tapentadol	310 ng/mL In Blood (unspecified) @ Unknown
		bupropion (extended release)	2	2					bupropion	180 ng/mL In Blood (unspecified) @ Unknown
		diazepam	3	3					nordiazepam	150 ng/mL In Blood (unspecified) @ Unknown
		amitriptyline	4	4					nortriptyline	30 ng/mL In Blood (unspecified) @ Unknown
459ph	46 y F				A	Unk	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	187 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	34 mg/dL In Blood (unspecified) @ Unknown
		baclofen	3	3						
		beta blocker	4	4						
		pregabalin	5	5						
		trazodone	6	6						
		lisinopril	7	7						
460h	46 y M				U	Ingst	Int-S	2		
		acetaminophen	1	1						
461h	46 y M				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	251 mg/L In Serum @ 18 h (pe)
		ethanol	2	2					ethanol	71 mg/dL In Serum @ 18 h (pe)
462ha	46 y F				U	Unk	Unk	1		
		acetaminophen	1	1					acetaminophen	178 mg/mL In Blood (unspecified) @ Unknown
		liraglutide	2	2						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
463ha	47 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	83 mcg/mL In Blood (unspecified) @ Unknown
		salicylate	2	2					salicylate	59.9 mg/L In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	84 mg/dL In Blood (unspecified) @ Unknown
464pa	47 y M				C	Ingst	Int-S	1		
		oxycodone	1	1					oxycodone	44915.6 ng/mL In Urine (quantitative only) @ Autopsy
		oxycodone	1	1					oxycodone	6.53 mg/L In Blood (unspecified) @ Autopsy
		oxymorphone	2	2					oxymorphone	0.05 mg/L In Whole Blood @ Autopsy
		oxymorphone	2	2					oxycodone	18049.4 ng/mL In Urine (quantitative only) @ Autopsy
		diazepam	3	3						
465	47 y M				C	Ingst	Int-M	3		
		caffeine/salicylamide/ salicylate	1	1						
466h	48 y F				C	Ingst	Unt-T	1		
		acetaminophen/ diphenhydramine	1	1						
		acetaminophen/ oxycodone	2	2						
467h	48 y M				U	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen	61 mcg/mL In Blood (unspecified) @ Unknown
468pa	48 y F				U	Ingst	Int-U	1		
		buprenorphine (sublingual tablet)	2	1					buprenorphine	0.025 mg/kg In Liver @ Autopsy
		buprenorphine (sublingual tablet)	2	1					norbuprenorphine	0.06 mg/kg In Liver @ Autopsy
		buprenorphine (sublingual tablet)	2	1					buprenorphine	2.2 ng/mL In Blood (unspecified) @ Autopsy
		buprenorphine (sublingual tablet)	2	1					norbuprenorphine	5.8 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	1	1					oxymorphone	0.013 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	1	1					oxycodone	0.19 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	3	3					alprazolam	0.023 mg/L In Blood (unspecified) @ Autopsy
		gabapentin	4	4					gabapentin	11 mg/L In Blood (unspecified) @ Autopsy
		clonazepam	5	5					7-aminoclonazepam	0.025 mg/L In Blood (unspecified) @ Autopsy
		amitriptyline	6	6					nortriptyline	0.3 mg/L In Blood (unspecified) @ Autopsy
		amitriptyline	6	6					amitriptyline	0.34 mg/L In Blood (unspecified) @ Autopsy
		diphenhydramine	7	7						
		diazepam	8	8					nordiazepam	0.024 mg/L In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
469	48 y F				A/C	Ingst	Int-U	3		
		methadone	1	1						
		clonazepam	2	2						
470ha	48 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	601 mcg/mL In Serum @ 1 h (pe)
471pa	48 y F				A	Ingst + Vag	Int-U	1		
		oxycodone	1	1					oxycodone	291 ng/mL In Blood (unspecified) @ Autopsy
472h	48 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	41 mcg/mL In Blood (unspecified) @ Unknown
473h	48 y F				U	Ingst	Unk	1		
		acetaminophen/ diphenhydramine	1	1						
		tramadol	2	2						
		hydrocodone	3	3						
474	49 y M				C	Ingst	Int-M	1		
		acetaminophen	1	1						
475ph	49 y M				A	Ingst	Unk	2		
		methadone	1	1						
		ethylene glycol (antifreeze)	2	2						
476p	49 y F				A	Ingst	Int-S	3		
		acetaminophen	1	1						
		ethanol	2	2						
		drug, unknown	3	3						
477h	49 y M				U	Ingst	Int-S	1		
		acetaminophen/ oxycodone	1	1					acetaminophen	174.8 mcg/mL In Blood (unspecified) @ 7 m (pe)
		morphine (extended release)	2	2						
		diazepam	3	3						
		skeletal muscle relaxant	4	4						
478h	49 y M				C	Ingst	Int-M	3		
		acetaminophen	1	1					acetaminophen	10 mcg/mL In Blood (unspecified) @ Unknown
479ph	49 y F				A/C	Ingst	Int-S	1		
		acetaminophen	1	1						
		carisoprodol	2	2						
480h	49 y M				A	Unk	Unk	3		
		acetaminophen/ bultalbital	1	1					acetaminophen	6 mcg/mL In Blood (unspecified) @ Unknown
481hi	49 y F				A/C	Ingst	Unt-M	1		
		acetaminophen	1	1					acetaminophen	191 mcg/mL In Serum @ Unknown
482	49 y F				A/C	Ingst	Int-S	2		
		oxycodone (extended release)	1	1						
		clonazepam	2	2						
483pa	50 y F				A/C	Ingst	Int-S	1		
		oxycodone	1	1					oxycodone	840 ng/mL In Blood (unspecified) @ Autopsy
		oxmorphone (extended release)	2	2					oxymorphone	43 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen	3	3					acetaminophen	80 mcg/mL In Blood (unspecified) @ Autopsy
		diphenhydramine	4	4					diphenhydramine	570 ng/mL In Blood (unspecified) @ Autopsy
		bupropion	5	5					bupropion	140 ng/mL In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		topiramate	6	6					topiramate	3.7 mcg/mL In Blood (unspecified) @ Autopsy
		diazepam	7	7					nordiazepam	0.58 mcg/mL In Blood (unspecified) @ Autopsy
		diazepam	7	7					diazepam	0.93 mcg/mL In Blood (unspecified) @ Autopsy
484a	50 y F				A	Ingst	Int-U	1		
		acetaminophen	1	1					acetaminophen	88 mcg/mL In Blood (unspecified) @ 1 d (pe)
		ibuprofen	2	2						
485p	50 y F				A/C	Ingst	Int-S	3		
		oxycodone	1	1						
		alprazolam	2	2						
486ph	50 y F				A	Ingst	Int-U	2		
		acetaminophen/ oxycodone	1	1						
		ethanol	2	2						
487ai	50 y M				A	Par	Int-A	2		
		fentanyl	1	1					norfentanyl	2.8 ng/mL In Blood (unspecified) @ Unknown
		fentanyl	1	1					fentanyl	20 ng/mL In Blood (unspecified) @ Autopsy
488h	50 y M				U	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	158 mcg/mL In Blood (unspecified) @ 3 d (pe)
		acetaminophen	1	1					acetaminophen	201 mcg/mL In Blood (unspecified) @ 2 d (pe)
		acetaminophen	1	1					acetaminophen	246 mcg/mL In Blood (unspecified) @ 1 d (pe)
		acetaminophen	1	1					acetaminophen	495.4 mcg/mL In Blood (unspecified) @ Unknown
489h	50 y M				A	Ingst	Int-A	1		
		acetaminophen	1	1					acetaminophen	12 mcg/mL In Blood (unspecified) @ Unknown
		ethanol (non-beverage)	2	2						
		ibuprofen	3	3						
490ph	51 y M				U	Ingst	Int-S	1		
		acetaminophen/ diphenhydramine	1	1						
		clonazepam	2	2						
491	51 y M				A/C	Ingst	AR-D	2		
		acetaminophen	1	1						
492	51 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1						
493ha	51 y F				U	Ingst	Int-S	2		
		methadone	1	1					methadone	0.2 mg/kg In Whole Blood @ 50 m (pe)
		acetaminophen/dextro-methorphan/ doxylamine	2	2						
		acetaminophen	3	3						
494h	51 y M				U	Ingst	Unt-T	3		
		acetaminophen/ salicylate	2	1						
		ethanol	1	1						
		ibuprofen	3	3						
		sulfasalazine	4	4						
		doxycycline	5	5						
495h	51 y F				A/C	Ingst	Int-S	1		
		acetaminophen	1	1						
		propranolol	2	2						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
496p	52 y F				A	Ingst	Int-S	3		
		hydrocodone	1	1						
497h	52 y F				A	Ingst	Int-U	1		
		morphine (extended release)	1	1						
498	52 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1						
499	52 y M				U	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen	42.7 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen	43.9 mcg/mL In Blood (unspecified) @ 5 h (pe)
500ha	52 y F				A/C	Unk	Unk	2		
		hydromorphone	1	1					hydromorphone	0.01 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	2	2					oxycodone	0.18 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	2	2					oxycodone	0.37 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	3	3					alprazolam	0.057 mg/L In Blood (unspecified) @ Autopsy
501h	52 y M				A/C	Ingst	Int-S	3		
		tramadol	1	1						
		hydroxyzine	2	2						
		trazodone	3	3						
		lorazepam	4	4						
502p	52 y M				A	Ingst	Int-S	1		
		oxycodone	1	1						
503h	53 y M				C	Ingst	AR-D	3		
		colchicine	1	1						
504ai	53 y M				A	Par	Int-A	2		
		fentanyl	1	1					norfentanyl	2.4 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	3.2 ng/mL In Blood (unspecified) @ Autopsy
505ha	53 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		clonazepam	2	2						
506ha	53 y M				C	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	310 mg/L In Blood (unspecified) @ 2 d (pe)
		acetaminophen	1	1					acetaminophen	43 mg/L In Blood (unspecified) @ Autopsy
		trazodone	2	2						
		tramadol	3	3					tramadol	0.031 mg/L In Blood (unspecified) @ 2 d (pe)
		cocaine	4	4					benzoylecognine	0.25 mg/L In Blood (unspecified) @ Autopsy
507h	53 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
		quetiapine	2	2						
508ha	53 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	330 mcg/mL In Serum @ Unknown
		hydrocodone	2	2					hydrocodone (free)	1000 mcg/mL In Serum @ Unknown
		dihydrocodeine	3	3					dihydrocodeine	59 ng/mL In Serum @ Unknown
		hydromorphone	4	4					hydromorphone	4.9 ng/mL In Serum @ Unknown

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
509	53 y M				C	Ingst	Int-S	2		
		acetaminophen	1	1						
510h	53 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ oxycodone	1	1						
		oxycodone (extended release)	2	2						
		tramadol	3	3						
		promethazine	4	4						
		zolpidem (extended release)	5	5						
		levothyroxine	6	6						
511ph	53 y F				A	Ingst	Int-S	1		
		buprenorphine/naloxone	1	1						
		quetiapine	2	2						
		ethanol	3	3						
512ha	53 y M				A/C	Ingst	Int-S	1		
		acetaminophen/ oxycodone	1	1					hydrocodone	0.22 mg/L In Serum @ Unknown
		acetaminophen/ oxycodone	1	1					hydromorphone	0.8 mg/L In Serum @ Unknown
		acetaminophen/ oxycodone	1	1					acetaminophen	50 mg/dL In Serum @ Unknown
		morphine	2	2					morphine	0.1 mg/L In Serum @ Unknown
		salicylate	3	3						
		carisoprodol	4	4						
		pregabalin	5	5						
513pi	54 y M				A/C	Ingst	Int-U	2		
		oxycodone	1	1						
514h	54 y M				U	Ingst	Unt-M	1		
		acetaminophen	1	1					acetaminophen	167 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	76 mg/dL In Blood (unspecified) @ Unknown
515h	54 y F				C	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	44 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
		salicylate	3	3					salicylate	8.5 mg/dL In Blood (unspecified) @ Unknown
516pha	54 y M				A/C	Ingst	Int-U	1		
		acetaminophen/codeine	1	1					codeine	0.038 mg/L In Blood (unspecified) @ 20 m (pe)
		acetaminophen/codeine	1	1					morphine	0.13 mg/L In Blood (unspecified) @ 20 m (pe)
		metaxalone	2	2						
		gabapentin	3	3					gabapentin	28 mg/kg In Blood (unspecified) @ 20 m (pe)
		trazodone	4	4						
		loratadine	5	5						
		clorazepate	6	6					nordiazepam	0.06 mg/kg In Blood (unspecified) @ 20 m (pe)
517h	55 y F				A/C	Ingst	Int-S	3		
		oxymorphone	1	1						
		trazodone	2	2						
		quetiapine	3	3						
		sertraline	4	4						
		lithium	5	5						
		clonazepam	6	6						
518	55 y F				A	Ingst	Int-U	3		
		methadone	1	1						
		acetaminophen/ hydrocodone	2	2						

(*continued*)

Table 21. Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
519ha	55 y M				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen	26.9 mcg/mL In Serum @ 40 h (pe)
		acetaminophen	1	1					acetaminophen	41 mcg/mL In Serum @ 12 h (pe)
		acetaminophen	1	1					acetaminophen	47 mcg/mL In Serum @ Unknown
520p	55 y M				A/C	Ingst	Int-S	2		
		acetaminophen/ oxycodone	1	1						
		morphine (extended release)	2	2						
521	55 y F				A	Ingst	Int-S	2		
		methadone	1	1						
		diazepam	2	2						
522h	55 y F				U	Ingst	Int-S	2		
		acetaminophen/ diphenhydramine	1	1					diphenhydramine	1800 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ diphenhydramine	1	1					acetaminophen	24 mcg/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ diphenhydramine	1	1					acetaminophen	57 mcg/mL In Blood (unspecified) @ 15 m (pe)
		fluoxetine	2	2					fluoxetine	55 ng/mL In Blood (unspecified) @ Autopsy
		lorazepam	3	3					lorazepam	21 ng/mL In Blood (unspecified) @ Autopsy
523ph	55 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	13.6 mcg/mL In Blood (unspecified) @ 1 d (pe)
524ph	56 y M				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					hydromorphone	15 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					hydrocodone	1877 ng/mL In Blood (unspecified) @ Unknown
525ph	56 y F				U	Ingst	Int-S	1		
		acetaminophen/opioid	1	1						
		alprazolam	2	2						
526h	56 y F				A	Ingst	Unt-T	2		
		colchicine	1	1						
527	56 y M				C	Ingst	Int-S	1		
		acetaminophen/ codeine	1	1					acetaminophen	224 mcg/mL In Serum @ Unknown
		acetaminophen/ codeine	1	1					acetaminophen	268 mcg/mL In Serum @ Unknown
528ph	56 y M				A/C	Ingst	Int-S	3		
		tramadol	1	1						
529pa	56 y F				A	Ingst	Int-U	1		
		morphine	1	1					morphine (free)	0.37 mg/L In Blood (unspecified) @ 1 h (pe)
		morphine	1	1					morphine	1.19 mg/dL In Blood (unspecified) @ 1 h (pe)
		benzodiazepine	2	2					7-aminoclonazepam	25 ng/mL In Blood (unspecified) @ 1 h (pe)
		benzodiazepine	2	2					clonazepam	5.6 ng/mL In Blood (unspecified) @ 1 h (pe)
530h	56 y F				U	Ingst	Int-U	2		
		acetaminophen	1	1						
		acetaminophen/ hydrocodone	2	2						
531p	56 y F				A	Ingst	Int-S	2		
		tramadol	1	1						
		cyclobenzaprine	2	2						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminophen	3	3					acetaminophen	163 mcg/mL In Blood (unspecified) @ Unknown
532h	56 y F				U	Ingst	Int-U	3		
		acetaminophen	1	1						
533	57 y F				A	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1						
		Iron	2	2						
		gamma-aminobutyric acid	3	3						
534ha	57 y M				A	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen	561 mcg/mL In Serum @ Unknown
		acetaminophen/ hydrocodone	2	2						
535ph	57 y M				U	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	109 mcg/mL In Serum @ 1 h (pe)
		ethanol	2	2					ethanol	382 mg/dL In Serum @ 1 h (pe)
536p	57 y F				U	Ingst	Unk	2		
		acetaminophen/ oxycodone	1	1					oxycodone	4000 ng/mL In Urine (quantitative only) @ Unknown
		oxymorphone	2	2					oxymorphone	592 ng/mL In Urine (quantitative only) @ Unknown
537	57 y F				A	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen	154 mcg/mL In Blood (unspecified) @ 48 h (pe)
		acetaminophen	1	1					acetaminophen	214 mcg/mL In Blood (unspecified) @ 24 h (pe)
		acetaminophen	1	1					acetaminophen	400 mcg/mL In Blood (unspecified) @ 1 h (pe)
		benzodiazepine	2	2						
538ph	58 y F				A/C	Ingst	Int-S	1		
		codeine	1	1					codeine	7621 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.097 g/dL In Blood (unspecified) @ Unknown
		ethanol	2	2					ethanol	115 mg/dL In Serum @ Unknown
		acetaminophen/ hydrocodone	3	3					acetaminophen	141 mcg/mL In Serum @ Unknown
		methamfetamine	4	4					methamfetamine	82 mg/mL In Blood (unspecified) @ Unknown
		amitriptyline	5	5						
539h	58 y F				A/C	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	443 mg/L In Serum @ 6 h (pe)
		acetaminophen	1	1					acetaminophen	667.8 mg/L In Serum @ 15 m (pe)
		clonidine	2	2						
		enalapril	3	3						
		sertraline	4	4						
		risperidone	5	5						
		ibuprofen	6	6						
540ha	58 y F				A	Ingst	Int-S	2		
		diphenhydramine/ ibuprofen	1	1					diphenhydramine	4603 ng/mL In Blood (unspecified) @ Unknown
		diphenhydramine/ ibuprofen	1	1					ibuprofen	97.9 mcg/mL In Blood (unspecified) @ Unknown
		clonazepam	2	2					7-aminoclonazepam	12.9 ng/mL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		clonazepam	2	2					clonazepam	6.3 ng/mL In Blood (unspecified) @ Unknown
		olanzapine	3	3					olanzapine	52.7 ng/mL In Blood (unspecified) @ Unknown
		venlafaxine	4	4					venlafaxine	132 ng/mL In Blood (unspecified) @ Unknown
		venlafaxine	4	4					norvenlafaxine	439 ng/mL In Blood (unspecified) @ Unknown
541h	58 y F				A/C	Ingst	Int-M	2		
		acetaminophen	1	1						
542h	58 y F				A/C	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	42.5 mcg/mL In Blood (unspecified) @ 24 h (pe)
		ethanol	2	2						
543h	58 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	682.6 mcg/mL In Blood (unspecified) @ Unknown
		drug, unknown	2	2						
544ph	58 y M				A	Par	Int-U	1		
		hydrocodone	1	1						
		salicylate	2	2					salicylate	7 mg/dL In Blood (unspecified) @ Unknown
545ha	58 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	2	1					acetaminophen	79 mcg/mL In Blood (unspecified) @ Unknown
		amlodipine	1	1						
		amitriptyline	3	3						
		cyclobenzaprine	4	4						
		fentanyl (transdermal)	5	5						
		clonazepam	6	6						
		sertraline	7	7						
		mirtazapine	8	8						
		temazepam	9	9						
		ethanol	10	10						
546	58 y F				A	Ingst	Int-S	2		
		oxycodone	1	1						
		escitalopram	2	2						
		ibuprofen	3	3						
547ha	59 y M				U	Ingst + Aspir	Int-S	2		
		acetaminophen	1	1						
		hydrocodone	2	2					hydrocodone	0.22 mcg/mL In Blood (unspecified) @ Unknown
		diazepam	3	3					diazepam	0.055 mcg/mL In Blood (unspecified) @ Unknown
		benzodiazepine	4	4					nordiazepam	0.057 mcg/mL In Blood (unspecified) @ Unknown
		diphenhydramine	5	5					diphenhydramine	0.12 mcg/mL In Blood (unspecified) @ Unknown
548	59 y F				A	Ingst	Int-M	3		
		acetaminophen	1	1						
549ai	59 y M				A	Par	Int-A	2		
		fentanyl	1	1					fentanyl	7.3 ng/mL In Blood (unspecified) @ Autopsy
550h	59 y F				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	300 mcg/mL In Serum @ 30 m (pe)
		lorazepam	2	2						
		tramadol	3	3						
		marijuana	4	4						
		barbiturate	5	5						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
551a	59 y F				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	121 mg/dL In Blood (unspecified) @ 1 h (pe)
552h	59 y F				A	Ingst	Int-S	2		
		acetaminophen/ oxycodone	1	1						
		carisoprodol	2	2						
		diazepam	3	3						
553h	59 y F				U	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	61.2 mcg/mL In Serum @ Unknown
		zolpidem	2	2						
		ethanol	3	3						
554h	59 y M				A	Ingst	Int-S	2		
		acetaminophen/ oxycodone	1	1						
		tamsulosin	2	2						
		gabapentin	3	3						
555ha	59 y F				U	Ingst	Int-S	2		
		methadone	1	1					methadone	110 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	2	2						
556ph	59 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ oxycodone	1	1					acetaminophen	27 mg/L In Serum @ Unknown
		lorazepam	2	1						
557	59 y F				A/C	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
		ibuprofen	2	2						
		diphenhydramine	3	3						
558ha	60 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	579 mcg/mL In Blood (unspecified) @ Autopsy
		salicylate	1	1					salicylate	65 mg/dL In Blood (unspecified) @ 15 m (pe)
559pa	60 y M				C	Ingst	Unt-T	1		
		oxycodone	1	1					oxymorphone	0.067 mg/L In Blood (unspecified) @ Autopsy
		oxycodone	1	1					oxycodone	0.28 mg/L In Blood (unspecified) @ Autopsy
		clonazepam	2	2					7-aminoclonazepam	0.088 mg/L In Blood (unspecified) @ Autopsy
		gabapentin	3	3					gabapentin	21 mg/L In Blood (unspecified) @ Autopsy
		methocarbamol	4	4						
560h	60 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	45 mcg/mL In Plasma @ Unknown
		oxycodone	2	2						
561ph	2 m F				A/C	Ingst	AR-D	2		
		methadone	1	1					methadone	160 ng/mL In Blood (unspecified) @ Autopsy
562h	60 y F				A/C	Ingst	Int-S	3		
		acetaminophen/ hydrocodone	1	1					acetaminophen	225 mcg/mL In Blood (unspecified) @ Unknown
		carisoprodol	2	2						
		eszopiclone	3	3						
		salicylate	4	4					salicylate	8 mg/dL In Unknown @ Unknown
563p	60 y F				A	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	131.7 mcg/mL In Blood (unspecified) @ 1 h (pe)
		clonazepam	2	2						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
564h	61 y F				A/C	Ingst	Int-M	1		
		acetaminophen	1	1						
565pha	61 y F				A/C	Ingst	Int-S	1		
		morphine	1	1					morphine	0.26 mg/L In Blood (unspecified) @ Autopsy
		morphine	1	1					morphine	3.6 mg/L In Urine (quantitative only) @ Autopsy
		lorazepam	2	2					lorazepam	0.058 mg/L In Blood (unspecified) @ Autopsy
		clonazepam	3	3					7-aminoclonazepam	0.042 mg/L In Blood (unspecified) @ Autopsy
		hydrocodone	4	4					hydrocodone	0.013 mg/L In Blood (unspecified) @ Autopsy
		hydrocodone	4	4					hydromorphone	0.083 mg/L In Urine (quantitative only) @ Autopsy
		hydrocodone	4	4					hydrocodone	2.8 mg/L In Urine (quantitative only) @ Autopsy
		acetaminophen	5	5					acetaminophen	11 mcg/mL In Plasma @ Unknown
566pa	61 y F				U	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					hydromorphone	1.1 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					hydrocodone (free)	130 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					acetaminophen	38 ng/mL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	1	1					dihydrocodeine/hydro-codol (free)	45 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	2	2					alprazolam	59 ng/mL In Blood (unspecified) @ Unknown
		sertraline	3	3					desmethylsertraline	170 ng/mL In Blood (unspecified) @ Unknown
		sertraline	3	3					sertraline	57 ng/mL In Blood (unspecified) @ Unknown
		ethanol	4	4					ethanol	25 mg/dL In Serum @ 1 h (pe)
		lisinopril	5	5						
567ha	61 y F				U	Ingst	Unk	1		
		acetaminophen	1	1						
		drug, unknown	2	2						
568ai	62 y F				A	Par	Int-A	2		
		fentanyl	1	1					norfentanyl	1.3 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	12 ng/mL In Blood (unspecified) @ Autopsy
569ph	62 y F				A/C	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	13 mg/L In Serum @ Unknown
		acetaminophen/ hydrocodone	2	2						
		clonazepam	3	3						
570h	62 y M				A	Ingst	Int-S	3		
		acetaminophen/ diphenhydramine	1	1					acetaminophen	143 mg/L In Serum @ 28 h (pe)
		acetaminophen/ diphenhydramine	1	1					acetaminophen	195 mg/L In Serum @ 21 h (pe)
		acetaminophen/ diphenhydramine	1	1					acetaminophen	241 mg/L In Serum @ 18 h (pe)

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminophen/ diphenhydramine	1	1					acetaminophen	442 mg/L In Serum @ 6 h (pe)
		acetaminophen/ diphenhydramine	1	1					acetaminophen	534.5 mg/L In Serum @ 30 m (pe)
571ai	62 y M				A	Par	Int-A	2		
		fentanyl	1	1					norfentanyl	1.4 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	10 ng/mL In Blood (unspecified) @ Autopsy
572ha	62 y F				U	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen	110 mcg/mL In Blood (unspecified) @ Autopsy
		acetaminophen	1	1					acetaminophen	76 mcg/mL In Blood (unspecified) @ Unknown
		propoxyphene	2	2					propoxyphene	3.3 mcg/mL In Blood (unspecified) @ Autopsy
		propoxyphene	2	2					norpropoxyphene	4.5 mcg/mL In Blood (unspecified) @ Autopsy
		morphine	3	3					morphine (free)	30 ng/mL In Blood (unspecified) @ Autopsy
		diphenhydramine	4	4					diphenhydramine	330 ng/mL In Blood (unspecified) @ Autopsy
		amfetamine	5	5						
573ph	63 y M				A/C	Ingst	Int-U	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	65 mcg/mL In Serum @ Unknown
		oxycodone	2	2						
574a	63 y F				A/C	Ingst + Derm	Unk	2		
		oxycodone	1	1					oxycodone	66 mcg/L In Blood (unspecified) @ Unknown
		fentanyl (transdermal)	2	2					fentanyl	3 mcg/L In Blood (unspecified) @ Unknown
575	63 y F				A	Ingst	Int-U	1		
		salicylate	1	1					salicylate	70 mg/dL In Plasma @ 6 h (pe)
		salicylate	1	1					salicylate	83 mg/dL In Plasma @ 10 h (pe)
576h	63 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	279 mcg/mL In Blood (unspecified) @ Unknown
577a	63 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	201 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	1	1					acetaminophen	437 mcg/mL In Blood (unspecified) @ 1 h (pe)
		ethanol	2	2					ethanol	20 mg/dL In Blood (unspecified) @ Unknown
		benzodiazepine	3	3						
		mirtazapine	4	4						
		oxcarbazepine	5	5						
578	63 y F				U	Ingst	Unk	3		
		salicylate	1	1					salicylate	57.2 mg/dL In Blood (unspecified) @ 1 h (pe)
		acetaminophen	2	2					acetaminophen	15 mcg/mL In Blood (unspecified) @ 1 h (pe)
579a	65 y F				A	Ingst	Int-S	2		
		methadone	1	1					methadone	0.06 mg/L In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		benzodiazepine	2	2					alprazolam	11 ng/mL In Blood (unspecified) @ Unknown
580hi	65 y M				A	Ingst	Unk	2		
		acetaminophen/ oxycodone	1	1					acetaminophen	44 mcg/mL In Serum @ Unknown
581h	65 y M				A	Ingst	Unk	2		
		salicylate	1	1					salicylate	20.8 mg/dL In Blood (unspecified) @ Unknown
582h	65 y F				A	Ingst	Unk	2		
		acetaminophen	1	1						
583p	65 y F				A/C	Ingst	Int-S	1		
		oxycodone	1	1					oxycodone	6100 ng/mL In Blood (unspecified) @ Autopsy
584h	65 y M				U	Ingst	Int-S	3		
		acetaminophen	1	1					acetaminophen	134 mcg/mL In Unknown @ Unknown
		acetaminophen	1	1					acetaminophen	174 mcg/mL In Unknown @ Unknown
		ethanol	2	2					ethanol	34 mg/dL In Unknown @ Unknown
585ph	65 y M				A/C	Ingst	Int-M	2		
		acetaminophen	1	1						
		metformin	2	2						
586i	66 y F				U	Ingst	Int-S	2		
		tramadol	1	1						
		acetaminophen	2	2						
		cyclobenzaprine	3	3						
		diphenhydramine	4	4						
		quetiapine	5	5						
		ethanol	6	6						
587	66 y F				A	Ingst	Int-U	1		
		acetaminophen/ oxycodone	1	1						
588h	66 y M				A	Ingst	Int-S	2		
		acetaminophen	1	1						
589ph	66 y F				A	Ingst	Unk	2		
		oxycodone	1	1						
[590ha]	66 y F				U	Unk	Unk	1		
		salicylate	1	1					salicylate	35983 mg/kg In Gastric (stomach content) @ Autopsy
		salicylate	1	1					salicylate	77.16 mg/dL In Blood (unspecified) @ 15 m (pe)
		salicylate	1	1					salicylate	85.51 mg/dL In Blood (unspecified) @ Autopsy
		acetaminophen	2	2					acetaminophen	33.2 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	2	2					acetaminophen	338.2 mg/kg In Gastric (stomach content) @ Autopsy
		acetaminophen	2	2					acetaminophen	40.3 mcg/mL In Blood (unspecified) @ Autopsy
591a	66 y F				C	Ingst	Int-M	1		
		salicylate	1	1					salicylate	47 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	530 mg/L In Blood (unspecified) @ Autopsy
		propranolol	2	2						
		acetaminophen/ oxycodone	3	3						
		ethanol	4	4						
		warfarin	5	5						
		furosemide	6	6						
		diazepam	7	7						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
592h	67 y M				A	Ingst	Int-S	1		
		salicylate	1	1						
		venlafaxine	2	2						
593pha	67 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1						
594p	67 y F				A/C	Ingst	Int-S	2		
		oxycodone (extended release)	1	1						
		diazepam	2	2						
595	67 y M				C	Ingst	Int-M	3		
		colchicine	1	1						
596	67 y F				U	Ingst	Int-S	1		
		acetaminophen/butalbital/caffeine	1	1					acetaminophen	109 mcg/mL In Serum @ 1 h (pe)
597pha	67 y F				A	Ingst	Int-S	2		
		acetaminophen/hydrocodone	1	1					acetaminophen	86 mcg/mL In Serum @ Unknown
		ethanol	2	2					ethanol	18 mg/dL In Plasma @ Unknown
598	68 y F				A	Ingst	Int-S	1		
		acetaminophen/codeine	1	1					acetaminophen	506 mg/mL In Serum @ Unknown
		ibuprofen	2	2						
599	68 y F				C	Ingst	Unk	1		
		acetaminophen/oxycodone	1	1					acetaminophen	31 mcg/mL In Serum @ 14 h (pe)
600h	68 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	273.6 mg/L In Serum @ 1 d (pe)
		acetaminophen	1	1					acetaminophen	323.3 mg/L In Serum @ 1 d (pe)
		acetaminophen	1	1					acetaminophen	368.4 mg/L In Serum @ Unknown
601	68 y U				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	80.4 mg/dL In Blood (unspecified) @ 1 h (pe)
602h	68 y F				U	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	13.5 mcg/mL In Blood (unspecified) @ Unknown
		oxycodone	2	2						
603h	68 y F				C	Ingst	Int-M	2		
		acetaminophen/hydrocodone	1	1					acetaminophen	83 mcg/mL In Blood (unspecified) @ Unknown
604ph	69 y F				A	Ingst	Int-S	1		
		acetaminophen/oxycodone	1	1					acetaminophen	60 mcg/mL In Blood (unspecified) @ Unknown
605	69 y M				A	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen	196 mcg/mL In Blood (unspecified) @ Unknown
		salicylate	2	2					salicylate	32 mg/dL In Blood (unspecified) @ Unknown
606ha	70 y F				U	Ingst	Int-U	1		
		salicylate	1	1					salicylate	14.8 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	41.9 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	46.3 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	57.3 mg/dL In Blood (unspecified) @ Unknown
607h	70 y F				A/C	Ingst	Int-S	3		
		acetaminophen/hydrocodone	1	1						
		metoprolol	2	2						
		gabapentin	3	3						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
608a	70 y M				C	Ingst	Unk	1		
		acetaminophen	1	1						
609h	70 y F				U	Ingst	Int-S	1		
		salicylate	1	1					salicylate	130 mg/dL In Blood (unspecified) @ Unknown
610a	70 y F				A	Ingst	Int-U	1		
		acetaminophen/ codeine	1	1						
611	70 y F				A	Ingst	Int-S	2		
		morphine	1	1						
612h	71 y F				A/C	Ingst	Int-U	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	11.3 mcg/mL In Blood (unspecified) @ Unknown
613h	71 y M				A	Ingst	Int-S	2		
		acetaminophen/ oxycodone	1	1					acetaminophen	12.6 mcg/mL In Serum @ 15 m (pe)
614	71 y M				A	Ingst	Int-S	1		
		acetaminophen	1	1						
615ph	71 y F				A/C	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1					acetaminophen	233 mcg/mL In Blood (unspecified) @ Unknown
		alprazolam	2	2						
		hydrochlorothiazide	3	3						
616ha	72 y M				A/C	Ingst	Int-S	1		
		meperidine	1	1					meperidine	12.7 mmol/L In Whole Blood @ Autopsy
		meperidine	1	1					meperidine	8.8 mcg/mL In Blood (unspecified) @ 3 h (pe)
		amlodipine	2	2						
617h	72 y F				A	Ingst	Int-S	3		
		acetaminophen/ oxycodone	1	1						
		metoprolol	2	2						
618ha	72 y F				U	Ingst	Unk	1		
		tramadol	1	1						
		benzodiazepine	2	2						
		oxycodone	3	3						
619	72 y F				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1						
620h	73 y M				U	Ingst	Int-U	2		
		morphine	1	1						
621	74 y F				U	Ingst	Unk	2		
		acetaminophen	1	1					acetaminophen	176 mcg/mL In Blood (unspecified) @ Unknown
622	75 y M				A	Ingst	Int-S	3		
		acetaminophen/ oxycodone	1	1					acetaminophen	201 mg/L In Serum @ 4 h (pe)
623	75 y F				U	Ingst	Unk	2		
		acetaminophen	1	1						
624h	75 y F				U	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen	191 mcg/mL In Serum @ 5 m (pe)
		salicylate	2	2					salicylate	28.7 mg/dL In Serum @ 5 m (pe)
625h	76 y F				A	Ingst	Unk	3		
		acetaminophen	1	1					acetaminophen	47 mcg/mL In Blood (unspecified) @ Unknown
626	76 y F				C	Ingst	Int-M	1		
		salicylate	1	1					salicylate	44.1 mg/dL In Serum @ Unknown
627h	76 y F				U	Ingst	Unk	2		
		acetaminophen	1	1						
628h	76 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	234 ng/mL In Blood (unspecified) @ 20 m (pe)

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
629h	78 y F				A	Ingst	Int-S	3		
		morphine	1	1						
		acetaminophen/ hydrocodone	2	2						
		oxycodone	3	3						
		acetaminophen	4	4						
630h	78 y F				A/C	Ingst	Int-M	3		
		acetaminophen/ hydrocodone	1	1						
631h	79 y F				U	Ingst	Unt-M	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	113 mcg/mL In Blood (unspecified) @ 24 h (pe)
		acetaminophen/ hydrocodone	1	1					acetaminophen	193 mcg/mL In Blood (unspecified) @ 12 h (pe)
		acetaminophen/ hydrocodone	1	1					acetaminophen	235 mcg/mL In Blood (unspecified) @ 1 m (pe)
		acetaminophen/ hydrocodone	2	2					acetaminophen	113 mcg/mL In Blood (unspecified) @ 24 h (pe)
		acetaminophen/ hydrocodone	2	2					acetaminophen	193 mcg/mL In Blood (unspecified) @ 12 h (pe)
		acetaminophen/ hydrocodone	2	2					acetaminophen	235 mcg/mL In Blood (unspecified) @ 1 m (pe)
632h	79 y M				A/C	Ingst	Int-M	3		
		acetaminophen/ codeine	1	1					acetaminophen	82 mcg/mL In Blood (unspecified) @ Unknown
		salicylate	2	2					salicylate	10 mg/dL In Blood (unspecified) @ Unknown
633	79 y F				A/C	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	24.4 mg/L In Serum @ Unknown
634h	80 y F				A	Ingst	Unk	2		
		salicylate	1	1					salicylate	16.1 mg/dL In Serum @ 2 d (pe)
		salicylate	1	1					salicylate	21 mg/dL In Serum @ 27 h (pe)
		salicylate	1	1					salicylate	24 mg/dL In Serum @ 19 h (pe)
		salicylate	1	1					salicylate	74 mg/dL In Serum @ 5.5 h (pe)
		salicylate	1	1					salicylate	79.6 mg/dL In Serum @ 2 h (pe)
635ha	80 y M				C	Ingst	Int-M	2		
		acetaminophen	1	1					acetaminophen	64 mcg/mL In Blood (unspecified) @ Unknown
636h	80 y M				A/C	Ingst	Int-S	2		
		acetaminophen/ codeine	1	1						
		acetaminophen/ hydrocodone	2	2						
637h	80 y F				U	Ingst	Unk	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	28 mcg/mL In Blood (unspecified) @ 1 h (pe)
		gabapentin	2	2						
		naproxen	3	3						
		verapamil	4	4						
		meclizine	5	5						
		omeprazole	6	6						
		estrogen	7	7						
		lactulose	8	8						
		potassium chloride	9	9						
		methocarbamol	10	10						
		zolpidem	11	11						
		sertraline	12	12						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
638	81 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1						
639	81 y F				A/C	Ingst	Unt-M	1		
		acetaminophen	1	1					acetaminophen	15 mcg/mL In Blood (unspecified) @ 2 d (pe)
		acetaminophen	1	1					acetaminophen	28 mcg/mL In Blood (unspecified) @ 1 d (pe)
		acetaminophen	1	1					acetaminophen	83 mcg/mL In Blood (unspecified) @ 1 h (pe)
		salicylate	2	2					salicylate	14 mg/dL In Blood (unspecified) @ 1 h (pe)
		salicylate	2	2					salicylate	6 mg/dL In Blood (unspecified) @ 2 d (pe)
		salicylate	2	2					salicylate	9 mg/dL In Blood (unspecified) @ 1 d (pe)
640	82 y F				A/C	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	3.4 mcg/mL In Blood (unspecified) @ 1 h (pe)
		venlafaxine (extended release)	2	2						
641h	83 y F				C	Ingst	Unk	1		
		acetaminophen	1	1					acetaminophen	36 mcg/mL In Serum @ 2 d (pe)
		acetaminophen	1	1					acetaminophen	62 mcg/mL In Serum @ 0.5 h (pe)
		ethanol	2	2						
642h	85 y F				C	Ingst	Int-S	1		
		acetaminophen/ hydrocodone	1	1						
643	85 y M				A	Ingst	Int-S	2		
		acetaminophen/ hydrocodone	1	1					acetaminophen	334 mcg/mL In Blood (unspecified) @ Unknown
		benzodiazepine	2	2						
644h	85 y M				A	Ingst	Int-S	1		
		salicylate	1	1					salicylate	53.1 mg/dL In Blood (unspecified) @ 7 h (pe)
		salicylate	1	1					salicylate	92 mg/dL In Blood (unspecified) @ 11 h (pe)
645i	86 y F				A/C	Ingst	Unk	1		
		hydrocodone	1	1						
		amitriptyline	2	2						
646a	86 y F				A	Ingst	Unt-M	1		
		caffeine/salicylate	1	1					salicylate	33.1 mg/dL In Blood (unspecified) @ 32 h (pe)
		caffeine/salicylate	1	1					salicylate	48 mg/dL In Blood (unspecified) @ 11 h (pe)
		caffeine/salicylate	1	1					salicylate	87.2 mg/dL In Blood (unspecified) @ 1 h (pe)
647	88 y F				A	Ingst	Int-S	2		
		acetaminophen	1	1					acetaminophen	162 mcg/mL In Blood (unspecified) @ 1 h (pe)
648h	88 y F				U	Ingst	Int-S	1		
		morphine	1	1						
		acetaminophen/ hydrocodone	2	2						
		zolpidem	3	3						
649h	89 y F				U	Ingst	Unk	2		
		acetaminophen/ hydrocodone	1	1						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminophen/ codeine	2	2					acetaminophen	163 mcg/mL In Blood (unspecified) @ 18 h (pe)
		tramadol	3	3						
		gabapentin	4	4						
650	91 y F				A	Ingst	Int-S	1		
		acetaminophen	1	1					acetaminophen	570 mcg/mL In Blood (unspecified) @ Unknown
651h	91 y F				C	Ingst	Int-M	1		
		acetaminophen	1	1					acetaminophen	115 mg/L In Serum @ Unknown
		acetaminophen/ hydrocodone	2	2						
652h	92 y F				U	Ingst	Unk	3		
		salicylate	1	1					salicylate	63.9 mg/dL In Blood (unspecified) @ Unknown
		salicylate	1	1					salicylate	73.1 mg/dL In Blood (unspecified) @ Unknown
653ph	11 m F				U	Unk	Unk	2		
		hydrocodone	1	1						
		propoxyphene	2	2						
654pai	11 m M				A	Ingst	Unt-G	1		
		fentanyl	1	1					norfentanyl	1.6 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl	1	1					fentanyl	1143 ng/mL In Gastric (stomach content) @ Autopsy
		fentanyl	1	1					fentanyl	14 ng/mL In Blood (unspecified) @ Autopsy
		heroin	2	2					morphine	50 ng/mL In Gastric (stomach content) @ Autopsy
		heroin	2	2					6-monoacetylmorphine	523 ng/mL In Gastric (stomach content) @ Autopsy
[655p]	11 m M				A	Ingst	Unt-G	1		
		methadone	1	1						
656pai	14 m F				A	Ingst	Oth-M	1		
		fentanyl	1	1					fentanyl	101 ng/mL In Gastric (stomach content) @ Autopsy
		fentanyl	1	1					fentanyl	20 ng/mL In Blood (unspecified) @ Autopsy
		heroin	2	2					morphine	106 ng/mL In Blood (unspecified) @ Autopsy
		heroin	2	2					6-monoacetylmorphine	163 ng/mL In Gastric (stomach content) @ Autopsy
		heroin	2	2					morphine	86 ng/mL In Gastric (stomach content) @ Autopsy
657ph	19 m F				A	Ingst	Unt-G	2		
		oxycodone	1	1						
658p	20+ y F				A	Inhal	Int-A	1		
		fentanyl (transdermal)	1	1					norfentanyl	0.72 ng/mL In Blood (unspecified) @ Autopsy
		fentanyl (transdermal)	1	1					fentanyl	4.4 ng/mL In Blood (unspecified) @ Autopsy
		Peganum harmala	2	2						
659pi	Unknown adult (>=20 yrs) F				U	Ingst	Int-S	2		
		oxycodone	1	1						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
660	Unknown adult (>=20 yrs) F				A/C	Ingst	Int-A	3		
		acetaminophen/ hydrocodone	1	1					acetaminophen	122 mcg/mL In Serum @ Unknown
See also case 14, 29, 30, 34, 37, 88, 106, 107, 112, 117, 203, 234, 661, 663, 672, 681, 687, 688, 693, 704, 707, 709, 725, 730, 731, 734, 736, 745, 747, 748, 755, 757, 771, 779, 781, 784, 791, 794, 797, 800, 802, 806, 808, 810, 811, 813, 817, 819, 827, 841, 846, 856, 860, 866, 868, 877, 887, 888, 891, 892, 893, 894, 899, 906, 909, 912, 917, 922, 929, 932, 945, 947, 953, 954, 960, 963, 964, 969, 970, 971, 980, 981, 988, 990, 995, 996, 999, 1016, 1026, 1030, 1033, 1034, 1041, 1051, 1052, 1054, 1062, 1077, 1084, 1087, 1093, 1094, 1095, 1098, 1100, 1104, 1106, 1109, 1122, 1123, 1125, 1127, 1132, 1135, 1137, 1139, 1140, 1143, 1144, 1150, 1151, 1152, 1155, 1156, 1158, 1166, 1167, 1168, 1169, 1170, 1176, 1180, 1208, 1220, 1222, 1225, 1231, 1233, 1235, 1236, 1253, 1258, 1264, 1270, 1276, 1278, 1281, 1296, 1298, 1300, 1303, 1306, 1309, 1310, 1319, 1321, 1338, 1339, 1346, 1362, 1363										
Anesthetics										
[661pha]	28 y M				A	Ingst	Unt-T	2		
		lidocaine	1	1						
		meloxicam	2	2						
		venlafaxine	3	3					o-desmethyl-venlafaxine	270 ng/mL In Blood (unspecified) @ Unknown
		venlafaxine	3	3					venlafaxine	310 ng/mL In Blood (unspecified) @ Unknown
		lacosamide	4	4						
		trazodone	5	5					trazodone	0.15 mcg/mL In Blood (unspecified) @ Unknown
662pa	32 y M				A	Ingst + Inhal	Int-A	2		
		nitrous oxide	1	1						
		amfetamine	2	2						
		cocaine	3	3						
		lysergic acid diethyl-amide (LSD)	4	4						
		methylenedioxyme-thamfetamine (MDMA)	5	5						
663	50 y M				A	Par	Unt-T	1		
		bupivacaine	1	1						
		hydromorphone	2	2						
664h	55 y F				U	Ingst	AR-D	3		
		sevoflurane	1	1						
665	85 y F				A	Par	Unt-T	1		
		lidocaine	1	1						
		bupivacaine	2	2						
666pi	Unknown age F				A	Inhal	Int-S	2		
		isoflurane	1	1						
Anticoagulants										
667h	63 y F				U	Ingst	Unt-G	2		
		heparin	1	1						
		rivaroxaban	2	2						
668h	69 y M				C	Ingst	AR-D	2		
		rivaroxaban	1	1						
669h	70 y M				U	Unk	Unk	2		
		warfarin	1	1						
670	73 y M				A	Ingst	AR-D	2		
		dabigatran	1	1						
671p	74 y F				C	Ingst	Int-U	3		
		warfarin	1	1						
		cardiac glycoside	2	2					digoxin	3.5 ng/mL In Unknown @ Unknown
672ha	75 y M				C	Ingst	AR-D	3		
		apixaban	1	1						
		salicylate	2	2						
673h	78 y F				A/C	Ingst	Int-S	3		
		dabigatran	1	1						
674ph	89 y F				U	Ingst	Unt-T	3		
		apixiban	1	1						
See also case 401, 591, 776, 860, 900, 908, 932, 995, 1013, 1016, 1023, 1028, 1031, 1048, 1323										
Anticonvulsants										
675h	25 y F				A/C	Ingst	Int-S	1		
		valproic acid	1	1						
[676a]	29 y M				A	Ingst	Int-S	1		
		valproic acid	1	1					valproic acid	450 mcg/mL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
677	32 y M				A	Ingst	Int-S	2		
		lamotrigine	1	1						
678h	38 y F				A/C	Ingst	Int-S	2		
		gabapentin	1	1						
		lamotrigine	2	2						
679ph	42 y M				A	Ingst	Int-S	1		
		lamotrigine	1	1					lamotrigine	83.4 mcg/mL In Blood (unspecified) @ Unknown
		duloxetine	2	2						
680	42 y F				A/C	Ingst	Int-S	3		
		valproic acid	1	1					valproic acid	2500 mg/L In Blood (unspecified) @ 12 h (pe)
681	48 y F				U	Ingst + Unk	Unk	3		
		levetiracetam	1	1						
		naproxen	2	2						
		nystatin	3	3						
		clonidine	4	4						
		omeprazole	5	5						
		hydrochlorothiazide	6	6						
		potassium, metal	7	7						
		lisinopril	8	8						
		morphine	9	9						
		alprazolam	10	10						
		temazepam	11	11						
		duloxetine	12	12						
682ph	50 y M				A	Ingst	Int-S	2		
		oxcarbazepine	1	1						
		trazodone	2	2						
		lorazepam	3	3						
683pha	52 y M				A	Ingst	Int-S	3		
		gabapentin	2	1						
		methamfetamine	1	1					methamfetamine	0.56 mg/L In Blood (unspecified) @ Unknown
684ha	52 y M				C	Ingst	Int-S	1		
		valproic acid (extended release)	1	1					valproic acid	301 mg/L In Serum @ Autopsy
		ethanol	2	2					ethanol	246 mg/dL In Serum @ Autopsy
685h	52 y M				A/C	Ingst	Int-S	2		
		valproic acid (extended release)	1	1					valproic acid	150 mcg/mL In Serum @ Unknown
		clonazepam	2	2						
		ethanol	3	3					ethanol	166 mg/dL In Serum @ Unknown
686	53 y F				A/C	Ingst + Aspir	Int-S	3		
		phenytoin	1	1					phenytoin	16.9 mcg/mL In Blood (unspecified) @ Unknown
		phenytoin	1	1					phenytoin	38.1 mcg/mL In Blood (unspecified) @ 6 h (pe)
		phenytoin	1	1					phenytoin	55.9 mcg/mL In Blood (unspecified) @ Unknown
687pa	54 y F				U	Ingst	Unk	1		
		lamotrigine	1	1					lamotrigine	31 mcg/mL In Whole Blood @ Autopsy
		olanzapine	2	2					olanzapine	1100 ng/mL In Whole Blood @ Autopsy
		buprenorphine/naloxone (sublingual film)	3	3					buprenorphine	3 ng/mL In Whole Blood @ Autopsy
		buprenorphine/naloxone (sublingual film)	3	3					norbuprenorphine	5.7 ng/mL In Whole Blood @ Autopsy
		topiramate	4	4					topiramate	5900 ng/mL In Whole Blood @ Autopsy
		citalopram	5	5					citalopram	1400 ng/mL In Whole Blood @ Autopsy

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
688	54 y F				A/C	Ingst	Int-S	1		
		lamotrigine	1	1						
		quetiapine	2	2						
		salicylate	3	3						
		acetaminophen	4	4						
689h	55 y M				A/C	Ingst + Aspir	Int-S	3		
		carbamazepine	1	1					carbamazepine	12.9 mg/L In Serum @ 48 h (pe)
		carbamazepine	1	1					carbamazepine	24.1 mg/L In Serum @ 24 h (pe)
		carbamazepine	1	1					carbamazepine	26.7 mg/L In Serum @ 6 h (pe)
		carbamazepine	1	1					carbamazepine	29.2 mg/L In Serum @ 1 h (pe)
		quetiapine	2	2						
		zolpidem	3	3						
690h	58 y F				A/C	Ingst + Aspir	Int-S	3		
		gabapentin	1	1						
691h	61 y F				A/C	Ingst	Int-S	2		
		valproic acid	1	1					valproic acid	225 mcg/mL In Blood (unspecified) @ Unknown
		valproic acid	1	1					valproic acid	246 mcg/mL In Blood (unspecified) @ Unknown
		valproic acid	1	1					valproic acid	329 mcg/mL In Blood (unspecified) @ Unknown
		clonidine	2	2						
		perphenazine	3	3						
692ha	64 y M				A/C	Ingst	Int-S	1		
		lamotrigine	1	1						
		bupropion	2	2						
		quetiapine	3	3						
		vortioxetine	4	4						
693p	64 y F				A/C	Ingst	Int-S	2		
		gabapentin	1	1						
		acetaminophen/ hydrocodone	2	2						
694ph	83 y F				A/C	Ingst	Int-S	1		
		valproic acid	1	1						
		lorazepam	2	2						
		trazodone	3	3						
See also case 26, 294, 312, 314, 325, 341, 366, 383, 385, 428, 433, 448, 453, 459, 468, 483, 512, 516, 554, 559, 577, 607, 637, 649, 661, 702, 710, 725, 730, 738, 740, 745, 746, 747, 748, 753, 755, 763, 770, 771, 776, 778, 780, 790, 793, 797, 802, 808, 812, 846, 860, 861, 869, 873, 909, 919, 921, 927, 929, 947, 948, 960, 962, 964, 966, 967, 971, 977, 986, 990, 996, 1055, 1062, 1090, 1103, 1117, 1137, 1149, 1154, 1159, 1164, 1167, 1169, 1238, 1296, 1300, 1301, 1308, 1340										
Antidepressants										
695p	13 y F				A/C	Ingst	Int-S	1		
		bupropion (extended release)	1	1						
696ph	13 y F				A	Ingst	Int-S	2		
		bupropion	1	1						
		quetiapine	2	2						
		buspirone	3	3						
		benztropine	4	4						
		sertraline	5	5						
697h	13 y F				A	Ingst	Int-S	2		
		bupropion (extended release)	1	1						
[698ph]	15 y F				A	Ingst	Int-S	1		
		bupropion	1	1					bupropion	1931 ng/mL In Blood (unspecified) @ Unknown
		bupropion	1	1					hydroxybupropion	2453 ng/mL In Blood (unspecified) @ Unknown
699pha	16 y F				A	Ingst	Int-S	1		
		doxepin	1	1					doxepin	12823 ng/mL In Blood (unspecified) @ Autopsy
		doxepin	1	1					desmethyldoxepin	2870 ng/mL In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		risperidone	2	2					risperidone	118 ng/mL In Blood (unspecified) @ Autopsy
		risperidone	2	2					9-hydroxyrisperidone	60.5 ng/mL In Blood (unspecified) @ Autopsy
		aripiprazole	3	3					aripiprazole	101 ng/mL In Blood (unspecified) @ Autopsy
		chlorpheniramine	4	4					chlorpheniramine	36 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	5	5					ethanol	22 mg/dL In Blood (unspecified) @ Autopsy
700p	16 y F				A	Ingst	Int-S	1		
		bupropion	1	1						
701h	17 y F				A	Ingst	Int-S	2		
		bupropion	1	1						
		cyclic antidepressant, unknown	2	2						
		quetiapine	3	3						
		mirtazapine	4	4						
702p	17 y F				A	Ingst	Int-S	1		
		doxepin	1	1					nordoxepin	1093 ng/mL In Blood (unspecified) @ Autopsy
		doxepin	1	1					doxepin	2594 ng/mL In Blood (unspecified) @ Autopsy
		amfetamine/ dextroamfetamine	2	2					amfetamine	192 ng/mL In Blood (unspecified) @ Autopsy
		cyclobenzaprine	3	3						
		ziprasidone	4	4						
		venlafaxine	5	5					norvenlafaxine	199 ng/mL In Blood (unspecified) @ Autopsy
		venlafaxine	5	5					venlafaxine	554 ng/mL In Blood (unspecified) @ Autopsy
		topiramate	6	6						
703pa	17 y F				A	Unk	Int-S	1		
		amitriptyline	1	1					nortriptyline	1.3 mg/L In Whole Blood @ Autopsy
		amitriptyline	1	1					amitriptyline	46 mg/kg In Liver @ Autopsy
		amitriptyline	1	1					nortriptyline	7.2 mg/kg In Liver @ Autopsy
		amitriptyline	1	1					amantadine	8.3 mg/L In Whole Blood @ Autopsy
704h	18 y F				A/C	Ingst	Int-S	2		
		bupropion (extended release)	1	1						
		venlafaxine	2	2						
		acetaminophen/ diphenhydramine	3	3						
		ethanol	4	4					ethanol	49 mg/dL In Blood (unspecified) @ Unknown
705a	18 y F				U	Ingst	Int-S	1		
		fluoxetine	1	1						
		bupropion	2	2						
		lurasidone	3	3						
		lorazepam	4	4						
		atenolol	5	5						
706pai	18 y M				A	Ingst	Int-S	1		
		bupropion	1	1					hydroxybupropion	2000 ng/mL In Blood (unspecified) @ Autopsy
		bupropion	1	1					bupropion	4400 ng/mL In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		citalopram	2	2					citalopram	1400 ng/mL In Blood (unspecified) @ Autopsy
707pha	19 y F				A/C	Ingst	Int-S	1		
		venlafaxine	1	1					venlafaxine	1300 ng/mL In Blood (unspecified) @ Unknown
		venlafaxine	1	1					o-desmethyl-venlafaxine	240 ng/mL In Blood (unspecified) @ Unknown
		bupropion (extended release)	2	2					hydroxybupropion	2100 ng/mL In Blood (unspecified) @ Unknown
		bupropion (extended release)	2	2					bupropion	390 ng/mL In Blood (unspecified) @ Unknown
		salicylate	3	3					salicylate	180 mcg/mL In Blood (unspecified) @ 1 h (pe)
		clonazepam	4	4					7-aminoclonazepam	110 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	4	4					clonazepam	22 ng/mL In Blood (unspecified) @ Unknown
		thyroid preparation	5	5						
		fluoxetine	6	6						
		risperidone	7	7						
		atomoxetine	8	8						
		butalbital	9	9						
708h	19 y M				A/C	Ingst	Int-S	1		
		amitriptyline	1	1						
709ha	19 y F				A/C	Ingst	Int-S	1		
		bupropion (extended release)	1	1					bupropion	0.31 mg/L In Blood (unspecified) @ 16 h (pe)
		bupropion (extended release)	1	1					hydroxybupropion	0.98 mg/L In Blood (unspecified) @ 16 h (pe)
		venlafaxine	2	1					o-desmethyl-venlafaxine	0.42 mg/L In Blood (unspecified) @ 16 h (pe)
		venlafaxine	2	1					venlafaxine	10 mg/L In Blood (unspecified) @ 16 h (pe)
		paroxetine	3	3						
		ibuprofen	4	4						
		acetaminophen	5	5					acetaminophen	12.7 mcg/mL In Blood (unspecified) @ 4 h (pe)
710ph	19 y F				U	Ingst	Int-U	1		
		amitriptyline	1	1						
		lamotrigine	2	2						
		antipsychotic (atypical)	3	3						
711	19 y M				A	Ingst	Int-S	1		
		bupropion (extended release)	1	1						
712ha	20 y F				A/C	Ingst	Int-S	1		
		bupropion (extended release)	1	1					bupropion	42.416 mg/L In Blood (unspecified) @ Autopsy
		aripiprazole	2	2						
713ph	21 y F				A	Ingst	Int-S	2		
		citalopram	1	1						
		bupropion	2	2						
		diphenhydramine	3	3						
714h	21 y F				A/C	Ingst	Int-S	3		
		venlafaxine	1	1						
		clonazepam	2	2						
715p	21 y F				A/C	Ingst	Int-S	3		
		venlafaxine	1	1						
		alprazolam	2	2						
		ethanol	3	3					ethanol	48 mg/dL In Blood (unspecified) @ 1 h (pe)

(*continued*)

Table 21. Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
716ha	22 y F				A	Ingst	Int-S	1		
		bupropion	1	1					hydroxybupropion	2800 ng/mL In Serum @ Unknown
		bupropion	1	1					bupropion	39 ng/mL In Serum @ Unknown
		clonazepam	2	2					clonazepam	14 ng/mL In Serum @ Unknown
		clonazepam	2	2					7-aminoclonazepam	44 ng/mL In Serum @ Unknown
		escitaopram	3	3					escitalopram	400 ng/mL In Serum @ Unknown
		amfetamine/ dextroamfetamine	4	4					amfetamine	270 ng/mL In Serum @ Unknown
		ethanol (non-beverage)	5	5						
717h	22 y F				A	Ingst	Int-S	1		
		venlafaxine	1	1						
		diphenhydramine	2	2						
718pha	23 y F				U	Unk	Int-S	1		
		fluoxetine	1	1					fluoxetine	0.8 mg/L In Blood (unspecified) @ Autopsy
		propranolol	2	2					propranolol	0.3 mg/L In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	22 mg/dL In Blood (unspecified) @ Unknown
		alprazolam	4	4						
719pha	23 y F				A	Ingst	Int-S	1		
		venlafaxine	1	1					venlafaxine	47000 ng/mL In Blood (unspecified) @ 1 h (pe)
		venlafaxine	1	1					o-desmethyl-venlafaxine	7100 ng/mL In Blood (unspecified) @ 1 h (pe)
		alprazolam	2	2						
		hyoscyamine	3	3						
		mirtazapine	4	4						
		sertraline	5	5					desmethylsertraline	570 ng/mL In Blood (unspecified) @ 1 h (pe)
		sertraline	5	5					sertraline	780 ng/mL In Blood (unspecified) @ 1 h (pe)
720h	23 y F				A	Ingst	Int-S	1		
		nortriptyline	1	1						
721h	23 y F				A	Ingst	Unt-G	2		
		bupropion	1	1						
722	25 y F				A/C	Ingst	Int-S	1		
		bupropion	1	1						
		sertraline	2	2						
		alpha blocker	3	3						
		promethazine	4	4						
723	25 y F				A	Ingst	Int-S	1		
		bupropion (extended release)	1	1						
		ethanol	2	2						
724ph	26 y F				A	Ingst	Int-S	1		
		bupropion (extended release)	1	1						
725	28 y F				A	Ingst	Oth-M	3		
		amitriptyline	1	1						
		zonisamide	2	2						
		morphine	3	3						
726h	28 y F				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		citalopram	2	2						
		ethanol	3	3					ethanol	322 mg/dL In Blood (unspecified) @ Unknown
727ph	29 y M				A	Unk	Unk	2		
		bupropion	1	1						
		drug, unknown	2	2						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
728	30 y M				A/C	Ingst	Int-S	2		
		venlafaxine	1	1						
		bupropion	2	2						
		clonidine	3	3						
729a	31 y F				A	Ingst	Int-S	1		
		bupropion (extended release)	1	1					bupropion	1.3 mg/L In Blood (unspecified) @ Autopsy
		bupropion (extended release)	1	1					bupropion	1.5 mg/L In Blood (unspecified) @ Autopsy
730h	31 y M				U	Ingst	Int-S	1		
		bupropion (extended release)	1	1						
		acetaminophen/ hydrocodone	2	2					acetaminophen	9 mcg/mL In Blood (unspecified) @ Unknown
		gabapentin	3	3						
		trazodone	4	4						
731pha	32 y F				A	Ingst	Unt-U	2		
		amitriptyline	1	1					amitriptyline	231 ng/mL In Blood (unspecified) @ Unknown
		amitriptyline	1	1					nortriptyline	32.8 ng/mL In Blood (unspecified) @ Unknown
		cocaine	2	2					benzoylecognine	124 mcg/mL In Urine (quantitative only) @ Unknown
		cocaine	2	2					benzoylecognine	1336 ng/mL In Blood (unspecified) @ Unknown
		ethanol	3	3					ethanol	0.165 % (wt/Vol) In Blood (unspecified) @ Unknown
		amfetamine	4	4					amfetamine	245 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	5	5					alprazolam	10.5 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	5	5					alprazolam	60 ng/mL In Urine (quantitative only) @ Unknown
		alprazolam	5	5					alpha-oh-alprazolam	86 ng/mL In Urine (quantitative only) @ Unknown
		methadone	6	6					methadone	27.2 pg/mL In Blood (unspecified) @ Unknown
		bupropion	7	7						
		morphine	8	8					morphine	501 ng/mL In Urine (quantitative only) @ Unknown
		hydrocodone	9	9					hydrocodone	63 ng/mL In Urine (quantitative only) @ Unknown
732ph	33 y M				A/C	Ingst	Int-S	1		
		bupropion (extended release)	1	1						
		chlorpheniramine/ dextromethorphan	2	2						
733ph	34 y M				A/C	Ingst	Int-S	2		
		trazodone	1	1						
		hydroxyzine	2	2						
		zolpidem	3	3						
		ethanol	4	4						
734ph	35 y M				A	Ingst	Int-S	1		
		amitriptyline	1	1						
		methadone	2	2						
		diphenhydramine	3	3						
		venlafaxine	4	4						
735h	35 y F				U	Ingst	Int-S	1		
		bupropion	1	1						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
736ha	36 y F				U	Ingst	Int-S	1		
		bupropion	1	1						
		tramadol	2	2					tramadol	0.61 mcg/mL In Whole Blood @ Unknown
		tramadol	2	2					tramadol	1 mcg/mL In Whole Blood @ Autopsy
		buspirone	3	3						
		benzodiazepine	4	4						
737ph	36 y F				A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
738pa	37 y M				A	Ingst	Unk	3		
		venlafaxine	1	1					venlafaxine	0 mg/mL In Blood (unspecified) @ 4 d (pe)
		venlafaxine	1	1					o-desmethyl-venlafaxine	62 ng/mL In Blood (unspecified) @ 4 d (pe)
		gabapentin	2	2						
739h	37 y F				A	Ingst	Int-S	2		
		venlafaxine	1	1						
		citalopram	2	2						
740h	37 y F				U	Ingst + Par	Int-S	2		
		lithium	1	1						
		oxcarbazepine	2	2						
		diazepam	3	3						
		bupropion	4	4						
		quetiapine	5	5						
		lurasidone	6	6						
		zolpidem (extended release)	7	7						
		diphenhydramine	8	8						
		benztropine	9	9						
		gabapentin	10	10						
		duloxetine	11	11						
741pi	38 y M				U	Ingst	Unk	2		
		mirtazapine	1	1						
		zolpidem	2	2						
		clonazepam	3	3						
742h	38 y F				A/C	Ingst	Int-S	2		
		bupropion (extended release)	1	1						
		quetiapine	2	2						
		buspirone	3	3						
743	40 y F				A/C	Ingst	Int-S	1		
		bupropion (extended release)	1	1						
		venlafaxine	2	2						
744h	40 y F				A/C	Ingst	Int-S	1		
		bupropion	1	1						
745h	41 y M				U	Ingst	Int-S	2		
		amitriptyline	1	1						
		gabapentin	2	2						
		topiramate	3	3						
		codeine/guaifenasen	4	4						
		acyclovir	5	5						
		dexmedetomidine	6	6						
		fentanyl	7	7						
746a	42 y F				U	Ingst	Int-U	1		
		amitriptyline	1	1					amitriptyline	600 ng/mL In Blood (unspecified) @ Autopsy
		amitriptyline	1	1					nortriptyline	750 ng/mL In Blood (unspecified) @ Autopsy
		topiramate	2	2					topiramate	2100 ng/mL In Blood (unspecified) @ Autopsy
747pha	43 y F				U	Ingst	Int-A	1		
		citalopram	1	1					citalopram	1000 ng/mL In Blood (unspecified) @ Autopsy
		morphine	2	2					morphine (free)	570 ng/mL In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		amitriptyline	3	3					nortriptyline	30 ng/mL In Blood (unspecified) @ Autopsy
		amitriptyline	3	3					amitriptyline	70 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	4	4					diazepam	36 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	4	4					nordiazepam	90 ng/mL In Blood (unspecified) @ Autopsy
		lorazepam	5	5					lorazepam	42 ng/mL In Blood (unspecified) @ Autopsy
		phenytoin	6	6					phenytoin	9.4 mcg/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	7	7						
		metoprolol	8	8						
		pregabalin	9	9						
748	43 y F				A/C	Ingst	Int-S	2		
		fluvoxamine	1	1						
		sertraline	2	2						
		pregabalin	3	3						
		alprazolam	4	4						
		carisoprodol	5	5						
		tramadol	6	6						
749h	43 y F				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		citalopram	2	2						
		clonazepam	3	3						
		ethanol	4	4					ethanol	84 mg/dL In Blood (unspecified) @ 1 h (pe)
		methylenedioxyme-thamfetamine (MDMA)	5	5						
		lysergic acid diethyl-amide (LSD)	6	6						
		methylphenidate	7	7						
		thyroid preparation	8	8						
		diuretics, potassium sparing	9	9						
		naltrexone	10	10						
		melatonin	11	11						
750ha	43 y F				A/C	Ingst	Int-S	3		
		cyclic antidepressant, unknown	1	1						
751	44 y F				A	Ingst	Int-S	1		
		bupropion (extended release)	1	1						
		venlafaxine (extended release)	2	2						
		quetiapine	3	3						
752h	45 y F				A	Ingst	Int-S	2		
		lithium	1	1						
		antipsychotic (atypical)	2	2						
753h	45 y F				A/C	Ingst	Int-S	1		
		amitriptyline	1	1						
		topiramate	2	2						
754h	45 y F				A/C	Ingst	Int-S	1		
		doxepin	1	1						
		ziprasidone	2	2						
		lithium	3	3					lithium	1.4 mmol/L In Blood (unspecified) @ Unknown
		levothyroxine	4	4						
		benzodiazepine	5	5						
		metformin	6	6						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
755h	45 y F				U	Ingst	Int-S	2		
		amitriptyline	1	1					amitriptyline	1785 mg/mL In Blood (unspecified) @ 3 d (pe)
		amitriptyline	1	1					amitriptyline	2296 ng/mL In Blood (unspecified) @ 5 d (pe)
		amitriptyline	1	1					amitriptyline	3624 ng/mL In Blood (unspecified) @ 1 d (pe)
		hydrocodone	2	2						
		acetaminophen/ antihistamine/ decongestant/ dextromethorphan	3	3						
		diazepam	4	4						
		baclofen	5	5						
		naproxen (extended release)	6	6						
		gabapentin	7	7						
		potassium salts	8	8						
		codeine	9	9						
756h	45 y F				A	Ingst	Int-S	1		
		venlafaxine	1	1						
757ph	45 y F				A/C	Ingst	Int-S	2		
		clomipramine	1	1						
		acetaminophen/ oxycodone	2	2						
		olanzapine	3	3						
		fluoxetine	4	4						
758ph	45 y F				A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
		cyclobenzaprine	2	2						
		trazodone	3	3						
759h	46 y M				A	Ingst	Int-S	3		
		nortriptyline	1	1						
		losartan	2	2						
760h	47 y F				A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
761pha	47 y M				A/C	Ingst	Int-S	1		
		bupropion	1	1					bupropion	400 ng/mL In Serum @ Unknown
		bupropion	1	1					bupropion	5473 mg/dL In Blood (unspecified) @ Autopsy
		citalopram	2	2					citalopram	3600 ng/mL In Serum @ Unknown
		citalopram	2	2					citralopram	6176 ng/mL In Blood (unspecified) @ Autopsy
		atorvastain	3	3						
		ethanol	4	4					ethanol	18 mg/dL In Blood (unspecified) @ Unknown
762	47 y F				A	Ingst	Int-S	1		
		venlafaxine	1	1						
		fluoxetine	2	2						
		alprazolam	3	3						
763h	47 y F				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		fluoxetine	2	2						
		topiramate	3	3						
		ethanol	4	4						
		levothyroxine	5	5						
764	48 y F				A/C	Ingst	Int-S	2		
		venlafaxine	1	1						
		alprazolam	2	2						
765pha	48 y M				U	Ingst	Int-S	1		
		doxepin	1	1					doxepin	3.4 mg/L In Blood (unspecified) @ 1 h (pe)
		carvedilol	2	2						
		ethanol	3	3					ethanol	205 mg/dL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		quetiapine	4	4						
		clonazepam	5	5						
766ph	49 y M				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		fluoxetine	2	2						
		mirtazapine	3	3						
767	49 y M				A	Ingst + Aspir	Int-S	1		
		bupropion	1	1						
		quetiapine	2	2						
		ethanol	3	3					ethanol	0.247 g/dL In Blood (unspecified) @ 1 h (pe)
768	49 y F				A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
769ph	51 y F				A/C	Ingst	Int-S	2		
		venlafaxine	1	1						
770	51 y F				A	Ingst	Int-S	3		
		amitriptyline	1	1						
		quetiapine	2	2						
		metoprolol	3	3						
		alpha blocker	4	4						
		carisoprodol	5	5						
		suvorexant	6	6						
		linaclotide	7	7						
		trazodone	8	8						
		benzodiazepine	9	9						
		gabapentin	10	10						
		dicyclomine	11	11						
		furosemide	12	12						
		potassium chloride	13	13						
		omeprazole	14	14						
771h	52 y M				A	Ingst	Unk	3		
		citalopram	1	1						
		gabapentin	2	2						
		meloxicam	3	3						
		omeprazole	4	4						
772ha	52 y F				A/C	Ingst + Unk	Int-S	1		
		doxepin	1	1					desmethyldoxepin	740 ng/mL In Blood (unspecified) @ 2 h (pe)
		doxepin	1	1					doxepin	7600 ng/mL In Blood (unspecified) @ 2 h (pe)
		cocaine	2	2					benzoylecognine	0.025 mg/L In Serum @ 1 h (pe)
773hai	52 y F				A	Ingst	Int-S	2		
		amitriptyline	1	1						
774h	53 y M				U	Ingst	Int-S	1		
		trazodone	1	1						
		nortriptyline	2	2						
		clonazepam	3	3						
		vortioxetine	4	4						
		thyroid preparation	5	5						
775a	53 y F				A	Ingst	Int-S	1		
		amitriptyline	1	1					nortriptyline	42 mg/kg In Liver @ Autopsy
		amitriptyline	1	1					amitriptyline	67 mg/kg In Liver @ Autopsy
		escitaopram	2	2					escitalopram	1200 ng/mL In Blood (unspecified) @ 1 h (pe)
		diphenhydramine	3	3					diphenhydramine	1.16 mg/L In Blood (unspecified) @ 1 h (pe)
		ethanol	4	4					ethanol	0.21 g/dL In Blood (unspecified) @ 1 h (pe)
776ha	53 y M				A/C	Ingst	Int-S	2		
		bupropion	1	1					hydroxybupropion	1100 ng/mL In Blood (unspecified) @ Unknown
		bupropion	1	1					bupropion	250 ng/mL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		warfarin	2	2						
		metoprolol (extended release)	3	3					metoprolol	460 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	4	4					alprazolam	0.111 mg/L In Blood (unspecified) @ Unknown
		chlorthalidone	5	5						
		lamotrigine	6	6					lamotrigine	8.1 mcg/mL In Blood (unspecified) @ Unknown
777h	54 y M				A/C	Ingst + Par	Int-S	2		
		bupropion (extended release)	1	1						
		insulin (aspart)	2	2						
778pha	54 y F				A/C	Ingst	Int-S	2		
		venlafaxine	1	1					venlafaxine	14019 ng/mL In Vitreous @ Autopsy
		ethanol	2	2					ethanol	125 mg/dL In Blood (unspecified) @ Unknown
		gabapentin	3	3						
779	56 y M				U	Ingst	Unk	2		
		cyclic antidepressant, unknown	1	1						
		benzodiazepine	2	2						
		oxycodone	3	3						
780ph	57 y F				A	Ingst	Int-S	3		
		venlafaxine	1	1						
		skeletal muscle relaxant	2	2						
		gabapentin	3	3						
781h	57 y F				A/C	Ingst	Int-S	2		
		bupropion	1	1						
		citalopram	2	2						
		clorazepate	3	3						
		naproxen	4	4						
		cimetidine	5	5						
		omeprazole	6	6						
		cyanocobalamin	7	7						
		alcohol, unknown	8	8						
		ethanol	9	9					ethanol	170 mg/dL In Blood (unspecified) @ 4 h (pe)
782h	58 y M				U	Ingst	Int-S	2		
		bupropion	1	1						
		cyclobenzaprine	2	2						
		fluoxetine	3	3						
		lisinopril	4	4						
		diazepam	5	5						
		potassium salts	6	6						
783	58 y F				A/C	Ingst	Int-S	3		
		amitriptyline	1	1						
784	58 y F				A/C	Ingst	Int-U	2		
		doxepin	1	1						
		oxycodone	2	2						
785pha	59 y M				A/C	Ingst	Unk	3		
		amitriptyline	1	1					nortriptyline	0.122 mg/L In Blood (unspecified) @ Autopsy
786	59 y F				U	Ingst	Int-S	3		
		sertraline	1	1						
		atenolol	2	2						
787	59 y F				A/C	Ingst	Int-S	1		
		duloxetine	1	1						
		bupropion (extended release)	2	2						
		escitalopram	3	3						
788ph	59 y F				A/C	Ingst	Int-S	2		
		trazodone	1	1						
		amfetamine/ dextroamfetamine	2	2						
		atorvastatin	3	3						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		ethanol	4	4					ethanol	0 mg/dL In Blood (unspecified) @ Unknown
789ha	60 y F				A	Ingst	Int-S	1		
		amitriptyline	1	1					nortriptyline	250 ng/mL In Serum @ Unknown
		amitriptyline	1	1					amitriptyline	4000 ng/mL In Serum @ Unknown
		ethanol	2	2					ethanol	299 mg/dL In Serum @ Unknown
790	61 y F				A/C	Ingst	Int-S	1		
		bupropion (extended release)	1	1						
		mirtazapine	2	2						
		Dicyclomine	3	3						
		cyclobenzaprine	4	4						
		trazodone	5	5						
		simvastatin	6	6						
		lamotrigine	7	7						
		clonazepam	8	8						
		losartan	9	9						
		omeprazole	10	10						
791pha	61 y M				A/C	Ingst	Int-S	1		
		duloxetine	1	1						
		diazepam	2	2						
		oxycodone	3	3						
		ethanol	4	4					ethanol	0.06 g/dL In Serum @ 1 h (pe)
792h	61 y F				A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
793h	61 y F				A/C	Ingst	Int-S	2		
		amitriptyline	1	1						
		topiramate	2	2						
		alprazolam	3	3						
794h	63 y F				A	Ingst + Par	AR-D	3		
		fluoxetine	1	1						
		fentanyl	3	2						
		moxifloxacin	2	2						
795h	66 y M				A/C	Ingst	Int-U	1		
		amitriptyline	1	1						
796p	67 y F				A/C	Ingst	Int-S	3		
		venlafaxine	1	1						
		lorazepam	2	2						
		zolpidem	3	3						
		magnesium oxide	4	4						
		omeprazole	5	5						
797	67 y F				A	Ingst	Int-S	2		
		bupropion (extended release)	1	1						
		venlafaxine (extended release)	2	2						
		aripiprazole	3	3						
		trazodone	4	4						
		oxycodone	5	5						
		lamotrigine	6	6						
		prednisone	7	7						
		buspirone	8	8						
		zaleplon	9	9						
		ciprofloxacin	10	10						
		activated charcoal	11	11						
798h	67 y F				A/C	Ingst	AR-D	2		
		bupropion	1	1						
		quetiapine	2	2						
		ethanol	3	3					ethanol	109 mg/dL In Serum @ Unknown
799i	68 y F				A/C	Ingst	Unk	3		
		lithium	1	1					lithium	3.3 mmol/L In Blood (unspecified) @ 1 h (pe)
800ph	69 y F				U	Ingst	Int-S	1		
		doxepin	1	1						
		acetaminophen/ hydrocodone	2	2					acetaminophen	115 mcg/mL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
801ha	73 y F				A	Ingst	Int-S	1		
		bupropion	1	1					hydroxybupropion	1200 ng/mL In Serum @ 2 h (pe)
		bupropion	1	1					bupropion	9300 ng/mL In Serum @ 2 h (pe)
		paroxetine	2	2					paroxetine	4300 ng/mL In Serum @ 2 h (pe)
		sertraline	3	3					desmethylsertraline	100 ng/mL In Serum @ 2 h (pe)
		sertraline	3	3					sertraline	1700 ng/mL In Serum @ 2 h (pe)
802h	74 y F				A/C	Ingst	Int-S	2		
		doxepin	1	1						
		escitalopram	2	2						
		hydrocodone	3	3						
		olmesartan	4	4						
		alprazolam	5	5						
		hydrochlorothiazide	6	6						
		famotidine	7	7						
		cetirizine	8	8						
		pregabalin	9	9						
803h	74 y M				A/C	Ingst	Int-S	2		
		venlafaxine	1	1						
804	74 y M				A	Ingst + Par	Int-S	2		
		amitriptyline	1	1						
		insulin	2	2						
		amlodipine	3	3						
		chlorpromazine	4	4						
		digoxin	5	5					digoxin	8 ng/mL In Blood (unspecified) @ Unknown
		tamsulosin	6	6						
[805h]	78 y F				A	Ingst	Int-S	1		
		tranylcypromine	1	1						
		olanzapine	2	2						
		lisinopril	3	3						
		sertraline	4	4						
		hydroxychloroquine	5	5						
		amlodipine	6	6						
		buspirone	7	7						
		levothyroxine	8	8						
806ph	79 y F				A	Ingst	Int-S	2		
		nortriptyline	1	1						
		acetaminophen	2	2					acetaminophen	192 mcg/mL In Blood (unspecified) @ Unknown
		hydrocodone	3	3						
807ha	84 y F				A	Ingst	Int-S	1		
		mirtazapine	2	1					mirtazapine	410 ng/mL In Blood (unspecified) @ Unknown
		venlafaxine	1	1					venlafaxine	20000 ng/mL In Blood (unspecified) @ Unknown
		clonazepam	3	2					clonazepam	190 mcg/mL In Blood (unspecified) @ Unknown
808h	85 y F				A/C	Ingst	Int-S	3		
		duloxetine	1	1						
		gabapentin	2	2						
		clonazepam	3	3						
		naproxen	4	4						
809h	92 y F				A/C	Ingst	Int-S	2		
		bupropion (extended release)	1	1						
810hai	95 y M				U	Ingst	Int-S	1		
		doxepin	1	1						
		tramadol	2	2					tramadol	1.8 mg/L In Blood (unspecified) @ 2 h (pe)
		alpha blocker	3	3						
		lorazepam	4	4						
		sertraline	5	5						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
See also case 4, 19, 72, 165, 240, 255, 286, 294, 312, 322, 327, 329, 344, 352, 355, 366, 370, 383, 397, 414, 428, 430, 441, 448, 458, 459, 468, 483, 501, 506, 516, 517, 522, 538, 539, 540, 545, 546, 566, 577, 592, 637, 640, 645, 661, 679, 681, 682, 687, 692, 694, 812, 821, 827, 850, 851, 854, 858, 861, 862, 863, 865, 869, 877, 881, 886, 887, 891, 894, 895, 898, 904, 909, 910, 919, 925, 928, 932, 937, 940, 948, 949, 962, 964, 965, 967, 969, 970, 971, 972, 977, 988, 992, 994, 995, 996, 999, 1002, 1005, 1008, 1026, 1032, 1041, 1048, 1062, 1063, 1065, 1067, 1077, 1090, 1093, 1096, 1097, 1098, 1101, 1115, 1118, 1123, 1130, 1132, 1133, 1137, 1140, 1141, 1145, 1148, 1157, 1162, 1167, 1168, 1171, 1173, 1180, 1183, 1185, 1221, 1235, 1248, 1266, 1293, 1301, 1308, 1331, 1340, 1370										
Antihistamines										
811h	15 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1						
		ibuprofen	2	2						
812h	16 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	17022 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/antihistamine/decongestant/dextromethorphan	2	2						
		hydroxyzine	3	3					hydroxyzine	77.8 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	4	4					fluoxetine	275 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	4	4					norfluoxetine	294 ng/mL In Blood (unspecified) @ Autopsy
		phenytoin	5	5					phenytoin	4.7 mcg/mL In Blood (unspecified) @ Autopsy
		lamotrigine	6	6					lamotrigine	1.2 mcg/mL In Blood (unspecified) @ Autopsy
813h	17 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
		benzodiazepine	2	2						
		naproxen	3	3						
		ibuprofen	4	4						
814pai	17 y F				A	Ingst	Int-S	3		
		diphenhydramine	1	1					diphenhydramine	2500 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	2	2					thc (tetrahydrocannabinol)	44.12 ng/mL In Blood (unspecified) @ Autopsy
815h	19 y M				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
816h	21 y M				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
817	26 y M				A/C	Ingst	Int-S	3		
		doxylamine	1	1						
		amfetamine/dextroamfetamine	2	2						
		lisinopril	3	3						
		etodolac	4	4						
		clonazepam	5	5						
		ethanol	6	6						
818ph	31 y M				A	Ingst	Int-S	1		
		diphenhydramine	1	1						
819	32 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1						
		acetaminophen	2	2					acetaminophen	11.1 mcg/mL In Blood (unspecified) @ 20 m (pe)
820pa	33 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	0.8 mg/L In Blood (unspecified) @ Autopsy
		diphenhydramine	1	1					diphenhydramine	11 mg/L In Blood (unspecified) @ Unknown
821pha	41 y M				A	Ingst	Int-S	1		
		diphenhydramine	1	1						
		escitalopram	2	2						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		ethanol	3	3					ethanol	264 mg/dL In Blood (unspecified) @ 1.5 h (pe)
		ethanol	4	4						
822a	43 y F				A	Ingst	Int-S	1		
		diphenhydramine	1	1					diphenhydramine	9.5 mcg/mL In Blood (unspecified) @ Unknown
		melatonin	2	2						
823ph	44 y F				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
824h	45 y M				A	Ingst	Int-S	1		
		diphenhydramine	1	1						
		ethanol	2	2					ethanol	129 mg/dL In Blood (unspecified) @ 20 m (pe)
		ethanol	3	3						
825ph	50 y M				A	Ingst	Int-S	2		
		diphenhydramine	1	1						
826ph	50 y F				A	Ingst	Unk	1		
		diphenhydramine	1	1						
827ph	53 y F				A	Ingst	Int-U	2		
		diphenhydramine	1	1					diphenhydramine	291 ng/mL In Blood (unspecified) @ Unknown
		citalopram	2	2					citalopram	188 ng/mL In Blood (unspecified) @ Unknown
		lorazepam	3	3					lorazepam	58.4 mcg/mL In Blood (unspecified) @ Unknown
		acetaminophen	4	4					acetaminophen	10.6 mcg/mL In Blood (unspecified) @ Unknown
828ha	75 y M				A	Ingst	Int-S	3		
		diphenhydramine	1	1					diphenhydramine	2 mg/kg In Liver @ Unknown
		petroleum distillate, NOS	2	2						
		ethanol	3	3					ethanol	18 mg/dL In Blood (unspecified) @ 20 m (pe)
See also case 112, 124, 165, 182, 234, 294, 297, 397, 432, 448, 468, 483, 501, 510, 516, 547, 557, 572, 586, 699, 713, 717, 722, 733, 734, 740, 775, 781, 802, 854, 868, 872, 873, 891, 904, 912, 926, 966, 1077, 1096, 1110, 1285, 1296, 1300										
Antimicrobials										
829h	35 y F				C	Unk	Int-A	1		
		levamisole	1	1						
		cocaine	2	2						
830i	58 y F				A	Par	AR-D	1		
		ceftriaxone	1	1						
		methylprednisolone	2	2						
		cyanocobalamin	3	3						
831i	74 y F				A	Ingst	AR-D	2		
		cephalexin	1	1						
832	79 y M				A	Ingst	Unt-T	2		
		amantadine	1	1						
See also case 4, 433, 494, 681, 745, 794, 797, 805, 931, 1067, 1185										
Antineoplastics										
[833ph]	52 y F				A	Par	AR-D	2		
		paclitaxel	1	1						
834h	52 y M				C	Par	AR-D	2		
		nivolumab	1	1						
		ipilimumab	2	2						
835h	65 y F				C	Ingst	Unt-G	2		
		antineoplastic drug	1	1					methotrexate	0.1 mcg/L In Blood (unspecified) @ 5 d (pe)
836	68 y M				C	Ingst	AR-D	3		
		methotrexate	1	1						
[837ha]	81 y F				C	Ingst	Unt-T	3		
		methotrexate	1	1					methotrexate	0.04 mmol/L In Blood (unspecified) @ 2 d (pe)

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		methotrexate	1	1					methotrexate	0.04 mmol/L In Blood (unspecified) @ 3 d (pe)
		methotrexate	1	1					methotrexate	0.04 mmol/L In Blood (unspecified) @ 30 m (pe)
Asthma Therapies										
[838h]	59 y M				A/C	Ingst	Int-S	1		
		theophylline	1	1					theophylline	112 mcg/mL In Blood (unspecified) @ Unknown
		theophylline	1	1					theophylline	18.2 mcg/mL In Blood (unspecified) @ 1 d (pe)
		theophylline	1	1					theophylline	72 mcg/mL In Blood (unspecified) @ 8 h (pe)
[839a]	70 y F				A	Par	Unt-T	1		
		epinephrine	1	1						
Cardiovascular Drugs										
[840ha]	3 y F				A	Ingst	Unt-G	1		
		diltiazem (extended release)	1	1					diltiazem	100 ng/mL In Blood (unspecified) @ Autopsy
841ha	11 y F				A	Ingst	Int-S	1		
		verapamil	1	1					verapamil	2000 ng/mL In Blood (unspecified) @ Autopsy
		salicylate	2	2					salicylate	23 mcg/mL In Blood (unspecified) @ Autopsy
		antipsychotic (atypical)	3	3					9-hydroxyrisperidone	110 ng/mL In Blood (unspecified) @ Autopsy
		antipsychotic (atypical)	3	3					risperidone	58 ng/mL In Blood (unspecified) @ Autopsy
842a	21 y F				A	Ingst	Int-S	1		
		verapamil	1	1					verapamil	350 ng/mL In Serum @ Unknown
		benzodiazepine	2	2					lorazepam	34 ng/mL In Plasma @ Unknown
		benzodiazepine	2	2					diazepam	48 ng/mL In Plasma @ Unknown
843ha	21 y F				A	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	720 ng/mL In Blood (unspecified) @ Unknown
844	23 y F				A/C	Ingst	Int-S	3		
		atenolol	1	1						
		diltiazem (extended release)	2	2						
845h	23 y M				A	Ingst	Int-S	2		
		calcium antagonist	1	1						
		beta blocker	2	2						
846ph	25 y F				A/C	Ingst	Int-S	2		
		propranolol	1	1						
		oxcarbazepine	2	2						
		haloperidol	3	3						
		ibuprofen	4	4						
847	26 y M				A	Ingst	Int-S	2		
		nifedipine	1	1						
848hi	27 y F				A/C	Ingst	Int-S	1		
		diltiazem	1	1						
		medroxyprogesterone	2	2						
		estrogen	3	3						
849h	27 y F-Pregnant				A	Ingst	Int-S	1		
		amlodipine/benazepril	1	1						
		ethanol	2	2					ethanol	28 mg/dL In Serum @ 1 h (pe)
850h	27 y F				A	Ingst	Int-S	1		
		propranolol	1	1						
		bupropion	2	2						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
851	29 y F				A	Ingst	Int-S	1		
		amlodipine	1	1						
		metoprolol	2	2						
		bupropion (extended release)	3	3						
852	29 y M				A	Ingst	Int-S	2		
		diltiazem	1	1						
		amlodipine	2	2						
		clonazepam	3	3						
		risperidone	4	4						
853	29 y M				A/C	Ingst	Int-S	3		
		verapamil	1	1						
		hydrochlorothiazide	2	2						
854ha	31 y M				A	Ingst	Int-S	1		
		verapamil	1	1					verapamil	2600 ng/mL In Blood (unspecified) @ 3 h (pe)
		hydroxyzine	2	2					hydroxyzine	490 ng/mL In Blood (unspecified) @ 3 h (pe)
		nortriptyline	3	3					nortriptyline	23 ng/mL In Blood (unspecified) @ 3 h (pe)
		caffeine	4	4						
855ha	32 y F				A	Ingst	Int-S	1		
		diltiazem	1	1					diltiazem	0.81 mg/L In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	93 mg/dL In Serum @ Unknown
		clonazepam	3	3					7-aminoclonazepam	0.042 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	4	4					alprazolam	0.02 mg/L In Blood (unspecified) @ Autopsy
856ha	32 y M				A	Ingst	Int-S	1		
		propranolol	1	1						
		valsartan	2	2						
		celecoxib	3	3						
		hydrochlorothiazide	4	4						
		ethanol	5	5					ethanol	59 mg/dL In Blood (unspecified) @ Unknown
857h	32 y F				U	Ingst	Int-S	2		
		propranolol	1	1						
858ha	33 y F				A/C	Ingst	Int-S	1		
		amlopidipine	1	1					amlodipine	180 ng/mL In Blood (unspecified) @ Unknown
		zolpidem	2	2					zolpidem	1700 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	3	3					alprazolam	100 ng/mL In Blood (unspecified) @ Unknown
		fluoxetine	4	4					fluoxetine	710 ng/mL In Blood (unspecified) @ Unknown
859ha	36 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1					norverapamil	0.79 mg/L In Serum @ Unknown
		verapamil	1	1					verapamil	0.89 mg/L In Serum @ Unknown
		lorazepam	2	2					lorazepam	0.091 mg/L In Urine (quantitative only) @ Unknown
		zopiclone	3	3						
860ph	36 y M				A	Ingst	Int-S	1		
		amlodipine	1	1						
		lisinopril	2	2						
		potassium chloride	3	3						
		lamotrigine	4	4						
		tadalafil	5	5						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		acetaminophen	6	6					acetaminophen	32 mcg/mL In Serum @ 8.5 h (pe)
		acetaminophen	6	6					acetaminophen	45 mcg/mL In Serum @ 5.5 h (pe)
		acetaminophen	6	6					acetaminophen	79 mcg/mL In Serum @ 105 m (pe)
		rivaroxaban	7	7						
		gabapentin	8	8						
		furosemide	9	9						
861ph	36 y F				A/C	Ingst	Int-S	1		
		propranolol	1	1					propranolol	7527 ng/mL In Blood (unspecified) @ Unknown
		citalopram	2	2					citalopram	99.7 pg/mL In Blood (unspecified) @ Unknown
		bupropion	3	3					bupropion	98.4 ng/mL In Blood (unspecified) @ Unknown
		gabapentin	4	4					gabapentin	11.4 mcg/mL In Blood (unspecified) @ Unknown
862ha	36 y F				A	Ingst	Int-S	1		
		verapamil	1	1					verapamil	1500 pg/mL In Blood (unspecified) @ Autopsy
		doxepin	2	2					desmethyldoxepin	1400 ng/mL In Blood (unspecified) @ Autopsy
		doxepin	2	2					doxepin	3700 ng/mL In Blood (unspecified) @ Autopsy
		asenapine	3	3						
863pa	37 y M				U	Ingst	Int-S	1		
		metoprolol	1	1					metoprolol	14 mg/L In Blood (unspecified) @ Autopsy
		metoprolol	1	1					metoprolol	21 mg/kg In Liver @ Autopsy
		bupropion (extended release)	2	2					bupropion	0.8 mg/kg In Liver @ Autopsy
		bupropion (extended release)	2	2					bupropion	1.9 mg/L In Blood (unspecified) @ Autopsy
864h	37 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		clonidine	2	2						
		hydrochlorothiazide/ losartan	3	3						
		alprazolam	4	4						
		metformin	5	5						
		doxylamine/pyridoxine	6	6						
865h	37 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1						
		venlafaxine	2	2						
866pha	39 y M				A	Ingst	Int-S	1		
		beta blocker	1	1						
		acetaminophen/ hydrocodone	2	2						
[867h]	39 y M				A	Ingst	Unt-T	1		
		cardiac glycoside (bufadiendolide)	1	1					digoxin	1.14 ng/mL In Blood (unspecified) @ Unknown
868ha	40 y F				U	Ingst + Unk	Int-S	1		
		verapamil	1	1					verapamil	1800 ng/mL In Blood (unspecified) @ Unknown
		tramadol	2	2					tramadol	120 ng/mL In Blood (unspecified) @ Unknown
		hydrocodone	3	3						
		ethanol	4	4						
		methylphenidate	5	5						
		diphenhydramine	6	6						
		nicotine	7	7						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
869ha	40 y M				U	Ingst	Int-S	3		
		atenolol	1	1						
		verapamil	2	2					verapamil	110 ng/mL In Blood (unspecified) @ Unknown
		sertraline	3	3					desmethylsertraline	160 ng/mL In Blood (unspecified) @ Unknown
		sertraline	3	3					sertraline	78 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	4	4					7-aminoclonazepam	120 ng/mL In Blood (unspecified) @ Unknown
		benzodiazepine	4	4					clonazepam	87 ng/mL In Blood (unspecified) @ Unknown
		gabapentin	5	5						
870pa	40 y F				A/C	Ingst	Int-S	1		
		propranolol	1	1						
		ethanol	2	2						
871p	40 y F				A	Ingst	Int-S	1		
		nifedipine	1	1						
[872ha]	40 y M				A	Ingst	Int-S	1		
		flecainide	1	1					flecainide	3.7 mcg/mL In Blood (unspecified) @ 2 h (pe)
		dextromethorphan	2	2						
		chlorpheniramine	3	3					dextromethorphan	1090 ng/mL In Blood (unspecified) @ Autopsy
873pha	40 y F				A/C	Ingst	Int-S	3		
		nebivolol	1	1						
		metformin	2	2						
		gabapentin	3	3					gabapentin	14.2 mcg/mL In Serum @ Unknown
		topiramate	4	4					topiramate	24 mcg/mL In Serum @ Unknown
		diphenhydramine	5	5					diphenhydramine	83 ng/mL In Serum @ Unknown
		clonazepam	6	6					7-aminoclonazepam	13.1 ng/mL In Serum @ Unknown
		clonazepam	6	6					clonazepam	7 mg/mL In Serum @ Unknown
874h	41 y M				A/C	Ingst	AR-D	3		
		digoxin	1	1						
875ph	41 y F				A	Ingst	Int-S	1		
		verapamil	1	1						
876a	42 y F				A/C	Ingst	Int-S	2		
		clonidine	1	1						
		clonazepam	2	2						
		hair dye, NOS	3	3						
877	42 y F				A	Ingst	Int-S	3		
		nifedipine (extended release)	1	1						
		acetaminophen	2	2						
		bisoprolol	3	3						
		ethanol	4	4						
		hydrochlorothiazide/ triamterene	5	5						
		trazodone	6	6						
878ha	43 y M				A/C	Ingst	Int-S	1		
		metoprolol (extended release)	1	1						
879	43 y F				A	Ingst	Int-S	1		
		propranolol	1	1						
		ethanol	2	2					ethanol	256 mcg/dL In Serum @ 2 h (pe)
880	44 y M				A/C	Ingst	Int-S	1		
		propafenone	1	1					propafenone	5.3 mg/mL In Blood (unspecified) @ Autopsy
		metoprolol	2	2						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
881	44 y M				A/C	Ingst	Int-S	2		
		calcium antagonist	1	1						
		glimepiride	3	2						
		metformin	2	2						
		buspirone	5	3						
		citalopram	4	3						
		lisinopril	6	3						
882	46 y F				A	Ingst	Int-S	2		
		verapamil	1	1						
883h	46 y F				A	Ingst	Int-S	2		
		verapamil	1	1						
884h	46 y F				U	Ingst	Unk	1		
		verapamil	1	1						
		ramipril	2	2						
		ethanol	3	3						
885ha	47 y M				C	Ingst	Int-U	3		
		propranolol	1	1						
		amlodipine	2	2						
886p	47 y M				A/C	Ingst	Int-S	1		
		propranolol	1	1						
		benzodiazepine	2	2						
		trazodone	3	3						
887h	47 y F				A	Ingst	Int-S	1		
		amlodipine	1	1						
		metoprolol (extended release)	2	1						
		bupropion (extended release)	3	3						
		quetiapine	4	4						
		paroxetine	5	5						
		ibuprofen	6	6						
888	47 y M				A	Ingst	Int-S	3		
		sildenafil	1	1						
		tramadol	2	2						
889	47 y M				A/C	Ingst	Int-S	1		
		metoprolol	1	1						
		clonidine	2	2						
[890ha]	47 y M				A	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	0.22 mg/L In Blood (unspecified) @ 1 h (pe)
891ha	47 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		metoprolol	2	2						
		potassium salts	3	3						
		amitriptyline	4	4						
		prazosin	5	5						
		spironolactone	6	6						
		lisinopril	7	7						
		atorvastain	8	8						
		Dicyclomine	9	9						
		meloxicam	10	10						
		histamine-2 blocker	11	11						
		omeprazole	12	12						
		fluoxetine	13	13						
892	48 y F				A	Ingst	Int-S	1		
		diltiazem (extended release)	1	1						
		tramadol	2	2						
		diazepam	3	3						
		ethanol	4	4					ethanol	122 mg/dL In Blood (unspecified) @ Unknown
893ha	48 y F				U	Ingst	Unk	1		
		verapamil	1	1					verapamil	240 ng/mL In Blood (unspecified) @ Unknown
		verapamil	1	1					verapamil	8900 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	2	2						
		oxycodone	3	2						
		tizanidine	4	4						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
894h	48 y F				C	Ingst	Int-S	1		
		amlodipine	1	1						
		bupropion	2	2						
		heroin	3	3						
		acetaminophen/ hydrocodone	4	4						
		ibuprofen	5	5						
895	48 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		venlafaxine	2	2						
		metformin	3	3						
[896ha]	49 y F				A	Ingst	Int-S	1		
		diltiazem (extended release)	1	1					diltiazem	230 ng/mL In Blood (unspecified) @ Autopsy
		doxylamine	2	2					doxylamine	1100 ng/mL In Blood (unspecified) @ Autopsy
897i	49 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		atenolol	2	2						
		angiotensin converting enzyme inhibitor	3	3						
898	49 y M				A	Ingst	Int-S	2		
		propranolol	1	1						
		amitriptyline	2	2						
		amlodipine	3	3						
		paroxetine	4	4						
		lisinopril	5	5						
		ethanol	6	6					ethanol	262 mg/dL In Blood (unspecified) @ Unknown
899h	49 y M				A/C	Ingst	Int-S	1		
		diltiazem	1	1						
		metoprolol	2	2						
		ethanol	3	3					ethanol	173 mg/dL In Serum @ 15 m (pe)
		insulin (glargine)	4	4						
		insulin	5	5						
		acetaminophen	6	6						
		tramadol	7	7						
900	49 y M				A	Ingst	Int-S	1		
		verapamil	1	1						
		rivaroxaban	2	2						
		lisinopril	3	3						
901	49 y F				A/C	Ingst	Int-S	2		
		atenolol	1	1						
902h	50 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		labetalol	2	2						
		ethanol	3	3						
903h	50 y F				A	Ingst	AR-D	2		
		hydrochlorothiazide/ lisinopril	1	1						
		hydrochlorothiazide	2	2						
904ha	50 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1					verapamil	3967 ng/mL In Blood (unspecified) @ Autopsy
		drug, unknown	2	2						
		histamine-2 blocker	3	3						
		benzodiazepine	4	4						
		fluoxetine	5	5						
		hydrochlorothiazide	6	6						
905p	50 y F				A	Ingst	Int-S	1		
		flecainide	1	1						
906	50 y F				A/C	Ingst	Int-U	2		
		carvedilol	1	1						
		cyclobenzaprine	2	2						
		lorazepam	3	3						
		levothyroxine	4	4						
		morphine (extended release)	5	5						

(*continued*)

Table 21. Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
[907ha]	50 y F				U	Ingst	Int-S	1		
		verapamil	1	1					verapamil	1.3 mcg/mL In Blood (unspecified) @ 2 h (pe)
908	50 y M				C	Ingst	Unt-G	3		
		cardiac glycoside	1	1						
		warfarin	2	2						
909	51 y F				A/C	Ingst	Int-S	1		
		clonidine	1	1						
		diazepam	2	2						
		gabapentin	3	3						
		trazodone	4	4						
		tizanidine	5	5						
		tramadol	6	6						
910h	51 y F				A/C	Ingst + Unk	Int-S	2		
		amlodipine	1	1						
		escitalopram	2	2						
		ethanol	3	3					ethanol	34 mg/dL In Blood (unspecified) @ Unknown
		drug, unknown	4	4						
911ha	51 y M				A/C	Ingst	Int-S	1		
		carvedilol	1	1						
		isosorbide mononitrate	2	2						
		lisinopril	3	3						
		clonazepam	4	4						
		metformin	5	5						
912	52 y M				A	Ingst	Unt-G	2		
		amlodipine	1	1						
		hydroxyzine	2	2						
		zolpidem	3	3						
		ibuprofen	4	4						
		ethanol	5	5						
913ha	52 y M				A/C	Ingst	Int-S	1		
		diltiazem	1	1					diltiazem	590 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	95 mg/dL In Blood (unspecified) @ Autopsy
914h	52 y M				A/C	Ingst	Int-S	2		
		metoprolol	1	1						
915a	53 y M				A	Ingst	Int-S	1		
		diltiazem (extended release)	1	1						
		ethanol	2	2						
		insulin	3	3						
		sodium chloride	4	4						
916	53 y F				A	Ingst	AR-D	2		
		lisinopril	1	1						
917h	53 y M				A	Ingst	Int-S	1		
		metoprolol (extended release)	1	1						
		amlodipine	2	2						
		acetaminophen	3	3						
918h	53 y M				A/C	Ingst	Int-S	1		
		metoprolol	1	1						
		amlodipine	2	2						
919ha	54 y F				U	Ingst	Int-S	1		
		metoprolol	1	1					metoprolol	4600 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	0.159 g/dL In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	210 mg/dL In Vitreous @ Autopsy
		bupropion	3	3					hydroxybupropion	340 ng/mL In Blood (unspecified) @ Autopsy
		bupropion	3	3					bupropion	61 ng/mL In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		trazodone	4	4					mcpp (meta-chloro phenylpiperazine)	340 ng/mL In Blood (unspecified) @ Autopsy
		trazodone	4	4					trazodone	6.2 mcg/mL In Blood (unspecified) @ Autopsy
		oxcarbazepine	5	5					10-hydroxycarbazepine	21 mcg/mL In Blood (unspecified) @ Autopsy
		amlodipine	6	6						
920ha	54 y M				A/C	Ingst	Int-S	1		
		carvedilol	1	1						
		nitroglycerin	3	2						
		ranolazine	2	2					ranolazine	10.1 mcg/mL In Blood (unspecified) @ 1 h (pe)
		ranolazine	2	2					ranolazine	10.6 mcg/mL In Whole Blood @ Autopsy
		drug, unknown	4	3						
		ethanol	5	5					ethanol	150 mg/dL In Blood (unspecified) @ 1 h (pe)
921ha	54 y M				A/C	Ingst	Int-S	3		
		metoprolol	1	1						
		lisinopril	2	2						
		rosuvastatin	3	3						
		potassium chloride	4	4						
		furosemide	5	5						
		gabapentin	6	6						
		omeprazole	7	7						
		benzodiazepine	8	8					alprazolam	15 ng/mL In Blood (unspecified) @ Autopsy
922h	54 y F				U	Ingst	Int-S	2		
		amlodipine	1	1						
		cyclobenzaprine	2	2						
		acetaminophen/ codeine	3	3						
		acetaminophen/ hydrocodone	4	4						
923	54 y F				A/C	Ingst	Int-S	3		
		metoprolol	1	1						
924	54 y M				A	Par	Unt-T	3		
		amiodarone	1	1						
925p	54 y F				A/C	Ingst	Int-S	1		
		metoprolol	1	1						
		clonidine	2	2						
		alprazolam	3	3						
		trazodone	4	4						
		anticholinergic	5	5						
		ethanol	6	6						
		drug, unknown	7	7						
		antacid (proton pump inhibitor)	8	8						
		vitamin B	9	9						
		venlafaxine	10	10						
926	55 y F				A	Ingst	Int-S	1		
		nimodipine	1	1						
		diltiazem	2	2						
		cyclobenzaprine	3	3						
		hydroxyzine	4	4						
		metformin	5	5						
927h	55 y M				A	Ingst	Int-S	2		
		calcium antagonist	1	1						
		angiotensin converting enzyme inhibitor	2	2						
		phenytoin	3	3						
		heroin	4	4						
		cocaine	5	5						
		gabapentin	6	6						
		beta blocker	7	7						
		ethanol	8	8						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
928	55 y F				A	Ingst	Int-S	2		
		calcium antagonist	1	1						
		duloxetine	2	2						
		trazodone	3	3						
		benzodiazepine	4	4						
		ethylene glycol	5	5						
929h	55 y M				U	Ingst	Int-S	1		
		atenolol	1	1						
		metformin	2	2						
		gabapentin	3	3						
		acetaminophen/ hydrocodone	4	4						
		meloxicam	5	5						
		lisinopril	6	6						
		pregabalin	7	7						
		salicylate	8	8						
		simvastatin	9	9						
		esomeprazole	10	10						
930h	55 y M				U	Ingst	Int-S	1		
		amlodipine	1	1						
		metoprolol	2	2						
		lurasidone	3	3						
		sitagliptin	4	4						
931	56 y M				U	Ingst	Int-S	2		
		verapamil	1	1						
		sulfamethoxazole/ trimethoprim	2	2						
932	56 y F				A	Ingst	Int-S	1		
		propafenone	1	1						
		bupropion	2	2						
		tramadol	3	3						
		vilazodone	4	4						
		trazodone	5	5						
		rivaroxaban	6	6						
933h	56 y M				A/C	Ingst	Int-S	1		
		diltiazem (extended release)	1	1						
		cyclobenzaprine	2	2						
		ethanol	3	3						
934	56 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		metformin	2	2						
935h	56 y F				A/C	Ingst	Int-S	1		
		propranolol	1	1						
936h	57 y F				A	Ingst	Int-S	1		
		diltiazem	1	1						
937h	57 y F				A	Ingst	Int-S	1		
		metoprolol	1	1						
		venlafaxine	2	2						
		mirtazapine	3	3						
		paliperidone	4	4						
		metformin	5	5						
		glipizide	6	6						
		levothyroxine	7	7						
		atorvastain	8	8						
938h	57 y F				A/C	Ingst	Int-U	2		
		amlodipine	1	1						
		alprazolam	2	2						
939h	57 y M				C	Ingst	AR-D	2		
		digoxin	1	1					digoxin	3.2 ng/mL In Serum @ Unknown
940ha	57 y F				A/C	Ingst	Int-S	1		
		diltiazem	1	1						
		atenolol	2	2						
		duloxetine	3	3						
941ha	57 y F				A	Ingst	Int-S	1		
		diltiazem (extended release)	1	1						
942	57 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		quetiapine	2	2						
		atenolol	3	3						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
943h	57 y M				A/C	Ingst	Int-S	1		
		metoprolol	1	1						
		clonidine	2	2						
944pa	58 y M				C	Ingst	Unk	2		
		flecainide	1	1						
		ethanol	2	2						
945ph	58 y F				A/C	Ingst + Unk	Int-S	2		
		amlodipine	1	1						
		carisoprodol	2	2						
		acetaminophen/ hydrocodone	3	3					acetaminophen	26 mcg/mL In Blood (unspecified) @ Unknown
		alprazolam	4	4						
		fentanyl (transdermal)	5	5						
946	58 y M				U	Ingst	Int-S	1		
		amlodipine	1	1						
		atenolol	2	2						
947a	58 y F				A	Ingst	Int-S	1		
		verapamil	1	1					verapamil	2.7 mg/L In Blood (unspecified) @ Autopsy
		verapamil	1	1					verapamil	3.7 mg/L In Blood (unspecified) @ Autopsy
		pregabalin	2	2						
		levothyroxine	3	3						
		acetaminophen/butalbital/caffeine	4	4					butalbital	7.4 mg/L In Blood (unspecified) @ Autopsy
948ha	58 y F				A/C	Ingst	Int-S	2		
		propranolol	1	1						
		lamotrigine	2	2						
		buspirone	3	3						
		paroxetine	4	4						
949	58 y F				A/C	Ingst	Int-U	2		
		amlodipine	1	1						
		lisinopril	2	2						
		venlafaxine	3	3						
950	59 y M				A/C	Ingst + Inhal	Int-S	1		
		amlodipine	1	1						
		metoprolol	2	2						
		angiotensin converting enzyme inhibitor	3	3						
		cocaine	4	4						
951h	59 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		carvedilol	2	2						
		hydrochlorothiazide/ lisinopril	3	3						
		zolpidem	4	4						
952	59 y F				U	Ingst	Int-S	1		
		amlodipine	1	1						
		atenolol	2	2						
		quetiapine	3	3						
953	59 y F				A	Ingst	Int-S	1		
		metoprolol	1	1						
		acetaminophen	2	2						
954	59 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		metformin	2	2						
		salicylate	3	3						
		glipizide	4	4						
		lisinopril	5	5						
		ethanol	6	6						
955h	60 y M				A/C	Unk	AR-D	3		
		cardiac glycoside	1	1					digoxin	1 ng/mL In Blood (unspecified) @ Unknown
		nadolol	2	2						
956h	60 y M				U	Ingst	Int-S	1		
		diltiazem	1	1						
957ha	60 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
958	60 y F				A	Ingst	Int-S	2		
		amlodipine/benazepril	1	1						
		clorazepate	2	2						
959	61 y M				A/C	Ingst	Int-S	1		
		atenolol	1	1						
		clonazepam	2	2						
		losartan	3	3						
960	61 y M				A/C	Ingst	Unt-G	2		
		verapamil	1	1						
		diazepam	3	2						
		gabapentin	5	2						
		ibuprofen	4	2						
		lisinopril	2	2						
961h	61 y M				A	Ingst	Int-M	2		
		diltiazem (extended release)	1	1						
962p	61 y F				A/C	Ingst	Int-S	2		
		amlodopine/benazepril	1	1						
		venlafaxine	2	2						
		lorazepam	3	3						
		gabapentin	4	4						
963h	62 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		metformin	2	2						
		losartan	3	3						
		ibuprofen	4	4						
964p	62 y F				A/C	Ingst	Int-S	2		
		verapamil	1	1						
		metoprolol	2	2						
		venlafaxine	3	3						
		doxepin	4	4						
		sertraline	5	5						
		acetaminophen	6	6						
		furosemide	7	7						
		gabapentin	8	8						
		celecoxib	9	9						
965	62 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		metoprolol	2	2						
		lisinopril	3	3						
		citalopram	4	4						
966h	63 y M				A/C	Ingst	Int-S	3		
		digoxin	1	1					digoxin	4.6 ng/mL In Serum @ Unknown
		glipizide	2	2						
		fexofenadine	3	3						
		carbamazepine	4	4						
		metolazone	5	5						
		potassium chloride	6	6						
		simvastatin	7	7						
		furosemide	8	8						
		allopurinol	9	9						
		vitamin C	10	10						
967a	63 y F				A	Ingst	Int-S	2		
		amlodipine	1	1						
		amitriptyline	2	2						
		zolpidem	3	3						
		ethanol	4	4					ethanol	247 mg/dL In Blood (unspecified) @ Unknown
		gabapentin	5	5						
968	63 y F				A	Ingst	Int-S	1		
		verapamil	1	1						
969ha	63 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1					verapamil	1100 ng/mL In Blood (unspecified) @ Unknown
		bupropion	2	2						
		venlafaxine	3	3						
		bupropion	4	4						
		paroxetine	5	5						
		ketorolac	6	6						
		ethanol	7	7						
		oxycodone	8	8						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
970h	64 y M				A/C	Ingst	Unk	1		
		metoprolol	1	1						
		amlodipine	2	2						
		amitriptyline	3	3					amitriptyline	984 ng/mL In Blood (unspecified) @ 20 m (pe)
		hydrochlorothiazide/ lisinopril	4	4						
		glyburide	5	5						
		fluoxetine	6	6						
		phenazopyridine	7	7						
		simvastatin	8	8						
971ha	64 y M				A	Ingst	Unk	1		
		verapamil	1	1					verapamil	1500 ng/mL In Blood (unspecified) @ Unknown
		amitriptyline	2	2					nortriptyline	28 ng/mL In Blood (unspecified) @ Unknown
		methadone	3	3					eddp (2-ethylidene-1,5-dimethyl-3,3-diphenyl pyrrolidine)	62 ng/mL In Blood (unspecified) @ Unknown
		methadone	3	3					methadone	80 ng/mL In Blood (unspecified) @ Unknown
		diazepam	4	4					diazepam	170 ng/mL In Blood (unspecified) @ Unknown
		diazepam	4	4					oxazepam	21 ng/mL In Blood (unspecified) @ Unknown
		diazepam	4	4					nordiazepam	350 ng/mL In Blood (unspecified) @ Unknown
		marijuana	5	5					delta-9-carboxy-thc	14 ng/mL In Whole Blood @ Autopsy
		marijuana	5	5					delta-9-thc	4.2 ng/mL In Whole Blood @ Autopsy
		gabapentin	6	6						
		insulin	7	7						
972	64 y M				A	Ingst + Par	Int-S	1		
		amlodipine	1	1						
		enalapril	2	2						
		escitalopram	3	3						
		tamsulosin	4	4						
		insulin	5	5						
973	64 y F				C	Ingst	Unk	1		
		flecainide	1	1						
974	64 y M				A/C	Ingst	AR-D	3		
		diltiazem	1	1						
975h	64 y F				A	Ingst	Int-S	1		
		propranolol	1	1						
		diltiazem	2	2						
976h	64 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		angiotensin converting enzyme inhibitor	2	2						
977p	65 y F				A/C	Ingst	Int-S	1		
		propranolol	1	1						
		mirtazapine	2	2						
		alprazolam	3	3						
		oxcarbazepine	4	4						
		amfetamine	5	5						
		quetiapine	6	6						
978h	65 y M				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		ethanol	2	2						
979ha	65 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	0.72 mg/L In Blood (unspecified) @ 10 h (pe)
		diazepam	2	2						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
980h	65 y F				A	Ingst	Int-S	2		
		verapamil	1	1						
		furosemide	2	2						
		salicylate	3	3						
981h	66 y F				A	Ingst	Int-S	2		
		metoprolol (extended release)	1	1						
		morphine	2	2						
		fentanyl	3	3						
		clonazepam	4	4						
982ha	66 y M				A/C	Ingst	Int-S	1		
		diltiazem	1	1					diltiazem	26.3 mg/L In Serum @ Autopsy
		diltiazem	1	1					diltiazem	5.8 mg/L In Blood (unspecified) @ Autopsy
		diltiazem	1	1					diltiazem	7.6 mg/L In Blood (unspecified) @ Autopsy
983a	66 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1					amlodipine	0.2 mg/L In Blood (unspecified) @ Autopsy
		atenolol	2	2						
		amiodarone	3	3						
		diazepam	4	4						
		irbesartan	5	5						
984	66 y F				A	Ingst	AR-D	3		
		digoxin	1	1					digoxin	4.2 ng/mL In Blood (unspecified) @ 20 m (pe)
985h	66 y M				A/C	Ingst	Int-S	2		
		digoxin	1	1						
		calcium antagonist	2	2						
986h	66 y M				A/C	Ingst	Int-S	1		
		propranolol	1	1						
		gabapentin	2	2						
987h	67 y M				A/C	Ingst	Int-S	2		
		propranolol	1	1						
		quetiapine	2	2						
		clonazepam	3	3						
988h	67 y F				A/C	Ingst	Int-S	3		
		amlodipine	1	1						
		oxycodone	2	2						
		morphine	3	3						
		venlafaxine	4	4						
		acetaminophen/ hydrocodone	5	5						
[989ha]	67 y M				U	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	270 ng/mL In Blood (unspecified) @ Unknown
990h	67 y F				A	Ingst	Int-S	1		
		amlodipine	1	1						
		metoprolol (extended release)	2	2						
		salicylate	3	3						
		oxcarbazepine	4	4						
		olanzapine	5	5						
		thyroid preparation	6	6						
		omeprazole	7	7						
		atorvastain	8	8						
991h	67 y M				A/C	Ingst	Int-S	1		
		metoprolol	1	1						
		drug, unknown	2	2						
992ha	68 y F				A	Ingst	Int-S	2		
		diltiazem	2	1						
		trazodone	1	1					trazodone	7.8 mcg/mL In Blood (unspecified) @ Autopsy
		amlodipine	3	2						
		angiotensin converting enzyme inhibitor	4	3						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
993	68 y M				A	Ingst	Int-S	1		
		amlodipine	1	1						
		ethanol	2	2						
994h	69 y M				A/C	Ingst	Int-S	1		
		amlopidipine	1	1						
		amitriptyline	2	2						
995p	69 y F				U	Ingst	Int-S	2		
		flecainide	1	1						
		acetaminophen/ hydrocodone	5	2						
		antacid (proton pump inhibitor)	10	2						
		benzodiazepine	8	2						
		fluoxetine	9	2						
		furosemide	12	2						
		lisinopril	4	2						
		metoprolol	2	2						
		rivaroxaban	3	2						
		sertraline	11	2						
		simvastatin	7	2						
		temazepam	6	2						
996	69 y F				A/C	Ingst	Int-S	2		
		propranolol	1	1						
		quetiapine	2	2						
		topiramate	3	3						
		desvenlafaxine	4	4						
		levomilnacipram	5	5						
		vilazodone	6	6						
		vortioxetine	7	7						
		alprazolam	8	8						
		levothyoxin	9	9						
		fish oil	10	10						
		estrogen	11	11						
		acetaminophen/ oxycodone	12	12						
997h	69 y M				A/C	Ingst	Int-S	1		
		atenolol	1	1						
		amlodipine	2	2						
		lisinopril	3	3						
998h	69 y F				C	Ingst	AR-D	3		
		digoxin	1	1					digoxin	3.4 mcg/dL In Blood (unspecified) @ Unknown
		metformin	2	2						
999ph	70 y M				A	Ingst	Int-S	2		
		lisinopril	1	1						
		metformin	2	2						
		bupropion	3	3						
		ibuprofen	4	4						
		ethanol	5	5					ethanol	41 mg/dL In Blood (unspecified) @ Unknown
1000ha	70 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		zolpidem	2	2					zolpidem	120 ng/mL In Blood (unspecified) @ Unknown
		lisinopril	3	3						
1001h	70 y F				C	Ingst	AR-D	2		
		digoxin	1	1						
1002	71 y F				A	Ingst	Int-S	1		
		amlodipine	1	1						
		bupropion (extended release)	2	2						
		nitroglycerin	3	3						
		furosemide	4	4						
		angiotensin converting enzyme inhibitor	5	5						
1003	71 y F				A/C	Ingst	AR-D	3		
		digoxin	1	1						
1004a	71 y M				A	Ingst	Int-S	1		
		labetalol	1	1					labetalol	6400 ng/mL In Blood (unspecified) @ Autopsy
		clonazepam	2	2						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1005h	72 y M				U	Ingst	Unt-U	3		
		angiotensin converting enzyme inhibitor	1	1						
		cyclic antidepressant, unknown	2	2						
		alprazolam	3	3						
1006h	72 y F				A/C	Ingst	Int-S	3		
		calcium antagonist	1	1						
		beta blocker	2	2						
		digoxin	3	3					digoxin	2.4 ng/mL In Blood (unspecified) @ Unknown
1007h	72 y F				C	Ingst	AR-D	3		
		metoprolol	1	1						
1008h	72 y M				U	Ingst + Inhal	Int-S	1		
		amlodipine	1	1						
		bupropion	2	2						
		lorazepam	3	3						
		marijuana	4	4						
1009h	73 y F				C	Ingst	Unt-U	3		
		cardiac glycoside	1	1					digoxin	5 ng/mL In Serum @ Unknown
		metformin	2	2						
1010h	73 y F				A	Ingst	Unt-T	3		
		digoxin	1	1						
1011h	74 y F				A	Ingst	Unt-G	3		
		digoxin	1	1					digoxin	0 ng/mL In Blood (unspecified) @ Unknown
		digoxin	1	1					digoxin	14.4 ng/mL In Blood (unspecified) @ Unknown
1012h	74 y F				C	Ingst	AR-D	3		
		digoxin	1	1					digoxin	4.2 ng/mL In Serum @ 19 h (pe)
1013h	74 y F				A/C	Ingst	Unt-M	2		
		atenolol	1	1						
		enalapril	2	2						
		rivaroxaban	3	3						
		antiplatelet drug	4	4						
1014h	75 y M				A	Unk	Unk	2		
		hydrochlorothiazide/ lisinopril	1	1						
1015	75 y F				A/C	Ingst	Unk	2		
		flecainide	1	1						
1016h	75 y M				A/C	Ingst	Int-S	2		
		calcium antagonist	1	1						
		beta blocker	2	2						
		acetaminophen/ oxycodone	3	3						
		benzodiazepine	4	4						
		rivaroxaban	5	5						
1017h	76 y M				A	Ingst	Int-S	2		
		verapamil	1	1						
1018h	76 y M				A/C	Ingst	Unt-T	3		
		carvedilol	1	1						
1019	76 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		carvedilol	2	2						
		lisinopril	3	3						
		carisoprodol	4	4						
1020h	77 y F				C	Ingst	AR-D	3		
		cardiac glycoside	1	1					digoxin	3.7 ng/mL In Blood (unspecified) @ Unknown
1021h	78 y F				C	Ingst	Unk	3		
		digoxin	1	1						
		labetolol	2	2						
1022i	78 y F				A/C	Ingst	Int-S	1		
		verapamil	1	1						
1023	78 y M				A/C	Ingst	Int-S	3		
		digoxin	1	1						
		rivaroxaban	2	2						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		flurazepam	3	3						
		atorvastain	4	4						
1024ha	78 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1					amlodipine	0.64 mg/L In Blood (unspecified) @ 7 h (pe)
1025	80 y F				A/C	Ingst	Int-S	3		
		propranolol	1	1						
		clonazepam	2	2						
1026	81 y F				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		lisinopril	2	2						
		clonazepam	3	3						
		salicylate	4	4						
		hydrochlorothiazide	5	5						
		paroxetine	6	6						
		meloxicam	7	7						
		estazolam	8	8						
1027h	82 y F				C	Ingst	AR-D	1		
		digoxin	1	1					digoxin	3 ng/mL In Blood (unspecified) @ Unknown
		metoprolol	2	2						
1028h	83 y M				A/C	Ingst	AR-D	3		
		diltiazem (extended release)	1	1						
		digoxin	2	2						
		amiodarone	3	3						
		lisinopril	4	4						
		alprazolam	5	5						
		warfarin	6	6						
1029h	84 y M				C	Ingst	AR-D	1		
		digoxin	1	1					digoxin	5 ng/mL In Blood (unspecified) @ Unknown
1030ha	84 y M				A/C	Ingst	Int-S	3		
		carvedilol	1	1						
		methadone	2	2						
		tramadol	3	3						
1031	84 y M				A/C	Ingst	Int-S	1		
		diltiazem	1	1						
		clopidogrel	2	2						
		warfarin	3	3						
		nitrate	4	4						
1032h	84 y F				A	Ingst	Unt-T	2		
		metoprolol (extended release)	1	1						
		trazodone	2	2						
		alprazolam	3	3						
		citalopram	4	4						
		mesalamine	5	5						
		memantine	6	6						
1033h	86 y M				A/C	Ingst	Int-S	2		
		sildenafil	1	1						
		oxycodone	2	2						
1034h	86 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		oxycodone	2	2						
		codeine	3	3						
1035h	87 y F				C	Ingst	Unt-T	2		
		diltiazem (extended release)	1	1						
1036h	87 y M				A/C	Ingst	AR-D	3		
		sotalol	1	1						
		furosemide	2	2						
1037h	87 y M				A/C	Ingst	AR-D	2		
		digoxin	1	1					digoxin	3.7 ng/mL In Serum @ 30 m (pe)
		bisoprodol	2	2						
1038ha	88 y F				A/C	Ingst	Unt-T	1		
		verapamil	1	1					verapamil	4900 ng/mL In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		memantine	2	2						
		oxybutynin	3	3						
		esomeprazole	4	4						
		rosuvastatin	5	5						
1039h	88 y F				A/C	Ingst	AR-D	3		
		verapamil	1	1						
		metoprolol (extended release)	2	2						
1040a	89 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
1041h	90 y F				A/C	Ingst	Int-S	1		
		amlodipine	1	1						
		mirtazapine	2	2					mirtazapine	0.72 mg/L In Blood (unspecified) @ 15 m (pe)
		acetaminophen	3	3					acetaminophen	407 mcg/mL In Blood (unspecified) @ 4 h (pe)
		acetaminophen	3	3					acetaminophen	490 mg/L In Blood (unspecified) @ Autopsy
1042h	92 y F				C	Ingst	Unk	3		
		amlodipine	1	1						
		metoprolol	2	2						
1043h	93 y M				A/C	Ingst	Int-S	2		
		amlodipine	1	1						
		enalapril	2	2						
		alpha blocker	3	3						
1044	94 y F				C	Ingst	AR-D	3		
		digoxin	1	1					digoxin	2.5 ng/mL In Serum @ Unknown
[1045ph]	21 m F				A	Ingst	Unt-G	1		
		flecainide	1	1						
[1046ha]	12 d F				A	Par	Unt-T	1		
		amiodarone	1	1						
1047h	40+ y F				A/C	Ingst	Int-S	1		
		flecainide	1	1						
1048	60+ y M				A	Ingst	Int-S	1		
		amlodipine	1	1						
		metoprolol	2	2						
		trazodone	3	3						
		clopidogrel	4	4						
See also case 107, 165, 329, 432, 459, 495, 539, 545, 554, 566, 591, 607, 616, 617, 637, 671, 681, 691, 705, 718, 722, 728, 747, 759, 761, 765, 770, 776, 782, 786, 788, 790, 802, 804, 805, 810, 817, 1056, 1062, 1063, 1066, 1069, 1071, 1075, 1077, 1085, 1098, 1115, 1137, 1141, 1146, 1148, 1174, 1177, 1185, 1370										
Cold and Cough Preparations										
[1049ph]	11 y F				A	Ingst	Unk	1		
		benzonatate	1	1						
1050pha	15 y F				A	Ingst + Unk	Int-A	2		
		benzonatate	1	1						
		trimethobenzamide	2	2						
1051	20 y M				A	Ingst	Int-S	1		
		diphenhydramine/ pseudoephedrine	1	1						
		methylphenidate	2	2						
		salicylate	3	3					salicylate	45 mg/dL In Serum @ Unknown
		acetaminophen	4	4					acetaminophen	142 mcg/mL In Serum @ Unknown
		ethanol	5	5						
1052h	28 y M				A	Ingst	Int-S	1		
		acetaminophen/ dextromethorphan/ doxylamine/ pseudoephedrine	1	1					acetaminophen	438 mcg/mL In Blood (unspecified) @ Unknown
		ibuprofen	2	2						
		ibuprofen	3	3						
		acetaminophen	4	4						
1053h	29 y M				A/C	Ingst	Int-A	2		
		acetaminophen/ antihistamine/ dextromethorphan	1	1						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1054	69 y F				A	Ingst	Int-S	1		
		meclizine	1	1						
		ethanol	2	2					ethanol	321 mg/dL In Blood (unspecified) @ Unknown
		acetaminophen/ hydrocodone	3	3					acetaminophen	86 mcg/mL In Blood (unspecified) @ Unknown
See also case 4, 213, 266, 493, 637, 732, 755, 812, 872, 896										
Diuretics										
1055	53 y F				A/C	Ingst	AR-D	3		
		furosemide	1	1						
		gabapentin	2	2						
1056	54 y M				A	Ingst	Int-S	2		
		furosemide	1	1						
		lisinopril	2	2						
		amlodipine	3	3						
		carvedilol	4	4						
See also case 591, 615, 681, 749, 770, 776, 802, 853, 856, 860, 877, 891, 903, 904, 921, 964, 966, 980, 995, 1002, 1026, 1036, 1069, 1174										
Electrolytes and Minerals										
1057h	4 y M				U	Unk	Unk	2		
		sodium chloride	1	1						
		diazepam	2	2						
1058ph	30 y M				A/C	Ingst	Unt-U	2		
		dietary supplement	1	1						
		dietary supplement	2	2						
		dietary supplement	3	3						
		dietary supplement	4	4						
[1059h]	6 m F				U	Unk	Unk	2		
		sodium chloride	1	1						
See also case 533, 755, 770, 782, 796, 891, 915, 921, 966										
Gastrointestinal Preparations										
[1060pha]	23 y M				A	Ingst	Int-A	1		
		loperamide	1	1					7-aminoclonazepam	180 ng/mL In Whole Blood @ Autopsy
		loperamide	1	1					loperamide	77 ng/mL In Whole Blood @ Autopsy
		clonazepam	2	2						
1061	75 y F				C	Ingst	AR-D	2		
		bethanechol	1	1						
See also case 387, 433, 637, 681, 719, 770, 771, 781, 790, 796, 864, 891, 921, 925, 929, 990, 995, 1038, 1138, 1143										
Hormones and Hormone Antagonists										
1062hai	26 y F				A	Ingst	Int-S	2		
		metformin	1	1						
		olanzapine	2	2					olanzapine	0.16 mcg/mL In Blood (unspecified) @ Autopsy
		olanzapine	2	2					olanzapine	0.23 mcg/mL In Blood (unspecified) @ Autopsy
		lamotrigine	3	3						
		sertraline	4	4					sertraline	0.21 mcg/mL In Blood (unspecified) @ Autopsy
		sertraline	4	4					sertraline	0.23 mcg/mL In Blood (unspecified) @ Autopsy
		salicylate	5	5						
		simvastatin	6	6						
1063a	32 y F				U	Ingst + Par	Int-S	1		
		insulin	1	1						
		lisdexamfetamine	2	2					amfetamine	90 ng/mL In Blood (unspecified) @ Autopsy
		risperidone	3	3						
		citalopram	4	4						
		caffeine	5	5						
		tadalafil	6	6						
1064	33 y F				A	Ingst + Par	Int-S	1		
		metformin	1	1						
		insulin (lispro)	2	2						
1065	35 y F				A	Ingst + Par	Int-S	2		
		insulin	1	1						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		quetiapine	2	2						
		mirtazapine	3	3						
		mirtazapine	4	4						
1066h	41 y M				A/C	Ingst	Int-S	2		
		insulin (detemir)	1	1						
		cyclobenzaprine	2	2						
		hydrochlorothiazide/ losartin	3	3						
		pioglitazone	4	4						
		clonazepam	5	5						
1067hai	44 y F				A/C	Ingst + Unk	Int-S	1		
		metformin	1	1					metformin	38 mcg/mL In Blood (unspecified) @ Autopsy
		ethanol	2	2						
		quetiapine	3	3					quetiapine	15 mg/L In Blood (unspecified) @ Autopsy
		cocaine	4	4					cocaethylene	0.029 mg/L In Blood (unspecified) @ Autopsy
		cocaine	4	4					cocaine	0.053 mg/L In Blood (unspecified) @ Autopsy
		cocaine	4	4					benzoylecognine	0.23 mg/L In Blood (unspecified) @ Autopsy
		paroxetine	5	5					paroxetine	0.19 mg/L In Blood (unspecified) @ Autopsy
		clindamycin	6	6						
1068	49 y M				A/C	Ingst	Int-S	2		
		oral hypoglycemic (sulfonylurea)	1	1						
		zolpidem	2	2						
		metformin	3	3						
1069h	50 y M				A/C	Ingst	Int-S	1		
		metformin	1	1						
		benazepril	2	2						
		glipizide	3	3						
		simvastatin	4	4						
		hydrochlorothiazide	5	5						
1070h	51 y M				A	Ingst	Int-S	2		
		metformin	1	1						
		oral hypoglycemic (sulfonylurea)	2	1						
		ethanol	3	2						
1071ha	59 y M				A/C	Ingst	Int-S	2		
		metformin	1	1					metformin	6 mcg/mL In Blood (unspecified) @ Autopsy
		verapamil	2	2					verapamil	0.19 mcg/mL In Blood (unspecified) @ Autopsy
1072	61 y M				A	Ingst	Unk	2		
		metformin	1	1						
1073h	62 y F				U	Ingst	Int-S	1		
		metformin	1	1						
		drug, unknown	2	2						
1074h	63 y F				A/C	Ingst	Unk	2		
		glimepiride	1	1						
1075a	64 y F				A	Ingst	Int-S	1		
		metformin	1	1						
		ethanol	2	2					ethanol	228 mg/dL In Blood (unspecified) @ Unknown
		nifedipine	3	3						
1076h	65 y M				A/C	Ingst	Int-S	1		
		metformin	1	1						
		thiazolidinedione	2	2						
1077	65 y F				A	Ingst	Int-S	1		
		metformin	1	1						
		diphenhydramine	2	2						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		lurasidone	3	3						
		fluoxetine	4	4						
		atorvastain	5	5						
		acetaminophen	6	6						
1078	69 y F				A	Ingst	Int-S	2		
		metformin	1	1						
		ethanol	2	2						
1079h	70 y F				A	Ingst	Int-S	1		
		metformin	1	1						
1080h	75 y F				U	Ingst	Int-U	2		
		metformin	1	1						
1081	84 y F				A/C	Ingst	Int-S	2		
		metformin	1	1						
1082ph	86 y M				A/C	Par	Int-S	1		
		insulin	1	1						
1083h	86 y M				A/C	Par	Int-S	3		
		insulin (glargine)	1	1						
		insulin (lispro)	2	2						
See also case 55, 79, 112, 433, 510, 585, 637, 707, 749, 754, 763, 774, 777, 797, 804, 805, 830, 848, 864, 873, 881, 895, 899, 906, 911, 915, 926, 929, 930, 934, 937, 947, 954, 963, 966, 970, 971, 972, 990, 996, 998, 999, 1009, 1148, 1159										
Miscellaneous Drugs										
1084h	32 y M				C	Par	Unt-T	1		
		acetylcysteine	1	1						
		acetaminophen/ oxycodone	2	2					acetaminophen	135 mcg/mL In Blood (unspecified) @ Unknown
		alprazolam	3	3						
1085p	38 y M				A	Par	Int-S	2		
		vecuronium	1	1						
		diltiazem	2	2						
		diazepam	3	3						
1086	49 y F				C	Ingst	AR-D	1		
		teriflunomide	1	1						
1087p	53 y F				A	Ingst	Unk	2		
		memantine	1	1						
		methadone	2	2						
		ethanol	3	3					ethanol	228.1 mg/dL In Blood (unspecified) @ Unknown
See also case 383, 397, 462, 707, 925, 966, 1032, 1038										
Muscle Relaxants										
1088ph	21 y F				A	Ingst	Int-S	2		
		baclofen	1	1						
1089ph	23 y M				A/C	Ingst	Int-S	2		
		carisoprodol	1	1						
		drug, unknown	2	2						
1090ha	34 y F				A/C	Ingst	Int-S	3		
		tizanidine	1	1						
		alprazolam	2	2						
		clonazepam	3	3						
		paroxetine	4	4						
		sertraline	5	5						
		phenytoin	6	6						
		gabapentin	7	7						
1091h	39 y M				A	Ingst	Int-U	3		
		cyclobenzaprine	1	1						
		ethanol	2	2						
1092ph	42 y F				A	Ingst	Int-S	1		
		carisoprodol	1	1						
		zolpidem	2	2						
1093ph	50 y F				A	Ingst	Int-S	2		
		cyclobenzaprine	1	1						
		lithium	2	2					lithium	1.4 mcg/mL In Blood (unspecified) @ 15 m (pe)
		acetaminophen/ hydrocodone	3	3						
1094a	52 y F				A/C	Ingst	Int-S	2		
		baclofen	1	1						
		quetiapine	2	2						
		meloxicam	3	3						
		clonazepam	4	4						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1095p	59 y M				A	Ingst	Int-A	1		
		carisoprodol	1	1						
		acetaminophen/ hydrocodone	2	2						
		benzodiazepine	3	3						
		ethanol	4	4						
1096	60 y M				A	Ingst	Int-S	1		
		tizanidine	1	1					tizanidine	110 ng/mL In Blood (unspecified) @ Unknown
		sertraline	2	2					sertraline	678 ng/mL In Blood (unspecified) @ Unknown
		hydroxyzine	3	3					hydroxyzine	218 ng/mL In Serum @ Unknown
		ethanol	4	4						
		citalopram	5	5					citalopram	135 ng/mL In Blood (unspecified) @ Unknown
1097ph	65 y F				A/C	Ingst	Int-U	1		
		tizanidine	1	1						
		fluoxetine	2	2						
See also case 21, 271, 378, 383, 401, 430, 448, 451, 459, 477, 479, 512, 516, 531, 545, 552, 559, 562, 586, 637, 702, 748, 755, 758, 770, 780, 782, 790, 893, 906, 909, 922, 926, 933, 945, 1019, 1066, 1098, 1112, 1117, 1143, 1148, 1149										
Sedative/Hypnotics/Antipsychotics										
1098ph	15 y F				U	Ingst	Int-S	2		
		risperidone	1	1						
		fluoxetine	2	2						
		losartan	3	3						
		oxycodone	4	4						
		alprazolam	5	5						
		tizanidine	6	6						
1099ha	16 y M				A	Ingst	Int-S	2		
		alprazolam	1	1						
		lorazepam	2	1					lorazepam	0.24 mg/L In Serum @ 9 h (pe)
		marijuana	3	3						
1100a	18 y M				U	Ingst + Unk	Int-A	1		
		alprazolam	1	1					alprazolam	0.25 mg/L In Blood (unspecified) @ Autopsy
		ethanol	3	2					ethanol	50 mg/dL In Blood (unspecified) @ Autopsy
		tramadol	2	2					tramadol	0.42 mg/L In Blood (unspecified) @ Autopsy
1101ph	22 y F				A/C	Ingst	Int-S	1		
		quetiapine	1	1						
		pentobarbital	2	2						
		aconite	3	3						
1102p	23 y M				A	Ingst	Int-S	3		
		quetiapine	1	1						
		drug, unknown	2	2						
1103p	24 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
		lamotrigine	2	2						
1104pha	26 y F				A/C	Ingst	Int-A	2		
		alprazolam	1	1						
		oxycodone	2	2						
1105h	27 y F				A/C	Ingst	Int-S	2		
		zolpidem	1	1						
		ethanol	2	2						
1106p	28 y M				A	Ingst	Int-S	1		
		benzodiazepine	1	1					alprazolam	5.3 ng/mL In Serum @ Unknown
		benzodiazepine	1	1					7-aminoclonazepam	7.7 ng/mL In Serum @ Unknown
		hydrocodone	2	2						
		ethanol	3	3					ethanol	181 mg/dL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
[1107ha]	29 y F				U	Ingst	Unk	3		
		quetiapine	1	1					quetiapine	170 mg/kg In Liver @ Autopsy
		quetiapine	1	1					quetiapine	7.5 mg/L In Blood (unspecified) @ Autopsy
1108pa	29 y M				A/C	Ingst + Par	Int-U	1		
		alprazolam	1	1					alprazolam	0.026 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	1	1					morphine	0.042 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	1	1					fentanyl	2.2 mcg/L In Blood (unspecified) @ Autopsy
		drug, unknown	2	2						
1109p	30 y F				A/C	Ingst + Par	Int-S	2		
		alprazolam	1	1						
		buprenorphine/ naloxone (sublingual film)	2	2						
		heroin	3	3						
1110h	31 y F				U	Ingst	Unk	3		
		quetiapine	1	1						
		diphenhydramine	2	2						
1111pha	31 y M				U	Ingst	Int-S	1		
		risperidone	1	1					risperidone	3.5 ng/mL In Blood (unspecified) @ Autopsy
		risperidone	1	1					9-hydroxyrisperidone	66 ng/mL In Blood (unspecified) @ Autopsy
		quetiapine	2	2					quetiapine	1400 ng/mL In Blood (unspecified) @ Autopsy
1112	32 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		cyclobenzaprine	2	2						
1113ph	33 y F				U	Ingst	Int-S	2		
		quetiapine	1	1						
		ethanol	2	2						
1114	34 y F				U	Ingst	Int-S	2		
		alprazolam	1	1						
		naltrexone	2	2						
		ethanol	3	3						
1115	34 y F				A/C	Ingst	Int-S	1		
		quetiapine	1	1					quetiapine	1458 ng/mL In Blood (unspecified) @ Unknown
		amlodipine	2	2					amlodipine	99.9 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	3	3						
		lithium	4	4					lithium	2.13 mEq/L In Blood (unspecified) @ Unknown
		ethanol	5	5					ethanol	194 mg/dL In Blood (unspecified) @ Unknown
1116h	35 y M				A	Ingst	Int-S	3		
		quetiapine	1	1						
1117h	36 y M				A	Ingst	Int-S	2		
		Chlordiazepoxide	1	1						
		ethanol	2	2					ethanol	160 mg/dL In Serum @ Unknown
		valproic acid (extended release)	3	3					valproic acid	69 mcg/mL In Serum @ Unknown
		quetiapine	4	4						
		cyclobenzaprine	5	5						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1118ph	37 y F				U	Unk	Unk	2		
		benzodiazepine	1	1						
		amitriptyline	2	2						
1119	39 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
1120ph	40 y M				A	Ingst + Unk	Unk	2		
		alprazolam	1	1						
1121ha	40 y M				A	Ingst	Int-S	1		
		alprazolam	1	1						
1122pha	41 y F				U	Ingst	Unk	1		
		barbiturate	1	1						
		hydrocodone	2	2						
		cocaine	3	3						
		benzodiazepine	4	4						
1123ha	42 y M				U	Ingst	Int-A	1		
		alprazolam	2	1						
		oxycodone	1	1						
		citalopram	3	2						
1124ph	42 y M				A	Ingst	Unk	2		
		alprazolam	1	1						
1125h	42 y F				A/C	Ingst	Int-S	3		
		lorazepam	1	1						
		zolpidem	2	2						
		oxycodone	3	3						
1126	42 y M				A/C	Ingst	Unk	2		
		aripiprazole	1	1						
1127p	43 y F				A/C	Ingst	Int-S	2		
		alprazolam	1	1						
		oxycodone	2	2						
1128p	43 y F				A/C	Ingst	Int-S	2		
		perfenazine	1	1						
1129h	43 y F				A/C	Ingst + Aspir	Int-S	2		
		clonazepam	1	1						
1130h	44 y F				A/C	Ingst	Int-S	2		
		risperidone	1	1						
		bupropion	2	2						
1131h	44 y M				A	Ingst	Unk	3		
		zolpidem	1	1						
1132pha	44 y F				U	Ingst + Unk	Int-S	2		
		diazepam	1	1					diazepam	160 ng/mL In Blood (unspecified) @ Unknown
		diazepam	1	1					nordiazepam	380 ng/mL In Blood (unspecified) @ Unknown
		hydrocodone	2	2					hydrocodone	200 ng/mL In Blood (unspecified) @ Unknown
		hydrocodone	2	2					dihydrocodeine	65 ng/mL In Blood (unspecified) @ Unknown
		alprazolam	3	3					alprazolam	72 ng/mL In Blood (unspecified) @ Unknown
		hydromorphone	4	4					hydromorphone	2.2 ng/mL In Blood (unspecified) @ Unknown
		fluoxetine	5	5					norfluoxetine	53 ng/mL In Blood (unspecified) @ Unknown
		marijuana	6	6					delta-9-thc	0.88 ng/mL In Blood (unspecified) @ Unknown
		marijuana	6	6					11-oh-thc (11-hydroxy-delta-9-tetrahydrocannabinol)	1 ng/mL In Blood (unspecified) @ Unknown
		marijuana	6	6					delta-9-carboxy-thc	15 ng/mL In Blood (unspecified) @ Unknown
1133p	46 y F				A/C	Ingst	Int-S	3		
		lurasidone	1	1						
		trazodone	2	2						
		ethanol	3	3						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1134ph	46 y F				C	Ingst	Int-U	3		
		clonazepam	1	1						
1135	47 y F				A	Ingst	Int-S	1		
		lorazepam	1	1						
		salicylate	2	2					salicylate	28 mg/dL In Serum @ Unknown
		clonazepam	3	3						
1136	47 y M				A	Ingst	Int-S	3		
		alprazolam	1	1						
		amfetamine/ dextroamfetamine	2	2						
1137pa	47 y M				A/C	Ingst	Int-S	1		
		quetiapine	1	1					quetiapine	4100 ng/mL In Blood (unspecified) @ Autopsy
		citalopram	2	2					escitalopram	1700 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	178 mg/dL In Blood (unspecified) @ Autopsy
		propranolol	4	4						
		acetaminophen	5	5						
		benztropine	6	6						
		gabapentin	7	7						
		trazodone	8	8						
		ibuprofen	9	9						
1138	47 y F				A/C	Ingst	Int-S	1		
		quietapine	1	1						
		oxybutinin	2	2						
1139pha	47 y F				U	Ingst	Int-S	1		
		alprazolam	1	1					alprazolam	39 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	2	2						
1140pha	47 y F				A/C	Ingst	Int-S	1		
		alprazolam	1	1					alprazolam	200 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ hydrocodone	2	2					hydrocodone	82 ng/mL In Blood (unspecified) @ Autopsy
		amitriptyline	3	3						
		fluoxetine	4	4						
1141ha	48 y M				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		trazodone	2	2						
		lisinopril	3	3						
1142p	48 y F				A	Ingst	Int-S	1		
		diazepam	1	1						
1143a	48 y F				U	Ingst	Int-S	1		
		alprazolam	1	1					alprazolam	88.9 ng/mL In Blood (unspecified) @ Unknown
		diazepam	2	2					diazepam	291 ng/mL In Blood (unspecified) @ Unknown
		diazepam	2	2					temazepam	892 ng/mL In Blood (unspecified) @ Unknown
		diazepam	2	2					nordiazepam	992 ng/mL In Blood (unspecified) @ Unknown
		baclofen	3	3						
		benztropine	4	4						
		oxycodone	5	5					oxycodone	12.9 ng/mL In Blood (unspecified) @ Unknown
		pantoprazole	6	6						
1144ph	49 y F				A/C	Ingst	Int-S	1		
		quetiapine	1	1						
		zolpidem	2	2						
		alprazolam	3	3						
		acetaminophen	4	4					acetaminophen	60 mg/L In Serum @ 15 m (pe)

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1145h	49 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		fluoxetine	2	2						
		amfetamine/ dextroamfetamine (extended release)	3	3						
		ethanol	4	4						
1146h	49 y F				U	Ingst	Int-S	3		
		quetiapine	1	1						
		metoprolol	2	2						
1147i	50 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
1148ha	50 y M				A/C	Ingst	Int-S	1		
		olanzapine	1	1					olanzapine	3200 ng/mL In Blood (unspecified) @ Autopsy
		amfetamine	2	2					amfetamine	2200 ng/mL In Blood (unspecified) @ Autopsy
		glimepiride	3	3						
		alpha blocker	4	4						
		temazepam	5	5					temazepam	400 ng/mL In Blood (unspecified) @ Autopsy
		lisinopril	6	6						
		quetiapine	7	7					quetiapine	550 ng/mL In Blood (unspecified) @ Autopsy
		venlafaxine	8	8					venlafaxine	2800 ng/mL In Blood (unspecified) @ Autopsy
		venlafaxine	8	8					o-desmethyl-venlafaxine	59 ng/mL In Blood (unspecified) @ Autopsy
		glipizide	9	9					glipizide	310 ng/mL In Blood (unspecified) @ Autopsy
		lorazepam	10	10					7-aminoclonazepam	8.1 ng/mL In Blood (unspecified) @ Autopsy
		lorazepam	10	10					lorazepam	87 pg/mL In Blood (unspecified) @ Autopsy
		clonazepam	11	11					7-aminoclonazepam	8.1 ng/mL In Blood (unspecified) @ Autopsy
		bupropion	12	12					bupropion	98 ng/mL In Blood (unspecified) @ Autopsy
		duloxetine	13	13					duloxetine	64 ng/mL In Whole Blood @ Autopsy
		haloperidol	14	14					haloperidol	63 ng/mL In Blood (unspecified) @ Autopsy
		methylphenidate	15	15					methylphenidate	230 ng/mL In Blood (unspecified) @ Autopsy
		chlorpromazine	16	16					chlorpromazine	600 ng/mL In Blood (unspecified) @ Autopsy
		doxepin	17	17					desmethyldoxepin	100 ng/mL In Blood (unspecified) @ Autopsy
		doxepin	17	17					doxepin	1000 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	18	18					fluoxetine	2100 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	18	18					norfluoxetine	700 ng/mL In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		clonidine	19	19					clonidine	10 ng/mL In Blood (unspecified) @ Autopsy
		cyclobenzaprine	20	20					cyclobenzaprine	88 ng/mL In Blood (unspecified) @ Autopsy
1149pha	50 y F				A	Ingst	Int-S	2		
		clonazepam	2	1						
		methocarbamol	1	1						
		topiramate	3	2						
1150h	50 y M				A/C	Ingst	Unk	3		
		alprazolam	1	1						
		acetaminophen/ hydrocodone	2	2						
1151ph	50 y F				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
		acetaminophen/ hydrocodone	2	2						
		clonazepam	3	3						
1152h	52 y F				A/C	Ingst	Int-S	2		
		temazepam	1	1						
		ibuprofen	2	2						
1153h	52 y F				A	Ingst	Int-S	1		
		zolpidem	1	1						
1154h	53 y M				A	Ingst	Unk	2		
		clonazepam	1	1						
		quetiapine	2	2						
		carbamazepine	3	3						
1155h	53 y F				A	Ingst	Int-S	1		
		diazepam	1	1						
		oxycodone	2	2						
1156ph	54 y F				A/C	Ingst	Unk	1		
		chlordiazepoxide	1	1					chlordiazepoxide	10000 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ codeine	2	2					codeine (free)	1300 ng/mL In Blood (unspecified) @ Autopsy
		acetaminophen/ codeine	2	2					acetaminophen	44 mcg/mL In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	182 mg/dL In Blood (unspecified) @ Autopsy
1157p	54 y F				A	Ingst	Int-S	2		
		olanzapine	1	1						
		quetiapine	2	2						
		paroxetine	3	3						
		eszopiclone	4	4						
		alprazolam	5	5						
1158ph	54 y F				U	Ingst + Unk	Int-S	3		
		alprazolam	2	1						
		cocaine	1	1						
		oxycodone	3	2						
1159h	55 y M				A	Ingst	Int-S	1		
		quetiapine (extended release)	1	1						
		oxcarbazepine	2	2						
		metformin/rosiglitazone	3	3						
1160ha	57 y F				A	Ingst	Int-S	3		
		benzodiazepine	1	1					clonazepam	58 ng/mL In Whole Blood @ Autopsy
1161ph	57 y M				A	Ingst	Int-U	1		
		diazepam	1	1						
1162a	58 y M				U	Ingst	Int-M	2		
		quetiapine	1	1					quetiapine	1400 ng/mL In Blood (unspecified) @ Unknown
		quetiapine	1	1					quetiapine	670 ng/mL In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Continued.

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		benzodiazepine	2	2						
		bupropion	3	3					hydroxybupropion	150 ng/mL In Blood (unspecified) @ Unknown
		bupropion	3	3					bupropion	56 ng/mL In Blood (unspecified) @ Unknown
		citalopram	4	4					citalopram	160 ng/mL In Blood (unspecified) @ Autopsy
		citalopram	4	4					citalopram	84 ng/mL In Blood (unspecified) @ Unknown
		trazodone	5	5					trazodone	2.4 mcg/mL In Blood (unspecified) @ Unknown
		trazodone	5	5					mcpp (meta-chloro phenylpiperazine)	43 ng/mL In Blood (unspecified) @ Autopsy
		risperidone	6	6					risperidone	4.8 ng/mL In Blood (unspecified) @ Autopsy
1163	59 y F				A	Ingst	Int-S	2		
		quetiapine	1	1						
1164h	60 y M				A/C	Ingst + Aspir	Int-S	3		
		quetiapine (extended release)	1	1						
		clonazepam	2	2						
		oxcarbazepine	3	3						
1165p	60 y M				A/C	Ingst	Int-S	2		
		quetiapine	1	1						
1166h	61 y M				A	Ingst	Int-S	2		
		alprazolam	1	1						
		oxycodone	2	2						
		temazepam	3	3						
1167ha	63 y F				A/C	Ingst	Int-S	2		
		clonazepam	1	1					clonazepam	0.07 mg/L In Blood (unspecified) @ 1 h (pe)
		acetaminophen/ codeine	2	2					codeine (free)	0.5 mg/L In Blood (unspecified) @ 1 h (pe)
		acetaminophen/ codeine	2	2					codeine	0.86 mg/L In Blood (unspecified) @ 1 h (pe)
		primidone	3	3						
		bupropion	4	4						
		tramadol	5	5						
		levetiracetam	6	6						
1168pai	64 y M				A	Inhal	Unk	2		
		benzodiazepine	1	1					diazepam	40 ng/mL In Blood (unspecified) @ Autopsy
		benzodiazepine	1	1					nordiazepam	95 ng/mL In Blood (unspecified) @ Autopsy
		tramadol	2	1					tramadol	3040 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	3	3					norfluoxetine	130 ng/mL In Blood (unspecified) @ Autopsy
		fluoxetine	3	3					fluoxetine	50 ng/mL In Blood (unspecified) @ Autopsy
1169h	64 y F				A/C	Ingst	Int-S	1		
		quetiapine	1	1						
		oxcarbazepine	2	2						
		lamotrigine	3	3						
		gabapentin	4	4						
		meloxicam	5	5						
1170	65 y F				A/C	Ingst	Int-S	2		
		zolpidem	1	1						
		alprazolam	2	2						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		morphine	3	3						
		acetaminophen/ hydrocodone	4	4						
1171hai	69 y F				A/C	Ingst	Int-S	2		
		alprazolam	1	1						
		zolpidem	2	2						
		trazodone	3	3					trazodone	1.8 mg/L In Serum @ Unknown
1172ha	72 y F				A/C	Ingst	Int-S	1		
		diazepam	1	1					temazepam	5435 ng/mL In Blood (unspecified) @ Autopsy
		diazepam	1	1					oxazepam	57 ng/mL In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	2904 ng/mL In Blood (unspecified) @ Autopsy
1173h	73 y F				C	Ingst	Int-S	1		
		lurasidone	1	1						
		venlafaxine	2	2						
1174h	74 y M				C	Ingst	AR-D	3		
		lorazepam	1	1						
		furosemide	2	2						
		digoxin	3	3						
1175ha	77 y M				U	Unk	Unk	2		
		diazepam	1	1						
[1176ha]	79 y F				A/C	Ingst	Int-S	1		
		phenobarbital	1	1					phenobarbital	79 mcg/mL In Blood (unspecified) @ Autopsy
		phenobarbital	1	1					phenobarbital	85.9 mg/L In Blood (unspecified) @ 2 d (pe)
		phenobarbital	1	1					phenobarbital	94.3 mg/L In Blood (unspecified) @ 1.5 d (pe)
		phenobarbital	1	1					phenobarbital	99.9 mg/L In Blood (unspecified) @ 1 d (pe)
		morphine	2	2					morphine	2 mcg/mL In Urine (quantitative only) @ Autopsy
1177h	81 y M				A	Ingst	Unt-T	2		
		benzodiazepine	1	1						
		angiotensin converting enzyme inhibitor	2	2						
1178ph	86 y F				A	Ingst	Int-S	1		
		benzodiazepine	1	1						
1179h	87 y M				A/C	Ingst	Int-S	2		
		clonazepam	1	1						
		drug, unknown	2	2						
1180ha	91 y M				U	Ingst	Int-U	1		
		temazepam	1	1					temazepam	2800 ng/mL In Blood (unspecified) @ Unknown
		temazepam	1	1					oxazepam	43 ng/mL In Blood (unspecified) @ Unknown
		methadone	2	2						
		tramadol	3	3					o-demethyl tramadol	180 ng/mL In Blood (unspecified) @ Unknown
		tramadol	3	3					tramadol	2500 ng/mL In Blood (unspecified) @ Unknown
		sertraline	4	4					desmethylsertraline	110 ng/mL In Blood (unspecified) @ Unknown
		sertraline	4	4					sertraline	42 ng/mL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1181ha	92 y M				A	Ingst	Int-S	1		
		quetiapine	1	1						
1182h	50+ y M				A	Ingst	Int-S	2		
		drug, unknown	1	1						
		benzodiazepine	2	2						
1183h	70+ y M				A	Unk	Int-S	2		
		zolpidem	1	1						
		duloxetine	2	2						
		alprazolam	3	3						
1184p	Unknown adult (>=20 yrs) M				U	Ingst	Unk	2		
		phenobarbital	1	1						
1185ai	Unknown age F				U	Unk	Int-U	1		
		alprazolam	1	1						
		ciprofloxacin/ dexamethasone	2	2						
		amfetamine/ dextroamfetamine	3	3						
		ziprasidone	4	4						
		sertraline	5	5						
		hydrochlorothiazide/ valsartan	6	6						
		doxycycline	7	7						
		clonidine	8	8						
		cocaine	9	9						
See also case 87, 88, 276, 279, 281, 282, 289, 290, 294, 295, 298, 309, 312, 314, 315, 320, 323, 325, 327, 328, 329, 330, 332, 345, 355, 359, 364, 365, 370, 383, 385, 402, 404, 406, 415, 419, 421, 423, 430, 432, 436, 448, 453, 458, 464, 468, 469, 477, 482, 483, 485, 490, 500, 501, 505, 507, 510, 511, 516, 517, 521, 522, 525, 529, 537, 539, 540, 545, 547, 550, 552, 553, 556, 559, 562, 563, 565, 566, 569, 577, 579, 586, 591, 594, 615, 618, 637, 643, 648, 681, 682, 685, 687, 688, 689, 691, 692, 694, 696, 699, 701, 702, 705, 707, 710, 712, 714, 715, 716, 718, 719, 731, 733, 736, 740, 741, 742, 745, 747, 748, 749, 751, 752, 754, 755, 757, 762, 764, 765, 767, 770, 774, 776, 779, 781, 782, 790, 791, 793, 796, 797, 798, 802, 804, 805, 807, 808, 810, 813, 817, 827, 841, 842, 846, 852, 855, 858, 859, 862, 864, 869, 873, 876, 881, 886, 887, 892, 893, 904, 906, 909, 911, 912, 921, 925, 928, 930, 937, 938, 942, 945, 948, 951, 952, 958, 959, 960, 962, 967, 971, 977, 979, 981, 983, 987, 990, 995, 996, 1000, 1004, 1005, 1008, 1016, 1023, 1025, 1026, 1028, 1032, 1050, 1057, 1060, 1062, 1063, 1065, 1066, 1067, 1068, 1077, 1084, 1085, 1090, 1092, 1094, 1095, 1187, 1188, 1194, 1203, 1213, 1215, 1219, 1220, 1238, 1246, 1249, 1260, 1264, 1266, 1270, 1276, 1279, 1280, 1282, 1285, 1286, 1293, 1297, 1306, 1312, 1331, 1338, 1346										
Stimulants and Street Drugs										
1186pha	16 y M				A	Ingst	Int-A	3		
		lysergic acid diethylamide (LSD)	1	1						
1187ph	16 y F				A	Ingst	Int-S	1		
		heroin	1	1						
		alprazolam	2	2						
		marijuana	3	3						
		nicotine	4	4						
1188pha	17 y F				A/C	Ingst	Int-S	1		
		lisdexamfetamine	1	1						
		quetiapine	2	2						
		diazepam	3	3						
		drug, unknown	4	4						
1189pa	17 y M				U	Unk	Int-A	1		
		amfetamine (hallucinogenic), 25C-NBOMe	1	1						
1190p	17 y M				A	Inhal	Int-A	2		
		tryptamine (hallucinogenic)	1	1						
1191p	18 y M				A	Inhal	Int-A	1		
		hallucinogen, other	1	1						
		THC homolog	2	2						
1192pai	18 y F				U	Par	Int-A	1		
		methamfetamine	1	1						
		marijuana	2	2						
1193h	19 y F				U	Unk	Unk	2		
		methamfetamine	1	1						
		amfetamine	2	2						
1194pha	19 y M				A	Oth	Int-A	1		
		heroin	1	1					morphine	0.029 mg/L In Blood (unspecified) @ 4 h (pe)
		heroin	1	1					codeine	0.542 mg/L In Urine (quantitative only) @ 4 h (pe)

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		heroin	1	1					morphine	3 mg/L In Urine (quantitative only) @ 4 h (pe)
		heroin	1	1					6-monoacetylmorphine	500 ng/mL In Urine (quantitative only) @ 4 h (pe)
		benzodiazepine	2	2					alprazolam	0.049 mg/L In Blood (unspecified) @ 4 h (pe)
		benzodiazepine	2	2					alprazolam	0.798 mg/L In Urine (quantitative only) @ 4 h (pe)
[1195pha]	19 y F				A	Ingst + Inhal + P-ar	Int-A	1		
		methamfetamine	1	1					amfetamine	910 ng/mL In Blood (unspecified) @ Autopsy
		methamfetamine	1	1					methamfetamine	9300 ng/mL In Blood (unspecified) @ Autopsy
1196h	20 y M				A	Ingst	Int-A	1		
		amfetamine (hallucinogenic)	1	1						
		amfetamine (hallucinogenic)	2	2						
		THC homolog	3	3						
1197	20 y F				A	Unk	Int-A	3		
		amfetamine (hallucinogenic)	1	1						
		ethanol	2	2						
1198pa	20 y M				U	Par	Int-A	1		
		heroin	1	1					morphine	0.14 mg/L In Blood (unspecified) @ Autopsy
		heroin	1	1					codeine	0.15 mg/L In Urine (quantitative only) @ Autopsy
		heroin	1	1					morphine	3 mg/L In Urine (quantitative only) @ Autopsy
1199h	20 y F				A	Ingst	Int-A	1		
		amfetamine (hallucinogenic)	1	1						
		methamfetamine	2	2						
1200h	21 y F				A	Par	Int-A	2		
		heroin	1	1						
1201pa	21 y M				A	Unk	Int-A	1		
		methamfetamine	1	1					amfetamine	0.06 mg/L In Blood (unspecified) @ Autopsy
		methamfetamine	1	1					methamfetamine	0.38 mg/L In Blood (unspecified) @ Autopsy
		THC homolog	2	2						
1202ph	21 y M				U	Par	Int-A	1		
		heroin	1	1						
1203ph	21 y F				A/C	Par	Unk	2		
		heroin	1	1						
		haloperidol	2	2						
		benztropine	3	3						
1204p	21 y M				U	Par	Int-A	2		
		heroin	1	1						
1205h	22 y M				A	Ingst	Int-M	1		
		methamfetamine	1	1						
1206ph	22 y F				U	Par	Int-A	1		
		heroin	1	1						
1207h	22 y F				A	Ingst	Int-S	2		
		methamfetamine	1	1						
1208pha	22 y M				A	Par	Int-A	1		
		heroin	1	1					morphine (free)	140 ng/mL In Blood (unspecified) @ Unknown
		heroin	1	1					6-monoacetylmorphine	2.3 ng/mL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		heroin	1	1					codeine (free)	6.7 ng/mL In Blood (unspecified) @ Unknown
		codeine	2	2						
[1209ph]	22 y M				U	Unk	Int-A	1		
		amfetamine (hallucinogenic)	1	1						
1210	22 y M				U	Inhal + Par + Unk	Int-A	2		
		THC homolog, K2	1	1						
		heroin	2	2						
1211ph	23 y M				A	Par	Int-A	1		
		heroin	1	1						
1212p	23 y F				A	Unk	Int-A	2		
		methamfetamine	1	1						
1213ph	23 y M				U	Inhal	Int-A	3		
		synthetic marijuana	1	1						
		methylenedioxymethamfetamine (MDMA)	2	2						
		benzodiazepine	3	3						
		lysergic acid diethylamide (LSD)	4	4						
1214pha	23 y M				A	Ingst	Int-U	3		
		amfetamine	2	1					amfetamine	231 ng/mL In Serum @ Autopsy
		methamfetamine	1	1					methamfetamine	736 ng/mL In Serum @ Autopsy
1215p	23 y F				U	Ingst + Par	Int-A	1		
		heroin	1	1						
		benzodiazepine	2	2						
		cocaine	3	3						
1216ph	23 y M				A	Ingst	Int-A	2		
		amfetamine	1	1						
		amfetamine (hallucinogenic)	2	2						
		lysergic acid diethylamide (LSD)	3	3						
1217pi	23 y F-Pregnant				A	Par	Oth-M	1		
		heroin	1	1						
1218pha	24 y F				A	Oth	Int-A	2		
		heroin	1	1						
1219pha	24 y M				A	Ingst + Inhal + Par	Int-A	1		
		heroin	1	1					codeine	0.01 mg/L In Blood (unspecified) @ Autopsy
		heroin	1	1					morphine	0.064 mg/L In Urine (quantitative only) @ Autopsy
		heroin	1	1					morphine	0.21 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					cocaethylene	0.051 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					cocaine	0.066 mg/L In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	0.91 mg/L In Blood (unspecified) @ Autopsy
		alprazolam	3	3					alprazolam	0.03 mg/L In Blood (unspecified) @ Autopsy
		ethanol	4	4					ethanol	50 mg/dL In Blood (unspecified) @ Autopsy
1220ph	24 y M				A	Par	Int-A	2		
		heroin	1	1						
		alprazolam	2	2						
		buprenorphine/naloxone (sublingual film)	3	3						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1221pha	25 y F				A/C	Ingst	Int-S	1		
		heroin	1	1					6-monoacetylmorphine	1 ng/mL In Vitreous @ Autopsy
		trazodone	2	2						
1222pa	25 y M				A	Unk	Unk	1		
		heroin	1	1					morphine (free)	24 mcg/L In Blood (unspecified) @ Autopsy
		fentanyl	2	2					fentanyl	0.002 mg/L In Blood (unspecified) @ Autopsy
1223h	25 y F				A	Ingst	Int-S	1		
		methamfetamine	1	1						
1224pa	25 y M				A/C	Par	Int-A	1		
		heroin	1	1					codeine	0.022 mg/L In Blood (unspecified) @ Autopsy
		heroin	1	1					morphine	0.24 mg/L In Blood (unspecified) @ Autopsy
		heroin	1	1					codeine	0.64 mg/L In Urine (quantitative only) @ Autopsy
		heroin	1	1					morphine	8 mg/L In Urine (quantitative only) @ Autopsy
1225a	26 y M				U	Ingst + Inhal	Int-A	3		
		amfetamine	1	1						
		methadone	2	2					methadone	0.6 mg/dL In Blood (unspecified) @ 1 h (pe)
		amfetamine (hallucinogenic)	3	3						
1226	26 y M				U	Unk	Int-U	2		
		amfetamine	1	1						
1227pha	26 y M				A	Unk	Int-A	2		
		methylenedioxymethamfetamine (MDMA)	1	1					mdma (3,4-methylenedioxy ethamfetamine)	750 ng/mL In Whole Blood @ Unknown
		methylenedioxymethamfetamine (MDMA)	1	1					mda (3,4-methylenedioxyamfetamine)	82 ng/mL In Whole Blood @ Unknown
		amfetamine	2	2						
1228pai	26 y M				A	Par	Int-A	1		
		heroin	1	1					morphine	41.4 ng/mL In Blood (unspecified) @ Autopsy
1229ph	27 y F				A	Par	Int-A	1		
		heroin	1	1						
1230ai	27 y M				A/C	Ingst	Int-A	1		
		methamfetamine	1	1					amfetamine	0.31 mg/L In Blood (unspecified) @ Autopsy
		methamfetamine	1	1					methamfetamine	12 mg/L In Blood (unspecified) @ Autopsy
1231h	27 y M				A	Ingst	Int-S	2		
		diet aid, unknown	1	1						
		acetaminophen/hydrocodone	2	2						
1232pha	27 y M				U	Ingst + Par	Int-A	2		
		heroin	1	1					morphine (free)	90 ng/mL In Blood (unspecified) @ 1 h (pe)
		ethanol	2	2					ethanol	148 mg/dL In Blood (unspecified) @ 1 h (pe)
1233pi	27 y M				A	Par	Int-S	2		
		heroin	1	1						
1234	28 y M				A	Unk	Int-A	2		
		heroin	1	1						
1235pi	28 y M				A	Par	Int-A	2		
		heroin	1	1						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		nabumetone	2	2						
		acetaminophen	3	3						
		nabumetone	4	4						
		buproprion	5	5						
1236pha	28 y F				U	Ingst + Par	Int-A	1		
		cocaine	1	1					benzoylecognine	0.11 mg/L In Blood (unspecified) @ 16 h (pe)
		ethanol	2	2					ethanol	15 mg/dL In Serum @ 15 m (pe)
		buprenorphine/ naloxone (sublingual film)	3	3						
1237h	28 y M				A	Ingst	Int-A	1		
		methamfetamine	1	1						
		body stuffer	2	2						
1238ph	28 y F				U	Unk	Unk	2		
		heroin	1	1						
		clonazepam	3	2						
		cocaine	2	2						
		gabapentin	4	3						
1239h	28 y M				U	Ingst + Unk	Int-A	2		
		amfetamine	1	1						
		methamfetamine	2	2						
		methylenedioxyme-thamfetamine (MDMA)	3	3						
1240h	28 y M				U	Ingst	Int-U	1		
		methamfetamine	1	1						
1241h	29 y F				A/C	Par	Int-A	2		
		methamfetamine	1	1						
1242ph	30 y M				A/C	Par	Int-A	2		
		heroin	1	1						
1243ph	30 y M				A	Unk	Int-A	2		
		cocaine	1	1						
		phencyclidine	2	2						
1244p	30 y F				A	Unk	Int-A	1		
		heroin	1	1						
1245ph	30 y F				A	Unk	Int-A	1		
		heroin	1	1						
1246ph	31 y M				A/C	Par	Int-A	1		
		cocaine	1	1						
		heroin	2	2						
		diazepam	3	3						
1247p	31 y M				A	Ingst	Int-U	2		
		heroin	1	1						
1248ha	31 y M				A	Par	Int-U	1		
		heroin	1	1						
		fluoxetine	2	2						
		cocaine	3	3						
1249	32 y M				U	Unk	Int-S	2		
		cocaine	1	1						
		benzodiazepine	2	2						
		cocaine	3	3						
		methamfetamine	4	4						
		heroin	5	5						
1250ph	32 y M				U	Ingst + Par	Int-A	1		
		heroin	1	1						
		ethanol	2	2					ethanol	66 mg/dL In Blood (unspecified) @ Unknown
1251ph	33 y M				U	Par	Int-A	1		
		heroin	1	1						
1252i	33 y M				U	Inhal	Int-A	2		
		THC homolog	1	1						
1253pha	33 y F				U	Ingst + Par	Int-A	1		
		heroin	1	1						
		cocaine	2	2						
		methadone	3	3					methadone	430 mg/mL In Blood (unspecified) @ Autopsy
		methamfetamine	4	4					methamfetamine	24 ng/mL In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1254pha	33 y M				A	Unk	Int-A	2		
		methamfetamine	1	1					methamfetamine	3.1 mg/L In Blood (unspecified) @ Autopsy
		THC homolog	2	2						
1255pha	33 y F				A	Par	Int-A	2		
		heroin	1	1						
1256ph	33 y M				A	Ingst	Int-A	2		
		amfetamine (hallucinogenic)	1	1						
1257pha	34 y M				U	Unk	Unk	1		
		cocaine	1	1					cocaethylene	0.01 mg/L In Blood (unspecified) @ Autopsy
		cocaine	1	1					cocaine	0.011 mg/L In Blood (unspecified) @ Autopsy
		cocaine	1	1					cocaine	0.013 mg/L In Blood (unspecified) @ 1.5 h (pe)
		cocaine	1	1					benzoylecognine	2 mg/L In Blood (unspecified) @ 1.5 h (pe)
		cocaine	1	1					benzoylecognine	3.3 mg/L In Blood (unspecified) @ Autopsy
		ethanol	2	2					ethanol	90 mg/dL In Blood (unspecified) @ 1 h (pe)
1258pha	34 y M				A	Ingst	Int-A	1		
		amfetamine (hallucinogenic)	1	1						
		methamfetamine	2	2						
		morphine	3	2						
1259ph	34 y M				A	Par	Int-A	2		
		heroin	1	1						
1260ph	34 y M				A	Par	Int-A	1		
		heroin	1	1						
		diazepam	2	2						
1261p	34 y M				A	Par	Int-U	1		
		heroin	1	1						
1262p	34 y M				A	Par	Int-M	1		
		drug, unknown stimulant or street drug	1	1						
1263h	35 y M				U	Par	Int-A	1		
		heroin	1	1						
1264pha	35 y M				U	Ingst	Unt-G	1		
		heroin	1	1						
		buprenorphine	2	2						
		alprazolam	3	3						
		marijuana	4	4						
		ethanol	5	5						
		cocaine	6	6						
1265h	35 y M				A	Ingst	Int-A	2		
		amfetamine (hallucinogenic)	1	1						
1266pha	35 y F				A/C	Ingst + Par	Int-A	1		
		heroin	1	1					codeine	0.01 mcg/mL In Blood (unspecified) @ Autopsy
		heroin	1	1					morphine	0.26 mcg/mL In Blood (unspecified) @ Autopsy
		alprazolam	2	2					alprazolam	0.031 mcg/mL In Blood (unspecified) @ Autopsy
		zolpidem	3	3					zolpidem	0.17 mcg/mL In Blood (unspecified) @ Autopsy
		trazodone	4	4					trazodone	0.25 mcg/mL In Blood (unspecified) @ Autopsy
1267h	35 y M				A	Unk	Int-A	1		
		methamfetamine	1	1						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1268h	35 y M				A	Ingst	Int-A	1		
		amfetamine (hallucinogenic)	1	1						
		phencyclidine	2	2						
1269	35 y M				U	Ingst	Int-A	1		
		amfetamine (hallucinogenic), alpha-PDP	1	1						
1270ph	35 y F				U	Unk	Unk	2		
		cocaine	1	1						
		benzodiazepine	2	2						
		opioid	3	3						
		ethanol	4	4					ethanol	173 mg/dL In Blood (unspecified) @ Unknown
1271ph	35 y M				A	Oth	AR-D	3		
		methamfetamine	1	1						
1272ph	36 y F				A	Par	Int-A	1		
		heroin	1	1						
1273p	36 y F				U	Par	Int-A	2		
		heroin	1	1						
1274ph	37 y F				A/C	Unk	Int-U	2		
		heroin	1	1						
1275pha	37 y M				U	Unk	Int-U	1		
		cocaine	1	1						
		heroin	2	2						
1276pha	37 y M				A	Ingst	Int-A	2		
		cocaine	1	1					benzoylecognine	990 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone (extended release)	2	2						
		clonazepam	3	3						
1277pha	38 y F				A	Inhal	Int-A	2		
		cocaine	1	1						
1278ph	38 y M				A	Par	Int-A	1		
		heroin	1	1						
		fentanyl	2	2						
1279h	38 y F				U	Par + Unk	Int-A	3		
		methamfetamine	1	1						
		benzodiazepine	2	2						
		marijuana	3	3						
1280ph	38 y M				A/C	Par	Int-S	2		
		heroin	1	1						
		alprazolam	2	2						
1281ph	39 y M				U	Unk	Unk	2		
		amfetamine	1	1						
		methadone	2	2						
		cocaine	3	3						
1282pai	39 y F				U	Unk	Unk	2		
		cocaine	1	1					cocaine	0.032 mg/L In Blood (unspecified) @ Autopsy
		cocaine	1	1					benzoylecognine	0.925 mg/L In Blood (unspecified) @ Autopsy
		cocaine	1	1					benzoylecognine	20 mg/L In Urine (quantitative only) @ Autopsy
		cocaine	1	1					cocaine	3.702 mg/L In Urine (quantitative only) @ Autopsy
		heroin	2	2					morphine	0.066 mg/L In Blood (unspecified) @ Autopsy
		heroin	2	2					6-monoacetylmorphine	115 mg/L In Urine (quantitative only) @ Autopsy
		heroin	2	2					morphine	3 mg/L In Urine (quantitative only) @ Autopsy
		benzodiazepine	3	3					alprazolam	0.048 mg/L In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
		benzodiazepine	3	3					alpha-oh-alprazolam	0.768 mg/L In Urine (quantitative only) @ Autopsy
		benzodiazepine	3	3					alprazolam	1.075 mg/L In Urine (quantitative only) @ Autopsy
1283pai	39 y M				U	Unk	Int-U	1		
		methamfetamine	1	1					methamfetamine	6.3 mg/L In Blood (unspecified) @ Autopsy
1284pai	39 y M				A	Par	Int-A	2		
		heroin	1	1						
1285h	40 y M				A	Unk	Unk	3		
		THC homolog	1	1						
		quetiapine	2	2						
		promethazine	3	3						
1286	40 y M				A	Ingst + Par	Int-S	3		
		phencyclidine	1	1						
		benzodiazepine	2	2						
		dexmedetomidine	3	3						
		lorazepam	4	4						
1287h	40 y F				A	Ingst	Int-A	2		
		methamfetamine	1	1						
		amfetamine/ dextroamfetamine	2	2						
1288ha	40 y F				U	Inhal	Int-A	3		
		phencyclidine	1	1						
		THC homolog	2	2						
		marijuana	3	3						
1289ph	40 y M				A	Ingst + Inhal + Unk	Int-A	2		
		THC homolog, K2	1	1						
1290h	41 y M				A	Ingst	Unk	2		
		methylenedioxyme-thamfetamine (MDMA)	1	1						
		methamfetamine	2	2						
1291h	41 y F				A	Inhal	Int-A	3		
		THC homolog	1	1						
		cocaine	2	2						
1292h	42 y M				A	Par	Int-A	2		
		amfetamine	1	1						
		heroin	2	2						
1293pa	42 y F				A	Par	Int-S	1		
		heroin	1	1						
		diazepam	2	2					nordiazepam	0.79 mg/L In Blood (unspecified) @ Autopsy
		diazepam	2	2					diazepam	1 mg/L In Blood (unspecified) @ Autopsy
		amitriptyline	3	3						
		temazepam	4	4						
1294p	42 y M				A	Ingst	Int-M	1		
		cocaine	1	1						
1295ph	43 y M				A	Unk	Int-A	1		
		methamfetamine	1	1						
1296h	44 y M				A	Ingst	Int-S	2		
		amfetamine	5	1						
		ethanol	3	1						
		gabapentin	1	1						
		oxycodone	4	1						
		promethazine	2	1						
1297pa	44 y F				A/C	Ingst	Int-S	2		
		heroin	1	1						
		benzodiazepine	2	2						
		ethanol	3	3					ethanol	167 mg/dL In Blood (unspecified) @ Unknown
1298ph	45 y M				U	Inhal	Int-A	2		
		cocaine	1	1						
		hydrocodone	2	2						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1299p	46 y F				A	Inhal	Int-A	2		
		THC homolog, K2	1	1						
1300pa	47 y F				A	Ingst + Inhal + Par	Int-S	3		
		cocaine	1	1						
		marijuana	2	2					delta-9-thc	1 ng/mL In Blood (unspecified) @ Autopsy
		marijuana	2	2					delta-9-carboxy-thc	5.5 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	3	3					oxycodone (free)	30 ng/mL In Blood (unspecified) @ Autopsy
		oxycodone	3	3					oxymorphone	4.2 ng/mL In Blood (unspecified) @ Autopsy
		levetiracetam	4	4					levetiracetam	17 mcg/mL In Blood (unspecified) @ Autopsy
		diphenhydramine	5	5					diphenhydramine	130 ng/mL In Whole Blood @ Autopsy
1301pa	47 y F				A	Ingst	Int-U	1		
		heroin	1	1					6-monoacetylmorphine	13 ng/mL In Blood (unspecified) @ Unknown
		heroin	1	1					morphine (free)	93 ng/mL In Blood (unspecified) @ Unknown
		carbamazepine	3	2						
		trazodone	2	2						
		venlafaxine	4	4						
		ethanol	5	5						
1302ph	47 y M				U	Ingst	Int-M	3		
		methamfetamine	1	1						
1303ph	48 y M				A	Unk	Int-A	2		
		heroin	1	1						
		methadone	2	2						
1304p	48 y F				A	Ingst	Unk	2		
		heroin	1	1						
		drug, unknown	2	2						
1305a	48 y M				U	Par	Int-A	1		
		methamfetamine	1	1					methamfetamine	17000 ng/mL In Blood (unspecified) @ Autopsy
		methamfetamine	1	1					amfetamine	240 ng/mL In Blood (unspecified) @ Autopsy
1306h	50 y F				A	Ingst	Int-S	2		
		heroin	1	1						
		acetaminophen/ hydrocodone	2	2						
		buspirone	3	3						
1307pha	50 y F				A	Inhal	Int-A	3		
		THC homolog, K2	1	1						
1308pha	50 y M				U	Unk	Unk	1		
		methamfetamine	1	1					methamfetamine	174 mg/mL In Blood (unspecified) @ Unknown
		bupropion	2	2					bupropion	771 ng/mL In Blood (unspecified) @ Unknown
		valproic acid	3	3					valproic acid	56.3 mcg/mL In Blood (unspecified) @ Unknown
		ethanol	4	4					ethanol	0.086 % In Blood (unspecified) @ Unknown
		marijuana	5	5					(tetrahydrocannabinol)	7.8 ng/mL In Blood (unspecified) @ Unknown

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1309	51 y F				A	Ingst	Int-S	3		
		amfetamine	1	1						
		tramadol	2	1						
		ethanol	3	2						
1310h	51 y F				U	Ingst	Unk	2		
		cocaine	1	1						
		hydrocodone	2	2						
1311ha	53 y M				U	Inhal	Int-A	3		
		cocaine	1	1						
1312h	53 y F				A	Ingst	Int-S	3		
		phentermine	1	1						
		clonazepam	2	2						
		lorazepam	3	3						
1313pha	55 y M				A	Inhal + Par	Int-A	1		
		heroin	1	1					6-monoacetylmorphine	8.1 ng/mL In Blood (unspecified) @ Autopsy
		cocaine	2	2					benzoylecognine	1535 ng/mL In Blood (unspecified) @ Autopsy
1314h	58 y M				A	Ingst	Int-S	2		
		caffeine	1	1						
		ethanol	2	2						
1315p	58 y M				A/C	Par	Int-A	2		
		heroin	1	1						
1316ph	59 y M				A	Inhal	Int-A	3		
		THC homolog	1	1						
1317pha	61 y M				A	Ingst + Par	Int-A	1		
		heroin	1	1					morphine (free)	100 ng/mL In Blood (unspecified) @ 1 h (pe)
		cocaine	2	2					benzoylecognine	150 ng/mL In Blood (unspecified) @ 1 h (pe)
		ethanol	3	3					ethanol	220 mg/dL In Blood (unspecified) @ 1 h (pe)
[1318h]	62 y M				A/C	Ingst	Unk	3		
		phenibut	1	1						
1319h	62 y M				U	Unk	Int-U	2		
		cocaine	1	1						
		heroin	2	2						
		methadone	3	3						
1320a	64 y M				A	Ingst	Int-S	1		
		caffeine	1	1					caffeine	180 mg/L In Blood (unspecified) @ Unknown
1321pha	65 y M				U	Inhal + Unk	Int-A	1		
		heroin	1	1						
		morphine (extended release)	2	2					hydromorphone	1.1 ng/mL In Blood (unspecified) @ Unknown
		morphine (extended release)	2	2					morphine (free)	51 ng/mL In Blood (unspecified) @ Unknown
		morphine (extended release)	2	2					codeine (free)	6.1 ng/mL In Blood (unspecified) @ Unknown
		marijuana	3	3						
		fentanyl	4	4					norfentanyl	0.53 ng/mL In Unknown @ Unknown
		fentanyl	4	4					fentanyl	10 ng/mL In Blood (unspecified) @ Unknown
1322ha	66 y M				A	Unk	Int-A	1		
		cocaine	1	1						
1323ha	70 y M				A	Ingst	Int-A	3		
		cocaine	1	1					benzoylecognine	0.87 mg/L In Plasma @ Unknown
		warfarin	2	2						
1324p	30+ y M				U	Par	Int-A	1		
		heroin	1	1						
1325p	40+ y M				A	Par	Int-M	2		
		heroin	1	1						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1326p	50+ y F				A/C	Inhal	Int-A	2		
		cocaine	1	1						
1327pi	Unknown adult (>=20 yrs) F				A/C	Unk	Int-A	1		
		heroin	1	1						
1328p	Unknown adult (>=20 yrs) F				A/C	Par	Int-A	1		
		heroin	1	1						
1329pi	Unknown age M				A	Par	Int-A	2		
		heroin	1	1						
See also case 7, 53, 206, 213, 227, 242, 259, 275, 278, 279, 281, 289, 290, 292, 295, 298, 302, 309, 314, 320, 328, 332, 340, 347, 359, 364, 388, 397, 402, 407, 419, 423, 444, 506, 538, 550, 572, 654, 656, 662, 683, 702, 716, 731, 749, 772, 788, 814, 817, 829, 854, 868, 894, 927, 950, 971, 977, 1008, 1051, 1063, 1067, 1099, 1109, 1122, 1132, 1136, 1145, 1148, 1158, 1185, 1330, 1338, 1351										
Unknown Drug										
1330h	17 y M				A/C	Ingst	Int-A	3		
		drug, unknown	1	1						
		marijuana	2	2						
1331	19 y M				A/C	Ingst	Int-S	2		
		drug, unknown	1	1						
		sertraline	2	2						
		olanzapine	3	3						
		trazodone	4	4						
1332h	19 y M				A	Unk	Int-A	3		
		drug, unknown	1	1						
		ethanol	2	2					ethanol	130 mg/dL In Blood (unspecified) @ Unknown
1333	20 y M				A	Ingst	Int-S	2		
		drug, unknown	1	1						
1334pai	20 y M				A	Ingst	Unk	2		
		drug, unknown	1	1						
1335ph	23 y F				A/C	Par	Int-A	2		
		drug, unknown	1	1						
1336pa	24 y M				A	Unk	Int-A	1		
		drug, unknown	1	1					methamfetamine	4.1 mg/L In Blood (unspecified) @ Unknown
1337p	24 y M				A	Unk	Unk	2		
		drug, unknown	1	1						
1338ph	26 y F				U	Unk	Unk	1		
		drug, unknown	1	1						
		benzodiazepine	2	2						
		cocaine	3	3						
		hydrocodone	4	4						
		barbiturate	5	5						
		phencyclidine	6	6						
1339	26 y F				A	Ingst	Int-S	2		
		drug, unknown	1	1						
		acetaminophen	2	2					acetaminophen	30 mcg/mL In Blood (unspecified) @ Unknown
1340pa	27 y M				A	Ingst	Int-S	2		
		drug, unknown	1	1						
		bupropion	2	2					bupropion	203 ng/mL In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	161 mg/dL In Blood (unspecified) @ Autopsy
		ethanol	3	3					ethanol	186 mg/dL In Vitreous @ Autopsy
		gabapentin	4	4					gabapentin	2.3 mcg/mL In Blood (unspecified) @ Autopsy
		lamotrigine	5	5					lamotrigine	1.1 mcg/mL In Blood (unspecified) @ Autopsy

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
1341p	30 y F				U	Ingst	Int-U	2		
		drug, unknown	1	1						
		ethanol	2	2						
1342pa	31 y M				A	Unk	Unk	2		
		drug, unknown	1	1					phencyclidine	0.07 mg/L In Blood (unspecified) @ Autopsy
1343pa	32 y M				A	Unk	Unk	2		
		drug, unknown	1	1						
1344p	33 y M				U	Unk	Unk	2		
		drug, unknown	1	1						
1345h	35 y F				A	Ingst	Int-A	2		
		drug, unknown	1	1						
1346ph	36 y F				A	Unk	Int-S	2		
		drug, unknown	1	1						
		acetaminophen	2	2						
		diazepam	3	3						
1347h	37 y M				U	Unk	Int-U	3		
		drug, unknown	1	1						
1348i	37 y F				A	Ingst	Int-S	2		
		drug, unknown	1	1						
1349h	38 y M				U	Unk	Unk	2		
		drug, unknown	1	1						
1350a	38 y F				A	Unk	Unk	3		
		drug, unknown	1	1						
1351ha	38 y F				A	Unk	Unk	2		
		drug, unknown	1	1						
		THC homolog	2	2						
1352pi	39 y F				A	Ingst	Unk	2		
		drug, unknown	1	1						
1353h	39 y M				A	Ingst	Int-U	2		
		drug, unknown	1	1						
1354ph	40 y F				U	Ingst	Int-S	2		
		drug, unknown	1	1						
1355h	42 y F				A/C	Ingst	Unt-T	2		
		drug, unknown	1	1						
1356p	44 y F				U	Unk	Unk	2		
		drug, unknown	1	1						
1357	47 y F				A	Unk	Unt-U	3		
		drug, unknown	1	1						
1358ph	47 y F				A	Ingst	Int-S	2		
		drug, unknown	1	1						
1359pha	52 y F				U	Ingst	Int-S	2		
		drug, unknown	1	1						
1360i	53 y M				A	Ingst	Int-S	2		
		drug, unknown	1	1						
1361ha	57 y M				A	Unk	Int-S	2		
		drug, unknown	1	1						
1362h	57 y F				A	Ingst + Unk	Int-U	2		
		drug, unknown	1	1						
		acetaminophen	2	2					acetaminophen	49 mcg/dL In Serum @ Unknown
1363h	58 y M				U	Ingst	Int-S	3		
		drug, unknown	1	1						
		acetaminophen	2	2					acetaminophen	36 mcg/mL In Blood (unspecified) @ Unknown
1364h	62 y F				U	Ingst	Int-U	2		
		drug, unknown	1	1						
		ethanol	2	2						
1365p	64 y M				U	Unk	Unt-U	2		
		drug, unknown	1	1						
1366h	65 y M				A/C	Ingst	Unk	3		
		drug, unknown	2	1						
		ethanol	1	1						
1367	66 y M				U	Ingst	Unk	3		
		drug, unknown	1	1						
		ethanol	2	2						
1368i	87 y M				C	Ingst	Int-M	3		
		drug, unknown	1	1						
1369	20+ y M				U	Unk	Unk	2		
		drug, unknown	1	1						

(*continued*)

Table 21. Continued

Annual Report ID	Age	Substances	Substance Rank	Cause Rank	Chronicity	Route	Reason	RCF	Analyte	Blood Concentration @ Time
See also case 30, 87, 90, 150, 281, 288, 302, 386, 408, 440, 476, 543, 567, 727, 904, 910, 920, 991, 1073, 1089, 1102, 1108, 1179, 1188, 1237, 1304										
Veterinary Drugs										
[1370a]	53 y F				A	Ingst	Int-S	1		
		pentobarbital/ phenytoin	1	1					phenytoin	12 mg/L In Blood (unspecified) @ Autopsy
		pentobarbital/ phenytoin	1	1					pentobarbital	52 mg/L In Blood (unspecified) @ Autopsy
		venlafaxine	2	2						
		simvastatin	3	3						
1371i	63 y M				A	Ingst	Int-M	2		
		doramectin	1	1						

Listing of 1371 (1256 Direct +115 Indirect) fatalities classified as RCF category =1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).
Annual Report ID: Bracketed [case number]=Narrative provided for this case in Appendix C
i=Indirect case; identified through other sources (news feeds, medical examiner data, or other) about which no inquiry to the PC was made, **p=**prehospital cardiac and/or respiratory arrest, **h**=hospital records reviewed, **a**=autopsy report reviewed.
Age Gender: y=years, **m**=months, **d**=days, **F**=female, **M**=male, **F-Pregnant**=pregnant, **U**=unknown
Chronicity: C=chronic exposure, **A**=acute exposure, **A/C=**acute on chronic, **U**=unknown
Route: Aspir=Aspiration (with ingestion), **B-S**=Bite/sting, **Derm**=Dermal, **Ingst**=Ingestion, **Inhal**=Inhalation/nasal, **Oc**=Ocular, **Ot**=Otic, **Oth**=Other, **Par**=Parenteral, **Rec**=Rectal, **Unk**=Unknown, **Vag**=Vaginal
Reason: AR-D=Adverse reaction – Drug, **AR-F**=AR – Food, **AR-O**=AR – Other, **Int-A**=Intentional – Abuse, **Int-M**=Int – Misuse, **Int-S**=Int – Suspected Suicide, **Int-U**=Int – Unknown, **Oth-C**=Other – Contamination/tampering, **Oth-M**=Oth – Malicious, **Oth-W**=Oth – Withdrawal, **Unk**=Unknown reason, **Unt-B**=Unintentional – Bite/sting, **Unt-E**=Unt – Environmental, **Unt-F**=Unt - Food poisoning, **Unt-G**=Unt – General, **Unt-M**=Unt – Misuse, **Unt-O**=Unt – Occupational, **Unt-T**=Unt - Therapeutic error, **Unt-U** =Unt – Unknown
RCF (Relative Contribution to Fatality): 1 = Undoubtedly responsible, 2 = Probably responsible, 3 = Contributory. Provided by the RPC for Indirect cases and the AAPCC Fatality Review Team for the direct (non-Indirect) cases.

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

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6-12	13-19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Non-Pharmaceuticals																			
Adhesives/Glues																			
Miscellaneous Adhesives/Glues																			
Cyanoacrylates (Superglues, etc)	4712	4648	2251	311	278	1419	5	327	57	4439	155	18	26	1220	643	887	156	5	0
Epoxy	548	507	164	30	21	235	2	47	8	481	8	4	13	134	89	113	23	1	0
Non-Toxic Adhesives/Glues (White Glue, Paper Glue, etc)	1066	978	642	212	42	60	8	13	1	917	44	10	3	42	115	67	2	0	0
Toluene/Xylene (Adhesives Only)	278	260	132	8	8	77	0	32	3	245	11	1	3	47	57	43	15	0	0
Unknown Types of Adhesive, Glue, Cement or Paste	3505	3314	1583	310	180	976	12	215	38	3114	94	25	65	606	553	553	84	5	0
Category Total:	**10,109**	**9707**	**4772**	**871**	**529**	**2767**	**27**	**634**	**107**	**9196**	**312**	**58**	**110**	**2049**	**1457**	**1663**	**280**	**11**	**0**
Alcohols																			
Miscellaneous Alcohols																			
Ethanol (Beverages)	51,811	6761	1579	159	882	3604	14	393	130	2190	3947	277	149	3169	704	1237	1127	260	20
Ethanol (Non-Beverage, Non-Rubbing)	3576	2620	1791	131	86	530	5	60	17	2355	197	29	17	270	568	185	59	9	0
Higher Alcohols (Butanol, Amyl Alcohol, Propanols, etc)	134	104	42	5	8	41	0	8	0	92	8	1	2	36	22	17	15	0	0
Isopropanol (Excluding Rubbing Alcohols and Cleaning Agents)	2983	2545	1092	81	122	1114	1	115	20	1887	584	29	18	740	538	479	241	31	1
Methanol (Excluding Automotive Products and Cleaning Agents)	632	501	94	6	39	320	0	36	6	414	65	9	1	246	113	79	47	17	13
Other Types of Alcohol	226	210	127	10	8	53	1	10	1	195	12	1	0	24	48	22	2	0	1
Unknown Types of Alcohol	592	206	51	9	12	108	2	19	5	100	81	4	4	94	26	25	27	16	3
Rubbing Alcohols																			
Rubbing Alcohols: Ethanol with Methyl Salicylate	9	9	5	1	1	2	0	0	0	7	1	0	1	3	2	2	0	0	0
Rubbing Alcohols: Ethanol without Methyl Salicylate	161	154	106	9	5	28	0	5	1	142	10	0	2	13	41	20	3	0	0
Rubbing Alcohols: Isopropanol with Methyl Salicylate	254	245	182	5	5	46	0	7	0	225	18	1	0	56	90	24	5	2	0
Rubbing Alcohols: Isopropanol without Methyl Salicylate	9218	8353	4712	278	355	2611	13	346	38	7003	1223	66	31	1649	1687	1255	392	32	1
Rubbing Alcohols: Unknown	65	55	24	2	3	23	0	2	1	39	15	0	0	23	12	11	4	0	0
Category Total:	**69,661**	**21,763**	**9805**	**696**	**1526**	**8480**	**36**	**1001**	**219**	**14,649**	**6161**	**417**	**225**	**6323**	**3851**	**3356**	**1922**	**367**	**39**
Arts/Crafts/Office Supplies																			
Miscellaneous Arts/Crafts/Office Supplies																			
Artist Paints (Non-Water Color)	3133	3039	2343	214	98	332	9	35	8	2950	47	6	34	97	361	119	8	1	0
Artist Paints (Water Color)	1290	1253	1080	89	34	35	4	8	3	1232	16	2	1	21	122	26	0	0	0
Chalks	1873	1843	1711	68	27	28	3	6	0	1809	27	3	1	38	208	49	4	0	0
Clays	2104	2051	1697	181	61	90	3	16	3	2015	27	1	8	93	217	82	4	0	1
Crayons	1901	1839	1565	146	44	68	4	9	3	1806	29	1	1	35	189	34	1	0	0
Glazes	107	105	47	18	16	19	0	5	0	96	7	0	2	17	16	14	0	0	0
Office Supplies: Miscellaneous	118	115	56	11	0	36	0	11	1	110	3	2	0	13	26	15	5	0	0
Other Types of Arts/Crafts/ Writing Products	5887	5560	4068	583	191	534	21	144	19	5359	151	30	14	256	773	257	28	1	0
Pencils	1287	1243	550	497	114	49	12	16	5	1108	95	26	2	54	131	57	2	1	0
Pens or Inks	9597	9344	6339	1743	718	365	32	121	26	8823	397	41	64	275	1178	256	18	1	0
Typewriter Correction Fluids	637	628	415	81	47	66	1	18	0	583	38	3	2	51	147	49	3	0	0
Unknown Types of Arts/Crafts/ Writing Products	118	113	75	21	7	7	0	3	0	108	2	1	1	9	21	7	2	0	0
Category Total:	**28,052**	**27,133**	**19,946**	**3652**	**1357**	**1629**	**89**	**392**	**68**	**25,999**	**839**	**116**	**130**	**959**	**3389**	**965**	**75**	**4**	**1**
Automotive/Aircraft/Boat Products																			
Automotive Products																			
Automotive Products: Brake Fluids	883	822	239	10	61	443	0	59	10	775	33	7	3	272	183	223	29	6	0
Automotive Products: Ethylene Glycol (Including Antifreeze)	6178	5666	459	129	502	3961	33	525	57	4748	702	131	18	2124	1074	924	433	119	10
Automotive Products: Glycol and Methanol Mixtures	183	178	44	10	17	87	0	16	4	159	12	5	1	57	45	27	4	2	1
Automotive Products: Hydrocarbons (Transmission Fluids, Power Steering Fluids, etc)	1995	1876	627	57	100	921	1	151	19	1773	74	15	9	591	368	602	97	4	0

(*continued*)

Table 22(A). Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6-12	13-19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Automotive Products: Methanol (Dry Gas, Windshield Washing Solutions, etc)	1285	1201	154	49	105	760	2	121	10	1067	105	22	2	392	299	262	44	6	2
Automotive Products: Other Glycols	439	428	51	14	13	64	234	49	3	420	4	2	1	32	290	44	5	0	0
Miscellaneous Automotive/Aircraft/Boat Products																			
Automotive/Aircraft/Boat Products: Non-Toxic	16	15	10	0	0	4	0	1	0	15	0	0	0	2	2	1	1	0	0
Automotive/Aircraft/Boat Products: Other	1436	1375	546	72	69	587	6	84	11	1312	29	9	19	420	264	372	82	4	0
Automotive/Aircraft/Boat Products: Unknown	208	193	44	6	19	102	0	20	2	174	9	2	5	101	30	56	15	2	0
Category Total:	**12,623**	**11,754**	**2174**	**347**	**886**	**6929**	**276**	**1026**	**116**	**10,443**	**968**	**193**	**58**	**3991**	**2555**	**2511**	**710**	**143**	**13**
Batteries																			
Disc Batteries																			
Disc Batteries: Alkaline (MNO2)	411	400	261	58	17	44	0	18	2	390	8	1	1	303	231	37	6	0	1
Disc Batteries: Lithium	163	133	62	21	9	35	0	5	1	108	12	0	10	113	41	26	24	8	3
Disc Batteries: Mercuric Oxide	5	5	1	0	0	4	0	0	0	5	0	0	0	1	2	0	0	0	0
Disc Batteries: Nickel Cadmium	2	2	1	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Disc Batteries: Other	6	6	3	0	0	3	0	0	0	6	0	0	0	3	3	0	0	0	0
Disc Batteries: Silver Oxide	34	34	14	1	2	17	0	0	0	32	0	2	0	17	23	4	0	0	0
Disc Batteries: Unknown	2591	2539	1600	367	70	456	6	34	6	2437	77	12	3	1866	1202	153	45	8	1
Disc Batteries: Zinc-Air	156	146	25	5	2	113	0	0	1	145	0	0	0	66	100	12	1	0	0
Miscellaneous Batteries																			
Automotive/Aircraft/Boat Batteries	577	569	37	14	27	428	0	60	3	550	5	7	4	177	60	176	45	3	0
Other Types of Battery	235	226	35	9	28	103	0	40	11	206	13	0	6	41	41	39	13	1	0
Penlight/Flashlight/Dry Cell Batteries	4850	4732	2695	526	262	987	10	224	28	4267	398	34	15	930	1226	445	103	0	0
Unknown Types of Battery	74	71	29	3	7	26	0	5	1	63	4	4	0	15	15	13	4	0	0
Category Total:	**9104**	**8863**	**4763**	**1005**	**424**	**2216**	**16**	**386**	**53**	**8211**	**517**	**60**	**39**	**3532**	**2944**	**905**	**241**	**20**	**5**
Bites and Envenomations																			
Aquatic																			
Fish Stings	626	619	25	32	62	450	6	37	7	612	1	1	5	288	6	204	110	3	1
Jellyfish and Other Coelenterate Stings	333	327	45	63	56	130	1	25	7	323	2	0	2	72	4	120	18	0	0
Other or Unknown Marine Animal Bites and/or Envenomations	278	274	157	22	11	65	2	16	1	266	3	3	2	51	41	29	13	1	0
Exotic Snakes																			
Exotic Snake: Unknown If Poisonous	5	5	0	0	1	1	0	3	0	5	0	0	0	1	0	2	1	0	0
Exotic Snakes: Non-Poisonous	32	31	2	0	9	20	0	0	0	31	0	0	0	27	2	11	11	0	0
Exotic Snakes: Poisonous	42	41	1	1	4	32	0	3	0	41	0	0	0	26	2	10	13	1	0
Insects																			
Ant or Fire Ant Bites	657	611	199	57	28	264	6	46	11	592	3	10	6	89	20	160	35	0	0
Bee, Wasp, or Hornet Stings	3501	3401	612	351	175	1877	10	323	53	3397	1	2	1	511	29	1199	222	20	1
Caterpillars	1437	1427	411	215	104	597	6	85	9	1392	9	5	20	245	61	498	65	1	0
Centipede or Millipede Bites	665	659	122	43	42	400	3	41	8	655	2	1	1	55	20	242	21	2	0
Mosquito Bites	101	93	23	7	6	48	0	8	1	93	0	0	0	9	1	31	2	0	0
Other Insect Bites and/or Stings	5659	5509	1186	398	335	2970	10	541	69	5352	14	113	16	968	191	1226	334	7	0
Scorpion Stings	15,632	15,604	1560	1635	1317	10,444	13	453	182	15,598	0	2	2	1416	76	10,040	698	25	0
Tick Bites	809	783	189	80	30	358	2	117	7	781	1	1	0	160	35	114	22	0	0
Mammals																			
Bat Bites	586	582	61	90	41	295	5	77	13	577	2	0	0	361	105	54	4	0	0
Cat Bites	638	629	40	61	52	400	3	60	13	627	0	0	1	424	3	204	42	0	0
Dog Bites	2201	2187	303	431	241	1064	10	111	27	2186	0	0	1	1631	10	777	170	4	0
Fox Bites	19	19	1	1	0	12	1	4	0	18	1	0	0	15	3	4	0	0	0
Human Bites	21	20	1	1	2	9	0	5	2	18	0	2	0	12	0	6	4	0	0
Other Mammal Bites	680	675	83	102	56	342	3	67	22	659	1	2	4	360	46	147	27	0	0
Raccoon Bites	128	124	8	8	16	78	0	11	3	120	2	2	0	80	9	29	5	0	0
Rodent or Lagomorph Bites (Squirrels, Rats, Mice, Gerbils, Hamsters, Rabbits, etc)	856	836	191	134	76	314	6	99	16	796	2	30	3	279	30	200	17	0	0
Skunk Bites	13	13	2	2	0	6	1	2	0	13	0	0	0	9	2	5	0	0	0

(*continued*)

Table 22(A). Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6-12	13-19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Miscellaneous Bites and Envenomations																			
Other or Unknown Animal Bites	246	244	25	32	20	134	1	28	4	242	1	0	1	91	9	75	32	0	1
Other or Unknown Reptile Bites	353	348	130	67	20	99	4	19	9	328	7	3	8	80	42	96	10	0	0
Unknown Types of Insect or Spider Bite and/or Envenomation	2607	2569	602	170	140	1352	4	226	75	2540	7	15	4	401	60	628	120	2	0
Miscellaneous Snake Bites and Envenomations																			
Unknown or Known Non-Poisonous Snake Bites	680	673	48	84	103	394	1	39	4	672	1	0	0	378	45	337	42	0	0
Unknown Types of Snake Envenomation	1765	1741	118	190	216	1160	0	49	8	1736	2	2	0	1538	45	744	583	26	1
Snakes																			
Copperhead Envenomations	1786	1764	63	122	151	1386	1	38	3	1761	3	0	0	1702	16	490	1074	33	1
Coral Envenomations	77	76	2	3	5	62	0	0	4	76	0	0	0	66	2	42	15	4	0
Cottonmouth Envenomations	234	233	6	13	25	185	0	4	0	231	0	0	2	213	3	98	92	3	0
Rattlesnake Envenomations	818	801	34	58	57	632	0	17	3	798	3	0	0	758	16	203	368	89	3
Unknown Crotalid Envenomations	884	866	42	56	91	660	2	14	1	864	1	0	0	824	18	230	498	29	2
Spiders																			
Black Widow Spider Bites and/or Envenomations	1631	1604	106	89	113	1202	2	78	14	1601	1	1	1	730	59	485	293	12	0
Brown Recluse Spider Bites and/or Envenomations	1185	1171	89	53	93	744	3	171	18	1169	1	0	0	448	20	260	198	11	0
Other Necrotizing Spider Bites and/or Envenomations	109	106	19	7	9	58	2	11	0	103	2	1	0	25	2	30	9	0	0
Other Spider Bites and/or Envenomations	4049	4008	418	223	289	2602	5	412	59	3978	6	10	4	858	78	1030	286	7	0
Tarantula Bites and/or Envenomations	50	48	3	7	6	30	0	2	0	47	0	0	1	11	3	15	2	0	0
Category Total:	**51,393**	**50,721**	**6927**	**4908**	**4002**	**30,876**	**113**	**3242**	**653**	**50,298**	**79**	**206**	**85**	**15,212**	**1114**	**20,075**	**5456**	**280**	**10**
Building and Construction Products																			
Insulation																			
Asbestos	371	341	38	23	11	163	0	83	23	333	2	1	3	41	71	22	2	0	0
Fiberglass	518	452	194	36	27	139	6	44	6	430	9	2	8	78	64	79	11	0	0
Other Types of Insulation	99	96	32	2	2	50	0	9	1	94	1	0	1	33	7	21	6	0	0
Unknown Types of Insulation	409	389	251	19	19	71	1	27	1	376	8	1	3	41	48	50	6	0	0
Urea or Formaldehyde Insulations	9	9	5	0	0	4	0	0	0	8	0	0	1	1	1	0	0	1	0
Miscellaneous Building and Construction Products																			
Caulking Compounds and Construction Putties	2346	2271	1565	88	56	439	5	100	18	2218	25	8	16	202	447	164	14	0	0
Cement or Concrete (Excluding Glues)	1147	1116	315	37	46	599	15	91	13	1092	9	3	10	471	131	271	200	4	0
Other Types of Building or Construction Products	2211	2050	1041	108	72	625	6	151	47	1965	44	12	24	378	388	325	91	2	0
Soldering Flux	158	146	46	9	13	59	1	16	2	142	1	3	0	45	29	43	5	0	0
Unknown Types of Building or Construction Products	76	69	17	1	4	37	0	10	0	63	1	2	1	26	8	13	7	1	0
Category Total:	**7344**	**6939**	**3504**	**323**	**250**	**2186**	**34**	**531**	**111**	**6721**	**100**	**32**	**67**	**1316**	**1194**	**988**	**342**	**8**	**0**
Chemicals																			
Acids																			
Hydrochloric Acid	1958	1609	77	78	204	1053	4	167	26	1539	43	10	6	624	121	555	197	7	2
Hydrofluoric Acid	683	569	19	7	17	482	0	37	7	553	10	1	1	452	79	212	130	9	2
Other Types of Acid	4443	3833	461	179	313	2389	5	452	34	3598	102	66	40	1536	379	1169	435	21	0
Unknown Types of Acid	154	126	11	1	10	83	1	17	3	109	5	8	1	66	3	24	28	4	0
Miscellaneous Chemicals																			
Acetone (Excluding Nail Polish Removers)	1256	1065	395	35	74	489	1	63	8	962	55	29	12	301	161	267	43	4	0
Alkalis (Excluding Cleaning Agents, Bleaches, Batteries, and Detergents)	3799	3317	561	127	245	1936	14	406	28	3099	117	43	28	1606	333	881	588	41	0
Ammonia (Excluding Cleaning Agents)	3017	2132	474	110	149	1166	9	206	18	1998	72	31	18	758	312	617	177	12	0
Borates or Boric Acid (Excluding Topicals and Pesticides)	3812	3460	1754	233	132	1070	10	231	30	3210	137	61	38	518	640	301	51	4	2

(*continued*)

Table 22(A). Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6-12	13-19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Chlorates (Excluding Matches and Fireworks)	19	17	8	1	4	4	0	0	0	17	0	0	0	6	5	3	1	0	0
Cyanides (Excluding Rodenticides)	205	143	6	3	3	95	0	29	7	107	14	15	2	86	29	28	6	6	3
Dioxins	9	6	0	0	0	5	0	1	0	6	0	0	0	5	0	5	0	0	0
Ethylene Glycol (Excluding Automotive, Aircraft, or Boat Products)	717	538	44	12	32	392	0	48	10	335	149	16	2	318	102	74	65	59	12
Formaldehyde or Formalin	825	745	85	30	76	438	2	86	28	692	21	11	13	287	96	182	47	2	0
Ketones	366	285	69	7	10	168	0	30	1	276	3	0	1	133	58	85	27	2	0
Methylene Chloride (Excluding Paint Strippers)	147	131	17	10	5	84	0	11	4	124	4	0	1	56	22	40	12	1	1
Nitrates and Nitrites (Excluding Medications and Substances of Abuse)	1120	1057	357	237	96	276	7	73	11	877	152	17	6	245	236	125	35	7	0
Other Chemicals	11,934	10,461	4129	838	575	3942	44	785	148	9546	390	173	300	2428	1649	1969	503	42	4
Other Glycols (Excluding Automotive, Aircraft, or Boat Products)	1092	574	233	23	22	206	0	70	20	521	19	2	23	169	97	104	23	3	1
Phenol or Creosotes (Excluding Disinfectants)	249	222	22	6	18	145	0	29	2	210	4	1	3	110	22	80	36	2	0
Strychnine (Excluding Rodenticides)	27	22	7	0	2	8	0	3	2	12	2	3	4	8	2	0	1	0	0
Toluene Diisocyanate	478	453	100	35	19	243	0	53	3	434	9	3	6	144	50	113	26	0	0
Unknown Chemicals	3949	3346	673	194	187	1719	20	478	75	2606	120	382	134	1188	418	727	277	13	0
Category Total:	**40,259**	**34,111**	**9502**	**2166**	**2193**	**16,393**	**117**	**3275**	**465**	**30,831**	**1428**	**872**	**639**	**11,044**	**4814**	**7561**	**2708**	**239**	**27**
Cleaning Substances (Household)																			
Automatic Dishwasher Detergents																			
Automatic Dishwasher Detergents: Granules (Unit Dose)	807	804	768	3	4	18	2	9	0	795	2	3	4	29	197	114	4	0	0
Automatic Dishwasher Detergents: Granules (Various Containers)	2339	2295	1936	28	30	234	6	60	1	2266	5	22	0	109	485	320	12	2	0
Automatic Dishwasher Detergents: Granules with Liquids (Unit Dose)	7333	7283	6947	44	40	199	4	44	5	7262	8	10	2	430	1907	1281	41	0	0
Automatic Dishwasher Detergents: Liquids (Unit Dose)	725	714	650	8	9	42	1	4	0	702	1	3	8	59	200	106	21	1	0
Automatic Dishwasher Detergents: Liquids (Various Containers)	1815	1774	1421	37	23	245	4	42	2	1734	16	23	1	137	396	241	30	1	0
Automatic Dishwasher Detergents: Tablets	3520	3482	3230	41	26	161	1	21	2	3463	8	9	1	141	878	434	14	0	0
Automatic Dishwasher Rinse Agents	914	885	706	8	13	134	0	23	1	873	9	3	0	83	181	167	18	0	0
Other or Unknown Types of Automatic Dishwasher Detergent	2153	2115	1799	33	29	205	2	42	5	2075	9	30	1	121	385	256	15	1	0
Bleaches																			
Bleaches: Borates	143	129	50	6	14	46	0	13	0	120	8	0	1	23	21	32	3	0	0
Bleaches: Hypochlorite (Liquid and Dry)	41,706	35,384	14,300	1403	2454	14,504	75	2340	308	31,835	2540	566	263	9317	5205	9901	1213	31	3
Bleaches: Non-Hypochlorite	373	326	128	11	24	135	7	18	3	292	20	4	9	74	58	83	9	0	0
Bleaches: Other or Unknown (Household)	581	496	206	24	43	189	0	29	5	435	43	13	3	161	79	132	29	0	0
Cleansers																			
Anionic or Nonionic Cleansers	1958	1821	1389	47	41	281	1	54	8	1764	32	18	6	139	416	196	13	0	0
Other or Unknown Types of Household Cleanser	2832	2518	1603	74	95	622	8	105	11	2359	77	60	14	481	468	396	49	3	1
Disinfectants																			
Disinfectants: Hypochlorite (Non-Bleach Products)	2548	2185	971	81	104	868	1	142	18	2039	85	37	17	558	303	529	106	4	0
Disinfectants: Other or Unknown	6041	5681	3407	306	257	1385	15	276	35	5326	202	63	71	654	1120	972	107	3	0
Disinfectants: Phenol	839	795	505	75	34	147	4	27	3	736	38	17	3	88	189	110	14	0	0
Disinfectants: Pine Oil	4382	3854	2150	135	142	1220	15	167	25	3589	177	42	18	763	970	742	77	6	0

(*continued*)

Table 22(A). Continued

	No. of Case Mentions	No. of Single Exposures	Age							Reason				Treated in Health Care Facility	Outcome				
			<=5	6-12	13-19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn		None	Minor	Moderate	Major	Death
Drain Cleaners																			
Drain Cleaners: Acids	134	96	11	3	3	60	2	15	2	90	3	1	2	37	10	27	15	0	0
Drain Cleaners: Alkalis	2763	2362	384	65	72	1511	6	287	37	2192	112	21	32	708	341	640	244	29	2
Drain Cleaners: Hydrochloric Acid	26	18	5	0	1	12	0	0	0	16	0	2	0	4	7	5	3	0	0
Drain Cleaners: Other or Unknown	778	624	94	16	15	417	0	72	10	574	34	9	4	182	76	136	50	9	0
Drain Cleaners: Sulfuric Acid	531	416	85	12	16	238	1	58	6	400	10	5	1	143	87	99	70	1	1
Fabric Softeners/Antistatic Agents																			
Fabric Softener/Antistatic Agent: Other or Unknown	26	25	21	1	0	2	0	1	0	24	1	0	0	5	6	3	1	0	0
Fabric Softeners/Antistatic Agents: Aerosol or Spray	110	106	84	2	1	15	2	2	0	102	1	2	1	4	22	11	1	0	0
Fabric Softeners/Antistatic Agents: Dry or Powder (Unit Dose)	8	8	7	1	0	0	0	0	0	8	0	0	0	3	4	1	0	0	0
Fabric Softeners/Antistatic Agents: Dry or Powder (Various Containers)	17	15	15	0	0	0	0	0	0	15	0	0	0	2	3	4	0	0	0
Fabric Softeners/Antistatic Agents: Liquid (Unit Dose)	11	11	10	0	1	0	0	0	0	10	0	0	1	2	0	3	0	0	0
Fabric Softeners/Antistatic Agents: Liquid (Various Containers)	865	812	598	25	22	140	3	24	0	777	20	3	10	87	179	97	8	0	0
Fabric Softeners/Antistatic Agents: Powder with Liquid (Unit Dose)	2	2	2	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0
Fabric Softeners/Antistatic Agents: Solid or Sheet	635	613	512	20	11	58	0	11	1	591	12	5	5	21	116	24	3	0	0
Glass Cleaners																			
Glass Cleaners: Ammonia Containing	1670	1505	1179	46	66	187	2	24	1	1402	81	17	3	165	385	184	10	0	0
Glass Cleaners: Anionics or Nonionics	112	102	61	4	7	27	0	3	0	89	10	1	1	18	27	22	3	0	0
Glass Cleaners: Isopropanol	1620	1469	1068	63	62	231	1	42	2	1382	68	14	2	138	339	169	10	0	0
Glass Cleaners: Other or Unknown Types of Household	1634	1455	966	71	109	252	3	43	11	1339	92	16	1	193	297	189	13	0	0
Hand Dishwashing																			
Anionic or Nonionic Hand Dishwashing Detergents	5578	4912	3046	259	103	1242	14	228	20	4694	74	98	41	412	636	870	55	1	0
Other or Unknown Types of Household Hand Dishwashing Detergent	2198	1938	1170	92	65	491	1	108	11	1842	33	51	10	129	184	278	15	0	0
Laundry Additives																			
Enzyme and/or Microbiological Laundry Additives	66	61	37	3	1	13	0	5	2	60	0	1	0	19	11	18	2	0	0
Laundry Bluing and/or Brightening Agents (without Detergent)	11	9	9	0	0	0	0	0	0	9	0	0	0	1	2	0	1	0	0
Laundry Detergent Boosters	343	309	220	19	4	58	0	8	0	304	3	1	1	31	83	48	5	0	0
Other or Unknown Laundry Additives or Miscellaneous Products	1170	1112	924	54	30	84	2	18	0	1071	15	14	10	110	258	124	9	1	0
Water Softeners	64	61	29	9	1	18	0	4	0	50	3	6	2	8	11	8	0	0	0
Laundry Detergents																			
Laundry Detergents: Granules (Unit Dose)	291	284	238	5	2	31	1	7	0	281	2	0	1	67	71	73	9	0	0
Laundry Detergents: Granules (Various Containers)	2915	2793	2106	78	124	409	6	64	6	2655	58	69	10	408	595	536	42	2	0
Laundry Detergents: Granules with Liquids (Unit Dose)	439	429	401	12	1	8	5	2	0	429	0	0	0	186	82	182	18	2	0
Laundry Detergents: Liquids (Unit Dose)	13,619	13,300	12,320	416	148	323	26	57	10	13,182	86	12	10	5763	2419	6375	854	28	1
Laundry Detergents: Liquids (Various Containers)	7158	6873	5230	176	175	1106	13	152	21	6623	185	33	18	1268	1229	1516	147	6	2
Laundry Detergents: Other or Unknown Types of Household Laundry Detergent and/or Fabric Cleaner	284	260	184	10	9	41	0	15	1	246	10	1	3	81	57	95	8	1	0

(*continued*)

Table 22(A). Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6-12	13-19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Laundry Detergents: Soaps	181	164	125	8	3	24	0	3	1	157	5	2	0	30	42	15	6	0	0
Laundry Prewash/Stain Removers																			
Laundry Prewash/Stain Removers: Aerosol or Spray Solvent Based	206	197	170	2	2	17	0	6	0	192	1	0	3	18	36	38	4	0	0
Laundry Prewash/Stain Removers: Aerosol or Spray Surfactant Based	221	210	179	4	5	16	1	5	0	206	2	2	0	26	34	44	6	0	0
Laundry Prewash/Stain Removers: Dry Solvent Based	4	3	1	0	0	2	0	0	0	3	0	0	0	0	1	0	0	0	0
Laundry Prewash/Stain Removers: Dry Surfactant Based	101	98	77	5	4	10	0	2	0	97	1	0	0	8	21	14	1	0	0
Laundry Prewash/Stain Removers: Liquid Solvent Based	552	526	415	8	15	72	1	13	2	509	7	7	2	83	158	71	7	1	0
Laundry Prewash/Stain Removers: Liquid Surfactant Based	1660	1593	1374	25	28	140	2	21	3	1563	17	7	6	134	325	257	16	0	0
Laundry Prewash/Stain Removers: Other or Unknown	1894	1798	1340	40	38	325	1	46	8	1744	25	11	16	176	339	339	24	1	0
Laundry Prewash/Stain Removers: Other or Unknown Solvent Based	26	24	20	1	2	1	0	0	0	24	0	0	0	6	3	7	2	0	0
Laundry Prewash/Stain Removers: Other or Unknown Surfactant Based	34	32	27	0	1	3	0	0	1	32	0	0	0	2	6	1	0	0	0
Miscellaneous Cleaners																			
Miscellaneous Cleaning Agents: Acids	1236	1068	465	20	36	466	3	70	8	1019	18	19	11	259	230	239	47	1	0
Miscellaneous Cleaning Agents: Alkalis	7183	6429	3934	183	249	1724	13	287	39	6051	239	90	33	1271	1263	1182	259	16	0
Miscellaneous Cleaning Agents: Anionics or Nonionics	4787	4342	2896	142	148	935	16	181	24	4138	115	46	32	559	807	601	65	2	0
Miscellaneous Cleaning Agents: Cationics	2741	2579	1419	96	129	735	49	135	16	2339	121	92	22	502	502	480	76	5	0
Miscellaneous Cleaning Agents: Ethanol (Excluding Automotive Products)	515	487	375	19	11	70	0	12	0	470	6	7	3	34	114	63	3	0	0
Miscellaneous Cleaning Agents: Glycols (Excluding Automotive Products)	461	426	272	17	14	105	0	17	1	403	15	3	4	66	98	67	5	1	0
Miscellaneous Cleaning Agents: Isopropanol (Excluding Automotive Products and Glass)	1741	1623	1044	154	80	275	4	56	10	1527	67	13	13	136	293	182	21	1	0
Miscellaneous Cleaning Agents: Methanol (Excluding Automotive Products)	17	15	9	0	1	5	0	0	0	14	0	0	0	3	4	2	1	0	0
Miscellaneous Cleaning Agents: Other or Unknown Household Cleaning Agents	4375	3998	2339	232	188	991	8	217	23	3749	133	75	27	778	818	773	124	2	1
Miscellaneous Cleaning Agents: Phenol (Excluding Disinfectants)	3	3	2	0	0	1	0	0	0	3	0	0	0	1	1	0	0	0	0
Miscellaneous Cleaning Substances (Household)																			
Ammonia Cleaners (All Purpose)	744	540	173	26	34	259	1	42	5	500	23	12	3	131	88	126	22	1	0
Carpet, Upholstery, Leather, or Vinyl Cleaners	3353	3161	2251	99	63	631	4	98	15	3045	48	30	29	382	562	495	53	3	0
Hydrofluoric Acid or Bifluoride Wheel Cleaners	59	58	6	1	4	42	0	4	1	57	0	1	0	44	2	30	15	0	0
Starches, Fabric Finishes, or Sizing	242	229	186	2	9	25	0	6	1	221	6	0	1	13	32	25	3	0	0
Oven Cleaners																			
Oven Cleaners: Acids	5	4	2	0	0	2	0	0	0	4	0	0	0	0	0	1	0	0	0
Oven Cleaners: Alkalis	2043	1973	330	65	162	1139	8	253	16	1859	32	49	27	757	220	599	237	14	0
Oven Cleaners: Detergent Types	8	7	3	0	0	3	0	1	0	6	0	0	1	1	3	1	0	0	0

(*continued*)

Table 22(A). Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6-12	13-19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Oven Cleaners: Other or Unknown	299	280	49	11	18	154	4	43	1	255	6	15	3	98	36	73	21	0	0
Rust Removers																			
Rust Removers: Acids Other Than Hydrofluoric Acid Types	366	329	122	13	9	151	0	30	4	304	16	5	3	78	68	93	9	1	0
Rust Removers: Alkalis	4	3	1	0	1	1	0	0	0	3	0	0	0	2	0	2	0	0	0
Rust Removers: Hydrofluoric Acid	315	303	29	2	6	224	1	27	14	281	10	4	6	137	73	134	20	1	0
Rust Removers: Other or Unknown	167	152	26	3	9	97	0	14	3	140	3	3	6	33	31	44	12	0	0
Spot Removers/Dry Cleaning Agents																			
Spot Removers/Dry Cleaning Agents: Anionics or Nonionics	116	112	76	5	7	21	1	2	0	106	3	2	1	14	25	16	2	0	0
Spot Removers/Dry Cleaning Agents: Glycols	127	118	76	11	1	25	0	5	0	116	1	0	1	17	21	30	2	0	0
Spot Removers/Dry Cleaning Agents: Isopropanol	37	34	25	0	1	7	0	1	0	33	0	0	1	2	10	5	0	0	0
Spot Removers/Dry Cleaning Agents: Other Halogenated Hydrocarbon Containing Products	13	13	10	0	0	3	0	0	0	13	0	0	0	2	2	3	0	0	0
Spot Removers/Dry Cleaning Agents: Other Hydrocarbon and/or Non-Halogenated Containing	392	367	215	12	6	102	0	30	2	349	8	5	5	78	84	83	18	0	1
Spot Removers/Dry Cleaning Agents: Other or Unknown	82	73	55	2	0	15	0	1	0	72	1	0	0	12	14	6	3	0	0
Spot Removers/Dry Cleaning Agents: Perchloroethylene	5	5	4	0	0	1	0	0	0	5	0	0	0	1	2	0	0	0	0
Toilet Bowl Cleaners																			
Toilet Bowl Cleaners: Acids	2945	2321	1238	56	88	780	3	138	18	2195	100	11	12	508	595	618	91	4	2
Toilet Bowl Cleaners: Alkalis	4263	3948	3203	63	62	511	5	98	6	3872	61	8	5	502	1159	577	56	3	0
Toilet Bowl Cleaners: Other or Unknown	3685	3440	2987	68	38	278	2	59	8	3387	34	5	8	315	859	264	20	3	0
Wall/Floor/Tile Cleaners																			
Wall/Floor/Tile/All-Purpose Cleaning Agents: Acids	1678	1425	930	33	46	357	0	55	4	1347	46	15	12	260	363	275	39	2	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Alkalis	6330	5712	3791	153	190	1324	11	218	25	5456	167	36	41	1040	1108	1297	158	4	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Anionics or Nonionics	8639	7760	4911	237	240	2070	7	269	26	7334	296	82	31	1345	1654	1118	112	8	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Cationics	2436	2161	1465	82	88	421	3	92	10	2045	84	18	11	300	390	408	41	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Ethanol	351	327	234	20	7	52	1	9	4	314	9	2	1	22	86	31	3	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Glycols	859	777	592	14	21	121	2	25	2	749	23	4	1	90	148	99	12	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Isopropanol	486	464	382	10	12	48	1	10	1	453	9	0	2	23	116	58	0	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Other or Unknown	1582	1435	994	52	39	290	7	48	5	1355	42	18	15	233	357	256	25	1	0
Category Total:	**195,656**	**177,667**	**114,031**	**5822**	**6546**	**42,680**	**393**	**7315**	**880**	**168,240**	**5993**	**2004**	**989**	**34,094**	**34,198**	**38,892**	**5012**	**207**	**14**
Cosmetics/Personal Care Products																			
Dental Care Products																			
False Teeth Cleaning Agents	2461	2426	325	47	46	1797	0	200	11	2347	43	9	23	112	404	168	13	1	0
Other Dental Care Products (Excluding Fluoride Supplements)	1655	1605	595	111	90	671	2	126	10	1458	43	0	100	143	235	155	18	0	1
Toothpastes (with Fluoride)	18,576	18,119	15,886	581	316	1097	8	209	22	17,638	199	83	191	330	3033	908	33	2	0
Toothpastes (without Fluoride)	1939	1877	1690	24	25	111	2	23	2	1848	7	1	20	19	231	62	3	0	0
Hair Care Products																			
Curl Activators	54	54	44	0	1	9	0	0	0	53	1	0	0	13	17	9	2	0	0
Hair Coloring Agents (Excluding Peroxides)	2293	2203	1066	53	121	796	3	147	17	1877	44	10	269	466	424	432	107	1	0
Hair Oils	530	504	439	7	8	41	0	7	2	492	6	2	4	66	106	47	5	0	0

(*continued*)

Table 22(A). Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6-12	13-19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Hair Relaxers (with Other Alkalines)	304	300	227	3	2	55	0	11	2	291	1	0	8	154	63	100	31	1	0
Hair Relaxers (with Other Non-Alkalines)	59	57	39	2	3	13	0	0	0	56	0	0	0	17	17	11	2	0	0
Hair Relaxers (with Sodium Hydroxide)	429	424	300	11	11	83	2	16	1	404	6	0	14	201	75	111	47	2	0
Hair Rinses, Conditioners, Relaxers	2111	1995	1679	61	48	180	2	23	2	1923	48	3	19	167	358	176	17	0	0
Hair Sprays	1450	1312	836	59	71	287	1	50	8	1146	142	12	9	186	282	201	29	1	0
Other Hair Care Products (Excluding Peroxides)	2786	2648	1963	66	105	413	5	86	10	2522	25	5	90	326	476	364	55	2	0
Permanent Wave Solutions	181	176	98	9	5	49	2	10	3	165	2	0	9	57	29	44	14	1	0
Shampoos	5834	5497	4137	263	185	771	10	118	13	5205	178	13	92	440	748	881	45	1	0
Hand Sanitizers																			
Hand Sanitizers: Ethanol Based	20,052	19,543	15,215	1678	598	1779	18	238	17	17,790	1380	292	26	1486	4906	1478	214	19	2
Hand Sanitizers: Isopropanol Based	199	186	150	11	6	15	1	3	0	169	14	3	0	15	48	10	4	0	0
Hand Sanitizers: Non-Alcohol Based	1893	1852	1459	181	57	130	2	18	5	1761	73	11	2	100	297	115	12	1	0
Hand Sanitizers: Unknown	541	507	308	77	31	77	1	10	3	427	55	22	1	66	92	70	17	1	0
Miscellaneous Cosmetics/Personal Care Products																			
Baby Oils	1734	1678	1557	24	15	69	1	10	2	1659	9	5	4	151	358	163	10	1	0
Bath Oils and/or Bubble Baths	2615	2547	2203	152	31	130	7	17	7	2483	45	4	13	118	448	216	8	1	0
Creams, Lotions, and Make-Up	21,858	21,029	17,450	596	478	2012	40	376	77	20,243	245	55	465	716	2778	1019	71	4	0
Deodorants	17,922	17,662	15,887	389	456	758	23	127	22	17,204	269	52	121	533	2369	1137	51	0	0
Depilatories	745	735	244	27	90	300	2	64	8	492	42	8	190	170	89	180	57	2	0
Douches	46	43	35	0	1	4	0	3	0	40	0	0	3	4	8	4	0	0	0
Eye Products	1464	1386	1174	24	30	129	2	20	7	1330	13	1	40	64	210	70	12	0	0
Lipsticks and Lip Balms (with Camphor)	886	870	778	35	18	34	0	5	0	851	11	0	7	16	149	38	1	0	0
Lipsticks and Lip Balms (without Camphor)	5145	4988	4534	154	47	176	5	41	31	4778	32	0	174	97	608	237	7	0	0
Perfumes, Colognes, and Aftershaves	9090	8779	7078	490	369	705	12	110	15	8306	323	98	28	796	1826	1497	65	1	1
Peroxides	6786	6319	2166	256	362	2955	10	508	62	5829	252	41	182	981	792	1339	188	10	0
Powders Made of Material Other Than Talc	1913	1871	1680	43	31	88	4	24	1	1825	36	3	7	119	305	308	12	0	0
Powders Made of Talc	2100	2044	1670	73	83	171	5	40	2	1951	55	20	15	245	360	405	35	1	0
Soaps (Bar, Hand or Complexion)	13,276	12,570	9256	578	411	1972	16	300	37	11,992	336	75	143	736	1812	1560	86	1	0
Suntan and/or Sunscreen Products	9047	8912	7850	407	127	408	10	95	15	8745	47	22	97	291	1148	813	32	1	0
Mouthwashes																			
Mouthwashes: Ethanol Containing	6481	5921	1727	528	424	2767	6	425	44	4839	997	28	31	965	898	602	214	17	1
Mouthwashes: Fluoride Containing	5721	5649	3806	1135	114	505	6	75	8	5566	60	3	18	71	888	167	6	0	0
Mouthwashes: Non Ethanol Containing	1780	1698	663	190	81	674	0	86	4	1578	80	1	35	72	291	95	5	0	0
Mouthwashes: Unknown	200	182	54	14	17	76	0	18	3	152	22	0	6	27	28	18	9	1	0
Nail Products																			
Acrylic Nail Adhesives	820	808	307	125	106	236	2	27	5	792	14	0	2	320	101	215	56	1	0
Acrylic Nail Primers	217	212	174	3	8	24	1	2	0	207	0	1	3	69	47	48	12	0	0
Acrylic Nail Removers	10	9	5	0	0	2	0	2	0	9	0	0	0	1	1	1	0	0	0
Miscellaneous Nail Products	724	701	488	18	21	147	0	25	2	679	13	0	9	119	124	134	20	0	0
Nail Polish Removers (Acetone Containing)	2220	2158	1520	93	105	377	3	56	4	2049	77	24	6	256	460	334	14	2	0
Nail Polishes	7947	7702	6843	264	128	362	13	80	12	7582	80	20	16	507	1360	858	21	0	0
Other Nail Polish Removers	827	807	600	33	45	115	1	10	3	772	25	6	1	75	199	132	4	0	0
Unknown Nail Polish Removers	7325	7019	4934	332	395	1149	10	181	18	6695	235	60	12	903	1417	1027	47	0	0
Category Total:	**192,246**	**185,584**	**141,139**	**9227**	**5722**	**24,719**	**238**	**4022**	**517**	**176,220**	**5585**	**993**	**2505**	**12,786**	**30,915**	**17,959**	**1711**	**76**	**5**
Deodorizers																			
Air Freshener																			
Air Fresheners: Aerosols	2050	2000	1422	136	66	289	6	67	14	1898	47	26	19	178	391	306	26	0	0
Air Fresheners: Liquids	7873	7782	6890	229	99	442	11	98	13	7637	64	61	16	561	1591	1113	37	1	0
Air Fresheners: Solids	3551	3515	3170	90	47	174	3	27	4	3466	30	7	7	215	708	248	11	2	0

(*continued*)

Table 22(A). Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6-12	13-19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Air Fresheners: Unknown Form	1698	1674	1384	76	36	152	1	23	2	1636	26	4	6	152	346	215	9	0	0
Miscellaneous Deodorizers																			
Diaper Pail Deodorizers (Excluding Moth Repellants)	9	9	7	1	0	0	0	1	0	9	0	0	0	0	0	0	0	0	0
Other Types of Deodorizer (Not For Personal Use)	5185	4977	3612	240	132	814	5	157	17	4773	116	53	33	538	1006	703	52	3	2
Toilet Bowl Deodorizers	491	485	401	14	8	55	2	4	1	473	9	0	2	50	109	37	5	0	0
Unknown Types of Deodorizer (Not for Personal Use)	78	75	44	6	4	17	0	3	1	72	1	1	1	15	12	16	2	0	0
Category Total:	**20,935**	**20,517**	**16,930**	**792**	**392**	**1943**	**28**	**380**	**52**	**19,964**	**293**	**152**	**84**	**1709**	**4163**	**2638**	**142**	**6**	**2**
Dyes																			
Miscellaneous Dyes																			
Dyes: Fabrics	331	318	225	30	12	39	2	8	2	301	11	2	4	20	65	16	2	0	0
Dyes: Foods (Including Easter Egg)	815	759	625	60	17	46	4	4	3	732	15	2	9	16	111	32	4	0	0
Dyes: Leathers	62	60	47	5	1	6	0	1	0	56	0	0	2	7	8	3	1	1	0
Dyes: Other	395	359	132	75	75	57	2	18	0	333	13	0	12	38	56	30	9	0	0
Dyes: Unknown	53	51	25	11	2	9	0	4	0	46	3	0	2	13	8	8	0	0	0
Category Total:	**1656**	**1547**	**1054**	**181**	**107**	**157**	**8**	**35**	**5**	**1468**	**42**	**4**	**29**	**94**	**248**	**89**	**16**	**1**	**0**
Essential Oils																			
Miscellaneous Essential Oil																			
Cinnamon Oil	631	555	359	56	47	66	0	23	4	447	73	4	29	64	69	179	15	0	1
Clove Oil	569	521	348	6	12	127	0	26	2	473	18	0	29	103	108	129	14	0	0
Eucalyptus Oil	931	841	544	33	24	199	2	37	2	796	19	4	19	175	223	140	22	0	0
Miscellaneous Essential Oils	10,872	10,370	7987	373	164	1505	15	293	33	9879	185	38	253	796	2253	1739	112	8	0
Pennyroyal Oil	25	23	4	4	1	14	0	0	0	16	4	0	3	7	4	3	1	1	0
Tea Tree Oil	3421	3213	1802	111	115	965	6	197	17	2990	121	12	86	392	762	373	48	1	0
Category Total:	**16,449**	**15,523**	**11,044**	**583**	**363**	**2876**	**23**	**576**	**58**	**14,601**	**420**	**58**	**419**	**1537**	**3419**	**2563**	**212**	**10**	**1**
Fertilizers																			
Miscellaneous Fertilizers																			
Household Plant Foods (Generally for Indoor Plants)	1430	1384	748	100	50	404	5	70	7	1337	26	9	6	61	244	59	3	0	0
Other Types of Fertilizer	1395	1272	742	109	67	292	6	45	11	1227	24	13	8	98	244	96	20	0	0
Outdoor Fertilizers	1789	1708	1047	131	43	403	1	71	12	1648	25	14	19	107	336	119	19	0	0
Plant Hormones	56	49	18	5	2	21	0	3	0	46	1	0	2	5	12	4	1	1	0
Unknown Types of Fertilizer	108	103	61	3	3	33	0	3	0	100	1	0	2	13	17	8	2	0	0
Category Total:	**4778**	**4516**	**2616**	**348**	**165**	**1153**	**12**	**192**	**30**	**4358**	**77**	**36**	**37**	**284**	**853**	**286**	**45**	**1**	**0**
Fire Extinguishers																			
Miscellaneous Fire Extinguisher																			
Miscellaneous Fire Extinguishers	2544	2461	199	265	272	1097	268	299	61	2251	89	86	10	645	572	669	114	5	0
Category Total:	**2544**	**2461**	**199**	**265**	**272**	**1097**	**268**	**299**	**61**	**2251**	**89**	**86**	**10**	**645**	**572**	**669**	**114**	**5**	**0**
Foreign Bodies/Toys/Miscellaneous																			
Miscellaneous Foreign Bodies/Toys/ Miscellaneous																			
Ashes	367	324	252	13	3	39	2	13	2	311	4	8	0	12	51	16	1	0	0
Bubble Blowing Solutions	3513	3469	3211	162	28	50	7	9	2	3443	19	6	1	123	424	526	14	1	0
Charcoals	565	470	344	24	7	70	1	19	5	437	16	4	12	34	97	32	1	0	0
Christmas ornaments	270	266	200	14	8	28	0	16	0	258	7	0	1	12	36	10	1	0	0
Coins	4300	4227	3531	598	35	45	8	6	4	4167	57	2	0	1424	990	461	36	0	0
Desiccants	21,690	21,502	18,300	1237	286	1245	58	340	36	21,162	190	128	8	986	2584	172	7	1	0
Feces/Urine	5661	4946	4068	140	82	460	14	163	19	4813	22	92	10	157	650	148	8	0	0
Glass	5329	5242	1139	368	342	2155	55	1085	98	5098	46	73	20	342	754	243	16	0	0
Glow Products	17,108	17,055	12,966	3183	397	327	54	108	20	16,817	198	26	5	701	1855	3128	34	0	0
Incense (Punk)	183	178	135	9	12	19	0	3	0	170	6	2	0	17	39	14	4	0	0
Other Types of Foreign Body, Toy, or Miscellaneous Substance	23,087	21,889	14,746	2333	802	2862	89	938	119	20,836	556	295	150	1876	3470	1022	88	7	0
Oxygen Absorbers	496	490	212	127	21	114	1	11	4	441	31	16	1	20	83	12	0	0	0
Soil	2206	1921	1271	87	46	419	4	80	14	1839	36	2	39	174	237	147	8	0	0
Toys	6274	6211	4851	1011	112	170	13	53	1	6069	108	15	13	417	871	391	15	1	0
Unknown Types of Foreign Body, Toy, or Miscellaneous Substance	1143	1093	771	147	48	76	12	37	2	1037	38	11	4	94	183	56	6	0	0
Thermometers																			
Thermometers: Mercury	1542	1528	283	166	347	429	37	239	27	1500	14	7	4	99	538	12	0	0	0
Thermometers: Other	730	717	263	100	34	177	10	124	9	701	4	2	10	59	122	34	5	0	0
Thermometers: Unknown	199	197	46	24	12	68	0	44	3	196	1	0	0	9	7	3	0	0	0

(*continued*)

Table 22(A). Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6-12	13-19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Category Total:	**94,663**	**91,725**	**66,589**	**9743**	**2622**	**8753**	**365**	**3288**	**365**	**89,295**	**1353**	**689**	**278**	**6556**	**12,991**	**6427**	**244**	**10**	**0**
Fumes/Gases/Vapors																			
Miscellaneous Fumes/Gases/Vapors																			
Carbon Dioxide	427	370	26	30	53	186	7	60	8	325	33	5	3	97	49	83	30	3	0
Carbon Monoxide	14,249	13,046	1518	1044	1221	7292	104	1586	281	12,634	311	16	18	5642	3357	3068	1254	209	52
Chloramine Gas	1924	1801	58	38	93	1324	8	260	20	1717	77	2	3	357	193	594	197	3	0
Chlorine Gas	4005	3714	294	296	247	2417	13	428	19	3532	118	16	41	1081	233	1352	477	6	2
Chlorine Gas (When Household Acid is Mixed with Hypochlorite)	1843	1767	80	40	95	1302	8	229	13	1701	61	0	2	410	228	630	209	2	0
Hydrogen Sulfide (Sewer Gas)	833	706	48	27	27	467	5	112	20	699	3	0	3	315	105	207	74	8	6
Methane and Natural Gas	4938	4646	855	399	249	2253	75	740	75	4622	15	1	4	822	1286	797	115	7	0
Other Types of Fume, Gas or Vapor	1640	1509	193	84	94	836	17	262	23	1423	53	10	18	387	240	311	125	7	0
Polymer Fume Fever	11	11	1	2	1	6	0	1	0	11	0	0	0	1	3	1	0	0	0
Simple Asphyxiants	2433	2207	236	252	220	1211	13	230	45	1997	183	4	15	718	333	509	190	18	3
Unknown Types of Fume, Gas or Vapor	1860	1813	181	108	97	885	41	413	88	1729	22	39	11	453	245	361	126	8	0
Category Total:	**34,163**	**31,590**	**3490**	**2320**	**2397**	**18,179**	**291**	**4321**	**592**	**30,390**	**876**	**93**	**118**	**10,283**	**6272**	**7913**	**2797**	**271**	**63**
Heavy Metals																			
Miscellaneous Heavy Metals																			
Aluminum	773	699	374	54	33	188	3	43	4	647	20	21	7	62	95	28	12	3	2
Arsenic (Excluding Pesticides)	771	667	123	19	14	426	4	66	15	387	9	137	14	337	98	43	31	3	1
Barium, Soluble Salts	28	16	3	0	4	9	0	0	0	15	0	0	1	3	3	3	0	0	0
Cadmium	71	47	2	0	0	26	0	18	1	40	0	1	0	33	9	17	0	1	0
Copper	561	478	65	42	112	217	1	38	3	410	35	16	13	152	62	128	32	0	0
Fireplace Flame Colors	35	35	16	8	0	6	2	2	1	34	1	0	0	7	14	4	0	0	0
Gold	2	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0
Lead	2214	2041	1018	148	87	611	11	148	18	1882	27	35	17	947	602	129	47	3	0
Manganese	45	38	5	1	11	19	0	1	1	28	6	2	2	10	6	4	0	0	0
Mercury (Other)	106	95	13	2	3	62	0	12	3	68	6	5	11	35	12	6	0	1	0
Mercury, Elemental (Excluding Thermometer)	1241	1182	101	94	153	589	9	174	62	1010	52	33	48	326	246	51	25	4	0
Metal Fume Fever	334	287	13	5	25	209	1	32	2	265	12	2	7	119	14	88	38	2	0
Other Types of Heavy Metal	3077	2018	746	127	93	847	6	177	22	1638	147	48	163	402	319	201	54	0	0
Thallium	33	26	1	0	0	19	0	5	1	10	0	10	0	13	2	2	1	1	1
Unknown Types of Heavy Metal	76	66	5	2	4	33	1	19	2	41	2	10	4	38	4	2	5	0	0
Category Total:	**9367**	**7696**	**2485**	**502**	**539**	**3262**	**38**	**735**	**135**	**6476**	**317**	**320**	**287**	**2484**	**1487**	**706**	**245**	**18**	**4**
Hydrocarbons																			
Miscellaneous Hydrocarbons																			
Benzene	63	51	5	0	1	39	0	6	0	45	1	3	1	32	2	15	6	1	0
Carbon Tetrachloride	52	52	4	0	1	37	0	10	0	51	0	1	0	15	11	4	4	0	0
Diesel Fuels	723	678	102	21	36	429	0	79	11	616	47	8	1	198	88	207	30	1	1
Freon and Other Propellants	4788	4544	324	266	417	2935	16	521	65	3438	1018	46	22	1780	676	1112	539	51	12
Gasolines	9490	9097	1831	559	795	4923	14	888	87	8345	600	95	22	2015	1240	2946	295	8	0
Kerosenes	843	779	341	34	33	300	0	69	2	729	32	12	2	273	125	202	53	7	1
Lamp Oils	1273	1250	843	53	29	272	2	43	8	1211	26	12	0	434	310	322	99	16	0
Lighter Fluids and/or Naphtha	2139	2005	1006	66	129	650	6	130	18	1832	80	77	11	643	398	545	111	12	0
Lubricating Oils and/or Motor Oils	3509	3318	1905	140	130	948	4	176	15	3188	62	48	11	590	884	518	74	4	0
Mineral Seal Oil	22	21	11	1	2	5	1	0	1	21	0	0	0	3	3	2	2	0	0
Mineral Spirits	1524	1381	390	44	77	753	0	109	8	1277	60	26	8	521	219	399	84	7	1
Other Types of Halogenated Hydrocarbon	201	185	41	4	11	109	0	19	1	167	12	2	3	92	24	61	28	1	1
Other Types of Hydrocarbon	4266	3891	1909	165	148	1420	8	216	25	3682	122	56	17	1005	809	814	177	6	0
Toluene and/or Xylene (Excluding Adhesives)	607	500	48	12	25	353	0	57	5	469	17	3	3	239	46	198	49	6	0
Turpentine	339	311	87	19	13	159	0	28	5	256	45	7	2	112	55	74	21	0	0
Unknown Types of Hydrocarbon	570	515	154	29	29	228	21	49	5	461	47	4	3	193	132	127	56	3	0
Category Total:	**30,409**	**28,578**	**9001**	**1413**	**1876**	**13,560**	**72**	**2400**	**256**	**25,788**	**2169**	**400**	**106**	**8145**	**5022**	**7546**	**1628**	**123**	**16**
Industrial Cleaners																			
Miscellaneous Industrial Cleaners																			
Industrial Cleaner: Disinfectants	2214	2063	145	72	123	1400	3	300	20	1909	112	21	14	647	199	683	182	5	1
Industrial Cleaner: Other or Unknown	1446	1330	364	38	81	739	0	102	6	1235	50	29	10	521	174	442	113	6	2
Industrial Cleaners: Acids	1685	1433	360	34	63	839	2	119	16	1358	35	18	18	480	226	426	111	4	0
Industrial Cleaners: Alkalis	2582	2391	466	64	164	1490	3	182	22	2255	77	36	20	1222	265	815	373	10	0

(*continued*)

Table 22(A). Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6-12	13-19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Industrial Cleaners: Anionics or Nonionics	625	548	252	21	35	215	2	21	2	507	30	5	5	130	89	114	26	1	1
Industrial Cleaners: Cationics	777	732	131	34	72	416	1	72	6	631	76	14	9	273	93	255	45	0	0
Category Total:	**9329**	**8497**	**1718**	**263**	**538**	**5099**	**11**	**796**	**72**	**7895**	**380**	**123**	**76**	**3273**	**1046**	**2735**	**850**	**26**	**4**
Infectious and Toxin-Mediated Diseases																			
Botulinum Toxins																			
Botulism	249	226	43	5	7	148	0	23	0	145	6	6	65	103	27	18	17	15	2
Ichthyosarcotoxins																			
Ciguatera Poisoning	181	174	4	5	4	149	1	8	3	136	0	0	38	85	6	58	48	3	0
Clupeotoxic Fish Poisoning	10	10	1	1	0	7	0	1	0	9	0	0	1	0	2	0	1	0	0
Other Types of Seafood Poisoning	220	206	5	10	13	157	0	20	1	171	1	3	27	61	10	55	20	0	0
Paralytic Shellfish Poisoning	163	151	4	3	7	119	0	13	5	123	0	1	27	34	6	32	14	3	0
Scombroid Fish Poisoning	163	156	8	7	6	114	0	19	2	104	0	3	49	43	5	45	27	1	0
Tetrodon Poisoning	148	145	33	23	14	59	5	11	0	134	6	0	4	17	26	24	6	0	0
Infectious Diseases																			
Bacterial Diseases	996	974	97	42	29	242	1	49	514	940	0	16	15	121	34	69	71	3	1
Fungal Diseases	2541	2456	668	234	150	1080	54	250	20	2223	3	129	99	68	293	104	11	1	0
Other Types of Bacterial Food Poisoning (Salmonella, Shigella, Vibrio, Staphylococcus, Streptococcus, etc)	98	98	22	9	2	54	2	8	1	94	0	1	3	14	5	25	17	0	0
Parasitic Diseases	31	26	5	5	0	9	1	5	1	23	0	3	0	4	2	3	0	0	0
Prion Diseases	2	2	0	0	0	0	0	2	0	1	0	1	0	0	0	0	0	0	0
Unknown Types of Bacterial Food Poisoning	241	233	15	10	28	161	0	18	1	221	0	2	7	13	8	32	8	0	0
Unknown Types of Suspected Food Poisoning	12,602	12,341	1906	811	951	7062	48	1356	207	11,584	23	161	541	1270	763	2160	511	8	1
Viral Diseases	78	70	11	3	1	41	1	12	1	55	1	4	5	21	3	7	1	0	0
Category Total:	**17,723**	**17,268**	**2822**	**1168**	**1212**	**9402**	**113**	**1795**	**756**	**15,963**	**40**	**330**	**881**	**1854**	**1190**	**2632**	**752**	**34**	**4**
Information Calls																			
Food Information Calls																			
Information Calls About Food Products, Additives or Supplements	8211	6681	3437	564	315	1810	28	471	56	5413	344	410	472	658	862	773	124	8	0
Information Calls About Possibly Spoiled Foods	6618	6473	1516	597	415	3155	25	692	73	5986	14	205	250	289	629	492	150	4	0
Category Total:	**14,829**	**13,154**	**4953**	**1161**	**730**	**4965**	**53**	**1163**	**129**	**11,399**	**358**	**615**	**722**	**947**	**1491**	**1265**	**274**	**12**	**0**
Lacrimators																			
Miscellaneous Lacrimators																			
Lacrimators: Capsicum Defense Sprays	3368	3343	614	678	784	891	34	264	78	2376	147	691	28	604	409	1537	121	1	0
Lacrimators: CN (Chloroacetophenone)	646	639	125	102	116	213	2	47	34	485	15	104	6	117	19	296	50	2	0
Lacrimators: CS (O-Chlorobenzylidene Malonitrile)	17	13	3	1	1	8	0	0	0	11	0	1	1	9	1	8	2	0	0
Lacrimators: Other	61	30	3	2	1	22	0	2	0	29	0	1	0	16	5	10	3	1	0
Lacrimators: Unknown	80	78	14	7	14	36	1	4	2	52	4	18	2	28	2	39	4	1	0
Category Total:	**4172**	**4103**	**759**	**790**	**916**	**1170**	**37**	**317**	**114**	**2953**	**166**	**815**	**37**	**774**	**436**	**1890**	**180**	**5**	**0**
Matches/Fireworks/Explosives																			
Miscellaneous Matches/Fireworks/ Explosives																			
Explosives	183	170	88	30	8	35	1	7	1	152	12	5	1	42	34	20	11	0	0
Fireworks	785	775	674	48	16	31	3	2	1	761	9	3	0	99	233	63	11	0	0
Matches	429	422	382	6	2	25	0	7	0	411	8	1	2	15	70	8	2	0	0
Other Types of Match, Firework, or Explosive	94	92	72	9	3	6	0	1	1	91	1	0	0	11	21	20	2	0	0
Unknown Types of Match, Firework, or Explosive	6	6	2	0	0	2	0	2	0	3	1	0	1	2	1	1	0	0	0
Category Total:	**1497**	**1465**	**1218**	**93**	**29**	**99**	**4**	**19**	**3**	**1418**	**31**	**9**	**4**	**169**	**359**	**112**	**26**	**0**	**0**
Miscellaneous Foods																			
Foods																			
Capsicum Peppers	2450	2362	500	291	401	916	20	216	18	1774	190	55	338	231	55	1000	105	3	0
Food Additives	382	341	122	37	22	120	2	34	4	253	11	5	69	42	28	48	5	1	0
Food Products	6579	6069	3118	468	306	1618	21	445	93	5067	151	157	666	410	747	549	117	4	0
Other Adverse Reactions to Food	1484	1394	241	93	100	673	6	211	70	609	20	68	685	274	64	329	131	8	0

(*continued*)

Table 22(A). Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6-12	13-19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Category Total:	**10,895**	**10,166**	**3981**	**889**	**829**	**3327**	**49**	**906**	**185**	**7703**	**372**	**285**	**1758**	**957**	**894**	**1926**	**358**	**16**	**0**
Mushrooms																			
Miscellaneous Mushrooms																			
Group 1 Mushrooms: Cyclopeptides	52	48	6	1	3	33	0	5	0	26	13	0	7	35	9	9	12	2	0
Group 1A Mushrooms: Orellanine	3	3	0	0	0	3	0	0	0	2	0	0	1	3	0	2	0	0	0
Group 2 Mushrooms: Muscimol (Ibotenic Acid)	29	21	8	0	2	11	0	0	0	10	11	0	0	15	4	6	7	1	0
Group 3 Mushrooms: Monomethylhydrazine (MMH)	45	44	1	3	5	35	0	0	0	32	2	0	10	20	18	13	5	1	0
Group 4 Mushrooms: Muscarine and Histamine	25	25	0	2	2	20	0	1	0	19	5	0	1	12	1	13	2	0	0
Group 5 Mushrooms: Coprine	14	12	4	2	1	5	0	0	0	5	4	0	3	2	2	0	1	0	0
Group 6 Mushrooms: Hallucinogenics (Psilocybin and Psilocin)	473	311	16	5	115	160	1	12	2	32	266	7	6	235	18	75	137	5	0
Group 7 Mushrooms: Gastrointestinal Irritants	181	169	62	14	7	75	2	9	0	126	30	0	12	68	43	56	25	0	0
Mushrooms: Miscellaneous, Non-Toxic	117	100	41	8	4	42	0	5	0	73	12	0	15	19	15	20	7	0	0
Mushrooms: Other Potentially Toxic	141	129	48	11	4	60	0	6	0	99	11	0	18	35	41	25	15	0	0
Mushrooms: Unknown	5011	4833	3245	455	235	772	20	80	26	4208	501	6	91	1395	2080	589	211	15	1
Category Total:	**6091**	**5695**	**3431**	**501**	**378**	**1216**	**23**	**118**	**28**	**4632**	**855**	**13**	**164**	**1839**	**2231**	**808**	**422**	**24**	**1**
Other/Unknown Non-drug Substances																			
Miscellaneous Other/Unknown Non-drug Substances																			
Other Non-Drug Substances	26,408	23,049	11,122	1976	980	6528	150	1836	457	20,815	683	696	612	3466	4685	4069	571	33	2
Unknown Substances Unlikely to be Drug Products	4542	4273	1060	234	217	2028	23	589	122	2724	176	743	185	1498	402	565	246	51	8
Category Total:	**30,950**	**27,322**	**12,182**	**2210**	**1197**	**8556**	**173**	**2425**	**579**	**23,539**	**859**	**1439**	**797**	**4964**	**5087**	**4634**	**817**	**84**	**10**
Paints and Stripping Agents																			
Miscellaneous Paints and Stripping Agents																			
Other Types of Paint, Varnish or Lacquer	521	493	197	22	11	197	0	36	30	474	5	0	12	122	67	122	22	2	0
Unknown Types of Paint, Varnish or Lacquer	5290	4964	3322	221	128	1013	8	239	33	4810	75	34	38	583	765	388	66	6	0
Varnishes and Lacquers	963	886	231	38	53	400	13	131	20	843	8	8	27	155	122	212	33	1	0
Paints																			
Anti-Algae Paints	16	16	1	0	1	12	0	2	0	15	1	0	0	4	3	6	0	0	0
Anti-Corrosion Paints	39	33	4	2	1	24	0	2	0	32	0	0	1	13	6	10	3	0	0
Oil-Base Paints	1951	1844	530	173	128	816	9	174	14	1706	77	13	39	343	241	411	76	3	0
Water Base Paints (Acrylic, Latex, etc)	2723	2641	2022	86	74	369	0	82	8	2575	24	14	26	185	439	162	16	1	0
Wood stains	683	637	270	29	28	253	0	57	0	616	3	2	16	95	113	134	21	0	0
Stripping Agents																			
Methylene Chloride Stripping Agents	271	262	40	5	17	164	2	32	2	251	7	0	3	113	24	98	34	0	0
Other Types of Stripping Agent	460	430	84	5	15	269	1	47	9	401	12	3	13	168	36	136	71	0	0
Unknown Types of Stripping Agent	64	53	7	0	5	34	2	5	0	50	0	1	1	22	3	19	6	0	0
Category Total:	**12,981**	**12,259**	**6708**	**581**	**461**	**3551**	**35**	**807**	**116**	**11,773**	**212**	**75**	**176**	**1803**	**1819**	**1698**	**348**	**13**	**0**
Pesticides																			
Fumigants																			
Aluminum Phosphide	85	82	4	4	2	66	0	5	1	77	4	1	0	60	13	26	9	1	2
Methyl Bromide	18	15	0	1	0	14	0	0	0	14	0	1	0	8	0	4	3	0	0
Other Fumigants	44	43	5	2	0	30	0	4	2	41	1	0	1	14	6	5	2	0	0
Sulfuryl Fluoride	257	228	37	21	6	128	4	24	8	219	2	5	2	34	29	23	8	0	0
Unknown Fumigants	98	92	7	2	8	62	1	11	1	84	3	4	1	26	10	15	4	0	0
Fungicides (Non-medicinal)																			
Carbamate Fungicides	117	78	9	3	10	28	0	13	15	66	9	1	0	15	13	24	2	0	0
Copper Compound Fungicides	82	80	9	2	7	53	0	9	0	79	1	0	0	5	12	20	1	0	0
Mercurial Fungicides	2	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Other Types of Non-Medicinal Fungicide	468	367	81	14	12	207	2	41	10	351	6	3	5	67	81	81	6	0	0

(*continued*)

Table 22(A). Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6-12	13-19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Other/Unknown Type of Non-Medicinal Fungicide	2	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Phthalimide Fungicides	35	26	16	2	1	6	0	1	0	25	0	0	1	2	2	1	1	0	0
Unknown Types of Non-Medicinal Fungicide	31	24	12	0	0	10	0	2	0	22	2	0	0	5	4	4	2	0	0
Wood Preservatives	134	127	20	2	3	85	0	13	4	123	2	1	1	24	15	26	5	0	0
Herbicides (Including Algaecides, Defoliants, Desiccants, Plant Growth Regulators)																			
Carbamate Herbicides (Excluding Metam Sodium)	9	8	2	0	0	5	0	1	0	7	0	0	1	4	1	2	1	0	0
Chlorophenoxy Herbicides	1709	1506	388	69	36	829	20	146	18	1439	25	13	27	265	316	324	37	2	0
Diquat	380	349	70	4	7	219	0	46	3	331	5	2	9	61	75	76	17	1	1
Glyphosate	3405	3117	729	122	81	1792	10	355	28	2940	56	25	85	499	666	730	63	6	3
Other Types of Herbicide	1276	1032	219	50	27	615	1	111	9	993	11	9	19	183	202	212	26	0	0
Paraquat	106	91	0	0	7	69	0	11	4	81	8	1	0	52	12	18	13	1	3
Paraquat and Diquat Combinations	7	7	2	5	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0
Triazine Herbicides	176	122	22	4	2	75	1	17	1	118	0	0	3	23	18	26	3	0	0
Unknown Types of Herbicide	473	398	97	22	21	198	2	44	14	352	8	25	11	99	62	63	14	0	1
Urea Herbicides	29	19	6	0	0	12	0	1	0	17	0	0	2	6	3	2	0	0	0
Insecticides (Including Insect Growth Regulators, Molluscicides, Nematicides)																			
Carbamate Insecticides Alone	1408	1308	430	76	42	605	6	128	21	1204	67	15	16	282	284	195	49	5	1
Carbamate Insecticides in Combination with Other Insecticides	198	190	38	10	18	91	0	31	2	178	4	2	5	31	37	32	7	1	0
Chlorinated Hydrocarbon Insecticides Alone	167	148	54	3	3	68	0	17	3	132	8	2	6	36	32	26	2	0	0
Chlorinated Hydrocarbon Insecticides in Combination with Other Insecticides	203	198	46	4	8	117	0	19	4	187	5	0	5	34	41	41	11	0	0
Insect Growth Regulators	200	95	36	6	1	39	0	13	0	90	2	1	2	18	17	10	3	1	0
Metaldehyde	42	38	22	1	0	11	0	4	0	37	1	0	0	8	14	1	0	0	0
Nicotine (Excluding Tobacco Products)	29	26	8	2	1	11	0	4	0	20	3	0	3	7	6	6	0	0	0
Organophosphate Insecticides Alone	2365	2186	594	107	71	1130	8	225	51	2006	85	29	46	559	520	398	98	18	2
Organophosphate Insecticides in Combination with Carbamate Insecticides	39	36	10	1	2	19	0	3	1	34	2	0	0	6	9	6	2	0	0
Organophosphate Insecticides in Combination with Non-Carbamate Insecticides	537	503	91	27	23	305	0	53	4	474	15	8	6	105	72	134	27	1	0
Other Types of Insecticide	9145	8593	4214	354	171	3046	16	664	128	8290	107	46	137	798	1704	864	94	7	1
Pyrethrins	5988	5628	1778	422	213	2601	20	513	81	5180	145	31	262	1056	766	1423	293	8	1
Pyrethroids	23,195	21,928	5260	1034	905	12,115	68	2204	342	20,126	684	246	800	3781	3427	5468	712	17	1
Rotenone	31	30	5	3	1	18	0	2	1	26	1	0	3	4	6	1	1	0	0
Unknown Types of Insecticide	4701	4296	1059	195	178	2174	15	579	96	3784	161	139	144	1170	539	765	200	6	2
Veterinary Insecticide/Pesticide Product (For Pets-Flea Collars, Etc.)	2	2	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0
Miscellaneous Pesticides																			
Arsenic Pesticides	33	31	16	0	0	13	0	1	1	30	1	0	0	4	11	1	0	0	0
Borates and/or Boric Acid Pesticides (Excluding Other Uses)	6822	6726	5850	151	54	524	11	117	19	6635	53	26	9	547	1515	196	18	2	1
Metam Sodium	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0
Repellents																			
Animal Repellents	444	429	123	35	13	190	2	57	9	399	11	3	13	70	59	130	10	0	0
Insect Repellants (Exclude Lacrimators)	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Insect Repellents with DEET	4012	3934	2063	526	184	903	19	198	41	3595	65	42	222	379	530	1131	85	2	0
Insect Repellents without DEET	1345	1301	949	119	20	176	0	33	4	1238	12	9	42	76	228	220	19	0	0
Naphthalene Moth Repellants (Excluding Deodorizing Products)	1265	1248	789	60	109	225	6	52	7	1207	28	5	7	172	351	169	12	1	1
Other Types of Moth Repellant	2	2	2	0	0	0	0	0	0	2	0	0	0	1	1	0	0	0	0

(*continued*)

Table 22(A). Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6-12	13-19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Paradichlorobenzene Moth Repellants (Excluding Deodorizing Products)	95	94	48	2	1	35	0	8	0	91	2	0	1	15	16	11	0	0	0
Unknown Types of Insect Repellent	159	150	91	16	4	31	0	5	3	137	3	3	5	24	19	29	5	0	0
Unknown Types of Moth Repellant	1899	1857	1025	107	25	500	10	173	17	1743	67	20	23	311	437	166	38	0	0
Rodenticides																			
ANTU (1-naphthalenylthiourea)	2	1	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0
Bromethalin Rodenticides	832	786	589	25	15	116	1	25	15	727	36	9	5	319	286	14	8	3	1
Cholecalciferol Rodenticides	4	2	1	0	0	1	0	0	0	2	0	0	0	1	0	1	0	0	0
Cyanide Rodenticides	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0
Long-Acting Anticoagulant Rodenticides	7327	7125	6071	156	80	641	8	141	28	6796	222	72	12	1966	1891	102	28	7	1
Other Types of Rodenticide	368	359	226	19	5	83	2	21	3	337	14	4	2	58	72	24	4	4	0
PNU (n-3-pyridylmethyl-n1-p-nitrophenyl urea)	1	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Sodium Monofluoroacetate	2	2	2	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0
Strychnine Rodenticides	72	54	7	3	3	31	0	10	0	25	9	19	0	24	7	10	2	1	1
Unknown Types of Rodenticide	1349	1208	788	35	23	251	7	80	24	1004	102	82	6	442	298	39	19	3	2
Warfarin Type Anticoagulant Rodenticides	159	151	112	4	2	22	0	9	2	143	6	1	0	41	37	4	1	1	0
Zinc Phosphide Rodenticides	95	86	29	4	3	42	1	7	0	77	8	0	0	33	30	8	1	0	0
Category Total:	**83,483**	**78,568**	**34,163**	**3837**	**2410**	**30,641**	**241**	**6251**	**1025**	**73,352**	**2072**	**905**	**1951**	**13,832**	**14,802**	**13,310**	**1966**	**99**	**25**
Photographic Products																			
Miscellaneous Photographic Products																			
Developers, Fixing Baths, Stop Baths	92	80	23	3	19	23	0	10	2	76	3	0	1	20	15	20	3	0	1
Other Types of Photographic Product	123	111	68	4	7	26	0	4	2	109	2	0	0	11	19	10	1	0	0
Unknown Types of Photographic Product	2	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Category Total:	**217**	**192**	**92**	**7**	**26**	**49**	**0**	**14**	**4**	**186**	**5**	**0**	**1**	**31**	**34**	**30**	**4**	**0**	**1**
Plants																			
Miscellaneous Plants																			
Plants: Amygdalin and/or Cyanogenic Glycosides	3960	3893	2001	531	143	991	7	203	17	3535	161	24	165	264	755	150	15	0	0
Plants: Anticholinergics	624	576	321	47	41	143	1	22	1	470	86	3	11	154	148	64	60	5	0
Plants: Cardiac Glycosides (Excluding Drugs)	1409	1370	783	194	47	295	4	41	6	1239	99	4	21	186	342	102	22	1	2
Plants: Colchicine	19	17	13	3	0	1	0	0	0	16	1	0	0	4	3	0	0	0	0
Plants: Depressants	197	158	88	22	12	27	1	7	1	124	20	0	11	20	26	11	6	0	0
Plants: Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	6945	6643	4637	627	176	953	16	218	16	6170	261	14	183	540	1265	603	78	5	0
Plants: Hallucinogenics (Code as Street Drug Unless Plant Part Involved)	654	528	100	31	110	256	2	26	3	198	253	11	61	289	78	96	131	11	0
Plants: Nicotine (Excluding Tobacco Products)	159	143	67	16	8	42	0	9	1	126	11	0	5	39	33	29	11	1	0
Plants: Non-Toxic	4847	4464	2973	623	119	565	24	137	23	4013	172	12	255	251	563	335	41	1	1
Plants: Other Toxic Types	4555	4245	2865	489	117	633	15	112	14	3818	239	18	155	472	932	322	86	9	1
Plants: Oxalates	4873	4774	3426	575	133	527	4	103	6	4471	241	7	49	332	877	937	55	1	0
Plants: Skin Irritants (Excluding Oxalate Containing Plants)	5917	5525	2078	545	322	1997	21	488	74	5009	164	26	304	928	493	872	318	3	0
Plants: Solanine	1851	1817	1129	141	56	388	4	90	9	1662	55	6	85	173	425	131	16	0	0
Plants: Stimulants	329	304	73	35	23	133	1	29	10	264	22	3	12	72	88	35	11	3	0
Plants: Toxalbumins	200	180	66	20	2	72	5	13	2	139	31	5	2	72	66	33	7	1	0
Plants: Unknown Toxic Types or Unknown if Toxic	9879	9384	6464	1149	225	1209	62	238	37	8777	330	43	204	727	1748	698	118	3	1
Category Total:	**46,418**	**44,021**	**27,084**	**5048**	**1534**	**8232**	**167**	**1736**	**220**	**40,031**	**2146**	**176**	**1523**	**4523**	**7842**	**4418**	**975**	**44**	**5**
Polishes and Waxes																			
Miscellaneous Polishes and Waxes																			
Floor Waxes, Polishes, or Sealers	380	354	214	11	3	103	0	22	1	343	5	2	4	64	79	59	8	3	0
Furniture Polishes	1433	1381	1192	24	16	117	3	25	4	1347	18	10	4	123	392	180	15	1	0
Miscellaneous Polishes and Waxes (Excluding Mineral Seal Oils)	2214	2122	1531	70	68	354	2	86	11	2052	34	14	20	222	430	224	23	0	1

(*continued*)

Table 22(A). Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6-12	13-19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Category Total:	**4027**	**3857**	**2937**	**105**	**87**	**574**	**5**	**133**	**16**	**3742**	**57**	**26**	**28**	**409**	**901**	**463**	**46**	**4**	**1**
Radiation																			
Ionizing Radiation																			
Ionizing Radiation: Type Unknown	65	61	5	0	2	45	0	9	0	49	0	7	4	26	5	4	1	0	0
Radon	82	69	11	6	4	19	2	25	2	69	0	0	0	11	10	3	0	0	0
Specific Nonpharmaceutical Radionuclides	61	47	3	4	2	31	0	6	1	43	3	0	1	23	11	5	4	0	0
X-ray Radiation	23	22	0	0	3	17	0	2	0	17	1	0	3	4	1	1	0	0	0
Miscellaneous Radiation																			
Nonpharmaceutical Radiation: Type Unknown	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0
Non-ionizing Radiation																			
Extremely Low-frequency Radiation	4	4	0	0	0	4	0	0	0	3	0	0	0	3	0	1	1	0	0
Infrared Radiation	3	3	0	0	0	2	0	1	0	1	0	0	1	0	0	0	0	0	0
Microwave Radiation	25	25	0	3	0	16	0	5	1	22	2	0	1	2	8	1	0	0	0
Non-ionizing Radiation: Type Unknown	9	9	0	0	0	7	0	1	1	8	0	1	0	2	0	2	0	0	0
Radio Frequency Radiation	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Ultraviolet Radiation	9	7	0	0	0	4	0	3	0	5	0	1	1	5	1	1	2	0	0
Visible Light Radiation (Lasers)	9	9	3	0	1	5	0	0	0	4	1	3	1	6	0	0	0	0	0
Category Total:	**292**	**258**	**22**	**13**	**12**	**152**	**2**	**52**	**5**	**223**	**7**	**12**	**12**	**83**	**36**	**18**	**8**	**0**	**0**
Sporting Equipment																			
Miscellaneous Sporting Equipment																			
Fishing Baits	48	48	38	4	4	2	0	0	0	46	2	0	0	2	9	1	1	0	0
Fishing Products, Miscellaneous	19	19	18	0	0	1	0	0	0	19	0	0	0	1	1	0	1	0	0
Golf Balls (Including Liquid Center of Golf Balls)	4	4	1	1	0	2	0	0	0	3	1	0	0	0	1	1	0	0	0
Gun Bluing Compounds	20	20	7	0	2	11	0	0	0	19	1	0	0	10	6	4	3	0	0
Hunting Products, Miscellaneous	264	257	152	22	11	59	0	12	1	227	16	9	0	72	80	28	7	0	1
Other Types of Sporting Equipment	12	12	6	1	1	4	0	0	0	11	1	0	0	2	3	0	0	0	0
Unknown Types of Sporting Equipment	2	2	0	1	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0
Category Total:	**369**	**362**	**222**	**29**	**18**	**79**	**0**	**13**	**1**	**327**	**21**	**9**	**0**	**87**	**100**	**34**	**12**	**0**	**1**
Swimming Pool/Aquarium																			
Miscellaneous Swimming Pool/Aquarium																			
Algicides	1203	1148	361	126	57	506	1	89	8	1113	20	3	11	247	122	310	114	3	0
Aquarium Products, Miscellaneous	1129	1068	838	62	23	123	3	16	3	1042	14	7	4	77	271	56	8	1	0
Bromine Shock Treatments	75	71	23	12	5	26	1	3	1	64	0	0	7	18	10	16	1	0	0
Chlorine Shock Treatments	2851	2732	500	398	209	1349	31	232	13	2625	54	11	40	756	184	1032	322	11	0
Other Types of Swimming Pool or Aquarium Product	1419	1351	346	193	77	605	7	98	25	1276	27	1	44	293	156	481	95	6	0
Swimming Pool and Aquarium Test Kits	86	79	46	5	6	20	0	2	0	74	5	0	0	16	22	16	0	0	0
Category Total:	**6763**	**6449**	**2114**	**796**	**377**	**2629**	**43**	**440**	**50**	**6194**	**120**	**22**	**106**	**1407**	**765**	**1911**	**540**	**21**	**0**
Tobacco/Nicotine/eCigarette Products																			
eCigarettes: Nicotine Containing																			
eCigarettes: Nicotine Device Flavor Unknown	93	86	47	1	9	27	0	2	0	69	8	1	7	34	33	19	11	0	0
eCigarettes: Nicotine Device With Added Flavors	32	30	24	0	1	4	0	1	0	27	1	0	2	6	15	4	1	0	0
eCigarettes: Nicotine Device Without Added Flavors	2926	2826	1979	45	148	536	6	100	12	2615	128	10	61	1092	1078	580	67	4	0
eCigarettes: Nicotine Liquid Flavor Unknown	393	382	286	6	17	67	0	6	0	362	18	1	1	195	162	101	10	1	0
eCigarettes: Nicotine Liquid With Added Flavors	151	150	125	3	4	15	0	1	2	142	7	0	1	61	70	36	8	0	0
eCigarettes: Nicotine Liquid Without Added Flavors	140	139	106	2	3	22	1	3	2	130	7	1	1	63	49	41	6	0	0
Miscellaneous Tobacco Products																			
Chewing Tobacco	1492	1466	1308	36	39	68	5	7	3	1413	38	6	6	346	436	418	38	0	0
Cigarettes	7152	6958	6556	52	48	235	10	44	13	6817	76	25	36	839	2246	1047	60	2	0
Cigars	135	128	105	1	6	15	1	0	0	111	6	0	11	20	41	14	1	0	0
Dissolvable Tobacco	9	9	7	0	1	1	0	0	0	9	0	0	0	1	6	1	0	0	0

(*continued*)

Table 22(A). Continued

			Age							Reason					Outcome				
	No. of Case Mentions	No. of Single Exposures	<=5	6-12	13-19	>=20	Unknown Child	Unknown Adult	Unknown Age	Unint	Int	Other	Adv Rxn	Treated in Health Care Facility	None	Minor	Moderate	Major	Death
Filter Tips Only (i.e. Butts)	60	60	49	1	2	8	0	0	0	58	1	0	1	4	19	7	0	0	0
Other Types of Tobacco Product	153	138	78	5	15	32	1	5	2	100	22	1	14	34	33	21	17	2	0
Snuff	497	486	410	7	21	40	1	7	0	461	19	1	4	127	129	136	20	0	0
Unknown Types of Tobacco Product	1875	1791	1200	42	71	377	2	86	13	1571	106	12	85	583	553	372	75	3	2
Category Total:	**15,108**	**14,649**	**12,280**	**201**	**385**	**1447**	**27**	**262**	**47**	**13,885**	**437**	**58**	**230**	**3405**	**4870**	**2797**	**314**	**12**	**2**
Waterproofers/Sealants																			
Miscellaneous Waterproofers/Sealants																			
Waterproofers/sealants: aerosols	235	228	107	17	22	62	1	18	1	211	6	3	8	54	42	50	20	1	0
Waterproofers/sealants: liquids	93	86	40	4	6	33	0	3	0	77	5	1	2	25	16	17	6	0	0
Waterproofers/sealants: solids	6	6	2	1	0	1	0	1	1	6	0	0	0	1	0	2	0	0	0
Waterproofers/sealants: unknown form	31	29	11	1	1	13	0	3	0	28	0	0	1	6	2	9	1	0	0
Category Total:	**365**	**349**	**160**	**23**	**29**	**109**	**1**	**25**	**2**	**322**	**11**	**4**	**11**	**86**	**60**	**78**	**27**	**1**	**0**
Weapons of Mass Destruction																			
Miscellaneous Weapons of Mass Destruction																			
Anthrax	4	3	0	0	0	2	0	1	0	2	0	1	0	1	0	0	0	0	0
Nerve Gases	2	2	1	0	0	1	0	0	0	2	0	0	0	1	0	0	0	0	0
Other Biological Weapons	5	4	1	0	0	2	0	1	0	3	0	0	0	1	1	0	0	0	0
Other Chemical Weapons	7	7	2	1	0	4	0	0	0	6	0	0	0	4	0	1	3	0	0
Other Suspicious Powders	155	146	36	12	6	60	0	29	3	113	6	21	1	45	32	27	9	1	0
Other Suspicious Substances (Non-Powder)	2117	1956	419	111	127	978	11	253	57	1184	124	326	72	814	239	361	183	47	6
Suspicious Powders in Envelope or Package	62	57	10	2	1	30	0	9	5	29	2	18	0	22	17	5	5	2	0
Category Total:	**2352**	**2175**	**469**	**126**	**134**	**1077**	**11**	**293**	**65**	**1339**	**132**	**366**	**73**	**888**	**289**	**394**	**200**	**50**	**6**
Nonpharmaceuticals Total:	**1,099,272**	**989,204**	**547,286**	**63,005**	**43,470**	**272,229**	**3439**	**51,615**	**8160**	**922,275**	**35,899**	**12,071**	**14,765**	**164,374**	**165,710**	**164,865**	**32,019**	**2245**	**260**

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

Analgesics																			
Acetaminophen Alone																			
Acetaminophen Alone, Adult	35,489	23,076	6530	971	5513	9302	8	635	117	11,723	10,750	13	326	13,404	6267	3269	1812	477	52
Acetaminophen Alone, Pediatric	22,180	20,466	18,743	1402	145	133	25	10	8	20,170	210	5	65	2715	4405	304	42	13	0
Acetaminophen Alone, Unknown if Adult or Pediatric	9296	5547	1811	239	1173	2123	3	137	61	2856	2497	3	57	3267	1524	757	498	149	20
Acetaminophen Combinations																			
Acetaminophen in Combination with Other Drugs, Adult Formulations	6175	3415	879	96	1104	1246	2	73	15	1311	1953	5	90	2229	855	858	472	42	2
Acetaminophen in Combination with Other Drugs, Pediatric Formulations	60	51	40	6	2	2	1	0	0	48	3	0	0	15	15	5	0	0	0
Acetaminophen with Codeine	4065	2023	378	98	297	1131	0	99	20	912	866	3	212	1040	480	428	165	23	5
Acetaminophen with Diphenhydramine	6918	4132	732	98	818	2349	2	98	35	1298	2740	3	50	2910	903	987	835	97	4
Acetaminophen with Hydrocodone	18,859	8234	1383	219	996	5161	6	387	82	3715	3850	22	502	4513	1925	1697	736	147	14
Acetaminophen with Other Narcotics or Narcotic Analogs	500	252	49	10	29	153	0	8	3	109	115	2	18	162	64	54	35	4	1
Acetaminophen with Oxycodone	8793	3974	676	59	316	2659	1	219	44	1715	1885	17	271	2348	937	851	465	113	12
Acetaminophen with Propoxyphene	101	44	10	1	5	23	0	4	1	20	20	0	2	26	11	13	3	0	0
Acetylsalicylic Acid Alone																			
Acetylsalicylic Acid Alone, Adult Formulations	5474	3119	1312	120	628	996	0	46	17	1737	1300	0	59	1647	815	397	486	39	1
Acetylsalicylic Acid Alone, Pediatric Formulations	491	284	201	31	22	27	1	2	0	230	48	0	6	81	74	12	16	0	0
Acetylsalicylic Acid Alone, Unknown if Adult or Pediatric Formulations	11,953	5945	1825	244	1242	2475	2	114	43	2656	2972	6	150	3781	1356	1014	1157	128	17
Acetylsalicylic Acid Combinations																			
Acetylsalicylic Acid in Combination with Other Drugs, Adult Formulations	1296	850	269	33	78	444	0	21	5	483	307	3	36	433	162	138	153	19	2
Acetylsalicylic Acid with Carisoprodol	19	4	1	0	0	3	0	0	0	1	3	0	0	3	0	1	1	0	0
Acetylsalicylic Acid with Codeine	42	25	5	1	2	15	0	2	0	12	12	0	1	12	2	7	3	0	0
Acetylsalicylic Acid with Other Narcotics or Narcotic Analogs	7	2	0	0	0	2	0	0	0	0	2	0	0	1	0	0	0	0	0
Acetylsalicylic Acid with Oxycodone	10	5	0	0	1	3	0	1	0	1	4	0	0	3	1	0	2	0	0
Acetylsalicylic Acid with Propoxyphene	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Miscellaneous Analgesics																			
Non-Aspirin Salicylates (Excluding Topicals and/or Gastrointestinal Drugs)	193	162	95	4	16	39	0	7	1	128	26	0	8	40	29	17	5	1	0
Other Analgesics	367	306	145	22	23	102	0	14	0	254	29	1	21	64	65	54	19	2	0
Phenacetin	2	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	0
Phenazopyridine	1022	833	557	32	45	174	0	23	2	725	65	0	42	187	253	98	19	6	0
Salicylamide	6	5	1	0	0	4	0	0	0	4	1	0	0	0	0	1	0	0	0
Unknown Analgesics	210	81	10	5	25	32	0	7	2	27	48	0	6	56	15	21	9	0	0
Nonsteroidal Antiinflammatory Drugs																			
Colchicine	343	233	42	4	8	169	0	8	2	164	40	0	27	118	47	44	30	3	7
Cyclooxygenase-2 Inhibitors	764	401	154	13	14	192	0	26	2	356	27	0	17	56	92	15	2	0	0
Ibuprofen	79,282	61,114	41,404	3347	7488	7873	43	771	188	49,450	10,959	21	559	13,281	13,991	3748	818	69	1
Ibuprofen with Diphenhydramine	2951	1867	425	52	350	975	1	53	11	941	885	0	28	961	385	365	239	23	2
Ibuprofen with Hydrocodone	132	73	9	2	7	52	0	3	0	36	29	0	7	35	12	17	7	1	0
Indomethacin	492	295	72	16	29	157	1	19	1	173	88	0	32	97	62	43	4	0	0
Ketoprofen	47	26	8	2	3	10	0	2	1	21	4	0	1	9	6	1	1	0	0
Naproxen	14,247	8384	2657	300	1981	3068	5	305	68	4976	3043	3	320	3176	2066	1071	257	17	0
Other Types of Nonsteroidal Antiinflammatory Drug	7411	4171	1595	197	293	1832	3	230	21	3475	540	2	141	898	1057	397	74	6	1
Unknown Types of Nonsteroidal Antiinflammatory Drug	18	9	5	0	0	4	0	0	0	6	3	0	0	3	5	1	1	0	0
Opioids																			
Buprenorphine	3623	2188	975	23	82	956	4	127	21	1279	670	58	140	1645	325	688	414	56	0
Butorphanol	65	42	5	3	5	27	0	2	0	27	9	0	6	22	12	7	7	0	0
Codeine	1824	1327	488	180	109	497	3	47	3	1073	185	1	65	325	332	182	30	3	0

(*continued*)

Table 22(B). Continued

Dihydrocodeine	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fentanyl	1402	763	56	2	24	630	0	39	12	177	485	6	73	556	91	156	191	87	47
Hydrocodone Alone or in Combination (Excluding Combination Products with Acetaminophen, Acetylsalicylic Acid or Ibuprofen)	1853	862	194	46	71	458	1	78	14	538	234	4	70	349	163	161	46	2	1
Hydromorphone	1530	652	69	18	30	482	1	46	6	336	240	8	50	360	120	155	88	21	1
Levorphanol	4	1	0	0	0	1	0	0	0	1	0	0	0	1	1	0	0	0	0
Meperidine	109	49	9	2	2	31	0	3	2	27	16	0	6	29	8	7	10	0	0
Methadone	3043	1224	198	20	52	867	0	72	15	449	580	44	86	943	160	238	325	131	8
Morphine	3518	1595	240	20	78	1141	2	97	17	916	535	16	91	923	327	317	236	59	5
Nalbuphine	14	9	0	0	0	7	0	1	1	2	2	0	5	6	0	4	1	0	0
Other or Unknown Narcotics	1716	487	53	6	28	371	1	18	10	80	280	50	23	411	28	88	166	86	7
Oxycodone Alone or in Combination (Excluding Combination Products with Acetaminophen or Acetylsalicylic Acid)	8170	3506	712	132	232	2156	5	223	46	1912	1319	30	152	1952	745	775	431	109	13
Oxymorphone	524	241	27	4	6	187	0	13	4	105	112	3	16	149	38	45	47	6	0
Pentazocine	44	24	3	1	1	18	0	1	0	10	8	0	5	12	5	4	3	0	0
Propoxyphene	19	3	0	0	0	3	0	0	0	0	2	0	0	2	0	1	1	0	0
Remifentanil	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tapentadol	292	160	17	2	6	127	0	7	1	91	52	0	14	89	34	43	23	5	0
Tramadol	12,584	5942	1160	173	644	3688	3	233	41	2644	2861	32	308	3815	1450	1346	888	174	4
Other Acetaminophen and Acetylsalicylic Acid Combinations																			
Acetaminophen and Acetylsalicylic Acid with Other Ingredients	6932	4741	2037	135	1095	1367	0	92	15	2721	1865	2	129	2261	1229	865	410	19	1
Acetaminophen and Acetylsalicylic Acid without Other Ingredients	261	165	54	4	16	87	0	4	0	89	65	0	9	95	32	19	28	2	0
Category Total:	**286,746**	**183,390**	**88,320**	**8395**	**25,134**	**56,032**	**124**	**4427**	**958**	**122,210**	**54,845**	**363**	**4302**	**71,517**	**42,981**	**21,786**	**11,712**	**2139**	**228**
Anesthetics																			
Inhalation Anesthetics																			
Nitrous Oxide	173	129	18	14	15	74	0	8	0	44	66	1	16	79	9	18	30	3	0
Other Types of Inhalation Anesthetic	136	73	4	2	2	49	0	9	7	60	6	4	3	34	8	25	2	1	2
Local and/or Topical Anesthetics																			
Dibucaine	22	21	15	1	0	4	0	1	0	19	1	0	1	2	7	2	0	0	0
Lidocaine	1518	1334	534	92	77	541	0	81	9	1099	75	2	143	296	328	178	66	22	1
Other or Unknown Local and/or Topical Anesthetic	3592	3391	2199	131	112	775	7	148	19	3072	102	11	195	475	947	371	76	12	0
Miscellaneous Anesthetics																			
Ketamine and Analogs	307	165	12	6	24	117	0	6	0	30	109	13	9	145	9	44	65	11	0
Other Types of Anesthetic	32	26	7	1	1	14	0	3	0	20	2	0	3	11	5	7	3	0	0
Unknown Types of Anesthetic	8	7	2	0	0	5	0	0	0	3	0	0	3	3	2	0	2	0	0
Category Total:	**5788**	**5146**	**2791**	**247**	**231**	**1579**	**7**	**256**	**35**	**4347**	**361**	**31**	**373**	**1045**	**1315**	**645**	**244**	**49**	**3**
Anticholinergic Drugs																			
Miscellaneous Anticholinergic Drugs																			
Anticholinergic Drugs (Excluding Cough and Cold Preparations, and Plants)	10,345	7943	308	57	109	6478	4	944	43	7437	319	7	155	706	1062	262	172	21	0
Category Total:	**10,345**	**7943**	**308**	**57**	**109**	**6478**	**4**	**944**	**43**	**7437**	**319**	**7**	**155**	**706**	**1062**	**262**	**172**	**21**	**0**
Anticoagulants																			
Miscellaneous Anticoagulants																			
Glycoprotein IIIa/IIb Inhibitors	7	6	1	0	0	5	0	0	0	6	0	0	0	6	1	2	1	0	0
Heparins	263	212	30	7	2	149	0	21	3	178	16	0	17	85	43	18	17	3	0
Other Antiplatelets	2651	1020	217	14	22	690	0	73	4	949	39	0	27	176	225	31	10	4	0
Other Types of Anticoagulant	2617	1590	198	15	7	1233	1	127	9	1404	95	1	85	366	358	51	53	13	6
Unknown Types of Anticoagulant	16	12	5	0	3	3	0	0	1	8	1	0	1	5	1	2	0	0	0
Warfarin (Excluding Rodenticides)	3247	1660	318	22	20	1207	0	88	5	1410	191	4	39	479	295	60	125	12	1
Category Total:	**8801**	**4500**	**769**	**58**	**54**	**3287**	**1**	**309**	**22**	**3955**	**342**	**5**	**169**	**1117**	**923**	**164**	**206**	**32**	**7**
Anticonvulsants																			
Anticonvulsants: Carbamazepine and Analogs																			
Carbamazepine	3574	1788	220	66	146	1293	0	54	9	725	769	2	221	1285	303	517	429	45	0
Oxcarbazepine	3995	1786	412	235	426	659	0	46	8	1050	676	0	45	932	392	429	226	19	0

(*continued*)

Table 22(B). Continued

Anticonvulsants: Gamma Aminobutyric Acid and Analogs																			
Gabapentin	17,702	6223	1005	101	433	4346	0	284	54	2867	2985	22	247	3504	1530	1427	577	73	2
Other Types of Gamma Aminobutyric Acid Anticonvulsant	3150	1181	270	28	83	737	1	48	14	581	495	15	69	666	291	256	131	24	0
Anticonvulsants: Hydantoins																			
Fosphenytoin	11	5	2	0	0	3	0	0	0	3	0	0	2	5	1	0	1	2	0
Phenytoin	2556	1601	95	12	33	1396	0	46	19	539	407	3	543	1301	235	446	457	31	2
Miscellaneous Anticonvulsants																			
Felbamate	64	28	9	4	3	12	0	0	0	26	2	0	0	9	6	3	2	0	0
Lamotrigine	9600	3788	529	199	741	2118	2	172	27	2172	1388	4	190	1941	673	908	527	67	1
Levetiracetam	4693	2515	913	311	234	986	0	64	7	2045	410	2	48	743	713	323	76	5	0
Other Types of Anticonvulsant (Excluding Barbiturates)	845	317	62	32	23	180	0	17	3	238	58	1	18	133	68	59	31	3	1
Primidone	358	119	14	0	1	93	0	10	1	84	23	1	8	54	18	35	14	1	0
Succinimides	162	121	62	34	13	10	0	2	0	115	5	0	1	32	33	15	2	0	0
Topiramate	4756	1878	496	173	372	763	1	68	5	1113	662	1	85	996	501	383	170	11	0
Unknown Types of Anticonvulsant (Excluding Barbiturates)	13	4	0	0	2	2	0	0	0	0	3	0	1	3	0	0	2	0	0
Valproic Acid	7928	3101	358	165	388	2095	1	79	15	1278	1268	3	386	2103	716	718	515	72	4
Zonisamide	598	308	81	36	42	131	1	16	1	247	46	1	14	83	98	31	15	1	0
Category Total:	**60,005**	**24,763**	**4528**	**1396**	**2940**	**14,824**	**6**	**906**	**163**	**13,083**	**9197**	**55**	**1878**	**13,790**	**5578**	**5550**	**3175**	**354**	**10**
Antidepressants																			
Lithium Salts																			
Lithium	7143	3825	129	62	462	3017	0	131	24	910	1297	8	1376	3196	553	831	1372	164	1
Miscellaneous Antidepressants																			
Antidepressants: Type Unknown to Consumer	65	12	1	0	3	5	0	1	2	1	10	0	1	7	2	1	2	0	0
Bupropion	12,381	5825	714	154	1095	3545	2	273	42	3089	2538	7	148	3853	1240	897	1351	396	14
Other Types of Antidepressant	554	213	49	2	30	124	2	4	2	85	107	4	16	143	52	45	32	6	0
Trazodone	19,524	7267	524	246	1557	4650	2	217	71	1800	5258	10	122	5615	1512	2423	1351	50	0
Monoamine Oxidase Inhibitors (MAOI)																			
Isocarboxazid	1	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0
Other Types of Monoamine Oxidase Inhibitor (MAOI)	91	41	6	0	0	34	0	1	0	35	2	0	4	13	9	1	5	0	0
Phenelzine	28	12	0	0	0	11	0	1	0	4	2	0	6	7	0	1	6	0	0
Selegiline	41	19	4	0	0	15	0	0	0	14	3	0	2	9	7	3	3	0	0
Tranylcypromine	47	17	3	0	1	10	0	3	0	9	4	0	4	9	3	0	4	2	0
Selective Serotonin Reuptake Inhibitors (SSRI)																			
Citalopram	9679	3752	862	215	992	1557	6	102	18	1801	1797	10	119	2150	1084	727	459	56	2
Escitalopram	7953	3328	585	229	1193	1194	3	103	21	1497	1697	9	107	1927	992	654	348	15	1
Fluoxetine	11,978	4901	840	336	2067	1498	0	129	31	2027	2737	6	91	3026	1678	926	394	33	0
Fluvoxamine	496	181	28	5	48	93	0	7	0	114	56	1	10	69	31	31	17	3	0
Other Types of Selective Serotonin Reuptake Inhibitor (SSRI)	2885	1212	244	59	347	515	0	31	16	520	633	1	52	767	326	268	143	7	0
Paroxetine	3991	1566	373	58	270	792	0	63	10	822	675	6	54	791	419	307	116	10	0
Sertraline	15,564	7316	1705	418	2425	2501	5	219	43	3404	3590	11	267	4244	1945	1672	874	31	1
Serotonin Norepinephrine Reuptake Inhibitors (SNRI)																			
Duloxetine	4487	1533	426	39	161	805	0	93	9	924	484	7	109	718	420	293	155	8	0
Nefazodone	42	9	2	0	1	4	0	2	0	6	2	0	1	4	3	2	1	0	0
Other Types of Serotonin Norepinephrine Reuptake Inhibitor (SNRI)	802	317	101	9	33	161	0	12	1	209	77	0	31	153	86	55	35	3	0
Venlafaxine	6156	2420	542	93	321	1339	1	100	24	1326	962	19	98	1405	653	446	335	55	5
Tetracyclic Antidepressants																			
Maprotiline	4	2	1	0	0	1	0	0	0	1	1	0	0	2	2	0	0	0	0
Mirtazapine	4346	1336	217	73	172	819	0	43	12	530	717	6	64	875	308	389	163	5	0
Tricyclic Antidepressants (TCA)																			
Amitriptyline	6160	2735	348	118	436	1739	3	77	14	917	1658	4	86	2091	394	642	805	201	11
Amoxapine	12	2	1	0	0	1	0	0	0	1	1	0	0	2	1	0	1	0	0
Clomipramine	247	113	11	0	11	77	0	12	2	81	25	0	7	40	23	20	11	3	0
Desipramine	63	36	6	0	3	25	0	2	0	20	12	0	4	17	6	7	5	0	0
Doxepin	1523	557	47	18	43	422	0	18	9	169	365	2	12	441	71	142	150	57	1
Imipramine	326	139	32	20	21	60	0	6	0	87	46	0	5	76	37	19	21	5	0
Loxapine	138	34	3	1	2	25	0	3	0	13	21	0	0	23	6	10	5	0	0
Nortriptyline	1130	511	70	12	61	337	0	27	4	263	204	2	27	301	102	86	80	16	1
Other Types of Tricyclic Antidepressant (TCA)	474	189	20	8	25	127	0	6	3	61	94	1	8	158	25	43	55	17	2

(*continued*)

Table 22(B). Continued

Protriptyline	10	3	1	1	0	1	0	0	0	3	0	0	0	0	2	0	0	0	0
Tricyclic Antidepressants (TCA) Formulated with a Benzodiazepine	9	6	1	0	1	4	0	0	0	2	4	0	0	6	1	1	3	1	0
Tricyclic Antidepressants (TCA) Formulated with a Phenothiazine	28	17	2	0	0	14	0	1	0	4	10	0	2	14	0	3	4	2	0
Tricyclic Antidepressants (TCA): Type Unknown to Consumer	20	5	1	0	0	4	0	0	0	3	2	0	0	4	0	0	2	1	1
Trimipramine	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Category Total:	**118,399**	**49,452**	**7899**	**2176**	**11,781**	**25,527**	**24**	**1687**	**358**	**20,752**	**25,091**	**114**	**2833**	**32,157**	**11,993**	**10,946**	**8308**	**1147**	**40**
Antihistamines																			
Miscellaneous Antihistamines																			
Cimetidine and Other Histamine-2 Blockers	8430	6255	4665	257	204	980	3	136	10	5908	262	1	77	559	1510	198	13	0	0
Diphenhydramine Alone (Over the Counter)	28,017	20,561	11,479	1408	2466	4782	9	350	67	14,507	5598	19	329	7687	4430	3024	2266	236	2
Diphenhydramine Alone (Prescription)	1447	934	406	56	163	287	1	18	3	555	355	0	19	426	154	169	145	18	1
Diphenhydramine Alone (Unknown if Over the Counter or Prescription)	15,243	10,471	5214	703	1467	2852	7	180	48	6762	3419	13	179	4432	2115	1713	1403	161	7
Other Antihistamines Alone (Excluding Cough and Cold Preparations)	51,150	36,057	20,423	4967	3162	6659	22	735	89	31,240	4278	20	427	6574	8422	2521	941	41	3
Category Total:	**104,287**	**74,278**	**42,187**	**7391**	**7462**	**15,560**	**42**	**1419**	**217**	**58,972**	**13,912**	**53**	**1031**	**19,678**	**16,631**	**7625**	**4768**	**456**	**13**
Antimicrobials																			
Anthelmintics																			
Diethylcarbamazine	45	44	23	1	1	17	0	2	0	44	0	0	0	3	11	1	0	0	0
Levamisole	35	20	0	0	0	19	0	1	0	9	5	3	1	12	0	4	4	0	0
Other Types of Anthelmintic	1872	1766	962	126	40	534	4	84	16	1635	51	5	73	195	442	151	22	1	0
Piperazine	208	204	140	10	4	37	1	8	4	191	10	2	0	17	57	7	3	0	0
Unknown Types of Anthelmintic	6	6	4	0	0	2	0	0	0	5	0	1	0	2	1	1	0	0	0
Antibiotics																			
Systemic Antibiotic Preparations (Oral, Intravenous, Intramuscular)	32,865	26,610	12,136	2560	1575	8827	46	1318	148	22,576	1305	9	2641	3342	4319	1849	358	27	3
Topical Antibiotic Preparations (Dermal, Otic, Ophthalmic, Nasal)	5918	5668	4009	260	124	997	10	242	26	5469	58	8	129	160	867	241	18	0	0
Unknown Types of Antibiotic Preparation	313	203	96	23	14	58	0	11	1	174	10	0	19	26	24	19	1	0	0
Antifungals																			
Systemic Antifungal Preparations (Oral, Intravenous, Intramuscular)	1297	1064	513	73	32	396	2	43	5	933	30	0	99	123	217	60	20	0	0
Topical Antifungal Preparations (Dermal, Otic, Ophthalmic, Nasal)	7930	7617	5277	213	130	1657	17	294	29	7396	51	18	148	487	1156	516	46	2	0
Unknown Types of Antifungal Preparation	20	18	10	2	1	4	0	1	0	17	1	0	0	6	2	2	0	0	0
Antiparasitics																			
Antimalarials	867	526	128	30	40	296	1	27	4	449	46	2	28	177	155	45	36	9	0
Metronidazole	1077	658	151	20	53	356	0	72	6	512	51	2	92	108	106	71	11	0	0
Other Types of Antiparasitic	37	28	4	3	3	13	0	5	0	25	2	0	1	6	2	8	0	0	0
Antituberculars																			
Isoniazid	145	96	10	5	33	43	0	5	0	34	40	0	20	72	18	13	12	30	0
Other Types of Antitubercular	16	7	2	0	0	5	0	0	0	6	0	0	1	1	1	2	0	0	0
Rifampin	76	55	17	3	4	24	3	4	0	44	1	1	9	15	17	4	1	0	0
Antivirals																			
Amantadine	242	91	16	12	15	45	0	3	0	59	18	1	11	41	14	10	9	5	1
Antiretrovirals	745	414	78	5	11	265	2	49	4	340	51	3	19	90	74	42	8	2	0
Other Anti-Influenza Agents	593	521	226	113	39	125	4	13	1	466	7	0	48	38	87	24	8	1	0
Systemic Antiviral Preparations (Oral, Intravenous, Intramuscular)	1434	1057	247	21	52	653	1	75	8	906	73	1	75	178	201	65	20	5	0
Topical Antiviral Preparations (Dermal, Otic, Ophthalmic, Nasal)	174	170	87	6	8	59	0	8	2	161	3	0	5	3	27	12	2	0	0
Unknown Types of Antiviral Preparations	548	338	111	23	24	156	0	24	0	276	37	0	24	66	68	24	5	1	0

(*continued*)

Table 22(B). Continued

Miscellaneous Antimicrobials																			
Other Types of Antimicrobial	153	146	85	6	2	44	0	9	0	139	2	0	5	12	30	15	4	0	0
Unknown Types of Antimicrobial	5	2	0	0	0	1	0	1	0	1	0	0	1	0	1	1	0	0	0
Category Total:	**56,621**	**47,329**	**24,332**	**3515**	**2205**	**14,633**	**91**	**2299**	**254**	**41,867**	**1852**	**56**	**3449**	**5180**	**7897**	**3187**	**588**	**83**	**4**
Antineoplastics																			
Miscellaneous Antineoplastics																			
Antineoplastic Drugs	2039	1573	277	50	36	1060	2	128	20	1422	45	3	95	490	349	134	58	11	4
Category Total:	**2039**	**1573**	**277**	**50**	**36**	**1060**	**2**	**128**	**20**	**1422**	**45**	**3**	**95**	**490**	**349**	**134**	**58**	**11**	**4**
Asthma Therapies																			
Miscellaneous Asthma Therapies																			
Albuterol	5101	4618	2839	705	242	692	6	113	21	3946	444	10	204	604	930	507	265	5	0
Aminophylline or Theophylline	146	88	10	3	1	68	0	5	1	55	9	1	17	41	15	4	22	5	2
Leukotriene Antagonist or Inhibitor	6427	4880	3367	818	163	461	7	56	8	4688	152	1	31	469	1010	80	7	1	0
Non-Selective Beta Agonists	4137	4078	1839	1125	200	801	5	101	7	3961	97	5	13	1220	325	1774	371	0	1
Other Asthma Therapeutic Agents	362	270	84	16	6	146	0	17	1	215	15	1	33	73	69	22	28	3	0
Terbutaline and Other Beta-2 Agonists	1245	1047	193	128	41	614	1	64	6	896	98	1	49	125	144	74	75	3	0
Unknown Asthma Therapeutic Agents	12	11	6	1	1	1	0	1	1	8	2	0	1	3	2	0	0	0	0
Category Total:	**17,430**	**14,992**	**8338**	**2796**	**654**	**2783**	**19**	**357**	**45**	**13,769**	**817**	**19**	**348**	**2535**	**2495**	**2461**	**768**	**17**	**3**
Cardiovascular Drugs																			
Miscellaneous Cardiovascular Drugs																			
Alpha Blockers	4167	1380	248	30	121	901	0	70	10	991	319	1	67	511	388	151	120	4	0
Angiotensin Converting Enzyme Inhibitors	16,668	7370	2892	463	266	3422	6	294	27	6407	839	2	108	2314	2631	294	253	6	2
Angiotensin Receptor Blockers	7788	3807	883	107	127	2469	1	212	8	3518	224	4	56	786	1189	163	80	3	0
Antiarrhythmics	1994	1192	140	13	22	941	0	71	5	1109	30	0	46	494	441	80	105	9	7
Antihyperlipidemics	12,076	4694	1753	159	102	2391	3	261	25	4407	174	4	101	473	797	100	23	4	0
Antihypertensives (Excluding Diuretics)	4936	2751	830	1086	416	373	4	39	3	2304	360	2	63	1446	884	433	432	26	1
Beta Blockers (Including All Propranolol Cases)	25,187	10,577	2938	354	423	6388	1	423	50	8706	1608	5	202	4301	3977	609	930	92	8
Calcium Antagonists	12,417	5,152	1245	166	140	3386	2	196	17	4486	534	1	105	2485	2073	327	411	61	25
Cardiac Glycosides	1916	1253	96	12	8	1107	1	25	4	566	47	0	580	958	191	103	485	122	18
Clonidine	10,064	5258	1893	1253	792	1235	3	68	14	3575	1509	8	105	3707	1033	1153	1588	154	0
Hydralazine	1104	409	109	7	26	246	0	21	0	331	67	0	10	195	127	40	51	2	0
Long-Acting Nitrates	848	278	43	4	3	218	0	10	0	258	10	0	10	73	84	12	20	1	0
Nitroglycerin	1086	672	392	21	4	224	2	26	3	569	84	1	16	247	296	41	26	1	1
Nitroprusside	13	11	0	0	0	11	0	0	0	3	0	0	8	11	2	0	3	0	0
Other Types of Cardiovascular Drug	585	259	72	6	8	162	0	9	2	239	14	0	5	72	88	21	9	1	0
Other Types of Vasodilator	1089	743	307	14	17	345	1	50	9	582	71	2	80	261	206	72	52	0	0
Unknown Types of Cardiovascular Drug	58	16	4	2	1	7	0	1	1	10	5	0	0	6	1	2	1	0	0
Unknown Types of Vasodilator	13	9	1	0	0	5	0	3	0	7	0	0	1	0	0	2	1	0	0
Vasopressors	429	300	138	49	17	77	1	15	3	267	12	0	19	99	40	60	24	1	0
Category Total:	**102,438**	**46,131**	**13,984**	**3746**	**2493**	**23,908**	**25**	**1794**	**181**	**38,335**	**5907**	**30**	**1582**	**18,439**	**14,448**	**3663**	**4614**	**487**	**62**
Cold and Cough Preparations																			
Acetaminophen and Acetylsalicylic Acid with Decongestant and/or Antihistamine																			
Acetaminophen and Acetylsalicylic Acid with Antihistamine without Opioids	10	4	2	0	0	2	0	0	0	2	2	0	0	2	1	0	0	0	0
Acetaminophen and Acetylsalicylic Acid with Decongestant and Antihistamine without Opioids	16	8	4	1	1	2	0	0	0	8	0	0	0	2	1	0	0	0	0
Acetaminophen and Acetylsalicylic Acid with Decongestant without Opioids	9	3	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan with Antihistamine	16	12	4	2	3	3	0	0	0	6	6	0	0	6	5	1	1	0	0
Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan with Decongestant	10	6	4	1	0	1	0	0	0	5	1	0	0	1	0	3	0	0	0
Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan with Decongestant and Antihistamine	9	7	4	1	0	2	0	0	0	7	0	0	0	2	1	0	0	0	0

(*continued*)

Table 22(B). Continued

Obsolete: Acetaminophen and Acetylsalicylic Acid with Decongestant and/or Antihistamine Combinations without Phenylpropanolamine or Opioids	27	16	14	0	0	2	0	0	0	15	1	0	0	7	5	1	0	0	0
Obsolete: Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	41	20	10	2	4	4	0	0	0	14	4	0	2	5	5	3	0	0	0
Obsolete: Acetaminophen, Acetylsalicylic Acid, and Opioid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	3	3	2	0	0	1	0	0	0	3	0	0	0	1	0	1	0	0	0
Acetaminophen with Decongestant and/or Antihistamine																			
Acetaminophen and Codeine with Antihistamine	3	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0
Acetaminophen and Codeine with Decongestant	3	2	1	0	1	0	0	0	0	2	0	0	0	0	1	0	0	0	0
Acetaminophen and Codeine with Decongestant and Antihistamine	6	2	2	0	0	0	0	0	0	2	0	0	0	0	1	1	0	0	0
Acetaminophen and Dextromethorphan with Antihistamine	3592	1822	693	144	357	572	4	40	12	1015	748	2	39	835	410	316	151	16	1
Acetaminophen and Dextromethorphan with Decongestant	2585	1462	781	117	183	350	0	28	3	1144	234	0	80	337	331	148	48	3	0
Acetaminophen and Dextromethorphan with Decongestant and Antihistamine	2083	1201	640	109	174	247	1	29	1	860	294	0	32	391	301	163	55	4	0
Acetaminophen and Other Opioid with Decongestant	2	2	1	0	0	1	0	0	0	2	0	0	0	1	1	0	0	0	0
Acetaminophen with Antihistamine without Opioids	472	327	79	16	103	121	1	7	0	118	200	0	4	213	52	69	82	3	0
Acetaminophen with Decongestant and Antihistamine without Opioids	711	443	272	49	40	75	0	7	0	356	65	0	22	111	113	44	19	0	0
Acetaminophen with Decongestant without Opioids	757	452	273	24	49	95	0	10	1	370	65	0	16	79	107	31	12	0	0
Obsolete: Acetaminophen and Codeine Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	20	12	1	3	1	7	0	0	0	5	5	0	2	7	3	1	0	0	0
Obsolete: Acetaminophen and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	3505	1953	908	163	317	519	1	37	8	1358	491	2	84	630	428	260	109	3	0
Obsolete: Acetaminophen and Other Opioid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	10	5	2	1	0	2	0	0	0	4	1	0	0	1	1	1	0	0	0
Obsolete: Acetaminophen with Decongestant and/or Antihistamine Combinations without Phenylpropanolamine or Opioids	757	446	196	45	78	118	1	5	3	294	122	0	28	152	85	70	39	1	1
Acetylsalicylic Acid with Decongestant and/or Antihistamine																			
Acetylsalicylic Acid and Dextromethorphan with Antihistamine	5	4	3	1	0	0	0	0	0	4	0	0	0	0	1	0	0	0	0

(*continued*)

Table 22(B). Continued

Acetylsalicylic Acid and Dextromethorphan with Decongestant	5	4	4	0	0	0	0	0	0	3	0	1	0	0	0	0	0	0	0
Acetylsalicylic Acid and Dextromethorphan with Decongestant and Antihistamine	29	17	11	4	0	2	0	0	0	14	3	0	0	2	8	0	1	0	0
Acetylsalicylic Acid and Other Opioid with Antihistamine	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acetylsalicylic Acid with Antihistamine without Opioids	22	20	7	1	7	4	0	1	0	9	11	0	0	12	3	3	6	0	0
Acetylsalicylic Acid with Decongestant and Antihistamine without Opioids	102	75	55	4	4	10	0	2	0	63	4	1	7	13	16	3	1	1	0
Acetylsalicylic Acid with Decongestant without Opioids	3	3	3	0	0	0	0	0	0	3	0	0	0	0	0	1	0	0	0
Obsolete: Acetylsalicylic Acid and Codeine Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	2	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Obsolete: Acetylsalicylic Acid and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	13	9	5	2	0	2	0	0	0	8	1	0	0	1	1	1	1	0	0
Obsolete: Acetylsalicylic Acid and Other Opioid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
Obsolete: Acetylsalicylic Acid with Decongestant and/or Antihistamine Combinations without Phenylpropanolamine or Opioids	16	13	8	0	2	3	0	0	0	9	4	0	0	4	3	2	2	0	0
Antihistamine and/or Decongestant																			
Antihistamine and Decongestant with Codeine	77	64	30	9	5	19	0	1	0	53	8	0	3	14	15	11	2	0	0
Antihistamine and Decongestant with Dextromethorphan	2591	2239	1724	319	74	115	1	6	0	2108	95	0	33	329	500	240	57	1	0
Antihistamine and Decongestant with Other Opioid	29	26	5	2	2	16	0	1	0	19	5	0	2	9	3	10	1	0	0
Antihistamine and Decongestant without Opioid	3721	2984	1920	424	167	422	1	43	7	2748	155	1	75	441	692	279	67	2	0
Antihistamine with Codeine	471	351	119	45	33	142	1	10	1	263	74	0	9	105	72	62	22	0	0
Antihistamine with Dextromethorphan	3490	2670	540	170	1018	903	0	30	9	833	1784	2	26	1874	334	669	838	43	0
Antihistamine with Other Opioid	208	169	44	13	11	94	0	6	1	140	17	1	9	66	38	37	12	3	1
Antihistamine without Opioid	1391	907	516	61	77	235	1	13	4	709	175	1	14	314	288	88	59	7	0
Decongestant with Codeine	8	7	2	0	1	4	0	0	0	5	0	0	2	0	1	1	0	0	0
Decongestant with Dextromethorphan	1492	1183	764	204	75	128	0	11	1	1046	103	1	31	182	296	103	38	0	0
Decongestant with Other Opioid	30	17	6	1	4	4	1	1	0	8	7	0	1	9	3	5	1	0	0
Decongestant without Opioid	3144	2147	1147	143	184	591	2	77	3	1911	155	1	74	308	569	141	57	4	0
Obsolete: Antihistamine and/or Decongestant with Codeine without Phenylpropanolamine	290	233	81	19	25	98	0	10	0	192	30	0	9	53	62	35	9	2	0
Obsolete: Antihistamine and/or Decongestant with Dextromethorphan without Phenylpropanolamine	3113	2527	1282	274	505	438	1	19	8	1702	776	0	37	929	500	389	350	22	0
Obsolete: Antihistamine and/or Decongestant with Other Opioid without Phenylpropanolamine	123	97	25	9	1	60	0	2	0	83	11	0	2	29	25	19	8	0	0
Obsolete: Antihistamine and/or Decongestant without Phenylpropanolamine and Opioid	2972	2216	1315	258	156	440	2	40	5	1985	156	3	66	397	550	205	63	6	0

(*continued*)

Table 22(B). Continued

Miscellaneous Cold and Cough Preparations																			
Acetaminophen in Combination with Dextromethorphan (Without Decongestants or Antihistamines)	155	114	78	11	10	12	0	2	1	94	14	0	5	30	37	11	3	0	0
Cough and Cold Preparations (Not Otherwise Classified)	2519	1945	1402	90	140	276	4	31	2	1646	243	3	42	343	381	158	68	7	0
Dextromethorphan Preparations (Not Otherwise Classified)	13,292	10,107	3940	1298	1577	3072	5	182	33	6733	2993	13	292	3716	1675	1744	1282	53	2
Dextromethorphan With Expectorants	336	252	148	32	22	47	0	3	0	204	42	0	4	74	63	20	18	0	0
Expectorants Without Dextromethorphan	1407	1010	478	57	60	339	1	63	12	901	76	0	27	105	153	26	6	0	0
Non-Narcotic Antitussives Excluding Dextromethorphan	986	697	253	53	74	279	0	36	2	548	91	1	53	239	209	102	23	4	0
Obsolete: Acetylsalicylic Acid in Combination with Dextromethorphan	3	3	2	0	0	1	0	0	0	2	0	0	1	1	0	0	0	0	0
Obsolete: Expectorants or Antitussives (Without Narcotics or Narcotic Analogs)	1046	758	292	67	64	282	1	46	6	644	71	0	36	144	139	59	18	3	1
Obsolete: Non-Acetylsalicylic Acid Salicylates in Combination with Dextromethorphan	8	7	5	1	1	0	0	0	0	7	0	0	0	2	1	0	1	0	0
Obsolete: Unknown Types of Cough and Cold Preparation	1003	479	143	28	106	179	2	14	7	192	252	1	20	310	83	106	76	3	0
Non-Acetylsalicylic Acid Salicylates with Decongestant and/or Antihistamine																			
Non-Acetylsalicylic Acid Salicylates and Dextromethorphan with Antihistamine	4	4	2	1	1	0	0	0	0	3	1	0	0	1	2	0	1	0	0
Non-Acetylsalicylic Acid Salicylates and Dextromethorphan with Decongestant	4	4	3	1	0	0	0	0	0	4	0	0	0	1	0	0	0	0	0
Non-Acetylsalicylic Acid Salicylates and Dextromethorphan with Decongestant and Antihistamine	3	2	1	0	0	1	0	0	0	1	1	0	0	2	1	0	1	0	0
Non-Acetylsalicylic Acid Salicylates and Opioid with Decongestant	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-Acetylsalicylic Acid Salicylates with Antihistamine without Opioid	4	2	2	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0
Non-Acetylsalicylic Acid Salicylates with Decongestant and Antihistamine without Opioid	7	3	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
Non-Acetylsalicylic Acid Salicylates with Decongestant without Opioid	3	3	1	0	1	0	0	1	0	3	0	0	0	0	1	1	0	0	0
Obsolete: Non-Acetylsalicylic Acid Salicylates and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	10	6	5	0	1	0	0	0	0	5	1	0	0	1	1	1	0	0	0
Obsolete: Non-Acetylsalicylic Acid Salicylates and Opioid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	2	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0

(*continued*)

Table 22(B). Continued

Obsolete: Non-Acetylsalicylic Acid Salicylates with Decongestant and/or Antihistamine without Phenylpropanolamine and Opioid	11	10	8	2	0	0	0	0	0	10	0	0	0	2	0	2	0	0	0
Phenylpropanolamine Containing Preparations																			
Acetaminophen and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	42	26	13	2	4	7	0	0	0	19	5	0	1	10	7	2	3	0	0
Acetaminophen, Acetylsalicylic Acid, and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	13	10	4	1	3	2	0	0	0	7	2	0	1	2	4	0	2	0	0
Acetaminophen, Acetylsalicylic Acid, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	33	17	4	4	6	2	0	1	0	13	3	1	0	4	6	2	0	0	0
Acetaminophen, Acetylsalicylic Acid, Phenylpropanolamine, and Opioid Combinations with Decongestant and/or Antihistamine	1	1	1	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0
Acetaminophen, Phenylpropanolamine, and Codeine Combinations with Decongestant and/or Antihistamine	3	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Acetaminophen, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	61	38	22	2	4	9	1	0	0	29	9	0	0	10	5	5	2	0	0
Acetaminophen, Phenylpropanolamine, and Other Opioid Combinations with Decongestant and/or Antihistamine	2	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0
Acetylsalicylic Acid and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	32	25	14	3	4	4	0	0	0	19	3	0	3	6	4	2	2	0	0
Acetylsalicylic Acid, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	12	7	6	0	1	0	0	0	0	7	0	0	0	2	3	1	0	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine and Codeine	4	2	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine and Dextromethorphan	196	170	115	24	12	19	0	0	0	151	12	0	6	46	54	16	10	1	0
Antihistamine and/or Decongestant with Phenylpropanolamine and Other Opioid	6	6	2	1	0	3	0	0	0	5	1	0	0	1	3	1	0	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine without Opioid	225	161	104	26	8	21	0	2	0	152	9	0	0	37	50	9	5	0	0

(*continued*)

Table 22(B). Continued

Non-Acetylsalicylic Acid Salicylates and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Non-Acetylsalicylic Acid Salicylates, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	3	3	1	0	1	1	0	0	0	3	0	0	0	0	1	0	0	0	0
Non-Acetylsalicylic Acid Salicylates, Phenylpropanolamine, and Opioid Combinations with Decongestant and/or Antihistamine	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Other Phenylpropanolamine Preparations (Excluding Street Drugs and Diet Aids)	219	196	99	2	5	83	0	6	1	196	0	0	0	18	62	5	1	0	0
Category Total:	**59,655**	**42,266**	**20,667**	**4348**	**5767**	**10,498**	**32**	**823**	**131**	**31,122**	**9644**	**35**	**1201**	**12,983**	**8778**	**5693**	**3633**	**192**	**6**
Diagnostic Agents																			
Miscellaneous Diagnostic Agents																			
Other Types of Diagnostic Agent	374	324	67	7	8	180	1	55	6	272	3	2	45	111	72	38	16	2	0
Unknown Types of Diagnostic Agent	17	14	2	1	0	9	1	1	0	12	0	1	1	1	1	3	1	0	0
Category Total:	**391**	**338**	**69**	**8**	**8**	**189**	**2**	**56**	**6**	**284**	**3**	**3**	**46**	**112**	**73**	**41**	**17**	**2**	**0**
Dietary Supplements/Herbals/Homeopathic																			
Amino Acids																			
Creatine	246	193	111	6	18	49	1	8	0	142	13	2	34	48	41	24	18	2	0
Other Amino Acid Dietary Supplements	660	456	267	26	30	119	0	14	0	364	42	1	46	100	92	39	15	1	0
Botanical Products																			
Blue Cohosh	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Citrus Aurantium (Single Ingredient)	6	3	2	0	1	0	0	0	0	2	0	0	0	2	1	0	1	0	0
Echinacea	147	112	87	13	4	6	0	1	1	102	4	0	6	6	25	6	2	0	0
Ginkgo Biloba	107	78	42	3	5	24	0	4	0	61	4	0	13	9	18	8	0	1	0
Ginseng	125	87	38	4	5	33	1	5	1	60	8	0	18	29	25	8	8	0	0
Kava Kava	75	43	4	0	11	25	0	3	0	13	19	0	9	20	2	13	4	0	0
Ma Huang/Ephedra (Single Ingredient)	29	18	3	0	4	11	0	0	0	7	7	0	4	8	4	1	4	0	0
Multi-Botanicals with Citrus Aurantium	72	61	37	1	7	16	0	0	0	45	10	0	6	23	20	10	12	0	0
Multi-Botanicals with Ma Huang	92	69	38	2	12	16	0	1	0	47	17	0	4	26	22	12	8	0	0
Multi-Botanicals without Ma Huang or Citrus Aurantium	1851	1479	864	69	81	417	1	43	4	1057	165	3	244	389	295	183	101	6	0
Other Single Ingredient Botanicals	3044	2383	1513	108	94	545	4	108	11	2012	131	5	226	336	462	196	54	6	0
St. John's Wort	227	155	86	5	17	38	2	5	2	114	30	0	10	33	41	9	7	0	0
Valerian	234	112	37	4	14	51	1	3	2	58	36	0	17	45	27	18	6	1	0
Yohimbe	172	138	22	0	3	104	0	8	1	50	19	2	66	82	12	32	38	4	0
Cultural Medicines																			
Asian Medicines	126	108	44	3	4	50	1	6	0	77	6	1	23	35	22	15	9	0	0
Ayurvedic Medicines	21	16	8	1	0	5	0	2	0	12	2	0	2	7	2	0	3	0	0
Hispanic Medicines	7	5	1	0	0	4	0	0	0	2	2	0	1	3	0	2	0	1	0
Other Cultural Medicines	68	58	27	0	2	25	0	4	0	33	11	0	13	23	4	2	5	2	0
Energy Products																			
Energy Drinks: Caffeine Containing (From Any Source Including Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc)	1161	905	481	71	126	205	0	19	3	637	141	7	117	208	185	167	83	2	0
Energy Drinks: Caffeine Only (Without Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc)	1005	721	431	58	63	146	0	21	2	538	96	5	81	93	163	92	48	1	0
Energy Drinks: Ethanol and Caffeine Containing (From Any Source Including Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc)	149	34	5	3	15	9	0	2	0	9	19	0	6	17	1	10	7	2	0

(*continued*)

Table 22(B). Continued

Energy Drinks: Ethanol and Caffeine Only (Without Guarana, Kola Nut, Tea, Yerba Mate, Cocoa, etc)	1	1	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0
Energy Drinks: No Caffeine (From Any Source)	29	24	14	1	1	8	0	0	0	18	0	0	5	9	8	5	1	0	0
Energy Drinks: Unknown	533	369	164	38	45	109	0	9	4	231	65	1	66	89	50	71	37	0	0
Energy Products: Other	332	280	138	5	35	95	1	6	0	174	44	0	58	109	70	50	42	2	0
Hormonal Products																			
Androgen or Androgen Precursor Dietary Supplements	122	78	51	3	2	21	0	1	0	62	7	0	9	18	16	6	4	0	0
Glandular Dietary Supplements	41	33	26	1	0	5	0	1	0	28	0	0	5	3	7	0	0	0	0
Melatonin	21,486	18,045	13,887	1964	1223	847	15	96	13	16,094	1772	32	92	2660	4057	1862	61	4	0
Phytoestrogen Dietary Supplements	62	48	23	3	3	16	0	3	0	36	6	1	5	14	7	2	2	0	0
Miscellaneous Dietary Supplements/ Herbals/Homeopathic																			
Homeopathic Agents	10,754	10,141	9217	336	89	417	16	53	13	9836	79	3	210	659	1796	284	33	2	1
Unknown Dietary Supplements or Homeopathic Agents	2057	1622	1038	83	69	372	3	52	5	1268	103	3	235	350	318	164	56	6	1
Other Dietary Supplements																			
Blue-Green Algae	215	197	66	36	15	67	0	12	1	187	2	3	5	38	20	36	7	0	0
Glucosamine (with or without Chondroitin)	602	396	292	10	8	75	0	7	4	369	9	0	18	23	78	11	2	0	0
Other Single Ingredient Non-Botanical Dietary Supplements	1862	1075	754	66	29	175	2	41	8	949	53	0	69	124	182	59	19	0	0
Category Total:	**47,721**	**39,544**	**29,819**	**2923**	**2036**	**4105**	**48**	**538**	**75**	**34,695**	**2923**	**69**	**1723**	**5638**	**8073**	**3398**	**697**	**43**	**2**
Diuretics																			
Miscellaneous Diuretics																			
Furosemide	3223	1094	403	44	29	576	2	39	1	1000	69	0	23	267	235	106	52	0	1
Other Types of Diuretic	2239	927	334	46	61	442	1	39	4	792	99	2	28	241	237	67	31	2	0
Thiazide	4113	1484	627	96	56	637	0	66	2	1304	147	1	25	355	388	67	36	1	0
Unknown Types of Diuretic	210	72	32	2	3	33	0	2	0	62	7	2	1	14	11	5	2	0	0
Category Total:	**9785**	**3577**	**1396**	**188**	**149**	**1688**	**3**	**146**	**7**	**3158**	**322**	**5**	**77**	**877**	**871**	**245**	**121**	**3**	**1**
Electrolytes and Minerals																			
Miscellaneous Electrolytes and Minerals																			
Calcium and Calcium Salts	11,873	10,453	9309	497	140	428	6	61	12	10,174	204	2	61	324	1629	180	28	0	0
Chromium, Trivalent	225	184	70	23	11	62	2	16	0	175	2	2	5	22	31	16	6	0	0
Colloidal Silver	105	81	27	5	2	39	1	5	2	49	13	1	18	30	13	5	6	3	0
Fluoride (Excluding Vitamins, Hydrofluoric Acid & Mouthwashes)	1619	1525	1231	155	29	84	5	17	4	1437	19	1	67	78	260	96	6	0	0
Iron and Iron Salts (Excluding Vitamins with Iron)	5682	4072	2036	141	459	1240	4	175	17	3211	553	2	286	1161	948	487	122	11	1
Magnesium and Magnesium Salts	1550	1233	507	61	54	524	1	81	5	989	115	7	116	168	208	162	23	1	0
Multi-Mineral and Multi-Herbal Dietary Supplement	920	730	436	29	74	174	0	14	3	532	118	0	77	273	216	96	61	0	0
Multi-Mineral Dietary Supplements	166	119	69	7	9	30	0	3	1	100	8	0	11	25	27	19	4	0	0
Other Types of Electrolyte or Mineral	35	33	11	1	1	16	0	4	0	29	0	0	4	3	3	12	1	0	0
Potassium and Potassium Salts	1287	544	183	25	17	277	0	40	2	468	49	4	21	102	108	27	17	2	0
Selenium and Selenium Salts	112	78	23	2	6	43	0	3	1	59	5	1	11	30	16	17	4	0	0
Sodium and Sodium Salts	4271	3516	1995	369	173	767	5	186	21	2999	381	37	86	538	643	500	62	4	1
Unknown Types of Electrolyte or Mineral	12	11	5	0	1	4	0	1	0	9	0	0	2	3	1	4	0	0	0
Vanadium and Vanadium Salts	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0
Zinc and Zinc Salts	1209	1019	586	21	44	318	0	39	11	843	71	1	96	89	134	133	11	1	0
Category Total:	**29,067**	**23,599**	**16,488**	**1336**	**1020**	**4007**	**24**	**645**	**79**	**21,075**	**1538**	**58**	**861**	**2847**	**4237**	**1754**	**352**	**22**	**2**
Eye/Ear/Nose/Throat Preparations																			
Miscellaneous Eye/Ear/Nose/Throat Preparations																			
Topical Steroids For Eye/Nose/Throat	1852	1540	764	224	41	407	3	92	9	1439	37	2	57	58	230	130	5	0	0
Nasal Preparations																			
Other Nasal Decongestants or Sympathomimetics (Excluding Tetrahydrazoline)	2179	2066	928	103	150	741	2	135	7	1828	91	13	133	260	518	230	47	1	0
Other Types of Nasal Preparation	572	540	331	23	11	138	0	32	5	515	8	1	16	21	68	38	5	0	0

(*continued*)

Table 22(B). Continued

Tetrahydrozoline, Nasal Preparations	36	35	25	2	1	7	0	0	0	33	1	0	1	11	19	3	0	0	0
Unknown Types of Nasal Preparation	15	12	3	0	1	7	0	1	0	9	0	1	2	1	2	2	0	0	0
Ophthalmic Preparations																			
Contact Lens Products	2254	2183	1179	35	116	727	0	116	10	2127	28	6	20	443	237	369	72	2	0
Glaucoma Medications	452	396	88	12	6	245	0	41	4	353	6	1	35	48	74	26	10	2	0
Other Ophthalmic Sympathomimetics	1095	1039	663	23	51	241	1	56	4	872	35	87	38	210	336	68	14	0	0
Other Types of Ophthalmic Preparation	2074	1978	1136	87	56	549	5	135	10	1858	33	20	64	159	350	98	24	3	1
Tetrahydrozoline, Ophthalmic Preparations	1037	1016	733	25	44	182	0	29	3	910	29	64	9	251	416	55	8	2	1
Unknown Types of Ophthalmic Preparation	48	44	19	3	2	14	0	6	0	31	2	4	6	16	10	4	2	0	0
Otic Preparations																			
Combination Products	1517	1497	704	119	43	524	3	96	8	1473	3	0	19	150	240	401	16	0	0
Other Types of Otic Preparation	2189	2165	737	110	64	1083	5	152	14	2119	12	2	32	260	207	689	44	0	0
Unknown Types of Otic Preparation	52	51	13	5	5	19	0	8	1	51	0	0	0	4	10	11	1	0	0
Throat Preparations																			
Other Types of Throat Preparation	531	504	165	68	62	169	0	36	4	444	48	1	11	48	110	56	4	1	0
Throat Lozenges with Local Anesthetics	301	269	111	21	26	88	0	21	2	249	12	0	8	15	54	18	3	1	0
Throat Lozenges without Local Anesthetics	975	895	727	61	33	56	1	13	4	844	32	1	16	32	176	39	3	0	0
Unknown Types of Throat Preparation	3	2	1	0	0	1	0	0	0	1	1	0	0	0	0	1	0	0	0
Category Total:	**17,182**	**16,232**	**8327**	**921**	**712**	**5198**	**20**	**969**	**85**	**15,156**	**378**	**203**	**467**	**1987**	**3057**	**2238**	**258**	**12**	**2**
Gastrointestinal Preparations																			
Antacids																			
Antacids: Other Types	4002	3709	3263	176	24	207	3	31	5	3588	84	5	31	91	495	38	5	1	0
Antacids: Proton Pump Inhibitors	10,568	5247	2555	179	222	1941	4	309	37	4768	308	3	160	530	1028	164	21	0	0
Antacids: Salicylate-Containing	2501	2249	1792	170	44	211	2	26	4	2065	100	0	76	182	523	47	12	0	0
Antidiarrheals																			
Antidiarrheals: Diphenoxylate and Atropine Containing	259	133	54	4	4	65	0	4	2	103	22	1	7	75	34	29	9	3	0
Antidiarrheals: Loperamide	1232	916	433	36	34	365	2	41	5	651	207	1	48	330	291	82	53	16	2
Antidiarrheals: Non-Narcotic Containing (Excluding Salicyl Containing)	31	16	13	0	1	2	0	0	0	14	1	0	1	3	2	0	0	0	0
Antidiarrheals: Other Narcotic Containing	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Antidiarrheals: Paregoric Containing	4	3	0	0	0	3	0	0	0	3	0	0	0	0	1	0	0	0	0
Antispasmodics																			
Antispasmodics: Anticholinergic Containing	2879	1341	528	119	126	513	0	50	5	1038	211	0	84	470	431	144	112	13	0
Antispasmodics: Other Types	156	82	14	2	0	55	0	11	0	72	1	0	8	16	18	5	4	0	0
Miscellaneous Gastrointestinal Preparations																			
Laxatives	15,449	13,448	9703	663	408	2231	8	386	49	12,331	612	59	419	1158	1830	1287	135	7	0
Other Types of Gastrointestinal Preparation	11,044	8966	6971	416	221	1133	13	196	16	8358	307	7	275	938	1728	377	99	7	2
Unknown Types of Gastrointestinal Preparation	30	11	7	1	0	2	0	1	0	9	0	0	2	1	0	1	0	0	0
Serotonin 5-HT3 Receptor Antagonists																			
Serotonin 5-HT3 Receptor Antagonists: Ondansetron	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Category Total:	**48,157**	**36,121**	**25,333**	**1766**	**1084**	**6728**	**32**	**1055**	**123**	**33,000**	**1853**	**76**	**1111**	**3794**	**6381**	**2174**	**450**	**47**	**4**
Hormones and Hormone Antagonists																			
Miscellaneous Hormones and Hormone Antagonists																			
Androgens	435	366	67	9	13	233	1	40	3	270	35	1	57	104	45	60	20	2	0
Corticosteroids	12,022	9865	4490	814	323	3594	12	580	52	9154	170	16	515	647	1323	367	57	6	0
Estrogens	1398	923	543	35	55	240	3	41	6	826	51	1	44	51	153	42	3	0	0
Insulin	6880	5842	170	70	122	5035	1	415	29	5143	592	14	74	2393	2370	320	928	51	2
oral Contraceptives	4471	3625	2472	127	384	516	9	98	19	3113	448	4	58	305	533	169	11	0	0
Other Hormone Antagonists	599	454	127	30	19	237	1	35	5	424	18	0	11	48	84	21	5	0	0
Other Hormones	819	601	183	77	52	243	2	40	4	537	34	2	25	153	148	51	16	4	0

(*continued*)

Table 22(B). Continued

Progestins	1353	1106	636	58	54	298	3	53	4	978	36	1	86	110	186	47	7	0	0
Selective Estrogen Receptor Modulators	355	213	74	9	7	111	0	12	0	198	8	0	4	37	72	11	1	1	0
Thyroid Preparations (Including Synthetics and Extracts)	13,844	9325	4538	430	320	3613	8	400	16	8845	347	4	116	1245	1749	150	74	1	0
Unknown Hormones or Hormone Antagonists	22	13	5	0	0	5	0	2	1	9	2	0	2	4	3	1	0	0	0
Oral Hypoglycemic																			
Oral Hypoglycemics: Biguanides	8733	4012	739	109	317	2592	4	235	16	3217	654	0	109	1120	860	333	220	43	8
Oral Hypoglycemics: Dipeptidyl Peptidase-4 (DPP-4) Inhibitors	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oral Hypoglycemics: Other or Unknown	1622	778	225	25	15	450	2	53	8	684	34	0	56	247	277	34	39	2	0
Oral Hypoglycemics: Sulfonylureas	3837	1659	807	51	54	709	2	31	5	1413	154	1	72	1253	603	64	497	47	2
Oral Hypoglycemics: Thiazolidinediones	341	124	62	3	1	52	0	6	0	114	6	0	3	46	67	3	4	1	0
Category Total:	**56,732**	**38,906**	**15,138**	**1847**	**1736**	**17,928**	**48**	**2041**	**168**	**34,925**	**2589**	**44**	**1232**	**7763**	**8473**	**1673**	**1882**	**158**	**12**
Miscellaneous Drugs																			
Other Miscellaneous Drugs																			
Allopurinol	901	318	161	8	8	132	1	8	0	298	16	0	4	49	95	22	3	0	0
Disulfiram	221	72	8	1	1	52	0	9	1	27	16	2	26	33	6	12	8	1	0
Ergot Alkaloids	77	50	20	1	4	24	0	1	0	34	4	1	10	25	17	9	5	2	0
Levo-Dopa and Related Drugs	1287	711	150	4	6	496	0	51	4	640	40	3	22	183	162	93	37	2	0
Neuromuscular Blocking Agents (Succinylcholine, Curare, etc)	16	14	4	0	0	8	0	1	1	11	1	0	2	10	4	2	3	1	1
Nicotine Pharmaceuticals	1568	1473	875	126	48	359	3	56	6	1266	75	8	118	284	450	249	30	2	1
Other Types of Miscellaneous Prescription or Over the Counter Drug	17,428	11,260	4542	632	593	4814	12	600	67	9767	714	24	690	2523	2493	1311	447	35	2
Category Total:	**21,498**	**13,898**	**5760**	**772**	**660**	**5885**	**16**	**726**	**79**	**12,043**	**866**	**38**	**872**	**3107**	**3227**	**1698**	**533**	**43**	**4**
Muscle Relaxants																			
Miscellaneous Muscle Relaxants																			
Baclofen	4571	2028	263	69	162	1453	1	66	14	649	1150	26	121	1565	265	406	614	246	5
Carisoprodol (Formulated Alone)	3639	1446	93	4	84	1222	0	34	9	267	1113	3	21	1212	154	500	406	69	0
Cyclobenzaprine	10,677	4395	1224	258	454	2295	2	134	28	2261	2003	0	79	2727	1121	1057	694	88	1
Metaxalone	549	247	42	2	34	152	0	11	6	141	91	2	8	117	50	51	30	5	0
Methocarbamol	2160	836	107	15	96	576	0	39	3	375	416	1	30	506	193	249	81	13	0
Other Types of Muscle Relaxant	759	280	42	6	26	194	0	10	2	106	152	0	14	185	53	66	61	14	0
Tizanidine	3598	1515	256	38	88	1053	0	70	10	695	709	3	74	1017	234	340	451	31	0
Unknown Types of Muscle Relaxant	235	43	7	0	10	20	0	5	1	12	28	0	1	30	6	11	10	0	0
Category Total:	**26,188**	**10,790**	**2034**	**392**	**954**	**6965**	**3**	**369**	**73**	**4506**	**5662**	**35**	**348**	**7359**	**2076**	**2680**	**2347**	**466**	**6**
Narcotic Antagonists																			
Miscellaneous Narcotic Antagonists																			
Miscellaneous Narcotic Antagonist	682	274	17	4	16	198	0	34	5	101	70	13	85	148	24	44	54	6	0
Category Total:	**682**	**274**	**17**	**4**	**16**	**198**	**0**	**34**	**5**	**101**	**70**	**13**	**85**	**148**	**24**	**44**	**54**	**6**	**0**
Radiopharmaceuticals																			
Miscellaneous Radiopharmaceutical																			
Specific Pharmaceutical Radionuclides	37	25	6	2	2	13	0	2	0	20	0	2	3	7	4	0	0	0	0
Category Total:	**37**	**25**	**6**	**2**	**2**	**13**	**0**	**2**	**0**	**20**	**0**	**2**	**3**	**7**	**4**	**0**	**0**	**0**	**0**
Sedative/Hypnotics/Antipsychotics																			
Barbiturates																			
Long Acting Barbiturates	1783	1043	225	28	37	700	1	49	3	736	214	5	43	416	222	163	104	31	1
Short or Intermediate Acting Barbiturates	169	84	4	2	6	60	0	8	4	56	23	0	3	42	15	22	9	2	1
Unknown Types of Barbiturate	39	12	0	1	0	10	0	1	0	2	4	1	0	10	1	2	3	1	0
Miscellaneous Sedative/Hypnotics/ Antipsychotics																			
Atypical Antipsychotics	42,343	16,457	1817	945	3148	9935	7	513	92	5635	9830	43	714	12,386	2881	4745	3814	463	13
Benzodiazepines	74,745	27,238	4930	687	3074	17,125	15	1116	291	8773	17,259	309	443	19,747	5275	9160	3512	358	16
Buspirone	4551	1339	227	50	217	785	0	47	13	561	703	2	59	809	398	323	101	8	0
Chloral Hydrate	12	7	0	2	0	4	0	1	0	4	3	0	0	5	0	2	3	0	0
Ethchlorvynol	1	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	0
Glutethimide	2	2	0	0	0	2	0	0	0	0	1	0	0	2	0	2	0	0	0
Meprobamate	20	9	0	0	2	7	0	0	0	3	5	0	1	5	0	2	2	1	0
Methaqualone	9	6	0	0	0	4	0	2	0	0	6	0	0	6	0	2	2	0	0
Other Types of Sedative/ Hypnotic/Anti-Anxiety or Anti-Psychotic Drug	15,944	6588	820	336	570	4549	2	265	46	2434	3877	13	136	4544	1032	2430	890	76	2

(*continued*)

Table 22(B). Continued

Phenothiazines	4497	1695	187	40	162	1202	0	96	8	661	815	8	188	1195	307	399	416	33	1
Sleep Aids, Over the Counter Only (Excluding Diphenhydramine)	1488	862	242	20	148	415	0	33	4	329	512	0	12	542	166	173	196	16	0
Unknown Types of Sedative/ Hypnotic/Anti-Anxiety or Anti-Psychotic Drug	275	100	4	3	19	66	0	7	1	17	68	7	2	76	10	24	28	1	0
Category Total:	**145,878**	**55,443**	**8456**	**2114**	**7383**	**34,865**	**25**	**2138**	**462**	**19,211**	**33,321**	**388**	**1601**	**39,786**	**10,307**	**17,449**	**9081**	**990**	**34**
Serums, Toxoids, Vaccines																			
Miscellaneous Serums, Toxoids, Vaccines																			
Miscellaneous Serums, Toxoids and Vaccines	1619	1440	274	96	93	802	3	150	22	1121	6	1	309	413	152	268	60	4	0
Category Total:	**1619**	**1440**	**274**	**96**	**93**	**802**	**3**	**150**	**22**	**1121**	**6**	**1**	**309**	**413**	**152**	**268**	**60**	**4**	**0**
Stimulants and Street Drugs																			
Cannabinoids and Analogs																			
eCigarettes: Marijuana Device Flavor Unknown	2	1	0	0	0	1	0	0	0	0	1	0	0	1	0	1	0	0	0
eCigarettes: Marijuana Liquid With Added Flavors	1	1	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0
Marijuana	6596	2465	410	107	704	1066	16	110	52	710	1379	99	179	1784	190	778	594	50	2
Tetrahydrocannabinol (THC) Homologs	7792	6173	35	47	1401	4451	4	183	52	267	5649	101	24	5761	251	1775	2567	567	17
Tetrahydrocannabinol (THC) Pharmaceuticals	78	54	6	1	11	30	0	6	0	17	26	0	8	32	3	17	12	3	0
Diet Aids																			
Diet Aids: Phenylpropanolamine and Caffeine Combinations	7	5	3	0	0	2	0	0	0	3	0	0	2	1	0	1	0	0	0
Diet Aids: Phenylpropanolamine Only	7	4	3	0	0	1	0	0	0	4	0	0	0	0	1	0	0	0	0
Other Types of Diet Aid, Over the Counter Only	202	158	95	6	18	37	0	2	0	113	21	1	21	62	51	18	16	0	0
Other Types of Diet Aid, Prescription Only	29	22	10	0	4	8	0	0	0	16	4	0	2	18	5	6	5	1	0
Unknown Types of Diet Aid	76	48	19	1	4	21	0	2	1	26	7	0	14	24	12	5	12	0	0
Miscellaneous Stimulants and Street Drugs																			
Amfetamines and Related Compounds	16,251	10,124	3614	1877	1779	2560	13	223	58	7063	2598	33	286	5119	2529	1627	1681	101	4
Amyl or Butyl Nitrites (Street Drugs)	132	109	20	3	3	76	0	4	3	43	63	2	0	60	12	22	19	5	1
Caffeine	3958	3023	1099	92	438	1225	3	139	27	1749	770	26	458	867	454	590	331	17	1
Cocaine	4738	1160	51	16	82	881	4	93	33	127	933	25	7	967	195	189	320	65	7
Ephedrine	174	146	75	3	8	49	1	9	1	112	24	1	9	42	31	17	13	0	0
gamma-Hydroxybutyric Acid including Analogs or Precursors	620	379	6	3	24	320	1	20	5	76	231	31	18	318	20	60	151	55	1
Hallucinogenic Amfetamines	2032	1058	25	2	324	629	2	52	24	66	915	47	10	917	49	213	418	77	3
Heroin	5693	2712	27	8	161	2320	0	131	65	128	2414	76	22	2453	254	482	858	476	33
Lysergic acid diethylamide (LSD)	893	512	7	2	297	169	1	20	16	29	461	12	0	444	18	94	261	35	1
Mescaline/Peyote	63	54	6	5	6	34	0	2	1	36	14	0	3	25	7	9	11	0	0
Methamfetamines	5836	3109	220	84	194	2174	5	317	115	617	2262	96	26	2518	367	513	993	180	17
Methylphenidate	9582	6527	1614	2699	1297	820	4	75	18	5259	1070	9	135	2149	1637	988	676	24	0
Other Hallucinogens	112	68	1	0	23	40	0	2	2	1	65	0	0	67	3	16	34	7	1
Other Stimulants (Excluding Amfetamines)	462	267	81	11	29	130	0	16	0	185	49	1	31	112	60	41	37	1	0
Other Street Drugs	898	596	22	5	84	450	0	25	10	50	515	16	3	516	37	81	258	69	2
Phenylcyclohexylpiperidine (PCP)	615	247	8	1	23	196	0	17	2	39	167	9	1	215	20	60	86	15	0
Phenylpropanolamine Containing Look Alike Drugs	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unknown Hallucinogens	9	9	0	0	2	7	0	0	0	1	6	2	0	7	0	0	4	1	0
Unknown Stimulants or Street Drugs	216	140	3	2	36	81	6	11	1	18	107	7	4	122	7	21	55	11	1
Category Total:	**67,075**	**39,171**	**7461**	**4975**	**6952**	**17,778**	**60**	**1459**	**486**	**16,756**	**19,751**	**594**	**1263**	**24,602**	**6214**	**7624**	**9412**	**1760**	**91**
Topical Preparations																			
Miscellaneous Topical Preparations																			
Acne Preparations	2383	2293	1313	98	313	469	2	85	13	2134	54	4	100	154	397	256	25	1	0
Boric Acid or Borates (As Antiseptics, Excluding Insecticides)	83	82	27	4	2	42	0	6	1	73	5	1	2	13	15	9	0	0	0
Calamine (Including All Caladryl Type Products)	2060	2021	1443	60	24	436	2	52	4	1989	16	1	11	119	329	175	6	0	0
Camphor	10,754	10,571	8940	219	146	1053	19	178	16	10,355	134	22	49	1096	2880	1191	68	8	0

(*continued*)

Table 22(B). Continued

Camphor and Methyl Salicylate Combinations	1418	1399	1135	39	19	175	1	29	1	1357	15	3	24	166	399	167	7	0	0
Diaper Care and Rash Products	26,418	25,936	24,548	287	163	761	28	129	20	25,844	31	8	47	526	3315	636	22	2	0
Hexachlorophene Containing Antiseptics	21	20	8	1	1	8	0	1	1	18	1	0	1	4	1	1	1	0	0
Hydrogen Peroxide 3%	7257	6961	2443	319	321	3350	5	492	31	6687	176	40	48	513	748	1142	50	1	0
Iodine or Iodide Containing Antiseptics	922	839	200	47	71	439	0	75	7	698	71	6	54	154	167	152	17	3	0
Mercury Containing Antiseptics	55	51	26	3	1	19	0	1	1	41	2	3	4	16	9	6	1	0	0
Methyl Salicylate	7146	7072	5150	298	159	1201	12	228	24	6837	69	17	144	653	1397	1033	46	0	0
Minoxidil, Topical	171	163	46	1	2	91	1	19	3	132	9	2	19	31	23	23	18	1	0
Other Types of Rubefacient or Liniment (Excluding Camphor and Methyl Salicylate)	3839	3766	2625	95	68	817	5	137	19	3427	26	8	302	198	595	579	45	0	0
Other Types of Topical Antiseptic	2215	2129	1221	90	90	639	2	81	6	2017	58	9	44	222	399	231	25	0	0
Podophyllin	46	45	8	3	5	22	0	5	2	32	6	0	7	10	7	8	3	0	0
Silver Nitrate	93	80	21	4	22	21	0	11	1	68	6	0	5	21	11	22	2	0	0
Topical Steroids (Including Otic, Ophthalmic, and Dermal Preparations)	9023	8797	5174	564	179	2347	15	487	31	8644	57	5	87	185	1135	304	17	0	0
Topical Steroids in Combination with Antibiotics (Including Otic, Ophthalmic, and Dermal Preparations)	865	838	350	52	27	338	1	61	9	794	11	0	33	48	102	147	6	0	0
Wart Preparations and Other Keratolytics	1235	1220	697	91	40	330	2	54	6	1148	20	6	45	203	247	215	43	2	0
Category Total:	**76,004**	**74,283**	**55,375**	**2275**	**1653**	**12,558**	**95**	**2131**	**196**	**72,295**	**767**	**135**	**1026**	**4332**	**12,176**	**6297**	**402**	**18**	**0**
Unknown Drug																			
Miscellaneous Unknown Drug																			
Miscellaneous Unknown Drugs	22,899	15,797	4356	619	2055	7512	66	836	353	6185	5969	834	594	11,420	2864	2620	3271	1072	107
Category Total:	**22,899**	**15,797**	**4356**	**619**	**2055**	**7512**	**66**	**836**	**353**	**6185**	**5969**	**834**	**594**	**11,420**	**2864**	**2620**	**3271**	**1072**	**107**
Veterinary Drugs																			
Miscellaneous Veterinary Drugs																			
Miscellaneous Veterinary Drugs without Human Equivalent	3785	3524	906	84	104	2091	2	300	37	3416	46	10	47	416	859	417	53	2	3
Category Total:	**3785**	**3524**	**906**	**84**	**104**	**2091**	**2**	**300**	**37**	**3416**	**46**	**10**	**47**	**416**	**859**	**417**	**53**	**2**	**3**
Vitamins																			
Miscellaneous Vitamins																			
Other Types of Vitamin	743	585	453	34	25	60	1	11	1	544	17	1	22	63	131	36	4	0	0
Unknown Types of Vitamin	804	559	407	74	17	39	1	17	4	513	33	0	10	58	125	18	0	0	0
Multiple Vitamin Liquids: Adult Formulations																			
Multiple Vitamin Liquids: Adult Formulations with Fluoride (No Iron)	18	16	13	1	1	1	0	0	0	14	1	0	1	2	3	2	0	0	0
Multiple Vitamin Liquids: Adult Formulations with Iron (No Fluoride)	264	211	142	11	7	41	0	10	0	193	8	1	9	22	34	13	0	0	0
Multiple Vitamin Liquids: Adult Formulations with Iron and Fluoride	9	9	5	0	1	3	0	0	0	9	0	0	0	1	2	1	0	0	0
Multiple Vitamin Liquids: Adult Formulations without Iron or Fluoride	531	411	289	50	19	45	2	6	0	369	24	2	16	41	60	17	8	0	0
Multiple Vitamin Liquids: Pediatric Formulations																			
Multiple Vitamin Liquids: Pediatric Formulations with Fluoride (No Iron)	116	110	102	6	1	0	1	0	0	107	2	0	1	3	13	1	0	0	0
Multiple Vitamin Liquids: Pediatric Formulations with Iron (No Fluoride)	560	525	505	16	2	2	0	0	0	509	6	0	9	40	97	29	4	0	0
Multiple Vitamin Liquids: Pediatric Formulations with Iron and Fluoride	36	33	30	3	0	0	0	0	0	33	0	0	0	1	5	0	0	0	0
Multiple Vitamin Liquids: Pediatric Formulations without Iron or Fluoride	725	682	587	80	8	4	1	2	0	656	19	0	6	37	91	18	3	0	0
Multiple Vitamin Tablets: Adult Formulations																			
Multiple Vitamin Tablets: Adult Formulations with Fluoride (No Iron)	99	89	70	6	5	7	0	1	0	80	7	0	2	8	15	4	1	0	0

(*continued*)

Table 22(B). Continued

Multiple Vitamin Tablets: Adult Formulations with Iron (No Fluoride)	5370	4293	3374	84	114	619	5	92	5	4052	163	3	69	412	932	169	14	1	0
Multiple Vitamin Tablets: Adult Formulations with Iron and Fluoride	33	22	16	0	0	6	0	0	0	19	0	0	2	2	5	2	0	0	0
Multiple Vitamin Tablets: Adult Formulations with Iron Carbonyl (No Fluoride)	94	79	59	2	0	18	0	0	0	71	4	0	4	11	27	3	0	0	0
Multiple Vitamin Tablets: Adult Formulations without Iron or Fluoride	5518	4452	3195	475	186	511	5	70	10	4088	247	2	110	305	885	174	18	1	0
Multiple Vitamin Tablets: Pediatric Formulations																			
Multiple Vitamin Tablets: Pediatric Formulations with Fluoride (No Iron)	283	264	243	20	0	1	0	0	0	264	0	0	0	17	41	4	0	0	0
Multiple Vitamin Tablets: Pediatric Formulations with Iron (No Fluoride)	4603	4368	3906	362	50	41	2	6	1	4281	75	3	8	396	911	282	8	0	0
Multiple Vitamin Tablets: Pediatric Formulations with Iron and Fluoride	37	36	28	5	0	3	0	0	0	35	1	0	0	5	8	1	0	0	0
Multiple Vitamin Tablets: Pediatric Formulations with Iron Carbonyl (No Fluoride)	17	17	17	0	0	0	0	0	0	17	0	0	0	0	2	0	0	0	0
Multiple Vitamin Tablets: Pediatric Formulations without Iron or Fluoride	26,145	25,418	20,653	3975	429	267	45	33	16	24,463	923	1	16	991	4291	473	15	0	0
Multiple Vitamins, Unspecified Adult Formulations																			
Multiple Vitamins, Unspecified Adult Formulations with Fluoride (No Iron)	11	10	7	0	0	3	0	0	0	9	0	0	0	0	0	0	0	0	0
Multiple Vitamins, Unspecified Adult Formulations with Iron (No Fluoride)	1493	1010	725	40	49	163	1	29	3	932	51	1	24	113	180	34	2	0	0
Multiple Vitamins, Unspecified Adult Formulations with Iron and Fluoride	11	7	5	1	1	0	0	0	0	6	1	0	0	2	1	3	0	0	0
Multiple Vitamins, Unspecified Adult Formulations without Iron or Fluoride	338	292	223	30	16	20	0	3	0	273	17	0	2	29	53	6	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations																			
Multiple Vitamins, Unspecified Pediatric Formulations with Fluoride (No Iron)	21	20	18	1	0	1	0	0	0	18	1	0	0	2	4	2	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations with Iron (No Fluoride)	51	47	42	4	1	0	0	0	0	46	1	0	0	7	7	5	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations with Iron and Fluoride	8	7	7	0	0	0	0	0	0	7	0	0	0	0	2	0	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations without Iron or Fluoride	713	695	575	105	12	2	1	0	0	666	29	0	0	31	149	20	0	0	0
Other Vitamins																			
Other B Complex Vitamins	6066	4393	3643	166	98	393	4	71	18	4142	136	4	99	342	765	97	12	1	1
Vitamin A	499	396	257	17	15	90	0	16	1	355	17	2	20	43	59	28	7	1	0
Vitamin B3 (Niacin)	1523	1217	370	27	119	604	0	87	10	593	225	2	393	311	73	424	66	3	0
Vitamin B6 (Pyridoxine)	374	235	154	4	9	58	0	8	2	200	15	1	18	26	36	10	3	0	0
Vitamin C	1588	1089	803	114	30	119	0	21	2	997	56	0	32	53	164	43	5	0	0
Vitamin D	7030	5150	3335	305	138	1197	4	156	15	4926	129	1	89	506	938	174	28	1	0
Vitamin E	653	422	342	19	10	45	0	6	0	397	15	0	10	24	64	8	2	0	0
Category Total:	**66,384**	**57,169**	**44,600**	**6037**	**1363**	**4363**	**73**	**645**	**88**	**53,884**	**2223**	**24**	**972**	**3904**	**10,173**	**2101**	**200**	**8**	**1**
Pharmaceuticals Total:	**1,473,638**	**931,894**	**440,215**	**60,534**	**86,846**	**309,042**	**897**	**29,589**	**4771**	**689,102**	**200,619**	**3303**	**30,053**	**298,149**	**193,691**	**114,837**	**67,436**	**9644**	**649**
GRAND TOTAL (Nonpharmaceuticals + Pharmaceuticals):	**2,572,910**	**1,921,098**	**987,501**	**123,539**	**130,316**	**581,271**	**4336**	**81,204**	**12,931**	**1,611,377**	**236,518**	**15,374**	**44,818**	**462,523**	**359,401**	**279,702**	**99,455**	**11,889**	**909**

Unintentional exposure reasons were: Environmental in 61 cases (4.45%), General in 40 cases (2.92%), Therapeutic error in 23 cases (1.68%), and Misuse in 8 cases (0.584%). Adverse drug reaction was the reason in 40 (2.92%).

Pediatric fatalities – age ≤5 years

Although children younger than 6 years were involved in the majority of exposures, they comprised only 42 of 1831 (2.29%) of fatalities. These numbers are similar to those reported since 1985 (Table 19(A), all RCFs and includes indirect deaths). Table 8 (RCF 1, 2 or 3, excludes indirect deaths) shows the percentage fatalities in children ≤5 years related to total pediatric exposures was 24/1,017,369 = 0.00236%. By comparison, 1611/835,269 = 0.193% of all adult exposures involved a fatality. Of these 24 pediatric fatalities, 19 (79.2%) were reported as unintentional, 4 (16.7%) were reported as unknown and 1 (4.17%) were coded as resulting from an adverse drug reaction (Table 8).

The 28 fatalities in children ≤5 years old in Table 21 (includes death, indirect reports and RCF 1-3) included 16 pharmaceuticals and 12 nonpharmaceuticals. The first ranked substances associated with these fatalities included: disc (2) or button (3) batteries, carbon monoxide (4), methadone (4), immediate (1) or extended release (2) oxycodone, fentanyl (2), sodium chloride (2), and 8 other substances (1 each).

Pediatric fatalities – ages 6–12 years

In the age range 6 to 12 years, there were 8 reported fatalities: 5 were unintentional environmental, 1 were unintentional general, 1 was intentional suspected suicide and 1 was unknown reason (Table 8). The 9 fatalities listed in Table 21 (includes death, indirect reports and RCF 1-3) included: carbon monoxide (6), aluminum sulfate/borax/calcium chloride (1), benzonatate (1), and verapamil (1).

Adolescent fatalities – ages 13–19 years

In the age range 13 to 19 years, there were 58 reported fatalities, a decrease of 3 (4.92%) from 2014, and included 49 intentional, 6 unintentional and 3 unknown reason (Table 8). The 67 fatalities listed in Table 21 (includes death, indirect reports and RCF 1-3) included 54 pharmaceuticals and 13 nonpharmaceuticals. The first ranked pharmaceuticals associated with these fatalities included: buprenorphine (5), buprenorphine (extended release) (5), diphenhydramine (5), fentanyl (3), amitriptyline (3), methamfetamine (3), unknown drug (3), acetaminophen (2), tramadol (2), doxepin (2), alprazolam (2), heroin (2), and the remainder with 1 substance each. The first ranked nonpharmaceutical associated with these fatalities included: carbon monoxide (9), butane (1), ethanol (1), methanol (1) and *Taxus baccata* (1).

Pregnancy and Fatalities

There were 3 deaths in pregnant women reported to NPDS in 2015. A total of 36 deaths of pregnant women have been reported from the years 2000 through 2015. The majority (30 of 36, 88.3%) were intentional exposures (misuse, abuse or suspected suicide).

AAPCC Surveillance Results

A key component of the NPDS surveillance system is the variety of monitoring tools available to the NPDS user community. In addition to AAPCC national surveillance definitions, 28 PCs utilize NPDS as part of their surveillance programs. The CDC, six state health departments, one county health department and one state police department run surveillance definitions in NPDS. Since Surveillance Anomaly 1, generated at 2:00 pm EDT on 17 September 2006, over 280,000 anomalies have been detected. Close to 2000 were confirmed as being of public health significance with PCs working collaboratively with their local and state health departments and, in some instances the CDC, on the public health issues identified.

At the time of this report, 269 surveillance definitions run continuously, monitoring case and clinical effects volume and a variety of case based definitions from food poisoning to nerve agents. These definitions represent the surveillance work by many PCs, state health departments, the AAPCC, and the Health Studies Branch, Division of Environmental Hazards and Health Effects, National Center for Environmental Health, CDC. NPDS has also been used for surveillance during mass gathering events such as the Super Bowl.

The underlying methodology of automated surveillance continues to be improved in an effort to detect the index case of a public health event. Uniform algorithms for the identification of these index cases vary greatly by the agent seeking to be identified and no one uniform algorithm is without flaw.[8] However, the situational awareness that NPDS provides is undoubtedly beneficial to public health surveillance.[9] Typical NPDS surveillance data detects a response to an event rather than event prediction. This aids in situational awareness and resilience during and after a public health event. The following are two examples of the utility of NPDS in detecting, evaluating and responding to public health events.

Last year we examined the potential for NPDS exposure data to predict CDC mortality data for heroin and opioids over time.[10] The statistical models predicted the 2014 CDC mortality data to be 15,246 [95% CI: 13,915, 16,935] for opioids and 9968 [9186, 10,750] for heroin. The reported 2014 CDC mortality data were 21,103 for opioids and 10,574 for heroin.

A second example supporting NPDS' significant role in public health surveillance uses NPDS data from an event that started between April 2nd and April 5th 2015, when the Emergency Department at the University of Mississippi Medical Center treated 28 patients for complications of suspected synthetic cannabinoid (SC) use including one death.[11] The Mississippi State Department of Health was notified on April 5th and then issued a press release and statewide alert and public press release requesting healthcare

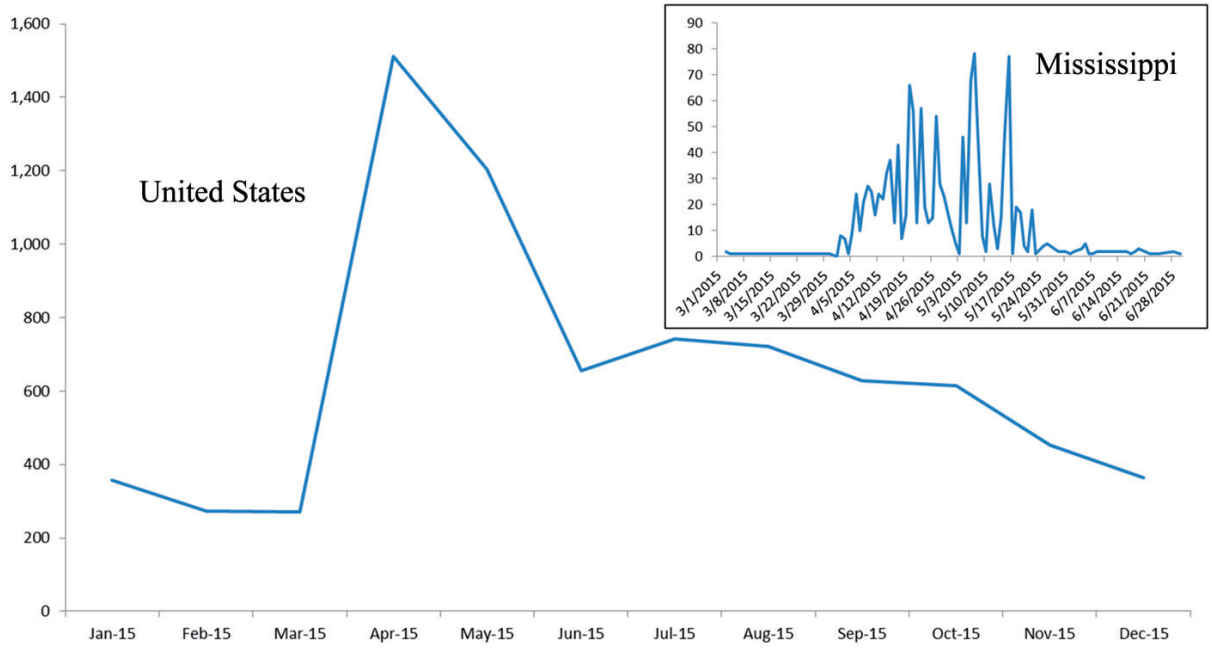

Figure 6. Human Synthetic Cannabinoid Exposure Cases - 2015
Total number of synthetic cannabinoid human exposures reported to all US PCs in 2015. The insert shows the spike in the number of synthetic cannabinoids human exposures reported to the Mississippi Poison Control Center for the time period of April 1 to May 31, 2015. The number of cases reported the months before and after spike are shown for comparison in the insert.

providers to report suspected cases to the Mississippi Poison Control Center. The CDC, on April 6th, also received notification of an overall increase in telephone calls to US PCs related to SC use.[12] Figure 6 shows the total SC cases reported to US PCS by month for 2015. The spike in April and May is noticeable, but these cases did not decrease to baseline until January 2016. The insert in Figure 6 shows the daily SC cases reported to NPDS by the Mississippi Poison Control Center from March through June of 2015. The spike in cases reported in April and May nationwide was temporally associated with the increases in SC cases reported in Mississippi. Figure 7 is a heat map by state showing the number of SC cases per million population (M) for the months of April and May 2015 combined. Using the rates instead of total calls normalizes the data and shows that while Mississippi was the epicenter of this outbreak (417/M), a significant number of cases were also reported in New York (25.0/M), the District of Columbia (20.8/M, data not shown), Maryland (13.5/M), Alabama (12.1/M) and Arizona (11.7/M) compared to the rest of the nation (2.60/M). A total of 1243 emergency department admissions were reported in Mississippi from April 1 to May 31, 2015 with at least 17 deaths.[13] Testing in 10 out of 16 (63%) of these patients was positive for the synthetic cannabinoid MAB-CHMINACA.[11,13] Evidence of how NPDS was used during the outbreak can be seen in the following. The AAPCC first issued a news release on the outbreak on April 23rd and posted periodic updates of SC cases reported by state on its website. In addition, the Mississippi State Board of Health used NPDS for situational awareness during the outbreak among other sources. Of note in this outbreak, surveillance was enhanced by early health department and poison center engagement with reports of this outbreak published as early as June and July of 2015.[11,13] The CDC, in collaboration with AAPCC, also used NPDS to characterize SC cases from PCs across the US. The two MMWR articles resulted in multiple interviews with local and national news outlets and over a hundred news articles on the topic. The investigations and resulting media coverage led to broader awareness of the ongoing issues with SCs, the dangers of using these illicit products, testing available, and novel prevention and control approaches.

Discussion

The exposure cases and information requests reported by PCs in 2015 do not reflect the full extent of PC efforts which also include poison prevention activities and public and health care professional education programs.

NPDS exposure data may be considered "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 2000-2015 call volume data clearly demonstrate a continuing decrease in exposure cases. This decline has been apparent and increasing since mid-2007 and reflects the decreasing use of the PC for less serious exposures. However,

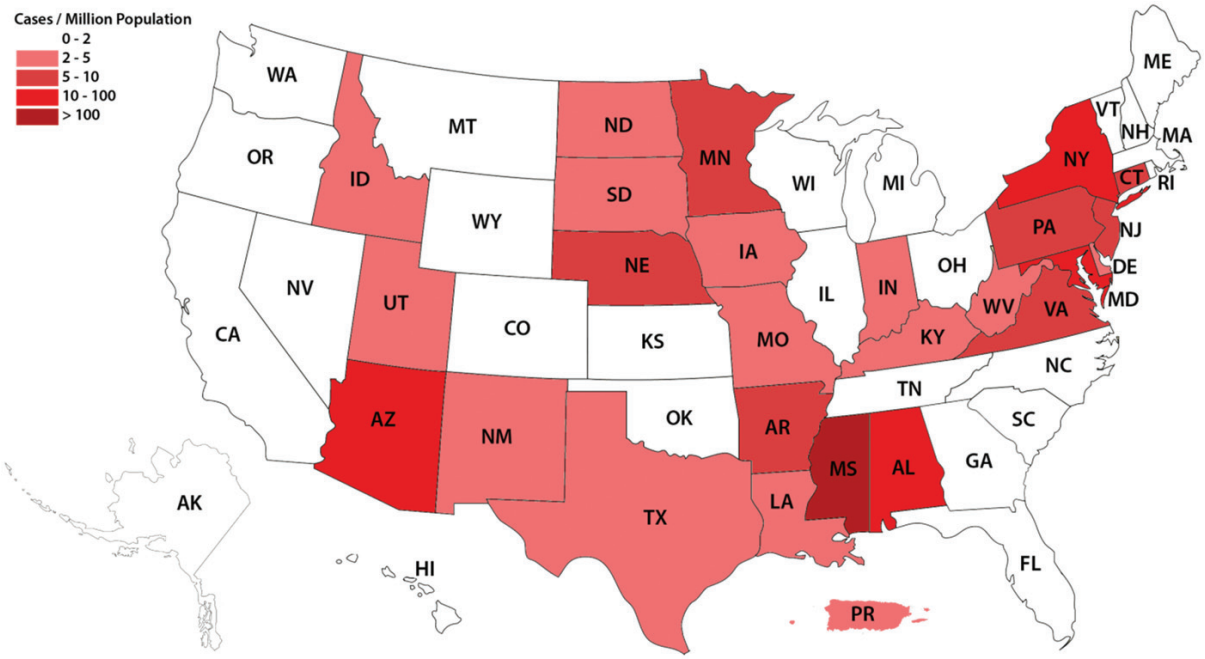

Figure 7. Synthetic Cannabinoid Exposure Cases – April and May 2015 Combined
The figure shows a heat map of the human synthetic cannabinoid exposure cases reported to US PCs for the months of April and May 2015 combined. The states with the greatest case rate were Mississippi (417), New York (25), District of Columbia (20.8, data not shown), Maryland (13.5), Alabama (12.1) and Arizona (11.7). The case rate for all other states and territories was 2.60.

in contrast, during this same period, exposures with a more serious outcome (death, major, moderate) and HCF cases have continued a consistent increase. Possible contributors to the declining PC access include: declining US birth rate (especially since exposure rates are much higher in children $\leq$5 years of age), increasing use of text rather than voice communication, and increasing use of and reliance on internet search engines and web resources. To meet our public health goals, PCs will need to understand and meet the public's 21st century communication preferences. We are concerned that failure to respond to these changes may result in a retro-shift with more people seeking medical care at HCFs for exposures that could have been managed at home by a PC. Likewise minor exposures may progress to more serious morbidity and mortality because of incorrect internet information or no telephone management. The net effect could be more serious poisoning outcomes because fewer people took advantage of PC services, with a resultant increased burden on the national healthcare infrastructure as may be reflected in the increased number of cases managed in a 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 17(B) and Figure 5. NPDS data mirrors CDC data that demonstrates similar findings.[9] Thus NPDS provides a real-time view of these public health issues without the need for data source extrapolations.

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

Summary

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

Changes in 2015 encounters are shown in Figures 1, 3 and 4, and include:

- Total encounters (all exposure and information calls) decreased by 3.42%.
- All information calls decreased 15.5%, Drug ID calls decreased 31.7%, and human exposures increased 0.149%.
- HCF information requests increased 2.67% and HCF exposure cases increased 5.09% in line with the steady increase since 2000.
- Human exposures with less serious outcomes decreased 0.42% while those with more serious outcomes

(moderate, major or death) increased 6.74% compared to an overall 4.34% yearly increase since 2000.
- The categories of substance exposures in cases with more serious outcomes increasing most rapidly were sedative/hypnotics/antipsychotics, followed by analgesics, antidepressants, and cardiovascular drugs.

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

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

Disclaimer

The American Association of Poison Control Centers (AAPCC; http://www.aapcc.org) maintains the national database of information logged by the country's regional Poison Centers (PCs) serving all 50 United States, Puerto Rico and the District of Columbia. Case records in this database are from self-reported calls: they reflect only information provided when the public or healthcare professionals report an actual or potential exposure to a substance (e.g., an ingestion, inhalation, or topical exposure, etc.) or request information/educational materials. Exposures do not necessarily represent a poisoning or overdose. The AAPCC is not able to completely verify the accuracy of every report made to member centers. Additional exposures may go unreported to PCs and data referenced from the AAPCC should not be construed to represent the complete incidence of national exposures to any substance(s).

Disclosure statement

The authors report no declarations of interest.

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Appendix A: Acknowledgments

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The Lead and Peer review of the 2015 fatalities was carried out by the 49 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 frame.

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

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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

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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 during the review process. The awards are presented each year at the North American Congress of Clinical Toxicology Annual meeting.

First Center to Complete all Cases (22-Dec 2015, last of their 29 cases)
Oregon Poison Center (Portland)

Largest Number with Autopsy Reports (50 of 82 cases)
Carolinas Poison Center (Charlotte)

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

Largest Number of INDIRECT cases (57 of 161 cases reported for 2015)
Central Ohio Poison Center (Columbus)

Highest Overall Quality of Reports (6.4 of possible 12 for 5 cases)
Texas Panhandle Poison Center (Amarillo)

Greatest improvement in Overall Quality of Reports (2.20 increase from last year)
Texas Panhandle Poison Center (Amarillo)

Most Narratives Published 2015 Annual report (8 of the 74 published narratives)
Carolinas Poison Center (Charlotte)

Most Helpful Regional Poison Center Staff (based on survey of AAPCC review team)
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Appendix B: Data definitions

Reason for Exposure

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

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

Unintentional general: All unintentional exposures not otherwise defined below.

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

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

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

Unintentional misuse: Unintentional, improper or incorrect use of a non-pharmaceutical 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: Narratives of Selected Cases

Selection of Narratives for Publication

The narratives 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

Weighted Case Score (WCS) =

Hospital records * 8.8 + Postmortem * 15.2 + Blood levels * 6.9 + Quality/Completeness * 6.4 + Novelty/Educational value * 13.2

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

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

The top ranked narratives (200 + ties) were each read by individual reviewers who volunteered (See Appendix A) and the 2 managers (DAS and DEB). Each reader judged each narrative as "publish" or "omit" and all narratives 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.

Narratives

Narratives of the cases were selected (see Selection of Narratives for Publication, above) from the human fatalities judged related to an exposure as reported to US PCs in 2015. A structured format for narratives was required in the PC preparation of the narratives and was used in the narratives presented. Abbreviations, units and normal ranges omitted from the narratives are given at the end of this appendix.

Case 1. Methanol ingestion: undoubtedly responsible.
Scenario/Substances: A 17 y/o female was found confused and "sleep walking" ~30 h prior to ED arrival. She slept most of the day prior to admission, and was uncoordinated with dilated pupils at dinner. She starting groaning, became incontinent of urine and seized. EMS transported her to the ED unresponsive and seizing. Her ingestion of methanol was unknown until after admission.
Past Medical History: Anxiety, athrogryposis, developmental delay, new onset alcohol abuse.
Physical Exam: Unresponsive with agonal respirations; cool, cyanotic, fixed, dilated pupils. Vital signs: BP 86/47, HR 59, RR 14, T 34.4 °C, O_2 sat 98% on nasal cannula.
Laboratory Data: Na 145 / K 6.8 / Cl 106 / CO_2 < 5 / BUN 21 / Cr 1.35 / Glu 281, ABG-pH 6.55 / pCO_2 59 / pO_2 63 / HCO_3 5, lactate 12.75 mmol/L, OG 397. ECG: right axis deviation, QRS 128, QTc 482. Methanol 212 mg/dL.
Clinical Course: She was intubated on arrival and treated with IVFs and sodium bicarbonate. Head CT showed poorly defined gray-white differentiation suspicious of hypoxic ischemic injury. She was transferred to a tertiary care center. Over the next 12 h she received bicarbonate therapy and vasopressors. HD was held due to hypotension. She remained profoundly acidotic (pH <7) with an AG metabolic acidosis. She was empirically treated with fomepizole and folic acid. After a couple of hours of fomepizole her pH improved to 7.04 and then 7.2. On Day 2 Na 153, K 3.2, $HCO_3$18. Cerebral flow study showed no evidence of perfusion. She tolerated vasopressor titration and underwent HD, but died on Day 2.
Autopsy Findings: Antemortem peripheral blood: acetone 30 mg/dL, caffeine, sertraline and norsertraline. Autopsy not done due to organ donation. Cause of death: methanol toxicity. Manner of death: accidental.

Case 17. Acute methanol ingestion: undoubtedly responsible.
Scenario/Substances: A 44 y/o male was brought to the ED by family for confusion and suicidal ideation; they initially thought he was intoxicated with ethanol.
Past Medical History: Hypertension and prior suicide attempts. Medication: hydrochlorothiazide.
Physical Exam: In the ED: BP 197/126, HR 108, RR 24, T 37 °C, O_2 sat 98% on room air. Neuro: Initially able to answer questions but within ~45 min became diaphoretic and minimally responsive and he was transferred to a tertiary care center.
Laboratory Data: In the ED: Na 146 / K 4.7 / Cl 101 / CO_2 6 / BUN 5 / Cr 1.0 / AG 39, calcium 10.0, lactate 9.81, OG 474. AST 73, ALT 91, bilirubin 0.5, Mg 2.9, albumin 5, CK 38, troponin 0.019. Serum APAP, ethanol and salicylate not detected. ABG-pH <6.80 / $pCO_2$46 / pO_2 261. UASG

>1.030, pH6, no crystals reported. WBC 11.5 / Hgb 16.8 / Hct 52.5 / platelets 329; PT 9.9, INR 0.93. UDS was negative. CxR unremarkable. ECG: HR 130, QRS 96, QTc 430.
Clinical Course: In the ED, the patient was intubated, a central venous catheter was placed, and he was transferred to a tertiary care center. BP 157/55 (on vasopressors), HR 80, RR 30; he was unresponsive with constricted but reactive pupils and active bowel sounds. Head CT was unremarkable. The patient was started on a norepinephrine infusion, fomepizole and sodium bicarbonate. He became hypotensive (BP 94/33) and bradycardic (HR 42). HD was performed. A repeat head CT on Day 2 showed diffuse cerebral edema with bilateral uncal herniation. A brain scan showed no effective cerebral blood flow. The patient was declared brain dead on Day 2 and organ donation was arranged.
Autopsy Findings: Hospital blood methanol level was 509 mg/dL; ethylene glycol was not detected. Cause of death: methanol intoxication. Manner of death: suicide.

Case 45. Acute aluminum sulfate, borax and calcium chloride ingestion: undoubtedly responsible.
Scenario/Substances: A 6 y/o female presented with altered mental status, respiratory failure and severe electrolyte abnormalities following the ingestion of 17 oz of children's modeling compound and was intubated by EMS.
Past Medical History: ROHHAD Syndrome (Rapid-onset Obesity with Hypothalamic dysfunction, Hypoventilation and Autonomic Dysregulation); hypernatremia due to endocrine dysfunction, epilepsy and central sleep apnea requiring BiPAP and respiratory monitors at home. History of an insatiable appetite, often waking early in the morning to sneak food.
Physical Exam: Minimally responsive with respiratory distress; withdrawing to pain, pupils reactive, but sluggish.
Laboratory Data: Na 197, Cl 162, Ca 27.9; head CT showed diffuse edema with vascular hyper-densities possibly resulting from venous congestion and hemorrhage. Na decreased to 185 and then 180; Cl decreased to 137 and then increased to 144; Ca decreased to 15.7 and then 7.1.
Clinical Course: The modeling compound was suctioned from her nose and mouth, with large amounts of the substance in her stomach. It was determined that she ingested ~17 oz of modeling compound (containing 32 g of sodium chloride and 26 g of calcium chloride). On Day 2 her clinical status deteriorated with no response to painful stimuli. Her head CT and EEG findings continued to deteriorate. Effort was made to correct her electrolytes. On Day 3 her pupils were fixed and dilated; corneal and oculocephalic reflexes were absent. Care was withdrawn after an EEG revealed no definite brain activity.
Autopsy Findings: Generalized cerebral edema with compression of the mid-brain in the anterior-posterior axis; microscopic exam showed vascular congestion of the pons, medulla (particularly the areas of the pyramids), basal ganglia and global acute hypoxic-ischemic encephalopathy. The stomach contained ~200 mL of purple liquid with blue and purple semi-liquid particles ranging up to 1.5 cm in size.

Note: ROHHAD is a rare syndrome associate with impaired sodium concentrations. A literature search did not identify reference to similar lethal ingestion in humans. A Consumer Product Safety Commission report was submitted.

Case 48. Acute methanol ingestion: undoubtedly responsible.
Scenario/Substances: A 48 y/o male was brought to the ED by family following 2 days of altered mental status. Several days later his family identified that he drank windshield washer fluid.
Past Medical History: Traumatic brain injury with seizures, alcohol abuse including non-beverage sources.
Laboratory Data: pH 6.8, Na 146 / K 4.8 / Cl 103 / BUN 5 / Cr 1.1 / Glu 168 / AG 83, OG 191, AST 134; ALT 71, lactate 5 mmol/L, WBC 17 / Hgb 15 / Hct 49. Serum APAP, ethanol and ketones not detected; UDS positive for barbiturates. Serum methanol 325 mg/dL ~24 h after ED arrival.
Clinical Course: The patient was intubated shortly after ED arrival and transferred to a tertiary care center for HD. About 14 h later: BP 109/71, HR 81, pupils 5-6 mm and sluggish. He had multiple seizures shortly after arrival and received propofol, bicarbonate infusions, fomepizole, thiamine, folate, and magnesium. Sedation was maintained with propofol and fentanyl. Norepinephrine and vasopressin were initiated for hypotension. He was started on IV NAC for mildly elevated hepatic transaminases. Fomepizole continued q 12 h and a toxic alcohol panel sent. At this time his pupils were fixed and dilated. He received levetiracetam as sub-clinical seizures were suspected. An MRI showed diffuse hypoxic brain injury with transtentorial herniation. Brain perfusion scan showed no perfusion. Based on the prognosis, the family opted for comfort measures and he died on Day 2.
Autopsy Findings: Cause of death: methanol poisoning.

Case 58. Acute ethylene glycol ingestion: undoubtedly responsible.
Scenario/Substances: A 63 y/o male was found unresponsive, with emesis and bladder/bowel incontinence, near a half empty bottle of ethylene glycol antifreeze. Family stated he was seen 5 h earlier in normal health. EMS noted bright green emesis during transport.
Past Medical History: Hypertension, CVA, depression and methamfetamine abuse.
Physical Exam: In the ED: BP 186/114, HR 106, RR 22, O_2 sat 99 on RA, T 37.8 °C, pupils constricted.
Laboratory Data: Na 160 / K 5.9 / Cl 110 / CO_2 4 / BUN 25 / Cr 2.0 / Glu179 /AG 46, WBC 53, Hgb 18, OG 12, AST 50, ALT 22, INR 1.0, lactate 42.4mmol/L. Serum APAP, ethanol, methanol and salicylate not detected. UDS positive for amfetamines. ECG showed LVH with ST changes. Head CT was unremarkable. Initial serum ethylene glycol was 489 mg/dL and 238 mg/dL 10 h later.
Clinical Course: Patient intubated and admitted to the ICU. Post intubation ABG-pH 6.65 / pCO_2 19 / pO_2 366 / HCO_3 2, O_2Sat 99% on100% FiO_2. He was responsive to physical stimuli only. He received hydralazine, kayexalate and a bicarbonate infusion and HD. The patient seized and then went into cardiac arrest. Based on the prognosis, comfort measures were instituted and he died 24 h after ED arrival.
Autopsy Findings: Cause of death: complications of ethylene glycol poisoning. Manner of death: suicide.

Case 62. Acute button battery ingestion: undoubtedly responsible.
Scenario/Substances: A 14 m/o female was taken to the ED after 1episode of hematemesis with large clots. She had been seen several times prior to this admission for recurrent abdominal pain, dark green stool and emesis. She had poor appetite for 24 h prior to ED arrival.
Past Medical History: Recent treatment for a urinary tract infection.
Physical Exam: The child was alert and responsive, but pale and ill appearing. BP 88/50, HR 168. There was a dark green, foul smelling stool in the diaper.
Laboratory Data: Hgb 7.3, metabolic lactic acidosis. CxR showed a foreign body (thought to be a coin) overlying the esophagus.
Clinical Course: One h after arrival she had another episode of hematemesis and went into cardiac arrest. ROSC was achieved after CPR, but she went back into asystole after another episode of hematemesis and died.
Autopsy Findings: The foreign body, removed from the esophagus, was a 20 mm lithium cell battery. There was an aorto-esophageal fistula, clotted blood was found in the stomach with melena in the large intestine.

Case 64. Acute Crotalid envenomation: undoubtedly responsible.
Scenario/Substances: A 36 y/o male snake enthusiast was bitten on the leg by a rattlesnake and collapsed 10 min later. He was found in cardiac arrest. CPR was initiated and he was taken to the ED.
Past Medical History: No known cardiac disease.
Laboratory Data: Platelets 32, coagulation studies were "so high, they were unreadable".
Clinical Course: He was intubated, coagulopathic and thrombocytopenic with severe acidosis. He was placed on epinephrine, norepinephrine and sodium bicarbonate drips, and given Crotalidae Fab antivenom and FFP. ECG showed anteroseptal ST elevations with reciprocal ST depression. He intermittently lost pulses and there was a concern for possible anaphylaxis to the antivenom so it was discontinued after 2 vials. He died within several hours of ED arrival.
Autopsy Findings: Puncture wounds consistent with a snake bite were identified on the patient's right ankle overlying the medial malleolus

adjacent to the saphenous vein. Intravascular envenoming was suspected rather than an anaphylactic reaction.

Case 65. Acute crotalid envenomation: undoubtedly responsible.
Scenario/Substances: A 58 y/o female was bitten by a *Crotalus horridus* on the right thumb on the night prior to arrival. There was minimal redness at the bite site.
Past Medical History: Allergic reaction to a previous snake envenomation 8 months earlier.
Physical Exam: BP 80/33, HR 64, RR 14 (ventilated, FiO_2 80%), T 32.2 °C.
Laboratory Data: BUN 15, Cr 2.1, PT 11.1, INR 1.0.
Clinical Course: In the ED, the patient received albuterol and methyl prednisone for dyspnea with wheezing, but became hypotensive and subsequently developed cardiac arrest. She was intubated and received a 6 vial loading dose and then a 2 vial maintenance dose of Crotalidae polyvalent Fab antivenom. She died on Day 2. Cause of death was believed to be anaphylactic reaction to *Crotalinae* envenomation.
Autopsy Findings: Not performed.

Case 66. Acute Crotalid bite: probably responsible.
Scenario/Substances: A 59 y/o male presented to a stranger's door stating he had been bitten by a rattlesnake. He immediately collapsed and bystander CPR was initiated. EMS intubated the patient; reported downtime was ~35 min prior to ED arrival.
Physical Exam: Intubated, diffuse fasciculations with evidence of right hand envenomation. Post-resuscitation SBP in the 60s, HR 60-100.
Laboratory Data: INR 1.4, PTT 82, CPK 5383; K 7.5, repeat was 5.2; Cr 2.3, AST 677, ALT 497. ECG showed ST elevation and wide QRS.
Clinical Course: After ROSC the patient received an epinephrine infusion and 6 vials of Crotalidae polyvalent Fab antivenom. Repeat ECG (after multiple ampules of sodium bicarbonate) showed QRS narrowing and diffuse ST depression. In the ICU he received atropine for bradycardia, norepinephrine infusion for persistent hypotension and another 6 vials of antivenom. CT scan of the brain revealed edema consistent with anoxic brain injury. The patient remained hemodynamically unstable until he died on Day 2.
Autopsy: Not performed.

Case 68. Acute hymenoptera stings: contributory.
Scenario/Substances: An 81 y/o male was stung over 1000 times by bees when he fell while trying to escape and suffered "road rash."
Past Medical History: Hypertension, chronic kidney disease, diabetes mellitus, atherosclerosis with CABG, and prostate cancer.
Physical Exam: Patient was alert and awake with "stable" vital signs on arrival to the ED.
Laboratory Data: Na 140 / K 5.9 / BUN 40 / Cr 1.8 / Glu 275, CK 692, PTT 62.2, PT 14.7, INR 1.2, troponin 0.22.
Clinical Course: He was admitted to the ICU and intubated for tongue edema and compromised airway; sedated with fentanyl and versed. The patient's renal function worsened, K and CK increased. He received IVFs, atenolol, diphenhydramine, enoxaparin, famotidine, fentanyl, insulin, kayexalate, levothyroxine, lisinopril, midazolam, simvastatin and methylprednisolone. Vital signs remained stable. Day 2 the patient experienced a NSTEMI (troponin 16.4), CK increased, and his renal function continued to worsen. On Day 3 antibiotics were started for pulmonary infiltrates. On Day 4 his renal function worsened (Cr 3.1) and he required norepinephrine for hypotension. HD was started and on Day 5 he was able to follow commands. The patient underwent percutaneous coronary intervention and received 3 stents. Vasopressors were stopped and intermittent HD continued. On Day 8 the patient became disoriented and unresponsive and went into cardiac arrest. He died after 10 min of ACLS.
Autopsy Findings: Not available.

Case 80. Acute methylene diphenyl diisocyanate inhalation: undoubtedly responsible.
Scenario/Substances: A 44 y/o male had been working with methylene diphenyl diisocyanate resin at a plastic factory. He started to feel short of breath, left the work area and went to the bathroom where he was later found unresponsive by his sister. Coworkers started CPR, estimated down time 10-15 min. EMS transported him with CPR and he had ROSC before arrival at the ED. EMS/Hazmat confirmed exposure to isocyanate.
Past Medical History: Asthma/COPD.
Physical Exam: BP 153/63, HR 93, RR 26, intubated, sedated, bilateral wheezing.
Laboratory Data: Na 139 / K 3.6 / Cl 116 / CO_2 22 / BUN 31 / Cr 2.2 / Glu 139, Ca 6.9, ABG-pH 7.32 / pCO_2 38.7 / pO_2 87 / HCO_3 20.
Clinical Course: The patient was intubated and a hypothermia protocol was initiated for 72 h at which time he was re-warmed and found to have an upper extremity deep vein thrombosis, fixed and dilated pupils and no spontaneous respiratory effort. He developed seizure activity, head CT showed multiple infarcts. Brain death protocol was instituted and the patient was terminally weaned from the ventilator on Day 8.
Autopsy Findings: Not performed.

Case 81. Acute hydrofluoric acid ingestion: undoubtedly responsible.
Scenario/Substances: A 44 y/o male was intubated by EMS after ingesting hydrofluoric acid. He was awake but confused; his airway was secured due to excessive secretions/aspiration.
Physical Exam: Intubated, HR 120, awake but confused with excessive salivation, no signs of oral burns.
Laboratory Data: Ca (ionized) 0.3.
Clinical Course: The patient became unresponsive and his BP continued to fall despite vasopressors and calcium. The patient died shortly after hospital arrival from a cardiac arrest.
Autopsy Findings: Not available.

Case 85. Acute sodium azide ingestion: undoubtedly responsible.
Scenario/Substances: A 49 y/o female (chemist in an immunology lab) wrote a note stating that she ingested 0.8 g of sodium azide. She was found 3 h later by her husband, lying unresponsive on the ground beside her bed. EMS reported BP 136/71, HR 85, RR 34. She was intubated and transported to the ED.
Past Medical History: Hashimoto's thyroiditis, depression with previous suicide attempts. Medications: duloxetine and olanzapine.
Physical Exam: In the ED she was unresponsive, "foaming from mouth", pupils 3 mm and fixed, ventilation assisted, HR 101, BP 157/82, then 101/54, then 34/21, RR24 "over the ventilator"O_2Sat 100% on 100% FiO_2.
Laboratory Data: Na 146 / K 5.2 / Cl 95 / CO_2 5.6/ BUN 18 / Cr 1.3 / Glu 444, lactate 22 mmol/L, OG 334, WBC 17, Hgb13, AST 25, ALT 31, ALP 51, troponin $<$0.01. ECG: sinus rhythm at 61, PR 156, QRS 92, QTc 450 with normal ST-T. Venous co-oximetry: OxyHgb 88.8%, DeoxyHgb 7.9%, MetHgb 3.7%. Arterial co-oximetry: OxyHgb 93.3%, DeoxyHgb 2.4%, MetHgb 4.5%.
Clinical Course: She remained unresponsive, profoundly acidotic and hypotensive despite IVFs, bicarbonate and multiple pressors. She received hydroxocobalamin without response. She continued to deteriorate, lost all brainstem functions, arrested and died within 24 hours of admission.
Autopsy Findings: Lungs: vascular congestion and pulmonary edema, bronchus: denuded epithelium with submucosal edema, liver: microvesicular steatosis around the central vein, heart and brain: unremarkable. Tox screen for cyanide was negative.

Case 86. Acute borate exposure: undoubtedly responsible.
Scenario/Substances: A 49 y/o male was found down at home, white powder near him, and taken to the ED.
Physical Exam: Intubated, hypotensive.
Laboratory Data: HCO_3 14, K 3, Cr 6.0, AG 20, Ca 5, lactate 19 mmol/L. AST and ALT were unremarkable. WBC 30, INR 4.6. Serum methanol not detected. UDS negative for salicylate, acetaminophen, ethanol and ethylene glycol.
Clinical Course: Patient remained unresponsive and was treated for septic shock with antibiotics, vasopressin and norepinephrine; sedated with propofol. On Day 2 sedation was discontinued due to hypotension; urine output decreased requiring boluses of IVFs. HD was started; HR 110, SBP in the 90s on pressors. On Day 3 he remained hypotensive (56/30) on pressors; GCS was 3, skin was scalded and sloughing. Renal replacement therapy was stopped due to persistent hypotension. He developed bleeding from his mouth and received cryoprecipitate for possible DIC. He developed multi-system organ

failure and died on Day 4 from cardiac arrest following hemorrhagic shock and gangrenous bowel.
Autopsy Findings: ME reported probable cause of death boric acid ingestion. White powder identified by state lab as boric acid.

Case 97. Acute ethylene glycol ingestion: undoubtedly responsible.
Scenario/Substances: A 64 y/o female, who developed vomiting, diarrhea, and neurologic symptoms after leaving a restaurant, presented to the ED 6 h later.
Past Medical History: Chronic pain, depression, CVAs. Medications included opioids.
Laboratory Data: Initial labs in the EDAG 36, ABG-pH 6.75, lactate >30, AG 44 (then 48), OG 44.4, ethylene glycol 42 mg/dL (~25 h after suspected ingestion).
Physical Examination: Comatose and dehydrated.
Clinical Course: She was intubated and a CT angiography suggested a brainstem stroke. The patient began to have seizures and she was transferred a tertiary care center for an MRI. She was hypotensive, in renal failure, and continued to have seizures. The patient was started on CVVHD but experienced a massive right internal cerebral artery stroke. Based on the prognosis, the family opted for institution of comfort measures and she died on Day 3.
Autopsy Findings: Toxicology: testing on hospital blood: positive for benzodiazepine and fentanyl, ethylene glycol was 229 mg/dL and propylene glycol 11 mg/dL. Repeated testing on hospital blood: ethylene glycol 69 mg/dL, propylene glycol 13 mg/dL. Vitreous humor: formaldehyde/methanol positive; femoral blood: formaldehyde/methanol positive; UDS was positive for opiates; urine comprehensive testing (GC-MS) identified mirtazapine. Cause of death: ethylene glycol poisoning. Manner of death: suicide.

Case 101. Acute cyanide ingestion: undoubtedly responsible.
Scenario/Substances: An adult male was brought to the ED in cardiac arrest after an intentional ingestion of potassium cyanide (suicide note was found).
Physical Exam: Cardiac arrest prior to arrival with CPR and ACLS in progress.
Clinical Course: The patient was intubated and received ACLS interventions, including atropine and defibrillation. He was further resuscitated for ~15 min after receiving hydroxocobalamin (5g IV) and sodium thiosulfate. He also received epinephrine and sodium bicarbonate, and a second dose of hydroxocobalamin. ROSC was obtained and a cooling protocol was initiated with vasopressors (epinephrine, norepinephrine, vasopressin and phenylephrine) for persistent hypotension. Post resuscitation MetHgb was 6.5%. The patient's acidosis resolved with CRRT and vasopressors were weaned. Electrolytes were unremarkable and vital signs improved, but he remained unresponsive off sedation. On Day 3 he was rewarmed but showed no neurologic improvement. Based on the prognosis, comfort measures were instituted and he died on Day 3.
Autopsy Findings: Post-mortem blood cyanide concentration was 6.1 mcg/mL. Cause of death: cyanide toxicity. Manner of death: suicide.

Case 103. Acute alkali drain cleaner ingestion: undoubtedly responsible.
Scenario/Substances: A 22 y/o male drank liquid lye-containing drain opener, slit his wrists and jumped from a second story window. EMS found oral bleeding and was unable to establish and airway during transport.
Past Medical History: Bipolar disorder, previous suicide attempts.
Physical Exam: In the ED: BP 135/80, HR 120-147, O_2 sat 70-86%, T 36.4^{O} C.
Laboratory Data: Na 146 / Cl 105 / K 3.4 /CO_2 21 / BUN 15 / Cr 1.4 / Glu 215, WBC 19.3 / Hgb 15.7 / Hct 47.5 /platelets 152, INR 1.3. CT scans showed right lower lobe pulmonary aspiration and pneumomediastinum with extensive intraperitoneal hemorrhage consistent with esophageal and gastric perforation.
Clinical Course: In the ED, blood was suctioned from the airway prior to intubation. Gastric tube placement returned blood. The patient received tranexamic acid and blood products. Surgical exploration revealed extensive liquefaction necrosis of nearly all internal organs which was judged not survivable. The abdominal cavity was irrigated and closed, and he was transitioned to comfort care. He received propofol and morphine infusions and died within 15 h of ED presentation.
Autopsy Findings: Analysis of blood for ethanol, drugs of abuse and psychiatric medications was negative. Cause of death: complications of drain cleaner (lye) ingestion. Manner of death: suicide.
Case 105. Acute sulfuric acid drain cleaner and ethanol ingestion: undoubtedly responsible.
Scenario/Substances: A 43 y/o female drank vodka followed by an unknown amount of a sulfuric acid drain cleaner.
Past Medical History: Hypertension, depression.
Laboratory Data: Ethanol 313 mg/dL, serum APAP and salicylate not detected. UDS negative.
Clinical Course: In the ED, she had oropharyngeal burns and mild ulceration, but her airway was intact with a normal voice and no swelling of uvula or tongue. Vital signs were initially unremarkable, but HR increased to 130's and her airway became compromised. She was sedated and intubated, and received a large amount of IVFs and vasopressors for hypotension. She was transferred to a tertiary care center and emergently taken to the OR. She coded and CPR was begun requiring massive volume resuscitation for ROSC. At surgery a large amount of foul smelling black liquid was found and irrigated during an attempt to remove the stomach. The patient again went into arrest; CPR was resumed with a temporary ROSC. The injury was judged non-survivable, CPR was stopped, and the patient died in the OR.
Autopsy Findings: Cause of death: necrosis of stomach and intestines secondary to ingestion of a corrosive drain cleaner containing sulfuric acid. Manner of death: suicide.

Case 116. Acute laundry detergent (pod) ingestion: probably responsible.
Scenario/Substances: An 81 y/o female presented with hypotension and a swollen tongue after swallowing 1 laundry pod.
Past Medical History: Dementia.
Physical Exam: Swollen tongue; BP 70/30, HR 105, O_2 sat 92%.
Laboratory Data: Na 139 / K 4.0 / Cl 104 / HCO_3 25 / BUN 47 / Cr 0.8 / Glu 24, AST 93, ALT 43. Serum APAP not detected.
Clinical Course: The patient developed worsening hypotension (55/35) and hypoxia (RR 20, O_2 sat 86% on 3 L). She was not intubated because of her DNR status and died ~36 h after ED arrival. Due to her pre-existing conditions the family opted for comfort measures only and followed her pre-existing DNR status.
Autopsy Findings: Not performed.

Case 123. Acute cinnamon ingestion and aspiration: probably responsible.
Scenario/Substances: A 4 y/o male was eating cinnamon, coughed, choked, and presented to the ED in cardiac arrest.
Clinical Course: The patient was unable to be resuscitated and died in the ED.
Autopsy Findings: Cause of death: cinnamon aspiration. Manner of death: accidental.

Case 124. Acute benzyl ammonium chloride algaecide and diphenhydramine ingestion: undoubtedly responsible.
Scenario/Substances: A 58 y/o male presented to the ED after drinking ¾ bottle of liquid diphenhydramine prior to ingesting 3-4 ounces of algaecide (49.8% alkyl dimethyl benzyl ammonium chloride) 5-6 h prior to ED arrival.
Past Medical History: Depression, alcohol use, chronic back pain.
Physical Exam: BP 137/97, HR 90, RR 18, O_2 sat 95% on room air, T 37 °C. Ill-appearing and lethargic with dried, non-bloody emesis and stool incontinence.
Laboratory Data: Na 136 /K 3.9 /Cl 100 /CO_2 23 / BUN 17 / Cr 2.26 / Glu 191, Ca 9.9, lactate 2.9 mmol/L, ABG-pH 7.45 / pCO_2 18 / pO_2 110 / HCO_3 18 / BE-11; AST 40, ALT 38, ALP 124, bilirubin 1.0, lipase 282, WBC 30.5 / Hgb 19.1/ Hct 58.6 / platelets 345. PTT 15.3, INR 1.24. UDS negative. Serum APAP and salicylate not detected. ECG: sinus rhythm at 91, left axis deviation, no ST segment elevation; CxR was unremarkable.
Clinical Course: He presented with CNS depression and odynophagia, was admitted to the ICU, and started on pantoprazole IV. Partial esophagogastroduodenoscopy on Day 1 showed ulceration of the vocal cords and blackish, sloughing mucosa over the entire length of the esophagus.

He could only talk with a whisper. He had metabolic acidosis (treated with IVFs), renal insufficiency, and leukocytosis. On Day 3he developed worsening mentation and wheezing, and required intubation. On Day 5, direct laryngoscopy, confirmed severe laryngeal injury that would require extensive reconstruction and tracheostomy. Based on the prognosis, the family opted for comfort measures and he died on Day 7.
Autopsy Findings: Not available.

Case 126. Acute carbon monoxide inhalation: undoubtedly responsible.
Scenario/Substances: A 2 y/o female was 1 of 6 children involved in a house fire. She was extricated from the house by the fire department and found to be pulseless and apneic with fixed, dilated pupils; there was no evidence of burns. She received CPR and intubation with ROSC, and was transported to the ED. Pupils were more reactive enroute to the hospital.
Past Medical History: Laryngomalacia.
Laboratory Data: 1 hour post exposure K 3.4, VGB-pH 6.80 / PCO_2 70.5 / PO_2 115 / HCO_3 10 / BE -24.5, COHb 30.5%.
Clinical Course: The patient received hydroxocobalamin, was stabilized and transferred to a tertiary care center for HBO. During transfer she developed pulmonary edema with increased airway pressures and pink, frothy secretions. She suffered another cardiopulmonary arrest after 4 h of HBO but had ROSC after 8 min of CPR. The patient developed bilateral tension pneumothoraces treated with needle decompression followed by chest tube placement. She was transferred back to the initial hospital's PICU. On Day 1 she suffered a third cardiac arrest with ROSC, but had fluctuating BPs, dilated pupils and minimal EEG activity. On Day 2, brain perfusion scan showed no blood flow, confirming brain death. Based on the prognosis, comfort measures were instituted and she died on Day 2.
Autopsy Findings: Cause of death: carbon monoxide intoxication and smoke inhalation. Manner of death: homicide.

Case 156. Acute hydrogen sulfide exposure: undoubtedly responsible.
Scenario/Substances: A 38 y/o male was found in a car partially off the road. He threatened police about having chemicals in the car which could kill them. A haze was seen in the car and a note on the window warned of hydrogen sulfide.
Past Medical History: Substance abuse, previous suicide attempts.
Clinical Course: He was dead on arrival in the ED.
Autopsy findings: Skin was noted to have a faint bluish-green discoloration. Cause of death: asphyxia due to the inhalation of hydrogen sulfide gas. Manner of death: suicide. Post-mortem subclavian blood demonstrated a thiosulfate level of 9 mg/L. Chemicals later found in his house included hydrogen peroxide and lime sulfur.

Case 163. Acute chlorine gas inhalation: undoubtedly responsible.
Scenario/Substances: A 44 y/o male with an occupational exposure to chlorine gas was decontaminated on the scene and transported to the ED.
Past Medical History: Diabetes mellitus.
Physical Exam: BP 98/59, HR 101, RR 24, T 35.5 °C, O_2 sat 95% on NRB.
Laboratory Data: AG 19, Cr 2.4, BUN 18, calcium 7.7, ALT 30, AST 41, PT 15.8.
Clinical Course: In the ED he was intubated for respiratory failure, and required prone positioning and nitrous oxide for persistent hypoxia. He was admitted to the ICU and developed hypotension, hemolysis and acute renal failure. He received RBC exchange transfusion but HD was not done due to hypotension. He was treated with three vasopressors and a sodium bicarbonate drip for metabolic acidosis (pH 6.88). Insulin was started for hyperglycemia (Glu 500). He remained tachycardic (HR 110-150), developed AF with rapid ventricular response and was started on a diltiazem drip. His O_2 sat dropped to 40% due to an ETT cuff leak; he was re-intubated but went into a PEA and died despite resuscitation.
Autopsy Findings: Cause of death: ARDS and pneumonia due to inhalation of chlorine gas. Manner of death: accidental.

Case 202. Acute thallium exposure: undoubtedly responsible.
Scenario/Substances: A 31 y/o female was hospitalized with a 2-week history of abdominal pain, painful peripheral neuropathy, new onset hypertension and transaminitis of unclear etiology.
Past Medical History: Polycystic ovarian disease.
Laboratory Data: Na 137, K 3.8, BUN 99, Cr 1.2, Phos 2.6, AST 170, ALT 381.
Clinical Course: Renal ultrasound and MRI were unrevealing. Due to progressive lethargy she was transferred to a tertiary care center. On arrival to that facility (Day 1) she had garbled speech and was difficult to arouse, her eyes were open but she did not follow commands. BP 117/49, HR 108, she was developing alopecia and a skin rash. Several days later her encephalopathy progressed and she was intubated for airway protection. Lumbar puncture was positive for herpes simplex 1 by PCR; she was treated with IV acyclovir x 14 days. Evaluation for autoimmune, inflammatory, genetic, paraneoplastic and neoplastic etiologies of encephalopathy were negative. Transvaginal ultrasound to assess for teratoma (as a cause for NMDA-receptor encephalitis) was negative. Tracheostomy and feeding tubes were placed due to persistent vegetative state. Ascending areflexia with EMG-proven motor-predominant peripheral axonopathy and polyradiculopathy developed over 1 week; brain biopsy revealed nonspecific axonopathy and leukoencephalopathy. Day 16 spot urine thallium $>$800 mcg/L, Day 17 showed a 24 h urine thallium $>$800 mcg/L. Blood thallium (from initial blood sampling) $>$ 900 mcg/mL. Random urine and serum mercury were negative. HD was initiated, followed shortly by multidose activated charcoal. Prussian blue was procured 3 days later and administration was continued for 16 days, with a progressive decrease in blood thallium with a nadir of 18 mcg/mL (Day 31). The patient remained in a vegetative state. Based on the prognosis, comfort measures were instituted and she died on Day 35.
Autopsy Findings: Cause of death: complications of thallium toxicity. The source of the thallium was not determined.

Case 204. Acute aluminum bladder irrigation absorption: contributory.
Scenario/Substances: A 67 y/o female received urinary bladder irrigations with an aluminum containing solution for 3 days. One day later she developed a fever, altered sensorium and hypotension.
Past Medical History: CAD, CVA, CHF, hypertension, cervical cancer, small bowel obstructions, radiation-induced enteritis with gastric tube, lupus erythematosus and hypothyroidism.
Physical Exam: Intubated, encephalopathic.
Laboratory Data: CT abdomen/pelvis revealed free air in the peritoneum and free fluid suggestive of perforated bladder and bowel. Arterial pH 7.04, lactate 11.4 mmol/L. Aluminum level was 2000 mcg/L in blood.
Clinical Course: Deferoxamine was initiated 3 days later. She developed AF and required cardioversion and multiple pressors. On Day 8 she developed multiple organ system failure and died on Day 9 following a PEA arrest. Bowel and bladder perforation were contributory.
Autopsy Findings: Not available.

Case 217. Acute-on-chronic, fluorinated hydrocarbon inhalation: undoubtedly responsible.
Scenario/Substances: A 41 y/o female was found unresponsive in bed after huffing compressed air.
Past Medical History: Anxiety, prescription drug abuse.
Clinical Course: She was pronounced dead on arrival in the ED.
Autopsy findings: Acute pulmonary edema, transmural fatty infiltration of the right ventricle, steatohepatitis. Aortic blood contained 64 mg/L of 1, 1 difluoroethane. Cause of death: 1, 1 difluoroethane toxicity.

Case 225. Acute tetanus: undoubtedly responsible.
Scenario/Substances: An 82 y/o female tripped and fell next to her chicken coup; her wound was sutured closed that day. Seven days later she developed jaw stiffness and was given tetanus immunization. She was admitted the next day.
Past Medical History: AF.
Physical Exam: The patient presented with trismus and hypersalivation. BP 73/36, HR 58, RR 20, O_2 sat 95%.
Laboratory Data: Na 140 / K 4.1 / Cl 108 / CO_2 20 / BUN 40 / Cr 2.0, CPK 1132.
Clinical Course: She developed "lock jaw" and could not move her neck. She received benzodiazepines, magnesium and tetanus immunoglobulin and started on metronidazole. She received IVF and norepinephrine for hypotension. She remained in AF which was treated with labetalol; later

treated with amiodarone and digoxin. On Day 2 she was intubated and sedated with midazolam and fentanyl; magnesium infusion was continued for diffuse muscle spasms. She developed significant autonomic instability. On Day 3 she was treated with cisatracurium, lorazepam, midazolam, and fentanyl but her spasms continued. She developed hypermagnesemia and the infusion was stopped. On Day 13 she received furosemide for decreased urine output. On Day 15 norepinephrine was increased following profound hypotension (50/30s). Her paralytic was stopped and on Day 17 the sedation was weaned. On Day 21, her pupils were fixed and an EEG showed profound hypoxic injury. Based on the prognosis, comfort measures were instituted and she died on Day 22.
Autopsy Findings: Cause of death: tetanus due to her leg lacerations. Manner of death: accidental. Autopsy not performed.

Case 229. Acute strychnine ingestion: undoubtedly responsible.
Scenario/Substances: A 21 y/o female ingested strychnine with suicidal intent. EMS transported her to the ED.
Past Medical History: Methamfetamine and alcohol abuse, anorexia, depression with several suicide attempts.
Laboratory Data: ABG-pH 6.58 / pCO_2 28.1 /pO_2 408, lactate 25.1 mmol/L, Cr 1.2, Glu 201, AST 53, PT 13.3. Serum APAP and salicylate not detected; UDS positive for amfetamines and THC.
Clinical Course: In the ED she was unresponsive, pupils 8 mm and nonreactive; BP 72/40, HR 115, RR 20, T 38.1 °C. She was intubated, a central line was established and received IVFs and vasopressors for hypotension. She received hydroxocobalamin and her SBP went to >150; pressors were titrated down. She was given benzodiazepines for myoclonic jerking without improvement and then switched to propofol. She was actively cooled for hyperthermia (42.2 °C) which improved to 39 °C. During transfer to tertiary care center she had an asystolic arrest with ROSC after 3 min of CPR. She was admitted to the ICU, afebrile with HR ranging from the 90's to 120's and a MAP of 65. She had persistent acidosis, worsening renal function, multisystem organ failure and DIC. Her neurological status declined with a fixed and dilated right pupil. A head CT showed severe cerebral edema with impending herniation. Based on the prognosis, the family opted for institution of comfort measures and she died 48 h after the ingestion.
Autopsy Findings: Cause of death: anoxic encephalopathy secondary to acute strychnine poisoning. Manner of death: suicide.

Case 233. Acute paraquat ingestion: undoubtedly responsible.
Scenario/Substances: A 33 y/o female was brought to the ED after ingesting paraquat.
Past Medical History: Anemia.
Physical Exam: Awake and alert.
Laboratory Data: Na 142 / K 3.5 / Cl 108 / CO_2 20.1 / BUN 10 / Cr. 2.1 / Glu 91, Ca 8.5, bilirubin 0.4, ALP 48, ALT 29, AST 17, CK 362 then 642. ABG-pH 7.38 / pCO_2 38 / pO_2 141 / HCO_3 18 / BE -6 then 11.2. Initial CxR and ECG were unremarkable. Serum APAP and salicylate not detected. UDS negative.
Clinical Course: Patient arrived to the ED alert and oriented, complaining of nausea. She received AC and IVFs, but started having copious watery stool. She was transferred to a tertiary care center. CVVHD and NAC were started but she had decreased mental status and was intubated. She remained hypotensive despite multiple vasopressors. She had 2 episodes of PEA requiring ACLS including epinephrine, acetylcysteine, calcium chloride, fentanyl, midazolam, sodium chloride, hydrocortisone, lidocaine, magnesium sulfate, pantoprazole, antibiotics, electrolyte replacement, vitamin E, and methylene blue. CT of the abdomen showed free air and fluid. Based on the prognosis, comfort measures were instituted and she died ~24 h after arrival.
Autopsy Findings: Post mortem femoral blood: paraquat 10, 000 ng/mL, midazolam 60 ng/mL, negative for ethanol. Urine positive for lidocaine. Postmortem findings: Chemical ingestion with: pleural and peritoneal serous effusions, hyperemia and edema of esophagus, stomach, and proximal small intestine, centrilobular necrosis of liver, diffuse alveolar damage, acute inflammation of the heart and acute tubular necrosis.

Case 236. Acute diquat ingestion: undoubtedly responsible.
Scenario/Substances: A 38 y/o female accidentally ingested "weed killer; thinking it was a shot of alcohol" 4 h prior to ED arrival. The substance was thought to contain 0.12% diquat.
Past Medical History: Hypertension, diabetes.
Physical Exam: Alert, vomiting.
Laboratory Data: Initial ED: ECG showed normal sinus rhythm. Second ED admission: Cr 2.8. On Day 5: Cr 5.5, AST 54, ALT 181. Day 8: AST 230, ALT 450, ALP 504. On Day 20: WBC 24.2, platelets 481, Na 136 / K 4.4 / Cl 92 / $C0_2$ 35 / BUN 18 / Cr 0.31 / Glu 91, Ca 10.4, Mg 1.1. ABG-pH 7.4 / pCO_2 61 / pO_2 42 / HCO_3 37.
Clinical Course: Her nausea and vomiting spontaneously resolved in the ED and she was discharged home. The next day she presented to urgent care with anorexia, sore throat, vomiting and odynophagia. She was transfer to an ED and received IVFs, magnesium and calcium. Her vomiting resolved but she received HD for worsening renal function. She developed dyspnea during her second HD, CxR showed "ground-glass/honeycomb" pattern. She was transferred to the ICU and NAC was started. She was intubated on Day 11 for worsening hypoxia and started on antibiotics for pneumonia; O_2 sat 80% on $FiO_2$100%, HR 20s. On Day 22 nitrous oxide therapy was started, she died on Day 26.
Autopsy: Autopsy revealed bilateral pulmonary infiltrates with areas of necrosis and spongiform appearance of lung parenchyma. Testing of the herbicide was inconclusive for diquat or paraquat; further testing was pending.

Case 238. Chronic dinitrophenol ingestion: probably responsible.
Scenario/Substances: A 40 y/o male presented to the ED after 4 days of dinitrophenol use as a weight loss supplement.
Physical Exam: Unresponsive, pupils dilated but reactive; BP 180/100, HR 130s, RR 18, T 40 °C.
Laboratory Data: WBC 11.6 / Hgb 11.9 / platelets 78, Na 137 / K 5.6 / Cl 106, HCO_3 18 / BUN 66 / Cr 1.6 / Glu 84, CPK 6291, lactate 0.9 mmol/L, Ca 6.3, AST 501, ALT 111, ALP 54, ABG-pH 7.21 / pCO_2 49 / pO_2 180. ECG: sinus tachycardia with non-specific ST changes and PVCs.
Clinical Course: In the ED he was intubated, aggressively cooled and received IVFs, benzodiazepines and dantrolene. On Day 2, T 37 °C, he remained unresponsive, required vasopressors for hypotension, developed acidosis and worsening kidney function (BUN 66, CR 4.5) despite bicarbonate infusion and HD. Based on the prognosis, the family opted for institution of comfort measures and he died on Day 6.
Autopsy Findings: Not available.

Case 242. Acute anticoagulant rodenticide ingestion: contributory.
Scenario/Substances: A 48 y/o female smoked marijuana and complained to her family of headache, dizziness and hematemesis. She may have fallen and hit head, but EMS reported she was ambulating.
Past Medical History: Schizophrenia, prior intentional ingestion of anticoagulant pesticide with ongoing vitamin K treatment (though noncompliant due to financial restraints).
Laboratory Data: In the ED, VBG-pH 7.13 / pCO_2 52 / HCO_3 17, INR 7, WBC 34.8, lactate 7.3 mmol/L, UA positive for blood, glucose, proteins and ketones.
Clinical Course: She was intubated in the ED and transferred to a tertiary care center for evaluation of intracerebral hemorrhage. On arrival there she was unresponsive. Head CT showed a large intraparenchymal hemorrhage with brainstem shift. She received vitamin K, prothrombin complex concentrate and an antihypertensive but developed hypotension and required vasopressors. Her neurological examination was consistent with brain death. She died several weeks later.
Autopsy Findings: Not available.

Case 243. Acute paraquat ingestion: undoubtedly responsible.
Scenario/Substances: A 51 y/o male presented to an ED with sore throat and vomiting after he accidentally ingested a liquid mixed with paraquat. He was treated and released. The vomiting and pain continued. Shortness of breath developed 4 days prior to admission, 12 days following the initial exposure.
Past Medical History: Methamfetamine abuse, chronic kidney disease.
Physical Exam: No GI symptoms or burns. Admission (Day 12): BP 132/75, HR 96, RR 21, O_2 sat 90% (65% FiO_2), T 37.8 °C.
Laboratory Data: Day 12 (day of admission): BUN 74 / Cr 2.9. Day 49: AST 43, ALT 37, bilirubin 0.7, Na 156.
Clinical Course: The patient was treated for community acquired pneumonia with antibiotics. He required intubation and had a CxR consistent

with pulmonary fibrosis and pneumonia. On Day 23, the treating team was informed of the history of paraquat exposure. Computed tomography of the patient's chest demonstrated ground glass opacity and severe bilateral lower lobe infiltrates with mild emphysema. Due to concerns for infection and the delay from exposure, he was not started on prednisone or cyclophosphamide. He remained intubated and sedated on propofol. He became hypertensive (BP 160/75) and febrile (101 °F) on Day 26. On Day 27 BP 183/69, HR 115, T 38.3 °C, on antibiotics. He died 28 days following the exposure.
Autopsy Findings: Paraquat was not detected in serum 16 days after ingestion. Lungs had a diffuse fibrosing process with gross obliteration of the normal architecture. Microscopic evaluation demonstrated obliteration of alveolar spaces by a fibroblastic proliferation; thickened septae containing fibrosis; extravasated red cells and hemosiderin deposition. There were tracheal and tongue ulcerations. Cause of death: paraquat ingestion. [Of note: detectives seized a liquids from the house that contained paraquat dichloride, and the container that the patient had been given to drink from by his girlfriend also tested positive for paraquat.]

Case 246. Acute organophosphate and ethanol ingestion: undoubtedly responsible.
Scenario/Substances: A 55 y/o male was found surrounded by beer bottles and a half empty quart of 50% malathion.
Past Medical History: Insulin-dependent diabetes mellitus.
Physical Exam: Unresponsive, vomiting, diarrhea and copious secretions. Vomitus on his chest and arm resulted in immediate blistering in areas of contact. BP 208/111, HR 150-170s.
Laboratory Data: Glu 459, ABG-pH 6.98 / pCO_2 74, WBC 21.2, ethanol 95 mg/dL. Day 2 plasma cholinesterase 77 IU/L; RBC cholinesterase 740 IU/L. Repeat levels on Day 7: plasma cholinesterase 1766 IU/L, RBC cholinesterase 1326 IU/L.
Clinical Course: In the ED, the patient was decontaminated, intubated, and sedated with propofol, fentanyl and midazolam. He had evidence of fasciculations; hypotension (SBP 60s) was treated with norepinephrine, and atropine was given for secretions. He developed AF and was treated with an amiodarone infusion. CxR showed aspiration pneumonitis, antibiotics were started. His respiratory acidosis improved with ventilation (ABG-pH 7.34 / pCO_2 53). He received additional atropine, pralidoxime and IVFs. He became hypothermic (T 34.8 °C) and blood cultures were positive for Streptococci. On Day 3 he again became diaphoretic and secretions increased. On Day 4, he became hypertensive and hyperthermic; BP 170/77, HR 114, RR 22, T 38.3 °C; he had a transient run of VT. He received a beta-blocker, sedation and analgesia. EEG showed seizure activity treated with diazepam. By Day 6, he was less responsive with miosis, loose stools and increased pulmonary secretions. Based on the prognosis, the family opted for institution of comfort measures on Day 15 and he died on Day 16.
Autopsy Findings: Cause of death: complications of organophosphate ingestion. Manner of death: suicide. Autopsy was not performed.

Case 247. Acute malathion ingestion: probably responsible.
Scenario/Substances: A 57 y/o female ingested concentrated malathion pesticide in a suicide attempt. She was alert upon EMS arrival, she had slurred speech, was combative and diaphoretic. She developed muscle fasciculations, had a seizure and became apneic. She was intubated and transported to the ED.
Past Medical History: Alcohol abuse, bipolar disorder, depression and suicidal ideation.
Physical Exam: Intubated and unresponsive, and smelled of a chemical substance. Abdomen was soft with normal bowel sounds, pupils were constricted. BP 82/57, HR 117, RR 12, T 37 °C, O_2 sat 97%.
Laboratory Data: ABG-pH 7.07 / pCO_2 53 / pO_2 105 / HCO_3 15.4, WBC 24.6, Hct 47.5, CO_2 16, AG 23, Glu 121, Cr 1.49, AST 169, ammonia 51 mmol/L, phosphorus 6.0, magnesium 3.6, OG 317, lactate 9.8 mmol/L, ethanol 81 mg/dL. Serum APAP, lithium, valproic acid and carbamazepine not detected. UDS positive for amfetamines. ECG: ST, normal QRS and axis, ST and T wave depression. CxR showed a small left pleural effusion. Head CT unremarkable.
Clinical Course: In the ED she received multiple doses of atropine for secretions, IVFs for hypotension, sodium bicarbonate for metabolic acidosis, and ceftriaxone for urinary tract infection. She was admitted to the ICU but remained unresponsive with no spontaneous respirations or pupillary response to light. She had anisocoria, lung sounds were coarse bilaterally. She was continued on an atropine infusion and pralidoxime. Based on the prognosis, the family opted for institution of comfort measures and she died after discontinuation of ventilator support.
Autopsy Findings: Not available.

Case 248. Acute deltamethrin/imiprothrin ingestion: probably responsible.
Scenario/Substances: A 60 y/o male told his family he was going to commit suicide. He was found coughing and vomiting after spraying pesticide into his mouth. A half empty bottle was found next to him on scene. When EMS arrived he was lying on the floor, covered in vomit, with "a chemical odor." A nasal pharyngeal airway was placed but became obstructed with vomit. He was suctioned but developed respiratory depression with rhonchi and copious white secretions, and then had a PEA arrest. He had ROSC after CPR, atropine and naloxone.
Past Medical History: Depression with prior suicide attempts.
Physical Exam: He was in PEA on arrival to the ED with CPR ongoing and seizure like activity. BP 85/52, HR 75, RR 24 (ventilator), T 31.5 °C. He was comatose, pupils were pinpoint and nonreactive. His lower extremities were rigid, with prominent clonus.
Laboratory Data: ABG-pH 7.12 / PCO_2 41 / PO_2 349, O_2 sat 99%, Na 145 / K 3.9 / Cl 115 / CO_2 6.3 / BUN 16/ Cr 0.6 / Glu 168, Ca 7.1, OG 110, WBC 27.4, Hgb 11.2, INR 1.15, AST 101, AST 35, ALP 73, lactate 7.8 mmol/L. UDS positive for opiates. ECG: sinus tachycardia, QTc 565, non-specific T abnormality
Clinical Course: In the ED he was emergently intubated and given atropine and epinephrine with ROSC. He received lorazepam and phenobarbital for the seizures, and atropine and pralidoxime for the pesticide. An orogastric tube returned ~300 ml of a white liquid. He was externally decontaminated using soap and water. He developed cardiac arrest in transit from the ED to the ICU and ROSC was obtained. He continued to have seizures and received additional atropine and lorazepam. His hypotension required norepinephrine and vasopressin. In the ICU, he arrested again and received magnesium and ILE with ROSC. He was diagnosed with hypoxic encephalopathy. Based on the prognosis, the family opted for institution of comfort measures and he died.
Autopsy Findings: Expanded forensic blood testing on pre-mortem sample was negative. Cause of death: pyrethroid exposure. Manner of death: undetermined.

Case 254. Acute *Taxus baccata* ingestion: undoubtedly responsible.
Scenario/Substances: A 19 y/o female was found vomiting after ingesting English Yew seeds that she ordered from the internet.
Past Medical History: Prior self-harm attempts.
Laboratory Data: UDS positive for benzodiazepines. Serum APAP and salicylate not detected.
Clinical Course: In the ED, the patient was in respiratory distress with wide complex tachycardia. She became pulseless and CPR was performed. She was intubated and received activated charcoal, sodium bicarbonate, atropine, epinephrine, norepinephrine, amiodarone, digoxin Fab fragments, and levetiracetam. Posturing was observed, and the patient died 2.25 h after arriving at the ED.
Autopsy Findings: Toxicology report: ethanol and comprehensive drug test negative. Tan fluid with multiple small round brown seeds was noted in the stomach. Cause of death: taxine poisoning. Manner of death: suicide.

Case 256. Acute cardiac glycoside ingestion: undoubtedly responsible.
Scenario/Substances: A 69 y/o female made a tea with leaves from a plant in her garden thinking it was safe and later developed nausea, vomiting and diarrhea.
Physical Exam: BP 153/76, HR 30 (irregular), RR 20, O_2 sat 93% on room air, T36.1 °C.
Laboratory Data: K 6.6, Glu 159, bili 1.6, digoxin 55.5 ng/mL.
Clinical Course: In the ED she received IVFs and atropine. She became bradycardic and received increasing doses of dopamine without improvement. The patient deteriorated, requiring ACLS and intubation. She received digoxin Fab fragments empirically (with known hyperkalemia). Serum potassium increased to 8.2 despite treatment. A pacemaker

did not capture, CPR and repeated cardioversions were performed. She developed multiple episodes of torsades de pointes and died ~24 h after presentation.
Autopsy Findings: Cause of death: acute digitalis intoxication. Manner of death: accidental.

Case 260. Acute salicylate ingestion: undoubtedly responsible.
Scenario/Substances: A 13 m/o male ingested an unknown amount of salicylate 4 h prior to vomiting a white, chalky substance at home. An empty salicylate bottle, apparently thrown away by another child, was found in the trash. His family brought the child to ED.
Physical Exam: The patient was cyanotic with focal seizures. RR 50's, HR 158, O_2 sat 100% via NRB.
Laboratory Data: ABG-pH 7.17 / pCO_2 55 / pO_2 238 / HCO_3 13.7 / BE -14.6, Glu 43, HCO_3 12, AG 27, K 5.7, PT 12.7, PLT 612, WBC 33. Serum salicylate 140 mg/dL.
Clinical Course: In the ED the patient received bicarbonate and dextrose. BP 152/76, HR 147, O_2 sat 97% NRB. The child became asystolic and rigid during preparations for intubation. He was pronounced dead after ~30 min of resuscitation efforts including bicarbonate, epinephrine, glucose, lorazepam and calcium. Cause of death was cardiopulmonary arrest.
Autopsy Findings: Not available.

Case 261. Acute oxycodone ingestion: undoubtedly responsible.
Scenario/Substances: A 2 y/o male ingested ~5 tablets of his mother's 30 mg extended release oxycodone tablets. About 90 min later, he developed severe lethargy and vomiting. Family called 911 and he was transported to the ED.
Physical Exam: Sleepy but arousable. BP 138/78, HR 105, RR 20, O_2 sat 92% on room air, T 37.1 °C.
Clinical Course: In the ED he received naloxone with response and was placed on oxygen. Despite recommendations for overnight observation, he was discharged home after ~7 h stay in the ED. The following morning, the mother found the child unarousable. He was taken by his family to a local fire station when he stopped breathing, and was transported to the ED. He died shortly after being admitted to the PICU.
Autopsy Findings: Cause of death: oxycodone intoxication. Manner of death: "undetermined." ED blood oxycodone 245 ng/mL, heart blood naloxone 0.08 mg/L. Post-mortem femoral blood oxycodone 840 ng/mL; liver oxycodone 1000 ng/g, oxymorphone 860 ng/g.

Case 262. Acute methadone ingestion: undoubtedly responsible.
Scenario/Substances: A 32 m/o female, who had been lethargic that evening, was later found in bed with an abnormally short, shallow breathing pattern, cold hands and purple lips. She stopped breathing, her mother gave some rescue breaths and called 911. Upon arrival, 5 min later, EMS found the child apneic and pulseless. She was intubated and transported with CPR in progress.
Past Medical History: Previously healthy.
Physical Exam: Unresponsive, apneic, pulseless, pupils fixed at 6mm.
Laboratory Data: Initial pH 6.43, pCO_2 162, WBC 29.9, Hgb 11.1, Cr 0.8, lactate 15.5 mmol/L, Further laboratory investigation showed elevated transaminases, pancreatic enzymes, troponin, and CK, along with coagulopathy. Brain CT showed hypoxic-ischemic injury. UDS was positive for methadone (confirmed on subsequent testing). Comprehensive urine drug testing (GC/MS) was negative for other drugs.
Clinical Course: She was resuscitated in the ED with 3 doses of IV epinephrine, IVFs and sodium bicarbonate. After 28 min of resuscitation, ROSC was achieved. The patient was admitted to the PICU with epinephrine and dopamine infusions. EEG was isoelectric and subsequent exams found no evidence of brainstem function. Brain death examinations were performed at ~36 h and 48 h after presentation. Based on the prognosis, comfort measures were instituted and she became an organ donor and died on Day 3.
Autopsy Findings: Hypoxic ischemic brain injury consistent with respiratory arrest due to opioid poisoning.

Case 300. Acute colchicine ingestion: undoubtedly responsible.
Scenario/Substances: A23 y/o male ingested ~150 tablets of his girlfriend's colchicine (unknown strength) in a suicide attempt 12 h prior to the EMS call.
Past Medical History: Gout. Medications: allopurinol.
Physical Exam: Alert, awake, answering questions appropriately, complaining of fever, shortness of breath, nausea, vomiting, diarrhea, and abdominal pain.
Laboratory Data: CO_2 17.2 / Cr 1.6/ AG 18, CK 1006, WBC 21.5 / Hgb 18.7 / Hct 55.9 / platelets 229, absolute neutrophil count 12.3. Serum APAP, ethanol and salicylate not detected. UDS negative.
Clinical Course: The patient was admitted to the ICU, ABG-pH 7.27 / pCO_2 28 / HCO_3 12.7 / BE -12. Early in Day 2 (20.5 h post ingestion) he became anxious, had massive diarrhea, HR 110, RR 35-40. He received benzodiazepines, morphine, antiemetics and was started on BiPAP. He became progressively more agitated and anxious, diarrhea continued, RR 30 to 50, BP 84/48 to 121/63. AG increased to 20, AST 236, ALT 87, ALP 342, INR 1.5, PTT 38. Later (29 h post ingestion), he was intubated, ventilated, and sedated with a midazolam infusion. Hypotension required phenylephrine and norepinephrine and acidosis required a sodium bicarbonate infusion. pH 7.29, BUN 26, Cr 2.22, CK 1221, troponin 0.115. He became progressively more hypotensive (SBP 80s) with sinus tachycardia requiring the addition of dobutamine. His calcium continued to decrease requiring IV boluses of calcium gluconate. He had a drop in BP (MAP 60) followed by PEA arrest. CPR and serial epinephrine produced ROSC, but 18 min later he developed PEA progressing to asystole and he died despite 60 min of resuscitation efforts.
Autopsy Findings: Autopsy showed charcoal staining of stomach and focal charcoal aspiration, petechiae in eyes, heart, lung, kidneys, and small intestines, biventricular dilatation of the heart, central lobular fatty change of the liver, and renal failure. Toxicology results: colchicine 0.054 mcg/mL in blood from hospital admission. Cause of death: drug intoxication with colchicine. Manner of death: suicide.

Case 342. Acute salicylate ingestion: undoubtedly responsible.
Scenario/Substances: 29 y/o male reported taking 429 tablets of 325 mg aspirin 4 h prior to ED arrival. He reported vomiting 'powder' ~90 min after the ingestion.
Past Medical History: Hypertension, asthma, cystinuria.
Physical Exam: Alert and oriented; HR 95, other vital signs reportedly "normal."
Laboratory Data: CO_2 24 / Cr 1.27. ABG-pH 7.48 / pCO_2 20 / HCO_3 20. Serum APAP was not detected. ECG: HR 95 with normal sinus rhythm. Initial salicylate 56 mg/dL; q2 h salicylate levels were 67.4, 57 and 70.2.
Clinical Course: Patient received activated charcoal (resulting in emesis) and 2 amps of sodium bicarbonate, then a bicarbonate infusion. Labs were repeated every 2 h. The patient became tachycardic 11 h post-ingestion, salicylate 70.2 mg/dL. Patient deteriorated clinically and died shortly after admission.
Autopsy Findings: Salicylate concentration on post mortem blood was 93 mg/dL. Cause of death: salicylate intoxication. Manner of death: suicide.

Case 446. Acute acetaminophen/diphenhydramine and ethanol ingestion: undoubtedly responsible.
Scenario/Substances: A 44 y/o woman informed her son that she had intentional ingested 90 tablets of APAP 500 mg /diphenhydramine 25 mg along with alcohol. EMS found the patient confused and combative; she received naloxone without response.
Past Medical History: Bipolar disorder.
Physical Exam: Initially agitated but somnolent after receiving lorazepam in the ED. BP 133/78, HR 122, RR 20, O_2 sat 97% on room air.
Laboratory Data: Initial APAP was 192 mcg/mL (unknown time of ingestion), AST 15, ALT 30, ethanol was 375 mg/dL. ECG: QRS 78, QTc 432.
Clinical Course: Patient was started on NAC. She showed no signs or symptoms of anticholinergic toxidrome and her mental status improved over the first day. Her 16-h bag was infused over 8 h, but another 16-h bag was ordered (after a 2 h delay) based on a repeat APAP level of 110 mcg/mL. Labs at that time: AST 24, ALT 13, INR 0.9 and bilirubin 0.2. On Day 3, after her fourth 16-h course of NAC, APAP 16.9 mcg/dL, AST 855, ALT 328. NAC was continued. Her mental status was reportedly "doing better." Her bilirubin increased to 7.0 and INR to 4.8. That evening she developed acute encephalopathy with worsening laboratory tests: AST 8111, ALT 3348, INR 4.8, lactate 24.8 mmol/L and ammonia 100 mcg/dL. IV NAC was continued and oral NAC via NG tube was

added. The patient was intubated on Day 4 for CNS depression; AST 17094, ALT 4466, bilirubin 6, bili (direct) 3.7. She was transferred for transplant evaluation. Her renal function worsened (Cr 3.36). She required vasopressors for hypotension and her ammonia increased to 440 mcg/dL. Based on the prognosis, the family opted for institution of comfort measures and she died on Day 6.
Autopsy Findings: Cause of death: acute liver failure secondary to APAP toxicity.

Case 458. Acute-on-chronic tapentadol (extended release), bupropion, diazepam and amitriptyline ingestion: undoubtedly responsible.
Scenario/Substances: A 46 y/o female was brought to the ED by a family member when he noticed altered mental status and missing medications. An empty bottle of tapentadol was later found with 20 tablets missing.
Past Medical History: Medications: amitriptyline 25 mg, bupropion (extended release) 300 mg, aripiprazole 10 mg, diazepam 5 mg, carisoprodol 350 mg, oxymorphone (extended release) 40 mg, tapentadol (extended release) 40 mg.
Physical Exam: In the ED she was awake, alert, oriented and responsive, pupils were normal and reactive to light. Vital signs were stable.
Laboratory Data: K 3.2, CO_2 23, BUN 18, Cr 0.7, AG 18, CPK 22, WBC 9.2, Hgb 11.8, Hct 36.2, ABG unremarkable. Serum APAP, ethanol and salicylate not detected. UDS positive for benzodiazepines. ECG showed sinus rhythm, QRS 86, QT 330.
Clinical Course: Shortly after ED arrival she became non-verbal with uncontrolled (flailing) body movements, had a seizure, and was treated with lorazepam, phenytoin and midazolam. After the seizure: BP 106/63, HR 123, RR 17, O_2 sat 96% on 2 L O_2 via nasal cannula, T 37.9 °C. She remained postictal (staring and confused) and then developed dystonic facial grimacing with abnormal posturing (arms stretched outward). BP, ABG and ECG all remained normal. Throughout the day she was restless, confused and agitated requiring physical restraints. ECG showed a HR 100 with no conduction delays or ectopy. Head CT was normal. Dystonia continued despite IVFs and lorazepam; urine output was adequate. She suffered a cardiac arrest and died on Day 2.
Autopsy Findings: Undigested pills in the stomach, pulmonary congestion and edema. Ante-mortem peripheral blood: nordiazepam 150 ng/ml, lorazepam 27 ng/ml, nortriptyline 30 ng/ml, bupropion 180 ng/ml, hydroxybupropion 3100 ng/ml, phenytoin 14 mcg/ml, tapentadol 310 ng/ml. Manner of death: suicide.

Case 590. Salicylate and APAP exposure: undoubtedly responsible.
Scenario/Substances: A 66 y/o female with lethargy and altered mental status was transported to the ED.
Past Medical History: Paranoid schizophrenia.
Physical Exam: In the ED: BP 150/64, HR 60, RR 28, T 37 °C, able to state her name, but was minimally responsive.
Laboratory Data: ABG-pH 7.44 / pCO_2 24.7 / pO_2 54, Na 133 / K6.6 / Cl 96 / CO_2 14 / BUN 13 / Cr 1.0 / Glu 281, AG 23, AST 38, ALT 35, INR 4.8, ammonia 25 mmol/L, lactate 1.49 mmol/L, urine ketones negative. Salicylate >72 mg/dL (reported post mortem).
Clinical Course: She was started on an insulin drip for presumed diabetic ketoacidosis. Less than an hour after arrival she exhibited generalized seizure activity which resolved with lorazepam. Shortly after, she was found to be in cardiopulmonary arrest. ACLS was initiated and she was intubated. Resuscitation was unsuccessful and she died.
Autopsy Findings: Stomach contained 300 ml of fluid admixed with fine, gritty material and 4 intact, white, friable pills. Liver histology showed centrilobular necrosis. Hospital blood salicylate 77.2 mg/dL, APAP 33.2 mcg/mL. APAP and salicylate were both detected in urine. Her post-mortem gastric salicylate 35,983 mg/kg, APAP 338 mg/kg. Her post-mortem blood salicylate 85.5 mg/dL, APAP 40.3 mcg/mL. Cause of death: acute salicylate and acetaminophen intoxication. Manner of death: undetermined.

Case 655. Acute methadone ingestion: undoubtedly responsible.
Scenario/Substances: An 11 m/o male was found at home with a pill believed by parents to be methadone. He was later found to be apneic, CPR was started, and EMS was called. EMS gave 1 mg of naloxone with minimal response and transported him to the ED.
Physical Exam: BP 118/91, HR 136, RR 30, T34 °C (rectal), O_2 sat 100%. Initially unresponsive, later began opening eyes to pain.
Laboratory Data: Na 139 / K 4.6 / Cl 103 / CO_2 18 / Glu 600/ BUN 6 / Cr 1.0/ AG 18, ABG-pH 6.78 / pCO_2 103 / pO_2 141 / HCO_3 15.8, O_2 sat 94%. UDS positive for methadone; UA negative for ketones.
Clinical Course: In the ED, the child received a second dose of 1 mg naloxone with minimal response, was intubated and transferred to a tertiary care center. Initial differential included toxic ingestion vs diabetic ketoacidosis. He was treated with therapeutic hypothermia and on rewarming was found to be brain dead.
Autopsy Findings: Not available.

Case 661. Acute lidocaine, meloxicam, venlafaxine, lacosamide and trazodone ingestion: probably responsible.
Scenario/Substances: A 28 y/o male, being treated for oral thrush, accidentally ingested >10 x the intended dose of oral lidocaine. He had a seizure and went into cardiac arrest. An empty 100 ml bottle of lidocaine was found near him.
Past Medical History: Mental delay, seizures, depression. Medications: lacosamide and venlafaxine.
Physical Exam: Unresponsive; pink and warm with CPR in progress.
Clinical Course: The patient had multiple seizures. He was treated with CPR and ACLS, plus ILE, sodium bicarbonate and glucagon. He was pronounced dead shortly after arrival.
Autopsy Findings: Toxicology testing on hospital blood showed subtherapeutic levels of lacosamide (1.6 mcg/mL); therapeutic levels of venlafaxine (310 ng/mL) and metabolites (270 ng/mL); and trazadone (0.15 mcg/mL). Caffeine, lidocaine, and MEG-X were detected but not quantified. Cause of death: epileptic seizure disorder. Manner of death: natural.

Case 676. Acute valproic acid ingestion: undoubtedly responsible.
Scenario/Substances: A 29 y/o male presented 2 h post ingestion of 90 tabs of 500 mg divalproex.
Past Medical History: Seizures and depression.
Physical Exam: BP111/58, HR 93, depressed mental status, pupils mid-size with nystagmus.
Laboratory Data: Na 147 / K 3.8 / Cl 109 / CO_2 25 / BUN 7 / Cr 1.1 / Glu 98, AST 31, ALT 29, ammonia 140 mmol/L, lactate 3.6 mmol/L, valproic acid >450 mcg/mL. Serum APAP, ethanol and salicylate not detected. UDS positive for benzodiazepines and amfetamines.
Clinical Course: GI decontamination was started with whole bowel irrigation. He received multiple dose activated charcoal and was started on L-carnitine for hyperammonemia. The patient's valproic acid level trended down over the next 3 days. His ammonia level initially declined to 90 and then increased to 179. On Day 3 his ammonia was 555 mmol/L. The patient was found to have cerebral edema with intraparenchymal hemorrhage, and died on Day 5.
Autopsy Findings: Cerebral edema and cerebral hemorrhage. Cause of death: complications of valproic acid intoxication. Manner of death: suicide.

Case 698. Acute bupropion ingestion: undoubtedly responsible.
Scenario/Substances: A 15 y/o female was found agitated at home by her parents who suspected ingestion of 20-30 tabs of extended release bupropion and called 911. On EMS arrival, the patient had a witnessed cardiac arrest with immediate CPR and ROSC. She was intubated and transported to the ED.
Past Medical History: Depression and previous suicide attempts.
Physical Exam: In the ED she was intubated and sedated with pinpoint pupils, hypotension and tachycardia (HR 120-140).
Laboratory Data: ABG-pH 6.83 / pCO_2 61.4 / pO_2 536 / HCO_3 10 / BE -24.4, lactate >17 mmol/L. Serum APAP, ethanol and salicylate not detected. Initial ECG showed ST at 138, with ST and T wave abnormalities.
Clinical Course: The patient seized upon ED arrival and had persistent myoclonic jerks despite lorazepam, midazolam and levetiracetam. She was placed on a bicarbonate infusion and given ILE. She was paralyzed with vecuronium, started on evaporative cooling, iced saline infusion and cooling blankets for T 39.7 °C. Her pH improved to 7.54 but her lactate remained elevated at 9 mmol/L. An EEG showed occasional burst

activity consistent with brain death. She later developed cerebral edema and herniated. She died on Day 3.
Autopsy Findings: Report not available. Antemortem bupropion 1931 ng/mL, hydroxybupropion 2453 ng/mL.

Case 805. Acute tranylcypromine, olanzapine, lisinopril, sertraline, hydroxychloroquine, amlodipine, buspirone and levothyroxine ingestion: undoubtedly responsible.
Scenario/Substances: A 78 y/o female was found unresponsive with a suicide note (stating that she ingested tranylcypromine) 1 day after last being seen normal.
Past Medical History: Hypothyroidism, hypertension, depression, rheumatoid arthritis, peripheral neuropathy and chronic kidney disease. Medications: amlodipine, buspirone, hydroxychloroquine, levothyroxine, lisinopril, sertraline and tranylcypromine.
Physical Exam: BP 164/74, HR 114, O_2 sat 94% on 15 L NRB, T 35 °C. Obtunded with myoclonic jerks, positive Babinski, hypoactive bowel sounds.
Laboratory Data: Na 145 / K 5.8 / Cl 111 / HCO_3 23 / BUN 35 / Cr 1.6, lactate 4.5 mmol/L, CK 883. ECG rate 111 with bundle branch block. UDS positive for amfetamine and benzodiazepines. Head CT was negative.
Clinical Course: The patient was treated with lorazepam and cyproheptadine for suspected serotonin syndrome. She became hyperthermic (40.1 °C) and acidotic with rhabdomyolysis and leg twitching. She received morphine and more benzodiazepines. The daughter reported that the patient had a DNR order; she had respiratory arrest and died on Day 2.
Autopsy Findings: Not available.

Case 833. Acute paclitaxel parenteral: probably responsible.
Scenario/Substances: A 52 y/o female suddenly developed respiratory distress and wheezing after receiving her second dose of IV paclitaxel. The resuscitation team found the patient in distress and complaining of shortness of breath. BP 149/89, HR 56, O_2 sat 85%. She had wheezing and an urticarial rash. She went into PEA arrest, CPR was initiated and she was intubated. Chest compressions with epinephrine and IVFs produced ROSC.
Past Medical History: Metastatic breast cancer.
Laboratory Data: K 4.0, Mg 3.1, phos 10.3, WBC 66, INR 3.2, D dimer >5000 ng/mL.
Clinical Course: She was admitted to the ICU and had 3 more cardiac arrests that responded to epinephrine and defibrillation. ECHO showed no evidence of right heart strain or wall motion abnormality, EF was 70%. BP stabilized on high dose epinephrine, norepinephrine and vasopressin; methylene blue was also given. On Day 2 an exploratory laparotomy revealed necrotic large bowel. Post operatively the patient was coagulopathic and lost a large blood volume. Based on the prognosis, the family opted for institution of comfort measures and she died on Day 2. Cause of death was thought to be anaphylaxis to paclitaxel.
Autopsy Findings: Not performed.

Case 837. Chronic methotrexate ingestion: contributory.
Scenario/Substances: An 81 y/o female nursing home resident was mistakenly given 12.5 mg of methotrexate per day for 13 days instead of once per week.
Past Medical History: Arthritis treated with weekly doses of methotrexate.
Physical Exam: Sores on her bottom lip and complaints of a sore throat.
Laboratory Data: WBC 4 / Hgb 10 / Hct 30 / platelets 78. Initial methotrexate from the morning of admission was undetectable (<0.04 mmol/L).
Clinical Course: Leucovorin (30 mg q 6 h) was initiated and a repeat methotrexate level ordered. Over the next several days, the patient developed diarrhea and her platelet count declined. Lorazepam and sodium bicarbonate were added on the Day 2 and filgastrim was started when her WBC dropped to 2.8. Over the next several days, she experienced increasing urinary incontinence, diarrhea, dysphagia and oral ulcerations. On Day 4 methotrexate was again undetectable. On Day 7 she was found unresponsive and pulseless, but was resuscitated with subsequent seizure activity. Her blood cultures returned positive for *Staphylococci*; WBC 1.5, platelets 61. Based on the prognosis, comfort measures were instituted and she died on Day 7. Her age and chronic methotrexate use were thought to be contributory.
Autopsy Findings: Cause of death: cardiopulmonary arrest; methotrexate levels were reportedly "within therapeutic range." No autopsy was done.

Case 838. Acute-on-chronic theophylline ingestion: undoubtedly responsible.
Scenario/Substances: A 59 y/o male was found agitated and confused by his family and brought to ED.
Past Medical History: Diabetes mellitus, COPD, depression with past overdose attempts. Medications: theophylline, lisinopril, amlodipine, metoprolol, metformin, hydroxyzine, lorazepam, oxybutynin, quetiapine, venlafaxine, levocetirizine, tamsulosin, and dextromethorphan.
Laboratory Data: Initial Na 142 / K 3.5 / Cl 108 / CO_2 15 / BUN 26 / Cr 3.22 / Glu 307, Mg 1.9. Hepatic panel unremarkable, troponin normal, UDS positive for benzodiazepines. Theophylline was 112 mcg/ml.
Clinical Course: In the ED the patient was confused and agitated, HR 180 in SVT. He was given adenosine and cardioverted X3 without effect. The patient was intubated for agitation and sedated with midazolam. Norepinephrine and phenylephrine were started for progressive hypotension despite IVFs. Systolic BP dropped to the 50's, HR 160-190. SBP increased to the 90s following 150 mEq of sodium bicarbonate plus escalating doses of pressors. On CRRT the theophylline level decreased to 72 mcg/ml after 4 h, and 18 mcg/ml after 28 h. His HR decreased to the 120s. The following day sedation was stopped, but the patient did not respond to stimuli. He was weaned off all pressors; HR 100s, SBP 90s. CRRT was stopped after 60 h, but he remained unresponsive. His Hgb dropped to 6 and platelets 15. His head CT showed a cerebral infarct and mesenteric ischemia was suspected. Based on the prognosis, the family opted for institution of comfort measures and he died on Day 5.
Autopsy Findings: Not performed.

Case 839. Acute epinephrine parenteral: undoubtedly responsible.
Scenario/Substances: A 70 y/o female patient (at an outpatient surgical center for a hemorrhoidectomy) developed VT after receiving 30 mL of 1: 1000 (10 mg/mL) epinephrine IM instead of the intended local anesthetic.
Past Medical History: Hypertension, CAD, hyperlipidemia, anal carcinoma.
Physical Exam: BP 180/130, HR 140, VT, lungs: acute pulmonary edema.
Clinical Course: In the ED the patient was intubated and received metoprolol and esomolol, but remained in sinus tachycardia with a HR of 140-150s. A nitroprusside infusion was started, but she suddenly became bradycardic, then went into VF and had a PEA arrest and died 2 h post exposure.
Autopsy Findings: Immediate cause of death: acute epinephrine toxicity. Manner of death: accidental.

Case 840. Acute diltiazem (extended release) ingestion: undoubtedly responsible.
Scenario/Substances: A 3 y/o female ingested an unknown amount (but up to 30) of her grandmother's 240 mg extended release diltiazem tablets 2 h prior to presentation. She vomited once (grandmother saw pill fragments in the emesis), appeared lethargic and was brought to the ED.
Past Medical History: Developmental delay.
Physical Exam: BP 75/30, P 88, RR 22, afebrile, O_2 sat 99% on room air. She was awake and alert, pupils 3 mm, mildly delayed capillary refill, heart and lung exam unremarkable.
Laboratory Data: ABG-pH 7.297 / pCO_2 31 / pO_2 221, Na 139 / K 3.6 / Cl 110 / CO_2 14.6 / BUN 27 / Cr 0.87, lactate 3.7 mg/dL.
Clinical Course: She received activated charcoal, a 20 mg/kg bolus of IVFs, was started on a calcium drip, and was transferred to a tertiary care center. Her BP and HR declined, a central line was placed and a dopamine infusion started. The patient continued to have low BPs with increasing serum lactate. Norepinephrine was initiated. She then had a seizure followed by cardiac arrest. She received 30 min of CPR, sodium bicarbonate, calcium and epinephrine with ROSC. She was started on high dose insulin (up to 10 units/kg/hr) and a pacemaker was placed

but failed to capture. CPR was initiated again for decreasing BP and HR and continued for ~1 hour. She was given multiple epinephrine boluses in addition to an epinephrine infusion. ECMO was considered but withheld due to fixed, dilated pupils and prolonged downtime. Based on the prognosis, the family opted for institution of comfort measures and she died on Day 2.
Autopsy Findings: Gross examination was significant only for pulmonary edema and congestion. Diltiazem concentration was 100 ng/mL from peripheral blood. Cause of death: diltiazem toxicity. Manner of death: accidental.

Case 867. Acute cardiac glycoside (bufadienolide) ingestion: undoubtedly responsible.
Scenario/Substances: A 39 y/o male purchased "Piedra China" as an aphrodisiac. The product was intended to be used topically, but he ingested half of the package by mistake. He developed vomiting and diaphoresis, and was transported to the ED.
Physical Exam: Mental status and examination were unremarkable except for the vomiting and diaphoresis.
Laboratory Data: Na 140 / K 4.6 / Cl 109 / CO_2 21 / BUN 15 / Cr 1.1 / AG 10, AST 62, ALT 43. ABG-pH 7.39 / pCO_2 40. Serum APAP, ethanol and salicylate not detected. Serum digoxin 1.14 ng/mL. Initial ECG showed HR 45 with AV dissociation.
Clinical Course: He became bradycardic to rate 30-40's. Repeat ECG showed paroxysmal atrial tachycardia with 3:2 conduction, which progressed to VF (Hour 0). ACLS protocol was initiated and he received 10 vials of digoxin Fab fragments with ROSC. At Hour 1.3 the patient suffered another VF arrest and received an additional 12 vials of Fab with ROSC. At Hour 2.1, VF reoccurred and he received an additional 9 vials of Fab with ROSC. At Hour 2.6, VF reoccurred and he received an additional 2 vials of Fab with ROSC. These 33 vials over 2.6 hours depleted the hospital and all surrounding hospitals of digoxin Fab fragments. At Hour 3.1 he suffered another VF arrest which, in the absence of Fab, progressed to asystole and he died.
Autopsy Findings: Not available.

Case 872. Acute flecainide, dextromethorphan and chlorpheniramine ingestion: undoubtedly responsible.
Scenario/Substances: A 40 y/o male presented to the ED by EMS, actively seizing following a reported intentional overdose on flecainide 2 h prior to arrival.
Past Medical History: Depression.
Physical Exam: Unresponsive, seizing.
Clinical Course: Patient developed cardiac arrest within 30 min of arrival; CPR was continued for ~45 min without ROSC.
Autopsy Findings: The cause of death was determined to be multiple drug intoxication. Hospital blood: flecainide 3.7 mcg/mL, chlorpheniramine 258 ng/mL, and dextromethorphan 1090 ng/mL.

Case 890. Acute amlodipine/benazpril ingestion: undoubtedly responsible.
Scenario/Substances: A 47 y/o male presented to and ED ~1 h after an intentional ingestion of 90 of his wife's amlodipine/benazepril (10 mg/20 mg) tablets.
Past Medical History: Schizophrenia, post-traumatic stress disorder.
Physical Exam: Alert and oriented; BP 75/36, HR 110, T 36 °C,
Laboratory Data: K 2.9, Glu 410, Ca 9.8. After initiation of vasopressors: ABG-pH 7.24 / pCO_2 33, lactate 7.3 mmol/L, Glu 552.
Clinical Course: Patient was intubated and started on phenylephrine, epinephrine and norepinephrine. He received 3 liters NS, sodium bicarbonate, calcium infusion and 2 mg of IV glucagon without response. Vasopressors were "at maximum" with systolic BP 75-85. High dose insulin was initiated and increased to 3 units/kg/hr; BP 66/39, Glu 1275. A dextrose 20% infusion was started and the insulin increased to >10 units/kg/hr. He remained awake and alert, but hypotensive and hyperglycemic with no urine output. At 11 h after ingestion he had a cardiac arrest and died.
Autopsy findings: Autopsy demonstrated moderate cardiomegaly, atherosclerotic CAD, bilateral emphysema, and acute pulmonary and cerebral edema. Antemortem peripheral blood drawn shortly after arrival: amlodipine 0.22 mg/L, morphine 0.012 mg/L. Post mortem subclavian blood had caffeine, cyclobenzaprine (< 0.25 mg/L), diphenhydramine (< 0.25 mg/L), lidocaine, nicotine, opiates/opioids and other organic bases. Cause of death: amlodipine toxicity with contribution from post-traumatic stress disorder, hypertension and CAD.

Case 896. Acute diltiazem and doxylamine ingestion: undoubtedly responsible.
Scenario/Substances: A49 y/o female presented ~40 min after an intentional ingestion of 80 tablets of 120 mg diltiazem (extended release) and 192 tablets of 25 mg doxylamine. Medications belonged to a family member.
Physical Exam: Alert, BP 170/80, HR 140.
Laboratory Data: ABG-pH 7.05 / PCO_2 48 / PO_2 74. Na 136 / K 3.9 / Cl 104 / HCO_3 24 / BUN 14 / Cr 1.0, lactate 1.9 mmol/L, AST 35, ALT 38, PT 21.7, INR 1.9, CPK 35047. Serum APAP, salicylate and ethanol not detected. Repeat labs 72 h later: BUN 69, Cr 4.9, Ca 23.5, Ca (ionized) 11.8, Hgb 13.8, WBC 8500. On Day 6: lactate 16 mmol/L, Hgb 10.4, WBC 23.3, AST 9346, ALT 3223. Initial ECG: HR 131, QRS 88, QTc 412; ECG #2: HR 59, QRS 102, QTc 317.
Clinical Course: The patient received activated charcoal and whole bowel irrigation in ED. Approximately 12 h after arrival she developed bradycardia with a HR in 40's and BP 150/63. Calcium and glucagon infusions were started for persistent bradycardia; BP 188/63. At 21 h post ingestion: HR 40-49, BP 150/63 on infusions of calcium chloride and glucagon. Calcium and glucagon infusions were titrated off due to hypercalcemia and normal blood pressure. About 36 h later, when BP 161/71 and HR 70-80, she was intubated for hypoxia and decreased mental status. She developed oliguric renal failure and HD was begun on Day 3. She became hypotensive (SBP 80) with a HR of 104; norepinephrine was started. ECHO showed an ejection fraction of 70%. She developed acute liver failure (AST 4642, ALT 2388, INR 1.9) and there was evidence of rhabdomyolysis. On Day 6 she developed clinical signs of an acute abdomen with shock and acidosis. An emergency laparotomy was performed which showed that her entire small bowel was infarcted; she was deemed "unsurvivable" and died on Day 7.
Autopsy Findings: ME report: patient died of diltiazem and doxylamine toxicity with complications. Autopsy showed multiple organ failure; pneumonia, necrosis of the heart, kidneys and liver; small bowel and descending colon were gangrenous. Post-mortem toxicology: peripheral blood: doxylamine 1100 ng/ml, diltiazem 230 ng/ml, ephedrine 250 ng/ml, midazolam 10 ng/ml, fentanyl 17 ng/ml, norfentanyl 4 ng/ml, urine was positive for THC and benzodiazepines.

Case 907. Acute-on-chronic verapamil ingestion: undoubtedly responsible.
Scenario/Substances: A 50 y/o female intentional ingested 15 to 20 of her own 240 mg verapamil (extended release) tablets. EMS found BP 60/40, HR 51.
Past Medical History: Hypertension, hyperlipidemia, diabetes, asthma, migraines, depression, sleep apnea.
Physical Exam: In the ED: lethargic but conversing with staff. BP 70/30, HR 47; RR 16, O_2 sat 96% on NRB.
Laboratory Data: ABG-pH 7.18 / pCO_2 51 / HCO_3 18; AG 25. Serum APAP and salicylate not detected. Initial ECG: HR 38 with AF, QRS 138, QTc 545.
Clinical Course: She received atropine, calcium gluconate and glucagon boluses, then started on calcium gluconate, norepinephrine (120 mcg/min) and dopamine (20 mcg/kg/min) infusions. SBP remained in the 60s and HR in the 30s. High dose insulin infusion and ILE were started; she had transient improvement of her BP to 120/60, but died on Day 2.
Autopsy Findings: Case of death: verapamil poisoning following intentional overdose. Antemortem blood (ED arrival) verapamil 1.3 mcg/mL (toxic), citalopram 0.2 mcg/mL (within therapeutic range).

Case 989. Acute-on-chronic amlodipine ingestion: undoubtedly responsible.
Scenario/Substances: A 67 y/o male was found unresponsive by his wife with a note stating he took his own medication. EMS gave naloxone without response.

Past Medical History: Cardiac arrhythmia, depression with prior suicidal ideation. He was taking amlodipine.
Physical Exam: Unresponsive; BP 78/palp, HR 70.
Laboratory Data: Ethanol 118 mg/dL. Serum APAP and salicylate not detected. ECG: sinus rhythm, QRS 99, QTC 445.
Clinical Course: The patient received vasopressors (epinephrine, norepinephrine and dopamine), calcium gluconate, insulin and glucose, and ILE infusions. BP 67/48, HR 86; he remained unresponsive and anuric. On Day 2 he developed worsening acidosis; repeat ECG: QRS 170, QTc 533. He was started on CVVH. On Day 4: BP 99/53, HR 82. Attempts to wean vasopressors failed; insulin infusion was stopped due to persistent hypoglycemia. On Day 5, an esophagogastroduodenoscopy showed pill fragments in his stomach; he died on Day 6.
Autopsy Findings: Infarcts throughout the small and large bowel. Blood drawn at time of admission showed an amlodipine level of 270 ng/mL. Cause of death: intestinal ischemia and severe acidosis secondary to hypotension from amlodipine toxicity.

Case 1045. Acute flecainide ingestion: undoubtedly responsible.
Scenario/Substances: A 21 m/o female arrived to an ED with CPR in progress after ingesting flecainide. She had a seizure prior to ED arrival.
Past Medical History: Wolff-Parkinson-White syndrome.
Physical Exam: Intubated, bradycardic, cool, mottled extremities with poor capillary refill. HR 40s.
Laboratory Data: ABG-pH 7.33 / pCO_2 81 / pO_2 32 / HCO_3 42, Na 155 / K 2.7 / Cl 102 / CO_2 35 / BUN 15 / Cr 0.48 / Glu 265 / AG 18, Mg 4.3, Ca 11.1, ALT 69, AST 182, ALP 116, WBC 9.8 / Hgb 10.1 / Hct 30.3 / platelet 333. Serum APAP, salicylate and ethanol not detected. UDS negative.
Clinical Course: Patient was being bagged with a face mask, and received atropine, epinephrine, lidocaine and defibrillation. With ROSC and intermittent respirations she was intubated; cardiac monitor showed QRS 200 and QTC 576. She received activated charcoal (via an NG tube), magnesium, calcium, sodium bicarbonate infusion and ILE. Lorazepam and levetiracetam were given for seizures. Despite ACLS interventions, she arrested and died within 6 h of presentation.
Autopsy Findings: Not available.

Case 1046. Acute parenteral amiodarone: undoubtedly responsible.
Scenario/Substances: A 14 d/o female was mistakenly given 75 mg amiodarone IV loading dose for SVT.
Past Medical History: Double outlet right ventricle VSD and transposition of the great vessels, pulmonary embolus, and low O_2 sat.
Clinical Course: The patient began having runs of SVT, treated with adenosine or ice to her face, then received 75 mg amiodarone IV. The patient immediately became hypotensive and bradycardic. CPR was initiated, she was intubated, given atropine and a temporary pacemaker was placed. Efforts to resuscitate were unsuccessful and the patient died within several hours of receiving the amiodarone.
Autopsy Findings: Cardiac blood amiodarone 5.2 mcg/ml, desethylamiodarone 0.29 mcg/ml, lorazepam11 ng/ml. Femoral blood: amiodarone 0.24 mcg/ml. Cause of death: acute amiodarone toxicity during treatment of arrhythmia due to congenital heart disease. Manner of death: accident (administration of inappropriate dose of medication).

Case 1049. Acute benzonatate ingestion: undoubtedly responsible.
Scenario/Substances: An 11 y/o female lost consciousness and seized, at home in the presence of her mother, after an occult ingestion of benzonatate. Mother performed CPR for 10 min prior to EMS transfer to the ED.
Physical Examination: Asystolic with no apparent trauma.
Laboratory Data: Lactate 20 mmol/L, repeat lactates trended down to 8 mmol/L. Troponin 0.19 ng/mL, venous pH 7.19. Serum APAP, ethanol and salicylate not detected. UDS positive for benzodiazepines and barbiturates.
Clinical course: She was intubated and received CPR and sodium bicarbonate boluses with ROSC. She was transferred to a pediatric HCF on a midazolam infusion. She received fosphenytoin, phenobarbital and levetiracetam. Vital signs were reported as "appropriate." She had no gag reflex or response to stimuli. EEG showed severe anoxic brain injury with generalized seizures. On Day 2 an empty bottle of benzonatate capsules were found in her bedroom. Head CT showed uncal herniation. She was declared brain dead on Day 5. Diagnosis: anoxic brain injury from cardiovascular shock secondary to local anesthetic toxicity.
Autopsy findings: Not performed.

Case 1059. Sodium chloride exposure: probably responsible.
Scenario/Substances: A 6 m/o female was well until ~3AM when mom found her irritable and warm to the touch. She gave her APAP, fed her a bottle and put her back to bed. At ~9AM, the patient was breathing but unresponsive, and was transported to the ED.
Laboratory Data: Initial ABG-pH 6.98 / pCO_2 53.9 / pO_2 97.6, Na 198 (repeat 202), urine Na 222, urine osmolality 568 mOsm/kg. Day 2: Na 176 / K 3.6 / Cl 149 / CO_2 15 / BUN 12 / Cr 0.4, AST 133, ALT 37.
Clinical Course: The patient was unresponsive in the ED, T 39.8 °C, O_2 sat 78-83% on room air with labored breathing. She was intubated and started on empiric antibiotics and IV fluids. Head CT showed multiple subdural hemorrhages, diffuse cerebral edema, and bilateral retinal hemorrhages. She was transferred to a tertiary care center PICU. The initial laboratories from the first hospital were not reported due to markedly abnormal results. The patient was continued on hypotonic fluids and intensive care monitoring. On Day 3, the patient became pulseless with PEA rhythm. ACLS and CPR were initiated including epinephrine, lidocaine, magnesium sulfate, amiodarone and repeated attempts at electrical cardioversion. The patient remained pulseless after 40 min of CPR and died on Day 3.
Autopsy Findings: The initial postmortem revealed that the death was inconsistent with trauma. Renal function was unremarkable with elevated sodium and chloride.

Case 1060. Acute loperamide and clonazepam ingestion: undoubtedly responsible.
Scenario/Substances: A 23 y/o male was found unresponsive at home with 6 empty bottles of 2 mg loperamide tablets. EMS found him in asystole; ACLS was initiated and he was transported to the ED.
Past Medical History: Substance abuse, recent ED visit for opioids.
Clinical Course: Resuscitative efforts were continued for 60 min in the ED but he remained asystolic and died.
Autopsy Findings: Heart blood: loperamide 77 ng/ml; 7-amino clonazepam 180 ng/ml; buprenorphine 1.8 ng/ml (therapeutic level); norbuprenorphine 2.9 ng/ml (therapeutic level). Cause of death: complications of mixed drug intoxication. Manner of death: accidental.

Case 1107. Quetiapine ingestion: contributory.
Scenario/Substances: A 29 y/o female was found unresponsive at home along with empty bottles of quetiapine. It was very hot and she was wearing multiple layers of clothing.
Past Medical History: Schizophrenia, noncompliance with medications, multiple psychiatric admissions.
Physical Exam: Agitated delirium; BP 80/60, HR 160s, RR 25, T (rectal) 37 °C.
Laboratory Data: Electrolytes "normal." HCO_3 18, Cr 2.8, lactate 4.4 mmol/L, CPK 529, WBC 13.5, Hct 39.2. Serum APAP, salicylate, ethanol not detected. UDS negative.
Clinical Course: Her vital signs improved (BP 100/60, HR 130s) after IVFs; there was no response to naloxone. She received antibiotics for a suspected urinary tract infection. She became unresponsive and went into PEA. She received CPR, sodium bicarbonate, epinephrine, norepinephrine and atropine but died within 4 h of ED arrival.
Autopsy findings: The main pulmonary artery and all major branches were completely obstructed by ropey, purple, non-adherent, folded thrombi up to 0.7 cm in diameter. There were small, non-adherent dull thrombi within deep veins of lower legs bilaterally. Post mortem quetiapine: iliac vein blood 7.5 mg/L, liver 170 mg/kg. Cause of death: acute bilateral pulmonary thromboemboli likely due to a prolonged period of immobility caused by quetiapine overdose.

Case 1176. Acute-on-chronic, phenobarbital and morphine ingestion: undoubtedly responsible.
Scenario/Substances: A79 y/o female was found lethargic by EMS with 2 bottles of phenobarbital (unknown dose) next to her. The patient reported taking 35 of her phenobarbital tablets.
Past Medical History: Seizures.

Physical Exam: HR 58, BP 150/73, RR 15, T 36.2 °C, drowsy, not responsive to pain.
Laboratory Data: UDS positive for barbiturates. Serum APAP, ethanol and salicylate not detected.
Clinical Course: In the ICU, 6 h post ingestion, she required intubation. On Day 2, serum phenobarbital was 99.9 mg/L. She became hypotensive (BP 98/53), HR 114, and hypoglycemic requiring 2 boluses of D_5W. Later that day phenobarbital was 94.3 mg/L. On Day 3 she developed a fever T 38.4 °C, phenobarbital was 85.9 mg/L. CxR on Day 4 showed a possible aspiration pneumonia. Based on the prognosis, the family declined starting antibiotics, opted for institution of comfort measures and she died on Day 5.
Autopsy Findings: Complications of phenobarbital toxicity, hypertensive cardiovascular disease with cardiomegaly and left ventricular hypertrophy, emphysema, left foot ulcer. Toxicology: blood negative for morphine, but urine positive for >2.0 mcg/mL of morphine; hospital blood phenobarbital 79 mcg/mL. Cause of death: drug toxicity with phenobarbital. Manner of Death: suicide.

Case 1195. Acute methamfetamine ingestion: undoubtedly responsible.
Scenario/Substances: A 19 y/o female was found unresponsive and pulseless. Her boyfriend reported that she drank bong water used for smoking methamfetamine. Family initiated CPR; she was intubated by EMS and received ACLS interventions for PEA with ROSC.
Past Medical History: Substance abuse.
Physical Exam: Intubated, unresponsive, pupils 8mm and reactive, mottled skin. BP 105/72, HR 99, RR 15, O_2 sat 95% (FiO_2 100%), T 36.7 °C.
Laboratory Data: ABG-pH 6.95 / pCO_2 54 / pO_2 60 (FiO_2 60%), K 8.6, Cr. 2.4, WBC 20.3, AST 1842, ALT 2542, lactate 6.2 mmol/L, INR 2.04, troponin 4.95. UDS positive for amfetamines; serum APAP not detected. Initial ECG: ST 113, peaked T waves, QRS 117. ECHO was unremarkable with an ejection fraction of ~60%.
Clinical Course: EMS flight crew provided norepinephrine, epinephrine, sodium bicarbonate, atropine, dopamine infusion and ILE; BP remained in the 70s. In the ICU she received infusions of epinephrine and norepinephrine (at 20 mcg/min), phenylephrine (50 mcg/min) and sodium bicarbonate, as well as calcium chloride and antibiotics. Hyperkalemia was treated with dextrose, insulin and calcium; CVVH was initiated. She coded ~8 h after being admitted to ICU and died.
Autopsy Findings: Post mortem testing: methamfetamine 9300 ng/ml; amfetamine 910 ng/ml. Cause of death: complications of acute methamfetamine intoxication. Autopsy revealed extensive GI hemorrhage and anoxic brain injury.

Case 1209. Acute hallucinogenic amfetamine exposure: undoubtedly responsible.
Scenario/Substances: A 22 y/o male collapsed at a music festival after ingesting "Molly." EMS found him in VF arrest; he was defibrillated, intubated and transported to the ED.
Physical Exam: Unresponsive, pulseless.
Laboratory Data: Na 137 / K 3.1 / Cl 117 / CO_2 17 / BUN 32 / Cr 3.76 / Glu 104, Ca 7.5, Phos 1.7, Mg 1.7, ammonia 28 mcg/dL, ALT 1376, AST 2081, bilirubin 2.7, lactate 3.2 mmol/L, CK 24365. Serum APAP and salicylate not detected; UDS positive for amfetamines and benzodiazepines.
Clinical Course: The patient had ROSC prior to ED arrival; he was minimally responsive with diaphoresis, mydriasis and intermittent convulsions; T 41.7 °C. He received IVFs, diazepam, dantrolene and active cooling before being transferred to a tertiary care center. MRI showed diffuse axonal injury and patient was declared brain dead. Based on the prognosis, the family opted for institution of comfort measures and he died on Day 2.
Autopsy Findings: Not performed per family request (organ donation).

Case 1318. Acute-on-chronic, phenibut ingestion: contributory.
Scenario/Substances: A 62 y/o male was found unconscious at his home when family called EMS. EMS gave naloxone without effect, gave diazepam for possible seizure activity and transported him to the ED. He had recently purchased phenibut on the internet.
Past Medical History: Diabetes mellitus, CAD s/p stents, CHF with AICD, obstructive sleep apnea, COPD, pulmonary fibrosis, hypothyroidism, pancreatitis, anxiety, depression.
Physical Exam: Intubated and sedated with exophthalmos. BP 132/76, HR 75, RR18, T 36.7 °C, O_2 sat 99%.
Laboratory Data: PT 14.3, AST 30, ALT 23, BUN 17, Cr 1.1, lactate1.9 mmol/L. Serum APAP, ethanol and salicylate not detected. UDS positive for benzodiazepines and opiates. UDS by GC/MS: hydrocodone, nicotine, caffeine, diphenhydramine, mirtazapine, and phenibut.
Clinical Course: In the ED he was intubated for respiratory distress and admitted to the ICU. He developed ARDS and was treated with bronchodilators, steroids, antibiotics and antifungals, for presumed aspiration pneumonia and septic shock, but remained febrile. He required prone ventilation and paralysis to maintain oxygenation and norepinephrine for hypotension. He developed AG metabolic acidosis with a peak lactate of 9.4 mmol/L on Day 2. BP improved transiently on Day 5 permitting temporary cessation of vasopressors. Liver enzymes peaked at AST 1578 and ALT 1004, believed due to hypoperfusion. Despite aggressive ventilator management, oxygenation became progressively more difficult. Based on the prognosis, the family opted for institution of comfort measures and he died on Day 8. His pre-existing medical conditions (including COPD) were thought to have been contributory.
Autopsy Findings: Not performed.

Case 1370. Acute pentobarbital, phenytoin, venlafaxine and simvastatin ingestion: undoubtedly responsible.
Scenario/Substances: A53 y/o female (employed in a veterinarian's office) was found unresponsive in a hotel room ~10 h after ingesting animal euthanasia medications (pentobarbital and phenytoin), venlafaxine and her own simvastatin.
Physical Exam: BP 107/69, HR 88, T 33.6 °C, O_2 sat 100% on a ventilator with FiO_2 1.0. GCS 3 with no sedation, pupils fixed and dilated.
Clinical Course: She was intubated upon presentation to the ED. Hypotension was treated with vasopressors, head CT showed "minor head trauma." The patient died ~3 h after ED arrival.
Autopsy Findings: Post-mortem blood phenytoin 12.3 mg/L, pentobarbital 52.1 mg/L, codeine 0.053 mg/L; morphine not detected.

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. They should not be used for interpretation. These values were taken from Harrison's (14), Goldfrank's (15) or Dart (16).

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

Abbreviations & Normal Ranges:

~	= approximately
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 or mmol/L
BE	= Base Excess [±2] mEq/L or mmol/L
ACLS	= advanced cardiac life support, protocol for the provision of cardiac resuscitation
ADHD	= attention deficit hyperactivity disorder
AF	= atrial fibrillation
AG	= anion gap Na – (Cl + HCO_3) [12 ± 4] mEq/L or mmol/L
AICD	= automatic implanted cardiodefibrillator
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

amfetamines (hallucinogenic) = one or more of the products (6-APB, bath salts, plant food, Bliss, Ivory Wave, Purple Wave, Vanilla Sky, et al) or chemicals (3,4 methylenedioxypyrovalerone [MDPV], 6-(2-aminopropyl)benzofuran [6-APB], butylone, desoxypipradrol [2-DPMP], ethylone, flephedrone, naphyrone, mephedrone, methylenedioxypyrovalerone, methylone, methcathinone, et al)
APAP = acetaminophen (acetyl-para-aminophenol)
APLS = advanced pediatric life support, protocol for the provision of cardiac resuscitation
ARDS = acute respiratory distress syndrome
AST = Aspartate aminotransferase [12-38] U/L = (SGOT)
AV block = atrio-ventricular block
BAL = British anti-Lewisite
BE = base excess [±2] mEq/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, direct [0.1, 0.4] mg/dL, indirect [0.2, 0.9] mg/dL
BiPAP = bilevel positive airway pressure, pressure support with 2 levels of continuous positive airway pressure
BLQ = below the limit of quantitation
BMI = body mass index
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 (<75y/o), > 450 pg/mL (>75y/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
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] mmol/L
CNS = central nervous system
CO_2 = Carbon Dioxide Serum or Plasma [22-26] mmol/L
COHb = carboxyhemoglobin (RR <3%)
COPD = chronic obstructive pulmonary disease
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
CVVHD = continuous venovenous hemodiafiltration
CxR = chest radiograph, chest xray
D10W = 10% dextrose in water
D50W = 50% dextrose in water
D5NS = 5% dextrose in normal saline
D5W = 5% dextrose in water
Day = when capitalized, Day = hospital day, i.e., days since admission to the initial hospital for this exposure
DIC = disseminated intravascular coagulation
DNR = do not resuscitate
Dx = diagnosis
ECG = electrocardiogram (EKG), leads = I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6
ECHO = echocardiogram
ECMO = extracorporeal membrane oxygenation
ED = emergency department, in these narratives refers to the initial health care facility
EDDP = principal methadone metabolite, 2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine
EEG = electroencephalogram
EF = ejection fraction
ELISA = enzyme-linked immunosorbent assay
EMS = emergency medical services, paramedics, the first responders
ER = extended release (sustained release)
ETT = endotracheal tube
FFP = fresh frozen plasma
FiO_2 = fraction of inspired oxygen
g = grams
g/dL = grams per deciliter
GCS = Glasgow Coma Score, ranges from 3 to 15
GERD = gastroesophageal reflux disease
GI = gastrointestinal
Glu = glucose, fasting [75-110] mg/dL
h = hours
HBO = hyperbaric oxygen treatment/therapy
HCF = health care facility
HCG = human chorionic gonadotropin test for pregnancy
HCO_3 = bicarbonate [22 – 28] mEq/L or mmol/L
HCP = health care provider
Hct = hematocrit [35.4-44.4] % females, [38.8-46.4] % males
HD = hemodialysis
Hgb = hemoglobin [12.0-15.8] g/dL females, [13.3-16.2] g/dL males
HIV = human immunodeficiency virus
Hour = when capitalized, Hour = hours since admission to the ED/hospital
HR = HR, beats per min
IABP = intraaortic balloon pump
ICP = intracranial pressure
ICU = intensive care unit
IgE = immunoglobulin E
ILE = intravenous lipid emulsion (20%)
IM = intramuscular
INR = international normalized ratio (PT to control) [0.8-1-2]
IU/L = international units per Liter
IV = intravenous
IVF = intravenous fluid(s)
K = potassium, [3.5-5] mmol/L
kg = kilogram
L = Liter
Lactate = lactic acid [4.5-14.4] mg/dL arterial, [4.5-19.8] mg/dL venous [0.5-1.6] mmol/L arterial, [0.5-2.2] mmol/L venous
LBBB = left bundle branch block on ECG
LVEF = left ventricular ejection fraction
m/o = months old
MAP = mean arterial pressure
mcg/dL = micrograms per deciliter
mcg/L = micrograms per liter
mcg/min = micrograms per minute
mcg/mL = micrograms per milliliter
mcmol/L = micromoles per liter
MDA = 3,4-methylenedioxyamfetamine
MDMA = methylenedioxymethamfetamine (ecstasy, molly)
ME = medical examiner
MetHgb = methemoglobin (RR <1%)
mEq = milliequivalents
mEq/L = milliequivalents per liter
Mg = magnesium [1.5-2.3] mg/dL
mg = milligrams
mg/dL = milligrams per deciliter
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
min = minutes
mL = milliliter
mmol/L = millmoles per liter (previously mEq/L)
mosm/kg = milliosmoles per kilogram
mosm/L = milliosmoles per liter
MRI = Magnetic Resonance Imaging
MRSA = methicillin-resistant Staphylococcus aureus
ms = milliseconds

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

Na = sodium [136-146] mmol/L
NAC = n-acetylcysteine
NG = nasogastric
ng/mL = nanograms per milliliter
not detected = analyte below the level of quantitation, negative
NPO = nil per os, nothing by mouth
NRB = non rebreathing mask for O_2 delivery
NS = normal saline
NSTEMI = non-ST segment elevation myocardial infarction
O_2 sat = oxygen percent saturation [94-100]% at sea level
OG = serum osmol gap = measured serum osmolality – calculated serum osmolality [0 ± 10] mOsmol/kg
OR = operating room
Osm = osmole
PALS = pediatric advanced life support
PC = poison center (= PCC, or Poison Control Center)
PCC = prothrombin complex concentrate
PCP = primary care provider
PEA = pulseless electrical activity
PEEP = positive end expiratory pressure
PICU = pediatric intensive care unit
Platelets = platelet count [150-400] x109/L
PO = per os ("by mouth" in Latin)
Potassium = [3.5-5] mmol/L
ppm = parts per million
PR = P-R interval [120-200] msec on the ECG
PRN = as needed
PT = prothrombin time, INR is preferred, but PT may be used if INR is not available
PTA = Prior to admission
PTT = partial thromboplastin time [26.3-39.4] sec
PVC = premature ventricular contraction
QRS = ECG QRS complex duration [60-100] msec
QT = Q to T interval on the ECG waveform, varies with HR
QTc = QT interval corrected for HR, usually QTcB = QT/RR½ (Bazett correction) 1-15 y-o [<440] msec, adult male [<430] msec, adult female [<450] msec
RBBB = right bundle branch block on ECG
RBC = red blood cell(s)
ROSC = return of spontaneous circulation
RPC = regional poison center
RR = respiratory rate, breaths per minute
s/p = status post
SBP = systolic blood pressure
sec = seconds
SL = sublingual
SVT = supraventricular tachycardia
T (oral) = Temperature (oral) [36.4, 37.2] °C
T (rectal) = Temperature (rectal) [36.4, 37.2] °C
T (tympanic) = Temperature (tympanic) [36.4, 37.2] °C
t-bili = total bilirubin
THC = tetrahydrocannabinol
THC Homolog = synthetic cannabinoid receptor agonists, one or more of the products (Blaze, Dawn, herbal incense, K2, Red X, spice, et al) or chemicals (cannabicyclohexanol, CP-47,497, JWH-018, JWH-073, JWH-200, et al)
TPN = total parenteral nutrition
Tprot = total protein
Troponin I = normal range [0-0.08] ng/mL, Cut-off for MI >0.04 ng/mL
U = units
U/dL = units per deciliter
U/L = units per liter
U/mL = units per milliliter
UA = urinalysis
UDS = urine drug screen
Urea nitrogen (BUN) = [6-17] mg/dL
VBG = venous blood gases
VF = ventricular fibrillation
VSD = ventricular septal defect
VT = Ventricular tachycardia
WBC = white blood count, see leukocyte count
WNL = within normal limits
y/o = years old