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AAPCC 2008 ANNUAL REPORT OF THE NPDS

2008 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS): 26th Annual Report

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Abstract

***Background*:** This is the 26th Annual Report of the American Association of Poison Control Centers (AAPCC; http://www.aapcc.org) National Poison Data System (NPDS). During 2008, 60 of the nation's 61 US poison centers uploaded case data automatically. The median upload time was 24 [7.2, 112] (median [25%, 75%]) minutes creating a real-time national exposure and information database and surveillance system.

***Methodology*:** We analyzed the case data tabulating specific indices from NPDS. The methodology was similar to that of previous years. Where changes were introduced, the differences are identified. Poison center cases with medical outcomes of death were evaluated by a team of 28 medical and clinical toxicologist reviewers using an ordinal scale of 1–6 to determine Relative Contribution to Fatality (RCF) from the exposure to the death.

***Results*:** In 2008, 4,333,012 calls were captured by NPDS: 2,491,049 closed human exposure cases, 130,495 animal exposures, 1,703,762 information calls, 7,336 human confirmed nonexposures, and 370 animal confirmed nonexposures. The top five substances most frequently involved in all human exposures were analgesics (13.3%), cosmetics/personal care products (9.0%), household cleaning substances (8.6%), sedatives/hypnotics/antipsychotics (6.6%), and foreign bodies/toys/miscellaneous (5.2%). The top five most common exposures in children age 5 or less were cosmetics/personal care products (13.5%), analgesics (9.7%), household cleaning substances (9.7%), foreign bodies/toys/miscellaneous (7.5%), and topical preparations (6.9%). Drug identification requests comprised 66.8% of all information calls. NPDS documented 1,756 human exposures resulting in death with 1,315 human fatalities deemed related with an RCF of at least contributory (1, 2, or 3).

***Conclusions*:** Poisoning continues to be a significant cause of morbidity and mortality in the US. The near real-time, always current status of NPDS represents a national resource to collect and monitor US poisoning exposure cases and information calls. NPDS continues its mission as one of the few real-time national surveillance systems in existence, providing a model public health surveillance system for all types of exposures, public health event identification, resilience response and situational awareness tracking.

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

Introduction

Sixty-one 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 submit information calls and exposure case data collected during the course of providing patient tailored exposure management to callers. This data is compiled by the American Association of Poison Control Centers (AAPCC) into its National Poison Data System (NPDS). PCs place emphasis on exposure management, accurate data collection and coding, and the continuing need for poison related public and professional education. The centers' health care professionals are available free of charge to callers 24-hours a day every day of the year. PCs respond to questions from both the public and health care professionals. The continuous staff dedication at regional poison centers is manifest as the number of exposure and information calls continues to rise (Table 1A). Calls to PCs either involve an exposed human or animal (EXPOSURE CALL) or a request for information (INFORMATION CALL) with no person or animal exposed to a substance.

What's New in NPDS and the Annual Report

Several enhancements were made to the tables and figures in this 26th Annual Report. One of the goals of the writing team has been to remove inconsistencies and improve the reader's ability to clearly understand the data. Our first foray into this area was the new version of Table 22 introduced with the 2006 Annual Report. This year corrections for clarity were made to the age labels in all tables. NPDS age values may only be integers. So one can not be age 5½ or 20½, they are either 5 or 20 respectively. All major age brackets were conformed to the following major categories: ≤ 5 years, 6–12 years, 13–19 years, ≥ 20 years, and unknown. Only the headers were changed for clarity, this did not effect how the data were summarized. As in previous years, the complete report

Table 1A. Growth of the AAPCC population served and exposure reporting (1983–2008)

Year	No. of participating centers	Population served (in millions)	Human exposures reported	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	301.3	2,482,041	8.4
2008	61	304.1	2,491,049	8.2
Total			48,456,030	

with all tables has been included in the print and online versions of the report. To better assist readers Tables 21 and 22 are also provided via separate electronic links in the internet version of this report.

Linear least squares regression lines were added to the 5 call frequencies reported (Figures 1 and 2). Doubling times and confidence intervals (CI) provide a simple measure of relative rate of increase. The data array attached to Figure 3 shows the Mean ± SD [90% CI] by day of the week for each of the call types in Figures 1 and 2. The doubling time for human exposure calls was 38.4 [90% CI:36.4, 40.5] years compared to only 6.5 [90% CI:6.4, 6.7] years for information calls and 3.98 [90% CI: 3.94, 4.02] for all drug identification calls. Clearly the slope for drug identification calls is steeper than human exposures and all information calls. With the current economic crisis and associated impact on PC funding, some PCs have elected to terminate drug identification services. This clearly demonstrated ever increasing demand for drug identification assistance will need to be addressed as it impacts PC available resources and staffing. In addition, drug identification request data adds perspective on prescribing usage and diversion patterns.

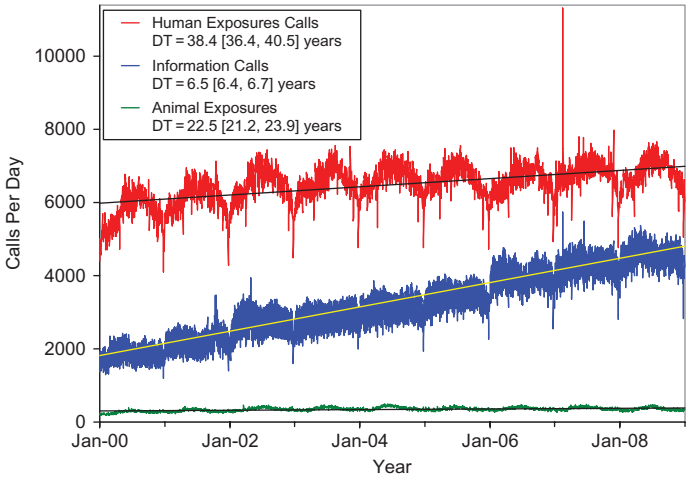


Fig. 1. Human Exposure Calls, Information Calls and Animal Exposure Calls by Day since January 1, 2000.

Line shows least-squares linear regression, DT = doubling time from the slope of the linear regression of the log-calls/day and 90% confidence interval.

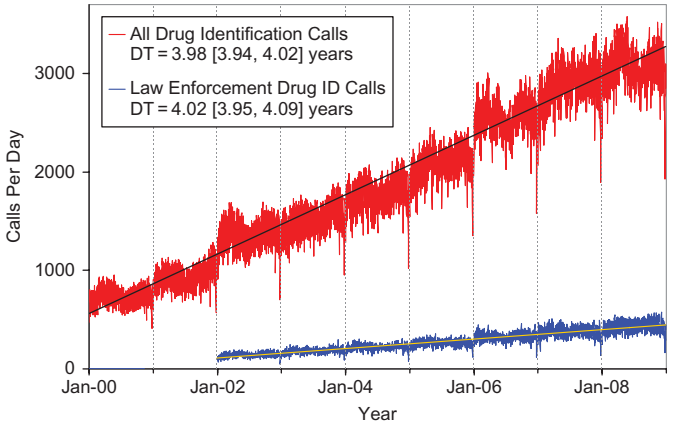


Fig. 2. Drug Identification and Law Enforcement Drug Identification Calls by Day since January 1, 2000.

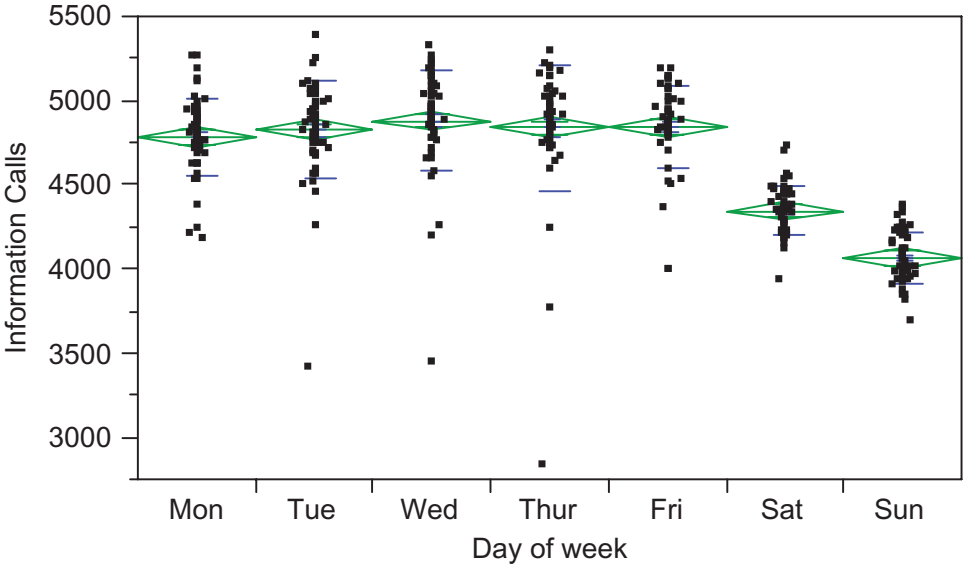
Line shows least-squares linear regression, DT = doubling time from the slope of the linear regression of the log-calls/day and 90% confidence interval.

Figure 3 and its associated table quantifies call rates by "day of week" for human and animal exposures, all information calls, and the subsets all drug identification and law enforcement only requests. All group patterns are statistically significant with the largest absolute volume decrease being all information calls for Saturdays and Sundays. Figure 3 presents a statistical/graphical summary for information calls. Detailed analyses of this type can be used to assist PCs to maintain optimal staffing. In this example, based on information calls alone, centers could down-staff for management of information calls on Saturdays and Sundays. Application of these techniques could help PCs save valuable budget dollars. Curiously, the fewest number of information calls was Christmas day.

Previous versions of Table 19, Comparisons of Death Data (1985–2008), mixed deaths associated with exposures and poison related fatalities as categorized by at least 3 different fatality scoring systems. Death case data was meticulously reviewed back to 1985 to establish that most years reported absolute counts of cases with medical outcomes of death or death, indirect report. Table 19 now reports all years this way. We believe that this change will make it easier to compare absolute death counts from year to year. Table 19 can still be created using the NPDS application and including the desired Relative Contribution to Fatality (RCF) score. There have been several positive changes to Table 21 as well. A standardized set of alternate names and a standardized set of analyte names were created. Both names are lower case and uniformly applied throughout the table.

This year, Table 21 lists human exposures with medical outcome of death or death, indirect report regardless of RCF score. Deaths that were pregnant have also been flagged to allow for rapid identification. The Fatality Review process continued with the new system introduced in 2007. However, the fatality case selection process for narrative publication excluded cases with medical outcome of death, indirect report. Two pediatrician medical toxicologist Fatality Reviewers volunteered to review exclusively the 53 pediatric deaths for 2008. This was undertaken to provide a more consistent and enhanced review of these important cases.

In 2008, numerous enhancements were introduced in the NPDS application. Many of these focused on surveillance and are detailed in the Surveillance section. Transcending all of the improvements were the two NPDS web services: aggregate case counts (total and human exposure call volumes, and clinical effects volume by geographical and time



Day of the Week, Mean ± SD [90% confidence interval]							
Calls per Day for	**Mon**	**Tue**	**Wed**	**Thur**	**Fri**	**Sat**	**Sun**
	(N = 52)	(N = 53)	(N = 53)	(N = 52)	(N = 52)	(N = 52)	(N = 52)
Human Exposure Calls	7021 ± 359 [6938, 7105]	6889 ± 339 [6811, 6967]	6896 ± 395 [6805, 6987]	6863 ± 431 [6762, 6963]	6722 ± 367 [6637, 6807]	6632 ± 342 [6553, 6712]	6616 ± 348 [6535, 6697]
Information Calls	4784 ± 230 [4731, 4838]	4823 ± 290 [4757, 4890]	4879 ± 300 [4810, 4948]	4837 ± 374 [4750, 4924]	4844 ± 247 [4786, 4901]	4346 ± 143 [4313, 4379]	4064 ± 153 [4028, 4100]
Animal Exposures	368 ± 42 [358, 378]	345 ± 43 [335, 355]	356 ± 43 [347, 366]	355 ± 47 [344, 366]	355 ± 38 [347, 364]	360 ± 42 [351, 370]	356 ± 43 [346, 366]
All Drug Identification Calls	3105 ± 161 [3067, 3142]	3159 ± 190 [3115, 3203]	3216 ± 200 [3171, 3262]	3198 ± 245 [3141, 3255]	3265 ± 180 [3223, 3306]	3019 ± 120 [2991, 3046]	2806 ± 118 [2778, 2833]
Law Enforcement Drug ID Calls	384 ± 37 [375, 392]	436 ± 46 [426, 447]	462 ± 51 [450, 474]	482 ± 66 [467, 498]	499 ± 45 [489, 510]	428 ± 31 [421, 435]	348 ± 30 [341, 355]

Fig. 3. Information Calls (total) for 2008 by Day of Week.

Means and SEM (diamonds) and SDs (horizontal lines) by Oneway ANOVA, F(6, 1) = 78.3, p<0.0001, Rsquare = 0.566, N=366. Fewest calls (N=2825) was Thursday December 25, 2008. Data array shows the Mean ± SD [90% confidence interval] by day of the week for each of the call types in Figures 1 and 2.

period of interest) and the full case information web service. These web services provide data to external systems or viewers to analyze NPDS data in ways not currently possible in the NPDS application. The aggregate web service provides total call volume, human exposure call volume, or clinical effects counts linked by AND or OR allowing an external system such as RODS (Real-time Outbreak and Disease Surveillance, University of Pittsburgh, Department of Biomedical Informatics) to create time-series. Unique to NPDS, the aggregate case count web service is not only accessible by external computer systems but also directly by system users to create their own time series without the need for external system software. The full case web service provides entire cases or portions of cases to authorized users. Queries for both web services may be done for any date range and for any time period of interest (down to the hour) and by Center, State or ZIP code. Time series technology was not an initial NPDS function but the web service allows for time series creation. The web services also allow for NPDS data to be provisioned in a federated manner where the data is always current in NPDS and can be readily accessed as needed without the need for costly cloning and warehousing.

The communications modules were also completed for the NPDS fatality and surveillance teams allowing for all correspondence to be stored within a fatality case or surveillance anomaly. Finally a new security model was introduced realizing the vision of the individual regional poison center controlling access to its data for its own users, sharing data with other centers, or allowing access to data by respective external organizations like State and local health departments.

Methods

Characterization of participating Poison Centers

All 61 participating centers submitted data to AAPCC for 2008. Fifty-eight centers (95%) were certified by AAPCC at

the end of 2008. The entire population of the 50 states, American Samoa, the District of Columbia, Federated States of Micronesia, Guam, Puerto Rico, and the US Virgin Islands was served by PCs in 2008.

The average number of human exposure cases managed per day by all US poison centers was 6,825. Similar to other years, higher volumes were observed in the warmer months, with a mean of 6,121 cases per day in June compared with 5,073 per day in January. On average, ignoring the time of day and seasonal fluctuations, US PCs received one call concerning a suspected or actual human exposure every 12.7 seconds. The median time to upload data is 24 [7.2, 112] (median [25%, 75%]) minutes creating a real-time national exposure database and surveillance system.

Call management – specialized poison exposure emergency providers

Poison center operation as well as clinical education and instruction are directed by Managing Directors (most are PharmDs or RNs with American Board of Applied Toxicology [ABAT] board certification). Medical direction is provided by Medical Directors who are board-certified physician medical toxicologists. At some poison centers, the Managing and Medical Director positions are held by the same person.

Calls received at US PCs are managed by healthcare professionals who have received specialized training in toxicology and managing exposure emergencies. These providers include medical and clinical toxicologists, registered nurses, doctors of pharmacy, pharmacists, chemists, hazardous materials specialists, and epidemiologists. Specialists in Poison Information (SPIs) are primarily registered nurses, PharmDs, and pharmacists. They work under the supervision of a Certified Specialist in Poison Information (CSPI). SPIs must log a minimum of 2,000 calls over a 12 month period to become eligible to take the CSPI examination for specialists in poison information. Poison Information Providers (PIPs) are allied healthcare professionals. They manage information-type and low acuity (non-hospital) calls and work under the supervision of a CSPI. Of note is the fact that no nursing or pharmacy school offers a toxicology curriculum designed for poison center work and SPIs must be trained in programs offered by their respective PC.

NPDS – near real-time data capture

Launched on 12 April 2006, NPDS is the data repository for the 61 regional poison centers. In 2008, 60 of the 61 US PCs uploaded case data automatically to NPDS with one center uploading data periodically (beginning on 22 January 2009, all centers submitted data near real-time). The web-based NPDS software facilitates querying, reporting and a myriad of surveillance uses allowing AAPCC, its member centers and public health agencies to utilize US poisoning exposure data. Users are able to access local and regional data for their own areas and view national aggregate data. The application allows for increased "drill-down" capability and mapping via a geographic information system (GIS). Custom surveillance definitions are available along with ad hoc reporting tools. Information in the NPDS database is dynamic. Each year the database is locked prior to extraction of annual report data to prevent inadvertent changes and ensure consistent, reproducible reports. The 2008 database was locked on 9 October 2009 at 1905 hours EDT.

Annual report case inclusion criteria

The information in this report reflects only those cases that are not duplicates and classified 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. Cases are followed as to precise a medical outcome as possible. Depending on the case specifics, most calls are "closed" within the first hours of the initial call. Some calls regarding complex hospitalized patients or cases resulting in death may remain open for weeks or months while data continues to be collected. Follow-up calls provide a proven mechanism for monitoring the appropriateness of management recommendations, augmenting patient guidelines and providing poison prevention education, enabling continual updates of case information as well as obtaining final/known medical outcome status to make the data collected as accurate and complete as possible.

NPDS surveillance

As previously noted, 60 of the 61 US PCs upload case data automatically to NPDS. This unique near real-time upload is the foundation of the NPDS surveillance system permitting both spatial and temporal case volume and case based surveillance. NPDS software allows creation of volume and case based definitions at will. Definitions can then be applied to national, regional, state, or ZIP code coverage areas. Geocentric definitions can also be created. This functionality is available not only to the AAPCC surveillance team, but to every regional poison center. PCs also have the ability to share NPDS real-time surveillance technology with external organizations such as their state and local health departments or other regulatory agencies. Another unique NPDS feature is the ability to generate system alerts on adverse drug events and other products of public health interest like contaminated food or product recalls. NPDS can thus provide real-time adverse event monitoring and surveillance for resilience response and situational awareness.

Surveillance definitions can be created to monitor a variety of volume parameters using a multiplicity of mathematical options with historical baseline periods from 1 to 8 years. Case based definitions for any desired substance or commercial product in the product database of over 350,000 entries

are also available (Micromedex® Healthcare Series [Internet database]. Greenwood Village, CO: Thomson Reuters [Healthcare] Inc.). NPDS surveillance tools include:

- Volume alerts
    1. Total Call Volume
    2. Human Exposure Call Volume
    3. Clinical Effects Volume (signs and symptoms or laboratory abnormalities)
- Case Based Surveillance Definitions
    1. Substance
    2. Clinical Effects
    3. Various NPDS data fields
    4. Boolean field expressions

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

AAPCC Surveillance team toxicologists review surveillance definitions on a regular basis to fine-tune the queries. CDC as well as state and local health departments with NPDS access as granted by their respective regional poison centers also have the ability to create surveillance definitions to respond to emerging public health events.

Fatality case review

NPDS fatality cases can be recorded as either DEATH or DEATH, INDIRECT REPORT. Medical outcome of death is by direct report. A reported fatality is coded as "indirect" if the PC was, in most cases, not directly contacted by the medical team, coroner, or family member, or post mortem reports were sent by the coroner or medical examiner for PC review, or the PC summarized a news account. However, a coroner or medical examiner or family member calling the PC with a question about the cause of death or a family member requesting interpretation of a toxicology laboratory result from a case not previously discussed with the PC is coded as a Death rather than Death, indirect report.

Although poison centers may report DEATH as an outcome, the death may not be the direct result of the poisoning exposure. We define Poison-related fatality as a death that was judged by the Fatality Review Team to be at least contributory to the exposure.

During the year, each death case is abstracted by the reporting regional PC center and verified for accuracy. These cases are then systematically reviewed at year end by Fatality Case Review Teams (CRT). Each CRT consisted of the following members:

Author – the PC medical director or their designee responsible for the case data entered, the abstract, and the initial choices of RCF and Substances;
Lead Reviewer – Medical Director or Managing Director (assigned from a PC other than the center from which the individual case originated using pseudorandom numbers) to provide the primary review of the case;
Peer Reviewer – Managing Director (if the lead reviewer was a Medical Director) or Medical Director (if the lead reviewer was a Managing Director) assigned (using pseudorandom numbers) to provide the second (complementary) review of the case;
Manager – Louis Cantilena MD (east coast) or Daniel A. Spyker MD (west coast) assigned by PC ZIP code.

The fundamental classification for the NPDS fatalities reporting is whether the exposure caused the death. The review teams assessed the following parameters for each fatality case:

1. Relative contribution of the toxic exposure to the death, RCF (see grading system below);
2. Cause Rank of the substances involved as described below;
3. Abstract scoring (see scoring system below);
4. Degree of agreement between the Abstract and the NPDS database entries for that case;
5. Degree of agreement and if resolution was required between determinations made by members of the CRT.

Cause Rank is a separate field associated with each substance to address the circumstance where 2 or more substances were judged causative, but we lack evidence to distinguish between them. Cause Rank defaults to the same number as the Substance Rank, 1, 2, 3, … so it does not require additional data entry in the usual single substance or clear ranking circumstances. Changing Cause Rank permits assignment of equivalence in the event the reviewer cannot distinguish between causative substances, e.g., they may rank substances as 1, 1, 3 instead of 1,2,3 and so forth.

The primary basis of the case classification and abstract evaluations were the:

Clinical Case Evidence – includes a variety of information such as the data entered into NPDS and, when available, the medical examiner's report.

Medical Examiner's Report – the postmortem examination results, autopsy report or the coroner's report were always sought and, when available, became an important part of fatality case review.

Relative Contribution to Fatality

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

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

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

Contributory – In the opinion of the CRT the Clinical Case Evidence establishes that the SUBSTANCES contributed to the death, but did not solely cause the death. That is, the SUBSTANCES alone would not have caused the death, but combined with other factors, were partially responsible for the death.

Probably not responsible – In the opinion of the CRT the Clinical Case Evidence establishes to a reasonable probability, but not conclusively, that the SUBSTANCES associated with the death did not cause the death

Clearly not responsible – In the opinion of the CRT the Clinical Case Evidence establishes beyond a reasonable doubt that the SUBSTANCES did not cause this death.

Unknown – In the opinion of the CRT the Clinical Case Evidence is insufficient to impute or refute a causative relationship for the SUBSTANCES in this death.

Review team procedure

A total of 14 review teams (28 individuals) volunteered to participate in the review. Reviewers were Medical Toxicologists (N = 15) or Clinical Toxicologists (N = 13). This year, a separate team of two Medical Toxicologists focused on the 53 pediatric fatalities. Names and affiliations of the reviewers are listed in Appendix A. Training and communication included weekly teleconferences, written guidance documents, spreadsheets (for assignment and reporting), the NPDS-Fatality Module (NPDS-FM) and individual telephone contacts. The initial 1,756 fatalities were randomly assigned such that each of the 28 individuals served as Lead Reviewer on 65–67 adult cases or 26–27 pediatric cases. Each individual peer reviewed another similar number of cases. For each fatality assigned, the **Lead Reviewer**:

1. Recorded their independent assessment of the RCF;
2. Recorded their assessment of the author's listing and ranking of the substance(s), and edited the case abstract as needed;
3. Scored the fatality case in regard to quality/completeness and novelty/educational value;
4. Evaluated the degree of agreement between the abstract and the NPDS database entries for that case;
5. Led the resolution of any questions with the CRT and Manager as required.

For each fatality assigned, the **Peer Reviewer**:

1. Recorded the agreement between the abstract and the NPDS database as described above for the Lead reviewer;
2. Reviewed the decisions of the Lead Reviewer (steps 1–4) and recorded their agreement with the Lead Reviewer.

Final decisions as to the fatality category and involved substances and sequence were derived from the Clinical Case Evidence. In most cases, the 3 members of the CRT were able to reach consensus. Decisions, which could not be resolved within the CRT, were queried to the responsible Manager for review and discussion.

Selection of abstracts for publication

The 89 abstracts included in Appendix C were selected for publication in a 3-stage process consisting of qualifying, ranking and reading. Qualifying was based on the RCF. Project reviewers recommended qualifying only RCF = 1, 2 or 3 (Undoubtedly Responsible, Probably Responsible or Contributory) as eligible for publication. Fatalities by Indirect report were not eligible for 2008. Qualifying cases thus numbered 1136. Ranking was based on the number of substances (33%) and weighted abstract scores (67%). The weightings were the averages chosen by the review team recommendations in 2006. Each was multiplied by the respective factors to obtain a weighted publication score: Hospital records * 4.4 + Postmortem * 7.6 + Blood levels * 6.9 + Quality/Completeness * 6.4 + Novelty/Educational value * 6.0.

The top ranked 200 abstracts were each read by 5 of the individual reviewers (Durback-Morris, Geller, Sangalli, Simone, Wiegand) and the 2 managers (Cantilena and Spyker). Each reader judged each abstract as "publish" or "omit" and all abstracts receiving 4 or more publish votes were selected, further edited and cross-reviewed by the 2 managers and a third writer (Rumack).

Results

2008 case summary

In 2008, the 61 participating PCs logged 4,333,012 total cases including 2,491,049 closed human exposure cases (Table 1A), 130,495 animal exposures (Table 1B), 1,703,762 information calls (Table 1C), 7,336 human confirmed nonexposures, and 370 animal confirmed nonexposures. An additional 1,296 calls were still open at the time of database lock.

Table 1B. Non-human exposures by animal type

Animal	Number	%
Dog	118,030	90.4
Cat	11,007	8.4
Bird	381	0.3
Rodent/lagomorph	306	0.2
Horse	259	0.2
Cow	81	0.1
Sheep/goat	73	0.1
Aquatic	46	0.0
Other	312	0.2
Total	130,495	100.0

The cumulative AAPCC database now contains close to 48.5 million human exposure case records (Table 1A). A total of 11,333,063 information calls (as described below) have been logged by NPDS since the year 2000. Figure 1 shows the human exposures, information calls and animal exposures by day since 2000. Linear regression and the least squares regression lines were added to the call frequencies reported. All were highly statistically significant ($p < 0.001$, $N = 3288$). Regressions of the natural log of the same data permitted calculation of a doubling time = ln(2)/slope (just as is done to calculate a disappearance half-life). We report these doubling times and 90% confidence intervals as a measure of relative rate of increase. The 90% CI was chosen as it gives the 5% lower bound and 95% upper bound.

PCs made 2,897,491 follow-up calls (or a series of calls) in 2008. Follow-up calls were done in 45.1% of human exposure cases. One follow-up call was made in 22.2% of human exposure cases, and multiple follow-up calls (range 2–128) were placed in 22.9% of cases.

Information calls to Poison Centers

Data from 1,703,762 information calls to PCs in 2008 (Table 1C) was transmitted to NPDS, including calls in optional reporting categories such as prevention/safety/education (36,804), administrative (27,727) and caller referral (64,081). Overall, the volume of information calls handled by US PCs increased by 6.3% over the 1,602,489 calls handled in 2007.[1]

The most frequent information call was for drug identification, comprising 1,138,254 calls to PCs during the year (Figure 2). Of these, 147,144 (12.9%) could not be identified over the telephone. We examined call rates for 2008 by "day of week" using Analysis of Variance (ANOVA) with day as a nominal variable. Figure 3 shows a graphical summary for information calls where ANOVA $F(6, 1) = 78.3$, $p < 0.0001$, Rsquare = 0.566, $N = 366$. The majority of the drug identification calls were received from the public, followed by law enforcement and health professionals. Most of the drug identification requests were regarding drugs sometimes involved in abuse; however, these cases were categorized based on the drug's abuse potential without knowledge of whether abuse was actually intended.

Table 1C. Distribution of information calls

Information call type	No. of calls	% of info. calls
Drug identification		
Public inquiry: Drug sometimes involved in abuse	535,733	31.44
Public inquiry: Drug not known to be abused	260,910	15.31
Public inquiry: Unknown abuse potential	10,874	0.64
Public inquiry: Unable to identify	121,193	7.11
HCP inquiry: Drug sometimes involved in abuse	12,444	0.73
HCP inquiry: Drug not known to be abused	22,995	1.35
HCP inquiry: Unknown abuse potential	998	0.06
HCP inquiry: Unable to identify	9,804	0.58
Law Enf. Inquiry: Drug sometimes involved in abuse	91,204	5.35
Law Enf. Inquiry: Drug not known to be abused	49,601	2.91
Law Enf. Inquiry: Unknown abuse potential	1,994	0.12
Law Enf. Inquiry: Unable to identify	16,147	0.95
Other drug ID	4,357	0.26
Subtotal	1,138,254	66.81
Drug information		
Adverse effects (no known exposure)	15,920	0.93
Brand/generic name clarifications	6,189	0.36
Calculations	274	0.02
Compatibility of parenteral medications	255	0.01
Compounding	1,038	0.06
Contraindications	2,144	0.13
Dietary supplement, herbal, and homeopathic	1,024	0.06
Dosage	16,908	0.99
Dosage form/formulation	3,946	0.23
Drug use during breast-feeding	5,912	0.35
Drug-drug interactions	34,838	2.04
Drug-food interactions	1,958	0.11
Foreign drug	1,442	0.08
Generic substitution	5,735	0.34
Indications/therapeutic use	69,914	4.10
Medication administration	5,597	0.33
Medication availability	1,314	0.08
Medication disposal	3,999	0.23
Pharmacokinetics	3,189	0.19
Pharmacology	2,867	0.17
Regulatory	5,127	0.30
Stability/storage	3,930	0.23
Therapeutic drug monitoring	904	0.05
Other drug info	35,660	2.09
Subtotal	230,084	13.50
Environmental information		
Air quality	2,165	0.13
Carbon monoxide – no known patient(s)	1,063	0.06
Carbon monoxide alarm use	544	0.03
Chem/bioterrorism/weapons (suspected or confirmed)	32	0.00
Clarification of media reports of environmental contamination	42	0.00
Clarification of substances involved in a HAZMAT incident - no known victim(s)	152	0.01
General questions about contamination of air and/or soil	707	0.04
HAZMAT planning	171	0.01
Lead - no known patient(s)	1,064	0.06
Mercury thermometer cleanup	4,195	0.25
Mercury (excluding thermometers) cleanup	3,842	0.23
Notification of a HAZMAT incident - no known patient(s)	561	0.03
Pesticide application by a professional pest control operator	714	0.04
Pesticides (other)	2,991	0.18
Potential toxicity of chemicals in the environment	1,554	0.09
Radiation	85	0.00
Safe disposal of chemicals	2,165	0.13
Water purity/contamination	970	0.06
Other environmental	6,080	0.36
Subtotal	29,097	1.71
Medical information		
Dental questions	161	0.01
Diagnostic or treatment recommendations for diseases or conditions – non-toxicology	10,327	0.61
Disease prevention	864	0.05
Explanation of disease states	1,585	0.09
General first-aid	1,854	0.11
Interpretation of non-toxicology laboratory reports	177	0.01

(*Continued*)

Table 1C. (*Continued*)

Information call type	No. of calls	% of info. calls
Medical terminology questions	110	0.01
Rabies – no known patient(s)	390	0.02
Sunburn management	174	0.01
Other medical	16,057	0.94
Subtotal	31,699	1.86
Occupational information		
Occupational treatment/first-aid guidelines - no known patient(s)	53	0.00
Information on chemicals in the workplace	193	0.01
MSDS interpretation	375	0.02
Occupational MSDS requests	1,175	0.07
Routine toxicity monitoring	49	0.00
Safe handling of workplace chemicals	120	0.01
Other occupational	253	0.01
Subtotal	2,218	0.13
Poison information		
Analytical toxicology	947	0.06
Carcinogenicity	124	0.01
Food poisoning – no known patient(s)	3,946	0.23
Food preparation/handling practices	7,921	0.46
General toxicity	39,742	2.33
Mutagenicity	74	0.00
Plant toxicity	5,891	0.35
Recalls of non-drug products (including food)	840	0.05
Safe use of household products	3,919	0.23
Toxicology information for legal use/litigation	292	0.02
Other poison	20,825	1.22
Subtotal	84,521	4.96
Prevention/Safety/Education		
Confirmation of poison center number	15,521	0.91
General (non-poison) injury prevention requests	958	0.06
Media requests	354	0.02
Poison prevention material requests	16,715	0.98
Poison prevention week date inquiries	91	0.01
Professional education presentation requests	513	0.03
Public education presentation requests	838	0.05
Other prevention	1,814	0.11
Subtotal	36,804	2.16
Teratogenicity information		
Teratogenicity	4,794	0.28
Subtotal	4,794	0.28
Other information		
Other	42,801	2.51
Subtotal	42,801	2.51
Substance Abuse		
Drug screen information	9,485	0.56
Effects of illicit substances – no known patient(s)	374	0.02
New trend information	300	0.02
Withdrawal from illicit substances – no known patient(s)	259	0.02
Other substance abuse	1,264	0.07
Subtotal	11,682	0.69
Administrative		
Expert witness requests	41	0.00
Faculty activities	56	0.00
Funding	20	0.00
Personnel issues	665	0.04
Poison center record request	201	0.01
Product replacement/malfunction (issues intended for the manufacturer)	2,088	0.12
Scheduling of poison center rotations	197	0.01
Other administration	24,459	1.44
Subtotal	27,727	1.63
Caller Referred		
Immediate referral – animal poison center or veterinarian	17,592	1.03
Immediate referral – drug identification	6,763	0.40
Immediate referral – drug information	499	0.03
Immediate referral – health department	7,373	0.43
Immediate referral – medical advice line	1,371	0.08
Immediate referral – pediatric triage service	67	0.00
Immediate referral – pesticide hotline	380	0.02
Immediate referral – pharmacy	3,813	0.22
Immediate referral – poison center	5,950	0.35
Immediate referral – private physician	2,905	0.17
Immediate referral – psychiatric crisis line	198	0.01
Immediate referral – teratology information program	160	0.01
Other call referral	17,010	1.00
Subtotal	64,081	3.76
Total	1,703,762	100.00

Drug information calls increased 30% from 2007 (177,436 calls) to 2008 (230,084 calls) and comprised 13.5% of all information request calls. Of these, the most common requests were in regards to therapeutic use and indications, followed by drug-drug interactions and questions about dosage. Environmental inquiries comprised 1.7% of all information calls. Of these environmental inquiries, questions related to cleanup of mercury thermometers were most common followed by questions involving pesticides.

Of all the information calls, poison information comprised 5.0% of the requests., with inquiries involving general toxicity the most common followed by questions involving food poisoning or food preparation practices and plant toxicity.

Exposure calls to poison centers

Tables **22A (Nonpharmaceuticals)** and **22B (Pharmaceuticals)** provide summary demographic data on patient age and gender, reason for exposure, medical outcome, and use of a health care facility for all 2,491,049 human exposure cases, presented by substance categories.

Column 1 (grey shading) lists the number of exposures to the substance in the total number of cases including multiple exposures (as in previous years) and is sorted in the table under the name of the substance ranked first by the regional PC. This column counts all exposures to that substance.

Column 2 (and the breakdowns by Age, Treatment Site, Reason, and Outcome) report single substance exposures only, i.e., excludes cases with a multiple substance exposure. *Subtracting* column 2 from column 1 provides the number of cases where there were multiple substance exposures.

Tables 22A and 22B restrict the breakdown columns to single-substance cases to improve precision (avoid misrepresentation). Prior to 2007, when multi-substance exposures were included, a relatively innocuous substance was 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 uninformed user of the information. 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 (90.5%) of all exposures (Table 5).

Tables 22A and 22B tabulate 2,858,250 substance-exposures mentions, of which 2,254,267 were single-substance exposures

including 1,204,673 (53.4%) nonpharmaceuticals and 1,049,594 (46.6%) pharmaceuticals.

In 16.8% of exposures that involved pharmaceutical substances the reason for exposure was intentional, compared to only 2.9% when the exposure involved a nonpharmaceutical substance. Correspondingly, treatment in a health care facility was provided in a higher percentage of exposures that involved pharmaceutical substances (26.4%) compared with nonpharmaceutical substances (14.1%). Exposures to pharmaceuticals also had more severe outcomes. Of single-substance poison-related fatal cases, 350 were pharmaceuticals compared with 178 nonpharmaceuticals.

Age and gender distribution

The age and gender distribution of human poison exposure victims is outlined in Table 3. Children younger than 3 years were involved in 38.7% of exposures and children younger than 6 years accounted for half of all human exposures. A male predominance is found among recorded cases involving children younger than 13 years, but this gender distribution is reversed in teenagers and adults, with females comprising the majority of reported poison exposure victims.

Caller site and exposure site

As shown in Table 2, of the 2,491,049 human exposures reported, 76.0% of calls originated from a residence (own or other) but 93.4% actually occurred at a residence (Own or Other). Another 16.1% of calls were made from a health care facility. Exposures occurred in the workplace in 1.75% of cases, schools (1.3%), health care facilities (0.3%), and restaurants or food services (0.3%).

Exposures in pregnancy

Exposure during pregnancy occurred in 8,477 women (0.34% of all human exposures). Of those with known pregnancy duration (n = 7,817), 31.4% occurred in the first trimester, 37.6% in the second trimester, and 31.0% in the third trimester. Most (72.6%) were unintentional exposures and 20.4% were intentional exposures.

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

Site	Site of caller (%)	Site of exposure (%)
Residence		
Own	74.05	90.58
Other	1.98	2.82
Workplace	1.33	1.75
Health care facility	16.14	0.32
School	0.52	1.34
Restaurant/food service	0.02	0.29
Public area	0.34	1.03
Other	5.33	0.92
Unknown	0.29	0.95

Multiple patients

In 2008, 9.7% (241,258) of human exposures involved multiple patients. Examples of these include siblings sharing found medication, multiple victims of carbon monoxide exposure such as a family, or multiple patients inhaling vapors at a hazardous material spill.

Chronicity

The overwhelming majority of human exposures, 2,261,862 (90.8%) were acute cases (single, repeated or continuous exposure occurring over 8 hours or less) compared to 830 acute cases of 1,756 fatalities (47.3%). Chronic exposures (continuous or repeated exposures occurring over > 8 hours) comprised 1.9% (46,917) 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 eight hours) numbered 158,490 (6.4%).

Reason for exposure

Most (82.8%) poison exposures were unintentional; suicidal intent was suspected in 8.7% of cases (Table 6A). Therapeutic errors accounted for 10.6% of exposures (263,942 cases), with unintentional misuse comprising 4.3% of exposures. Of the 263,942 therapeutic errors, the most common scenarios for all ages included: inadvertent double-dosing in 84,814 (34.0%) cases, wrong medication taken or give (15.3%), other incorrect dose (14.8%), doses given/taken too close together (9.5%) and inadvertent exposure to someone else's medication (9.4%). The types of therapeutic errors observed are different for each age group and are summarized in Table 6B.

The reason for most exposures was unintentional (82.8%) of all PC calls. Unintentional exposures outnumbered intentional poisonings in all age groups with the exception of age 13–19 years (Table 7). Intentional exposures were reported as frequently as unintentional exposures in patients age 13–19 years. In contrast, of the 1,315 of the reported human poisoning fatalities, the majority of the fatalities in children less than or equal to age 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 79.3% of cases (Table 9), followed in frequency by dermal (7.2%), inhalation/nasal (5.2%), and ocular routes (4.5%). For the 1,315 fatalities, ingestion (77.7%), inhalation/nasal (7.8%), and parenteral (3.6%) were the predominant exposure routes.

Clinical effects

The AAPCC database allows for the coding of up to 131 different clinical effects (signs, symptoms, or laboratory

Table 3. Age and gender distribution of human exposures

	Male		Female		Unknown gender		Total		Cumulative total	
Age (y)	Number	% of age group total	Number	% of age group total	Number	% of age group total	Number	% of total exposures	Number	Col%
Children (<20)										
< 1	68,121	52.06	62,314	47.62	423	0.32	130,858	5.25	130,858	5.25
1	211,756	51.99	194,947	47.86	594	0.15	407,297	16.35	538,155	21.60
2	223,895	52.44	202,354	47.39	717	0.17	426,966	17.14	965,121	38.74
3	102,620	55.19	82,912	44.59	406	0.22	185,938	7.46	1,151,059	46.21
4	49,678	56.40	38,140	43.30	257	0.29	88,075	3.54	1,239,134	49.74
5	28,232	56.51	21,491	43.02	234	0.47	49,957	2.01	1,289,091	51.75
Unknown ≤5	1,650	45.05	1,408	38.44	605	16.52	3,663	0.15	1,292,754	51.90
Child 6–12	88,845	58.02	62,943	41.11	1,333	0.87	153,121	6.15	1,445,875	58.04
Teen 13–19	77,485	46.10	89,832	53.44	777	0.46	168,094	6.75	1,613,969	64.79
Unknown Child	2,394	40.36	2,227	37.54	1,311	22.10	5,932	0.24	1,619,901	65.03
Subtotal	854,676	52.76	758,568	46.83	6,657	0.41	1,619,901	65.03	1,619,901	65.03
Adults (≥20)										
20–29	90,778	46.15	105,770	53.77	164	0.08	196,712	7.90	1,816,613	72.93
30–39	66,211	42.72	88,651	57.20	119	0.08	154,981	6.22	1,971,594	79.15
40–49	59,204	41.55	83,177	58.38	95	0.07	142,476	5.72	2,114,070	84.87
50–59	43,557	39.51	66,629	60.44	58	0.05	110,244	4.43	2,224,314	89.29
60–69	24,483	37.14	41,413	62.82	32	0.05	65,928	2.65	2,290,242	91.94
70–79	14,402	35.06	26,659	64.89	20	0.05	41,081	1.65	2,331,323	93.59
80–89	8,565	32.17	17,977	67.53	80	0.30	26,622	1.07	2,357,945	94.66
≥90	1,330	28.30	3,364	71.59	5	0.11	4,699	0.19	2,362,644	94.85
Unknown adult	44,913	39.34	65,896	57.72	3,356	2.94	114,165	4.58	2,476,809	99.43
Subtotal	353,443	41.25	499,536	58.30	3,929	0.46	856,908	34.40	2,476,809	99.43
Other										
Unknown age	4,991	35.05	6,301	44.25	2,948	20.70	14,240	0.57	2,491,049	100.00
Total	1,213,110	48.70	1,264,405	50.76	13,534	0.54	2,491,049	100.00	2,491,049	100.00

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

Age(y)	Male	Female	Unknown	Total (%)	Cumulative total (%)
< 1	5	0	0	5 (0.4%)	5 (0.4%)
1	4	4	0	8 (0.6%)	13 (1.0%)
2	1	1	0	2 (0.2%)	15 (1.1%)
3	3	1	0	4 (0.3%)	19 (1.4%)
4	3	1	0	4 (0.3%)	23 (1.8%)
5	1	2	0	3 (0.2%)	26 (2.0%)
6–12	3	5	0	8 (0.6%)	34 (2.6%)
13–19	45	29	0	74 (5.6%)	108 (8.2%)
Unknown Child	2	0	0	2 (0.2%)	110 (8.4%)
20–29	137	84	0	221 (16.8%)	331 (25.2%)
30–39	126	113	0	239 (18.2%)	570 (43.4%)
40–49	133	159	0	292 (22.2%)	862 (65.6%)
50–59	132	118	0	250 (19.0%)	1,112 (84.6%)
60–69	35	50	0	85 (6.5%)	1,197 (91.0%)
70–79	20	31	0	51 (3.9%)	1,248 (94.9%)
80–89	8	32	0	40 (3.0%)	1,288 (98.0%)
≥ 90	1	11	0	12 (0.9%)	1,300 (98.9%)
Unknown adult	8	3	0	11 (0.8%)	1,311 (99.7%)
Unknown age	0	1	3	4 (0.3%)	1,315 (100.0%)
Total	667	645	3	1,315 (100.0%)	1,315 (100.0%)

[a]Age columns include both actual and estimated ages (e.g., Age 20–29 include 20s, and so forth).
[b]Includes cases with RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory.

abnormalities) for each case. Each clinical effect can be further defined as related, not related, or unknown if related. Clinical effects were coded in 707,555 (28.4%) cases. (14.9% had 1 effect, 7.5% had 2 effects, 3.7% had 3 effects, 1.3% had 4 effects, 0.5% had 5 effects, and 0.5% had >5 effects coded). Of clinical effects coded, 79.2% were deemed related to the exposure(s), 9.2% were considered not related, and 11.6% were coded as unknown if related.

Table 5. Number of substances involved in human exposure cases

No. of substances	No. of cases	% of cases
1	2,254,267	90.5
2	153,295	6.2
3	48,003	1.9
4	18,927	0.8
5	8,116	0.3
6	3,763	0.2
7	1,958	0.1
8	1,084	0.0
≥9	1,636	0.1
Total	2,491,049	100.00

The duration of effect is required for all cases that report at least one clinical effect and have a medical outcome of minor, moderate or major effect (n = 493,386). Table 13 demonstrates an increasing duration of the clinical effects observed with more severe outcomes.

Case management site

The majority of cases reported to PCs were managed in a non–health care facility (72.6%), usually at the site of exposure, primarily the patient's own residence (Table 10). Another 1.8% of cases were referred to a health care facility but refused to go. Treatment in a health care facility was rendered in 24.0% of cases.

Of the 598,048 cases managed in a health care facility, 295,834 (49.5%) were treated and released without admission, 93,096 (15.6%) were admitted for critical care, and 55,878 (9.3%) were admitted for noncritical care.

Table 6A. Reason for human exposure cases

Reason	Number	% human exposures
Unintentional		
Unintentional – General	1,503,868	60.4
Unintentional – Therapeutic error	263,942	10.6
Unintentional – Misuse	106,743	4.3
Unintentional – Bite/sting	66,857	2.7
Unintentional – Environmental	56,457	2.3
Unintentional – Food poisoning	30,311	1.2
Unintentional – Occupational	30,018	1.2
Unintentional – Unknown	4,189	0.2
Subtotal	2,062,385	82.8
Intentional		
Intentional – Suspected suicide	217,813	8.7
Intentional – Misuse	54,257	2.2
Intentional – Abuse	46,265	1.9
Intentional – Unknown	18,939	0.8
Subtotal	337,274	13.5
Adverse Reaction		
Adverse reaction – Drug	44,334	1.8
Adverse reaction – Other	12,090	0.5
Adverse reaction – Food	5,888	0.2
Subtotal	62,312	2.5
Unknown		
Unknown reason	13,677	0.5
Subtotal	13,677	0.5
Other		
Other – Malicious	8,585	0.3
Other – Contamination/tampering	5,524	0.2
Other – Withdrawal	1,292	0.1
Subtotal	15,401	0.6
Total	2,491,049	100.0

The percentage of patients treated in a health care facility varied considerably with age. Only 9.9% of children younger 5 years or younger and only 11.1% of children between 6 and 12 years were managed in a health care facility compared with 42.8% of teenagers (13–19 y) and 35.8% of adults (age ≥20 y).

Medical outcome

Table 11 displays the medical outcome of the human poison exposure cases distributed by age, showing a greater incidence of severe outcomes in the older age groups. Table 12 compares medical outcome and reason for exposure and shows a greater frequency of serious outcomes in intentional exposures.

Decontamination procedures and specific antidotes

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

Table 16 demonstrates the continuing decline in the use of ipecac-induced emesis in the treatment of poisoning. Ipecac was administered in only 641 (<0.01%) pediatric human poison exposures in 2008. The continued decrease in ipecac syrup use in the last decade was likely a result of ipecac use guidelines issued in 1997 by the American Academy of Clinical Toxicology; European Association of Poisons Centres and Clinical Toxicologists and updated in 2004.[2,3] In a separate report, the American Academy of Pediatrics concluded not only that ipecac should no longer be used routinely as a home treatment strategy, but also recommended disposal of ipecac currently in homes.[4]

Top substances in human exposures

Table 17A presents the most common 25 substance categories involved in human exposures, listed by frequency of exposure. Tables 17B and 17C present similar data for children and adults, respectively, and show the differences between pediatric and adult poison exposures.

Distribution of suicides

Table 19 shows the modest variation in the distribution of suicides over the past 2 decades as reported to the NPDS's national database (45–68%). Since 1985, the percent of fatal

Table 6B. Scenarios for therapeutic errors by age*

	No. of cases	≤5y (row %)	6–12 y (row %)	13–19 y (row %)	≥20 y (row %)	Unknown (row %)
Inadvertently took/given medication twice	84,814	22.8	12.5	5.6	58.8	0.3
Wrong medication taken/given	38,138	16.4	11.9	6.6	64.6	0.4
Other incorrect dose	36,799	34.0	11.9	7.3	46.4	0.5
Medication doses given/taken too close together	23,663	24.2	9.8	7.4	58.3	0.4
Inadvertently took/given someone else's medication	23,506	19.5	19.0	7.4	53.8	0.3
Other/unknown therapeutic error	15,922	22.1	11.2	8.1	58.0	0.7
Incorrect dosing route	14,508	9.8	4.5	3.1	81.7	0.9
Confused units of measure	10,371	55.7	17.1	5.7	21.3	0.3
More than 1 product containing same ingredient	6,778	19.9	15.0	14.2	50.6	0.4
Incorrect formulation or concentration given	6,631	47.8	17.2	4.7	30.0	0.4
Health professional/iatrogenic error (pharmacist/nurse/physician)	5,922	30.0	10.9	6.5	51.1	1.4
Dispensing cup error	5,757	60.0	19.1	4.8	16.0	0.2
Drug interaction	1,768	8.5	7.6	6.8	76.8	0.3
Incorrect formulation or concentration dispensed	1,522	43.0	15.5	5.5	35.0	1.1
10-fold dosing error	1,349	59.8	6.6	3.1	30.2	0.3
Exposure through breast milk	133	88.7	0.0	0.0	8.3	3.0

Of the human exposure cases reported to U.S. Poison Centers in 2008, 451,279 (18.1%) were coded to 1 or more of the 56 'standard scenarios'.
*Age columns include both actual and estimated ages. ≥20 y includes "Unknown Adults". "Unknown" includes both "Unknown Child" and Unknown Age.

Table 7. Distribution of reason for exposure by age*

	≤5 y		6–12 y		13–19 y		≥20 y		Unknown		Total	
Reason	**No.**	**Row %**	**No.**	**Row %**	**No.**	**Row %**	**No.**	**Row %**	**No.**	**Row %**	**No.**	**Col %**
Unintentional	1,284,243	62.3	138,082	6.7	76,534	3.7	550,000	26.7	13,526	0.7	2,062,385	82.8
Intentional	1,352	0.4	9,292	2.8	82,417	24.4	240,072	71.2	4,141	1.2	337,274	13.5
Adverse reaction	5,119	8.2	3,303	5.3	5,018	8.1	47,796	76.7	1,076	1.7	62,312	2.5
Other	1,273	8.3	1,690	11.0	2,226	14.5	9,779	63.5	433	2.8	15,401	0.6
Unknown	767	5.6	754	5.5	1,899	13.9	9,261	67.7	996	7.3	13,677	0.6
Total	1,292,754	51.9	153,121	6.1	168,094	6.7	856,908	34.4	20,172	0.8	2,491,049	100.0

*Age columns include both actual and estimated ages. ≥20 y column also includes "Unknown Adult". "Unknown" column includes both "Unknown Child" and "Unknown Age".

Table 8. Distribution of reason for exposure and age[a] for fatalities[b]

Reason	**≤5 y**	**6–12 y**	**13–19 y**	**≥20 y**	**Unknown age**	**Total**
Unintentional						
Unintentional – General	7	3	2	32	0	44
Unintentional – Environmental	4	1	2	32	2	41
Unintentional – Occupational	0	0	1	8	0	9
Unintentional – Therapeutic error	5	0	1	30	0	36
Unintentional – Misuse	0	0	0	10	0	10
Unintentional – Bite/sting	1	0	0	4	1	6
Unintentional – Food poisoning	0	0	1	1	0	2
Unintentional – Unknown	0	0	1	4	0	5
Subtotal	17	4	8	121	3	153
Intentional						
Intentional – Suspected suicide	0	0	28	633	2	663
Intentional – Misuse	1	0	2	36	0	39
Intentional – Abuse	0	2	26	201	0	229
Intentional – Unknown	0	0	4	55	0	59
Subtotal	1	2	60	925	2	990
Other						
Other – Malicious	3	1	1	2	0	7
Other – Withdrawal	0	0	0	2	0	2
Subtotal	3	1	1	4	0	9
Adverse reaction						
Adverse reaction – Drug	1	0	2	31	1	35
Adverse reaction – Other	0	0	0	1	0	1
Subtotal	1	0	2	32	1	36
Unknown						
Unknown reason	4	1	3	119	0	127
Subtotal	4	1	3	119	0	127
Total	26	8	74	1,201	6	1,315

[a]Age columns include both actual and estimated ages. ≥20 yr includes "Unknown Adults". "'Unknown Age" includes both "Unknown Child" and "Unknown Age".
[b]Includes cases with RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory.

cases has increased from 0.036% to 0.070% and the percent of pediatric cases has decreased from 6.1% to 2.2%. (See Table 19).

Plant exposures

Table 20 provides a summary of plant exposures for those species and categories most commonly involved (top 25 of 63,362 total plant exposures). The top three table categories are essentially synonymous for unknown plant and comprise 14.1% (8,918/63,362) or all plant exposures. For a variety of reasons it was not possible to make a precise identification in these three groups. The top five most frequent plant exposures where a positive plant identification was made were descending order): Spathiphyllum species, Phytolacca americana (L.) – pokeweed, Euphorbia pulcherrima (Wild)), Philodendron (Species unspecified), and Toxicodendron radicans (L.).

Deaths and poison-related fatalities

A listing of cases (Table 21) and summary of cases (Tables 4, 11, 12, 18 and 19) are provided for fatal cases for which there exists reasonable confidence that the death was a result of that exposure. Of the 1,769 cases initially referred, 13 were miscoded (animal death, not a death, or not primary center). Of the 1756 finally classified, the CRT judged 1,315 poison related fatalities (RCF category = 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory). The remaining 441 cases were judged as follows: 91 as RCF = 4-Probably not responsible, 57 as 5-Clearly not responsible, and 293 as RCF = 6-Unknown.

Table 9. Route of exposure for human exposure cases

Route	In all exposure cases		In fatal[b] exposure cases	
	Number	%	Number	%
Ingestion	2,076,414	79.31	1,101	77.70
Dermal	188,930	7.22	22	1.55
Inhalation/nasal	135,460	5.17	110	7.76
Ocular	117,677	4.49	1	0.07
Bite/sting	66,853	2.55	6	0.42
Parenteral	15,516	0.59	51	3.60
Unknown	8,734	0.33	103	7.27
Other	2,604	0.10	6	0.42
Otic	2,501	0.10	0	0.00
Aspiration (with ingestion)	1,660	0.06	17	1.20
Vaginal	940	0.04	0	0.00
Rectal	748	0.03	0	0.00
Not Coded	30	0.00	0	0.00
Total Number of Routes	2,618,067	100.00	1,417	100.00

Multiple routes of exposure may be reported. Percentage is calculated on the total number of exposure routes rather than the total number of cases.
[b]Includes cases with RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory.

Table 10. Management site of human exposures

Site of management	Number	%
Managed on site, nonhealth care facility	1,807,201	72.6
Managed in healthcare facility		
Treated/evaluated and released	295,834	11.9
Patient lost to follow-up/left AMA	101,902	4.1
Admitted to critical care unit	93,096	3.7
Admitted to noncritical care unit	55,878	2.2
Admitted to psychiatric facility	51,338	2.1
Subtotal (managed in HCF)	598,048	24.0
Refused referral	44,604	1.8
Other	28,759	1.2
Unknown	12,437	0.5
Total	2,491,049	100.0

Deaths are sorted in this listing according to the category, patient age and substance deemed most likely responsible for the death. Please note: the Substance listed in column 3 of Table 21 was chosen to be the most specific based upon all of the clinical information including the substances entered for that case. This substance may not agree with the categories used in the summary tables (including Table 22). Additional agents implicated are listed below the primary agent in the order of their contribution to the fatality. The exposure-related fatalities involved a single substance in 528 cases (40.2%), 2 substances in 316 cases (24.0%), 3 in 220 cases (16.7%), and 4 or more in the balance of the cases. The cross-references at the end of each major category section list all cases that identify this substance as other than the primary substance.

The Case number is [bracketed] to indicate that the abstract for that case is included in Appendix C. The letters following the Case number include: i = reported to poison center indirectly (by coroner, medical examiner, or other) after the fatality occurred in 179 cases (13.6%), p = prehospital cardiac and/or respiratory arrest in 567 (43.1%), h = hospital records reviewed in 176 cases (143.4%), a = autopsy report reviewed in 359 cases (27.3%).

The distribution of RCF is as follows: 1 = Undoubtedly responsible in 670 cases (50.1%), 2 = Probably responsible in 466 cases (35.4%), 3 = Contributory in 179 cases (13.6%).

All fatalities – all ages

Table 4 presents the age and gender distribution for these 1,315 poison-related fatalities. The age distribution of reported fatalities is similar to that in past years with 74.8% (983 of 1,315) of fatal cases occurring in adults (age > 19 years) (Table 4). Although children younger than 6 years were involved in the majority of exposures, they comprised just 2.0% of the exposure-related fatalities. Most (76.2%) of the poisoning fatalities occurred in 20-to 59-year-old individuals.

Table 21 lists each of the 1,315 human fatalities along with all of the substances involved. Please note: the Substance listed in column 3 of Table 21 was chosen to be the most specific generic name based upon the substances entered for that case. This substance may not agree with the categories used in the summary tables (including Table 22).

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

Outcome	≤5 y		6–12 y		13–19 y		≥20 y		Unknown		Total	
	No.	% ≤5 y	No.	% 6–12 y	No.	% 13–19 y	No.	% ≥20 y	No.	% Unknown Age	No.	% Total
No effect	320,287	24.8	25,719	16.8	26,995	16.1	101,373	11.8	2,636	13.1	477,010	19.2
Minor effect	98,628	7.6	22,504	14.7	41,516	24.7	186,683	21.8	2,273	11.3	351,604	14.1
Moderate effect	10,689	0.8	4,023	2.6	20,030	11.9	95,426	11.1	631	3.1	130,799	5.3
Major effect	832	0.1	228	0.2	2,054	1.2	15,859	1.9	61	0.3	19,034	0.8
Death	32	0.0	9	0.0	77	0.1	1,397	0.2	20	0.1	1,535	0.1
No follow-up, nontoxic	262,137	20.3	24,373	15.9	9,648	5.7	56,780	6.6	1,666	8.3	354,604	14.2
No follow-up, minimal toxicity	559,863	43.3	68,750	44.9	47,289	28.1	293,365	34.2	6,516	32.3	975,783	39.2
No follow-up, potentially toxic	23,001	1.8	3,884	2.5	16,071	9.6	71,126	8.3	5,771	28.6	119,853	4.8
Unrelated effect	17,278	1.3	3,627	2.4	4,400	2.6	34,707	4.1	594	2.9	60,606	2.4
Death, indirect report	7	0.0	4	0.0	14	0.0	192	0.0	4	0.0	221	0.0
Total	1,292,754	100.0	153,121	100.0	168,094	100.0	856,908	100.0	20,172	100.0	2,491,049	100.0

*Age columns include both actual and estimated ages. ≥20 yr column also includes "Unknown Adult". "Unknown" column includes both "Unknown Child" and "Unknown Age". Total number of cases where Death was an outcome (1,535 + 221) is greater than the number of fatalities judged to be exposure-related (1,315).

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

	Unintentional		Intentional		Other		Adverse reaction		Unknown		Total	
Outcome	**No.**	**Col%**	**No.**	**Col%**	**No.**	**Col%**	**No.**	**Col%**	**No.**	**Col%**	**No.**	**Col%**
No effect	416,223	20.18	56,381	16.72	1,839	11.94	1,522	2.44	1,045	7.64	477,010	19.15
Minor effect	238,511	11.56	93,668	27.77	3,007	19.52	14,225	22.83	2,193	16.03	351,604	14.11
Moderate effect	48,134	2.33	70,879	21.02	1,021	6.63	8,348	13.40	2,417	17.67	130,799	5.25
Major effect	2,929	0.14	14,280	4.23	123	0.80	785	1.26	917	6.70	19,034	0.76
Death	195	0.01	1,027	0.30	8	0.05	65	0.10	240	1.75	1,535	0.06
No follow-up, nontoxic	347,230	16.84	5,085	1.51	1,017	6.60	1,039	1.67	233	1.70	354,604	14.24
No follow-up, minimal toxicity	909,245	44.09	36,098	10.70	5,602	36.37	22,934	36.81	1,904	13.92	975,783	39.17
No follow-up, potentially toxic	56,874	2.76	53,288	15.80	1,728	11.22	4,587	7.36	3,376	24.68	119,853	4.81
Unrelated effect	43,013	2.09	6,403	1.90	1,053	6.84	8,805	14.13	1,332	9.74	60,606	2.43
Death, indirect report	31	0.00	165	0.05	3	0.02	2	0.00	20	0.15	221	0.01
Total	2,062,385	100.00	337,274	100.00	15,401	100.00	62,312	100.00	13,677	100.00	2,491,049	100.00

Total number of cases where Death was an outcome (1,535 + 221) is greater than the number of fatalities judged to be exposure-related (1,315).

Table 13. Duration of clinical effects by medical outcome

	Percent of patients in the category*		
Duration of effect	**Minor effect**	**Moderate effect**	**Major effect**
≤2 hours	37.0	6.2	2.8
>2 hours, ≤8 hours	26.8	21.8	6.5
>8 hours, ≤24 hours	18.5	32.9	25.6
>24 hours, ≤3 days	5.1	18.3	31.0
>3 days, ≤1 week	1.5	5.9	16.8
>1 week, ≤1 month	0.4	1.3	5.7
>1 month	0.2	0.4	0.9
Anticipated permanent	0.1	0.2	1.9
Unknown	10.6	13.0	8.8
Total	100.0	100.0	100.0

*493,386 (19.8%) exposure cases reported duration of clinical effects.

Table 14. Decontamination and therapeutic interventions

Therapy	**No. of patients**	**%**
Decontamination Only	1,090,977	43.8
Therapeutic Intervention Only	193,747	7.8
Decontamination and Therapeutic Intervention	409,732	16.5
Not Coded	796,593	32.0
Total	2,491,049	100.0

Table 18 lists the top 25 substance categories associated with reported fatalities and the number of single exposure fatalities for that category – sedative/hypnotics/antipsychotics, opioids, and antidepressants lead this list followed by cardiovascular drugs, acetaminophen in combination, alcohols, and stimulants/street drugs. Although sedative/hypnotics/antipsychotics ranks 4th and antidepressants 7th among the most frequent exposures (Table 17A), there is otherwise little concordance between the frequency of exposures to a substance and the number of fatalities. Note that this Table tabulates 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).

A single substance was implicated in 90.5% of reported human exposures, and 9.5% of patients were exposed to 2 or more drugs or products (Table 5). The exposure-related fatalities (Table 21) involved a single substance in 528 cases (40.2%) and 2 or more substances in 787 cases (59.8%). The first ranked substance was a pharmaceutical in 1,066 of the 1,315 fatalities (81.2%). These 1,066 pharmaceuticals included (first ranked substance):

1. 544 analgesics (110 acetaminophen, 73 acetaminophen/hydrocodone, 71 methadone, 62 oxycodone, 48 salicylate, 34 morphine, 32 fentanyl transdermal, 25 acetaminophen/diphenhydramine, 16 acetaminophen/oxycodone, 15 acetaminophen/propoxyphene)
2. 113 cardiovascular drugs (17 verapamil, 15 cardiac glycoside, 13 beta blockers, 12 diltiazem (extended release), 8 metoprolol, and 6 amlodipine)
3. 111 antidepressants (16 amitriptyline, 13 lithium, 10 bupropion, 11,)
4. 87 stimulants/street drugs (45 cocaine, 16 heroin, 8 amphetamine, 8 methamphetamine, and 6 MDMA)

The exposure was acute in 692 (52.6%), A/C = acute on chronic in 241 (18.3%), C = chronic exposure in 87 (6.6%) and U = unknown in 295 (22.4%).

Tissue Concentrations for 1 or more related analytes were reported in 597 cases (45.4%).

Route of exposure was: Ingestion in 1,101 cases (77.7%), Inhalation/nasal in 110 cases (7.8%), Parenteral in 51 cases (3.6%). (Table 9)

Intentional exposure reasons: Suspected suicide in 663 cases (50.4%), Intentional-Abuse in 229 cases (17.4%), Intentional-Misuse in 39 cases (3.0%). Unintentional exposure reasons: Environmental in 41 cases (3.1%), Therapeutic error in 36 cases (2.7%), Misuse in 10 cases 0.8%). (Table 8)

Pediatric fatalities – age less than 6 years

Although children younger than 6 years were involved in the majority of exposures, they comprised just 34 of 1,315 (2.0%) of fatalities. These numbers are similar to those reported since 1985 (Table 19). The percentage fatalities in children younger than 6 years related to total pediatric exposures was 26/1,292,754 = 0.00201%. By comparison, 1,201/856,908 =

Table 15. Therapy provided in human exposures by age*

Therapy	≤5 y	6–12 y	13–19 y	≥20 y	Unknown	Total
Decontamination						
Cathartic	4,061	361	5,454	17,801	50	27,727
Charcoal, multiple doses	231	30	597	1,831	5	2,694
Charcoal, single dose	21,055	1,317	17,733	54,322	176	94,603
Dilute/irrigate/wash	659,632	67,643	41,416	254,026	5,029	1,027,746
Food/snack	144,576	11,390	5,936	31,149	397	193,448
Fresh air	7,701	5,227	5,935	54,622	1,824	75,309
Ipecac	641	70	119	370	5	1,205
Lavage	308	37	1,336	5,736	20	7,437
Other emetic	4,968	490	934	4,291	57	10,740
Whole bowel irrigation	118	21	435	1,703	6	2,283
Other Therapies						
2-PAM	5	3	3	53	0	64
Alkalinization	128	58	1,738	7,669	9	9,602
Amyl nitrite	1	1	0	9	0	11
Antiarrhythmic	8	6	55	468	0	537
Antibiotics	2,164	1,060	1,367	12,670	120	17,381
Anticonvulsants[a]	55	19	113	593	3	783
Antiemetics	536	274	3,160	7,718	8	11,696
Antihistamines	3,092	1,933	2,136	12,166	132	19,459
Antihypertensives	9	13	112	1,604	2	1,740
Antivenin (fab fragment)	305	190	165	1,113	4	1,777
Antivenin/antitoxin[b]	47	30	44	277	3	401
Atropine	108	22	73	959	0	1,162
BAL	11	4	3	22	0	40
Benzodiazepines	852	367	3,797	17,138	44	22,198
Bronchodilators	508	262	404	4,325	25	5,524
Calcium	9,521	619	258	2,110	11	12,519
Cardioversion	5	0	10	184	0	199
CPR	35	8	54	613	3	713
Deferoxamine	15	1	23	23	0	62
ECMO	3	0	1	4	0	8
EDTA	56	7	2	13	1	79
Ethanol	7	4	7	169	0	187
Extracorp. procedure (other)	0	0	1	30	0	31
Fab fragments	25	17	22	563	0	627
Fluids, IV	6,011	1,357	19,537	89,504	177	116,586
Flumazenil	119	17	201	1,808	5	2,150
Folate	14	0	26	743	0	783
Fomepizole	118	15	86	1,457	3	1,679
Glucagon	24	11	48	1,220	1	1,304
Glucose, > 5%	305	19	184	2,491	3	3,002
Hemodialysis	17	8	117	2,029	6	2,177
Hemoperfusion	1	0	4	22	0	27
Hydroxocobalamin	2	3	0	31	0	36
Hyperbaric oxygen	33	40	37	251	1	362
Insulin	11	4	55	1,200	2	1,272
Intubation	543	111	1,401	16,236	34	18,325
Methylene blue	18	1	9	93	0	121
NAC, IV	216	85	3,273	11,208	36	14,818
NAC, PO	184	51	2,565	8,123	23	10,946
Nalmefene	3	0	2	15	0	20
Naloxone	892	115	1,509	14,035	36	16,587
Neuromuscular blocker	45	9	115	996	1	1,166
Octreotide	41	4	23	217	1	286
Other	36,435	9,127	14,113	87,247	1,176	148,098
Oxygen	1,550	715	3,137	33,296	142	38,840
Pacemaker	3	0	4	169	0	176
Penicillamine	1	0	1	11	0	13
Physostigmine	4	6	61	104	0	175
Phytonadione	42	3	69	641	3	758
Pyridoxine	8	6	64	366	0	444
Sedation (other)	303	75	1,086	9,723	13	11,200
Sodium nitrite	0	1	2	21	0	24
Sodium thiosulfate	0	1	3	48	0	52
Steroids	812	487	513	5,088	49	6,949
Succimer	112	13	9	85	1	220
Transplantation	0	0	2	23	0	25
Vasopressors	96	28	240	4,195	6	4,565
Ventilator	471	88	1,208	14,396	34	16,197

*Age columns include both actual and estimated ages. ≥20y includes "Unknown Adults". "Unknown" includes both "Unknown Child" and "Unknown Age".
[a]Excludes benzodiazepines. [b]Excludes Fab fragments.

Table 16. Decontamination trends (1985–2008)

Year	Human exposures reported	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 (4.63)	568,691 (64.2)	94,919 (16.6908)	14,718 (2.59)
1986	1,095,228	145,516 (13.286)	56,481 (5.16)	690,137 (63.0)	99,688 (14.4447)	18,191 (2.64)
1987	1,164,648	117,840 (10.118)	60,310 (5.18)	730,228 (62.7)	83,443 (11.427)	18,507 (2.53)
1988	1,364,113	114,654 (8.4050)	88,876 (6.52)	843,106 (61.8)	80,749 (9.5776)	26,118 (3.10)
1989	1,578,968	110,545 (7.0011)	101,368 (6.42)	963,924 (61.0)	79,192 (8.2156)	30,345 (3.15)
1990	1,646,946	98,986 (6.0103)	108,341 (6.58)	999,751 (60.7)	73,469 (7.3487)	31,579 (3.16)
1991	1,836,364	94,877 (5.1666)	129,092 (7.03)	1,099,179 (59.9)	73,069 (6.6476)	36,177 (3.29)
1992	1,862,796	79,493 (4.2674)	135,625 (7.28)	1,094,256 (58.7)	63,486 (5.8018)	38,937 (3.56)
1993	1,747,147	65,078 (3.7248)	127,893 (7.32)	978,560 (56.0)	50,834 (5.1948)	35,791 (3.66)
1994	1,926,992	51,356 (2.6651)	138,247 (7.17)	1,042,651 (54.1)	41,489 (3.9792)	35,670 (3.42)
1995	2,023,089	47,359 (2.3409)	155,880 (7.71)	1,070,472 (52.9)	38,372 (3.5846)	38,095 (3.56)
1996	2,155,952	39,376 (1.8264)	157,331 (7.30)	1,137,263 (52.7)	32,622 (2.8685)	37,986 (3.34)
1997	2,192,088	32,098 (1.4643)	156,213 (7.13)	1,150,931 (52.5)	26,536 (2.3056)	35,856 (3.12)
1998	2,241,082	26,653 (1.1893)	152,134 (6.79)	1,180,989 (52.7)	22,247 (1.8838)	34,302 (2.90)
1999	2,201,156	21,942 (0.9968)	145,853 (6.63)	1,154,799 (52.5)	18,326 (1.5869)	33,812 (2.93)
2000	2,168,248	18,177 (0.8383)	145,911 (6.73)	1,142,796 (52.7)	15,239 (1.3335)	31,554 (2.76)
2001	2,267,979	16,058 (0.7080)	149,442 (6.59)	1,169,478 (51.6)	13,389 (1.1449)	30,367 (2.60)
2002	2,380,028	13,555 (0.5695)	149,527 (6.28)	1,227,381 (51.6)	11,163 (0.9095)	30,340 (2.47)
2003	2,395,582	9,284 (0.3875)	140,412 (5.86)	1,245,584 (52.0)	7,310 (0.5869)	28,888 (2.32)
2004	2,438,643	4,701 (0.1928)	135,969 (5.58)	1,250,536 (51.3)	3,366 (0.2692)	28,335 (2.27)
2005	2,424,180	3,027 (0.1249)	123,263 (5.08)	1,233,695 (50.9)	1,999 (0.1620)	26,338 (2.13)
2006	2,403,539	2,176 (0.0905)	111,351 (4.63)	1,223,815 (50.9)	1,337 (0.1092)	23,843 (1.95)
2007	2,482,041	1,740 (0.0701)	106,010 (4.27)	1,271,595 (51.2)	1,052 (0.0827)	22,829 (1.80)
2008	2,491,049	1,205 (0.0484)	97,297 (3.91)	1,292,754 (51.9)	641 (0.0496)	21,286 (1.65)

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

Substance category	Number	%*
Analgesics	331,123	13.3
Cosmetics/Personal Care Products	224,884	9.0
Cleaning Substances (Household)	213,595	8.6
Sedative/Hypnotics/Antipsychotics	165,539	6.6
Foreign Bodies/Toys/Miscellaneous	130,244	5.2
Topical Preparations	114,024	4.6
Antidepressants	102,510	4.1
Cold and Cough Preparations	98,636	4.0
Pesticides	93,998	3.8
Cardiovascular Drugs	91,421	3.7
Antihistamines	89,287	3.6
Alcohols	86,588	3.5
Bites and Envenomations	73,229	2.9
Antimicrobials	68,982	2.8
Vitamins	68,911	2.8
Plants	63,362	2.5
Hormones and Hormone Antagonists	58,274	2.3
Gastrointestinal Preparations	57,667	2.3
Hydrocarbons	46,418	1.9
Stimulants and Street Drugs	46,411	1.9
Anticonvulsants	45,905	1.8
Chemicals	44,736	1.8
Arts/Crafts/Office Supplies	38,940	1.6
Electrolytes and Minerals	34,507	1.4
Fumes/Gases/Vapors	34,361	1.4

*Percentages are based on the total number of exposures (N = 2,491,049).

Table 17B. Substance categories most frequently involved in pediatric* (≤ 5 y) exposures (Top 25)

Substance category	Number	%**
Cosmetics/Personal Care Products	173,945	13.5
Analgesics	125,454	9.7
Cleaning Substances (Household)	124,934	9.7
Foreign Bodies/Toys/Miscellaneous	96,806	7.5
Topical Preparations	89,730	6.9
Cold and Cough Preparations	52,723	4.1
Vitamins	50,836	3.9
Antihistamines	44,649	3.5
Pesticides	43,526	3.4
Plants	43,398	3.4
Gastrointestinal Preparations	39,756	3.1
Antimicrobials	36,125	2.8
Arts/Crafts/Office Supplies	29,039	2.2
Hormones and Hormone Antagonists	26,810	2.1
Cardiovascular Drugs	25,523	2.0
Electrolytes and Minerals	25,047	1.9
Alcohols	23,998	1.9
Deodorizers	20,686	1.6
Dietary Supplements/Herbals/Homeopathic	19,403	1.5
Sedative/Hypnotics/Antipsychotics	15,805	1.2
Asthma Therapies	15,760	1.2
Other/Unknown Nondrug Substances	15,334	1.2
Hydrocarbons	14,985	1.2
Antidepressants	14,276	1.1
Information Calls	12,707	1.0

*Includes all children with actual or estimated ages ≤ 5 years old. Results do not include "Unknown Child" or "Unknown Ages".
**Percentages are based on the total number of pediatric exposures (N = 1,292,754).

0.140% of all adult exposures involved a fatality. Of these 26, 17 (65.4%) were reported as unintentional and 3 (11.5%) were coded as resulting from malicious intent (Table 8). These 26 cases included 16 pharmaceuticals and 10 nonpharmaceuticals. The substances associated with these fatalities included: carbon monoxide/smoke inhalation (4 cases), oxycodone (3 cases), sodium bicarbonate (2 cases) and 17 other substances (1 each).

Pediatric fatalities – ages 6–12 years

In the age range 6 to 12 years, there were 8 reported fatalities (Table 8), 4 of which were unintentional exposures and 2 intentional exposures. These 12 cases included 3 pharmaceuticals and 5 nonpharmaceuticals. The substances associated with these fatalities included: carbon monoxide/smoke inhalation (3 cases), bupropion, methadone, tramadol, hair spray and paraquat (1 each).

Table 17C. Substance categories most frequently involved in adult* (≥20 y) exposures (Top 25)

Substance category	Number	%**
Analgesics	147,052	17.2
Sedative/Hypnotics/Antipsychotics	126,003	14.7
Cleaning Substances (Household)	70,336	8.2
Antidepressants	70,081	8.2
Cardiovascular Drugs	57,791	6.7
Alcohols	52,940	6.2
Bites and Envenomations	47,416	5.5
Pesticides	41,040	4.8
Cosmetics/Personal Care Products	32,631	3.8
Anticonvulsants	31,330	3.7
Antihistamines	27,540	3.2
Hormones and Hormone Antagonists	26,553	3.1
Chemicals	25,955	3.0
Hydrocarbons	24,454	2.9
Antimicrobials	23,794	2.8
Fumes/Gases/Vapors	23,630	2.8
Cold and Cough Preparations	23,313	2.7
Stimulants and Street Drugs	22,113	2.6
Muscle Relaxants	21,100	2.5
Food Products/Food Poisoning	20,819	2.4
Topical Preparations	17,849	2.1
Foreign Bodies/Toys/Miscellaneous	14,093	1.6
Gastrointestinal Preparations	13,903	1.6
Miscellaneous Drugs	13,580	1.6
Information Calls	13,056	1.5

*Includes all adults with actual or estimated ages ≥20 y old. Results also include "Unknown Adult" but do not include "Unknown Ages".
**Percentages are based on the total number of substances reported in adult exposures (N = 856,908).

Adolescent fatalities – ages 13–19 years

In the age range 13 to 19 years, there were 74 reported fatalities (Table 8). These 74 cases included 60 pharmaceuticals and 14 nonpharmaceuticals, similar to the numbers reported in this age group reported annually since 1999. The first ranked pharmaceuticals associated with these fatalities included: methadone and oxycodone (6 cases each), acetaminophen, bupropion and quetiapine (4 each), acetaminophen/oxycodone, MDMA, opioid, and salicylate (3 each), and amphetamine, and lithium (2 each) and 26 other substances (1 each).

Of the 74 reported fatalities for adolescents, 28 (37.8%) were presumed suicides, and 26 (35.1%) were intentional abuse exposures (Table 8). The suspected suicide percentage is similar to recent years. The percentage of intentional abuse cases increased from 25.8% in 2006 to 35.7% in 2008. As in the past years, only a small number (8 of 74) of adolescent fatalities were coded as being unintentional.

Pregnancy and fatalities

A total of 26 deaths of pregnant women have been reported from the years 2000 through 2008. An average of 2 deaths per year was recorded from 2000 through 2004. Since 2005, the average number of deaths in pregnant women reported to NPDS doubled to four per year. The majority (20 of 26) were intentional exposures of misuse, abuse and suspected suicide. These deaths are flagged in Table 21 as of this year's report.

AAPCC surveillance system

NPDS surveillance processes, anomaly definitions, and application software continue to be developed, refined, and evaluated. Surveillance Anomaly 1 was generated at 2:00 pm EDT on September 17, 2006. This event marked the transition of

Table 18. Categories associated with largest number of fatalities (Top 25)

Substance	All mentions	All mentions %	No. of single exposure	No. of single exposure %
Sedative/Hypnotics/Antipsychotics	467	14.81	32	3.96
Opioids	401	12.72	66	8.17
Antidepressants	247	7.83	29	3.59
Cardiovascular Drugs	238	7.55	54	6.68
Acetaminophen Combinations	235	7.45	53	6.56
Alcohols	210	6.66	40	4.95
Stimulants and Street Drugs	184	5.84	53	6.56
Acetaminophen Alone	168	5.33	69	8.54
Antihistamines	98	3.11	6	0.74
Anticonvulsants	85	2.70	4	0.50
Muscle Relaxants	83	2.63	6	0.74
Fumes/Gases/Vapors	78	2.47	63	7.80
Acetylsalicylic Acid Alone	73	2.32	25	3.09
Cyclic Antidepressants	71	2.25	17	2.10
Unknown Drug	55	1.74	61	7.55
Chemicals	44	1.40	31	3.84
Nonsteroidal Antiinflammatory Drugs	44	1.40	5	0.62
Oral Hypoglycemic	36	1.14	5	0.62
Barbiturates	25	0.79	6	0.74
Antihistamine and/or Decongestant without Phenylpropanolamine	18	0.57	5	0.62
Hormones and Hormone Antagonists	17	0.54	1	0.12
Hydrocarbons	17	0.54	13	1.61
Automotive Products	16	0.51	12	1.49
Anticoagulants	15	0.48	5	0.62
Other Miscellaneous Drugs	15	0.48	8	0.99

Numbers represent total exposures associated with 1,315 fatalities (with RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory); each fatality may have had exposure to more than one substance.

Table 19. Comparisons of death* data (1985–2008)

	Total fatalities		Suicides		Pediatric death	
Year	No.	% of cases	No.	% of deaths	No.	% of deaths
1985	328	0.036	174	(53.0)	20	(6.1)
1986	406	0.037	223	(54.9)	15	(3.7)
1987	398	0.034	227	(57.0)	22	(5.5)
1988	544	0.040	296	(54.4)	30	(5.5)
1989	590	0.037	323	(54.7)	24	(4.1)
1990	553	0.032	320	(57.9)	21	(3.8)
1991	764	0.042	408	(53.4)	44	(5.8)
1992	705	0.038	395	(56.0)	29	(4.1)
1993	626	0.036	338	(54.0)	27	(4.3)
1994	766	0.040	410	(53.5)	26	(3.4)
1995	724	0.036	405	(55.9)	20	(2.8)
1996	726	0.034	358	(49.3)	29	(4.0)
1997	786	0.036	418	(53.2)	25	(3.2)
1998	775	0.035	421	(54.3)	16	(2.1)
1999	873	0.040	472	(54.1)	24	(2.7)
2000	921	0.042	477	(51.8)	20	(2.2)
2001	1,085	0.048	553	(51.0)	27	(2.5)
2002	1,170	0.049	635	(54.3)	27	(2.3)
2003	1,109	0.046	592	(53.4)	35	(3.2)
2004	1,190	0.049	642	(53.9)	27	(2.3)
2005	1,438	0.059	674	(46.9)	32	(2.2)
2006	1,515	0.063	705	(46.5)	39	(2.6)
2007	1,597	0.064	737	(46.1)	47	(2.9)
2008	1,756	0.070	797	(45.4)	39	(2.2)

*Human exposures with medical outcome of death or death, indirect regardless of RCF.

AAPCC surveillance to NPDS. Since then more than 136,000 anomalies have been detected. Many individual PCs and CDC have created surveillance case definitions. Case definitions have been authored by many regional poison centers, the AAPCC, and Health Studies Branch, Division of Environmental Hazards and Health Effects, National Center for Environmental Health, Centers for Disease Control and Prevention. The system has been expanded to include new case based definitions, and enhanced surveillance capabilities at the regional PC level. At the time of this report, 370 surveillance definitions run continuously, monitoring case and clinical effects volume and a variety of case based definitions from food poisoning to nerve agents.

Significant NPDS surveillance enhancements were introduced in 2008. Geocentric coverage was added to the volume definitions allowing centers to create definitions for all cases from their geographic coverage area, not just cases taken by their center. Case based definitions were improved with the addition of expanded Boolean expression size to allow more complex case based surveillance definitions to be created. Clinical effect anomaly analysis screen was optimized to allow for analysis per clinical effect. Increased definition creation flexibility was added to volume definitions. This flexibility included the ability to extend active definitions beyond their original expiration date. Anomaly alert email information was expanded to make the alert information richer and definition alerts could be chosen for one-time alerts to give the user the option to use the NPDS surveillance engine as a notification system to detect cases for study rather than a surveillance system. Six new surveillance reports and logging reports were added to the application to allow the user to search for definitions based on a variety of parameters in order to find a definition that pertains to certain characteristics of interest. A communications module was built into NPDS surveillance simplifying the process to store all analysis actions and correspondence with each anomaly.

NPDS implemented an aggregate count web service that allows users to extract case counts based on user defined parameters such as clinical effects and generate time series graphs for analysis. A second web service was added to allow external systems such as BioSense, RODS, ESSENCE, or state based system to extract NPDS data for the purpose of

Table 20. Frequency of plant exposures (Top 25)

	Botanical name	Generic code name	Number
1	*Plants-general-unknown*	Unknown toxic or unknown if toxic	3,274
2	*Botanical terms*	Unknown toxic or unknown if toxic	3,244
3	*Unknown botanical name*	Unknown toxic or unknown if toxic	2,389
4	Spathiphyllum *species (botanic name)*	Oxalate	1,867
5	Phytolacca americana *(L.) (botanic name)*	Gastrointestinal irritant	1,857
6	Philodendron *(species unspecified)*	Oxalate	1,142
7	Toxicodendron radicans *(L.) (botanic name)*	Dermatitis	1,138
8	Euphorbia pulcherrima *(Willd.) (botanic name)*	Gastrointestinal irritant	1,130
9	Ilex *species (botanic name)*	Gastrointestinal irritant	1,004
10	Lycopersicon lycopersicum *(botanic name)*	Solanine	712
11	Plants-cardiac glycosides	Cardiac Glycoside	651
12	Plants-pokeweed	Other toxic	629
13	Plants-cyanogenic glycosides	Amygdalin/cyanogenic glycosides	621
14	Berry	Unknown toxic or unknown if toxic	601
15	Caladium *species (botanic name of all species of the genus* Caladium*)*	Oxalate	586
16	Schlumbergera bridgesii *(botanic name)*	Non-Toxic	576
17	Malus *species (botanical name)*	Amygdalin/cyanogenic glycosides	549
18	*Cherry (species unspecified)*	Amygdalin/cyanogenic glycosides	543
19	Taraxacum officinale *(botanic name)*	Non-Toxic	523
20	Epipremnum areum *(botanic name)*	Oxalate	508
21	*Mold*	Unknown toxic or unknown if toxic	507
22	Crassula argentea *(Thumb)(botanic name)*	Non-Toxic	489
23	Narcissus pseudonarcissus *(L.) (botanic name)*	Gastrointestinal irritant	454
24	Zantedeschia aethiopica *(botanic name)*	Oxalate	446
25	Nandina domestica *(Thumb) (botanical name)*	Unknown toxic or unknown if toxic	443

using NPDS full case data with their own surveillance engines and algorithms. Thus external system viewers can be used to augment existing NPDS analysis tools in a federated approach transforming NPDS into a data utility with always the most current data available for analysis. The advent of the NPDS web services marked a new era in NPDS development direction with all external system access under the purview of the responsible regional PC.

External users may now be given NPDS surveillance access by a poison center. NPDS surveillance access is now controlled by each poison center through the NPDS application. A center may grant any user access to their data and they may limit that access by one or more state and/or by one or more ZIP code. Regional Poison Centers remain completely in control of all access to their poison center data from a surveillance perspective.

Each surveillance definition now has a defined organization (owner) who is responsible for monitoring and analyzing the anomalies detected by the definition. NPDS now supports Full and Basic surveillance access. Basic access allows a user to survey the granting organization's data through the creating of surveillance definitions. Full access allows a user to view all definitions and anomalies owned by the granting organization and it allows the user to survey the granting organization's data by creating their own definitions. NPDS provided new functionality to allow user's to update and maintain his/her contact information used for surveillance notifications from NPDS. Surveillance storage was expanded to manage this additional data.

Automated surveillance remains controversial as a system to detect the index case of a public health event. Uniform evaluation algorithms are not available to determine the best and optimize methodologies.[5] Less controversial is the benefit to situational awareness that NPDS can provide. Typical NPDS surveillance data detects a response to an event rather than event prediction. The pre-recall tomato cases of the 2008 Tomato recall (see below) demonstrated the potential predictive value of NPDS as described using internet search engines. Recent work from several institutions has focused on the concept that queries to on-line information systems can predict major outbreaks.[6,7] Analysis of PC calls analogous to internet search queries may provide predictive data for events of public health significance.

On June 7, 2008, FDA released an alert warning consumers not to eat certain types of raw red tomatoes. Possibly contaminated with S*almonella* Saintpaul, an uncommon type of the bacteria.[8] Since mid-April 2008, 145 cases if salmonellosis had been reported nationwide. AAPCC issued a tomato recall coding guideline to poison centers on 10 June 2008. A retrospective review of NPDS tomato information calls and exposure calls revealed that prior to the FDA recall, daily calls to poison centers ranged from 0 to 2 calls per day. Beginning on 1 June 2008, calls increased ranging from 1 to 7 per day until 9 June when total tomato calls increased to 46 before peaking on 10–11 June at over 90 calls per day (Figure 4). Clearly, the initial rise of tomato related calls occurred prior to the FDA release and before the coding guidelines were released to the centers. This marks the first time that such phenomena in NPDS data has been seen although it has been shown in other Internet information systems.[9] Food recalls are becoming more common. It is possible that augmenting NPDS with automated time series technology for common food products may provide useful data on outbreaks before they reach mainstream media. Although NPDS did not detect the index case, implementation of refined algorithms and close work with public health agencies shows NPDS promise as part of an early detection system. NPDS case data clearly presaged the FDA alert and the tomato information and exposure call patterns provided situational awareness about the event (Figure 4).

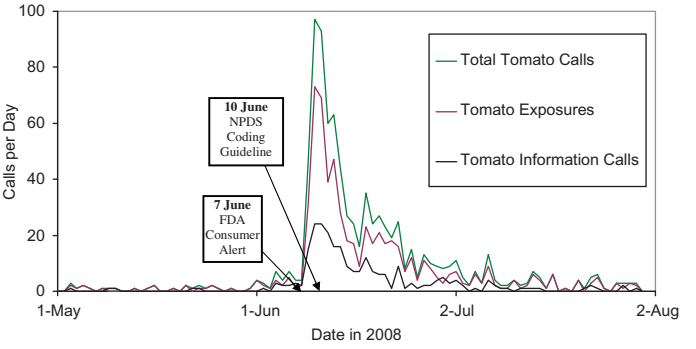


Fig. 4. Tomato Exposure and Information Calls by Day, 1 May – 2 August 2008.

Discussion

Trends in reported poisonings/exposures

The total of 4,333,012 human exposure cases and information calls reported to PCs in 2008 does not reflect the full extent of poison center efforts which also include activities such as poison prevention and education and poison awareness. Additionally, we do not know the true denominator for exposures and information calls in the United States.

These data (Figure 1) do not directly identify a trend in the overall incidence of poisonings in the US because the percentage of actual exposures and poisonings reported to PCs is unknown. As is explained in this section, NPDS data reports fewer fatalities and more exposures than other CDC databases.

NPDS may be considered as providing "numerator data" since the "denominator" is not accurately determined. Attempts have been made to better define the incidence of poisoning. For example, based on the National Health Interview Survey (NHIS), the estimated number of poisoning episodes in the US for the year 2000 was estimated to be 1,575,000.[10] During the same time AAPCC centers received reports of 2.2 million poisoning exposures of which 475,079 were managed in a health care facility.[1]

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Non-Pharmaceutical Exposures										
Adhesives/Glues										
1 pi	44 y M				A	Inhal	Int-S	1		
		Epoxy Adhesive	1	1						
Alcohols										
2 p	14 y M				A	Ingst	Int-U	2		
		Ethanol	1	1						
3 pa	18 y M				A	Ingst	Int-A	1		
		Ethanol	1	1					Ethanol	340 mg/dL In Blood (unspecified) @ Autopsy
		Ethanol	1	1					Ethanol	400 mg/dL In Vitreous @ Autopsy
4	21 y F				A	Ingst	Int-S	1		
		Methanol	1	1					Methanol	74 mg/dL In Serum @ Unknown
		Antifreeze (ethylene glycol)	2	2						
5 pai	21 y F				A/C	Ingst	Int-A	2		
		Ethanol	1	1					Ethanol	0.25 % (wt/Vol) In Whole Blood @ Autopsy
		Ethanol	1	1					Ethanol	0.36 % (wt/Vol) In Vitreous @ Autopsy
[6 pa]	23 y M				A	Ingst	Int-A	1		
		Ethanol	1	1					Ethanol	0.37 g/dL In Blood (unspecified) @ Unknown
7 pai	23 y M				A	Ingst	Int-A	1		
		Ethanol	1	1					Ethanol	0.37 % (wt/Vol) In Whole Blood @ Autopsy
		Ethanol	1	1					Ethanol	0.41 % (wt/Vol) In Vitreous @ Autopsy
8 ph	25 y F				A	Ingst	Oth-W	3		
		Ethanol	1	1						
		Bupropion (extended release)	2	2						
		Benzodiazepine	3	3						
		Olanzapine	4	4						
		Sertraline	5	5						
		Acetaminophen/ hydrocodone	6	6						
		Topiramate	7	7						
9 p	26 y F				A/C	Ingst	Int-A	3		
		Ethanol	1	1						
10	29 y M				A	Unk	Unk	1		
		Methanol	1	1						
11 pa	29 y M				A	Ingst	Int-S	2		
		Ethanol	1	1					Ethanol	345 mg/dL In Plasma @ Unknown
		Isopropanol	2	2						
12 pai	30 y M				A	Ingst	Int-A	2		
		Ethanol	1	1					Ethanol	0.43 % (wt/Vol) In Whole Blood @ Autopsy
		Ethanol	1	1					Ethanol	0.43 % (wt/Vol) In Vitreous @ Autopsy
13 pa	30 y M				A	Unk	Int-A	1		
		Ethanol	1	1						
		Propoxyphene	2	2					Norpropoxyphene	2311 ng/mL In Blood (unspecified) @ Autopsy
		Propoxyphene	2	2					Propoxyphene	1161 ng/mL In Blood (unspecified) @ Autopsy
14 pa	31 y M				A/C	Ingst	Int-A	1		
		Ethanol	1	1					Ethanol	0.35 % (wt/Vol) In Whole Blood @ Autopsy
15 pa	31 y M				U	Ingst	Int-A	3		
		Ethanol	1	1					Ethanol	140 mg/dL In Blood (unspecified) @ Autopsy
		Pheynylpropanol-amine	2	2						
		Propoxyphene	3	3						
		Promethazine	4	4						
16 pa	37 y F				U	Ingst	Int-S	2		
		Ethanol	1	1						
		Drug, Unknown	2	2						
17 h	37 y F				C	Unk	Unk	2		
		Ethanol	1	1						
		Acetaminophen	2	2						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Alcohols, continued										
18 h	39 y M				A	Ingst	Int-S	2		
		Ethanol	1	1						
		Opioid	2	2						
19 pai	39 y M				U	Ingst	Int-S	1		
		Methanol	1	1					Methanol	0.09 % (wt/Vol) In Blood (unspecified) @ Unknown
20 ha	39 y M				A	Unk	Unk	1		
		Methanol	1	1					Methanol	238 mg/dL In Blood (unspecified) @ 1 h (pe)
		Methanol	1	1					Methanol	63 mg/dL In Blood (unspecified) @ 14 h (pe)
21 ph	39 y M				A	Ingst	Int-A	1		
		Methanol	1	1						
22 ph	40 y M				A	Ingst	Int-A	2		
		Ethanol	1	1					Ethanol	597 mg/dL In Blood (unspecified) @ Unknown
23 ph	41 y M				A/C	Ingst	AR-D	2		
		Ethanol	1	1						
		Morphine	2	2						
		Benzodiazepine	3	3						
		Phenobarbital	4	4						
		Isoniazid	5	5						
24 h	41 y M				A	Ingst	Int-S	1		
		Methanol	1	1						
25 p	45 y F				A/C	Ingst	Unk	2		
		Ethanol	1	1					Ethanol	394 mg/dL In Whole Blood @ Autopsy
		Oxycodone	2	2					Oxycodone	78 ng/mL In Whole Blood @ Autopsy
		Diazepam	3	3					Diazepam	330 ng/mL In Whole Blood @ Autopsy
		Diazepam	3	3					Nordiazepam	410 ng/mL In Whole Blood @ Autopsy
		Loratadine	4	4						
		Amitriptyline	5	5						
		Citalopram	6	6						
		Atenolol	7	7						
		Lisinopril	8	8						
		Famotidine	9	9						
26 pai	45 y F				U	Ingst	Int-A	1		
		Ethanol	1	1					Ethanol	0.31 % (wt/Vol) In Whole Blood @ Autopsy
		Ethanol	1	1					Ethanol	0.33 % (wt/Vol) In Vitreous @ Autopsy
		Diazepam	2	2						
27 a	45 y M				C	Ingst	Int-A	3		
		Ethanol	1	1					Ethanol	21 mg/dL In Blood (unspecified) @ Unknown
		Acetaminophen	2	2					Acetaminophen	11.5 mcg/mL In Blood (unspecified) @ Unknown
28 pai	45 y M				U	Ingst	Int-A	1		
		Ethanol	1	1					Ethanol	0.08 % (wt/Vol) In Whole Blood @ Autopsy
		Ethanol	1	1					Ethanol	0.11 % (wt/Vol) In Vitreous @ Autopsy
		Oxycodone	2	2					Oxycodone	0.09 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	3	3					Alprazolam	48 ng/mL In Whole Blood @ Autopsy
29 h	46 y M				A	Ingst	Int-S	1		
		Methanol	1	1						
30	47 y M				U	Unk	Oth-W	3		
		Ethanol	1	1						
31 h	47 y F				C	Ingst	Int-A	1		
		Ethanol	1	1						
32	47 y F				A	Ingst	Int-S	2		
		Ethanol	1	1					Ethanol	509 mg/dL In Serum @ Unknown
33 ai	52 y M				A	Ingst	Int-A	2		
		Ethanol	1	1					Ethanol	0.38 % (wt/Vol) In Blood (unspecified) @ 30 h (pe)
34	55 y M				C	Ingst	Int-A	3		
		Ethanol	1	1						
35 p	55 y F				A/C	Ingst	Int-S	1		
		Ethanol	1	1						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Alcohols, continued										
36 h	57 y F				A	Unk	Unk	1		
		Methanol	1	1					Methanol	165 mg/dL In Blood (unspecified) @ Unknown
37	58 y M				A	Ingst	Int-A	3		
		Ethanol	1	1						
		Metformin	2	2						
38 ai	58 y F				A	Ingst	Int-A	3		
		Ethanol	1	1					Ethanol	402 mg/dL In Plasma @ 30 m (pe)
39 a	59 y M				U	Ingst	Int-U	3		
		Ethanol	1	1						
40 p	59 y M				A	Ingst	Int-A	3		
		Ethanol	1	1						
41	60 y F				A/C	Ingst	Int-S	2		
		Ethanol	1	1						
		Drug, unknown	2	2						
42	71 y M				C	Ingst	Int-A	3		
		Ethanol	1	1						
43	30+ y M				U	Ingst	Int-A	2		
		Ethanol	1	1						
See also case 47, 56, 81, 92, 98, 105, 109, 111, 140, 142, 143, 146, 149, 152, 182, 209, 216, 243, 264, 273, 276, 280, 293, 294, 296, 302, 308, 315, 323, 330, 332, 340, 343, 353, 354, 362, 368, 377, 386, 392, 400, 401, 411, 414, 421, 439, 443, 447, 454, 456, 457, 459, 467, 468, 473, 488, 489, 496, 509, 511, 512, 524, 528, 529, 531, 542, 544, 547, 548, 551, 552, 563, 564, 571, 600, 603, 608, 618, 619, 624, 626, 636, 639, 645, 650, 651, 652, 654, 655, 683, 694, 702, 709, 715, 718, 720, 734, 738, 742, 745, 749, 751, 758, 769, 777, 797, 827, 828, 829, 847, 851, 853, 857, 858, 862, 869, 872, 879, 886, 890, 896, 902, 913, 925, 931, 936, 951, 952, 966, 967, 969, 972, 974, 975, 984, 988, 990, 994, 996, 997, 999, 1003, 1009, 1010, 1013, 1024, 1028, 1065, 1087, 1107, 1112, 1118, 1125, 1136, 1151, 1165, 1175, 1187, 1192, 1216, 1220, 1235, 1238, 1242, 1248, 1258, 1264, 1296, 1305										
Arts/Crafts/Office Supplies										
[44 ha]	12 m F				A	Ingst+ Derm	Unt-G	1		
		Hydrofluoric Acid	1	1						
Automotive/Aircraft/Boat Products										
45	24 y M				A	Ingst	Int-S	2		
		Antifreeze (ethylene glycol)	1	1						
46	28 y M				A	Ingst	Unk	2		
		Methanol	1	1					Methanol	104 mg/dL In Blood (unspecified) @ 1 d (pe)
47 a	28 y M				A	Ingst	Int-S	1		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	18 mg/dL In Serum @ Autopsy
		Acetaminophen/ diphenhydramine	2	2					Acetaminophen	31 mcg/mL In Serum @ Unknown
		Acetaminophen	3	3						
		Ethanol	4	4					Ethanol	81 mg/dL In Serum @ Autopsy
48	36 y M				A	Ingst	Int-S	2		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	2 mmol/L In Blood (unspecified) @ Unknown
49 pa	40 y F				A	Ingst	Int-S	1		
		Antifreeze (ethylene glycol)	1	1						
		Propylene Glycol	2	2						
		Acetaminophen/ oxycodone	3	3						
50	42 y M				A	Ingst	Int-S	1		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	172 mg/dL In Serum @ 10 h (pe)
51 a	43 y M				A	Ingst	Int-S	3		
		Antifreeze (ethylene glycol)	1	1						
52	44 y M				A/C	Ingst	Int-S	1		
		Methanol	1	1					Methanol	367 mg/dL In Serum @ Unknown
53	48 y F				U	Ingst+ Unk	Unk	1		
		Glycol/methanol	1	1					Ethylene glycol	26 mg/dL In Serum @ Unknown
		Glycol/methanol	1	1					Methanol	300 mg/dL In Serum @ Unknown
54	52 y F				U	Ingst	Int-S	2		
		Antifreeze (ethylene glycol)	1	1						
		Trazodone	2	2						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Automotive/Aircraft/Boat Products, continued										
55	57 y M				A	Ingst	Int-S	2		
		Antifreeze (ethylene glycol)	1	1						
		Oxycodone	2	2						
		Alprazolam	3	3						
56	62 y M				A	Ingst	Int-S	2		
		Antifreeze (ethylene glycol)	1	1						
		Ethanol	2	2						
[57 a]	65 y M				A	Ingst	Int-S	1		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	3000 mg/L In Blood (unspecified) @ Unknown
[58 ha]	69 y M				A	Ingst	Unk	1		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	156 mg/dL In Serum @ 1 h (pe)
59	73 y F				A	Ingst	Int-S	1		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	74 mg/dL In Blood (unspecified) @ Unknown
See also case 749										
Bites and Envenomations										
60	2 y M				A	B-S	Unt-B	1		
		Scorpion stings	1	1						
[61 p]	37 y M				A	B-S	Unt-B	1		
		Envenomation (crotalid)	1	1						
62 pa	47 y F				A	Ingst+ B-S	Unt-B	3		
		Envenomation, crotalid	1	1						
		Verapamil	2	2					Verapamil	7.2 mg/L In Blood (unspecified) @ Autopsy
		Verapamil	2	2					Verapamil	3.1 mg/L In Blood (unspecified) @ Autopsy
		Verapamil	2	2					Verapamil	29 mg/kg In Liver @ Autopsy
		Hydrocodone	3	3						
		Oxycodone	4	4					Oxycodone	0.11 mg/L In Blood (unspecified) @ Autopsy
		Diazepam	5	5						
		Mirtazapine	6	6						
63 p	62 y F				A	B-S	Unt-B	3		
		Envenomation (crotalid)	1	1						
[64 p]	70 y M				A	B-S	Unt-B	2		
		Jellyfish stings	1	1						
65	Unknown child (<=19 y) M				A	B-S	Unt-B	1		
		Bite, mammal	1	1						
Chemicals										
[66 a]	18 y M				A	Oc+ Derm	Oth-M	1		
		Sulfuric acid	1	1						
67	19 y M				A	Ingst+ Derm	Unt-O	1		
		Citric acid	1	1						
		Chemical, unknown	2	2						
		Cottonseed oil	3	3						
68	26 y M				U	Ingst	Int-S	1		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	170 mg/dL In Blood (unspecified) @ Unknown
		Ketamine	2	2						
		Dextromethorphan	3	3						
69	26 y M				A	Ingst	Int-S	1		
		Antifreeze (ethylene glycol)	1	1						
70	27 y M				A	Ingst+ Unk	Int-S	1		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	49.7 mg/dL In Blood (unspecified) @ Unknown
71 p	30 y M				A	Inhal	Unt-O	2		
		Ammonia	1	1						
[72 a]	33 y M				A	Inhal	Int-A	1		
		Nitrate/nitrite	1	1					Methemoglobin	70 % (wt/Vol) In Blood (unspecified) @ Unknown
		Nitrate/nitrite	1	1					Methemoglobin	41.2 % (wt/Vol) In Blood (unspecified) @ Autopsy
		Ethyl chloride	2	2						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Bites and Envenomations, continued										
73	37 y M				A	Ingst	Int-S	1		
		Antifreeze (ethylene glycol)	1	1						
74 h	38 y M				A	Ingst	Int-S	1		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	398.1 mg/dL In Unknown @ Unknown
75	39 y M				U	Unk	Int-S	2		
		Antifreeze (ethylene glycol)	1	1					Ethanol	0 mg/dL In Blood (unspecified) @ 1 h (pe)
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	14 mg/dL In Blood (unspecified) @ 1 h (pe)
76	40 y M				A	Inhal	Unt-O	1		
		Liquid nitrogen	1	1						
77	40 y F				A	Inhal	Unt-E	1		
		Cyanide	1	1						
		Smoke	2	2						
78	41 y F				A	Ingst	Unk	1		
		Cyanide	1	1					Cyanide	4.3 mcg/mL In Serum @ Unknown
		Acetaminophen/ pseudoephedrine	2	2					Acetaminophen	3.2 mcg/mL In Serum @ Unknown
79 a	46 y M				A	Ingst	Unk	1		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	611 mg/dL In Blood (unspecified) @ 1 h (pe)
80	46 y M				A	Inhal	Unt-O	2		
		Sulfur	1	1						
81	47 y F				A	Ingst	Int-S	2		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	35 mg/dL In Blood (unspecified) @ Unknown
		Isopropranol	2	2					Isopropanol	10 mg/dL In Blood (unspecified) @ Unknown
82	48 y M				A	Ingst	Int-S	1		
		Hydrochloric acid	1	1						
83 a	49 y F				U	Ingst	Unk	3		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	72 mcg/dL In Serum @ Unknown
[84 h]	50 y M				A	Ingst	Int-S	1		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	248 mg/L In Whole Blood @ Unknown
[85]	50 y M				A	Ingst	Int-S	1		
		Antifreeze (ethylene glycol)	1	1						
		Alprazolam	2	2						
86	51 y M				A	Ingst	Int-S	1		
		Antifreeze (ethylene glycol)	1	1						
[87 ha]	51 y F				A	Ingst	Int-S	2		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	17 mg/dL In Blood (unspecified) @ 1 d (pe)
		Ziprasidone	2	2						
88 p	52 y M				A	Inhal	Unt-O	1		
		Chemical, unknown	1	1						
89 p	53 y F				A	Ingst	Int-S	2		
		Cyanide	1	1						
[90 a]	55 y F				U	Ingst	Int-S	1		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	5300 mg/L In Blood (unspecified) @ Unknown
91	56 y F				A	Ingst	Int-S	1		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	31.89 mg/dL In Blood (unspecified) @ Unknown
		Acetaminophen/ dextromethorphan	2	2						
		Ciprofloxacin	3	3						
92 a	58 y M				A/C	Ingst+ Aspir	Int-S	3		
		Charcoal	1	1						
		Benzodiazepine	2	2					Alprazolam	0.4 mg/L In Blood (unspecified) @ Autopsy
		Zolpidem	3	3					Zolpidem	0.1 mg/L In Blood (unspecified) @ Autopsy
		Ethanol	4	4						
		Citalopram	5	5					Citalopram	0.5 mg/L In Blood (unspecified) @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Bites and Envenomations, continued										
93	59 y M				A	Ingst	Int-S	2		
		Sulfuric Acid	1	1						
94 ha	60 y M				A	Ingst	Int-S	1		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	181 mg/L In Blood (unspecified) @ 1 d (pe)
95 a	61 y M				A	Ingst	Unk	1		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	14.33 mcg/dL In Blood (unspecified) @ Unknown
96 pai	63 y F				A	Ingst	Int-S	1		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	16.8 mg/mL In Whole Blood @ Autopsy
97	64 y F				U	Unk	Unk	1		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	7000 mg/dL In Blood (unspecified) @ Unknown
		Iron	2	2					Iron	224 mcg/dL In Blood (unspecified) @ Unknown
[98 pa]	72 y M				A	Unk	Int-S	1		
		Cyanide	1	1						
		Ethanol	2	2						
99	78 y M				A	Ingst	Int-S	1		
		Cyanide	1	1						
100	79 y M				A	Ingst	Int-S	1		
		Antifreeze (ethylene glycol)	1	1					Ethylene glycol	413 mg/dL In Serum @ Unknown
101 pha	85 y F				A	Inhal	Unt-E	1		
		Cyanide	1	1					Cyanide	0 Other (see abst) In Blood (unspecified) @ 3.5 h (pe)
		Smoke	2	2					Carboxyhemoglobin	10 % In Blood (unspecified) @ 12 h (pe)
102 ph	22 m M				A	Unk	Unt-G	1		
		Nitrate/nitrite	1	1						
103 p	80+ y F				A	Inhal	Unt-E	1		
		Cyanide	1	1						
		Carbon monoxide	2	2					Carboxyhemoglobin	13 % In Blood (unspecified) @ Unknown
		Smoke	3	3						
104 pa	Unknown age U				A	Ingst	Int-S	2		
		Cyanide	1	1					Cyanide	20 mcg/mL In Blood (unspecified) @ Autopsy
See also case 4, 49, 149, 172, 209, 235, 998, 1176										
Cleaning Substances (Household)										
105 h	22 y M				A	Ingst	Int-S	3		
		Hypochlorite	1	1						
		Lubricating oil	2	2						
		Ethanol	3	3						
106	24 y M				A	Ingst	Int-S	1		
		Toilet Bowl Cleaner (acid)	1	1						
		Aripiprazole	2	2						
[107 a]	25 y M				A	Inhal	Unt-O	2		
		Ethylene glycol monobutyl ether	1	1						
108 p	36 y F				A	Ingst	Int-S	2		
		Cleaner (alkali)	1	1						
		Cleaner (anionic/ nonionic)	2	2						
		Hair Spray	3	3						
		Aftershave/ cologne/perfume	4	4						
		Isopropranol	5	5						
		Pregabalin	6	6						
		Fluvoxamine	7	7						
109	40 y M				A	Ingst	Int-S	2		
		Sodium hydroxide	1	1						
		Ethanol	2	2						
110	43 y M				A	Ingst	Unt-G	3		
		Hypochlorite	1	1						
111 ph	43 y F				A	Ingst	Int-A	2		
		Cleaner, household	2	1						
		Ethanol *	1	2						
		Nail polish remover *	3	2						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Cleaning Substances (Household), continued										
112 ai	45 y M				A	Ingst	Int-S	1		
		Drain cleaner (alkali)	1	1						
113	48 y M				A	Ingst	Int-S	1		
		Toilet bowl cleaner (acid)	1	1						
		Colchicine	2	2						
		Propoxyphene/ salicylate	3	3						
		Metoclopramide	4	4						
		Drain cleaner (alkali)	5	5						
		Sodium hydroxide	6	6						
114	53 y M				A	Ingst	Unt-M	3		
		Laundry detergent	1	1						
[115 a]	54 y M				A	Ingst+ Aspir	Unt-M	1		
		Sodium hydroxide	1	1						
116 h	57 y F				A	Ingst	Int-S	1		
		Toilet bowl cleaner (acid)	1	1						
117 a	60 y F				A	Ingst	Int-S	1		
		Drain cleaner (hydrochloric acid)	1	1						
118	68 y M				A	Ingst	Int-S	2		
		Drain cleaner (alkali)	1	1						
[119 a]	70 y F				A	Ingst	Unt-G	1		
		Toilet bowl cleaner (acid)	1	1						
120 a	78 y F				A	Ingst	Int-S	3		
		Drain cleaner (alkali)	1	1						
121	82 y M				A	Ingst+ Aspir	Unt-G	2		
		Cleaner (anionic/ nonionic)	1	1						
122	84 y F				A	Ingst	Int-U	2		
		Dishwashing detergents (anionic/ nonionic)	1	1						
123 a	88 y F				A	Ingst	Int-S	3		
		Hypochlorite	1	1						
124	93 y F				A	Inhal+ Derm	Unt-G	2		
		Hypochlorite	1	1						
125 ha	98 y M				A	Ingst	Unt-G	1		
		Laundry additive	1	1						
		Loperamide	2	2						
See also case 248, 341, 584, 614, 1231										
Cosmetics/Personal Care Products										
126 p	12 y F				A	Inhal	Int-A	1		
		Hair spray	1	1						
127	52 y M				A	Par	Int-S	1		
		Soap	1	1						
		Chloroxylenol	2	2						
See also case 108, 724, 1249										
Deodorizers										
128 p	14 y F				A	Inhal	Int-A	2		
		Air freshener	1	1						
Food Products/Food Poisoning										
129 p	14 y F				A	Ingst	Unt-F	2		
		Tetrodotoxin	1	1						
[130 ha]	26 y M				A	Ingst	Unt-F	2		
		Food poisoning, bacterial	1	1						
Foreign Bodies/Toys/Miscellaneous										
[131 pha]	39 y M				A	Ingst+ Aspir	Int-A	1		
		Foreign body	1	1						
		Cocaine	2	2					Benzoylecgonine	2.84 mg/L In Serum @ Autopsy
		Cocaine	2	2					Cocaethylene	0 mg/L In Serum @ Autopsy
		Cocaine	2	2					Cocaine	0.16 mg/L In Serum @ Autopsy
See also case 782										

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Fumes/Gases/Vapors										
132 pi	2 y F				A	Inhal	Unt-E	1		
		Carbon monoxide	1	1						
133 pai	4 y M				A	Inhal	Unt-E	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	80 % In Blood (unspecified) @ Autopsy
134 pha	4 y M				A	Inhal	Unt-E	2		
		Smoke	1	1					Carboxyhemoglobin	65.9 % In Blood (unspecified) @ Autopsy
135 pai	5 y F				A	Inhal	Oth-M	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	78 % In Blood (unspecified) @ Autopsy
136 pha	6 y F				A	Inhal	Unt-E	1		
		Carbon monoxide	1	1						
137 pha	9 y M				A	Inhal	Unt-G	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	66.4 % In Whole Blood @ 20 m (pe)
138 pai	10 y F				A	Inhal	Oth-M	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	68 % In Blood (unspecified) @ Autopsy
139 pi	14 y M				A	Inhal	Unt-E	1		
		Carbon monoxide	1	1						
140 pai	17 y F				C	Ingst+ Inhal	Unt-E	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	74 % In Whole Blood @ Autopsy
		Ethanol	2	2					Ethanol	138 mg/dL In Whole Blood @ Autopsy
		Marijuana	3	3					Delta-9-carboxy-thc	12 ng/mL In Whole Blood @ Autopsy
141 pa	18 y M				U	Inhal	Int-A	1		
		Nitrous oxide	1	1					Nitrous oxide	21 mcg/mL In Whole Blood @ Autopsy
142 p	19 y M				A	Ingst+ Inhal	Int-A	1		
		Carbon dioxide	3	1						
		Methylenedioxymethamphetamine (MDMA)	1	2						
		Ethanol	2	3						
143 pai	21 y F				C	Ingst+ Inhal	Unt-E	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	90 % In Whole Blood @ Autopsy
		Ethanol	2	2					Ethanol	35 mg/dL In Whole Blood @ Autopsy
		Marijuana	3	3					Delta-9-carboxy-thc	18 ng/mL In Whole Blood @ Autopsy
		Marijuana	3	3					Delta-9-thc	5.3 ng/mL In Whole Blood @ Autopsy
144 p	22 y F				A	Inhal	Unt-G	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	52.4 % In Blood (unspecified) @ Unknown
		Carbon monoxide	1	1					Carboxyhemoglobin	28 % In Blood (unspecified) @ Unknown
		Carbon monoxide	1	1					Carboxyhemoglobin	16.6 % In Blood (unspecified) @ Unknown
		Carbon monoxide	1	1					Carboxyhemoglobin	5.1 % In Blood (unspecified) @ Unknown
		Carbon monoxide	1	1					Carboxyhemoglobin	4 % In Blood (unspecified) @ Unknown
		Smoke	2	2						
145	23 y F				A	Inhal	Unt-E	1		
		Smoke	1	1					Carboxyhemoglobin	40 % In Blood (unspecified) @ Unknown
146 pai	26 y M				U	Ingst+ Inhal	Int-S	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	77 % In Whole Blood @ Autopsy
		Ethanol	2	2					Ethanol	0.04 % (wt/Vol) In Whole Blood @ Autopsy
147 p	27 y M				A	Inhal	Unt-O	1		
		Hydrogen sulfide	1	1						
148 i	27 y M				C	Inhal	Unt-E	1		
		Carbon monoxide	1	1						
149 p	28 y M				A	Inhal	Unt-G	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	27.7 % In Blood (unspecified) @ 1 h (pe)
		Cyanide	2	2					Cyanide	1.14 mcg/mL In Blood (unspecified) @ 8 h (pe)
		Ethanol	3	3						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Fumes/Gases/Vapors, continued										
150 ph	28 y F				A	Inhal	Unt-E	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	33.6 % In Serum @ Unknown
151 pi	30 y M				A	Inhal	Unt-E	1		
		Carbon monoxide	1	1						
152 pa	32 y F				A	Inhal	Unt-E	1		
		Smoke	1	1					Carboxyhemoglobin	85.6 % In Blood (unspecified) @ Autopsy
		Ethanol	2	2						
153	34 y F				A	Inhal	Int-S	2		
		Methane	1	1						
154 pai	36 y M				A	Inhal	Unt-E	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	80 % In Blood (unspecified) @ Autopsy
155 pa	37 y F				A	Inhal+ Unk	Unk	3		
		Smoke	1	1					Carboxyhemoglobin	20 % In Blood (unspecified) @ 1 h (pe)
		Smoke	1	1					Carboxyhemoglobin	3 % In Blood (unspecified) @ 1 d (pe)
		Oxymorphone	2	2					Oxymorphone	0.02 mg/L In Blood (unspecified) @ Autopsy
156 pa	37 y M				A	Inhal	Unt-E	1		
		Smoke	1	1					Carboxyhemoglobin	68 % In Blood (unspecified) @ Autopsy
157 pai	37 y M				U	Inhal	Int-S	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	72 % In Blood (unspecified) @ Autopsy
158 pai	38 y M				A	Inhal	Int-S	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	78 % In Blood (unspecified) @ Autopsy
159 pai	39 y F				U	Inhal	Unt-E	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	50 % In Blood (unspecified) @ Autopsy
160 ph	41 y F				A	Inhal	Unt-E	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	48.4 % In Whole Blood @ 20 m (pe)
		Smoke	2	2						
161 pai	41 y M				U	Inhal	Unt-E	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	62 % In Blood (unspecified) @ Autopsy
162 pai	42 y F				A	Inhal	Oth-M	2		
		Smoke	1	1					Carboxyhemoglobin	62 % In Blood (unspecified) @ Unknown
163 pa	43 y M				A	Inhal	Unk	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	55.8 % In Serum @ Unknown
[164 pha]	43 y M				A	Ingst	Int-S	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	50.5 % In Blood (unspecified) @ 30 m (pe)
		Carbon monoxide	1	1					Carboxyhemoglobin	8 % In Blood (unspecified) @ 210 m (pe)
165 p	44 y M				A	Inhal	Int-S	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	67 % In Blood (unspecified) @ Unknown
166 pa	44 y M				A	Inhal+ Unk	Unt-G	1		
		Smoke	1	1					Carboxyhemoglobin	48 % In Blood (unspecified) @ Unknown
		Cocaine	2	2					Benzylecgonine	0.01 mg/L In Vitreous @ Autopsy
		Cocaine	2	2					Benzylecgonine	0.01 mg/L In Blood (unspecified) @ Autopsy
		Cocaine	2	2					Cocaine	0.03 mg/L In Blood (unspecified) @ Autopsy
		Cocaine	2	2					Cocaine	0.29 mg/L In Vitreous @ Autopsy
		Cocaine	2	2					Cocaine	0.02 mg/L In Blood (unspecified) @ Unknown
		Cocaine	2	2					Ecgonine methyl ester	0.24 mg/L In Blood (unspecified) @ Unknown
		Cocaine	2	2					Ecgonine methyl ester	0.23 mg/L In Blood (unspecified) @ Autopsy
		Oxycodone	3	3					Oxycodone	0.04 mg/L In Blood (unspecified) @ Unknown
		Oxycodone	3	3					Oxymorphone	0.03 mg/L In Blood (unspecified) @ Autopsy
		Benzodiazepine	4	4						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Fumes/Gases/Vapors, continued										
		Opioid	5	5					Oxymorphone	0.03 mg/L In Blood (unspecified) @ Unknown
167 p	45 y M				A	Inhal	Int-S	2		
		Carbon monoxide	1	1						
168 ha	48 y M				U	Inhal	Int-S	1		
		Carbon monoxide	1	1						
169	48 y M				A	Inhal	Unt-E	2		
		Carbon monoxide	1	1					Carboxyhemoglobin	46 % In Blood (unspecified) @ Unknown
170 pi	49 y M				A	Inhal	Int-S	2		
		Carbon monoxide	1	1						
171 pi	51 y M				A	Inhal	Unt-E	1		
		Carbon monoxide	1	1						
172 pa	52 y F				A	Inhal	Int-S	1		
		Smoke	1	1						
		Carbon monoxide	2	2					Carboxyhemoglobin	31 % In Blood (unspecified) @ Unknown
		Cyanide	3	3						
		Acetaminophen	4	4					Acetaminophen	158 mcg/mL In Blood (unspecified) @ Unknown
		Acetaminophen	4	4					Acetaminophen	258.7 mcg/mL In Blood (unspecified) @ 16.15 h (pe)
173 p	52 y M				A	Par	Unt-T	1		
		Smoke	1	1						
174 pa	52 y M				A	Inhal	Unt-O	1		
		Carbon monoxide	1	1						
175	55 y F				A	Inhal	Unt-E	3		
		Smoke	1	1						
176 p	55 y M				A	Inhal	Unt-O	2		
		Hydrogen sulfide	1	1						
177 pha	56 y F				A	Inhal	Unt-M	1		
		Smoke	1	1						
178 p	56 y M				A	Inhal	Unt-E	1		
		Smoke	1	1						
179 p	57 y M				A	Inhal	Int-S	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	48 % In Blood (unspecified) @ Unknown
		Sotalol	2	2						
		Simvastatin	3	3						
		Angiotensin-converting Enzyme Inhibitor	4	4						
180 p	58 y F				A	Inhal+ Derm	Unt-E	1		
		Smoke	1	1						
181	58 y M				A	Inhal	Unt-E	2		
		Carbon monoxide	1	1						
182 ha	58 y M				A	Inhal	Unt-E	3		
		Smoke	1	1					Carboxyhemoglobin	27 % In Blood (unspecified) @ Unknown
		Ethanol	2	2					Ethanol	0.076 g/dL In Blood (unspecified) @ Unknown
183 p	64 y M				A	Inhal	Unk	1		
		Smoke	1	1						
184 pa	64 y M				A	Inhal	Unt-E	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	59 % In Blood (unspecified) @ Autopsy
185 pi	65 y F				A	Inhal	Unt-E	1		
		Smoke	1	1						
186 ha	68 y M				A	Inhal	Unt-E	1		
		Smoke	1	1						
187 pi	73 y M				A	Inhal	Unt-E	1		
		Carbon monoxide	1	1						
188 ph	80 y M				A	Inhal	Unt-E	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	19.8 % In Blood (unspecified) @ Unknown
189 p	83 y F				A	Inhal	Unt-E	1		
		Carbon monoxide	1	1						
190 p	90 y F				A	Inhal	Unt-G	3		
		Carbon monoxide	1	1					Carboxyhemoglobin	20 % In Blood (unspecified) @ Unknown
191 pai	19 m F				A	Inhal	Unt-E	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	66 % In Blood (unspecified) @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Fumes/Gases/Vapors, continued										
192 pai	20+ y F				A/C	Inhal	Unt-G	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	39 % In Blood (unspecified) @ Autopsy
193 ai	40+ y F				U	Ingst	Unk	1		
		Carbon monoxide	1	1					Carboxyhemoglobin	25 % In Blood (unspecified) @ Autopsy
		Opioid	3	2					Hydrocodone	0.15 mg/L In Blood (unspecified) @ Autopsy
		Doxylamine	5	3					Doxylamine	0.4 mg/L In Blood (unspecified) @ Autopsy
		Clonazepam	2	4					Clonazepam	0.024 mg/L In Blood (unspecified) @ Autopsy
		Chlorpheniramine	4	5					Chlorpheniramine	0.25 mg/L In Blood (unspecified) @ Autopsy
194 p	50+ y F				A	Inhal	Int-S	1		
		Carbon monoxide	1	1						
195 p	Unknown child (<=19 y) M				A	Inhal	Unt-E	1		
		Carbon monoxide	1	1						
196 p	Unknown adult (>=20 y) M				A	Inhal	Unt-E	2		
		Carbon monoxide	1	1						
		Fume, gas or vapor, unknown	2	2						
197	Unknown adult (>=20 y) F				A	Inhal	Unt-E	2		
		Smoke	1	1						
198	Unknown adult (>=20 y) M				A	Inhal	Unt-E	3		
		Smoke	1	1						
199 p	Unknown adult (>=20 y) M				U	Inhal	Oth-M	2		
		Carbon monoxide	1	1						
		Benzodiazepine	2	2						
		Eszopiclone	3	3						
200 pi	Unknown adult (>=20 y) M				A	Inhal	Unt-E	1		
		Carbon monoxide	1	1						
201 p	Unknown age U				A	Inhal	Unt-E	2		
		Carbon monoxide	1	1						
See also case 77, 101, 103										
Heavy Metals										
[202 ha]	36 y M				A	Par	Int-S	1		
		Mercury	1	1					Mercury, elemental	3900 mcg/L In Blood (unspecified) @ Autopsy
		Mercury	1	1					Mercury, elemental	552 mcg/dL In Urine (quantitative only) @ 6 d (pe)
		Mercury	1	1					Mercury, elemental	224 mcg/dL In Serum @ 6 d (pe)
[203 a]	55 y M				A	Inhal	Int-M	1		
		Mercury	1	1					Mercury, elemental	1.108 mcg/mL In Blood (unspecified) @ 2 d (pe)
[204 h]	57 y M				A	Ingst	Int-S	1		
		Arsenic	1	1					Arsenic	2800 mcg/L In Urine (quantitative only) @ Unknown
See also case 243, 1229										
Hydrocarbons										
205 p	15 y M				U	Inhal	Int-U	2		
		Difluoroethane	1	1						
[206 h]	19 y M				A/C	Inhal	Int-A	1		
		Fluorochlorocarbon/ propellant	1	1						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Hydrocarbons, continued										
207 p	19 y M				U	Inhal	Int-U	2		
		Chloroflurocarbon	1	1						
208 p	20 y M				A	Inhal	Int-A	2		
		Trichloroethylene	1	1						
209 pai	21 y M				A/C	Ingst+ Inhal	Int-A	2		
		Difluoroethane	1	1						
		Tetrachloroethylene	2	2						
		Ethanol	3	3					Ethanol	0.04 % (wt/Vol) In Whole Blood @ Autopsy
210 p	22 y F				A	Inhal	Int-A	2		
		Difluoroethane	1	1						
211 p	32 y M				A/C	Inhal	Int-A	1		
		Fluorochlorocarbon/ propellant	1	1						
212	33 y F				A	Inhal	Int-A	1		
		Fluorochlorocarbon/ propellant	1	1						
213 ha	34 y M				A/C	Ingst+ Inhal	Int-A	1		
		Fluorochlorocarbon/ propellant	1	1						
		Alprazolam	2	2						
		Quetiapine	3	3						
[214 a]	40 y F				A	Par	Int-S	1		
		Lighter fluids and/ or naphtha	1	1						
215 h	41 y F				A	Inhal	Int-A	3		
		Toluene	1	1						
216 pa	50 y M				U	Inhal	Unk	2		
		Difluoroethane	1	1					1,1-difluoroethane	14 mcg/mL In Whole Blood @ Autopsy
		Ethanol	2	2					Ethanol	295 mg/dL In Whole Blood @ Autopsy
217 a	80 y M				A	Ingst+ Aspir	Unt-G	1		
		Lamp oil	1	1						
[218 a]	11 m M				A	Ingst+ Aspir	Unt-G	1		
		Mineral spirits	1	1						
219 pa	13 m M				A	Ingst+ Aspir	Unt-G	1		
		Gasoline	1	1						
		Hydrocarbons	2	2						
See also case 105										
Industrial Cleaners										
220	43 y M				A	Ingst+ Derm	Int-S	1		
		Cleaner (acid)	1	1						
221 a	72 y F				A	Ingst	Int-S	2		
		Cleaner (alkali)	1	1						
See also case 341										
Mushrooms										
222	51 y F				A	Ingst	Int-U	1		
		Mushrooms, cyclopeptides	1	1						
[223 a]	53 y F				A	Ingst	Unt-G	1		
		Mushrooms, cyclopeptides	1	1						
[224 a]	55 y F				A	Ingst	Unt-G	2		
		Mushrooms, cyclopeptides	1	1						
225	61 y F				A	Ingst	Int-M	1		
		Mushrooms	1	1						
See also case 1272										
Other/Unknown Nondrug Substances										
226 p	66 y M				A	Inhal	Unt-E	1		
		Water	1	1						
227 p	84 y F				A	Ingst	Unt-M	1		
		Lamp oil	1	1						
Pesticides										
[228 a]	8 y M				A	Ingst	Unt-G	1		
		Paraquat	1	1					Paraquat	0.74 mcg/mL In Urine (quantitative only) @ 15 d (pe)
229	17 y F				U	Ingst	Int-S	1		
		Organophosphate	1	1						
230	27 y M				A	Ingst	Unt-G	2		
		Carbamate	1	1						
231	37 y M				A	Ingst + Par	Int-S	1		
		Organophosphate	1	1						
232 h	37 y M				A	Ingst	Int-U	1		

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Pesticides, continued										
		Glyphosate	1	1						
233	38 y M				A	Ingst	Unt-M	2		
		Glyphosate	1	1						
234	48 y M				A	Ingst	Int-S	3		
		Glyphosate	1	1						
		Herbicide	2	2						
		Acetaminophen	3	3						
235	48 y M				A	Ingst	Int-S	2		
		Glyphosate	1	1						
236 p	54 y M				A	Ingst	Int-S	2		
		Insecticide, unknown	1	1						
		Pyrethroids	2	2						
237	56 y F				A	Ingst	Int-S	1		
		Rodenticide, unknown	1	1						
238 pai	56 y M				A	Ingst	Int-S	2		
		Organophosphate	1	1						
		Carisoprodol	2	2					Carisoprodol	97 Other (see abst) In Liver @ Autopsy
		Carisoprodol	2	2					Meprobamate	76 Other (see abst) In Liver @ Autopsy
239	58 y M				A	Ingst	Unt-G	2		
		Glyphosate	1	1						
		Acetaminophen/ opioid	2	2						
		Acetaminophen/ diphenhydramine	3	3						
		Ibuprofen	4	4						
		Simvastatin	5	5						
240	58 y F				A	Ingst	Int-S	2		
		Glyphosate	1	1						
241 a	58 y M				A	Ingst	Int-S	1		
		Glyphosate	1	1						
[242]	59 y F				A	Ingst	Int-S	2		
		Copper Sulfate	1	1						
[243 a]	61 y M				U	Ingst	Int-S	1		
		Strychnine	1	1					Strychnine	1.2 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen/ propoxyphene	2	2					Norpropoxyphene	1.9 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen/ propoxyphene	2	2					Propoxyphene	0.96 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen/ hydrocodone	3	3					Acetaminophen	148 mg/L In Blood (unspecified) @ 6 h (pe)
		Acetaminophen/ hydrocodone	3	3					Dihydrocodeine	0.031 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen/ hydrocodone	3	3					Hydrocodone	0.19 mg/L In Blood (unspecified) @ Autopsy
		Oxycodone	4	4					Oxycodone	0.06 mg/L In Blood (unspecified) @ Autopsy
		Arsenic	5	5						
		Trazodone	6	6						
		Ethanol	7	7					Ethanol	30 mg/dL In Blood (unspecified) @ 6 h (pe)
		Acetaminophen/ pseudoephedrine	8	8						
244	68 y F				A	Ingst	Int-S	3		
		Carbamate	1	1						
245 p	30+ y M				A	Ingst+ Derm	Int-S	1		
		Organophosphate	1	1						
See also case 593, 825										
Plants										
246	62 y F				A	Ingst	Unt-M	3		
		Pokeweed	1	1						
Sporting Equipment										
247	56 y M				A	Ingst	Int-S	1		
		Selenous acid	1	1						
Pharmaceutical Exposures										
Analgesics										
248 p	3 y M				A	Derm	Unk	2		
		Oxycodone	1	1						
		Chlorhexidine	2	2						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
249 pai	3 y M				A	Ingst	Unt-T	1		
		Methadone	1	1					Eddp (2-ethylidene-1,5-dimethyl-3,3-diphenyl Pyrrolidine)	0.07 mg/L In Blood (unspecified) @ Autopsy
		Methadone	1	1					Methadone	0.28 mg/L In Blood (unspecified) @ Autopsy
[250 pa]	4 y F				A	Ingst	Unk	1		
		Oxycodone	1	1					Oxycodone	2 mg/L In Blood (unspecified) @ Autopsy
		Oxycodone	1	1					Oxymorphone	0.2 mg/L In Blood (unspecified) @ Autopsy
251 pha	5 y F				A	Ingst	Oth-M	1		
		Oxycodone	1	1					Oxycodone	0.36 mg/L In Blood (unspecified) @ 1 m (pe)
		Morphine	2	2					Morphine	0.045 mg/L In Blood (unspecified) @ 1 m (pe)
252 pai	6 y F				A	Ingst	Unk	2		
		Tramadol	1	1					Tramadol	1.5 mcg/mL In Whole Blood @ Autopsy
		Tramadol	1	1					Tramadol	2.4 Other (see abst) In Liver @ Autopsy
		Diphenhydramine	2	2					Diphenhydramine	0.22 mcg/mL In Whole Blood @ Autopsy
		Diphenhydramine	2	2					Diphenhydramine	0.69 Other (see abst) In Liver @ Autopsy
[253 pa]	12 y M				A	Ingst+ Inhal	Int-A	1		
		Methadone	1	1					Methadone	0.24 mg/L In Other @ Unknown
		Alprazolam	2	2						
		Marijuana	3	3						
254	14 y F				A	Ingst	Int-S	1		
		Salicylate	4	1						
		Lamotrigine *	2	2						
		Lithium *	1	2						
		Methylphenidate	3	3						
255	14 y F				A	Ingst	Int-S	1		
		Salicylate	1	1					Salicylate	96 mg/dL In Blood (unspecified) @ Unknown
		Salicylate	1	1					Salicylate	131 mg/dL In Blood (unspecified) @ Unknown
		Salicylate	1	1					Salicylate	162 mg/dL In Blood (unspecified) @ Unknown
256	15 y F				U	Ingst	Int-A	2		
		Oxycodone	1	1						
		Naproxen	2	2						
257	15 y F				A	Ingst	Int-S	2		
		Salicylate	1	1						
258	15 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	150 mcg/mL In Unknown @ Unknown
259	16 y F				A	Ingst	Int-M	1		
		Acetaminophen	1	1					Acetaminophen	144 mcg/mL In Serum @ 14 h (pe)
260 ph	16 y M				A	Unk	Int-A	1		
		Methadone	1	1						
261 pi	16 y M				A/C	Ingst	Int-A	1		
		Methadone	1	1						
		Oxycodone	2	2						
		Amphetamine	3	3						
262	16 y F				U	Ingst	Int-S	1		
		Acetaminophen/ oxycodone	1	1						
		Hydralazine	2	2						
		Acetaminophen/ diphenhydramine	3	3						
263 pai	16 y M				U	Ingst	Int-A	1		
		Oxycodone	1	1					Oxycodone	0.18 mcg/mL In Whole Blood @ Autopsy
		Promethazine	2	2						
		Propoxyphene	3	3						
264 pa	16 y M				U	Ingst	Int-S	1		
		Oxycodone	1	1						
		Ethanol	2	2					Ethanol	14.6 mg/dL In Blood (unspecified) @ Unknown

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
265 pai	17 y M				U	Ingst	Int-S	1		
		Oxycodone	1	1					Oxycodone	0.2 mcg/mL In Whole Blood @ Autopsy
		Citalopram	2	2					Citalopram	1.2 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	3	3					Alprazolam	94 ng/mL In Whole Blood @ Autopsy
[266 ha]	17 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	137.7 mcg/mL In Blood (unspecified) @ 28 h (pe)
267 ph	17 y M				A	Ingst	Int-A	1		
		Opioid	1	1						
268 p	17 y M				A	Ingst	Int-U	1		
		Methadone	1	1						
269 pai	17 y M				A	Ingst	Int-A	1		
		Acetaminophen/ oxycodone	1	1					Oxycodone	20 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	2	2					Alprazolam	50 ng/mL In Whole Blood @ Autopsy
270 p	17 y M				U	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	1	1						
		Benzodiazepine	2	2						
		Acetaminophen/ oxycodone	3	3						
		Aripiprazole	4	4						
		Escitalopram	5	5					Escitalopram	410 Other (see abst) In Unknown @ Autopsy
271 p	18 y M				A	Ingst	Int-S	1		
		Acetaminophen/ oxycodone	1	1					Acetaminophen	345 mcg/mL In Serum @ 9 h (pe)
272 pha	18 y M				A	Ingst	Int-S	1		
		Methadone	1	1						
		Opioid	2	2						
		Acetaminophen	3	3						
273	18 y F				A	Ingst	Int-A	1		
		Oxycodone	2	1						
		Ethanol	1	2						
274 a	18 y M				A	Ingst	Int-S	1		
		Salicylate	1	1					Salicylate	800 mg/dL In Blood (unspecified) @ Unknown
275 p	18 y M				A	Ingst	Int-A	2		
		Methadone	1	1						
		Acetaminophen/ hydrocodone	2	2						
		Methamphetamine	3	3						
276 pa	18 y M				U	Ingst	Int-A	1		
		Morphine	1	1					Morphine	2.3 mg/L In Blood (unspecified) @ Autopsy
		Morphine	1	1					Morphine	0.73 mg/kg In Blood (unspecified) @ Autopsy
		Morphine	1	1					Morphine	5 mg/L In Urine (quantitative only) @ Autopsy
		Benzodiazepine	2	2					Alprazolam	0.062 mg/L In Blood (unspecified) @ Autopsy
		Diazepam	3	3					Diazepam	0.29 mg/L In Blood (unspecified) @ Autopsy
		Diazepam	3	3					Nordiazepam	0.1 mg/L In Blood (unspecified) @ Autopsy
		Ethanol	4	4						
		Theophylline	5	5						
277 pa	18 y F				A	Par	Int-A	2		
		Opioid	1	1					Codeine	0.01 mg/L In Blood (unspecified) @ Autopsy
		Opioid	1	1					Morphine	0.03 mg/L In Blood (unspecified) @ Autopsy
		Cocaine	2	2					Benzoylecognine	3.1 mg/L In Blood (unspecified) @ Autopsy
		Cocaine	2	2					Cocaine	0.03 mg/L In Blood (unspecified) @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
278 ph	18 y M				A	Ingst	Int-S	1		
		Tramadol	1	1					Tramadol	5.53 mg/L In Urine (quantitative only) @ Unknown
		Diazepam	2	2					Diazepam	1.37 mg/L In Urine (quantitative only) @ Unknown
		Diazepam	2	2					Nordiazepam	0.21 mg/L In Urine (quantitative only) @ Unknown
		Escitalopram	3	3						
		Paroxetine	4	4						
279 pai	18 y M				A/C	Ingst	Int-A	1		
		Hydrocodone	1	1					Hydrocodone	0.2 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	2	2					Alprazolam	122 ng/mL In Whole Blood @ Autopsy
280 ai	19 y F				A/C	Ingst	Unt-T	1		
		Acetaminophen	1	1					Acetaminophen	60 mcg/mL In Blood (unspecified) @ Unknown
		Ethanol	2	2					Ethanol	33 mg/dL In Blood (unspecified) @ Unknown
[281 ph]	19 y M				A	Ingst	Int-A	1		
		Methadone	1	1					Methadone	92 ng/mL In Serum @ 30 m (pe)
		Methadone	1	1					Methadone	54 ng/mL In Serum @ 48 h (pe)
282 pha	19 y F				A	Ingst + Unk	Unt-U	1		
		Oxycodone	1	1					Oxycodone	211 ng/mL In Blood (unspecified) @ Unknown
		Benzodiazepine	2	2					Alprazolam	11 ng/mL In Blood (unspecified) @ Unknown
		Citalopram	3	3						
		Acetaminophen	4	4						
		Marijuana	5	5						
283 p	19 y M				A	Oth + Unk	Int-A	1		
		Opioid	1	1						
		Cocaine	2	2						
284 pai	19 y M				A/C	Ingst	Int-A	2		
		Oxycodone	1	1					Oxycodone	0.11 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	2	2					Alprazolam	164 ng/mL In Whole Blood @ Autopsy
285	20 y M				A	Ingst	Int-S	1		
		Acetaminophen	1	1						
286 pa	20 y F				U	Ingst	Unk	1		
		Propoxyphene	1	1					Norpropoxyphene	3.7 mg/L In Blood (unspecified) @ Unknown
		Propoxyphene	1	1					Propoxyphene	2.5 mg/L In Blood (unspecified) @ Unknown
		Chlordiazepoxide	2	2						
		Methamphetamine	3	3						
		Escitalopram	4	4						
		Bupropion (extended release)	5	5						
287 pa	20 y M				A	Unk	Int-A	1		
		Oxycodone	1	1					Oxycodone	0.17 mg/L In Blood (unspecified) @ Unknown
		Oxycodone	1	1					Oxycodone	0.13 mg/L In Blood (unspecified) @ Autopsy
		Tramadol	2	2					N-demethyl Tramadol	0.51 mg/L In Blood (unspecified) @ Autopsy
		Tramadol	2	2					O-demethyl Tramadol	0.15 mg/L In Blood (unspecified) @ Autopsy
		Tramadol	2	2					Tramadol	0.57 mg/L In Blood (unspecified) @ Autopsy
		Citalopram	3	3					Citalopram	0.121 mg/L In Blood (unspecified) @ Autopsy
		Citalopram	3	3					N-desmethy-lcitalopram	0.15 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen/ codeine	4	4					Acetaminophen	0.67 mg/L In Blood (unspecified) @ Autopsy
[288 a]	20 y F				A	Ingst	Int-S	1		
		Salicylate	1	1					Salicylate	700 mcg/mL In Blood (unspecified) @ Unknown

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
289 pai	20 y M				U	Ingst+ Par	Int-A	1		
		Morphine	1	1					Morphine	0.19 mcg/mL In Whole Blood @ Autopsy
		Hydrocodone	2	2					Hydrocodone	0.05 mcg/mL In Whole Blood @ Autopsy
		Methamphetamine	3	3					Methamphetamine	0.2 mcg/mL In Whole Blood @ Autopsy
[290 pa]	20 y F				U	Ingst	Unk	1		
		Methadone	1	1					Methadone	0.27 mg/L In Blood (unspecified) @ Autopsy
		Methadone	1	1					Methadone	0.3 mg/L In Blood (unspecified) @ Autopsy
		Methadone	1	1					Methadone	1.7 mg/kg In Liver @ Autopsy
		Alprazolam	2	2					Alprazolam	0.057 mg/L In Blood (unspecified) @ Autopsy
		Carisoprodol	3	3						
[291 pha]	20 y M				A	Ingst+ Inhal	Int-A	1		
		Fentanyl transdermal	1	1						
		Methadone	2	2						
		Carisoprodol	3	3						
292 pai	20 y M				U	Par	Int-S	1		
		Fentanyl transdermal	1	1					Fentanyl	14.8 ng/mL In Whole Blood @ Autopsy
293 h	20 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1						
		Alprazolam	2	2						
		Carisoprodol	3	3						
		Ethanol	4	4						
294 pa	20 y M				A	Ingst	Unk	1		
		Fentanyl transdermal	1	1					Fentanyl	0.015 mg/L In Blood (unspecified) @ Autopsy
		Ethanol	2	2					Ethanol	0.14 mg/L In Blood (unspecified) @ Autopsy
295	20 y M				U	Ingst	Int-U	2		
		Buprenorphine	1	1						
		Alprazolam	2	2						
		Oxycodone	3	3						
		Fentanyl transdermal	4	4						
		Marijuana	5	5						
		Opioid	6	6						
296	21 y F				U	Ingst	Int-A	3		
		Acetaminophen	1	1						
		Ethanol	2	2						
297	21 y F				A/C	Ingst	Int-S	1		
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	696 mcg/mL In Serum @ Unknown
		Acetaminophen	2	2						
		Tramadol	3	3						
		Acetaminophen/ propoxyphene	4	4						
		Ibuprofen	5	5						
298	21 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1						
		Iron	2	2						
		Acetaminophen/ dextromethorphan	3	3						
		Diphenhydramine	4	4						
299 p	21 y M				A	Ingst	Int-A	1		
		Fentanyl transdermal	1	1						
300 a	21 y M				A	Ingst	Int-S	1		
		Salicylate	1	1					Salicylate	101.6 mg/dL In Serum @ 15 h (pe)
		Fluoxetine	2	2					Fluoxetine	2.7 mg/L In Blood (unspecified) @ Autopsy
		Fluoxetine	2	2					Norfluoxetine	1.3 mg/L In Blood (unspecified) @ Autopsy
		Venlafaxine	3	3					O-desmethy-lvenlafaxine	0.14 mg/L In Blood (unspecified) @ Autopsy
		Venlafaxine	3	3					Venlafaxine	0.82 mg/L In Blood (unspecified) @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
		Acetaminophen	4	4						
		Ibuprofen	5	5					Ibuprofen	4.4 mg/L In Blood (unspecified) @ Autopsy
301 pai	21 y F				U	Ingst	Int-S	1		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	89.4 mcg/mL In Whole Blood @ Autopsy
		Acetaminophen/ hydrocodone	1	1					Hydrocodone	0.08 mcg/mL In Whole Blood @ Autopsy
		Acetaminophen/ oxycodone	2	2					Oxycodone	0.06 mcg/mL In Whole Blood @ Autopsy
		Acetaminophen/ propoxyphene	3	3					Norpropoxyphene	0.29 mcg/mL In Whole Blood @ Autopsy
		Acetaminophen/ propoxyphene	3	3					Propoxyphene	0.8 mcg/mL In Whole Blood @ Autopsy
		Quetiapine	4	4					Quetiapine	6.3 mcg/mL In Whole Blood @ Autopsy
		Oxcabazepine	5	5					10-hydroxy-carbazepine	14 mcg/mL In Whole Blood @ Autopsy
		Lamotrigine	6	6					Lamotrigine	14 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	7	7						
		Sertraline	8	8					Sertraline	1.1 mcg/mL In Whole Blood @ Autopsy
302 pai	21 y M				U	Unk	Int-A	1		
		Oxycodone	1	1					Oxycodone	0.19 mcg/mL In Whole Blood @ Autopsy
		Ethanol	2	2					Ethanol	0.08 % (wt/Vol) In Whole Blood @ Autopsy
		Ethanol	2	2					Ethanol	0.12 % (wt/Vol) In Vitreous @ Autopsy
303	22 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1						
304	22 y F				A	Ingst	Unk	1		
		Methadone	1	1					Methadone	3441 ng/mL In Urine (quantitative only) @ Unknown
		Methadone	1	1					Methadone Metabolite	2734 ng/mL In Urine (quantitative only) @ Unknown
		Clonazepam	2	2						
		Acetaminophen/ oxycodone	3	3						
305	22 y F				C	Ingst	Int-U	1		
		Acetaminophen/ diphenhydramine	1	1						
		Promethazine	2	2						
306 a	22 y F-pregnant				C	Ingst	Int-M	2		
		Acetaminophen	1	1					Acetaminophen	81 mcg/mL In Serum @ Unknown
307 pai	22 y M				U	Ingst	Int-A	1		
		Methadone	1	1					Methadone	0.81 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	2	2					Alprazolam	260 ng/mL In Whole Blood @ Autopsy
308 p	22 y M				A	Ingst	Int-A	2		
		Morphine	1	1						
		Ethanol	2	2						
		Benzodiazepine	3	3						
309 pa	22 y M				U	Ingst	Unk	1		
		Oxycodone	1	1					Oxycodone	0.27 mg/L In Blood (unspecified) @ Autopsy
		Alprazolam	2	2					Alprazolam	0.13 mg/L In Blood (unspecified) @ Autopsy
		Opioid	3	3					Hydrocodone	0.09 mg/L In Blood (unspecified) @ Autopsy
		Duloxetine	4	4						
310	22 y F				A	Ingst	Int-S	1		
		Acetaminophen/ hydrocodone	1	1						
		Cyclobenzaprine	2	2						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
311	22 y F				A	Ingst	Int-S	2		
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	580 mcg/mL In Blood (unspecified) @ Unknown
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	855 mcg/mL In Blood (unspecified) @ Unknown
312 pai	22 y M				A	Ingst	Int-A	1		
		Oxycodone	1	1					Oxycodone	0.41 mcg/mL In Whole Blood @ Autopsy
		Diazepam	2	2					Diazepam	1.2 mcg/mL In Whole Blood @ Autopsy
		Diazepam	2	2					Nordiazepam	0.37 mcg/mL In Whole Blood @ Autopsy
		Temazepam	3	3						
313	23 y F				A	Ingst	Int-S	2		
		Methadone	1	1						
		Benzodiazepine	2	2						
314 p	23 y M				A	Ingst	Int-A	1		
		Acetaminophen/ hydrocodone	1	1						
		Carisoprodol	2	2						
		Alprazolam	3	3						
315 p	23 y F				A/C	Ingst	Int-A	1		
		Oxycodone	1	1						
		Acetaminophen	2	2						
		Ethanol	3	3						
316 pa	23 y M				A	Ingst	Int-U	1		
		Oxycodone	1	1					Oxycodone	1.5 mg/L In Blood (unspecified) @ Autopsy
		Oxycodone	1	1					Oxycodone	0.7 mg/L In Blood (unspecified) @ Autopsy
		Cocaine	2	2					Benzoylecgonine	2 mg/L In Blood (unspecified) @ Autopsy
		Cocaine	2	2					Cocaine	0.1 mg/L In Blood (unspecified) @ Autopsy
		Sertraline	3	3						
317 p	23 y F				A/C	Ingst	Int-A	2		
		Methadone	1	1						
		Benzodiazepine	2	2						
318 p	23 y M				A/C	Ingst	Int-A	3		
		Methadone	1	1						
		Oxycodone	2	2						
319 pai	23 y M				A/C	Ingst	Int-A	1		
		Methadone	1	1					Methadone	0.16 mcg/mL In Whole Blood @ Autopsy
		Oxycodone	2	2					Oxycodone	0.14 mcg/mL In Whole Blood @ Autopsy
		Oxycodone	2	2					Oxymorphone	18 ng/mL In Whole Blood @ Autopsy
		Alprazolam	3	3						
320 pa	23 y M				A	Ingst	Int-A	1		
		Methadone	1	1						
		Acepromazine	2	2						
		Citalopram	3	3						
		Lysergic Acid Diethylamide (LSD)	4	4						
		Alprazolam	5	5						
321	23 y F				U	Ingst	Int-A	1		
		Oxycodone	1	1						
322 pa	23 y M				A	Ingst+ Par	Int-S	1		
		Opioid	1	1					Morphine	110 ng/mL In Serum @ Unknown
		Opioid	1	1					Oxycodone	23 ng/mL In Serum @ Unknown
		Oxycodone	2	2						
		Cocaine	3	3					Benzoylecognine	380 ng/mL In Serum @ Unknown
		Hydroxyzine	4	4					Hydroxyzine	25 ng/mL In Serum @ Unknown
		Carbamazepine	5	5					Carbamazepine	3.6 mcg/mL In Serum @ Unknown
323 pa	23 y M				U	Ingst	Int-S	1		
		Oxycodone	1	1					Oxycodone	0.091 mg/L In Blood (unspecified) @ 1 d (pe)

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
		Benzodiazepine	2	2					Clonazepam	0.005 mg/L In Blood (unspecified) @ 1 d (pe)
		Cocaine	3	3						
		Ethanol	4	4					Ethanol	50 mg/dL In Blood (unspecified) @ 1 d (pe)
324 p	23 y F				A	Ingst	Int-S	1		
		Methadone	1	1						
		Acetaminophen/ codeine	2	2						
		Alprazolam	3	3						
325 pa	24 y M				A	Ingst	Unk	1		
		Oxycodone	1	1					Oxycodone	0.74 mg/L In Blood (unspecified) @ Autopsy
		Opioid	2	2					Hydrocodone	0.05 mg/L In Blood (unspecified) @ Autopsy
		Carisoprodol	3	3					Carisoprodol (n-isopropyl meprobamate)	2 mg/L In Blood (unspecified) @ Autopsy
		Diphenhydramine	4	4						
326 pa	24 y M				A	Unk	Int-U	1		
		Acetaminophen/ codeine	1	1					Codeine	0.3 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen/ codeine	1	1					Morphine (free)	140 mcg/L In Blood (unspecified) @ Autopsy
		Alprazolam	2	2					Alprazolam	0.079 mg/L In Blood (unspecified) @ Autopsy
327	24 y M				A	Ingst	Unt-G	1		
		Acetaminophen	1	1						
328 pa	24 y F				C	Ingst	Int-S	2		
		Oxycodone	1	1					Morphine	0.11 mg/L In Blood (unspecified) @ Autopsy
		Oxycodone	1	1					Morphine	4.36 mg/L In Bile @ Autopsy
		Oxycodone	1	1					Oxycodone	0.01 mg/L In Blood (unspecified) @ Autopsy
		Oxycodone	1	1					Oxycodone	0.04 mg/kg In Other @ Autopsy
329 a	24 y M				A	Ingst	Int-S	1		
		Salicylate	1	1						
		Beta Blocker	2	2						
		Benzodiazepine	3	3						
		Paroxetine	4	4						
330	24 y F				A	Ingst	Unk	1		
		Salicylate	1	1					Salicylate	90 mg/dL In Blood (unspecified) @ Unknown
		Ethanol	2	2						
331 pa	24 y F				A	Ingst	Int-S	1		
		Methadone	1	1					Methadone	0.13 mg/L In Blood (unspecified) @ 1 h (pe)
		Quetiapine	2	2						
		Duloxetine	3	3						
		Alprazolam	4	4					Alprazolam	0.06 mg/L In Blood (unspecified) @ 1 h (pe)
332	24 y M				A	Ingst	Int-U	3		
		Oxycodone	1	1						
		Alprazolam	2	2						
		Ethanol	3	3						
333 h	24 y M				A	Ingst	Int-S	1		
		Acetaminophen/ hydrocodone	1	1						
		Acetaminophen/ diphenhydramine	2	2						
		Methadone	3	3						
334 p	24 y M				U	Ingst	Int-A	2		
		Methadone	1	1						
335 p	24 y M				U	Ingst	Int-S	2		
		Oxycodone	1	1						
		Cocaine	2	2						
		Methamphetamine	3	3						
		Alprazolam	4	4						
336 pa	24 y M				A/C	Ingst	Int-U	1		
		Methadone	1	1					Eddp (2-ethylidene-1,5-dimethyl-3,3-diphenyl Pyrrolidine)	160 ng/mL In Whole Blood @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
		Methadone	1	1					Methadone	1000 ng/mL In Whole Blood @ Autopsy
		Citalopram	2	2					Citalopram	85 ng/mL In Whole Blood @ Autopsy
337 p	25 y M				C	Ingst	Unk	2		
		Acetaminophen	1	1						
338 pa	25 y F				A	Ingst	Int-S	1		
		Methadone	1	1					Methadone	0.55 mcg/mL In Blood (unspecified) @ 1 h (pe)
339 a	25 y F				A/C	Ingst	Int-S	1		
		Acetaminophen	1	1						
340 a	25 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	28 mg/L In Serum @ 3 d (pe)
		Ethanol	2	2					Ethanol	90 mg/dL In Serum @ Unknown
341	25 y M				A	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	327 mcg/mL In Blood (unspecified) @ 24 h (pe)
		Sodium Carbonate/ trisodium Phosphate	2	2						
		Hypochlorite	3	3						
		Cleaners (Anionic/ nonionic)	4	4						
[342 h]	25 y F				A	Ingst	Int-S	2		
		Salicylate	1	1					Saliclylate	96.5 mg/dL In Serum @ Unknown
343 pai	25 y F				U	Ingst	Int-A	1		
		Tramadol	1	1					Tramadol	2.8 mcg/mL In Whole Blood @ Autopsy
		Venlafaxine	2	2					Venlafaxine	0.9 mcg/mL In Whole Blood @ Autopsy
		Cyproheptadine	3	3						
		Ethanol	4	4					Ethanol	0.02 % (wt/Vol) In Whole Blood @ Autopsy
		Ethanol	4	4					Ethanol	0.04 % (wt/Vol) In Vitreous @ Autopsy
		Hydroxyzine	5	5						
		Trazodone	6	6					Trazodone	5.5 mcg/mL In Whole Blood @ Autopsy
344 h	25 y F				C	Ingst	Unk	2		
		Acetaminophen/ hydrocodone	1	1						
345 pa	25 y F				U	Ingst	Unk	2		
		Methadone	1	1					Methadone	0.62 mcg/mL In Blood (unspecified) @ Autopsy
		Benzodiazepine	2	2					Diazepam	0.23 mcg/mL In Blood (unspecified) @ Autopsy
		Benzodiazepine	2	2					Nordiazepam	0.29 mcg/mL In Blood (unspecified) @ Autopsy
346 pa	25 y F				A	Ingst	Unk	1		
		Methadone	1	1						
		Morphine	2	2						
		Quetiapine	3	3						
		Benzodiazepine	4	4						
347	26 y F				C	Ingst	Int-S	1		
		Acetaminophen	1	1						
348	26 y M				A	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	250 mcg/mL In Serum @ 2 d (pe)
349 p	26 y M				A	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	59 mcg/mL In Blood (unspecified) @ Unknown
		Clonazepam	2	2						
350 pai	26 y M				U	Ingst	Int-A	1		
		Acetaminophen/ oxycodone	1	1					Oxycodone	0.15 mcg/mL In Blood (unspecified) @ Unknown
		Alprazolam	2	2					Alprazolam	140 ng/mL In Blood (unspecified) @ Unknown
		Alprazolam	2	2					Alprazolam	186 ng/mL In Whole Blood @ Autopsy
351	26 y F				A/C	Ingst	Int-A	1		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	53 mcg/mL In Blood (unspecified) @ Unknown

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
352 pa	26 y M				C	Ingst	Unk	2		
		Methadone	1	1						
		Cocaine	2	2						
		Benzodiazepine	3	3						
		Marijuana	4	4						
353	26 y M				C	Ingst+ Unk	Int-A	3		
		Oxycodone	1	1						
		Cocaine	3	2						
		Ethanol	4	3						
		Marijuana	2	4						
354 pa	26 y M				A	Ingst	Int-S	1		
		Methadone	3	1					Methadone	320 ng/mL In Blood (unspecified) @ Autopsy
		Acetaminophen/ hydrocodone	4	2					Hydrocodone	56.3 ng/mL In Blood (unspecified) @ Autopsy
		Acetaminophen/ propoxyphene	1	3						
		Ethanol	2	4						
		Diazepam	5	5					Diazepam	52.3 ng/mL In Blood (unspecified) @ Autopsy
		Alprazolam	6	6						
355 pai	26 y M				A	Ingst	Int-A	1		
		Morphine	1	1					Morphine	0.14 mcg/mL In Whole Blood @ Autopsy
356 pai	26 y M				A	Ingst	Int-A	1		
		Methadone	1	1					Methadone	0.39 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	2	2						
357 ha	27 y F				U	Ingst	Int-A	1		
		Acetaminophen/ hydrocodone	1	1						
358 pa	27 y M				U	Ingst+ Unk	Unk	2		
		Morphine	1	1					Hydromorphone	357 ng/mL In Urine (quantitative only) @ Unknown
		Morphine	1	1					Morphine	334 ng/mL In Blood (unspecified) @ Unknown
		Clonazepam	2	2					Lorazepam	22.9 ng/mL In Blood (unspecified) @ Unknown
		Propoxyphene	3	3					Norpropoxyphene	92 ng/mL In Blood (unspecified) @ Unknown
		Marijuana	4	4					Carboxy-thc	32.8 ng/mL In Blood (unspecified) @ Unknown
		Marijuana	4	4					Carboxy-thc	30 ng/mL In Urine (quantitative only) @ Unknown
		Marijuana	4	4					Thc (tetrahydrocannabinol)	1.4 ng/mL In Blood (unspecified) @ Unknown
359 pai	27 y M				U	Ingst	Int-A	1		
		Methadone	1	1					Methadone	1 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	2	2					Alprazolam	58 ng/mL In Whole Blood @ Autopsy
		Amitriptyline	3	3						
360	27 y F				A	Ingst	Int-U	1		
		Acetaminophen	1	1						
361	27 y M				U	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	280 mcg/mL In Blood (unspecified) @ Unknown
		Acetaminophen	1	1					Acetaminophen	87 mcg/mL In Blood (unspecified) @ 1 d (pe)
		Acetaminophen	1	1					Acetaminophen	16 mcg/mL In Blood (unspecified) @ 2 d (pe)
		Acetaminophen	1	1					Acetaminophen	5 mcg/mL In Blood (unspecified) @ 3 d (pe)
362 p	27 y M				A/C	Ingst	Int-A	1		
		Methadone	1	1						
		Ethanol	2	2						
363 h	27 y M				A	Ingst	Int-S	2		
		Methadone	1	1						
		Acetaminophen/ diphenhydramine	2	2						
		Citalopram	3	3						
		Benzodiazepine	4	4						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
364	27 y F				U	Ingst	Unk	1		
		Acetaminophen	1	1						
365 h	27 y F				C	Ingst	Unt-G	2		
		Salicylate	1	1					Salicylate	33.8 mg/dL In Blood (unspecified) @ 1 h (pe)
366 a	27 y F				A	Ingst+ Unk	Unk	3		
		Acetaminophen	1	1					Acetaminophen	52 mcg/dL In Blood (unspecified) @ Unknown
		Marijuana	2	2						
367 pai	27 y M				A	Ingst	Int-A	1		
		Fentanyl Transdermal	1	1					Fentanyl	10.9 ng/mL In Whole Blood @ Autopsy
368 p	27 y M				A	Ingst	Int-A	2		
		Opioid	1	1						
		Acetaminophen	2	2					Acetaminophen	32 mcg/mL In Serum @ Unknown
		Barbiturates (extended release)	3	3						
		Ethanol	4	4					Ethanol	0.18 % (wt/Vol) In Serum @ Unknown
369 h	27 y F				A	Ingst	Int-U	2		
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	16 mcg/mL In Serum @ Unknown
		Acetaminophen	2	2						
370 pa	28 y M				U	Ingst	Int-S	2		
		Morphine	1	1					Morphine	0.3 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen	2	2						
371 pa	28 y M				U	Ingst	Int-U	3		
		Methadone	1	1					Methadone	0.17 mg/L In Blood (unspecified) @ Autopsy
372	28 y M				A	Ingst	Int-S	2		
		Salicylate	1	1						
		Acetaminophen/ diphenhydramine	2	2						
		Ibuprofen	3	3						
		Clomipramine	4	4						
373	28 y M				A/C	Ingst	Int-S	1		
		Acetaminophen	1	1						
374	28 y F-pregnant				A	Ingst	Int-S	2		
		Acetaminophen	1	1						
375 pai	28 y M				U	Ingst	Int-A	1		
		Methadone	1	1					Methadone	0.8 mcg/mL In Whole Blood @ Autopsy
		Hydrocodone	2	2					Hydrocodone	0.18 mcg/mL In Whole Blood @ Autopsy
376 pai	28 y M				U	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	181.3 mcg/mL In Whole Blood @ Autopsy
		Acetaminophen/ hydrocodone	1	1					Hydrocodone	0.59 mcg/mL In Whole Blood @ Autopsy
		Oxycodone	2	2					Oxycodone	81 mcg/mL In Whole Blood @ Autopsy
		Oxycodone	2	2					Oxymorphone	16.1 ng/mL In Whole Blood @ Autopsy
377	28 y F				C	Ingst	Int-M	3		
		Acetaminophen	1	1						
		Ethanol	2	2						
378 pai	28 y F				U	Ingst	Int-A	1		
		Oxycodone	1	1					Oxycodone	0.67 mcg/mL In Blood (unspecified) @ Unknown
		Hydrocodone	2	2					Hydrocodone	0.08 mcg/mL In Blood (unspecified) @ Unknown
		Diazepam	3	3						
379 h	29 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	69 mcg/mL In Serum @ 11.5 h (pe)
[380 ha]	29 y M				A/C	Ingst	Int-S	1		
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	360 mcg/mL In Blood (unspecified) @ 1 h (pe)
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	210 mcg/mL In Blood (unspecified) @ 7 h (pe)
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	350 mcg/mL In Blood (unspecified) @ 23 h (pe)
		Sertraline	2	2					Sertraline	29 ng/mL In Blood (unspecified) @ Unknown

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
381	29 y F				C	Ingst	Unk	1		
		Acetaminophen	1	1					Acetaminophen	78.3 mcg/mL In Blood (unspecified) @ Unknown
382 h	29 y F				C	Ingst	Int-A	3		
		Acetaminophen	1	1						
		Acetaminophen/ hydrocodone	2	2						
383 pai	29 y M				U	Ingst	Unk	2		
		Tramadol	1	1					Tramadol	1 mg/L In Blood (unspecified) @ Autopsy
		Sucralfate	2	2						
384 pai	29 y M				U	Ingst	Int-A	1		
		Oxycodone	1	1						
		Carisoprodol	2	2					Meprobamate	16 mcg/mL In Whole Blood @ Autopsy
385	29 y M				A/C	Ingst	Int-S	2		
		Acetaminophen	1	1						
		Salicylate	2	2						
		Drug, Unknown	3	3						
386 pai	29 y M				A/C	Ingst	Int-A	1		
		Methadone	1	1					Methadone	0.3 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	2	2					Alprazolam	61 ng/mL In Whole Blood @ Autopsy
		Ethanol	3	3					Ethanol	0.05 % (wt/Vol) In Whole Blood @ Autopsy
		Ethanol	3	3					Ethanol	0.06 % (wt/Vol) In Vitreous @ Autopsy
387 h	29 y F				U	Ingst	Unk	2		
		Methadone	1	1						
388 p	29 y F				A/C	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	235 mcg/mL In Blood (unspecified) @ Unknown
		Iron	2	2					Iron	320 mcg/dL In Blood (unspecified) @ Unknown
		Diphenhydramine	3	3						
		Citalopram	4	4						
389 a	29 y F				A/C	Ingst	Int-S	1		
		Salicylate	1	1						
		Quetiapine	2	2						
		Topiramate	3	3						
390 a	29 y F				A	Ingst	Int-S	1		
		Salicylate	1	1					Salicylate	93.8 mg/dL In Serum @ Unknown
391	29 y M				A	Ingst	Int-S	1		
		Acetaminophen/ diphenhydramine	1	1						
392 a	30 y F				A	Ingst	Int-S	2		
		Acetaminophen	1	1					Acetaminophen	2.8 mcg/mL In Whole Blood @ Autopsy
		Promethazine	2	2					Promethazine	110 ng/mL In Whole Blood @ Autopsy
		Fluoxetine	3	3					Fluoxetine	430 ng/mL In Whole Blood @ Autopsy
		Fluoxetine	3	3					Norfluoxetine	460 ng/mL In Whole Blood @ Autopsy
		Ethanol	4	4					Ethanol	36 mg/dL In Blood (unspecified) @ Unknown
		Diphenhydramine	5	5						
		Bupropion	6	6						
		Anticholinergic	7	7					Dicyclomine	12 ng/mL In Whole Blood @ Autopsy
393 a	30 y F				A	Ingst	Int-S	1		
		Acetaminophen/ diphenhydramine	1	1						
		Diphenhydramine	2	2						
		Acamprosate	3	3						
394	30 y M				A	Ingst	Int-S	1		
		Salicylate	1	1					Salicylate	1100 mg/L In Blood (unspecified) @ Unknown
		Hydroxyzine	2	2						
		Diuretic, unknown	3	3						
		Cefdinir	4	4						
		Ibuprofen	5	5						
		Prednisone	6	6						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
395 pa	30 y F				U	Par	Int-A	1		
		Morphine	1	1					Morphine	0.25 mg/L In Blood (unspecified) @ Autopsy
		Morphine	1	1					Morphine	174 mg/L In Bile @ Autopsy
		Cocaine	2	2						
		Drug, unknown	3	3						
396 p	30 y F				U	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	1	1						
397 pa	30 y F				U	Ingst+ Derm	Unk	1		
		Fentanyl Transdermal	1	1					Fentanyl	22 ng/mL In Blood (unspecified) @ Autopsy
		Fentanyl Transdermal	1	1					Norfentanyl	12 ng/mL In Blood (unspecified) @ Autopsy
		Ibuprofen	2	2						
		Piroxicam	3	3						
398	30 y F				A	Ingst	Int-S	1		
		Acetaminophen/ diphenhydramine	1	1						
399	30 y F				A	Ingst	Unk	1		
		Acetaminophen	1	1						
400 pa	30 y M				A	Par	Int-A	2		
		Fentanyl transdermal	1	1					Fentanyl	0.002 mg/L In Blood (unspecified) @ Autopsy
		Ethanol	2	2					Ethanol	0.239 g/dL In Blood (unspecified) @ Autopsy
		Diazepam	3	3					Diazepam	0.232 mg/L In Blood (unspecified) @ Autopsy
401 pai	30 y M				A	Ingst+ Derm	Int-A	2		
		Fentanyl transdermal	1	1					Fentanyl	14.2 ng/mL In Whole Blood @ Autopsy
		Ethanol	2	2					Ethanol	0.04 % (wt/Vol) In Whole Blood @ Autopsy
		Ethanol	2	2					Ethanol	0.06 % (wt/Vol) In Vitreous @ Autopsy
402	30 y F				A	Ingst	Int-U	1		
		Methadone	1	1						
		Acetaminophen/ oxycodone	2	2						
		Clonazepam	3	3						
		Alprazolam	4	4						
403 pai	30 y F				A/C	Ingst	Int-A	1		
		Methadone	1	1					Methadone	0.96 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	2	2					Alprazolam	108 ng/mL In Whole Blood @ Autopsy
		Amitriptyline	3	3					Amitriptyline	0.35 mcg/mL In Whole Blood @ Autopsy
		Amitriptyline	3	3					Nortiptyline	2.1 mcg/mL In Whole Blood @ Autopsy
404 pai	30 y M				A	Ingst	Int-A	1		
		Methadone	1	1					Methadone	1.2 mcg/mL In Whole Blood @ Autopsy
405 h	30 y F				A	Ingst	Int-S	2		
		Acetaminophen	1	1					Acetaminophen	75 mg/L In Urine (quantitative only) @ Unknown
		Acetaminophen	1	1					Acetaminophen	63 mg/L In Blood (unspecified) @ Unknown
		Carisoprodol	2	2						
406 pai	30 y M				U	Ingst	Int-A	1		
		Methadone	1	1					Methadone	0.19 mcg/mL In Whole Blood @ Autopsy
407	30 y F				A/C	Ingst	Int-S	2		
		Tramadol	1	1						
		Tizanidine	2	2						
		Metaxalone	3	3						
408	30 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	59 mcg/mL In Serum @ 48 h (pe)
409 a	31 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1						
		Diphenhydramine	2	2						
410 pa	31 y M				A/C	Ingst+ Unk	Int-A	2		
		Oxycodone	1	1					Oxycodone	0.17 mg/L In Blood (unspecified) @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
		Morphine	2	2					Morphine	0.34 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen/ diphenhydramine	3	3					Acetaminophen	6.13 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen/ diphenhydramine	3	3					Diphenhydramine	0.24 mg/L In Blood (unspecified) @ Autopsy
		Alprazolam	4	4					Alprazolam	0.05 mg/L In Blood (unspecified) @ Autopsy
		Diazepam	5	5					Diazepam	0.01 mg/L In Blood (unspecified) @ Autopsy
		Cocaine	6	6					Benzoylecgonine	0.47 mg/L In Blood (unspecified) @ Autopsy
411 p	31 y M				U	Ingst	Int-S	2		
		Acetaminophen	1	1					Acetaminophen	40 mcg/mL In Serum @ Unknown
		Ethanol	2	2					Ethanol	330 mg/dL In Serum @ Unknown
412	31 y F				A	Ingst	Int-M	1		
		Acetaminophen	1	1						
413 pa	31 y M				U	Ingst	Int-A	1		
		Oxycodone	1	1					Oxycodone	0.3 mg/L In Blood (unspecified) @ Autopsy
		Morphine	2	2						
414	31 y F				A/C	Ingst	Int-M	1		
		Acetaminophen	1	1						
		Ethanol	2	2						
415 p	31 y F				A	Ingst	Int-M	1		
		Acetaminophen/ hydrocodone	1	1						
		Acetaminophen/ diphenhydramine	2	2						
416 h	31 y F				A/C	Ingst	Int-S	1		
		Acetaminophen/ oxycodone	1	1					Acetaminophen	26.3 mcg/mL In Serum @ Unknown
		Carisoprodol	2	2						
417 pai	31 y M				U	Ingst+ Unk	Int-A	1		
		Tramadol	1	1					Tramadol	1.8 mcg/mL In Whole Blood @ Autopsy
		Hydrocodone	2	2					Hydrocodone	0.05 mcg/mL In Whole Blood @ Autopsy
		Cyclobenzaprine	3	3						
		Cocaine	4	4					Benzoylecgonine	0.06 mcg/mL In Whole Blood @ Autopsy
		Cocaine	4	4					Benzoylecgonine	0.13 Other (see abst) In Brain @ Autopsy
418	31 y M				A	Ingst	Int-S	1		
		Acetaminophen	1	1						
419	32 y M				U	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	713 mcg/mL In Serum @ Unknown
		Oxycodone	2	2						
420	32 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	159 mcg/mL In Blood (unspecified) @ Unknown
421 a	32 y F				A	Ingst	Int-S	1		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	17.9 mcg/mL In Blood (unspecified) @ Unknown
		Clonazepam	2	2						
		Salicylate	3	3						
		Ethanol	4	4						
422	32 y F				C	Ingst	Int-M	2		
		Acetaminophen	1	1						
[423 pa]	32 y M				U	Ingst	Int-S	2		
		Methadone	1	1					Eddp (2-ethylidene-1,5-dimethyl-3,3-diphenyl Pyrrolidine)	0.19 mcg/mL In Blood (unspecified) @ Autopsy
		Methadone	1	1					Methadone	0.3 mcg/mL In Blood (unspecified) @ Unknown
424	32 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1						
		Drug, Unknown	2	2						
425	32 y M				A	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	67 mcg/mL In Blood (unspecified) @ 1 h (pe)

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
426h	33 y F				C	Ingst	Int-M	3		
		Acetaminophen/ diphenhydramine	1	1						
427 a	33 y M				U	Ingst	Unk	2		
		Oxycodone	1	1					Oxycodone	1 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen/ hydrocodone	2	2					Hydrocodone	0.15 mg/L In Blood (unspecified) @ Autopsy
		Benzodiazepine	3	3					Alprazolam	0.11 mg/L In Blood (unspecified) @ Autopsy
		Meprobamate	4	4					Meprobamate	3 mg/L In Blood (unspecified) @ Autopsy
428 p	33 y F				A	Ingst	Int-S	2		
		Oxycodone	1	1						
		Fluoxetine/ olanzapine	2	2						
		Methadone	3	3						
429 p	33 y M				A	Unk	Unk	2		
		Morphine	1	1						
430 a	33 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	129 mg/L In Serum @ Autopsy
		Diphenhydramine	2	2					Diphenhydramine	0.65 mg/L In Serum @ Autopsy
431	33 y F				C	Ingst	Unk	2		
		Acetaminophen	1	1					Acetaminophen	39.9 mg/dL In Blood (unspecified) @ 1 h (pe)
		Acetaminophen	1	1					Acetaminophen	24.1 mg/dL In Blood (unspecified) @ 12 h (pe)
432 pai	33 y M				A/C	Ingst+ Derm	Int-A	1		
		Fentanyl transdermal	1	1					Fentanyl	7.5 ng/mL In Serum @ Autopsy
		Diazepam	2	2						
433	33 y M				A	Ingst	Int-S	3		
		Tramadol	1	1						
		Lorazepam	2	2						
		Temazepam	3	3						
434 ph	34 y M				U	Ingst	Int-U	1		
		Oxycodone	1	1					Oxycodone	50 mg/L In Urine (quantitative only) @ Unknown
435 pa	34 y F				C	Ingst+ Derm	Int-U	1		
		Fentanyl transdermal	1	1					Fentanyl	25 ng/mL In Blood (unspecified) @ Autopsy
		Fentanyl Transdermal	1	1					Norfentanyl	7.1 ng/mL In Blood (unspecified) @ Autopsy
		Methadone	2	2					Methadone	0.06 mg/L In Blood (unspecified) @ Autopsy
		Amitriptyline	3	3					Amitriptyline	0.18 mg/L In Blood (unspecified) @ Autopsy
		Diphenhydramine	4	4					Diphenhydramine	0.07 mg/L In Blood (unspecified) @ Autopsy
436 p	34 y F				A	Ingst	Int-S	2		
		Propoxyphene	1	1						
		Baclofen	2	2						
		Pregabalin	3	3						
		Trazodone	4	4						
437	34 y F				A	Ingst	Int-S	1		
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	30 mcg/mL In Blood (unspecified) @ Unknown
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	12 mcg/mL In Blood (unspecified) @ 2 d (pe)
		Salicylate	2	2					Salicylate	7.9 mg/dL In Blood (unspecified) @ 2 d (pe)
		Salicylate	2	2					Salicylate	6.5 mg/dL In Blood (unspecified) @ 3 d (pe)
438 pa	34 y F				A	Ingst	Int-U	1		
		Methadone	1	1						
		Gabapentin	2	2						
439 pa	34 y F				U	Ingst	Int-U	1		
		Fentanyl transdermal	1	1					Fentanyl	22 ng/mL In Blood (unspecified) @ Autopsy
		Fentanyl transdermal	1	1					Norfentanyl	20 ng/mL In Blood (unspecified) @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
		Diphenhydramine	2	2					Diphenhydramine	0.34 mg/L In Blood (unspecified) @ Autopsy
		Ethanol	3	3					Ethanol	0.11 g/dL In Vitreous @ Autopsy
		Drug, unknown	4	4						
440 pai	34 y F				A/C	Ingst+ Derm	Int-S	1		
		Fentanyl transdermal	1	1						
		Alprazolam	2	2					Alprazolam	26 ng/mL In Whole Blood @ Autopsy
		Olanzapine	3	3					Olanzapine	0.15 mcg/mL In Whole Blood @ Autopsy
		Mirtazapine	4	4						
[441 pa]	34 y M				U	Ingst+ Derm	Int-S	1		
		Fentanyl transdermal	1	1					Fentanyl	12 ng/mL In Blood (unspecified) @ Autopsy
		Fentanyl transdermal	1	1					Norfentanyl	6.2 ng/mL In Blood (unspecified) @ Autopsy
		Alprazolam	2	2					Alprazolam	0.25 mg/L In Blood (unspecified) @ Autopsy
		Citalopram	3	3						
442 h	34 y F				A	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	1	1						
443 pa	34 y F				U	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	153.3 mg/L In Serum @ 2 h (pe)
		Ethanol	2	2						
		Antihistamine	3	3					Diphenhydramine	0.971 Other (see abst) In Blood (unspecified) @ Autopsy
		Citalopram	4	4					Citalopram	32 ng/mL In Blood (unspecified) @ Autopsy
		Zopiclone	5	5					Eszopiclone	23 ng/mL In Blood (unspecified) @ Autopsy
444	34 y M				A	Ingst+ Inhal	Int-A	2		
		Acetaminophen/ hydrocodone	1	1						
		Phencyclidine	2	2						
		Cocaine	3	3						
		Benzodiazepine	4	4						
445 pa	34 y F				U	Ingst	Unk	2		
		Morphine	1	1					Morphine	215 ng/mL In Blood (unspecified) @ Autopsy
		Citalopram	2	2					Citalopram	182 ng/mL In Blood (unspecified) @ Autopsy
		Spironolactone	3	3						
446	34 y F				A/C	Ingst	Int-S	2		
		Acetaminophen	1	1					Acetaminophen	150 mcg/mL In Serum @ Unknown
		Carbamazepine	2	2					Carbamazepine	21 mcg/mL In Serum @ Unknown
		Topiramate	3	3						
		Lorazepam	4	4						
447	34 y M				C	Ingst	Int-A	2		
		Methadone	1	1						
		Ethanol	2	2					Ethanol	0.067 mg/dL In Blood (unspecified) @ Unknown
448 p	34 y M				A	Ingst	Int-U	2		
		Methadone	1	1						
		Amitriptyline	2	2						
		Diazepam	3	3						
449 pa	35 y M				U	Ingst	Unk	2		
		Methadone	1	1						
		Benzodiazepine	2	2						
		Drug, unknown	3	3						
450 h	35 y F				A	Ingst	Int-S	2		
		Acetaminophen/ propoxyphene	1	1						
		Acetaminophen/ hydrocodone	2	2						
451 a	35 y F				A	Ingst	Int-S	1		
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	530 mcg/mL In Blood (unspecified) @ Unknown
		Cocaine	2	2					Benzoylecognine	490 ng/mL In Blood (unspecified) @ Unknown

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
		Carisoprodol	3	3					Carisoprodol	0.44 mcg/mL In Blood (unspecified) @ Unknown
		Carisoprodol	3	3					Meprobamate	6.3 mcg/mL In Blood (unspecified) @ Unknown
		Lorazepam	4	4					Lorazepam	59 ng/mL In Blood (unspecified) @ Unknown
452	35 y M				A	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	1	1						
453 h	35 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1						
		Acetaminophen/ diphenhydramine	2	2						
454 pai	35 y M				U	Ingst	Int-A	1		
		Methadone	1	1					Methadone	0.17 mcg/mL In Whole Blood @ Autopsy
		Ethanol	2	2					Ethanol	0.03 % (wt/Vol) In Whole Blood @ Autopsy
455	35 y F				A	Ingst	Int-S	2		
		Acetaminophen/ propoxyphene	1	1						
		Bupropion	2	2						
		Diazepam	3	3						
		Quetiapine	4	4						
456	35 y M				A	Ingst	Int-S	2		
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	177 mg/L In Blood (unspecified) @ 1 h (pe)
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	77 mg/L In Blood (unspecified) @ 3 h (pe)
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	128 mg/L In Blood (unspecified) @ 29 h (pe)
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	88 mg/L In Blood (unspecified) @ 53 h (pe)
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	58 mg/L In Blood (unspecified) @ 61 h (pe)
		Ethanol	2	2					Ethanol	210 mg/dL In Serum @ 1 h (pe)
457 h	35 y M				A	Ingst	Int-S	1		
		Acetaminophen/ diphenhydramine	1	1						
		Ethanol	2	2						
458 a	35 y F				A	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	1	1						
459 pa	35 y F				U	Ingst	Unk	2		
		Hydrocodone	1	1					Hydrocodone	0.19 mg/L In Blood (unspecified) @ Autopsy
		Promethazine	2	2					Promethazine	0.49 mg/L In Blood (unspecified) @ Autopsy
		Ethanol	3	3					Ethanol	0.19 % (wt/Vol) In Blood (unspecified) @ Autopsy
460	35 y M				A	Ingst	Int-S	1		
		Salicylate	1	1						
461	36 y M				A	Ingst	Int-S	1		
		Salicylate	1	1					Salicylate	91.8 mg/dL In Blood (unspecified) @ Unknown
462	36 y F				A/C	Ingst	Unk	1		
		Acetaminophen	1	1					Acetaminophen	62 mcg/mL In Plasma @ Unknown
		Acetaminophen/ hydrocodone	2	2						
		Diazepam	3	3						
463	36 y M				U	Unk	Unk	2		
		Acetaminophen	1	1						
		Cocaine	2	2						
		Marijuana	3	3						
464 pai	36 y M				U	Ingst	Int-A	1		
		Morphine	1	1					Morphine (free)	0.8 mcg/mL In Whole Blood @ Autopsy
		Oxycodone	2	2					Oxycodone	0.63 mcg/mL In Whole Blood @ Autopsy
		Acetaminophen/ hydrocodone	3	3					Hydrocodone	0.06 mcg/mL In Whole Blood @ Autopsy
465	36 y M				A/C	Ingst+ Aspir	Int-S	3		
		Tramadol	1	1						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
		Alprazolam	2	2						
		Cyclobenzaprine	3	3						
		Benzodiazepine	4	4						
466	36 y M				A	Ingst	Int-S	1		
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	63 mcg/mL In Blood (unspecified) @ Unknown
		Olanzapine	2	2						
467 pa	36 y M				A	Ingst+ Aspir	Int-S	1		
		Acetaminophen/ propoxyphene	1	1						
		Ethanol	2	2						
468 pai	36 y M				U	Ingst+ Unk	Int-A	1		
		Fentanyl Transdermal	1	1					Fentanyl	14 ng/mL In Whole Blood @ Autopsy
		Ethanol	2	2					Ethanol	0.11 % (wt/Vol) In Whole Blood @ Autopsy
		Ethanol	2	2					Ethanol	0.2 % (wt/Vol) In Vitreous @ Autopsy
469 pha	36 y F				A	Unk	Int-S	2		
		Opioid	1	1					Hydrocodone (free)	11 ng/mL In Blood (unspecified) @ Unknown
		Opioid	1	1					Oxycodone (free)	95 ng/mL In Blood (unspecified) @ Unknown
		Opioid	1	1					Oxycodone (total)	87 ng/mL In Blood (unspecified) @ Unknown
		Opioid	1	1					Oxymorphone (total)	180 ng/mL In Blood (unspecified) @ Unknown
		Benzodiazepine	2	2					Alprazolam	80 ng/mL In Blood (unspecified) @ Unknown
470 p	37 y F				A	Ingst	Int-S	1		
		Propoxyphene	1	1						
471	37 y M				A	Ingst	Unt-M	3		
		Salicylate	1	1						
		Acetaminophen	2	2						
472 p	37 y F				U	Ingst	Unk	2		
		Hydrocodone	3	1						
		Benzodiazepine	2	2						
		Quetiapine	1	3						
473 ph	37 y M				U	Ingst	Int-A	1		
		Fentanyl transdermal	1	1						
		Ethanol	2	2					Ethanol	0.075 g/dL In Blood (unspecified) @ Unknown
474	37 y F				U	Ingst	Int-S	1		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	206 mcg/mL In Blood (unspecified) @ 1 h (pe)
475 pa	37 y M				U	Unk	Unk	2		
		Opioid	1	1					Hydrocodone	0.13 mg/L In Blood (unspecified) @ Autopsy
		Carisoprodol	2	2					Carisoprodol (n-isopropyl meprobamate)	10 mg/L In Blood (unspecified) @ Autopsy
		Carisoprodol	2	2					Meprobamate	14 mg/L In Blood (unspecified) @ Autopsy
		Drug, unknown	3	3						
476	37 y F				A/C	Ingst	Int-S	1		
		Salicylate	1	1					Salicylate	100.4 mg/dL In Blood (unspecified) @ Unknown
		Valproic acid	2	2					Valproic acid	239 mcg/mL In Blood (unspecified) @ Unknown
		Trazodone	3	3						
		Sertraline	4	4						
477 h	37 y F				A	Ingst	Int-S	3		
		Sulindac	1	1						
478	37 y F				A/C	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	1	1						
		Carisoprodol	2	2						
		Alprazolam	3	3						
		Zolpidem	4	4						
479	37 y M				A	Ingst	Int-S	1		
		Salicylate	1	1						
		Acetaminophen	2	2						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
480 pai	37 y M				A/C	Ingst+ Derm	Int-A	1		
		Fentanyl transdermal	1	1					Fentanyl	18.5 ng/mL In Whole Blood @ Autopsy
		Methadone	2	2					Methadone	0.14 mcg/mL In Blood (unspecified) @ Unknown
		Hydrocodone	3	3					Hydrocodone	0.05 mcg/mL In Whole Blood @ Autopsy
481 pai	37 y F				A/C	Ingst	Int-A	1		
		Oxycodone	1	1					Oxycodone	0.31 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	2	2					Alprazolam	69 ng/mL In Whole Blood @ Autopsy
		Citalopram	3	3						
482 pai	37 y F				A/C	Ingst	Int-A	2		
		Acetaminophen/ hydrocodone	1	1						
		Diazepam	2	2						
483 pa	37 y F				A	Ingst	Int-S	1		
		Hydromorphone	1	1					Hydromorphone	2525.8 ng/mL In Urine (quantitative only) @ Autopsy
		Hydromorphone	1	1					Hydromorphone	0.06 mg/L In Blood (unspecified) @ Autopsy
		Methadone	2	2					Methadone	0.12 mg/L In Blood (unspecified) @ Autopsy
		Oxycodone	3	3						
484 pai	37 y F				A/C	Ingst	Int-A	2		
		Methadone	1	1					Methadone	0.6 mcg/mL In Whole Blood @ Autopsy
		Morphine	2	2					Morphine	0.04 mcg/mL In Whole Blood @ Autopsy
485 pai	37 y F				A/C	Ingst	Int-U	1		
		Morphine	1	1					Morphine	0.21 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	2	2					Alprazolam	82 ng/mL In Whole Blood @ Autopsy
		Citalopram	3	3					Citalopram	0.53 mcg/mL In Whole Blood @ Autopsy
		Cyclobenzaprine	4	4						
486 p	37 y M				A	Ingst	Int-A	2		
		Morphine	1	1						
		Acetaminophen/ hydrocodone	2	2						
487 pai	37 y F				A/C	Ingst+ Derm	Int-A	1		
		Fentanyl Transdermal	1	1					Fentanyl	32.1 ng/mL In Whole Blood @ Autopsy
		Oxycodone	2	2						
488 pa	37 y M				A	Unk	Int-A	1		
		Propoxyphene	1	1					Norpropoxyphene	5809 ng/mL In Blood (unspecified) @ Autopsy
		Propoxyphene	1	1					Propoxyphene	5975 ng/mL In Blood (unspecified) @ Autopsy
		Ethanol	2	2						
489 pha	38 y M				A	Ingst	Int-S	1		
		Oxycodone	1	1					Oxycodone	0.09 mcg/mL In Blood (unspecified) @ Unknown
		Ethanol	2	2					Ethanol	0.06 % (wt/Vol) In Blood (unspecified) @ Unknown
490 p	38 y F				A	Ingst	Int-S	3		
		Acetaminophen (extended release)	1	1						
491 pai	38 y M				U	Ingst	Int-S	1		
		Methadone	1	1					Methadone	1.9 mcg/mL In Whole Blood @ Autopsy
		Amitriptyline	2	2					Amitriptyline	1.7 mcg/mL In Whole Blood @ Autopsy
		Amitriptyline	2	2					Nortiptyline	0.3 mcg/mL In Whole Blood @ Autopsy
		Cyclobenzaprine	3	3					Cyclobenzaprine	2.7 mcg/mL In Whole Blood @ Autopsy
492	38 y F				U	Ingst	Int-A	3		
		Acetaminophen/ oxycodone	1	1						
		Carisoprodol	2	2						
		Alprazolam	3	3						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
493 pa	38 y M				U	Ingst	Unk	1		
		Oxycodone	1	1					Oxycodone	1.3 mg/L In Blood (unspecified) @ Autopsy
494 pa	38 y F				A	Ingst	Int-S	1		
		Methadone	1	1					Methadone	0.13 mg/L In Blood (unspecified) @ Unknown
		Methadone	1	1					Methadone	0.31 mg/L In Blood (unspecified) @ Autopsy
		Methadone	1	1					Morphine	0.22 mg/L In Blood (unspecified) @ Autopsy
495	38 y M				A	Ingst	Int-S	1		
		Salicylate	1	1						
496 pai	38 y M				U	Ingst+ Par	Int-A	1		
		Morphine	1	1						
		Ethanol	2	2					Ethanol	0.08 % (wt/Vol) In Blood (unspecified) @ 15 m (pe)
497 p	39 y F				A	Ingst	Int-S	1		
		Acetaminophen/ hydrocodone	1	1						
		Acetaminophen	2	2						
498 p	39 y M				A	Ingst	Int-S	1		
		Methadone	1	1						
		Alprazolam	2	2						
499 p	39 y F				U	Ingst	Unk	2		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	22 mcg/mL In Blood (unspecified) @ 1 h (pe)
500	39 y F				U	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	145 mcg/mL In Unknown @ 1 h (pe)
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	47 mcg/mL In Unknown @ Unknown
501	39 y F				A	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	1	1						
		Acetaminophen/ caffein/salicylate	2	2						
		Imatinib	3	3						
		Digoxin	4	4						
502 pa	39 y M				A	Ingst+ Aspir	Int-S	1		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	389 mcg/mL In Serum @ 1 h (pe)
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	140 mcg/mL In Serum @ 26 h (pe)
		Pregabalin	2	2					Pregabalin	2.1 mg/L In Blood (unspecified) @ Autopsy
		Eszopiclone	3	3					Eszopiclone	0.007 mg/L In Blood (unspecified) @ Autopsy
		Hydroxyzine	4	4					Hydroxyzine	0.77 mg/L In Blood (unspecified) @ Autopsy
		Promethazine	5	5						
503 h	39 y F				A	Ingst	Int-A	1		
		Acetaminophen/ hydrocodone	1	1						
		Lorazepam	2	2						
504 h	39 y F				U	Ingst	Int-A	2		
		Salicylate	1	1						
		Alprazolam	2	2						
505	39 y M				U	Ingst	Unt-G	1		
		Acetaminophen	1	1					Acetaminophen	86 mcg/mL In Serum @ Unknown
506 p	39 y M				A/C	Ingst	Int-S	2		
		Oxycodone	1	1						
507	39 y F				A	Ingst	Int-S	3		
		Acetaminophen	1	1						
		Cyclobenzaprine	2	2						
		Acetaminophen/ hydrocodone	3	3						
508	39 y F				C	Ingst	Int-M	2		
		Acetaminophen/ diphenhydramine	1	1						
		Acetaminophen/ pseudoephedrine	2	2						
509 ph	40 y M				U	Ingst	Int-M	1		
		Opioid	1	1						
		Morphine	2	2						
		Ethanol	3	3						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
510 pa	40 y F				U	Ingst	Unk	1		
		Oxycodone	1	1					Oxycodone	0.72 mg/L In Blood (unspecified) @ Autopsy
		Benzodiazepine	2	2					Diazepam	0.16 mg/L In Blood (unspecified) @ Autopsy
		Benzodiazepine	2	2					Nordiazepam	0.13 mg/L In Blood (unspecified) @ Autopsy
		Carisoprodol	3	3					Carisoprodol (n-isopropyl meprobamate)	2 mg/L In Blood (unspecified) @ Autopsy
		Carisoprodol	3	3					Meprobamate	10 mg/L In Blood (unspecified) @ Autopsy
		Promethazine	4	4					Promethazine	0.28 mg/L In Blood (unspecified) @ Autopsy
		Diphenhydramine	5	5						
		Docusate	6	6						
		Gabitril	7	7						
511	40 y M				A/C	Ingst	Int-A	2		
		Acetaminophen	1	1						
		Ethanol	2	2						
512	40 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	37 mcg/mL In Blood (unspecified) @ Unknown
		Acetaminophen	1	1					Acetaminophen	49 Other (see abst) In Blood (unspecified) @ Autopsy
		Ethanol	2	2						
513	40 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	250 mcg/mL In Blood (unspecified) @ Unknown
514	40 y M				A	Ingst	Int-S	2		
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	69.8 mcg/mL In Blood (unspecified) @ 2 h (pe)
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	13.1 mcg/mL In Blood (unspecified) @ Unknown
		Citric acid/ salicylate/sodium bicarbonate	2	2						
		Acetaminophen	3	3						
[515pa]	41 y M				A/C	Ingst	Int-S	1		
		Methadone	1	1					Methadone	0.63 mg/L In Blood (unspecified) @ Autopsy
516h	41 y F				A/C	Ingst	Int-S	1		
		Acetaminophen	2	1					Acetaminophen	15 mcg/mL In Blood (unspecified) @ Unknown
		Acetaminophen	2	1					Acetaminophen	11 mcg/mL In Blood (unspecified) @ Unknown
		Clomipramine	1	2						
517p	41 y F				A/C	Ingst	Int-S	2		
		Acetaminophen/ oxycodone	1	1					Acetaminophen	50 mcg/mL In Blood (unspecified) @ Unknown
		Verapamil	2	2						
		Duloxetine	3	3						
		Pregabalin	4	4						
		Cyanocobalamin	5	5						
[518a]	41 y F				U	Ingst	Int-S	1		
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	53 mg/L In Blood (unspecified) @ Unknown
		Acetaminophen/ diphenhydramine	1	1					Diphenhydramine	0.33 mg/L In Blood (unspecified) @ Unknown
		Acetaminophen/ diphenhydramine	1	1					Diphenhydramine	0.63 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen/ diphenhydramine	1	1					Diphenhydramine	14 mg/kg In Liver @ Autopsy
		Oxymorphone	2	2						
		Venlafaxine	3	3					O-desmethy-lvenlafaxine	0.4 mg/L In Blood (unspecified) @ Unknown
		Venlafaxine	3	3					O-desmethy-lvenlafaxine	0.53 mg/L In Blood (unspecified) @ Unknown
		Venlafaxine	3	3					O-desmethy-lvenlafaxine	0.75 mg/L In Blood (unspecified) @ Autopsy
		Venlafaxine	3	3					O-desmethy-lvenlafaxine	2.2 mg/kg In Liver @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
		Venlafaxine	3	3					Venlafaxine	0.29 mg/L In Blood (unspecified) @ Unknown
		Venlafaxine	3	3					Venlafaxine	0.72 mg/L In Blood (unspecified) @ Autopsy
		Venlafaxine	3	3					Venlafaxine	3.5 mg/kg In Liver @ Autopsy
		Salicylate	4	4						
		Quetiapine	5	5						
		Zolpidem	6	6						
		Hydroxyzine	7	7					Hydroxyzine	0.076 mg/L In Blood (unspecified) @ Unknown
		Clonazepam	8	8						
519 ha	41 y F				A/C	Ingst	Int-S	1		
		Opioid	1	1						
		Benzodiazepine	2	2						
		Acetaminophen	3	3						
[520 h]	41 y F				A	Ingst	Int-A	1		
		Fentanyl transdermal	1	1						
521 a	41 y F				A	Ingst	Int-S	1		
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	60 mcg/mL In Serum @ 2 d (pe)
		Diphenhydramine	2	2						
		Benzodiazepine	3	3						
522 p	41 y M				A/C	Ingst	Int-A	2		
		Acetaminophen/ hydrocodone	1	1						
		Lamotrigine	2	2						
		Clonazepam	3	3						
523	41 y F				U	Ingst	Unk	1		
		Acetaminophen	1	1					Acetaminophen	61.4 mcg/mL In Plasma @ Unknown
		Drug, Unknown	2	2						
524 a	41 y F				U	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	301 mcg/mL In Blood (unspecified) @ Unknown
		Diphenhydramine	2	2					Diphenhydramine	4688 ng/mL In Blood (unspecified) @ Unknown
		Ethanol	3	3						
525	41 y F				A/C	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	130 mcg/mL In Blood (unspecified) @ 1 h (pe)
526 a	41 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	32.2 mcg/mL In Plasma @ 25 h (pe)
527	41 y F				A	Ingst	Int-S	1		
		Acetaminophen/ hydrocodone	2	1						
		Fentanyl Transdermal	1	2						
		Duloxetine	3	3						
528	41 y M				A	Ingst	Int-S	2		
		Acetaminophen	1	1						
		Ibuprofen	2	2						
		Salicylate	3	3						
		Ethanol	4	4						
529 ha	42 y M				A/C	Ingst	Unk	3		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	17 mcg/mL In Serum @ 1 h (pe)
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	26 mcg/mL In Blood (unspecified) @ Autopsy
		Acetaminophen/ hydrocodone	1	1					Hydrocodone	0.095 mcg/mL In Blood (unspecified) @ Autopsy
		Ethanol	2	2					Ethanol	161 mg/dL In Plasma @ 1 h (pe)
530 a	42 y M				U	Ingst+ Unk	Int-S	1		
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	21.9 mg/L In Blood (unspecified) @ 4 d (pe)
		Cocaine	2	2					Benzoylecgonine	0.11 mg/L In Blood (unspecified) @ Unknown
		Salicylate	3	3						
531	42 y F				A/C	Ingst	Int-S	2		
		Colchicine	1	1						
		Buspirone	2	2						
		Loratadine	3	3						
		Ethanol	4	4						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
532	42 y F				A/C	Ingst	Int-S	1		
		Acetaminophen/ propoxyphene	1	1					Acetaminophen	93.7 mcg/mL In Serum @ Unknown
533 pai	42 y F				U	Ingst	Int-A	1		
		Oxycodone	1	1					Oxycodone	0.49 mcg/mL In Whole Blood @ Autopsy
534 pai	42 y M				U	Ingst	Int-A	2		
		Methadone	1	1					Methadone	0.68 mcg/mL In Whole Blood @ Autopsy
		Hydrocodone	2	2					Hydrocodone	0.05 mcg/mL In Whole Blood @ Autopsy
		Diazepam	3	3						
[535]	42 y M				C	Ingst	Int-M	1		
		Acetaminophen	1	1					Acetaminophen	76 mcg/mL In Plasma @ Unknown
536 ph	42 y M				A	Ingst	Int-S	2		
		Acetaminophen	1	1					Acetaminophen	88 mcg/mL In Serum @ Unknown
		Oxycodone	2	2					Oxycodone	1490 ng/mL In Serum @ Unknown
		Hydrocodone	3	3					Hydrocodone	838.2 ng/mL In Serum @ Unknown
537	43 y M				C	Ingst	Unt-T	1		
		Acetaminophen/ caffeine/ salicylate	1	1						
538 ai	43 y M				U	Ingst	Int-U	1		
		Methadone	1	1					Methadone	0.42 mcg/mL In Whole Blood @ Unknown
		Benzodiazepine	2	2						
539 pa	43 y M				A	Ingst+ Aspir	Unt-G	3		
		Oxycodone	1	1					Oxycodone	0.5 mg/L In Blood (unspecified) @ Autopsy
		Tobacco	2	2						
540 p	43 y F				A	Ingst	Int-S	1		
		Methadone	2	1						
		Quetiapine	1	2						
		Acetaminophen	3	3						
		Benzodiazepine	4	4						
541	43 y F				U	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	143 mcg/mL In Serum @ Unknown
542 pai	43 y F				U	Ingst	Int-S	1		
		Fentanyl transdermal	1	1					Fentanyl	0.012 mg/L In Blood (unspecified) @ Autopsy
		Fentanyl transdermal	1	1					Fentanyl	0.003 mg/L In Blood (unspecified) @ Autopsy
		Ethanol	2	2					Ethanol	170 mg/dL In Blood (unspecified) @ Autopsy
		Benzodiazepine	3	3					Alprazolam	0.007 mg/L In Blood (unspecified) @ Autopsy
		Clonazepam	4	4					7-aminoclonazepam	0.005 mg/L In Blood (unspecified) @ Autopsy
		Clonazepam	4	4					Clonazepam	0.004 mg/L In Blood (unspecified) @ Autopsy
		Diazepam	5	5					Diazepam	0.022 mg/L In Blood (unspecified) @ Autopsy
		Diazepam	5	5					Nordiazepam	0.044 mg/L In Blood (unspecified) @ Autopsy
543	43 y F				U	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	202 mcg/mL In Blood (unspecified) @ Unknown
544 a	43 y F				C	Ingst	Int-M	1		
		Acetaminophen	1	1					Acetaminophen	28 mcg/mL In Blood (unspecified) @ Unknown
		Ethanol	2	2						
545	43 y F				A	Ingst	Int-S	2		
		Acetaminophen	1	1						
546 pa	43 y M				A	Ingst	Unk	1		
		Morphine	1	1					Morphine	1.95 mg/L In Blood (unspecified) @ Autopsy
547	44 y F				U	Ingst	Int-A	2		
		Acetaminophen	1	1						
		Ethanol	2	2						
		Ibuprofen	3	3						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
548 h	44 y M				C	Ingst	Int-U	1		
		Acetaminophen	1	1					Acetaminophen	63.1 mcg/mL In Plasma @ Unknown
		Ethanol	2	2					Ethanol	165 mg/dL In Serum @ Unknown
549 pa	44 y M				A/C	Ingst	Int-A	1		
		Propoxyphene	1	1					Norpropoxyphene	1.44 mg/L In Blood (unspecified) @ Unknown
		Propoxyphene	1	1					Propoxyphene	1.08 mg/L In Blood (unspecified) @ Unknown
		Acetaminophen/ hydrocodone	2	2					Hydrocodone	0.06 mg/L In Blood (unspecified) @ Unknown
550 pai	44 y F				U	Ingst	Int-A	2		
		Methadone	1	1					Methadone	1.2 mcg/mL In Whole Blood @ Autopsy
		Carisoprodol	2	2					Carisoprodol	3.8 mcg/mL In Whole Blood @ Autopsy
		Carisoprodol	2	2					Meprobamate	14 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	3	3					Alprazolam	146 ng/mL In Whole Blood @ Autopsy
551 pai	44 y M				U	Ingst	Int-A	1		
		Oxycodone	1	1					Oxycodone	0.3 mcg/mL In Whole Blood @ Autopsy
		Hydrocodone	2	2					Hydrocodone	0.06 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	3	3					Alprazolam	88 ng/mL In Whole Blood @ Autopsy
		Ethanol	4	4					Ethanol	0.07 % (wt/Vol) In Whole Blood @ Autopsy
		Ethanol	4	4					Ethanol	0.1 % (wt/Vol) In Vitreous @ Autopsy
552 p	44 y F				A/C	Ingst	Int-S	2		
		Acetaminophen/ propoxyphene	1	1					Acetaminophen	169.5 ng/mL In Serum @ Unknown
		Ethanol	2	2					Ethanol	250 mg/dL In Serum @ Unknown
553 p	44 y F				A	Ingst	Int-S	3		
		Morphine	1	1						
		Trazodone	2	2						
554 pai	44 y M				U	Ingst	Int-A	1		
		Morphine	1	1					Morphine	0.3 mcg/mL In Whole Blood @ Autopsy
		Benzodiazepine	2	2					Alprazolam	87 ng/mL In Whole Blood @ Autopsy
		Cyclobenzaprine	3	3						
555 p	44 y F				A	Ingst	Int-S	2		
		Acetaminophen	1	1					Acetaminophen	184 Other (see abst) In Blood (unspecified) @ Unknown
		Alprazolam	2	2						
[556 a]	44 y F				A	Par	Int-S	1		
		Acetaminophen	1	1						
		Acetaminophen/ hydrocodone	2	2					Hydrocodone	0.31 mg/dL In Blood (unspecified) @ Autopsy
		Acetaminophen/ hydrocodone	2	2					Hydrocodone	0.081 mg/dL In Urine (quantitative only) @ Autopsy
		Acetaminophen/ hydrocodone	2	2					Hydrocodone	0.37 mg/dL In Blood (unspecified) @ Autopsy
		Tramadol	3	3					Tramadol	1.4 mg/dL In Blood (unspecified) @ Autopsy
		Promethazine	4	4						
557 p	44 y F				A	Ingst	Int-S	1		
		Hydromorphone	1	1						
558 ai	44 y M				U	Ingst	Int-A	2		
		Oxycodone	1	1					Oxycodone	0.14 mcg/mL In Whole Blood @ Autopsy
		Oxycodone	1	1					Oxycodone	0.12 mcg/mL In Whole Blood @ Autopsy
559	45 y M				A	Ingst	Int-S	3		
		Methadone	1	1						
		Clonazepam	2	2						
560 a	45 y F				U	Ingst	Int-S	1		
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	480 mcg/mL In Blood (unspecified) @ Unknown

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	210 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen/ diphenhydramine	1	1					Diphenhydramine	6.1 mg/L In Blood (unspecified) @ Autopsy
		Alprazolam	2	2					Alprazolam	0.02 mg/L In Blood (unspecified) @ Autopsy
		Temazepam	3	3					Temazepam	0.22 mg/L In Blood (unspecified) @ Autopsy
		Lorazepam	4	4					Lorazepam	0.01 mg/L In Blood (unspecified) @ Autopsy
561 ai	45 y M				U	Unk	Int-A	1		
		Morphine	1	1					Morphine	0.75 mcg/mL In Whole Blood @ Autopsy
562 ai	45 y F				U	Ingst	Int-A	1		
		Methadone	1	1					Methadone	1.2 mcg/mL In Whole Blood @ Autopsy
		Citalopram	2	2					Citalopram	1.9 mcg/mL In Whole Blood @ Autopsy
		Tricyclic antidepressant	3	3					Doxepin	0.8 mcg/mL In Whole Blood @ Autopsy
563	45 y M				C	Ingst	Int-S	2		
		Acetaminophen/ oxycodone	1	1						
		Ethanol	2	2						
		Amitriptyline	3	3						
564 p	45 y F				U	Ingst	Int-S	1		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	7 mcg/mL In Blood (unspecified) @ Unknown
		Acetaminophen/ oxycodone	2	2					Acetaminophen	7 mcg/mL In Blood (unspecified) @ Unknown
		Ethanol	3	3					Ethanol	0.014 Other (see abst) In Blood (unspecified) @ Unknown
		Salicylate	4	4					Salicylate	5.1 mg/dL In Blood (unspecified) @ Unknown
565 pai	45 y M				A/C	Ingst	Int-S	1		
		Oxycodone	1	1					Oxycodone	0.43 mcg/mL In Whole Blood @ Autopsy
		Diazepam	2	2						
		Citalopram	3	3						
566 pai	45 y F				U	Ingst	Int-A	3		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	60.7 mcg/mL In Whole Blood @ Autopsy
		Acetaminophen/ hydrocodone	1	1					Hydrocodone	0.49 mcg/mL In Whole Blood @ Autopsy
		Diazepam	2	2						
		Diphenhydramine	3	3						
567 p	45 y F				A	Ingst	Int-A	2		
		Methadone	1	1						
		Cocaine	2	2						
568 p	45 y F				A	Ingst	Int-S	1		
		Oxycodone	1	1						
569	45 y F				A	Ingst	Int-S	1		
		Acetaminophen/ diphenhydramine	1	1						
570 h	45 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	40 mcg/mL In Unknown @ Autopsy
571	45 y F				A	Ingst	Int-S	1		
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	224 mcg/mL In Blood (unspecified) @ Unknown
		Ethanol	2	2					Ethanol	448 g/dL In Blood (unspecified) @ Unknown
572	46 y M				U	Ingst	Unk	1		
		Acetaminophen	1	1					Acetaminophen	390 mcg/mL In Serum @ Unknown
573 a	46 y F				A/C	Ingst	Int-S	1		
		Oxymorphone	1	1					Oxymorphone	0.22 mg/L In Blood (unspecified) @ Autopsy
		Cyclobenzaprine	2	2					Cyclobenzaprine	0.11 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen	3	3					Acetaminophen	89 mcg/mL In Blood (unspecified) @ Unknown
		Acetaminophen	3	3					Acetaminophen	13.9 mg/L In Blood (unspecified) @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
574 pai	46 y F				U	Ingst	Int-A	1		
		Methadone	1	1					Methadone	0.45 mcg/mL In Whole Blood @ Autopsy
575 pa	46 y F				A/C	Ingst	Int-S	2		
		Methadone	1	1					Methadone	1075 ng/mL In Serum @ Unknown
		Butalbital (unkown combination)	2	2						
		Alprazolam	3	3					Alprazolam	679 ng/mL In Serum @ Unknown
		Acetaminophen/ oxycodone	4	4						
576 pai	46 y M				U	Ingst	Int-A	1		
		Oxycodone	1	1					Oxycodone	0.33 mcg/mL In Whole Blood @ Autopsy
		Carisoprodol	2	2					Carisoprodol	2.1 mcg/mL In Whole Blood @ Autopsy
		Carisoprodol	2	2					Meprobamate	2.6 mcg/mL In Whole Blood @ Autopsy
		Benzodiazepine	3	3					Alprazolam	63 ng/mL In Whole Blood @ Autopsy
577	46 y M				A	Ingst	Int-S	2		
		Methadone	1	1						
578	46 y F				U	Ingst	Unk	2		
		Acetaminophen	1	1					Acetaminophen	83.6 mcg/mL In Blood (unspecified) @ 30 m (pe)
		Acetaminophen	1	1					Acetaminophen	75.5 mcg/mL In Blood (unspecified) @ 4 h (pe)
		Acetaminophen	1	1					Acetaminophen	53.7 mcg/mL In Blood (unspecified) @ 13.3 h (pe)
579 pa	46 y M				U	Ingst	Unk	2		
		Methadone	1	1					Methadone	0.75 mcg/mL In Blood (unspecified) @ Autopsy
		Diphenhydramine	2	2					Diphenhydramine	0.63 mcg/mL In Blood (unspecified) @ Autopsy
580 i	46 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	217 mcg/mL In Serum @ 20 h (pe)
581 pai	46 y F				U	Ingst	Int-A	2		
		Acetaminophen/ hydrocodone	1	1					Hydrocodone	1 mcg/mL In Whole Blood @ Autopsy
		Acetaminophen/ hydrocodone	1	1					Hydrocodone	0.9 Other (see abst) In Liver @ Autopsy
		Carisoprodol	2	2					Carisoprodol	4.6 mcg/mL In Whole Blood @ Autopsy
		Carisoprodol	2	2					Carisoprodol	5.1 mcg/mL In Whole Blood @ Autopsy
		Carisoprodol	2	2					Meprobamate	30 mcg/mL In Whole Blood @ Autopsy
582	46 y F				A/C	Ingst	Int-S	1		
		Oxycodone	1	1						
		Chlordiazepoxide	2	2						
583	46 y F				A/C	Ingst	Int-S	2		
		Oxycodone	1	1						
		Methadone	2	2						
		Temazepam	3	3						
		Lorazepam	4	4						
584 pa	46 y F				A	Ingst	Unt-G	3		
		Oxycodone	1	1					Oxycodone	0.32 mg/L In Whole Blood @ Autopsy
		Benzodiazepine	2	2					Diazepam	0.245 mg/L In Whole Blood @ Autopsy
		Benzodiazepine	2	2					Nordiazepam	0.247 mg/L In Whole Blood @ Autopsy
		Codeine/ promethazine	3	3					Codeine	0.11 mg/L In Whole Blood @ Autopsy
		Codeine/ promethazine	3	3					Promethazine	0.18 mg/L In Whole Blood @ Autopsy
		Alprazolam	4	4					Alpha-oh-alprazolam	2 ng/mL In Whole Blood @ Autopsy
		Alprazolam	4	4					Alprazolam	0.026 mg/L In Whole Blood @ Autopsy
		Temazepam	5	5					Temazepam	0.012 mg/L In Whole Blood @ Autopsy
		Skeletal Muscle Relaxant	6	6					Carisoprodol	0.07 mg/L In Whole Blood @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
		Skeletal muscle relaxant	6	6					Meprobamate	4.74 mg/L In Whole Blood @ Autopsy
		Carbamazepine	7	7					10-hydroxy-carbazepine	9 mg/L In Whole Blood @ Autopsy
		Carbamazepine	7	7					Carbemazepine	0.02 mg/L In Whole Blood @ Autopsy
		Trazodone	8	8					Trazodone	0.6 mg/L In Whole Blood @ Autopsy
		Diphenhydramine	9	9						
		Cleaner (anionic/nonionic)	10	10						
585 ai	46 y M				U	Ingst+ Unk	Int-A	1		
		Morphine	1	1					Morphine	0.29 mcg/mL In Blood (unspecified) @ 15 m (pe)
		Oxycodone	2	2					Oxycodone	0.17 mcg/mL In Blood (unspecified) @ 15 s (pa)
		Alprazolam	3	3						
		Diazepam	4	4						
		Temazepam	5	5						
586	46 y M				A	Ingst	Int-S	1		
		Salicylate	1	1					Salicylate	87 mg/dL In Serum @ 4 h (pe)
		Acetaminophen	2	2					Acetaminophen	25 mcg/mL In Serum @ 4 h (pe)
		Acetaminophen/dextromethorphan	3	3						
[587 a]	47 y F				A/C	Ingst	Unt-T	1		
		Salicylate	1	1					Salicylate	46.6 mg/dL In Serum @ Unknown
[588 ha]	47 y F				A	Ingst	Int-S	1		
		Acetaminophen/hydrocodone	1	1					Acetaminophen	434.4 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen/hydrocodone	1	1					Hydrocodone	0.86 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen/hydrocodone	1	1					Hydromorphone	26.4 mg/L In Blood (unspecified) @ Autopsy
		Carisoprodol	2	2					Carisoprodol	12.2 mg/L In Blood (unspecified) @ Autopsy
589 a	47 y F				U	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	498 mg/L In Blood (unspecified) @ Unknown
		Diphenhydramine	2	2					Diphenhydramine	1 mg/L In Blood (unspecified) @ Unknown
		Clonidine	3	3						
		Promethazine	4	4						
		Ibuprofen	5	5						
		Naproxen	6	6					Naproxen	22 mcg/mL In Blood (unspecified) @ Unknown
590 pa	47 y M				A	Unk	Unk	2		
		Morphine	1	1					Morphine	0.24 mg/L In Blood (unspecified) @ Autopsy
		Diazepam	2	2					Diazepam	0.2 mg/L In Blood (unspecified) @ Autopsy
		Oxycodone	3	3						
		Sertraline	4	4					Sertraline	0.08 mg/L In Blood (unspecified) @ Autopsy
591 pa	47 y F				U	Unk	Unk	1		
		Morphine	1	1					Morphine	0.2 mg/L In Blood (unspecified) @ Autopsy
		Morphine	1	1					Morphine	102 mg/L In Bile @ Autopsy
		Morphine	1	1					Morphine	50 mg/L In Urine (quantitative only) @ Autopsy
		Meprobamate	2	2					Meprobamate	15 mg/L In Blood (unspecified) @ Autopsy
		Pregabalin	3	3						
592 a	47 y M				A	Ingst	Int-S	1		
		Acetaminophen/hydrocodone	1	1					Acetaminophen	435 mcg/mL In Blood (unspecified) @ 0.25 h (pe)
		Acetaminophen/hydrocodone	1	1					Acetaminophen	162.2 mcg/mL In Blood (unspecified) @ 4 h (pe)
		Acetaminophen/hydrocodone	1	1					Acetaminophen	84.5 mcg/mL In Blood (unspecified) @ 25.5 h (pe)
		Acetaminophen/hydrocodone	1	1					Acetaminophen	26.8 mcg/mL In Blood (unspecified) @ 67 h (pe)
		Lorazepam	2	2						
		Alprazolam	3	3						
		Dextromethorphan	4	4						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
593 h	47 y M				U	Ingst	Int-S	2		
		Acetaminophen	1	1						
		Permethrin	2	2					Acetaminophen	11.9 mcg/mL In Blood (unspecified) @ Unknown
594 ph	47 y M				A/C	Ingst	Int-U	3		
		Oxycodone	1	1						
		Acetaminophen/ hydrocodone	2	2						
595 pai	47 y M				U	Unk	Int-A	1		
		Morphine	1	1						
		Acetaminophen/ oxycodone	2	2					Oxycodone	0.2 mcg/mL In Whole Blood @ Autopsy
596	47 y M				A	Ingst	Int-A	2		
		Methadone	1	1						
		Diazepam	2	2						
597	47 y F				A	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	1	1						
		Carisoprodol	2	2						
		Alprazolam	3	3						
598	47 y F				C	Ingst	Int-M	1		
		Acetaminophen	1	1						
599	48 y F				A/C	Ingst	Unk	3		
		Acetaminophen/ hydrocodone	1	1						
		Cyclobenzaprine	2	2						
		Paroxetine	3	3						
600 h	48 y M				A	Ingst	Int-S	1		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	2 mcg/mL In Serum @ 1 d (pe)
		Diazepam	2	2						
		Ethanol	3	3					Ethanol	7 mg/dL In Serum @ 1 d (pe)
601 pa	48 y M				U	Ingst	Int-A	2		
		Methadone	2	1					Methadone	0.65 mg/L In Whole Blood @ Autopsy
		Acetaminophen/ codeine	1	2						
		Acetaminophen/ opioid	3	3						
602	48 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1						
603 pa	48 y F				U	Ingst	Int-S	1		
		Propoxyphene	1	1					Norpropoxyphene	1.5 mcg/mL In Blood (unspecified) @ Unknown
		Propoxyphene	1	1					Propoxyphene	1.1 mcg/mL In Blood (unspecified) @ Unknown
		Ethanol	2	2					Ethanol	0.026 g/dL In Blood (unspecified) @ Unknown
604	48 y M				A	Unk	Int-S	2		
		Opioid	1	1						
605 a	48 y F				C	Ingst	Int-M	1		
		Acetaminophen	1	1					Acetaminophen	212 mcg/mL In Blood (unspecified) @ Unknown
		Acetaminophen	1	1					Acetaminophen	210 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen/ diphenhydramine	2	2					Diphenhydramine	1.22 mg/L In Blood (unspecified) @ Autopsy
606 pai	48 y M				U	Ingst	Int-A	1		
		Fentanyl transdermal	1	1					Fentanyl	13.8 ng/mL In Whole Blood @ Autopsy
		Methadone	2	2					Methadone	0.23 mcg/mL In Whole Blood @ Autopsy
[607]	48 y F				A	Ingst	Int-S	1		
		Acetaminophen/ caffeine/ salicylate	1	1						
608 pai	48 y F				U	Ingst	Int-S	1		
		Acetaminophen/ hydrocodone	1	1					Hydrocodone	6.4 Other (see abst) In Liver @ Autopsy
		Metaxalone	2	2					Metaxalone	128 Other (see abst) In Liver @ Autopsy
		Trazodone	3	3					Trazodone	337 Other (see abst) In Liver @ Autopsy
		Ethanol	4	4					Ethanol	0.05 % (wt/Vol) In Whole Blood @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
609 pa	48 y F				A/C	Ingst	Int-S	1		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	563 mg/L In Serum @ Unknown
		Acetaminophen/ hydrocodone	1	1					Hydrocodone	1.2 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen/ hydrocodone	1	1					Hydrocodone	1.25 mg/kg In Blood (unspecified) @ Unknown
		Benzodiazepine	2	2					Alprazolam	0.14 mg/L In Blood (unspecified) @ Autopsy
		Zolpidem	3	3						
610 pa	48 y M				U	Ingst	Unk	2		
		Methadone	2	1					Methadone	0.4 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen/ propoxyphene	1	2						
		Acetaminophen/ oxycodone	3	3						
611 p	48 y M				A	Ingst	Int-S	2		
		Oxycodone	1	1						
[612 a]	48 y F				C	Ingst	Int-M	1		
		Acetaminophen	1	1						
613 ai	48 y M				U	Ingst	Int-S	2		
		Hydrocodone	1	1						
		Meprobamate	2	2						
		Diphenhydramine	3	3						
614	48 y F				A	Ingst	Int-S	2		
		Acetaminophen/ diphenhydramine	1	1						
		Acetaminophen	2	2						
		Drain cleaner (Acid)	3	3						
615	48 y F				A/C	Ingst	Unt-T	2		
		Salicylate	1	1						
616	48 y M				A	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	1	1						
617	49 y F				U	Ingst	Int-U	1		
		Acetaminophen/ oxycodone	1	1						
618	49 y F				A/C	Ingst	Int-S	3		
		Acetaminophen/ hydrocodone	1	1						
		Acetaminophen/ oxycodone	2	2						
		Ethanol	4	4						
		Diltiazem	5	5						
		Topiramate	6	6						
		Clonazepam	7	7						
619 pai	49 y F				U	Ingst+ Derm	Int-A	1		
		Fentanyl transdermal	1	1					Fentanyl	9 ng/mL In Whole Blood @ Autopsy
		Hydrocodone	2	2					Hydrocodone	0.25 mcg/mL In Whole Blood @ Autopsy
		Ethanol	3	3					Ethanol	0.12 % (wt/Vol) In Whole Blood @ Autopsy
		Ethanol	3	3					Ethanol	0.15 % (wt/Vol) In Vitreous @ Autopsy
620 pa	49 y F				U	Ingst	Int-S	1		
		Opioid	1	1					Hydrocodone	0.58 mg/L In Blood (unspecified) @ Autopsy
		Zolpidem	2	2					Zolpidem	0.97 mg/L In Blood (unspecified) @ Autopsy
		Gabapentin	3	3						
621 p	49 y M				A	Ingst	Int-S	3		
		Fentanyl transdermal	1	1						
		Zolpidem	2	2						
		Opioid	3	3						
622	49 y F				A/C	Ingst	Int-S	1		
		Acetaminophen	1	1						
		Opioid	2	2						
623 p	49 y M				A/C	Ingst	Int-A	2		
		Methadone	1	1						
624 p	49 y M				A	Ingst	Int-S	2		

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	48.7 mcg/mL In Plasma @ Unknown
		Ethanol	2	2					Ethanol	36 mg/dL In Plasma @ Unknown
625 pai	49 y M				U	Ingst	Int-A	1		
		Oxycodone	1	1					Oxycodone	0.64 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	2	2					Alprazolam	155 ng/mL In Whole Blood @ Autopsy
		Diazepam	3	3						
626 pa	49 y F				A	Ingst	Int-S	3		
		Acetaminophen/ propoxyphene	1	1					Acetaminophen	400 mcg/mL In Blood (unspecified) @ Autopsy
		Acetaminophen/ propoxyphene	1	1					Norpropoxyphene	2.9 mcg/mL In Blood (unspecified) @ Autopsy
		Acetaminophen/ propoxyphene	1	1					Propoxyphene	4.3 mcg/mL In Blood (unspecified) @ Autopsy
		Lamotrigine	2	2					Lamotrigine	15 mcg/mL In Blood (unspecified) @ Autopsy
		Cyclobenzaprine	3	3					Cyclobenzaprine	480 ng/mL In Blood (unspecified) @ Autopsy
		Ethanol	4	4					Ethanol	146 mg/dL In Blood (unspecified) @ Autopsy
		Zopiclone	5	5					Zopiclone	50 ng/mL In Blood (unspecified) @ Autopsy
		Antihistamine	6	6					Diphenhydramine	25 ng/mL In Blood (unspecified) @ Autopsy
627 pai	49 y F				U	Ingst	Int-A	1		
		Methadone	1	1					Methadone	0.29 mcg/mL In Whole Blood @ Autopsy
628	50 y F				A	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	48.4 mcg/mL In Blood (unspecified) @ Unknown
		Carisoprodol	2	2						
629	50 y M				A	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	447 mcg/mL In Blood (unspecified) @ Unknown
630 pa	50 y M				U	Par	Int-A	1		
		Morphine	1	1					Morphine	0.76 mg/L In Blood (unspecified) @ Autopsy
		Morphine	1	1					Morphine	57 mg/L In Bile @ Autopsy
		Drug, unknown	2	2						
631 pa	50 y F				U	Ingst	Unk	1		
		Acetaminophen/ propoxyphene	1	1					Acetaminophen	23.9 mcg/mL In Blood (unspecified) @ Autopsy
		Acetaminophen/ propoxyphene	1	1					Norpropoxyphene	2248 ng/mL In Blood (unspecified) @ Autopsy
		Acetaminophen/ propoxyphene	1	1					Propoxyphene	2210 ng/mL In Blood (unspecified) @ Autopsy
		Morphine	4	2					Morphine	132 ng/mL In Blood (unspecified) @ Autopsy
		Morphine	4	2					Morphine	50000 ng/mL In Urine (quantitative only) @ Autopsy
		Sertraline	3	3					Norsertraline	991 ng/mL In Blood (unspecified) @ Autopsy
		Sertraline	3	3					Sertraline	712 ng/mL In Blood (unspecified) @ Autopsy
		Meprobamate	2	4						
		Hydromorphone	5	5					Hydromorphone	1087 ng/mL In Urine (quantitative only) @ Autopsy
		Alprazolam	6	6					Alpha-oh-alprazolam	350 ng/mL In Urine (quantitative only) @ Autopsy
		Alprazolam	6	6					Alprazolam	566 ng/mL In Urine (quantitative only) @ Autopsy
		Acetaminophen/ hydrocodone	7	7					Hydrocodone	111 ng/mL In Urine (quantitative only) @ Autopsy
		Diphenhydramine	8	8					Diphenhydramine	279 ng/mL In Blood (unspecified) @ Autopsy
632 pa	50 y F				U	Ingst	Unk	1		
		Methadone	1	1					Methadone	0.69 mg/L In Blood (unspecified) @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
		Morphine	2	2					Morphine	0.13 mg/L In Blood (unspecified) @ Autopsy
		Morphine	2	2					Morphine	35 mg/L In Urine (quantitative only) @ Autopsy
		Cocaine	3	3					Benzoylecgonine	2.2 mg/L In Blood (unspecified) @ Autopsy
		Cocaine	3	3					Benzoylecgonine	98 mg/L In Urine (quantitative only) @ Autopsy
		Cocaine	3	3					Cocaine	0.07 mg/L In Blood (unspecified) @ Autopsy
		Loratadine	4	4						
		Drug, unknown	5	5						
[633 pha]	50 y F				A	Ingst	Int-S	2		
		Morphine	1	1						
		Benzodiazepine	2	2						
		Pregabalin	3	3						
		Duloxetine	4	4						
634 ai	50 y M				U	Ingst+ Unk	Int-S	1		
		Morphine	1	1					Morphine	0.16 mcg/mL In Serum @ Unknown
		Benzodiazepine	2	2						
635 pai	50 y F				U	Ingst	Int-A	2		
		Methadone	1	1					Methadone	0.44 mcg/mL In Blood (unspecified) @ Autopsy
		Methadone	1	1					Methadone	16 Other (see abst) In Liver @ Autopsy
		Amitriptyline	2	2					Amitriptyline	43 mcg/mL In Blood (unspecified) @ Autopsy
		Amitriptyline	2	2					Amitriptyline	3.9 Other (see abst) In Liver @ Autopsy
		Amitriptyline	2	2					Nortiptyline	45 mcg/mL In Blood (unspecified) @ Autopsy
		Amitriptyline	2	2					Nortiptyline	8.1 Other (see abst) In Liver @ Autopsy
		Alprazolam	3	3					Alprazolam	62 ng/mL In Blood (unspecified) @ Autopsy
		Diphenhydramine	4	4						
636 pai	50 y M				A/C	Ingst	Int-A	1		
		Methadone	1	1					Methadone	5.6 Other (see abst) In Liver @ Autopsy
		Alprazolam	2	2					Alprazolam	50 ng/mL In Blood (unspecified) @ Autopsy
		Tramadol	3	3					Tramadol	7 Other (see abst) In Liver @ Autopsy
		Citalopram	4	4					Citalopram	3.5 Other (see abst) In Liver @ Autopsy
		Ethanol	5	5					Ethanol	0.07 % (wt/Vol) In Blood (unspecified) @ Autopsy
637 a	50 y F				A/C	Ingst	Unt-M	1		
		Acetaminophen/ oxycodone	1	1						
638 pai	50 y M				U	Ingst+ Unk	Int-A	1		
		Morphine	1	1					Morphine	0.22 mcg/mL In Whole Blood @ Autopsy
		Oxycodone	2	2					Oxycodone	0.06 mcg/mL In Whole Blood @ Autopsy
		Diazepam	3	3						
		Phentermine	4	4					Phentermine	0.45 mcg/mL In Whole Blood @ Autopsy
639	50 y M				A/C	Ingst	Int-A	1		
		Acetaminophen	1	1						
		Ethanol	2	2						
640 hi	50 y F				A	Ingst	Unk	3		
		Acetaminophen/ hydrocodone	1	1						
		Acetaminophen/ oxycodone	2	2						
		Carbamazepine	3	3						
		Perphenazine	4	4						
641 a	51 y F				A	Ingst	Int-M	2		
		Acetaminophen	1	1					Acetaminophen	286.6 mcg/mL In Blood (unspecified) @ Unknown
		Acetaminophen	1	1					Acetaminophen	230 mcg/mL In Plasma @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
		Acetaminophen	1	1					Acetaminophen	62 mcg/mL In Whole Blood @ Autopsy
		Acetaminophen/ hydrocodone	2	2					Dihydrocodone (free)	13 ng/mL In Whole Blood @ Autopsy
		Acetaminophen/ hydrocodone	2	2					Hydrocodone	0.1 mg/L In Plasma @ Unknown
		Acetaminophen/ hydrocodone	2	2					Hydrocodone (free)	23 ng/mL In Whole Blood @ Autopsy
		Diazepam	3	3					Diazepam	400 ng/mL In Whole Blood @ Autopsy
		Diazepam	3	3					Nordiazepam	370 ng/mL In Whole Blood @ Autopsy
		Benzodiazepine	4	4					Temazepam	76 ng/mL In Whole Blood @ Autopsy
		Fentanyl transdermal	5	5					Fentanyl	12 ng/mL In Whole Blood @ Autopsy
		Ephedrine	6	6					Ephedrine	77 ng/mL In Whole Blood @ Autopsy
		Midazolam	7	7					Midazolam	100 ng/mL In Whole Blood @ Autopsy
		Ibuprofen	8	8					Ibuprofen	50 mcg/mL In Whole Blood @ Autopsy
642 a	51 y F				U	Ingst	Unk	2		
		Morphine	1	1					Morphine	640 ng/mL In Whole Blood @ Autopsy
		Antihistamine	2	2					Diphenhydramine	190 ng/mL In Whole Blood @ Autopsy
		Marijuana	3	3					Delta-9-thc	1.5 ng/mL In Whole Blood @ Autopsy
643 p	51 y F				A	Ingst+ Unk	Int-S	2		
		Morphine	1	1						
		Benzodiazepine	2	2						
644 pai	51 y M				U	Ingst	Int-A	2		
		Methadone	1	1					Methadone	0.63 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	2	2					Alprazolam	285 ng/mL In Whole Blood @ Autopsy
		Imipramine	3	3						
645 h	51 y M				A	Ingst	Int-S	2		
		Salicylate	1	1					Salicylate	68.6 mg/dL In Serum @ 1 h (pe)
		Isopropanol	2	2					Isopropanol	123.3 mg/dL In Serum @ 1 h (pe)
646 pai	51 y M				U	Derm	Int-A	1		
		Fentanyl transdermal	1	1					Fentanyl	30.1 ng/mL In Whole Blood @ Autopsy
647	51 y F				A	Ingst	Int-S	1		
		Salicylate	1	1					Salicylate	74.6 mg/dL In Blood (unspecified) @ Unknown
		Acetaminophen/ hydrocodone	2	2						
648 a	51 y M				A	Ingst	Int-S	2		
		Salicylate	1	1						
649	51 y M				U	Ingst	Int-S	3		
		Methadone	1	1						
650 a	51 y M				C	Ingst	Int-M	2		
		Acetaminophen	1	1					Acetaminophen	25 mcg/mL In Serum @ Unknown
		Acetaminophen	1	1					Acetaminophen	33.2 mg/L In Blood (unspecified) @ Autopsy
		Ethanol	2	2					Ethanol	19 mg/dL In Serum @ Unknown
		Ethanol	2	2					Ethanol	0.02 mg/L In Blood (unspecified) @ Autopsy
651 h	51 y F				A/C	Ingst	Int-M	2		
		Acetaminophen/ butalbital/ caffeine	1	1						
		Ethanol	2	2						
		Salicylate	3	3						
652 a	51 y M				A/C	Ingst	Int-S	3		
		Acetaminophen	1	1						
		Ethanol	2	2						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
653	51 y M				A	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	579 mcg/mL In Blood (unspecified) @ Unknown
		Acetaminophen	1	1					Acetaminophen	200 mcg/mL In Blood (unspecified) @ 36 h (pe)
654 pa	51 y M				A/C	Ingst	Int-S	2		
		Propoxyphene	1	1					Propoxyphene	1539 ng/mL In Blood (unspecified) @ Autopsy
		Alprazolam	2	2					Alprazolam	23.5 mg/mL In Blood (unspecified) @ Autopsy
		Ethanol	3	3					Ethanol	0.07 % (wt/wt) In Blood (unspecified) @ Autopsy
655 p	51 y F				A/C	Ingst	Int-S	2		
		Acetaminophen/ propoxyphene	1	1					Acetaminophen	178 mg/L In Blood (unspecified) @ 1 h (pe)
		Ethanol	2	2					Ethanol	212 mg/dL In Blood (unspecified) @ 1 h (pe)
656 pai	51 y M				U	Ingst	Int-A	2		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	69.5 mcg/mL In Whole Blood @ Autopsy
		Acetaminophen/ hydrocodone	1	1					Hydrocodone	0.25 mcg/mL In Whole Blood @ Autopsy
		Carisoprodol	2	2					Carisoprodol	35 Other (see abst) In Liver @ Autopsy
		Carisoprodol	2	2					Meprobamate	23 Other (see abst) In Liver @ Autopsy
		Alprazolam	3	3						
657 pa	52 y F				A/C	Ingst	Int-A	2		
		Acetaminophen/ hydrocodone	1	1					Hydrocodone	0.18 mg/L In Blood (unspecified) @ Unknown
		Skeletal muscle relaxant	2	2					Carisoprodol	7.8 mg/L In Blood (unspecified) @ Unknown
		Skeletal muscle relaxant	2	2					Meprobamate	7.2 mg/L In Blood (unspecified) @ Unknown
		Benzodiazepine	3	3					Diazepam	0.015 mg/L In Blood (unspecified) @ Unknown
		Benzodiazepine	3	3					Nordiazepam	0.57 mg/L In Blood (unspecified) @ Unknown
		Acetaminophen/ propoxyphene	4	4					Norpropoxyphene	0.04 mg/L In Blood (unspecified) @ Unknown
		Acetaminophen/ propoxyphene	4	4					Propoxyphene	0.007 mg/L In Blood (unspecified) @ Unknown
		Topiramate	5	5					Topiramate	12.4 mg/L In Blood (unspecified) @ Unknown
		Zolpidem	6	6					Zolpidem	0.14 mg/L In Blood (unspecified) @ Unknown
658 h	52 y F				U	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	141.3 mcg/mL In Urine (quantitative only) @ Unknown
659	52 y F				C	Ingst	Int-M	1		
		Acetaminophen/ oxycodone	1	1						
		Acetaminophen/ hydrocodone	2	2						
		Acetaminophen	3	3						
660	52 y M				A	Ingst	Int-S	1		
		Acetaminophen/ opioid	1	1						
661 p	52 y F				A	Ingst	Int-S	1		
		Acetaminophen/ oxycodone	1	1						
		Phenobarbital	2	2						
		Lithium	3	3						
662	52 y F				A	Ingst	Unk	2		
		Acetaminophen	1	1						
663 pa	52 y F				A	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	87 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen/ hydrocodone	1	1					Hydrocodone	0.6 mg/L In Blood (unspecified) @ Autopsy
		Lorazepam	2	2					Lorazepam	0.02 mg/L In Blood (unspecified) @ Autopsy
		Antihistamine	3	3						
		Trazodone	4	4						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
664 ph	52 y M				A	Ingst	Int-S	2		
		Oxycodone	1	1						
665	52 y F				A	Ingst	Int-S	3		
		Acetaminophen	1	1					Acetaminophen	23.3 mcg/mL In Plasma @ 24 h (pe)
		Acetaminophen	1	1					Acetaminophen	23.3 mcg/mL In Serum @ 24 h (pe)
		Antidepressant, unknown	2	2						
666	52 y M				C	Ingst	Unt-G	1		
		Acetaminophen	1	1						
667	52 y M				A/C	Ingst	Int-S	2		
		Acetaminophen/ codeine	1	1					Acetaminophen	24 mcg/mL In Blood (unspecified) @ Unknown
		Hydromorphone	2	2						
668	52 y M				C	Ingst	Unt-T	3		
		Acetaminophen	1	1					Acetaminophen	41.7 mcg/mL In Unknown @ Unknown
669 pa	52 y M				A/C	Ingst	Int-A	2		
		Oxycodone	1	1					Oxycodone	0.74 mg/L In Blood (unspecified) @ Autopsy
		Oxycodone	2	2						
		Alprazolam	3	3					Alprazolam	0.05 mg/L In Blood (unspecified) @ Autopsy
670 pai	52 y F				U	Ingst+ Unk	Int-A	1		
		Acetaminophen/ codeine	1	1					Acetaminophen	65.8 mcg/mL In Whole Blood @ Autopsy
		Acetaminophen/ codeine	1	1					Codeine	1.2 mcg/mL In Whole Blood @ Autopsy
		Diazepam	2	2						
		Carisoprodol	3	3						
671	53 y F				C	Ingst+ Oth	Unt-T	2		
		Acetaminophen/ hydrocodone	1	1						
672 h	53 y M				A	Ingst	Int-S	1		
		Acetaminophen	1	1						
		Morphine	2	2						
		Phenobarbital	3	3						
		Hydromorphone	4	4						
		Carisoprodol	5	5						
		Diphenoxylate/ atropine	6	6						
673 h	53 y F				A	Ingst	Int-U	1		
		Salicylate	1	1					Salicylate	53.8 mg/dL In Serum @ Unknown
674 pa	53 y F				U	Ingst	Unk	2		
		Methadone	1	1					Methadone	0.27 mg/L In Blood (unspecified) @ Autopsy
		Potassium chloride	2	2						
		Butalbital/caffein/ salicylate	3	3						
		Furosemide	4	4						
		Acetaminophen/ hydrocodone	5	5						
675 pa	53 y M				A/C	Ingst	Int-S	1		
		Morphine	1	1					Morphine	1.5 mg/L In Blood (unspecified) @ Autopsy
676 pa	53 y F				C	Ingst	Int-A	2		
		Acetaminophen/ hydrocodone	1	1					Morphine	1.44 mcg/mL In Lung @ Autopsy
		Acetaminophen/ hydrocodone	1	1					Morphine	0.52 mcg/mL In Blood (unspecified) @ Autopsy
		Acetaminophen/ hydrocodone	1	1					Morphine	6.23 mg/kg In Liver @ Autopsy
		Acetaminophen/ hydrocodone	1	1					Morphine	1.27 Other (see abst) In Gastric (stomach content) @ Autopsy
		Acetaminophen/ oxycodone	2	2						
		Diazepam	3	3						
677 pai	53 y F				U	Ingst	Int-A	1		
		Methadone	1	1						
		Hydrocodone	2	2					Hydrocodone	0.13 mcg/mL In Whole Blood @ Autopsy
		Carisoprodol	3	3					Meprobamate	3.1 mcg/mL In Whole Blood @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
		Diphenhydramine	4	4						
		Benzodiazepine	5	5					Alprazolam	102 ng/mL In Blood (unspecified) @ Autopsy
		Benzodiazepine	5	5					Alprazolam	102 ng/mL In Whole Blood @ Autopsy
678 i	53 y M				A	Ingst+ Par	Int-S	1		
		Acetaminophen	2	1						
		Quetiapine	1	2						
		Insulin	3	3						
679	53 y M				A/C	Ingst+ Par	Int-S	1		
		Acetaminophen	1	1						
		Quetiapine	2	2						
		Insulin	3	3						
680 pai	53 y M				U	Ingst	Int-A	2		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	19.9 mcg/mL In Whole Blood @ Autopsy
		Acetaminophen/ hydrocodone	1	1					Hydrocodone	0.52 mcg/mL In Whole Blood @ Autopsy
		Acetaminophen/ hydrocodone	1	1					Hydrocodone	1.1 Other (see abst) In Liver @ Autopsy
		Acetaminophen/ hydrocodone	1	1					Hydrocodone	1.8 Other (see abst) In Gastric (stomach content) @ Autopsy
681 a	53 y M				A	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	47 mg/L In Blood (unspecified) @ Unknown
		Hydrocodone	2	2						
		Quetiapine	3	3						
682 h	54 y M				A	Ingst	Int-S	2		
		Methadone	1	1						
683 pai	54 y M				U	Ingst+ Unk	Int-A	2		
		Oxycodone	1	1					Oxycodone	0.46 mcg/mL In Whole Blood @ Autopsy
		Hydrocodone	2	2					Hydrocodone	0.18 mcg/mL In Whole Blood @ Autopsy
		Ethanol	3	3					Ethanol	0.05 % (wt/Vol) In Blood (unspecified) @ Autopsy
		Diazepam	4	4						
		Cocaine	5	5					Benzoylecgonine	1.7 Other (see abst) In Brain @ Autopsy
		Cocaine	5	5					Cocaethylene	0.02 mcg/mL In Whole Blood @ Autopsy
		Cocaine	5	5					Cocaine	0.56 mcg/mL In Whole Blood @ Autopsy
		Cocaine	5	5					Cocaine	1.1 Other (see abst) In Brain @ Autopsy
684 p	54 y M				U	Ingst+ Par	Int-S	1		
		Propoxyphene	1	1						
		Heroin	2	2						
		Benzodiazepine	3	3						
685 h	54 y F				C	Ingst	Int-M	3		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	38 mcg/mL In Plasma @ Unknown
		Acetaminophen/ dextromethorphan	2	2						
686 pa	55 y F				U	Ingst	Unk	1		
		Methadone	1	1					Methadone	0.183 mg/L In Blood (unspecified) @ Autopsy
		Benzodiazepine *	4	3						
		Diphenhydramine *	3	3					Diphenhydramine	0.193 mg/L In Blood (unspecified) @ Autopsy
		Meprobamate	2	4					Meprobamate	2.12 mg/L In Blood (unspecified) @ Autopsy
		Promethazine	5	5						
687 p	55 y F				U	Ingst	Int-S	1		
		Salicylate	1	1					Salicylate	96.6 mg/dL In Serum @ Unknown
688 p	55 y F				A	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	2	1						
		Tramadol	1	2						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
[689 a]	55 y F				A	Ingst	Int-S	2		
		Salicylate	1	1					Salicylate	83 mg/dL In Serum @ Unknown
		Acetaminophen	2	2					Acetaminophen	74 mcg/mL In Serum @ Unknown
		Antihistamine	3	3					Doxylamine	0.09 mg/L In Serum @ Unknown
690	55 y F				A	Ingst	Int-S	3		
		Acetaminophen/ codeine	7	1						
		Marijuana	2	2						
		Citalopram	3	3						
		Topiramate	4	4						
		Pregabalin	5	5						
		Naproxen	6	6						
		Opioid	1	7						
		Anticonvulsant, pyrrolidinone derivitive	8	8						
691 ph	55 y M				A/C	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	1	1						
		Benzodiazepine	2	2						
692	55 y F				U	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	1	1						
693	55 y F				A/C	Ingst	Int-S	1		
		Acetaminophen/ hydrocodone	1	1						
		Morphine	2	2						
		Carisoprodol	3	3						
		Alprazolam	4	4						
		Zolpidem	5	5						
694 pai	55 y M				A/C	Ingst	Int-A	1		
		Morphine	1	1						
		Alprazolam	2	2					Alprazolam	11 Other (see abst) In Liver @ Autopsy
		Alprazolam	2	2					Alprazolam	127 ng/mL In Urine (quantitative only) @ Autopsy
		Ethanol	3	3					Ethanol	0.03 % (wt/Vol) In Urine (quantitative only) @ Autopsy
695 h	55 y M				C	Ingst	Unt-T	2		
		Acetaminophen/ hydrocodone	1	1						
696	56 y F				C	Ingst	Unt-T	3		
		Acetaminophen	1	1					Acetaminophen	50 mcg/mL In Unknown @ Unknown
		Acetaminophen	1	1					Acetaminophen	41 mcg/mL In Unknown @ 1 d (pe)
697	56 y F				A	Ingst	Int-S	2		
		Salicylate	1	1						
		Ibuprofen	2	2						
698 a	56 y M				U	Ingst	Int-S	3		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	102 mcg/mL In Serum @ Unknown
		Salicylate	2	2					Salicylate	6.8 mg/dL In Serum @ Unknown
699 pai	56 y F				U	Ingst	Int-U	1		
		Oxycodone	1	1					Oxycodone	0.78 mcg/mL In Whole Blood @ Autopsy
		Cyclobenzaprine	2	2					Cyclobenzaprine	0.44 mcg/mL In Whole Blood @ Autopsy
700 pa	56 y F				A/C	Ingst	Int-S	3		
		Methadone	1	1					Methadone	0.81 mg/L In Whole Blood @ Autopsy
		Amitriptyline	2	2					Amitriptyline	0.66 mg/L In Whole Blood @ Autopsy
		Amitriptyline	2	2					Nortiptyline	0.79 mg/L In Whole Blood @ Autopsy
		Fluoxetine	3	3					Fluoxetine	0.41 mg/L In Whole Blood @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
701 pai	56 y M				A/C	Derm	Int-A	1		
		Fentanyl transdermal	1	1					Fentanyl	18.9 ng/mL In Whole Blood @ Autopsy
		Fentanyl transdermal	1	1					Fentanyl	10.3 ng/mL In Vitreous @ Autopsy
702 pa	56 y M				A/C	Ingst	Int-A	2		
		Oxycodone	1	1					Oxycodone	271 ng/mL In Blood (unspecified) @ Autopsy
		Ethanol	2	2					Ethanol	330 mg/dL In Blood (unspecified) @ Autopsy
[703]	56 y M				A	Ingst	Int-S	1		
		Salicylate	1	1					Salicylate	116 mg/dL In Serum @ 7 h (pe)
704 p	56 y M				A	Ingst	Int-S	1		
		Acetaminophen/ hydrocodone	1	1						
705 pa	56 y M				U	Unk	Unk	2		
		Morphine	1	1					Morphine	0.31 mg/L In Blood (unspecified) @ Autopsy
		Benzodiazepine	2	2					Nordiazepam	0.21 mg/L In Blood (unspecified) @ Autopsy
706 a	56 y F				A	Ingst	Int-S	1		
		Salicylate	1	1					Salicylate	110 mg/dL In Blood (unspecified) @ Unknown
		Salicylate	1	1					Salicylate	149.5 mg/dL In Blood (unspecified) @ Autopsy
		Acetaminophen	2	2					Acetaminophen	62 mg/L In Plasma @ Unknown
		Acetaminophen	2	2					Acetaminophen	61 mg/L In Blood (unspecified) @ Autopsy
707 pa	57 y F				U	Ingst	Unk	1		
		Codiene	1	1						
		Amphetamine	2	2						
		Carisoprodol	3	3						
		Cimetidine	4	4						
		Vitamins-multiple	5	5						
708 pa	57 y M				U	Ingst	Int-U	2		
		Acetaminophen/ propoxyphene	1	1						
		Cocaine	2	2						
		Methadone	3	3						
709 pai	57 y M				U	Ingst	Int-A	1		
		Oxycodone	1	1					Oxycodone	0.17 mcg/mL In Whole Blood @ Autopsy
		Ethanol	2	2					Ethanol	0.18 % (wt/Vol) In Whole Blood @ Autopsy
		Ethanol	2	2					Ethanol	0.23 % (wt/Vol) In Vitreous @ Autopsy
710 p	57 y F				C	Ingst	Int-S	2		
		Oxymorphone	1	1						
711 pai	57 y F				C	Ingst+ Unk	AR-D	1		
		Fentanyl transdermal	1	1					Fentanyl	31.8 ng/mL In Whole Blood @ Autopsy
		Fentanyl transdermal	1	1					Fentanyl	35 Other (see abst) In Brain @ Autopsy
		Diphenhydramine	2	2					Diphenhydramine	0.81 mcg/mL In Whole Blood @ Autopsy
		Promethazine	3	3						
		Trazodone	4	4						
712 pa	57 y F				A/C	Ingst	Int-U	1		
		Oxycodone	1	1						
		Diazepam	2	2					Nordiazepam	0.08 mg/L In Blood (unspecified) @ Autopsy
713	57 y M				A	Ingst	Int-S	2		
		Salicylate	1	1					Salicylate	109 Other (see abst) In Unknown @ Unknown
714	57 y M				A	Ingst	Int-S	1		
		Salicylate	1	1						
715 h	57 y M				A	Ingst	Unk	3		
		Acetaminophen	1	1					Acetaminophen	72 mcg/mL In Serum @ Unknown
		Salicylate	2	2					Salicylate	130 mcg/mL In Serum @ Unknown
		Ethanol	3	3					Ethanol	40 mg/dL In Blood (unspecified) @ Unknown

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
716 pai	57 y M				U	Unk	Int-A	1		
		Fentanyl transdermal	1	1					Fentanyl	7.2 ng/mL In Whole Blood @ Autopsy
717 pai	58 y F				U	Ingst+ Unk	Int-A	1		
		Morphine	1	1					Morphine	0.17 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	2	2					Alprazolam	41 ng/mL In Whole Blood @ Autopsy
		Secobarbital	3	3						
		Carisoprodol	4	4					Carisoprodol	3.7 mcg/mL In Whole Blood @ Autopsy
		Carisoprodol	4	4					Meprobamate	13 mcg/mL In Whole Blood @ Autopsy
		Clonazepam	5	5						
718 pa	58 y M				U	Ingst	Unk	1		
		Acetaminophen/ hydrocodone	1	1					Hydrocodone	0.4 mg/L In Serum @ Unknown
		Ethanol	3	3					Ethanol	204 g/dL In Serum @ 10 m (pe)
		Isopropanol	2	5						
719 p	58 y F				A	Ingst	Int-S	1		
		Acetaminophen/ propoxyphene	1	1						
720	58 y F				C	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	2	1						
		Benzodiazepine	1	2						
		Isopropranol	3	3						
721	58 y F				U	Ingst	Int-S	1		
		Acetaminophen/ caffeine/ salicylate	1	1						
		Diphenhydramine	2	2						
722	58 y F				A	Ingst	Int-S	1		
		Acetaminophen/ hydrocodone	1	1						
		Carisoprodol	2	2						
723	59 y F				A/C	Ingst	Int-S	1		
		Acetaminophen	2	1					Acetaminophen	217 mcg/mL In Blood (unspecified) @ Unknown
		Lithium	1	2					Lithium	4.6 mEq/L In Blood (unspecified) @ Unknown
724 a	59 y M				C	Ingst	Int-S	2		
		Acetaminophen	1	1					Acetaminophen	221 mcg/mL In Serum @ Unknown
		Ethanol	2	2						
725 pha	59 y M				A/C	Ingst	Int-S	2		
		Morphine	1	1					Morphine (total)	0.26 mg/L In Blood (unspecified) @ 5 h (pe)
		Opioid	2	2					Hydrocodone	0.39 mg/L In Blood (unspecified) @ 5 h (pe)
		Oxycodone	3	3					Oxycodone (free)	2.01 mg/L In Blood (unspecified) @ 5 h (pe)
		Oxycodone	3	3					Oxycodone (total)	1.86 mg/L In Blood (unspecified) @ 5 h (pe)
		Benzodiazepine	4	4					Alprazolam	0.03 mg/L In Blood (unspecified) @ 5 h (pe)
		Butalbital (unkown combination)	5	5						
726	59 y F				A	Ingst	Int-S	1		
		Salicylate	1	1					Salicylate	560 mcg/mL In Whole Blood @ Autopsy
		Supplement, botanical	2	2						
727	59 y M				A	Par	Unt-T	3		
		Acetaminophen	1	1						
		Acetaminophen/ diphenhydramine	2	2						
		N-acetylcsysteine	3	3						
728	59 y M				A/C	Ingst	Int-U	3		
		Tramadol	1	1						
		Olmesartan	2	2						
		Mirtazapine	3	3						
		Levothyroxine	4	4						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
729 p	59 y M				A	Ingst+ Derm	Int-S	2		
		Fentanyl transdermal	1	1						
		Quetiapine	2	2						
730	59 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1						
731	60 y F				A/C	Ingst	Unt-T	1		
		Acetaminophen/ propoxyphene	1	1					Acetaminophen	200 mcg/mL In Blood (unspecified) @ 4 h (pe)
732	60 y F				A/C	Ingst	Int-S	1		
		Acetaminophen/ oxycodone	1	1						
		Venlafaxine	2	2						
		Benztropine	3	3						
733	60 y M				C	Ingst	Int-M	3		
		Salicylate	1	1					Salicylate	52 mg/dL In Serum @ Unknown
734 pai	61 y M				U	Ingst	Int-A	1		
		Oxycodone	1	1					Oxycodone	0.26 mcg/mL In Whole Blood @ Autopsy
		Ethanol	2	2					Ethanol	0.31 % (wt/Vol) In Whole Blood @ Autopsy
735	61 y M				A	Ingst	Int-S	2		
		Salicylate	1	1					Salicylate	56.6 mg/dL In Serum @ Unknown
		Ibuprofen	2	2						
736	61 y M				A	Ingst	Int-S	3		
		Acetaminophen/ oxycodone	1	1						
737 i	61 y F				A	Ingst	Int-S	2		
		Salicylate	1	1						
		Nortriptyline	2	2						
		Acetaminophen/ hydrocodone	3	3						
		Benzodiazepine	4	4						
738 p	61 y F				A/C	Ingst	Int-S	2		
		Oxycodone	1	1						
		Acetaminophen/ hydrocodone	2	2						
		Ethanol	3	3						
739	62 y M				A	Ingst	Int-S	2		
		Salicylate	1	1						
740 h	62 y F				C	Ingst	Unk	1		
		Acetaminophen/ hydrocodone	1	1						
741 pha	63 y F				A/C	Ingst	Int-U	3		
		Acetaminophen/ hydrocodone	1	1						
		Alprazolam	2	2					Alprazolam	12 ng/mL In Blood (unspecified) @ Autopsy
742 a	63 y M				A	Ingst	Int-S	2		
		Acetaminophen	2	1					Acetaminophen	47 mcg/mL In Whole Blood @ 0 d (pe)
		Atenolol	1	2					Atenolol	0 ng/mL In Blood (unspecified) @ 0 h (pe)
		Ethanol	3	3					Ethanol	32 mg/dL In Blood (unspecified) @ 0 d (pe)
743	64 y F				A/C	Ingst	Int-S	1		
		Acetaminophen/ oxycodone	1	1						
		Warfarin	2	2						
744	64 y F				A	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	1	1						
		Carisoprodol	2	2						
		Alprazolam	3	3						
745 a	65 y M				C	Ingst	Int-M	3		
		Acetaminophen	1	1					Acetaminophen	49 mcg/mL In Blood (unspecified) @ Unknown
		Acetaminophen/ propoxyphene	2	2						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
746 pa	65 y F				U	Unk	Unk	3		
		Oxycodone	1	1					Oxycodone	0.12 mg/L In Blood (unspecified) @ Autopsy
		Trazodone	2	2					Trazodone	0.45 mg/L In Blood (unspecified) @ Autopsy
		Tramadol	3	3					Tramadol	0.17 mg/L In Blood (unspecified) @ Autopsy
747 pa	65 y F				A	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	194 mcg/mL In Serum @ Unknown
		Acetaminophen/ hydrocodone	1	1					Alprazolam	1.1 mg/L In Serum @ Unknown
		Acetaminophen/ hydrocodone	1	1					Carisoprodol	40 mg/L In Serum @ Unknown
748 pai	65 y F				U	Unk	Int-A	1		
		Fentanyl transdermal	1	1					Fentanyl	29.2 ng/mL In Whole Blood @ Autopsy
749 h	65 y F				U	Ingst	Int-S	2		
		Acetaminophen/ diphenhydramine	1	1					Acetaminophen	41 mg/L In Blood (unspecified) @ Unknown
		Methanol	2	2						
		Antifreeze (ethylene glycol)	3	3						
750	65 y M				U	Ingst	Int-S	2		
		Acetaminophen	1	1						
		Salicylate	2	2						
		Metoprolol	3	3						
751 pa	66 y F				U	Ingst	Unk	2		
		Oxycodone	1	1					Oxycodone	0.37 mg/L In Blood (unspecified) @ Autopsy
		Benzodiazepine	2	2					Diazepam	0.16 mg/L In Blood (unspecified) @ Autopsy
		Benzodiazepine	2	2					Nordiazepam	0.39 mg/L In Blood (unspecified) @ Autopsy
		Ethanol	3	3					Ethanol	0.1 g/dL In Vitreous @ Autopsy
		Acetaminophen	4	4						
		Salicylate	5	5						
		Chlordiazepoxide/ clidinium	6	6						
		Benzonatate	7	7						
		Drug, unknown	8	8						
		Chlorothiazide	9	9						
752	66 y F				U	Ingst	Unk	3		
		Acetaminophen/ hydrocodone	1	1						
		Drug, unknown	2	2						
753	66 y M				C	Ingst	Int-M	3		
		Acetaminophen/ hydrocodone	1	1						
754 pa	67 y F				U	Ingst+ Derm	Unk	2		
		Fentanyl transdermal	1	1					Fentanyl	3 ng/mL In Blood (unspecified) @ Autopsy
		Fentanyl transdermal	1	1					Norfentanyl	4.9 ng/mL In Blood (unspecified) @ Autopsy
		Alprazolam	2	2					Alprazolam	0.15 mg/L In Blood (unspecified) @ Autopsy
		Diazepam	3	3					Diazepam	0.05 mg/L In Blood (unspecified) @ Autopsy
		Diazepam	3	3					Nordiazepam	0.19 mg/L In Blood (unspecified) @ Autopsy
		Metoprolol	4	4						
		Diovan	5	5						
755 h	67 y F				C	Ingst	Unt-M	3		
		Salicylate	1	1						
		Nonsteroidal antiinflammatory drug	2	2						
756	68 y F				C	Ingst	Int-M	2		
		Acetaminophen/ hydrocodone	1	1						
757 a	69 y F				A	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	130.3 mg/dL In Blood (unspecified) @ Unknown
		Quetiapine	2	2						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
		Salicylate	3	3						
		Duloxetine	4	4						
		Clopidogrel	5	5						
		Zolpidem	6	6						
		Tiotropiumt-iotropium	7	7						
		Fluticasone/salmeterol	8	8						
		Benzodiazepine	9	9						
		Solifenacin	10	10						
758 h	69 y F				A/C	Ingst	Unt-T	1		
		Acetaminophen/hydrocodone	1	1						
		Ethanol	2	2						
		Salicylate	3	3						
759	70 y M				A	Par	AR-D	1		
		Hydromorphone	1	1						
760 ai	70 y F				A/C	Ingst	Int-U	2		
		Morphine	1	1					Morphine	0.09 mcg/mL In Whole Blood @ Unknown
		Tramadol	2	2					Tramadol	0.69 mcg/mL In Whole Blood @ Autopsy
		Diphenhydramine	3	3						
761 a	70 y M				U	Ingst	Unk	3		
		Salicylate	1	1					Salicylate	24.3 mg/dL In Blood (unspecified) @ Unknown
		Salicylate	1	1					Salicylate	32 mg/dL In Blood (unspecified) @ Unknown
		Salicylate	1	1					Salicylate	28 mg/dL In Blood (unspecified) @ Unknown
		Salicylate	1	1					Salicylate	25 mg/dL In Blood (unspecified) @ Unknown
		Salicylate	1	1					Salicylate	14.4 mg/dL In Blood (unspecified) @ Unknown
762	71 y M				A	Ingst	Int-S	1		
		Salicylate	1	1						
763 p	72 y F				A/C	Ingst	Unt-T	2		
		Methadone	1	1						
764 p	72 y F				A	Ingst	Int-S	1		
		Opioid	1	1						
		Acetaminophen	2	2						
765	73 y F				C	Ingst	Unk	3		
		Salicylate	1	1					Salicylate	37.2 mg/dL In Blood (unspecified) @ Unknown
		Quetiapine	2	2						
[766 a]	73 y F				A	Ingst	Int-S	2		
		Salicylate	1	1						
		Donepezil	2	2						
767	75 y F				A/C	Ingst	Int-S	2		
		Acetaminophen/hydrocodone	1	1						
		Sitagliptin	2	2						
		Gabapentin	3	3						
		Clonazepam	4	4						
		Darifenacin	5	5						
		Metformin	6	6						
		Doxazosin	7	7						
		Buspirone	8	8						
768 p	76 y F				A/C	Ingst+ Aspir	Int-S	3		
		Acetaminophen/hydrocodone	1	1						
		Bismuth subsalicylate	2	2						
		Hydrocholorothiazide/irbesartan	3	3						
		Levothyroxine	4	4						
769	76 y M				A	Ingst	Int-S	1		
		Acetaminophen/diphenhydramine	1	1						
		Ethanol	2	2						
770 h	77 y F				A	Ingst	Int-S	2		
		Acetaminophen	1	1						
		Oxycodone	2	2						
771	77 y F				A/C	Ingst	Unk	1		
		Acetaminophen	1	1						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
772	78 y F				A	Ingst	Unt-G	1		
		Salicylate	1	1						
773	79 y M				A	Ingst	Int-S	1		
		Salicylate	1	1						
		Acetaminophen	2	2						
774	79 y F				A	Ingst	Unt-T	3		
		Opioid	1	1						
775	80 y F				A/C	Ingst	Int-S	2		
		Acetaminophen/ propoxyphene	1	1						
776	80 y F				A	Ingst	Int-S	1		
		Acetaminophen/ hydrocodone	1	1						
777 a	80 y F				A/C	Ingst	Int-S	1		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	300 mcg/mL In Whole Blood @ 6 h (pe)
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	43.2 mg/L In Whole Blood @ Unknown
		Acetaminophen/ hydrocodone	1	1					Hydrocodone	2.67 mg/L In Whole Blood @ Unknown
		Acetaminophen/ hydrocodone	1	1					Hydromorphone	0.47 mg/L In Whole Blood @ Unknown
		Temazepam	2	2					Temazepam	0.28 mg/L In Whole Blood @ Unknown
		Ethanol	3	3						
		Beta Blocker	4	4						
778 pa	80 y M				U	Ingst	Unk	3		
		Tramadol	1	1					Tramadol	3.1 mg/L In Blood (unspecified) @ Autopsy
779 h	81 y F				A	Unk	Unk	2		
		Salicylate	1	1						
780 a	81 y F				A	Ingst	Int-U	2		
		Acetaminophen	1	1					Acetaminophen	17.7 mcg/mL In Serum @ 2 d (pe)
		Iron	2	2					Iron	253 mcg/dL In Serum @ 2 d (pe)
		Famciclovir	3	3						
781	82 y M				U	Ingst	Int-S	2		
		Acetaminophen/ hydrocodone	1	1						
782	83 y F				U	Ingst+ Aspir	Int-S	3		
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	229 mcg/mL In Plasma @ 1 h (pe)
		Acetaminophen/ hydrocodone	1	1					Acetaminophen	317 mcg/mL In Plasma @ 4 h (pe)
		Activated Charcoal	2	2						
783	88 y F				A/C	Ingst	Int-S	3		
		Acetaminophen/ oxycodone	1	1						
784	89 y F				A	Ingst	Int-S	2		
		Acetaminophen	1	1					Acetaminophen	500 mcg/mL In Blood (unspecified) @ Unknown
		Warfarin	2	2						
		Simvastatin	3	3						
785	89 y F				A	Ingst	Int-S	1		
		Acetaminophen/ hydrocodone	1	1						
786	89 y M				A	Ingst	Int-S	1		
		Acetaminophen	1	1					Acetaminophen	159 mcg/mL In Serum @ 4 h (pe)
		Acetaminophen	1	1					Acetaminophen	369 mcg/mL In Serum @ 19 h (pe)
		Acetaminophen	1	1					Acetaminophen	289 mcg/mL In Serum @ 36 h (pe)
787 h	90 y F				A/C	Ingst	Unt-G	2		
		Acetaminophen	1	1						
788 ha	97 y F				A	Ingst	Int-S	1		
		Naproxen	1	1					Naproxen	640 mcg/mL In Whole Blood @ Unknown
789	99 y F				A	Ingst	Unk	1		
		Salicylate	1	1						
		Temazepam	2	2						
		Acetaminophen	3	3					Acetaminophen	56 mcg/mL In Plasma @ Unknown

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Analgesics, continued										
790 pa	13 m F				U	Unk	Oth-M	1		
		Morphine	1	1					Morphine	381 ng/mL In Blood (unspecified) @ Autopsy
		Morphine	1	1					Morphine	96048 ng/mL In Urine (quantitative only) @ Autopsy
791 p	14 m M				U	Derm	Int-M	2		
		Fentanyl transdermal	1	1						
792 i	18 m F				A/C	Ingst	Unt-T	1		
		Acetaminophen	1	1					Acetaminophen	107 mcg/mL In Blood (unspecified) @ 1 h (pe)
793 p	20+ y M				U	Ingst	Unk	2		
		Oxymorphone	1	1						
794 pa	40+ y M				A/C	Ingst	Unk	1		
		Oxycodone	1	1					Oxycodone	1630 ng/mL In Blood (unspecified) @ Autopsy
		Duloxetine	2	2					Duloxetine	743 ng/mL In Blood (unspecified) @ Autopsy
		Bupropion	3	3					Bupropion	118 ng/mL In Blood (unspecified) @ Autopsy
		Gabapentin	4	4					Gabapentin	2.7 ng/mL In Blood (unspecified) @ Autopsy
		Zolpidem	5	5					Zolpidem	90 ng/mL In Blood (unspecified) @ Autopsy
		Diphenhydramine	6	6					Diphenhydramine	79.9 ng/mL In Blood (unspecified) @ Autopsy
795 a	Unknown adult (>=20 y) M				A	Ingst	Int-U	2		
		Oxycodone	1	1					Oxycodone	0.19 mg/L In Blood (unspecified) @ Autopsy
		Oxycodone	1	1					Oxymorphone	0.07 mg/L In Blood (unspecified) @ Autopsy
		Morphine	2	2					Morphine	0.03 mg/L In Blood (unspecified) @ Autopsy
796	Unknown adult (>=20 y) F				U	Ingst	Unk	2		
		Acetaminophen/ propoxyphene	1	1						
		Quetiapine	2	2						
		Trazodone	3	3						
		Clonazepam	4	4						
		Alprazolam	5	5						
		Benzodiazepine	6	6						
		Acetaminophen/ hydrocodone	7	7						
797pa	Unknown adult (>=20 y) M				A	Ingst	Int-U	1		
		Fentanyl transdermal	1	1					Fentanyl	18.3 mg/L In Blood (unspecified) @ Autopsy
		Oxycodone	2	2					Oxycodone	0.14 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen/ hydrocodone	3	3					Hydrocodone	0.07 mg/L In Blood (unspecified) @ Autopsy
		Ethanol	4	4					Ethanol	0.11 mg/L In Blood (unspecified) @ Autopsy
See also case 8, 13, 15, 17, 18, 23, 25, 27, 28, 47, 49, 55, 62, 113, 155, 166, 172, 193, 234, 239, 243, 800, 801, 802, 806, 809, 813, 817, 822, 826, 827, 833, 834, 841, 843, 846, 848, 849, 852, 856, 857, 861, 863, 866, 871, 874, 880, 883, 885, 886, 887, 889, 897, 898, 899, 901, 903, 904, 907, 910, 916, 917, 921, 925, 926, 929, 932, 958, 960, 962, 963, 968, 972, 984, 986, 987, 989, 990, 991, 1003, 1010, 1012, 1014, 1015, 1017, 1018, 1019, 1028, 1029, 1030, 1034, 1043, 1050, 1061, 1067, 1072, 1077, 1078, 1103, 1104, 1105, 1106, 1108, 1110, 1111, 1112, 1114, 1116, 1117, 1127, 1128, 1129, 1130, 1132, 1141, 1146, 1156, 1159, 1161, 1163, 1169, 1172, 1178, 1179, 1180, 1182, 1189, 1190, 1191, 1195, 1209, 1219, 1220, 1234, 1235, 1238, 1239, 1242, 1245, 1255, 1256, 1259, 1263, 1266, 1269, 1273, 1274, 1275, 1278, 1282, 1284, 1295, 1303, 1304, 1307, 1310										
Anticholinergic Drugs										
798 a	39 y M				A	Ingst	Int-S	3		
		Benztropine	1	1						
		Quetiapine	2	2						
See also case 392, 732, 757, 767, 1113, 1134										
Anticoagulants										
799	73 y M				A	Par	Unt-T	3		
		Activase	1	1						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Anticoagulants, continued										
800	78 y M				U	Par	Unk	3		
		Enoxaparin	1	1						
		Clopidogrel	2	2						
		Salicylate	3	3						
		Warfarin	4	4						
801	79 y M				C	Ingst	AR-D	3		
		Warfarin	1	1						
		Acetaminophen	2	2						
See also case 743, 757, 784, 905, 921, 951, 962, 1015, 1055, 1167										
Anticonvulsants										
802	23 y F				A	Ingst	Int-S	1		
		Gabapentin	1	1						
		Paroxetine	2	2						
		Alprazolam	3	3						
		Fluoxetine	4	4						
		Naproxen	5	5						
		Zolpidem	6	6						
		Opioid	7	7						
		Acetaminophen	8	8					Acetaminophen	20 mcg/mL In Blood (unspecified) @ Unknown
803	26 y M				U	Ingst	Int-S	2		
		Valproic acid	1	1						
804	30 y F				A	Ingst	Int-S	3		
		Topiramate	1	1						
		Quetiapine	2	2						
805	30 y F				A	Ingst	Int-S	2		
		Lamotrigine	1	1						
		Venlafaxine	2	2						
806 pa	31 y M				U	Unk	Int-A	1		
		Oxcabazepine	1	1					Oxcarbazepine	96 mg/L In Blood (unspecified) @ Autopsy
		Tramadol	2	2						
807 pa	31 y F				U	Ingst	Unk	2		
		Carbamazepine	2	1					Carbemazepine	22.6 mcg/mL In Whole Blood @ Autopsy
		Topiramate	4	2					Topiramate	37.2 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	3	3					Alprazolam	16.9 ng/mL In Whole Blood @ Autopsy
		Ziprasidone	1	4						
808	31 y F				A	Ingst	Int-S	3		
		Carbamazepine	1	1						
		Alprazolam	2	2						
		Hydroxyzine	3	3						
		Cocaine	4	4						
809 p	31 y F				A	Ingst	Int-S	2		
		Anticonvulsant	1	1						
		Acetaminophen/ oxycodone	2	2						
		Quetiapine	3	3						
		Benzodiazepine	4	4						
		Cyclobenzaprine	5	5						
		Amitriptyline	6	6						
		Alprazolam	7	7						
810	39 y F				U	Ingst	Int-S	1		
		Gabapentin	1	1						
		Drug, Unknown	2	2						
811 pha	48 y M				A/C	Ingst	Int-S	2		
		Valproic acid	1	1						
		Haloperidol	2	2						
		Clonazepam	3	3						
		Trazodone	4	4						
		Benzodiazepine	5	5						
812	56 y F				A	Ingst	Int-S	1		
		Carbamazepine	1	1					Carbemazepine	53 mg/L In Blood (unspecified) @ Unknown
		Quetiapine	2	2						
		Anticonvulsant, pyrrolidinone derivitive	3	3						
		Duloxetine	4	4						
813	56 y M				A/C	Ingst	Int-S	2		
		Phenytoin	1	1						
		Phenobarbital	2	2						
		Quetiapine	3	3						
		Trazodone	4	4						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Anticonvulsants, continued										
		Escitalopram	5	5						
		Emtricitabine/ tenofovir	6	6						
		Oxycodone	7	7						
		Methylphenidate	8	8						
		Metformin	9	9						
		Zolpidem	10	10						
		Ondansetron	11	11						
		Pregabalin	12	12						
		Metoclopramide	13	13						
814	58 y M				A	Ingst	Int-S	2		
		Zonisamide	1	1						
		Pregabalin	2	2						
		Lamotrigine	3	3						
815	60 y F				A	Ingst	Int-S	2		
		Valproic acid	1	1						
		Clonazepam	2	2						
		Metformin	3	3						
		Lisinopril	4	4						
		Losartan	5	5						
		Simvastatin	6	6						
		Haloperidol	7	7						
		Calcium antagonist	8	8						
See also case 8, 108, 254, 301, 322, 389, 436, 438, 446, 476, 502, 510, 517, 522, 584, 591, 618, 620, 626, 633, 640, 657, 690, 767, 794, 821, 828, 830, 848, 853, 856, 860, 867, 871, 887, 889, 891, 893, 901, 912, 917, 971, 980, 987, 1027, 1037, 1107, 1110, 1111, 1120, 1123, 1124, 1134, 1136, 1137, 1156, 1172, 1174, 1221, 1255										
Antidepressants										
816 ai	6 y F				A	Ingst	Unt-G	2		
		Bupropion (extended release)	1	1					Bupropion	20.3 mg/L In Whole Blood @ Autopsy
817 h	14 y M				A	Ingst	Int-A	1		
		Citalopram	3	1						
		Metaxalone	1	2						
		Meloxicam	2	3						
		Tobacco	4	4						
818 p	17 y F				U	Ingst	Int-S	2		
		Bupropion (extended release)	1	1						
[819 a]	17 y F				A	Ingst	Int-S	1		
		Bupropion (extended release)	1	1					Bupropion	31 mcg/mL In Whole Blood @ Autopsy
820 p	17 y M				U	Ingst	Int-S	2		
		Citalopram	1	1						
[821 a]	18 y M				A/C	Ingst	Int-S	1		
		Bupropion (extended release)	1	1					Bupropion	2200 ng/mL In Blood (unspecified) @ Autopsy
		Bupropion (extended release)	1	1					Hydroxybupropion	2600 ng/mL In Blood (unspecified) @ Autopsy
		Aripiprazole	2	2					Aripiprazole	330 ng/mL In Blood (unspecified) @ Autopsy
		Gabapentin	3	3						
		Lorazepam	4	4						
822 pa	18 y F				A/C	Ingst	Int-S	2		
		Tricyclic antidepressant	1	1						
		Benzodiazepine	2	2						
		Opioid	3	3						
		Hydroxyzine	4	4					Hydroxyzine	300 ng/mL In Blood (unspecified) @ Autopsy
		Cyclobenzaprine	5	5					Cyclobenzaprine	19 ng/mL In Blood (unspecified) @ Autopsy
		Marijuana	6	6						
823 ha	19 y F				U	Ingst	Int-S	1		
		Amitriptyline	1	1						
		Hydroclorothiazide /olmesartan	2	2						
[824 ha]	19 y F				A/C	Ingst	Unt-G	3		
		Bupropion (extended release)	1	1						
825 a	19 y M				U	Unk	Unk	3		
		Lithium	1	1						
		Brodifacoum	2	2					Brodifacoum	0 Other (see abst) In Blood (unspecified) @ Unknown
		Brodifacoum	2	2					Brodifacoum	0 Other (see abst) In Unknown @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Antidepressants, continued										
826 pa	20 y M				A	Ingst	Int-S	1		
		Citalopram	1	1					Citalopram	1.9 mg/L In Blood (unspecified) @ 999 h (pe)
		Tramadol	2	2					Tramadol	6 mg/L In Blood (unspecified) @ 999 h (pe)
827	21 y M				C	Ingst	Int-S	1		
		Escitalopram	1	1						
		Acetaminophen	2	2						
		Ibuprofen	3	3						
		Methylphenidate	4	4						
		Ethanol	5	5						
828 p	21 y M				U	Ingst	Int-S	2		
		Fluoxetine	1	1						
		Quetiapine	2	2						
		Bupropion (extended release)	3	3						
		Oxcabazepine	4	4						
		Methylphenidate	5	5						
		Ethanol	6	6						
829 pa	23 y M				A	Ingst	Int-S	1		
		Venlafaxine (extended release)	1	1					Venlafaxine	67 mcg/mL In Serum @ Autopsy
		Ethanol	2	2						
830	25 y M				U	Ingst	Unt-U	3		
		Duloxetine	1	1						
		Valproic acid (extended release)	2	2					Valproic acid	123 mcg/mL In Serum @ Unknown
		Olanzapine	3	3						
831	25 y M				A	Ingst	Int-S	1		
		Amitriptyline	1	1						
832 p	26 y F				A	Ingst	Int-S	1		
		Amitriptyline	1	1						
833 p	26 y M				U	Ingst	Int-S	3		
		Escitalopram	1	1						
		Oxycodone	2	2						
		Cocaine	3	3						
834	27 y M				A	Ingst	Int-S	1		
		Bupropion (extended release)	1	1						
		Compazine	2	2						
		Olanzapine	3	3						
		Clonazepam	4	4						
		Ibuprofen	5	5						
		Acetaminophen/ hydrocodone	6	6						
835	27 y F				A/C	Ingst+ Aspir	Int-S	1		
		Bupropion (extended release)	1	1						
[836 pa]	29 y M				A	Ingst	Int-S	2		
		Bupropion	3	1					Bupropion	8.49 mg/L In Other @ Autopsy
		Bupropion	3	1					Bupropion	0.63 mg/L In Blood (unspecified) @ 1 d (pe)
		Bupropion	3	1					Bupropion	6.05 mg/kg In Liver @ Autopsy
		Bupropion	3	1					Bupropion	397 Other (see abst) In Gastric (stomach content) @ Autopsy
		Olanzapine	1	2					Olanzapine	0.17 mg/L In Blood (unspecified) @ Autopsy
		Olanzapine	1	2					Olanzapine	4.73 mg/kg In Liver @ Autopsy
		Olanzapine	1	2					Olanzapine	12.1 Other (see abst) In Gastric (stomach content) @ Autopsy
		Olanzapine	1	2					Olanzapine	1.03 mg/L In Blood (unspecified) @ 1 d (pe)
		Carvedilol	2	3						
837	30 y F-pregnant +C4592				A/C	Ingst	Int-S	2		
		Escitalopram	1	1						
		Bupropion (extended release)	2	2						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Antidepressants, continued										
838	30 y F				A/C	Ingst	Int-S	1		
		Bupropion	1	1						
		Duloxetine	2	2						
839 p	31 y M				A	Ingst	Int-S	2		
		Amitriptyline	1	1						
840	33 y F				A/C	Ingst	Int-S	1		
		Amitriptyline	1	1						
		Clonazepam	2	2						
		Lorazepam	3	3						
841 pa	33 y F				U	Ingst	Int-U	1		
		Sertraline	1	1					Sertraline	2.79 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen/ hydrocodone	2	2					Acetaminophen	159 mg/L In Blood (unspecified) @ Autopsy
842	34 y F				C	Ingst	AR-D	2		
		Lithium	1	1						
843	35 y F				A/C	Ingst	Int-S	1		
		Nortriptyline	1	1						
		Acetaminophen/ oxycodone	2	2						
[844 a]	36 y F				A/C	Ingst	Int-U	1		
		Bupropion (extended release)	1	1					Bupropion	2.3 mg/L In Blood (unspecified) @ Autopsy
		Bupropion (extended release)	1	1					Bupropion	3 mg/L In Blood (unspecified) @ Autopsy
		Bupropion (extended release)	1	1					Threobupropion	22 mg/L In Blood (unspecified) @ Autopsy
		Bupropion (extended release)	1	1					Threobupropion	40 mg/L In Blood (unspecified) @ Autopsy
		Bupropion (extended release)	1	1					Threobupropion	140 mg/kg In Liver @ Autopsy
		Sertraline	2	2					Norsertraline	7.5 mg/L In Blood (unspecified) @ Autopsy
		Sertraline	2	2					Norsertraline	2 mg/L In Blood (unspecified) @ Autopsy
		Sertraline	2	2					Norsertraline	36 mg/kg In Liver @ Autopsy
		Sertraline	2	2					Sertraline	4.7 mg/L In Blood (unspecified) @ Autopsy
		Sertraline	2	2					Sertraline	1.4 mg/L In Blood (unspecified) @ Autopsy
		Sertraline	2	2					Sertraline	13 mg/kg In Liver @ Autopsy
		Cocaine	3	3					Benzoylecgonine	0.23 mg/L In Blood (unspecified) @ Autopsy
		Cocaine	3	3					Cocaethylene	0.024 mg/L In Blood (unspecified) @ Autopsy
		Cyclobenzaprine	4	4						
845 a	37 y F				U	Ingst	Int-S	1		
		Bupropion	1	1						
846	37 y M				C	Ingst	Unt-G	1		
		Sertraline	1	1						
		Benzodiazepine	2	2						
		Etodolac	3	3						
847 a	37 y F				A/C	Ingst	Int-S	1		
		Bupropion	1	1					Bupropion	14.6 mg/L In Blood (unspecified) @ Autopsy
		Buspirone	2	2						
		Ethanol	3	3					Ethanol	0.11 g/dL In Blood (unspecified) @ Autopsy
		Iron	4	4						
		Duloxetine	5	5						
		Omeprazole	6	6						
		Drug, unknown	7	7						
848 pa	37 y F				U	Ingst	Int-S	2		
		Antidepressant	1	1						
		Anticonvulsant	2	2						
		Antipsychotic, unknown	3	3						
		SSRI	4	4					Sertraline	630 ng/mL In Blood (unspecified) @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Antidepressants, continued										
		Lamotrigine	5	5					Lamotrigine	52 mcg/mL In Blood (unspecified) @ Autopsy
		Acetaminophen	6	6					Acetaminophen	11 mcg/mL In Blood (unspecified) @ Autopsy
		Antihistamine	7	7					Doxylamine	63 mcg/mL In Blood (unspecified) @ Autopsy
		Bupropion	8	8						
849 a	38 y M				A	Ingst	Int-S	1		
		Amitriptyline	1	1					Amitriptyline	0.7 mg/L In Blood (unspecified) @ Autopsy
		Tramadol	2	2					Tramadol	0.4 mg/L In Blood (unspecified) @ Autopsy
		Methamphetamine	4	3					Methamphetamine	0.1 mg/L In Blood (unspecified) @ Autopsy
		Diazepam	3	4					Diazepam	0.1 mg/L In Blood (unspecified) @ Autopsy
850 a	38 y F				A	Ingst	Int-S	1		
		Tricyclic antidepressant	1	1					Doxepin	7646 ng/mL In Blood (unspecified) @ Autopsy
		Tricyclic antidepressant	1	1					Nordoxepin	978 ng/mL In Blood (unspecified) @ Autopsy
		Benzodiazepine *	2	2					Alprazolam	28.2 ng/mL In Blood (unspecified) @ Autopsy
		Quetiapine *	3	2					Quetiapine	2675 ng/mL In Blood (unspecified) @ Autopsy
		Fluoxetine	4	4					Fluoxetine	543 ng/mL In Blood (unspecified) @ Autopsy
		Fluoxetine	4	4					Norfluoxetine	214 ng/mL In Blood (unspecified) @ Autopsy
		Cyclobenzaprine	5	5					Cyclobenzaprine	18.4 ng/mL In Blood (unspecified) @ Autopsy
851	38 y F				A	Ingst	Int-S	1		
		Bupropion	1	1						
		Benzodiazepine	2	2						
		Ethanol	3	3						
852 pa	38 y M				U	Ingst	Int-S	2		
		Citalopram	1	1					Citalopram	0.56 mg/L In Blood (unspecified) @ Autopsy
		Trazodone	2	2					Trazodone	0.1 mg/L In Blood (unspecified) @ Autopsy
		Diphenhydramine	3	3						
		Naproxen	4	4						
853 a	39 y M				A	Ingst	Int-S	1		
		Amitriptyline	1	1					Nortiptyline	0.1 mg/L In Blood (unspecified) @ Autopsy
		Ethanol	2	2					Ethanol	315 mg/dL In Blood (unspecified) @ Unknown
		Carbamazepine	3	3					Carbemazepine	3.2 mg/L In Blood (unspecified) @ Autopsy
854	40 y M				A	Ingst	Int-S	2		
		Bupropion	1	1						
855 h	40 y F				A	Ingst	Int-S	2		
		Nordoxepin	1	1						
856 p	41 y F				A/C	Ingst	Int-S	1		
		Venlafaxine	1	1						
		Olanzapine	2	2						
		Sertraline	3	3						
		Lamotrigine	4	4						
		Ibuprofen	5	5						
857 p	41 y F				A/C	Ingst	Int-S	2		
		Citalopram	1	1						
		Ethanol	2	2					Ethanol	0.22 mg/dL In Blood (unspecified) @ Unknown
		Salicylate	3	3					Salicylate	5.1 mg/dL In Serum @ Unknown
858 a	41 y F				A/C	Ingst	Int-S	1		
		Bupropion	1	1					Bupropion	2656 ng/mL In Serum @ 1 h (pe)
		Bupropion	1	1					Bupropion	1927 ng/mL In Blood (unspecified) @ Autopsy
		Citalopram	2	2					Citalopram	995 ng/mL In Serum @ 1 h (pe)
		Citalopram	2	2					Citalopram	1443 ng/mL In Blood (unspecified) @ Autopsy
		Ethanol	3	3						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Antidepressants, continued										
859 ha	41 y M				U	Ingst	Int-S	2		
		Venlafaxine (extended release)	1	1						
		Verapamil	2	2						
		Trazodone	3	3						
		Angiotensin-converting enzyme inhibitor	4	4						
		Eszopiclone	5	5						
860 a	42 y M				C	Ingst	AR-D	1		
		Lithium	1	1						
		Oxcabazepine	2	2						
		Aripiprazole	3	3						
		Clonazepam	4	4						
861	42 y M				A/C	Ingst	Int-S	2		
		Venlafaxine	2	1						
		Tramadol	3	2						
		Zolpidem	1	3						
862	42 y F				A	Ingst	Int-S	2		
		Bupropion (extended release)	1	1						
		Ethanol	2	2						
863 pa	43 y F				A	Unk	Int-S	1		
		Bupropion	1	1					Bupropion	3.6 mg/L In Blood (unspecified) @ Autopsy
		Bupropion	1	1					Bupropion	5.3 mg/L In Blood (unspecified) @ Autopsy
		Bupropion	1	1					Bupropion	1 mg/kg In Liver @ Autopsy
		Bupropion	1	1					Threobupropion	21 mg/L In Blood (unspecified) @ Autopsy
		Bupropion	1	1					Threobupropion	13 mg/L In Blood (unspecified) @ Autopsy
		Bupropion	1	1					Threobupropion	58 mg/kg In Liver @ Autopsy
		Diphenhydramine	2	2					Diphenhydramine	1.2 mg/L In Blood (unspecified) @ Autopsy
		Ketoprofen	3	3						
864 pa	43 y F				A	Ingst	Int-S	1		
		Doxepin	1	1						
865 p	43 y M				A	Ingst	Int-S	2		
		Nortriptyline	1	1						
[866 pha]	44 y F				A	Ingst	Int-S	2		
		Citalopram	1	1					Citalopram	1300 mcg/L In Unknown @ Autopsy
		Acetaminophen/ hydrocodone	2	2						
		Diazepam	3	3						
867 h	44 y M				U	Ingst	Int-S	2		
		Escitalopram	1	1						
		Ziprasidone	2	2						
		Lamotrigine	3	3						
868 ph	44 y F				A/C	Ingst	Int-S	1		
		Nortriptyline	1	1					Nortiptyline	500 ng/mL In Serum @ Unknown
869 pa	44 y F				A	Ingst	Int-S	1		
		Tricyclic antidepressant	1	1					Desipramine	3621 ng/mL In Blood (unspecified) @ Autopsy
		Fluoxetine	2	2					Fluoxetine	1258 ng/mL In Blood (unspecified) @ Autopsy
		Fluoxetine	2	2					Norfluoxetine	1154 ng/mL In Blood (unspecified) @ Autopsy
		Duloxetine	3	3					Duloxetine	1258 ng/mL In Blood (unspecified) @ Autopsy
		Trazodone	4	4						
		Oxybutynin	5	5						
		Metoclopramide	6	6						
		Benzodiazepine	7	7						
		Ethanol	8	8						
870	44 y F				U	Ingst	Int-U	3		
		Amitriptyline	1	1						
871 a	44 y M				A	Ingst	Int-S	1		
		Tricyclic antidepressant	1	1					Nortiptyline	2968 ng/mL In Blood (unspecified) @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Antidepressants, continued										
		Cocaine	3	2					Benzoylecgonine	3218 ng/mL In Blood (unspecified) @ Autopsy
		Cocaine	3	2					Cocaethylene	58 ng/mL In Blood (unspecified) @ Autopsy
		Cocaine	3	2					Cocaine	161 ng/mL In Plasma @ Autopsy
		Topiramate	2	3						
		Opioid	4	4						
872 p	44 y M				A	Ingst	Int-S	2		
		Amitriptyline	1	1						
		Ethanol	2	2						
873	44 y F				A/C	Ingst	Int-S	1		
		Lithium	1	1					Lithium	4.8 mEq/L In Serum @ Unknown
		Quetiapine	2	2						
		Alprazolam	3	3						
874 p	45 y F				U	Ingst	Int-S	1		
		Venlafaxine	1	1						
		Tramadol	2	2						
		Drug, unknown	4	4						
875 p	45 y F				A	Ingst	Int-S	1		
		Tricyclic antidepressant	1	1						
		Phenobarbitone	2	2						
876 pai	45 y M				A	Ingst	Int-S	2		
		Doxepin	1	1					Doxepin	9.6 mcg/mL In Whole Blood @ Autopsy
877 a	46 y F				A	Ingst+ Aspir	Int-S	1		
		Bupropion (extended release)	1	1						
		Benzodiazepine	2	2						
878	46 y F				A	Ingst	Int-S	1		
		Duloxetine	1	1						
		Quetiapine	2	2						
		Zolpidem	3	3						
879 p	46 y F				A	Ingst	Int-S	2		
		Amitriptyline	1	1						
		Ethanol	2	2						
880 a	46 y M				A	Ingst	Int-S	1		
		Bupropion	1	1						
		Venlafaxine	2	2						
		Fexofenadine	3	3						
		Ibuprofen	4	4						
881 p	46 y M				U	Ingst+ Unk	Int-S	2		
		Tricyclic antidepressant	1	1						
		Cocaine	2	2						
882 p	47 y M				A/C	Ingst	Int-S	1		
		Amitriptyline	1	1						
		Bupropion	2	2						
883 p	48 y F				A/C	Ingst	Int-S	2		
		Amitriptyline	1	1						
		Acetaminophen/ propoxyphene	2	2					Acetaminophen	99.3 mcg/mL In Serum @ Unknown
		Acetaminophen/ codeine	3	3						
		Lorazepam	4	4						
		Trazodone	5	5						
884	48 y M				U	Ingst	Int-S	2		
		Cyclic antidepressant, unknown	1	1						
885 a	48 y F				A/C	Ingst	Int-S	3		
		Tricyclic antidepressant	1	1					Amitriptyline	0.41 mg/L In Whole Blood @ Autopsy
		Tricyclic antidepressant	1	1					Nortiptyline	0.11 mg/L In Whole Blood @ Autopsy
		Acetaminophen	2	2					Acetaminophen	10.3 mg/L In Whole Blood @ Autopsy
886 a	48 y F				A	Ingst	Int-S	1		
		Amitriptyline	1	1					Amitriptyline	83 mg/kg In Liver @ Autopsy
		Amitriptyline	1	1					Amitriptyline	1157 mg/L In Gastric (stomach content) @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Antidepressants, continued										
		Amitriptyline	1	1					Nortiptyline	23 mg/kg In Liver @ Autopsy
		Amitriptyline	1	1					Nortiptyline	2 mg/L In Gastric (stomach content) @ Autopsy
		Beta blocker	2	2						
		Tramadol	3	3						
		Hydrochlorothiazide/triamterene	4	4						
		Ethanol	5	5					Ethanol	0.36 g/dL In Urine (quantitative only) @ Autopsy
		Ethanol	5	5					Ethanol	0.23 g/dL In Vitreous @ Autopsy
		Oxycodone	6	6					Oxycodone	1.9 mg/dL In Blood (unspecified) @ Autopsy
		Oxycodone	6	6					Oxycodone	1663 mg/L In Gastric (stomach content) @ Autopsy
		Hydrocodone	7	7					Hydrocodone	1.3 mg/L In Gastric (stomach content) @ Autopsy
887 a	48 y M				A/C	Ingst	Int-S	1		
		Venlafaxine (extended release)	1	1					Norvenlafaxine	3.19 mg/L In Blood (unspecified) @ Autopsy
		Venlafaxine (extended release)	1	1					Venlafaxine	19.9 mg/L In Blood (unspecified) @ Autopsy
		Gabapentin	2	2						
		Sitagliptin	3	3						
		Ibuprofen	4	4					Ibuprofen	24.7 mg/dL In Blood (unspecified) @ Autopsy
888	49 y F				A	Ingst	Int-S	1		
		Nortriptyline	1	1						
889	49 y F				A/C	Ingst	Int-S	2		
		Venlafaxine	1	1						
		Cyclobenzaprine	2	2						
		Tramadol	3	3						
		Lamotrigine	4	4						
		Benzodiazepine	5	5						
		Hydroxyzine	6	6						
890 p	49 y F				A	Ingst	Int-S	2		
		Citalopram	1	1						
		Escitalopram	2	2						
		Venlafaxine	3	3						
		Ethanol	4	4						
891 pa	49 y M				U	Ingst	Unk	3		
		Citalopram	1	1					Citalopram	690 ng/mL In Blood (unspecified) @ Autopsy
		Citalopram	1	1					Desmethylcitalopram	138 ng/mL In Blood (unspecified) @ Autopsy
		Mirtazapine	2	2					Mirtazapine	554 ng/mL In Blood (unspecified) @ Autopsy
		Gabapentin	3	3					Gabapentin	53.2 mcg/mL In Blood (unspecified) @ Autopsy
		Hydroxyzine	4	4					Hydroxyzine	259 ng/mL In Blood (unspecified) @ Autopsy
892 pa	50 y M				A	Ingst	Int-S	1		
		Amitriptyline	1	1					Amitriptyline	9610 ng/mL In Blood (unspecified) @ Autopsy
		Amitriptyline	1	1					Nortiptyline	6222 ng/mL In Blood (unspecified) @ Autopsy
893 a	50 y M				A/C	Ingst	Int-S	2		
		Bupropion	1	1						
		Lamotrigine	2	2						
		Olanzapine	3	3						
		Duloxetine	4	4						
		Alprazolam	5	5						
894	50 y M				A	Ingst	Int-S	2		
		Antidepressant	1	1						
		Benzodiazepine	2	2						
895 pai	51 y F				U	Ingst	Int-S	1		
		Mirtazapine	1	1					Mirtazapine	0.4 mcg/mL In Whole Blood @ Autopsy
		Citalopram	2	2					Citalopram	2.2 mcg/mL In Whole Blood @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Antidepressants, continued										
896 pa	51 y F				U	Unk	Unk	1		
		Doxepin	1	1					Doxepin	52 mg/kg In Liver @ Autopsy
		Doxepin	1	1					Doxepin	1.2 mg/L In Other @ Autopsy
		Doxepin	1	1					Nordoxepin	0.2 mg/L In Other @ Autopsy
		Doxepin	1	1					Nordoxepin	4.2 mg/kg In Liver @ Autopsy
		Ethanol	2	2					Ethanol	130 mg/dL In Other @ Autopsy
		Clonazepam	3	3					7-aminoclonazepam	0.058 mg/L In Other @ Autopsy
		Clonidine	4	4						
		Drug, unknown	5	5						
		Diphenhydramine	6	6						
		Sildenafil	7	7						
		Sertraline	8	8						
		Duloxetine	9	9						
		Oxybutynin	12	12						
		Escitalopram	14	14						
897 p	51 y M				C	Ingst	Int-S	2		
		Trazodone	1	1						
		Quetiapine	2	2						
		Oxycodone	3	3						
		Zolpidem	4	4						
		Amiodarone	5	5						
		Acetaminophen/ oxycodone	6	6						
898	52 y F				A	Ingst	Int-S	3		
		Tricyclic antidepressant	1	1						
		Acetaminophen	2	2					Acetaminophen	48 mcg/mL In Serum @ Unknown
		Benzodiazepine	3	3						
899 p	52 y F				A/C	Ingst	Int-S	2		
		Nortriptyline	1	1						
		Cyclobenzaprine	2	2						
		Hydrocodone	3	3						
900 p	53 y F				A	Ingst	Int-S	2		
		Doxepin	1	1						
		Benzodiazepine	2	2						
		Escitalopram	3	3						
901 h	53 y F				C	Ingst	AR-D	3		
		Lithium	1	1						
		Oxybutynin	2	2						
		Albuterol	3	3						
		Angiotensin-converting enzyme inhibitor	4	4						
		Clemastine	5	5						
		Acetaminophen	6	6						
		Topical Steroids	7	7						
		Valproic acid (extended release)	8	8						
902	53 y M				U	Ingst	Int-S	2		
		Escitalopram	1	1						
		Duloxetine	2	2						
		Zolpidem	3	3						
		Temazepam	4	4						
		Ethanol	5	5						
903 ai	53 y F				U	Ingst+ Unk	Int-A	2		
		Imipramine	1	1					Desipramine	2.8 mcg/mL In Whole Blood @ Autopsy
		Imipramine	1	1					Desipramine	78.6 Other (see abst) In Liver @ Autopsy
		Imipramine	1	1					Desipramine	3.9 Other (see abst) In Gastric (stomach content) @ Autopsy
		Imipramine	1	1					Imipramine	1.4 mcg/mL In Whole Blood @ Autopsy
		Imipramine	1	1					Imipramine	17.3 Other (see abst) In Liver @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Antidepressants, continued										
		Imipramine	1	1					Imipramine	14.4 Other (see abst) In Gastric (stomach content) @ Autopsy
		Paroxetine	2	2					Paroxetine	0.29 mcg/mL In Whole Blood @ Autopsy
		Fentanyl transdermal	3	3						
904 ph	54 y F				A/C	Ingst	Int-S	1		
		Amitriptyline	1	1						
		Oxycodone	2	2						
905	54 y F				A	Ingst	Int-S	3		
		Escitalopram	1	1					Citalopram	8.67 mg/L In Lung @ Autopsy
		Metoprolol	5	2						
		Carisoprodol	4	3						
		Clopidogrel	2	4						
		Diazepam	3	5					Diazepam	1.86 mg/L In Blood (unspecified) @ Autopsy
		Diazepam	3	5					Nordiazepam	0.92 mg/L In Blood (unspecified) @ Autopsy
906 pai	54 y F				A	Ingst	Int-S	1		
		Desipramine	1	1					Desipramine	17000 ng/mL In Blood (unspecified) @ Autopsy
		Citalopram	2	2					Citalopram	3400 ng/mL In Blood (unspecified) @ Autopsy
907 ai	56 y M				U	Ingst	Int-U	1		
		Nortriptyline	1	1					Nortiptyline	2.4 mcg/mL In Whole Blood @ Autopsy
		Acetaminophen/ hydrocodone	2	2					Hydrocodone	0.17 mcg/mL In Whole Blood @ Autopsy
908	56 y F				A/C	Ingst	Int-S	2		
		Duloxetine	1	1						
909 p	57 y M				U	Ingst	Int-S	3		
		Lithium	1	1					Lithium	3.1 mmol/L In Unknown @ Unknown
		Lithium	1	1					Lithium	2.7 mmol/L In Unknown @ Unknown
		Lithium	1	1					Lithium	0.58 mmol/L In Unknown @ Unknown
		Lithium	1	1					Lithium	0.52 mmol/L In Unknown @ Unknown
910	57 y F				A/C	Ingst	Int-S	1		
		Lithium	1	1						
		Acetaminophen	2	2						
		Zaleplon	3	3						
		Diphenhydramine	4	4						
		Lisinopril	5	5						
911 p	57 y M				C	Ingst	Int-S	2		
		Trazodone	1	1						
		Alprazolam	2	2						
		Desvenlafaxine	3	3						
912	57 y F				A	Ingst	Int-S	1		
		Amitryptiline/ perphenazine	1	1						
		Gabapentin	2	2						
913	58 y M				C	Ingst	AR-D	3		
		Lithium	1	1						
		Ethanol	2	2						
[914 ha]	58 y F				A/C	Ingst	Int-S	1		
		Venlafaxine (extended release)	1	1					Venlafaxine	20000 ng/mL In Serum @ 1 d (pe)
915	59 y M				A/C	Ingst	Int-S	2		
		Lithium	1	1						
		Tranylcypromine	2	2						
916	62 y F				A	Ingst	Int-S	1		
		Protriptyline	1	1						
		Acetaminophen	2	2					Acetaminophen	572 mcg/mL In Serum @ 1 h (pe)
		Acetaminophen	2	2					Acetaminophen	770 mcg/mL In Serum @ 5 h (pe)
		Acetaminophen	2	2					Acetaminophen	850 mcg/mL In Serum @ 1 d (pe)
		Lorazepam	3	3						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Antidepressants, continued										
917 pa	63 y M				U	Ingst	Int-S	1		
		Amitriptyline	1	1					Amitriptyline	6200 ng/mL In Blood (unspecified) @ Autopsy
		Oxycodone	2	2					Oxycodone	0.13 mg/L In Blood (unspecified) @ Autopsy
		Promethazine	3	3					Promethazine	0.3 mg/L In Blood (unspecified) @ Autopsy
		Mirtazapine	4	4						
		Clonazepam	5	5						
		Atenolol	6	6						
		Prazosin	7	7						
		Trazodone	8	8						
		Niacin (B3)	9	9						
		Pravachol	10	10						
		Gabapentin	11	11						
		Drug, unknown	12	12						
		Venlafaxine	13	13						
918 pi	63 y M				A/C	Ingst	Int-S	3		
		Lithium	1	1						
919 pai	65 y M				U	Ingst	Int-S	1		
		Bupropion	1	1					Bupropion	21.1 Other (see abst) In Liver @ Autopsy
920	68 y F				C	Ingst	AR-D	3		
		Lithium	1	1						
921 pa	73 y F				A/C	Ingst	Int-S	2		
		Doxepin	1	1					Desmethyldoxepin	1200 ng/mL In Whole Blood @ Autopsy
		Doxepin	1	1					Doxepin	910 ng/mL In Whole Blood @ Autopsy
		Alprazolam	2	2					Alprazolam	140 ng/mL In Whole Blood @ Autopsy
		Acetaminophen/ butalbital/ caffeine	3	3					Acetaminophen	10 mcg/mL In Whole Blood @ Autopsy
		Acetaminophen/ butalbital/ caffeine	3	3					Butalbital	7.9 mcg/mL In Whole Blood @ Autopsy
		Acetaminophen/ butalbital/ caffeine	3	3					Caffeine	8.3 mcg/mL In Whole Blood @ Autopsy
		Irbesartan	4	4						
		Ezetimibe	5	5						
		Salicylate	6	6						
		Clopidogrel	7	7						
922 p	76 y F				U	Ingst	Int-S	2		
		Trazodone	1	1						
		Thiothixene	2	2						
923 a	78 y F				A/C	Ingst	Unk	3		
		Venlafaxine (extended release)	1	1						
		Temazepam	2	2						
924	40+ y F				A	Ingst	Int-S	2		
		Citalopram	1	1						
See also case 8, 25, 54, 62, 92, 108, 243, 254, 265, 270, 278, 282, 286, 287, 300, 301, 309, 316, 320, 329, 331, 336, 343, 359, 363, 372, 380, 388, 392, 403, 435, 436, 440, 441, 443, 445, 448, 455, 476, 481, 485, 491, 516, 517, 518, 527, 553, 562, 563, 565, 584, 590, 599, 608, 631, 633, 635, 636, 644, 661, 663, 665, 690, 700, 711, 718, 723, 728, 732, 737, 746, 757, 794, 796, 802, 805, 809, 811, 812, 813, 925, 937, 950, 951, 958, 961, 962, 963, 967, 968, 969, 974, 976, 979, 983, 987, 988, 991, 1003, 1014, 1015, 1024, 1037, 1061, 1086, 1090, 1098, 1099, 1110, 1111, 1113, 1123, 1124, 1125, 1126, 1137, 1143, 1144, 1145, 1149, 1150, 1152, 1156, 1157, 1159, 1167, 1169, 1172, 1174, 1181, 1182, 1186, 1188, 1189, 1190, 1198, 1221, 1248, 1259, 1278, 1302, 1303										
Antihistamines										
925 p	16 y M				A	Ingst	Int-S	1		
		Diphenhydramine	1	1					Diphenhydramine	9091 ng/mL In Blood (unspecified) @ Unknown
		Trazodone	2	2						
		SSRI	3	3					Norsertraline	561 ng/mL In Blood (unspecified) @ Unknown
		SSRI	3	3					Sertraline	176 ng/mL In Blood (unspecified) @ Unknown
		Ethanol	4	4						
		Salicylate	5	5						
926 pa	18 y M				U	Unk	Unk	2		
		Chlorpheniramine	1	1					Chlorpheniramine	0.14 mcg/mL In Blood (unspecified) @ Autopsy
		Dextromethorphan	2	2					Dextromethorphan	0.84 mg/mL In Blood (unspecified) @ Autopsy
		Alprazolam	3	3						
		Oxycodone	4	4					Oxycodone	0.07 mcg/mL In Blood (unspecified) @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Antihistamines, continued										
927 pha	24 y M				A	Ingst	Int-A	2		
		Diphenhydramine	1	1						
		Cocaine	2	2						
		Acetaminophen/ dextromethorphan	3	3						
[928 a]	25 y M				A	Ingst	Int-S	1		
		Diphenhydramine	1	1						
929 a	26 y M				A	Ingst	Int-S	1		
		Diphenhydramine	1	1						
		Salicylate	2	2						
		Antihistamine	3	3						
		Dietary supplement	4	4						
		Homeopathic agent	5	5						
930	30 y M				A	Ingst	Int-S	1		
		Diphenhydramine	1	1						
931 p	31 y M				A	Ingst	Int-S	2		
		Cyproheptadine	1	1						
		Cocaine	2	2						
		Ethanol	3	3					Ethanol	180 mg/dL In Blood (unspecified) @ Unknown
932 p	35 y M				A/C	Ingst	Int-S	2		
		Promethazine	1	1						
		Acetaminophen/ hydrocodone	2	2						
933 pai	38 y F				A	Ingst	Int-A	2		
		Diphenhydramine	1	1					Diphenhydramine	9 mcg/mL In Whole Blood @ Autopsy
934 p	38 y M				A	Ingst	Int-S	3		
		Diphenhydramine	1	1						
935	48 y F				U	Ingst	Int-S	2		
		Hydroxyzine	1	1						
		Diphenhydramine	2	2						
		Clonazepam	3	3						
936 p	48 y F				A/C	Ingst	Int-S	2		
		Diphenhydramine	1	1						
		Ethanol	2	2						
937 a	48 y F				U	Ingst	Int-S	3		
		Promethazine	2	1					Promethazine	0.3 mg/L In Blood (unspecified) @ Autopsy
		Promethazine	2	1					Promethazine	15 mg/kg In Liver @ Autopsy
		Promethazine	2	1					Promethazine	0.32 mg/L In Blood (unspecified) @ Autopsy
		Mirtazapine	1	2					Mirtazapine	5.7 mg/kg In Liver @ Autopsy
		Mirtazapine	1	2					Mirtazapine	0.86 mg/L In Blood (unspecified) @ Autopsy
		Mirtazapine	1	2					Mirtazapine	0.97 mg/kg In Blood (unspecified) @ Autopsy
		Clonidine	3	3						
		Clonazepam	4	4						
See also case 15, 25, 193, 252, 263, 298, 305, 322, 325, 343, 388, 392, 393, 394, 409, 430, 435, 439, 459, 502, 510, 518, 521, 524, 526, 531, 556, 566, 579, 584, 589, 613, 631, 632, 635, 677, 686, 689, 707, 711, 721, 760, 794, 808, 822, 852, 863, 880, 889, 891, 896, 901, 910, 917, 955, 956, 958, 987, 1030, 1037, 1061, 1062, 1079, 1110, 1111, 1140, 1145, 1168, 1174, 1186, 1192, 1194, 1235, 1275										
Antimicrobials										
938	48 y M				A	Ingst	Int-S	2		
		Hydroxychloroquine	1	1						
		Metformin	2	2						
939 ha	58 y M				A/C	Ingst	AR-D	2		
		Isoniazid	1	1						
940 h	60 y F				A	Ingst	Int-S	1		
		Quinine	1	1						
		Benzodiazepine	2	2						
941	Unknown age U				U	Unk	AR-D	3		
		Antibiotic	1	1						
See also case 23, 91, 394, 780, 813, 1090, 1103, 1248										
Antineoplastics										
942	23 y M				A	Oth	Unt-T	1		
		Vincristine	1	1						
[943]	58 y F				A/C	Ingst	Unt-T	1		
		Methotrexate	1	1					Methotrexate	0.14 mmol/L In Blood (unspecified) @ Unknown
[944]	67 y M				A	Par	AR-D	2		

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Antineoplastics, continued										
		Methotrexate	1	1					Methotrexate	403.12 Other (see abst) In Serum @ 1 d (pe)
945	73 y F				A/C	Par	AR-D	2		
		Ifosfamide	1	1						
See also case 501										
Asthma Therapies										
946	66 y F				A/C	Ingst	AR-D	2		
		Theophylline	1	1						
947	93 y F				A/C	Ingst	AR-D	3		
		Theophylline	1	1					Theophylline	28.8 mcg/mL In Blood (unspecified) @ Unknown
		Theophylline	1	1					Theophylline	20.6 mcg/mL In Blood (unspecified) @ 1 d (pe)
		Theophylline	1	1					Theophylline	7 mcg/mL In Blood (unspecified) @ 2 d (pe)
See also case 276, 757, 901, 958										
Cardiovascular Drugs										
948	4 y M				A	Par	Unt-T	2		
		Cardiac glycoside	1	1					Digoxin	8 ng/mL In Unknown @ Unknown
949 h	14 y F				A	Ingst	Int-S	1		
		Disopyramide	1	1						
		Angiotensin-converting enzyme inhibitor	2	2						
		Diltiazem (extended release)	3	3						
[950 a]	14 y M				A	Ingst	Int-S	1		
		Flecainide	1	1					Flecainide	12 mcg/mL In Blood (unspecified) @ Autopsy
		Flecainide	2	2						
		Metoprolol	3	3					Metoprolol	140 ng/mL In Blood (unspecified) @ Autopsy
		Citalopram	4	4					Citalopram	420 ng/mL In Blood (unspecified) @ Autopsy
951	18 y M				A	Ingst	Int-S	3		
		Calcium antagonist	1	1						
		SSRI	4	2						
		Benzodiazepine	3	3						
		Ethanol	6	4						
		Clopidogrel	2	5						
		Marijuana	5	6						
952 pha	25 y F				A	Ingst	Int-S	1		
		Diltiazem	1	1					Diltiazem	2133 ng/mL In Blood (unspecified) @ Autopsy
		Metoprolol	2	2					Metoprolol	642 ng/mL In Blood (unspecified) @ Autopsy
		Ethanol	3	3					Ethanol	180.9 mg/dL In Blood (unspecified) @ Unknown
		Cyclobenzaprine	4	4					Cyclobenzaprine	24.6 ng/mL In Blood (unspecified) @ Autopsy
953 p	26 y M				A	Ingst	Int-S	1		
		Propranolol	1	1						
954	30 y M				A/C	Ingst	Int-M	1		
		Verapamil	1	1						
955 pai	30 y F				A/C	Ingst	Int-A	2		
		Clonidine	1	1					Clonidine	26 ng/mL In Whole Blood @ Autopsy
		Diphenhydramine	2	2					Diphenhydramine	2.4 mcg/mL In Whole Blood @ Autopsy
956	33 y F				A	Ingst	Int-S	1		
		Diltiazem (extended release)	1	1						
		Nifedipine	2	2						
		Diphenhydramine	3	3						
		Hydralazine	4	4						
		Simvastatin	5	5						
957	33 y F				A/C	Ingst	Int-S	2		
		Verapamil	1	1						
		Quetiapine	2	2						
		Temazepam	3	3						
958 a	34 y F				A/C	Ingst	Int-S	1		
		Metoprolol	1	1						
		Calcium antagonist	2	2						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Cardiovascular Drugs, continued										
		Amitriptyline	3	3						
		Acetaminophen/ oxycodone	4	4						
		Zolpidem	5	5						
		Rabeprazole	6	6						
		Antihistamine	7	7						
		Venlafaxine	8	8						
		Prednisone	9	9						
		Skeletal muscle relaxant	10	10						
		Zafirlukast	11	11						
[959]	35 y M				A	Ingst	Unt-M	1		
		Stone (cardiac glycoside)	1	1						
960 p	37 y F				A/C	Ingst	Int-S	3		
		Nifedipine	1	1						
		Baclofen	2	2						
		Acetaminophen/ propoxyphene	3	3						
961 p	38 y F				A/C	Ingst	Unk	2		
		Nifedipine	1	1					Nifedipine	0.083 mcg/mL In Serum @ 6 d (pe)
		Atenolol	2	2					Atenolol	0.44 mcg/mL In Serum @ 6 d (pe)
		Quinapril	3	3						
		Sertraline	4	4						
962	40 y F				A	Ingst	Unk	3		
		Diltiazem (extended release)	1	1						
		Warfarin	2	2						
		Acetaminophen/ hydrocodone	3	3						
		Metoclopramide	4	4						
		Mirtazapine	5	5						
		Temazepam	6	6						
963 p	41 y M				A	Ingst	Int-S	2		
		Beta Blocker	1	1						
		Duloxetine	2	2						
		Olanzapine	3	3						
		Alprazolam	4	4						
		Acetaminophen/ hydrocodone	5	5						
964	41 y F				A	Ingst	Int-S	1		
		Diltiazem (extended release)	1	1						
965	42 y F				A/C	Ingst	Int-S	2		
		Verapamil	1	1						
		Ramipril	2	2						
		Alprazolam	3	3						
966 a	42 y M				A	Ingst	Int-S	1		
		Carvedilol	1	1						
		Ethanol	3	2						
		Cocaine	2	3						
967	42 y M				A/C	Ingst	Int-S	1		
		Verapamil	1	1						
		Risperidone	2	2						
		Citalopram	3	3						
		Ethanol	4	4						
968	43 y F				A	Unk	Unk	3		
		Beta Blocker	1	1						
		Quetiapine	2	2						
		Trazodone	3	3						
		Ibuprofen	4	4						
		Salicylate	5	5						
969	43 y F				A	Ingst	Int-S	2		
		Diltiazem	1	1						
		Mirtazapine	2	2						
		Ethanol	3	3						
970	43 y F				A/C	Ingst	Int-S	1		
		Flecainide	1	1						
971 p	44 y F				A	Ingst	Int-S	2		
		Metoprolol	1	1						
		Glyburide/ metformin	2	2						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Cardiovascular Drugs, continued										
		Topiramate	3	3						
		Cardiac glycoside	4	4						
		Insulin	5	5						
		Barbiturates (extended release)	6	6						
		Cocaine	7	7						
		Benzodiazepine	8	8						
972 a	46 y F				U	Ingst	Int-S	3		
		Flecainide	1	1						
		Clonazepam	2	2					Clonazepam	41.2 ng/mL In Blood (unspecified) @ Autopsy
		Acetaminophen/ hydrocodone	3	3					Hydrocodone	51 ng/mL In Urine (quantitative only) @ Unknown
		Ethanol	4	4						
973	46 y F				A	Ingst	Int-S	1		
		Beta blocker	1	1					Atenolol	0.36 mg/L In Blood (unspecified) @ Autopsy
974 a	47 y F				A/C	Ingst	Int-S	1		
		Propafenone	1	1						
		Beta Blocker	3	2						
		Alprazolam	5	3						
		Fluoxetine	6	4						
		Ethanol	7	5						
		Cardiac glycoside	2	6						
		Clonazepam	4	7						
975 a	47 y F				U	Ingst	Int-S	2		
		Diltiazem	1	1						
		Diazepam	2	2						
		Zolpidem	3	3						
		Ethanol	4	4					Ethanol	157 mg/dL In Serum @ Unknown
976 a	47 y M				A/C	Ingst	Int-S	1		
		Cardiac glycoside	1	1					Digoxin	44.4 ng/mL In Blood (unspecified) @ Unknown
		Cardiac glycoside	1	1					Digoxin	18 ng/mL In Blood (unspecified) @ Autopsy
		Cardiac glycoside	1	1					Digoxin	18 ng/mL In Whole Blood @ Autopsy
		Barbiturates (extended release)	2	2					Phenobarbital	3 Other (see abst) In Blood (unspecified) @ Unknown
		Nortriptyline	3	3						
		Atenolol	4	4						
		Doxepin	5	5						
		Citalopram	6	6						
		Buspirone	7	7						
		Fluoxetine	8	8						
977	47 y F				A/C	Ingst	Int-S	1		
		Verapamil	2	1						
		Esomeprazole	1	2						
978	47 y F				A	Ingst	Int-S	2		
		Verapamil	1	1						
[979 ha]	47 y F				A	Ingst	Int-S	1		
		Verapamil	1	1					Norverapamil	1733 ng/mL In Whole Blood @ Autopsy
		Verapamil	1	1					Verapamil	2685 ng/mL In Whole Blood @ Autopsy
		Escitalopram	2	2						
		Antihistamine	3	3						
980 pa	47 y F				A	Ingst	Int-S	2		
		Clonidine	1	1						
		Pregabalin	2	2						
		Clonazepam	3	3						
981	48 y M				A	Ingst	Int-S	2		
		Verapamil	1	1						
982	48 y M				A	Ingst	AR-D	1		
		Stone (cardiac glycoside)	1	1						
983	48 y F				A/C	Ingst	Int-S	2		
		Amlodipine	2	1					Amlodipine	470 ng/mL In Blood (unspecified) @ Autopsy
		Metoprolol	1	2					Metoprolol	1086 ng/mL In Blood (unspecified) @ Autopsy
		Ezetimibe/ simvastatin	3	3						
		Antidepressant	4	4						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Cardiovascular Drugs, continued										
984 a	49 y M				A/C	Ingst	Int-S	1		
		Verapamil	1	1					Verapamil	4.3 mcg/mL In Whole Blood @ Autopsy
		Meloxicam	2	2						
		Ethanol	3	3						
985 a	50 y F				A	Ingst	Int-S	1		
		Amlodipine/ benazepril	1	1						
		Alprazolam	2	2						
986 a	50 y F				A/C	Ingst	Int-S	1		
		Diltiazem (extended release)	1	1					Diltiazem	4005 ng/mL In Blood (unspecified) @ Autopsy
		Diltiazem (extended release)	1	1					Diltiazem	2000 ng/mL In Serum @ Unknown
		Salicylate	2	2					Salicylate	53 mg/dL In Blood (unspecified) @ Autopsy
987 a	50 y F				U	Ingst	Int-S	1		
		Drug, unknown	1	1						
		Acetaminophen/ hydrocodone	2	2					Hydrocodone	0.018 mg/L In Unknown @ Autopsy
		Acetaminophen	3	3					Acetaminophen	148.8 mcg/mL In Blood (unspecified) @ Unknown
		Lorazepam	4	4					Lorazepam	0.035 mg/L In Lung @ Autopsy
		Gabapentin	5	5						
		Hydroxyzine	6	6						
		Cyclic antidepressant, unknown	7	7						
		Hyoscyamine	8	8						
988	51 y M				A/C	Ingst	Int-S	2		
		Propranolol	1	1						
		Doxepin	2	2						
		Ethanol	5	3						
		Clonazepam	4	4						
		Citalopram	3	5						
989	51 y M				A	Ingst	Unk	1		
		Metoprolol	1	1						
		Salicylate	2	2					Salicylate	13.9 mg/dL In Serum @ Unknown
		Acetaminophen	3	3					Acetaminophen	48 mcg/mL In Serum @ Unknown
990 a	51 y M				A	Ingst	Int-S	1		
		Verapamil	1	1					Verapamil	1.5 mg/L In Blood (unspecified) @ Autopsy
		Tramadol	2	2					Tramadol	0.4 mg/L In Blood (unspecified) @ Autopsy
		Lisinopril	3	3						
		Enalapril	4	4						
		Ethanol	5	5					Ethanol	227 mg/dL In Blood (unspecified) @ Unknown
991	51 y F				A	Ingst	Int-S	2		
		Beta blocker	1	1						
		Bupropion (extended release)	2	2						
		Alprazolam	3	3						
		Fluoxetine	4	4						
		Enalapril	5	5						
		Zolpidem	6	6						
		Cyclobenzaprine	7	7						
		Glibenclamide	8	8						
		Lisinopril	9	9						
		Diclofenac	10	10						
		Lovastatin	11	11						
992 a	51 y M				A/C	Ingst	Int-S	3		
		Beta Blocker	1	1						
		Metformin	2	2						
		Amlodipine	3	3						
993 a	51 y M				A	Par	Unt-T	3		
		Labetalol	1	1						
994	52 y F				A	Ingst	Int-A	2		
		Beta Blocker	1	1						
		Ethanol	2	2						
		Benzodiazepine	3	3						
		Cocaine	4	4						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Cardiovascular Drugs, continued										
995 h	52 y F				A/C	Ingst	Int-S	2		
		Benazepril	1	1						
		Amlodipine	2	2						
		Metformin	3	3						
996 a	52 y F				A	Ingst	Int-S	1		
		Verapamil	1	1					Verapamil	2.5 mcg/mL In Blood (unspecified) @ Autopsy
		Ethanol	2	2					Ethanol	0.182 % (wt/Vol) In Blood (unspecified) @ Autopsy
997 h	52 y M				A	Ingst	Int-S	1		
		Propranolol	1	1						
		Beta blocker	2	2						
		Ethanol	3	3						
998 h	52 y M				A/C	Ingst	Int-S	3		
		Amlodipine	1	1						
		Atenolol	2	2						
		Charcoal	3	3						
999 ha	53 y F				A	Ingst	Int-S	3		
		Beta blocker	1	1						
		Clonidine	2	2						
		Hydralazine	3	3						
		Nifedipine	4	4						
		Angiotensin-converting enzyme inhibitor	5	5						
		Ethanol	6	6						
1000	53 y M				A	Ingst	Int-S	2		
		Beta blocker	1	1						
		Labetalol	2	2						
		Esomeprazole	3	3						
1001 a	54 y F				A	Ingst	Int-S	1		
		Atenolol	1	1					Atenolol	39 mg/L In Plasma @ Unknown
		Barbiturates (extended release)	2	2					Primidone	5.1 mg/L In Plasma @ Unknown
		Zolpidem	3	3					Zolpidem	0.1 mg/L In Plasma @ Unknown
		Amlodipine	4	4						
		Lisinopril	5	5						
1002	54 y F				A	Ingst	Int-S	1		
		Verapamil	1	1						
		Amlodipine	2	2						
		Zolpidem	3	3						
		Lorazepam	4	4						
1003 pa	54 y F				A	Ingst	Int-S	1		
		Amlodipine	1	1						
		Ethanol	2	2					Ethanol	400 mg/dL In Blood (unspecified) @ Unknown
		Ethanol	2	2					Ethanol	0.05 % (wt/Vol) In Blood (unspecified) @ Autopsy
		Ethanol	2	2					Ethanol	0.03 % (wt/Vol) In Bile @ Autopsy
		Ethanol	2	2					Ethanol	0.02 % (wt/Vol) In Vitreous @ Autopsy
		Oxycodone	3	3					Oxycodone	0.3 mg/L In Blood (unspecified) @ Autopsy
		Citalopram	4	4					Citalopram	1.1 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen	5	5					Acetaminophen	62 mcg/mL In Blood (unspecified) @ Unknown
		Acetaminophen	5	5					Acetaminophen	61 mg/L In Blood (unspecified) @ Autopsy
1004	54 y M				A	Ingst	Int-S	1		
		Verapamil	1	1						
1005 h	54 y M				C	Ingst	Unk	3		
		Cardiac glycoside	1	1					Digoxin	3.7 ng/mL In Blood (unspecified) @ Unknown
1006	54 y F				C	Ingst	AR-D	3		
		Cardiac glycoside	1	1						
1007	55 y M				A	Ingst	Int-S	2		
		Nifedipine	1	1						
1008 p	55 y M				A/C	Ingst	Int-S	1		
		Verapamil	1	1						
		Beta blocker	2	2						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Cardiovascular Drugs, continued										
[1009 ha]	55 y M				A/C	Ingst	Int-S	1		
		Metoprolol	1	1					Metoprolol	95000 ng/mL In Serum @ Autopsy
		Ethanol	2	2					Ethanol	187 mg/dL In Serum @ Autopsy
1010	55 y M				A	Ingst	Int-S	1		
		Amlodipine	1	1						
		Beta blocker	2	2						
		Ethanol	3	3						
		Indomethacin	4	4						
1011 h	56 y M				U	Ingst	Int-S	1		
		Verapamil	2	1						
		Doxazosin	1	2						
		Lisinopril	3	3						
1012 pa	56 y F				U	Ingst	Int-S	1		
		Beta blocker	1	1						
		Acetaminophen	2	2						
		Diazepam	3	3					Diazepam	0.24 mg/L In Blood (unspecified) @ Autopsy
1013 a	57 y M				A/C	Ingst	Int-S	1		
		Metoprolol	1	1						
		Isradipine	2	2						
		Ethanol	3	3					Ethanol	221 mg/dL In Blood (unspecified) @ Unknown
		Ethanol	3	3					Ethanol	0.02 g/dL In Blood (unspecified) @ Autopsy
		Ethanol	3	3					Ethanol	0.04 g/dL In Vitreous @ Autopsy
1014	57 y M				A/C	Ingst+ Unk	Unk	2		
		Atenolol	1	1						
		Fluoxetine	2	2						
		Benzodiazepine	3	3						
		Zolpidem	4	4						
		Hydrocodone/ ibuprofen	5	5						
		Hydrocodone	6	6						
		Marijuana	7	7						
1015 p	57 y F				A	Ingst	Int-S	2		
		Diltiazem	3	1						
		Lorazepam	1	2						
		Methylphenidate	2	3						
		Duloxetine	4	4						
		Zolpidem	5	5						
		Celecoxib	6	6						
		Warfarin	7	7						
1016	58 y F				A/C	Ingst	Int-S	2		
		Diltiazem	1	1						
1017	59 y M				U	Ingst	Int-S	1		
		Verapamil	1	1						
		Clonidine	2	2						
		Acetaminophen	3	3						
1018	59 y F				U	Ingst	Int-S	2		
		Verapamil	1	1						
		Acetaminophen/ hydrocodone	2	2						
1019	59 y M				A/C	Ingst	Int-S	2		
		Diltiazem (extended release)	1	1						
		Alprazolam	2	2						
		Esomeprazole	3	3						
		Sotalol	4	4						
		Salicylate	5	5						
		Hydromorphone	6	6						
		Morphine	7	7						
1020 a	60 y F				A/C	Ingst	Int-S	1		
		Diltiazem (extended release)	1	1					Diltiazem	3.98 mcg/mL In Blood (unspecified) @ Autopsy
		Clonazepam	2	2					7-aminoclonazepam	180 ng/mL In Blood (unspecified) @ Autopsy
		Clonazepam	2	2					Clonazepam	21000 ng/mL In Gastric (stomach content) @ Autopsy
		Zolpidem	3	3						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Cardiovascular Drugs, continued										
1021	60 y F				A	Ingst	Int-S	2		
		Diltiazem (extended release)	1	1						
		Hydrochlorothiazide	2	2						
1022	62 y M				A	Par	Unt-T	2		
		Nesiritide	1	1						
1023 p	63 y M				A/C	Ingst	Unk	1		
		Cardiac glycoside	1	1					Digoxin	4.6 mcg/mL In Blood (unspecified) @ 1 h (pe)
1024	63 y F				A/C	Ingst	Int-S	1		
		Calcium antagonist	1	1						
		Hydroclorothiazide/ olmesartan	2	2						
		Citalopram	3	3						
		Alprazolam	4	4						
		Zolpidem	5	5						
		Ethanol	6	6						
1025	64 y M				C	Ingst	Unt-T	2		
		Verapamil	1	1						
1026	64 y M				A	Ingst	AR-D	3		
		Carvedilol	1	1						
1027	65 y M				A	Ingst	Int-S	1		
		Beta blocker	1	1						
		Calcium antagonist	2	2						
		Valproic acid	3	3						
1028	66 y F				A	Ingst	Int-S	1		
		Metoprolol	1	1						
		Acetaminophen/ propoxyphene	2	2					Acetaminophen	13.2 mcg/dL In Plasma @ Unknown
		Acetaminophen/ propoxyphene	2	2					Acetaminophen	13.2 mcg/mL In Plasma @ Unknown
		Gemfibrozil	3	3						
		Ethanol	4	4						
1029 a	68 y F				A	Ingst	Int-S	1		
		Beta blocker	1	1						
		Acetaminophen/ hydrocodone	2	2						
		Alprazolam	3	3						
1030	68 y F				A/C	Ingst	Int-S	2		
		Beta blocker	1	1						
		Cardiac glycoside	2	2						
		Acetaminophen/ butalbital/ caffeine	3	3						
		Promethazine	4	4						
1031	70 y F				A/C	Ingst	Unt-T	3		
		Verapamil (extended release)	1	1						
1032 ph	70 y M				A/C	Ingst	Int-S	2		
		Amlodipine/ benazepril	1	1						
		Carvedilol	2	2						
1033	71 y F				A	Ingst	Int-S	1		
		Amlodipine	1	1						
1034	71 y F				C	Ingst	Unk	3		
		Digoxin	1	1						
		Acetaminophen	2	2						
		Acetaminophen/ propoxyphene	3	3						
1035	71 y F				C	Ingst	AR-D	2		
		Cardiac glycoside	1	1					Digoxin	8.2 ng/mL In Plasma @ Unknown
1036 ha	72 y F				A/C	Ingst	Int-S	2		
		Verapamil	1	1						
		Metoprolol	2	2						
		Amlodipine/ atorvastin	3	3						
1037	72 y M				A	Ingst	Int-S	3		
		Clonidine	1	1						
		Amlodipine	2	2						
		Phenytoin	3	3						
		Sertraline	4	4						
		Cortisone acetate	5	5						
		Hydroxyzine	6	6						
		Carbamazepine	7	7						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Cardiovascular Drugs, continued										
1038	72 y F				A	Ingst	Int-S	2		
		Amlodipine	1	1						
		Chlorpromazine	2	2						
1039	74 y F				C	Ingst	Unt-G	1		
		Calcium antagonist	1	1						
1040	79 y M				A/C	Ingst	Unt-T	3		
		Digoxin	1	1					Digoxin	3.9 ng/mL In Blood (unspecified) @ Unknown
1041	79 y F				C	Ingst	Unt-T	3		
		Cardiac Glycoside	1	1						
1042	80 y F				A	Par	Unt-T	3		
		Labetalol	1	1						
1043	81 y F				A/C	Ingst	Int-S	1		
		Diltiazem (extended release)	1	1						
		Amiodarone	2	2						
		Beta blocker	3	3						
		Acetaminophen/ hydrocodone	4	4						
		Morphine	5	5						
1044 p	81 y F				A	Ingst	Int-S	2		
		Diltiazem (extended release)	1	1						
		Olanzapine	2	2						
[1045]	82 y F				U	Ingst	Int-S	1		
		Amiodarone	1	1						
1046	84 y F				C	Ingst	Unt-U	3		
		Cardiac glycoside	1	1						
1047 a	84 y F				A	Par	AR-D	3		
		Cardiac glycoside	1	1						
		Diltiazem	2	2						
[1048 h]	86 y F				C	Ingst	AR-D	3		
		Cardiac glycoside	1	1						
1049	86 y F				C	Ingst	AR-D	3		
		Cardiac glycoside	1	1					Digoxin	3.7 ng/mL In Serum @ Unknown
		Cardiac glycoside	1	1					Digoxin	1 ng/mL In Serum @ Unknown
1050 ha	87 y M				A	Ingst	Int-S	1		
		Amlodipine	2	1						
		Atenolol	1	2						
		Acetaminophen	3	3						
1051	87 y F				C	Ingst	Unt-T	3		
		Cardiac glycoside	1	1					Digoxin	3.3 ng/mL In Serum @ 30 m (pe)
1052	88 y F				C	Ingst	Unt-T	3		
		Beta Blocker	1	1						
1053	88 y F				C	Ingst	AR-D	3		
		Cardiac glycoside	1	1					Digoxin	3.58 ng/mL In Serum @ Unknown
1054	89 y F				C	Ingst	AR-D	3		
		Cardiac glycoside	1	1						
1055	90 y F				A	Ingst	Unt-T	2		
		Diltiazem (extended release)	1	1						
		Glyburide	2	2						
		Tenormin	3	3						
		Warfarin	4	4						
		Furosemide	5	5						
		Potassium chloride	6	6						
		Metolazone	7	7						
		Hydralazine	8	8						
1056	90 y F				C	Ingst	AR-D	3		
		Digoxin	1	1						
[1057 a]	91 y F				A/C	Ingst+ Aspir	Unt-T	1		
		Diltiazem (extended release)	1	1					Diltiazem	3.8 mg/L In Blood (unspecified) @ 5 h (pe)
1058	92 y F				C	Ingst	AR-D	3		
		Cardiac glycoside	1	1					Digoxin	6.3 ng/mL In Serum @ Unknown
1059 ha	11 m M				A	Ingst	Unt-G	1		
		Amlodipine	1	1					Amlodipine	1300 ng/mL In Blood (unspecified) @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Cardiovascular Drugs, continued										
[1060 ha]	23 m M				A/C	Ingst	Unt-G	1		
		Flecainide	1	1					Flecainide	3.19 mcg/mL In Blood (unspecified) @ Unknown
1061	Unknown adult (> = 20 y) F				U	Ingst	Int-S	1		
		Metoprolol	1	1						
		Acetaminophen *	4	2					Acetaminophen	694 mcg/mL In Serum @ 1 h (pe)
		Paroxetine *	2	2						
		Hydroxyzine	3	4						
See also case 25, 62, 179, 239, 262, 329, 501, 517, 589, 618, 728, 742, 750, 754, 767, 768, 777, 784, 815, 823, 836, 859, 886, 896, 897, 901, 905, 910, 917, 921, 937, 1079, 1081, 1082, 1086, 1100, 1136, 1174, 1181, 1190, 1198, 1248										
Cold and Cough Preparations										
1062 pha	3 y M				A/C	Ingst	AR-D	2		
		Hydrocodone/ phenyltoloxamine	1	1					Hydrocodone	0.21 mcg/mL In Blood (unspecified) @ Autopsy
		Chlorpheniramine	2	2					Chlorpheniramine	0.38 mcg/mL In Blood (unspecified) @ Autopsy
		Diphenhydramine	3	3						
[1063 a]	21 y M				A	Ingst	Int-S	1		
		Antihistamine	1	1					Diphenhydramine	3.26 mg/L In Blood (unspecified) @ Unknown
1064 a	24 y M				A/C	Ingst+ Inhal	Int-A	2		
		Antihistamine *	1	1						
		Methamphetamine *	2	1						
		Cocaine	3	3						
		Methylenedioxymethamphetamine (MDMA)	4	4						
		Gamma-hydroxybutyric acid	5	5						
		Marijuana	6	6						
1065 p	26 y F				A	Ingst	Int-S	2		
		Benzonatate	1	1						
		Ethanol	2	2						
1066 pai	26 y M				A	Ingst	Int-A	1		
		Chlorpheniramine/ hydrocodone	1	1					Chlorpheniramine	0.59 mcg/mL In Whole Blood @ Autopsy
		Chlorpheniramine/ hydrocodone	1	1					Hydrocodone	0.34 mcg/mL In Whole Blood @ Autopsy
1067 a	28 y M				A	Ingst	Int-S	1		
		Chlorpheniramine	1	1						
		Acetaminophen/ caffeine/ salicylate	2	2						
1068 h	42 y F				A	Ingst	Int-S	1		
		Dextromethorphan/ guaifenesin	1	1					Dextromethorphan	62 mg/dL In Blood (unspecified) @ Unknown
1069 p	65 y F				C	Ingst	Int-M	2		
		Antihistamine	1	1						
1070 pa	10 m M				A	Unk	Unk	1		
		Pseudoephedrine	1	1					Pseudoephedrine	2255 ng/mL In Blood (unspecified) @ Autopsy
		Pseudoephedrine	1	1					Pseudoephedrine	2373 Other (see abst) In Liver @ Autopsy
		Pseudoephedrine	1	1					Pseudoephedrine	53993 ng/mL In Gastric (stomach content) @ Autopsy
		Cyclobenzaprine	2	2					Cyclobenzaprine	166 ng/mL In Blood (unspecified) @ Autopsy
		Cyclobenzaprine	2	2					Cyclobenzaprine	238 Other (see abst) In Liver @ Autopsy
		Cyclobenzaprine	2	2					Cyclobenzaprine	10000 ng/mL In Gastric (stomach content) @ Autopsy
See also case 47, 68, 78, 91, 243, 298, 443, 508, 514, 584, 586, 592, 626, 642, 663, 685, 751, 848, 926, 927, 929, 979, 1103, 1120, 1133, 1303										
Dietary Supplements/Herbals/Homeopathic										
1071	32 y M				A	Ingst+ Inhal	Int-S	1		
		Guarana	1	1						
		Cocaine	2	2						
See also case 726, 929, 1137										

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Diuretics										
1072 ha	31 y F				C	Par	AR-D	2		
		Furosemide	1	1						
		Tramadol	2	2						
See also case 394, 445, 674, 751, 886, 1021, 1055										
Electrolytes and Minerals										
1073	3 y F				A	Oth	Unt-T	2		
		Sodium bicarbonate	1	1						
1074 p	49 y F				C	Ingst	Int-M	2		
		Sodium bicarbonate	1	1						
1075	7 m M				A	Ingst	Unt-G	2		
		Sodium bicarbonate	1	1						
See also case 97, 298, 388, 674, 780, 847, 929, 1055, 1167										
Gastrointestinal Preparations										
[1076 pha]	21 y M				A/C	Ingst	Int-S	1		
		Loperamide	1	1						
1077 a	88 y F				A	Ingst	Int-S	1		
		Belladonna/ phenobarbital	1	1					Phenobarbital	101 mcg/mL In Whole Blood @ Unknown
		Acetaminophen	2	2						
See also case 113, 125, 383, 510, 672, 757, 768, 813, 847, 869, 896, 901, 958, 962, 977, 987, 1000, 1019, 1105										
Hormones and Hormone Antagonists										
1078	26 y M				A	Ingst	Int-S	1		
		Metformin	1	1						
		Oxycodone	2	2						
1079 a	33 y F				U	Ingst	Int-S	1		
		Metformin	1	1						
		Pioglitazone	2	2						
		Diphenhydramine	3	3						
		Sitagliptin	4	4						
		Sildenafil	5	5						
		Valsartan	6	6						
		Simvastatin	7	7						
1080 a	38 y M				A	Ingst	Int-S	2		
		Metformin	1	1						
1081	41 y F				A	Ingst	Int-S	3		
		Metformin	1	1						
		Lotensin	2	2						
1082	46 y F				A	Ingst	Int-S	2		
		Metformin	1	1						
		Lotensin	2	2						
1083	50 y F				A	Ingst	Int-S	2		
		Metformin	1	1						
1084	50 y M				A	Ingst	Int-S	2		
		Metformin	1	1					Metformin	75 mcg/mL In Blood (unspecified) @ Unknown
1085	54 y M				A	Ingst	Int-S	1		
		Metformin	3	1						
		Glyburide	2	2						
		Insulin	1	3						
		Rosiglitazone	4	4						
1086	56 y F				A	Ingst	Int-S	2		
		Metformin	1	1						
		Olmesartan	2	2						
		Atorvistatin/ amlodipine	3	3						
		Fluoxetine	4	4						
1087	58 y M				A	Ingst	Int-M	2		
		Glipizide	2	1						
		Ethanol	1	2						
1088	62 y M				C	Ingst	AR-D	3		
		Metformin	1	1						
		Allopurinol	2	2						
1089	63 y F				A/C	Ingst+ Par	Int-S	2		
		Insulin	1	1						
		Carisoprodol	2	2						
1090	66 y F				A	Ingst	Int-S	1		
		Metformin	2	1						
		Quetiapine	3	2						
		Venlafaxine (extended release)	4	3						
		Clonazepam	5	4						
		Pioglitazone	1	5						
		Sulfamethoxazole/ trimethoprim	6	6						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Hormones and Hormone Antagonists, continued										
1091	70 y F				A/C	Ingst	Unk	2		
		Amaryl	1	1						
		Glyburide	2	2						
1092	71 y M				A/C	Par	Int-S	2		
		Insulin	1	1						
1093	75 y F				C	Ingst	Unt-G	3		
		Metformin	1	1						
1094 p	82 y F				A	Ingst	Int-S	2		
		Insulin	2	1						
		Zolpidem	1	2						
See also case 37, 394, 678, 679, 728, 767, 768, 813, 815, 887, 938, 958, 971, 991, 992, 995, 1037, 1055, 1097, 1110, 1158, 1186, 1248										
Miscellaneous Drugs										
[1095]	22 y F				A	Par	Unt-T	3		
		Drotrecogin alfa	1	1						
1096	28 y M				A	Par	AR-D	2		
		Succinylcholine	1	1						
		Lidocaine	2	2						
		Vecuronium	3	3						
		Etomindate	4	4						
1097 pa	31 y M				A	Par	Int-S	1		
		Succinylcholine	1	1						
		Etomindate	2	2						
		Insulin	3	3						
1098 p	66 y F				A	Ingst	Int-S	2		
		Modafinil	1	1						
		Lithium	2	2						
		Quetiapine	3	3						
		Diazepam	4	4						
1099	76 y F				A/C	Ingst	Unt-G	2		
		Memantine	1	1						
		Lorazepam	2	2						
		Paroxetine	3	3						
1100 p	94 y F				A/C	Ingst	Unk	2		
		Donepezil	1	1					Donepezil	0.21 mg/L In Blood (unspecified) @ Autopsy
		Beta blocker	2	2						
1101	9 M M				C	Ingst	Unt-T	2		
		Tacrolimus	1	1						
See also case 727, 766, 813, 1088, 1169, 1188, 1301										
Muscle Relaxants										
1102 pai	21 y M				U	Ingst	Int-A	1		
		Carisoprodol	1	1					Carisoprodol	10 mcg/mL In Whole Blood @ Autopsy
		Carisoprodol	1	1					Meprobamate	14 mcg/mL In Whole Blood @ Autopsy
		Benzodiazepine	2	2					Alprazolam	120 ng/mL In Whole Blood @ Autopsy
1103 pa	28 y F				A	Unk	Unk	3		
		Carisoprodol	1	1					Carisoprodol (n-isopropyl meprobamate)	3 mg/L In Blood (unspecified) @ Autopsy
		Carisoprodol	1	1					Meprobamate	30 mg/L In Blood (unspecified) @ Autopsy
		Opioid	2	2					Hydrocodone	0.05 mg/L In Blood (unspecified) @ Autopsy
		Ibuprofen	3	3						
		Acyclovir	4	4						
		Azithromycin	5	5						
		Metronidazole	6	6						
		Guaifenesin/ pseudoephedrine	7	7						
1104	28 y M				A	Ingst	Int-S	3		
		Cyclobenzaprine	1	1						
		Diflunisal	2	2						
1105	31 y M				U	Ingst	Int-S	1		
		Carisoprodol	1	1						
		Dicyclomine	2	2						
		Ibuprofen	3	3						
		Acetaminophen	4	4					Acetaminophen	404 mcg/mL In Unknown @ Unknown
		Salicylate	5	5					Salicylate	48.5 mg/dL In Unknown @ Unknown
1106	42 y F				A	Ingst	Int-S	2		
		Cyclobenzaprine	1	1						
		Meperidine	2	2						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Muscle Relaxants, continued										
		Carisoprodol	3	3						
		Hydromorphone	4	4						
		Acetaminophen/ hydrocodone	5	5						
1107 p	44 y F				U	Ingst	Int-S	2		
		Carisoprodol	1	1						
		Ethanol	2	2						
		Alprazolam	3	3						
		Benzodiazepine	4	4						
		Pregabalin	5	5						
1108	46 y F				A/C	Ingst	Int-U	2		
		Carisoprodol	1	1						
		Acetaminophen	2	2					Acetaminophen	4.1 mcg/mL In Plasma @ Unknown
1109 h	47 y F				A/C	Ingst	Int-S	3		
		Baclofen	1	1						
1110	47 y F				A	Ingst	Int-S	2		
		Baclofen	6	1						
		Acetaminophen/ butalbital	2	2						
		Alprazolam	3	3						
		Hydroxyzine	4	4						
		Mirtazapine	5	5						
		Pregabalin	1	6						
		Levothyroxine	7	7						
1111	47 y F				A	Ingst	Int-S	1		
		Baclofen	1	1						
		Hydroxyzine	2	2						
		Mirtazapine	3	3						
		Acetaminophen/ butalbital	4	4						
		Alprazolam	5	5						
		Pregabalin	6	6						
1112 pa	47 y M				U	Ingst	Int-S	3		
		Cyclobenzaprine	2	1						
		Oxycodone	1	2					Oxycodone	110 ng/mL In Blood (unspecified) @ Autopsy
		Ethanol	3	3					Ethanol	15 mg/dL In Blood (unspecified) @ Autopsy
1113 ph	47 y M				A/C	Ingst	Int-S	2		
		Baclofen	1	1						
		Trihexyphenidyl	2	2						
		Quetiapine	3	3						
		Diazepam	4	4						
		Fluoxetine	5	5						
1114 pai	49 y F				A	Ingst	Int-A	1		
		Carisoprodol	1	1					Carisoprodol	11 mcg/mL In Whole Blood @ Autopsy
		Carisoprodol	1	1					Meprobamate	21 mcg/mL In Whole Blood @ Autopsy
		Acetaminophen/ hydrocodone	2	2					Acetaminophen	27 mcg/mL In Whole Blood @ Autopsy
		Acetaminophen/ hydrocodone	2	2					Hydrocodone	0.15 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	3	3					Alprazolam	71 ng/mL In Whole Blood @ Autopsy
1115 p	50 y M				U	Ingst	Int-S	2		
		Tizanidine	1	1						
1116 p	53 y F				U	Ingst	Int-S	2		
		Carisoprodol	1	1						
		Acetaminophen	2	2						
1117	54 y F				A	Ingst	Int-S	2		
		Carisoprodol	1	1						
		Alprazolam	2	2						
		Acetaminophen/ hydrocodone	3	3						
1118 p	57 y F				U	Unk	Int-S	1		
		Carisoprodol	1	1						
		Ethanol	2	2						
		Zolpidem	3	3						

See also case 238, 290, 291, 293, 310, 314, 325, 384, 405, 407, 416, 417, 436, 451, 465, 475, 478, 485, 491, 492, 507, 510, 550, 554, 573, 576, 581, 584, 588, 597, 599, 608, 626, 628, 656, 657, 670, 672, 677, 693, 699, 707, 717, 722, 744, 809, 817, 822, 844, 850, 889, 899, 905, 952, 958, 960, 991, 1070, 1089, 1127, 1159, 1174, 1248, 1273

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Sedative/Hypnotics/Antipsychotics										
1119 pi	15 y F				A	Ingst	Unk	2		
		Quetiapine	1	1					Quetiapine	13.5 mg/L In Blood (unspecified) @ Autopsy
1120 a	16 y F				U	Ingst	Int-S	1		
		Quetiapine	1	1					Quetiapine	9000 ng/mL In Serum @ Autopsy
		Lamotrigine	2	2						
		Acetaminophen/ dextromethorphan/ doxylamine	3	3						
1121 a	18 y M				A	Par	AR-D	3		
		Propofol	1	1					Propofol	0 Other (see abst) In Other @ 2 d (pe)
1122 a	18 y M				U	Ingst	Int-S	2		
		Quetiapine	1	1					Quetiapine	483 ng/mL In Whole Blood @ Autopsy
		Haloperidol	2	2						
1123	19 y F				A	Ingst	Int-S	3		
		Quetiapine	1	1						
		Carbamazepine	2	2					Carbamazepine	38.7 mcg/L In Blood (unspecified) @ Unknown
		Sertraline	3	3						
1124	20 y F				A	Ingst	Int-S	2		
		Aripriprazole	1	1						
		Amphetamine	3	2						
		Escitalopram	4	3						
		Valproic acid	2	4						
1125 p	21 y M				A	Ingst	Int-S	2		
		Clonazepam	1	1						
		Citalopram	2	2						
		Mirtazapine	3	3						
		Ethanol	4	4						
1126 pa	21 y F				A	Ingst	Int-S	1		
		Quetiapine	1	1					Quetiapine	1800 ng/mL In Blood (unspecified) @ Autopsy
		Citalopram	2	2					Citralopram	4100 ng/mL In Blood (unspecified) @ Autopsy
		Bupropion (extended release)	3	3					Bupropion	8300 ng/mL In Blood (unspecified) @ Autopsy
		Bupropion (extended release)	3	3					Hydroxybupropion	2000 ng/mL In Blood (unspecified) @ Autopsy
		Trazodone	4	4						
1127 pa	21 y M				A	Unk	Int-A	2		
		Diazepam	1	1					Diazepam	890 ng/mL In Whole Blood @ Autopsy
		Methadone	2	2					Methadone	600 ng/mL In Whole Blood @ Autopsy
		Cyclobenzaprine	3	3					Cyclobenzaprine	1.4 ng/mL In Whole Blood @ Autopsy
1128 a	22 y F				A/C	Ingst	Int-U	3		
		Butalbital (unkown combination)	1	1					Butalbital	1.3 mg/L In Blood (unspecified) @ Autopsy
		Alprazolam	2	2					Alprazolam	0.08 mg/L In Blood (unspecified) @ Autopsy
		Acetaminophen/ hydrocodone	3	3						
1129 pa	23 y F				A	Ingst	Int-S	1		
		Alprazolam	1	1					Alprazolam	170 ng/mL In Blood (unspecified) @ Autopsy
		Acetaminophen	2	2						
1130	24 y F				C	Ingst	Int-S	1		
		Quetiapine	1	1						
		Diazepam	2	2						
		Temazepam	3	3						
		Acetaminophen/ propoxyphene	4	4					Acetaminophen	44 mcg/mL In Serum @ Unknown
1131 pa	25 y F				A/C	Ingst	Unt-T	1		
		Clozapine	1	1					Clozapine	6285 ng/mL In Blood (unspecified) @ Autopsy
		Clozapine	1	1					Norclozapine	3804 ng/mL In Blood (unspecified) @ Autopsy
1132 pi	25 y M				A	Ingst	Int-S	2		
		Benzodiazepine	2	1						
		Oxycodone	1	2						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Sedative/Hypnotics/Antipsychotics, continued										
[1133 ha]	26 y F				A	Ingst + Par	Int-S	1		
		Alprazolam	1	1					Alprazolam	120 ng/mL In Blood (unspecified) @ Autopsy
		Antihistamine	2	2						
1134 pa	27 y M				U	Ingst	Int-S	1		
		Olanzapine	3	1					Olanzapine	3.3 mcg/mL In Blood (unspecified) @ Autopsy
		Benztropine	2	2					Benztropine mesylate	0.05 mcg/mL In Blood (unspecified) @ Autopsy
		Valproic acid	1	3						
1135	28 y M				A/C	Ingst	Unt-U	3		
		Phenobarbital	1	1					Phenobarbital	67.2 mg/L In Blood (unspecified) @ Unknown
[1136 pha]	28 y F				A	Ingst	Int-S	1		
		Quetiapine	1	1					Quetiapine	4500 ng/mL In Blood (unspecified) @ Unknown
		Alprazolam	2	2					Alprazolam	390 ng/mL In Blood (unspecified) @ Unknown
		Benzodiazepine	2	2					Alprazolam	390 ng/mL In Blood (unspecified) @ Unknown
		Ethanol	3	3					Ethanol	102 mg/dL In Blood (unspecified) @ Unknown
		Atenolol	4	4						
		Pregabalin	5	5						
1137	29 y M				A/C	Ingst	Unk	1		
		Diazepam	1	1					Diazepam	120 ng/mL In Whole Blood @ Autopsy
		Benzodiazepine	2	2					Lorazepam	25 ng/mL In Whole Blood @ Autopsy
		Fluoxetine	3	3					Fluoxetine	95 ng/mL In Whole Blood @ Autopsy
		Venlafaxine	4	4					Venlafaxine	110 ng/mL In Whole Blood @ Autopsy
		Monoamine oxidase inhibitors	5	5						
		Tryptophan	6	6						
		Lamotrigine	7	7						
1138 p	29 y M				A	Ingst	Int-S	2		
		Alprazolam	1	1						
		Phencyclidine	2	2						
		Marijuana	3	3						
1139	30 y M				U	Ingst	Int-S	2		
		Benzodiazepine	1	1						
[1140 ha]	30 y M				A	Ingst	Int-S	1		
		Doxylamine	1	1						
		Diphenhydramine	2	2						
1141 pa	30 y M				U	Ingst	Int-U	1		
		Quetiapine	1	1					Quetiapine	31 mg/L In Blood (unspecified) @ Autopsy
		Quetiapine	1	1					Quetiapine	3.6 mg/L In Blood (unspecified) @ Autopsy
		Quetiapine	1	1					Quetiapine	30 mg/kg In Liver @ Autopsy
		Methadone	2	2					Methadone	0.3 mg/L In Blood (unspecified) @ Autopsy
		Methadone	2	2					Methadone	0.12 mg/L In Blood (unspecified) @ Autopsy
		Methadone	2	2					Methadone	1 mg/kg In Liver @ Autopsy
		Benzodiazepine	3	3					Alprazolam	0.014 mg/L In Blood (unspecified) @ Autopsy
1142	30 y F				A	Ingst	Int-S	2		
		Benzodiazepine	1	1						
1143 p	31 y M				U	Ingst	Unk	2		
		Quetiapine	1	1						
		Trazodone	2	2						
1144 p	31 y M				U	Ingst	Unk	2		
		Phenobarbital	1	1						
		Tricyclic antidepressant	2	2						
1145 ph	32 y F				A/C	Ingst	Int-S	1		
		Alprazolam	1	1						
		Trazodone	2	2						
		Buspirone	3	3						
		Hydroxyzine	4	4						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Sedative/Hypnotics/Antipsychotics, continued										
1146 pa	33 y M				A/C	Ingst	Int-U	1		
		Benzodiazepine	1	1					Alprazolam	72 ng/mL In Blood (unspecified) @ Unknown
		Oxycodone	2	2					Oxycodone	340 ng/mL In Blood (unspecified) @ Unknown
1147	33 y F				A	Ingst+ Unk	Int-S	2		
		Quetiapine	1	1						
		Cocaine	2	2						
		Clonazepam	3	3						
1148 p	34 y M				A	Ingst	Int-S	2		
		Clonazepam	1	1						
1149 p	35 y F				A	Par	Int-S	3		
		Quetiapine	1	1						
		Lithium	2	2					Lithium	0.7 mg/mL In Blood (unspecified) @ Unknown
		Clonazepam	3	3						
1150 ph	36 y M				A/C	Ingst	Int-S	2		
		Benzodiazepine	1	1					Clonazepam	0.11 mg/L In Blood (unspecified) @ Autopsy
		Quetiapine	2	2					Quetiapine	0.54 mg/L In Blood (unspecified) @ Autopsy
		Venlafaxine (extended release)	3	3						
1151	37 y F				A	Ingst	Int-S	2		
		Diazepam	1	1						
		Ethanol	2	2						
1152 a	38 y F				A/C	Ingst	Unk	2		
		Quetiapine	1	1						
		Risperidone	2	2						
		Paroxetine	3	3						
1153 p	38 y F				A	Ingst	Unt-G	2		
		Alprazolam	1	1						
		Drug, unknown	2	2						
1154 p	39 y M				A/C	Ingst	Int-S	2		
		Quetiapine	1	1						
1155 p	39 y M				A	Ingst	Int-S	3		
		Alprazolam	1	1						
1156	39 y F				A	Ingst	Int-S	2		
		Quetiapine	1	1						
		Bupropion	2	2						
		Phenobarbital	3	3						
		Levetiracetam	4	4						
		Tramadol	5	5						
1157 pai	40 y F				U	Ingst	AR-D	3		
		Olanzapine	1	1					Olanzapine	1.1 mcg/mL In Whole Blood @ Autopsy
		Quetiapine	2	2						
		Citalopram	3	3					Citalopram	1.1 mcg/mL In Whole Blood @ Autopsy
		Duloxetine	4	4					Duloxetine	1.2 mcg/mL In Whole Blood @ Autopsy
1158 p	42 y F				U	Ingst+ Par	Int-S	3		
		Quetiapine	1	1						
		Insulin	2	2						
1159	42 y F				U	Ingst	Int-S	1		
		Clonazepam	1	1						
		Zolpidem	2	2						
		Tramadol	3	3						
		Cyclobenzaprine	4	4						
		Trazodone	5	5						
		Duloxetine	6	6						
1160	43 y M				A	Ingst	Int-S	2		
		Quetiapine	1	1						
1161 pai	44 y M				U	Ingst	Int-A	1		
		Alprazolam	1	1					Alprazolam	260 ng/mL In Whole Blood @ Autopsy
		Hydrocodone	2	2					Hydrocodone	0.26 mcg/mL In Whole Blood @ Autopsy
1162 p	44 y M				A	Ingst	Int-S	2		
		Alprazolam	1	1						
1163 p	44 y F				A/C	Ingst	Int-U	2		
		Benzodiazepine	1	1						
		Oxycodone	2	2						
1164 p	45 y M				A	Ingst	Int-S	2		
		Doxylamine	1	1						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Sedative/Hypnotics/Antipsychotics, continued										
1165	46 y F				U	Ingst	Int-A	2		
		Diazepam	2	1						
		Ethanol	1	2						
1166 p	47 y F				A	Unk	Int-U	3		
		Zolpidem	1	1						
1167 h	47 y F				A/C	Ingst	Int-S	2		
		Quetiapine	1	1						
		Citalopram	2	2						
		Warfarin	3	3						
		Potassium chloride	4	4						
1168 p	47 y F				U	Ingst+ Unk	Int-S	2		
		Phenobarbital	1	1					Phenobarbital	11.24 mg/L In Blood (unspecified) @ Autopsy
		Antihistamine	2	2					Diphenhydramine	0.091 mg/L In Blood (unspecified) @ Autopsy
1169	48 y F				A/C	Ingst	Int-S	2		
		Quetiapine	1	1					Quetiapine	4400 ng/mL In Serum @ 1 h (pe)
		Quetiapine	2	2						
		Benzodiazepine	3	3						
		Oxycodone	4	4						
		Methadone	5	5						
		Propoxyphene	6	6						
		Tricyclic antidepressant	7	7						
		Varenicline	8	8						
		Venlafaxine	9	9						
		Lithium	11	11					Lithium	0 mEq/L In Blood (unspecified) @ 1 h (pe)
1170	48 y M				A	Ingst	Int-S	1		
		Chlorpromazine	1	1						
		Quetiapine	2	2						
		Benzodiazepine	3	3						
1171 p	48 y M				A	Ingst	Int-S	2		
		Alprazolam	1	1						
1172 p	49 y F				A	Ingst	Int-S	2		
		Alprazolam	1	1						
		Citalopram	2	2						
		Ziprasidone	3	3						
		Lamotrigine	4	4						
		Opioid	5	5						
1173	49 y M				A/C	Ingst	Int-S	2		
		Temazepam	1	1						
1174 pa	49 y M				A	Ingst	Int-S	1		
		Quetiapine	1	1						
		Beta blocker	2	2						
		Diphenhydramine	3	3					Diphenhydramine	1300 ng/mL In Blood (unspecified) @ Unknown
		Bupropion	4	4						
		Topiramate	5	5						
		Lisinopril	6	6						
		Tizanidine	7	7						
		Mirtazapine	8	8					Mirtazapine	150 ng/mL In Blood (unspecified) @ 1 h (pe)
		Mirtazapine	8	8					Mirtazapine	150 ng/mL In Blood (unspecified) @ Unknown
		Tamsulosin	9	9						
		Cocaine	10	10					Benzoylecgonine	0.23 mg/dL In Blood (unspecified) @ 1 h (pe)
1175	51 y F				A	Ingst	Int-U	2		
		Alprazolam	1	1						
		Ethanol	2	2					Ethanol	218 mg/dL In Blood (unspecified) @ Unknown
1176 h	53 y M				A/C	Ingst+ Aspir	Int-S	2		
		Quetiapine	1	1						
		Charcoal	2	2						
1177 a	53 y F				A	Ingst	Int-S	2		
		Alprazolam	1	1					Alprazolam	1 Other (see abst) In Blood (unspecified) @ Autopsy
1178	55 y M				U	Ingst	Int-S	2		
		Quetiapine	1	1						
		Methadone	2	2						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Sedative/Hypnotics/Antipsychotics, continued										
1179	55 y M				A	Ingst	Int-S	1		
		Benzodiazepine	1	1						
		Acetaminophen	2	2						
		Marijuana	3	3						
		Cocaine	4	4						
		Opioid	5	5						
1180 pai	55 y M				U	Ingst	Int-A	2		
		Alprazolam	1	1					Alprazolam	176 ng/mL In Whole Blood @ Autopsy
		Acetaminophen/ oxycodone	2	2					Acetaminophen	28 mcg/mL In Whole Blood @ Autopsy
		Acetaminophen/ oxycodone	2	2					Oxycodone	0.24 mcg/mL In Whole Blood @ Autopsy
1181 a	57 y F				A/C	Ingst	Int-S	2		
		Quetiapine	1	1						
		Benzodiazepine	2	2					Lorezepam	0.39 mg/L In Blood (unspecified) @ Autopsy
		Duloxetine	3	3						
		Prazosin	4	4						
1182	60 y F				A/C	Ingst	Int-S	2		
		Olanzapine	2	1						
		Duloxetine	1	2						
		Zolpidem	3	3						
		Acetaminophen/ codeine	4	4						
1183 p	61 y F				A	Ingst	Int-S	3		
		Olanzapine	1	1						
1184	62 y M				U	Ingst	Int-S	1		
		Phenobarbital	1	1						
		Zolpidem	2	2						
		Lorazepam	3	3						
		Alprazolam	4	4						
1185 h	62 y F				A/C	Ingst	Int-S	2		
		Phenobarbital	1	1						
1186	67 y M				A	Ingst	Int-S	3		
		Prochlorperazine	3	1						
		Diphenhydramine	6	2						
		Glyburide	5	3						
		Metformin	4	4						
		SSRI	2	5						
		Benzodiazepine	1	6						
1187 p	67 y F				A/C	Ingst	Int-S	1		
		Clonazepam	1	1						
		Ethanol	2	2						
1188 a	68 y F				A/C	Ingst	Int-S	1		
		Quetiapine	1	1					Quetiapine	2.4 mg/L In Blood (unspecified) @ Autopsy
		Quetiapine	1	1					Quetiapine	2 mg/L In Blood (unspecified) @ Autopsy
		Quetiapine	1	1					Quetiapine	21 mg/kg In Liver @ Autopsy
		Venlafaxine	2	2					O-desmethy- lvenlafaxine	2.2 mg/L In Blood (unspecified) @ Autopsy
		Venlafaxine	2	2					O-desmethy- lvenlafaxine	2 mg/L In Blood (unspecified) @ Autopsy
		Venlafaxine	2	2					Venlafaxine	2.4 mg/kg In Liver @ Autopsy
		Venlafaxine	2	2					Venlafaxine	0.9 mg/L In Blood (unspecified) @ Autopsy
		Venlafaxine	2	2					Venlafaxine	0.92 mg/L In Blood (unspecified) @ Autopsy
		Donepezil	3	3					Donepezil	0.71 mg/L In Blood (unspecified) @ Autopsy
		Donepezil	3	3					Donepezil	0.78 mg/L In Blood (unspecified) @ Autopsy
		Donepezil	3	3					Donepezil	7.8 mg/kg In Liver @ Autopsy
1189	69 y M				A	Ingst	Int-S	2		
		Diazepam	1	1						
		Duloxetine	2	2						
		Risperidone	3	3						
		Ibuprofen	4	4						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Sedative/Hypnotics/Antipsychotics, continued										
1190	74 y M				A	Ingst	Int-S	2		
		Benzodiazepine	1	1						
		Ranolazine	2	2						
		Angiotensin-converting enzyme inhibitor	3	3						
		Nitroglycerin	4	4						
		Acetaminophen/ hydrocodone	5	5						
		Metoprolol	6	6						
		Sertraline	7	7						
		Hydralazine	8	8						
		Cardiac glycoside	9	9						
1191 pa	75 y F				A	Ingst	Int-S	1		
		Phenobarbital	1	1					Phenobarbital	66.8 mg/L In Blood (unspecified) @ Unknown
		Phenobarbital	1	1					Phenobarbital	42 mg/L In Blood (unspecified) @ Autopsy
		Oxycodone	2	2					Oxycodone	0.19 mg/L In Blood (unspecified) @ Autopsy
1192 ph	75 y M				A	Ingst	Int-S	2		
		Zolpidem	1	1						
		Hydroxyzine	2	2						
		Ethanol	3	3						
1193	80 y F				A/C	Ingst	Unt-T	3		
		Quetiapine	1	1						
1194 pai	81 y M				A	Unk	Int-S	1		
		Pentobarbital	1	1					Pentobarbital	23 mg/L In Blood (unspecified) @ Autopsy
		Diphenhydramine	2	2					Diphenhydramine	0.55 mg/L In Blood (unspecified) @ Autopsy
1195 h	84 y F				A/C	Ingst	Unt-U	3		
		Zolpidem	1	1						
		Fentanyl transdermal	2	2						
1196 a	84 y F				A	Ingst	Int-S	1		
		Barbiturates (extended release)	1	1					Phenobarbital	50 mg/L In Blood (unspecified) @ Unknown
1197 i	Unknown age F				U	Ingst	Int-S	2		
		Butalbital (unkown combination)	1	1					Butalbital	25 mg/L In Unknown @ Unknown
See also case 8, 23, 25, 26, 28, 55, 62, 85, 87, 92, 106, 166, 193, 199, 213, 253, 265, 269, 270, 276, 278, 279, 282, 284, 286, 290, 293, 295, 301, 304, 307, 308, 309, 312, 313, 314, 317, 319, 320, 323, 324, 326, 329, 331, 332, 335, 345, 346, 349, 350, 352, 354, 356, 358, 359, 363, 368, 378, 386, 389, 393, 400, 402, 403, 410, 421, 427, 428, 432, 433, 440, 441, 443, 444, 446, 448, 449, 451, 455, 462, 465, 466, 469, 472, 478, 481, 482, 485, 492, 498, 502, 503, 504, 510, 518, 519, 521, 522, 531, 534, 538, 540, 542, 550, 551, 554, 555, 559, 560, 565, 566, 575, 576, 582, 583, 584, 585, 590, 591, 592, 596, 597, 600, 609, 613, 618, 620, 621, 625, 626, 631, 633, 634, 635, 636, 638, 640, 641, 643, 644, 654, 656, 657, 661, 663, 669, 670, 672, 676, 677, 678, 679, 681, 683, 684, 686, 691, 693, 694, 705, 712, 717, 718, 720, 725, 729, 737, 741, 744, 751, 754, 757, 765, 767, 777, 789, 794, 796, 798, 802, 804, 807, 808, 809, 811, 812, 813, 815, 821, 822, 828, 830, 834, 836, 840, 846, 847, 848, 849, 850, 851, 856, 859, 860, 861, 866, 867, 869, 873, 875, 877, 878, 883, 889, 893, 894, 896, 897, 898, 900, 902, 905, 910, 911, 916, 917, 921, 922, 923, 926, 935, 937, 940, 951, 957, 958, 962, 963, 965, 967, 968, 971, 972, 974, 975, 976, 980, 985, 987, 988, 991, 994, 1001, 1002, 1012, 1014, 1015, 1019, 1020, 1024, 1029, 1038, 1044, 1090, 1094, 1096, 1097, 1098, 1099, 1102, 1107, 1110, 1111, 1113, 1114, 1117, 1118, 1209, 1219, 1224, 1245, 1250, 1252, 1255, 1259, 1266, 1268, 1273, 1274, 1295, 1303, 1311										
Stimulants and Street Drugs										
1198 pa	5 y M				U	Ingst	Unk	1		
		Amphetamine	1	1						
		Mirtazapine	2	2						
		Clonidine	3	3						
[1199 pa]	14 y M				U	Ingst	Int-M	1		
		Cocaine	1	1					Benzoylecgonine	3.14 mg/L In Blood (unspecified) @ Autopsy
		Cocaine	1	1					Cocaine	10.5 mg/L In Blood (unspecified) @ Autopsy
1200 h	16 y F				A	Ingst	Int-A	2		
		Methylenedioxymethamphetamine (MDMA)	1	1						
1201 pai	17 y M				A	Unk	Int-A	1		
		Heroin	1	1						
1202	17 y F				A	Ingst	Int-A	1		
		Methylenedioxymethamphetamine (MDMA)	1	1						
1203 p	18 y M				A	Ingst	Unt-G	3		
		Amphetamine	1	1						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Stimulants and Street Drugs, continued										
[1204 pa]	18 y F				A	Ingst	Int-A	1		
		Drug, unknown *	1	1						
		Methylenedioxymethamphetamine (MDMA) *	2	1					Mdma (3,4-methylenedioxymethamphetamine)	274 ng/mL In Serum @ Unknown
1205 pi	18 y M				U	Ingst	Int-S	2		
		Amphetamine	1	1						
1206 pha	20 y M				A	Ingst	Int-A	1		
		Cocaine	1	1						
1207	20 y M				A	Ingst	Int-A	2		
		Methylenedioxymethamphetamine (MDMA)	1	1						
1208 p	21 y F				A/C	Ingst	Int-A	2		
		Cocaine	1	1						
		Drug, unknown	2	2						
1209 pai	21 y M				U	Ingst	Int-A	1		
		Cocaine	1	1					Cocaethylene	0.02 mcg/mL In Whole Blood @ Autopsy
		Cocaine	1	1					Cocaine	0.11 mcg/mL In Whole Blood @ Autopsy
		Oxycodone	2	2					Oxycodone	0.7 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	3	3					Alprazolam	46 ng/mL In Whole Blood @ Autopsy
[1210 pa]	21 y F				A	Par	Int-A	1		
		Heroin	1	1						
1211	21 y F				A	Ingst	Int-A	2		
		Methylenedioxymethamphetamine (MDMA)	1	1						
[1212 pha]	22 y F				A/C	Par	Int-S	2		
		Heroin	1	1						
1213	23 y M				U	Unk	Unk	2		
		Amphetamine	1	1						
		Drug, unknown	2	2						
1214 p	23 y M				A/C	Par	Int-U	1		
		Heroin	1	1						
1215 pa	23 y M				A	Ingst	Int-A	1		
		Methylenedioxymethamphetamine (MDMA)	1	1						
		Methamphetamine	2	2						
1216 p	23 y F				U	Ingst+ Unk	Int-U	2		
		Cocaine	1	1						
		Ethanol	2	2						
[1217]	23 y F				A	Ingst	Int-S	1		
		Caffeine	1	1					Caffeine	189.1 mg/L In Blood (unspecified) @ 1 h (pe)
1218 pa	24 y F				A	Par	Int-S	1		
		Heroin	1	1					6-monoacetylmorphine	0.02 mcg/mL In Blood (unspecified) @ Autopsy
		Heroin	1	1					Morphine	0.61 mcg/mL In Blood (unspecified) @ Autopsy
1219 p	24 y M				A	Ingst	Int-S	2		
		Cocaine	1	1						
		Barbiturate	2	2						
		Opioid	3	3						
1220	24 y M				A/C	Inhal	Int-S	2		
		Methamphetamine	1	1						
		Oxycodone	2	2						
		Ethanol	3	3						
1221 pa	25 y M				A/C	Ingst+ Par	Int-S	1		
		Heroin	1	1						
		Valproic acid	2	2						
		Trazodone	3	3						
1222	26 y M				A/C	Ingst	Int-M	3		
		Crack cocaine	1	1						
1223 p	26 y M				A	Ingst	Int-S	1		
		Cocaine	1	1						
1224 pa	26 y M				A	Ingst+ Par	Int-A	1		
		Heroin	1	1					Morphine	0.02 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	2	2					Alprazolam	91 ng/mL In Whole Blood @ Autopsy

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Stimulants and Street Drugs, continued										
		Cocaine	3	3					Benzoylecgonine	0.84 mcg/mL In Whole Blood @ Autopsy
		Cocaine	3	3					Benzoylecgonine	0.36 Other (see abst) In Brain @ Autopsy
		Cocaine	3	3					Cocaine	0.06 mcg/mL In Whole Blood @ Autopsy
1225 a	27 y M				A	Unk	Int-U	1		
		Cocaine	1	1					Benzoylecognine	1.6 mg/L In Serum @ Unknown
		Cocaine	1	1					Benzoylecognine	36 mg/L In Urine (quantitative only) @ Autopsy
1226	27 y M				U	Unk	Unk	1		
		Cocaine	1	1						
		Drug, unknown	2	2						
1227 p	27 y F				U	Par	Int-U	2		
		Heroin	1	1						
1228	27 y M				A	Ingst	Int-U	3		
		Cocaine	1	1						
		Phencyclidine	2	2						
1229 pa	27 y M				U	Ingst+ Inhal	Int-A	2		
		Amphetamine	1	1					Methamphetamine	444 ng/mL In Blood (unspecified) @ Autopsy
		Cadmium	2	2					Cadmium	9.6 ng/mL In Blood (unspecified) @ Autopsy
1230 pai	28 y M				A	Par	Int-A	1		
		Heroin	1	1					Morphine	0.45 mg/L In Blood (unspecified) @ Autopsy
		Cocaine	2	2					Benzoylecgonine	1.87 ng/mL In Blood (unspecified) @ Autopsy
		Cocaine	2	2					Ecgonine methyl ester	0.044 ng/mL In Blood (unspecified) @ Autopsy
1231 ph	28 y M				A	Par	Int-A	2		
		Cocaine	1	1						
		Sodium hypochlorite	2	2						
1232 p	28 y M				U	Unk	Unk	2		
		Heroin	1	1						
1233 h	28 y F-pregnant				A	Par	Int-A	3		
		Heroin	1	1						
		Cocaine	2	2						
1234 pa	29 y M				A	Ingst+ Inhal	Int-A	1		
		Cocaine	1	1					Benzoylecognine	34167 ng/mL In Urine (quantitative only) @ Unknown
		Opioid	2	2						
		Marijuana	3	3						
1235 pai	29 y F				U	Ingst+ Unk	Int-A	1		
		Cocaine	1	1					Benzoylecgonine	0.86 Other (see abst) In Brain @ Autopsy
		Cocaine	1	1					Cocaine	0.1 mcg/mL In Whole Blood @ Autopsy
		Cocaine	1	1					Cocaine	0.07 Other (see abst) In Brain @ Autopsy
		Methadone	2	2					Methadone	0.3 mcg/mL In Whole Blood @ Autopsy
		Diphenhydramine	3	3					Diphenhydramine	0.4 mcg/mL In Whole Blood @ Autopsy
		Ethanol	4	4						
1236 a	29 y M				A	Unk	Int-U	1		
		Methamphetamine	1	1						
1237 pai	29 y M				A/C	Unk	Int-A	1		
		Amphetamine	1	1					Methamphetamine	0.08 mcg/mL In Whole Blood @ Autopsy
1238 pai	31 y M				A/C	Ingst+ Unk	Int-A	1		
		Phencyclidine	1	1					Phencyclidine	25 ng/mL In Blood (unspecified) @ Unknown
		Methylenedioxymethamphetamine (MDMA)	2	2						
		Ethanol	3	3					Ethanol	0.29 % (wt/Vol) In Blood (unspecified) @ Unknown
		Oxycodone	4	4						
		Hydrocodone	5	5						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Stimulants and Street Drugs, continued										
1239 pai	31 y M				U	Ingst	Int-A	1		
		Methamphetamine	1	1					Amphetamine	0.16 mcg/mL In Whole Blood @ Autopsy
		Methamphetamine	1	1					Methamphetamine	1 mcg/mL In Whole Blood @ Autopsy
		Acetaminophen/ hydrocodone	2	2						
1240 ph	31 y M				A	Ingst	Int-A	3		
		Cocaine	1	1						
1241 pa	32 y M				U	Par	Int-U	1		
		Heroin	1	1					Morphine	0.18 mg/L In Blood (unspecified) @ Autopsy
		Heroin	1	1					Morphine	0.14 mg/kg In Brain @ Autopsy
1242 pi	32 y M				A	Ingst	Int-A	2		
		Methamphetamine	1	1						
		Methadone	2	2						
		Ethanol	3	3						
[1243 pa]	32 y M				A	Ingst	Int-M	1		
		Cocaine	1	1					Benzoylecgonine	4.661 mg/mL In Brain @ Autopsy
		Cocaine	1	1					Cocaine	2.714 mg/mL In Brain @ Autopsy
		Cocaine	1	1					Ecgonine methyl ester	10.274 mg/mL In Brain @ Autopsy
1244	32 y M				A	Ingst	Unk	2		
		Methamphetamine	1	1						
1245 pa	32 y M				A	Ingst	Int-S	1		
		Amphetamine	3	1					Amphetamine	1600 ng/mL In Unknown @ Autopsy
		Acetaminophen/ opioid	1	2					Acetaminophen	59 mcg/mL In Blood (unspecified) @ Unknown
		Benzodiazepine	2	3						
[1246 a]	32 y M				A/C	Ingst	Int-M	1		
		Cocaine	1	1					Benzoylecgonine	2500 ng/mL In Blood (unspecified) @ Unknown
		Cocaine	1	1					Cocaine	95 ng/mL In Blood (unspecified) @ Unknown
1247 ai	33 y M				A	Ingst	Int-M	1		
		Heroin	1	1					Morphine	0.23 mg/L In Blood (unspecified) @ Autopsy
		Cocaine	2	2					Benzoylecgonine	2.81 mg/L In Blood (unspecified) @ Autopsy
		Cocaine	2	2					Cocaine	0.39 mg/L In Blood (unspecified) @ Autopsy
		Cocaine	2	2					Ecgonine methyl ester	0.83 mg/L In Blood (unspecified) @ Autopsy
1248 a	34 y M				A/C	Ingst	Int-S	2		
		Cocaine	1	1						
		Ethanol	2	2						
		Tricyclic antidepressant	3	3						
		Atenolol/ chlorthalidone	4	4						
		Lisinopril	5	5						
		Pioglitazone	6	6						
		Baclofen	7	7						
		Simvastatin	8	8						
		Cephalexin	9	9						
		Insulin	10	10						
1249	35 y F				A	Ingst	Int-A	2		
		Cocaine	1	1						
		Hydrogen peroxide	2	2						
1250 p	38 y M				U	Unk	Int-A	2		
		Heroin	1	1						
		Alprazolam	2	2						
[1251 a]	38 y M				A	Ingst	Int-M	1		
		Cocaine	1	1					Cocaine	3200 ng/mL In Blood (unspecified) @ 1 h (pe)
1252 h	39 y M				A	Unk	Int-A	1		
		Cocaine	1	1						
		Benzodiazepine	2	2						
		Marijuana	3	3						
[1253 a]	39 y M				A	Oth	Int-M	2		
		Cocaine	1	1						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Stimulants and Street Drugs, continued										
1254 pai	39 y M				A/C	Unk	Int-A	1		
		Cocaine	1	1					Benzoylecgonine	0.68 mcg/mL In Whole Blood @ Autopsy
		Cocaine	1	1					Cocaine	0.04 mcg/mL In Whole Blood @ Autopsy
1255 p	41 y M				A	Ingst+ Unk	Int-S	2		
		Cocaine	1	1						
		Acetaminophen/ diphenhydramine	2	2						
		Alprazolam	3	3						
		Valproic Acid	4	4						
1256	41 y M				U	Ingst+ Inhal	Int-U	2		
		Cocaine	1	1						
		Opioid	2	2						
1257 p	41 y F				A	Unk	Int-A	2		
		Heroin	1	1						
1258 pha	41 y M				A	Ingst	Int-A	1		
		Amyl/butyl nitrites	1	1						
		Ethanol	2	2						
1259 pai	42 y M				U	Ingst	Int-A	1		
		Cocaine	1	1						
		Morphine	2	2					Morphine	0.05 mcg/mL In Whole Blood @ Autopsy
		Citalopram	3	3					Citalopram	0.91 mcg/mL In Whole Blood @ Autopsy
		Butalbital (unkown combination)	4	4					Butalbital	1.3 mcg/mL In Whole Blood @ Autopsy
[1260 ha]	42 y M				A	Unk	Int-S	3		
		Cocaine	1	1					Benzoylecgonine	0.23 mg/mL In Whole Blood @ Autopsy
1261	42 y M				A	Ingst+ Par	Int-A	1		
		Heroin	1	1						
		Cocaine	2	2						
1262 a	43 y M				A	Oth	Int-A	1		
		Cocaine	1	1						
		Heroin	2	2						
1263 ai	43 y F				A/C	Ingst+ Unk	Int-A	3		
		Cocaine	1	1						
		Methadone	2	2						
1264 pai	43 y M				A/C	Ingst+ Unk	Int-A	3		
		Cocaine	1	1					Benzoylecgonine	0.7 Other (see abst) In Liver @ Autopsy
		Ethanol	2	2					Ethanol	0.02 % (wt/Vol) In Whole Blood @ Autopsy
[1265 pha]	45 y M				U	Unk	Unk	2		
		Cocaine	1	1					Benzoylecgonine	1.556 mg/L In Blood (unspecified) @ 3 h (pe)
		Cocaine	1	1					Ecgonine methyl ester	0.371 mg/L In Blood (unspecified) @ 3 h (pe)
1266 p	46 y M				U	Ingst+ Inhal	Int-A	1		
		Cocaine	1	1						
		Methadone	5	2						
		Morphine	3	3						
		Hydrocodone	4	4						
		Benzodiazepine	2	5						
		Naproxen	6	6						
1267 pai	47 y M				A/C	Ingst	Int-A	2		
		Methamphetamine	1	1					Amphetamine	0.08 mcg/mL In Whole Blood @ Autopsy
1268 ai	47 y F				U	Ingst+ Unk	Int-A	2		
		Cocaine	1	1					Benzoylecgonine	0.7 mcg/mL In Blood (unspecified) @ Unknown
		Cocaine	1	1					Cocaine	0.04 mcg/mL In Blood (unspecified) @ Unknown
		Alprazolam	2	2						
1269	47 y M				A	Ingst	AR-O	3		
		Methamphetamine	1	1						
		Acetaminophen/ propoxyphene	2	2						
1270 pai	47 y M				U	Unk	Int-A	2		
		Cocaine	1	1					Benzoylecgonine	0.07 mcg/mL In Whole Blood @ Autopsy
1271	48 y M				A	Ingst	Int-M	1		
		Cocaine	1	1						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Stimulants and Street Drugs, continued										
1272 p	48 y M				A	Ingst	Unt-G	2		
		Cocaine	1	1						
		Mushroom (psilocybin and psilocin)	2	2						
1273 ai	48 y F				U	Ingst+ Unk	Int-A	1		
		Cocaine	1	1					Cocaine	0.2 mcg/mL In Whole Blood @ Autopsy
		Alprazolam	2	2					Alprazolam	65 ng/mL In Whole Blood @ Autopsy
		Hydrocodone	3	3					Hydrocodone	0.37 mcg/mL In Whole Blood @ Autopsy
		Carisoprodol	4	4						
1274 h	51 y M				A	Ingst+ Inhal+ Par	Int-A	2		
		Cocaine	1	1						
		Amphetamine	2	2						
		Methadone	3	3						
		Benzodiazepine	4	4						
1275 pai	51 y M				U	Ingst	Int-A	1		
		Cocaine	1	1					Benzoylecgonine	0.14 mcg/mL In Whole Blood @ Autopsy
		Methadone	2	2					Methadone	0.25 mcg/mL In Whole Blood @ Autopsy
		Promethazine	3	3						
1276 pai	51 y M				A/C	Unk	Int-A	1		
		Amphetamine	1	1					Amphetamine	0.56 mcg/mL In Whole Blood @ Autopsy
		Amphetamine	1	1					Methamphetamine	0.18 mcg/mL In Whole Blood @ Autopsy
1277 pi	53 y M				A	Ingst	Int-S	1		
		Amphetamine	1	1						
1278 pai	54 y M				A/C	Unk	Int-A	3		
		Methamphetamine	1	1					Methamphetamine	0.06 mcg/mL In Whole Blood @ Autopsy
		Oxycodone	2	2					Oxycodone	0.32 mcg/mL In Whole Blood @ Autopsy
		Sertraline	3	3					Sertraline	0.69 mcg/mL In Whole Blood @ Autopsy
1279 ai	54 y M				U	Unk	Int-A	2		
		Cocaine	1	1						
1280 h	56 y M				A	Unk	Int-A	2		
		Cocaine	1	1						
		Heroin	2	2						
1281 pai	57 y F				U	Unk	Int-A	2		
		Cocaine	1	1					Cocaine	0.2 mcg/mL In Whole Blood @ Autopsy
1282 h	59 y F				A	Ingst	Unt-G	3		
		Cocaine	1	1						
		Amphetamine	2	2						
		Opioid	3	3						
1283 ha	62 y M				A	Inhal	Int-A	3		
		Cocaine	1	1						
1284 p	65 y F				U	Ingst+ Inhal	Int-S	3		
		Cocaine	1	1						
		Acetaminophen	2	2						
1285 i	Unknown adult (> = 20 y) M				U	Unk	Unk	1		
		Cocaine	1	1					Benzoylecognine	3043 ng/mL In Blood (unspecified) @ Autopsy
		Cocaine	1	1					Cocaine	15045 ng/mL In Blood (unspecified) @ Autopsy
		Marijuana	2	2					Carboxy-thc	13.3 ng/mL In Blood (unspecified) @ Autopsy
		Marijuana	2	2					Carboxy-thc	305 ng/mL In Urine (quantitative only) @ Autopsy
		Marijuana	2	2					Thc (tetrahydrocannabinol)	11.2 ng/mL In Blood (unspecified) @ Autopsy

See also case 15, 131, 140, 142, 143, 166, 253, 254, 261, 275, 277, 282, 283, 286, 289, 295, 316, 320, 322, 323, 335, 352, 353, 358, 366, 395, 410, 417, 444, 451, 463, 530, 567, 632, 638, 641, 642, 683, 684, 690, 707, 708, 808, 813, 822, 827, 828, 833, 844, 849, 871, 881, 927, 931, 951, 966, 971, 994, 1014, 1015, 1064, 1071, 1124, 1138, 1147, 1174, 1179, 1295, 1310

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Unknown Drug										
1286 pa	17 y M				A	Inhal	Int-A	3		
		Drug, unknown	1	1						
1287	18 y F				A	Inhal	AR-D	1		
		Sevoflurane	1	1						
1288 p	18 y M				A	Ingst	Int-A	3		
		Drug, unknown	1	1						
1289	20 y F				A	Ingst	Int-A	2		
		Drug, unknown	1	1						
1290	27 y M				A	Ingst	Int-A	1		
		Drug, unknown	1	1						
1291 ai	27 y M				A	Ingst	Unt-G	2		
		Drug, unknown	1	1						
1292 ph	29 y M				U	Ingst	Int-S	2		
		Drug, unknown	1	1						
1293 ph	31 y M				A	Ingst	Int-S	2		
		Drug, unknown	1	1						
1294 p	32 y M				A	Unk	Unk	2		
		Drug, unknown	1	1						
1295 p	33 y F				A	Unk	Int-A	2		
		Drug, unknown	1	1						
		Opioid	2	2						
		Benzodiazepine	3	3						
		Alprazolam	4	4						
		Cocaine	5	5						
		Marijuana	6	6						
1296 p	34 y F				A	Ingst	Int-U	2		
		Drug, unknown	1	1						
		Ethanol	2	2						
1297	36 y F				A	Ingst	Unt-G	3		
		Drug, unknown	1	1						
1298	37 y M				A	Ingst	Int-S	2		
		Drug, unknown	1	1						
1299	43 y F				U	Unk	Unk	2		
		Drug, unknown	1	1						
1300 ph	44 y F				A	Ingst	Int-S	2		
		Drug, unknown	1	1						
1301 i	44 y M				A/C	Ingst	Int-S	2		
		Drug, unknown	1	1						
		Allopurinol	2	2						
1302 p	45 y F				U	Ingst	Int-S	3		
		Drug, unknown	1	1						
		Bupropion	2	2					Bupropion	12.9 mg/L In Blood (unspecified) @ Autopsy
1303 p	47 y M				A	Ingst	Unk	1		
		Drug, unknown	1	1						
		Loratadine	2	2						
		Acetaminophen/ propoxyphene	3	3						
		Duloxetine	4	4						
		Zolpidem	5	5						
1304 p	49 y M				U	Ingst	Int-U	3		
		Drug, unknown	1	1						
		Acetaminophen	2	2					Acetaminophen	79.7 mcg/mL In Serum @ Unknown
1305	49 y M				U	Unk	Unk	3		
		Drug, unknown	1	1						
		Ethanol	2	2					Ethanol	270 mcg/dL In Blood (unspecified) @ Unknown
1306 p	50 y F				U	Unk	Int-S	2		
		Drug, unknown	1	1						
1307	51 y F				A	Ingst	Int-S	2		
		Drug, unknown	1	1						
		Acetaminophen	2	2						
1308	52 y M				U	Ingst	Int-S	1		
		Drug, unknown	1	1						
1309	52 y M				U	Unk	Unk	2		
		Drug, unknown	1	1						
1310 p	53 y F				A	Ingst	Unk	2		
		Drug, unknown	1	1						
		Methadone	2	2						
		Marijuana	3	3						
1311	53 y F				U	Ingst	Int-S	1		
		Drug, unknown	1	1						
		Benzodiazepine	2	2						

(*Continued*)

Table 21. Listing of fatal nonpharmaceutical and pharmaceutical exposures (this table can be viewed separately online at www.informahealthcare.com/ctx)

Annual report ID	Age/Sex	Substances	Substance rank	Cause rank	Chronicity	Route	Reason	AAPCC RCF	Analyte	Blood concentration @ time
Unknown Drug, continued										
1312 p	59 y F				A	Ingst	Int-S	2		
		Drug, unknown	1	1						
1313	61 y F				U	Ingst	Unk	3		
		Drug, unknown	1	1						
1314	66 y M				A	Inhal	AR-D	1		
		Sevoflurane	1	1						
1315	Unknown adult (>=20 y) M				A	Inhal	AR-D	2		
		sevoflurane	1	1						

See also case 16, 41, 235, 385, 395, 424, 439, 449, 475, 523, 630, 632, 751, 752, 810, 847, 874, 896, 917, 1153, 1204, 1208, 1213, 1226

Listing of 1,315 fatalities classified as RCF category = 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory).
Case: Bracketed [case number] = Narrative provided for this case in Appendix B, i = case was reported to poison center indirectly (by coroner, medical examiner, or other) after the fatality occurred, 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, F-pregnant = pregnant female), M = male, 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, 4 = Probably not responsible.
*Cause Rank differed from Substance Rank for these substances in this multisubstance case.

Table 22A. Demographic profile of SINGLE-SUBSTANCE nonpharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Adhesives/Glues															
Miscellaneous Adhesives/Glues															
Cyanoacrylates (Superglues, etc.)	9,073	8,986	3,963	1,488	2,694	8,695	184	55	43	1,927	1,091	1,659	275	5	0
Epoxy	772	688	256	46	297	650	16	4	14	201	154	134	31	1	1
Non-Toxic Adhesives/Glues (White Glue, Paper Glue, etc.)	1,813	1,714	1,201	349	123	1,642	58	9	3	43	197	86	3	0	0
Toluene/Xylene (Adhesives Only)	505	490	284	48	113	462	20	1	5	75	128	86	14	0	0
Unknown Types of Adhesive, Glue, Cement or Paste	4,235	4,065	2,021	534	1,163	3,832	114	41	69	745	795	675	124	5	0
Category Total:	16,398	15,943	7,725	2,465	4,390	15,281	392	110	134	2,991	2,365	2,640	447	11	1
Alcohols															
Miscellaneous Alcohols															
Ethanol (Beverages)	50,919	8,560	1,459	1,833	4,380	2,496	5,512	204	196	3,552	1,153	1,174	935	185	20
Ethanol (Non-Beverage, Non-Rubbing)	17,291	15,901	12,491	1,616	1,485	15,100	587	165	20	844	4,060	1,142	107	14	0
Higher Alcohols (Butanol, Amyl Alcohol, Propanols, etc.)	201	150	60	10	45	142	5	2	1	56	46	25	7	0	0
Isopropanol (Excluding Rubbing Alcohols and Cleaning Agents)	7,405	6,784	3,989	534	1,916	5,825	843	61	23	1,302	1,684	1,040	270	33	0
Methanol (Excluding Automotive Products and Cleaning Agents)	792	619	149	69	319	530	62	5	5	326	152	114	48	15	7
Other Types of Alcohol	534	514	403	27	66	499	9	1	4	49	164	45	4	0	0
Unknown Types of Alcohol	652	271	82	42	106	162	85	8	4	105	44	43	20	11	0
Rubbing Alcohols															
Rubbing Alcohols: Ethanol with Methyl Salicylate	6	6	5	0	1	5	1	0	0	1	0	0	0	0	0
Rubbing Alcohols: Ethanol without Methyl Salicylate	249	242	152	14	69	223	17	1	0	28	73	30	4	0	0
Rubbing Alcohols: Isopropanol with Methyl Salicylate	331	315	235	17	50	293	18	2	0	64	116	47	6	1	0
Rubbing Alcohols: Isopropanol without Methyl Salicylate	7,566	7,083	4,514	520	1,755	6,239	735	66	13	1,221	1,665	1,049	234	30	0
Rubbing Alcohols: Unknown	71	64	30	9	19	53	7	3	0	10	5	15	1	2	0
Category Total:	86,017	40,509	23,569	4,691	10,211	31,567	7,881	518	266	7,558	9,162	4,724	1,636	291	27
Arts/Crafts/Office Supplies															
Miscellaneous Arts/Crafts/Office Supplies															
Artist Paints (Non-Water Color)	3,193	3,093	2,237	399	374	3,020	46	9	16	118	440	143	17	1	0
Artist Paints (Water Color)	1,295	1,268	1,105	110	42	1,259	2	5	2	18	153	23	1	0	0
Chalks	1,798	1,762	1,624	95	30	1,737	20	1	3	40	214	42	3	0	0
Clays	2,617	2,568	2,223	245	77	2,522	30	4	12	73	301	86	8	0	0
Crayons	2,483	2,428	2,126	206	77	2,393	29	3	0	56	249	38	2	0	0
Glazes	107	100	43	33	20	95	3	1	1	16	25	17	0	0	0
Office Supplies: Miscellaneous	211	203	87	26	69	192	10	0	1	18	37	35	4	0	0
Other Types of Arts/Crafts/Writing Products	6,173	5,837	4,500	684	474	5,661	120	17	36	233	829	267	30	1	1
Pencils	2,471	2,431	1,211	1,037	130	2,312	79	32	0	111	214	186	6	1	0
Pens or Inks	16,574	16,266	11,712	3,869	474	15,684	463	44	59	367	2,155	374	23	0	0
Typewriter Correction Fluids	1,776	1,753	1,344	276	95	1,684	56	9	0	108	435	133	9	0	0
Unknown Types of Arts/Crafts/Writing Products	162	156	119	28	4	155	0	0	1	8	35	7	0	0	0
Category Total:	38,860	37,865	28,331	7,008	1,866	36,714	858	125	131	1,166	5,087	1,351	103	3	1
Automotive/Aircraft/Boat Products															
Automotive Products															
Automotive Products: Brake Fluids	1,073	1,016	317	100	498	959	43	7	2	397	242	271	49	9	0
Automotive Products: Ethylene Glycol (Including Antifreeze)	5,363	4,921	514	596	3,170	4,099	648	89	30	1,878	949	780	358	140	7
Automotive Products: Glycol and Methanol Mixtures	235	223	51	36	104	206	13	2	1	64	54	49	4	3	1

(*Continued*)

Table 22A. Demographic profile of SINGLE-SUBSTANCE nonpharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Automotive Products: Hydrocarbons (Transmission Fluids, Power Steering Fluids, etc.)	2,737	2,598	1,063	294	1,011	2,458	90	25	14	688	615	732	115	12	0
Automotive Products: Methanol (Dry Gas, Windshield Washing Solutions, etc.)	1,245	1,149	251	157	628	1,023	100	13	4	525	328	277	55	12	2
Automotive Products: Other Glycols	219	209	107	25	63	206	1	1	0	40	50	38	3	1	0
Miscellaneous Automotive/Aircraft/Boat Products															
Automotive/Aircraft/Boat Products: Non-Toxic	10	10	6	0	3	10	0	0	0	1	2	2	0	0	0
Automotive/Aircraft/Boat Products: Other	2,017	1,932	741	253	768	1,876	25	7	20	546	394	660	105	5	0
Automotive/Aircraft/Boat Products: Unknown	234	217	72	13	116	201	7	2	2	90	36	68	24	1	0
Category Total:	13,133	12,275	3,122	1,474	6,361	11,038	927	146	73	4,229	2,670	2,877	713	183	10
Batteries															
Disc Batteries															
Disc Batteries: Alkaline (MNO2)	301	300	190	49	39	293	4	1	0	196	153	26	7	3	0
Disc Batteries: Lithium	185	109	43	25	32	67	24	0	16	86	31	21	18	3	0
Disc Batteries: Mercuric Oxide	3	3	1	0	2	3	0	0	0	1	1	0	0	0	0
Disc Batteries: Nickel Cadmium	4	4	2	0	2	4	0	0	0	0	1	0	0	0	0
Disc Batteries: Other	14	14	7	5	1	14	0	0	0	8	5	0	1	0	0
Disc Batteries: Silver Oxide	37	36	15	0	18	35	0	0	1	30	22	1	0	0	0
Disc Batteries: Unknown	3,160	3,122	2,187	586	273	3,054	55	2	1	2,211	1,416	145	45	7	0
Disc Batteries: Zinc-Air	73	69	31	4	30	69	0	0	0	52	40	2	1	0	0
Miscellaneous Batteries															
Automotive/Aircraft/Boat Batteries	825	806	60	80	527	798	1	3	3	220	95	263	64	1	0
Other Types of Battery	149	142	44	26	47	135	5	0	0	26	21	22	3	0	0
Penlight/Flashlight/Dry Cell Batteries	5,079	5,007	2,832	936	925	4,680	278	22	12	777	1,180	725	115	0	0
Unknown Types of Battery	68	66	20	12	20	61	4	0	0	7	10	15	5	0	0
Category Total:	9,898	9,678	5,432	1,723	1,916	9,213	371	28	33	3,614	2,975	1,220	259	14	0
Bites and Envenomations															
Aquatic															
Fish Stings	1,027	1,017	41	162	714	1,011	0	0	5	350	16	295	123	1	0
Jellyfish and Other Coelenterate Stings	785	781	97	379	251	779	1	0	1	118	7	228	50	2	1
Other or Unknown Marine Animal Bites and/or Envenomations	332	317	178	42	75	306	7	2	2	40	52	38	18	1	0
Exotic Snakes															
Exotic Snake: Unknown If Poisonous	7	7	0	1	5	7	0	0	0	6	0	4	1	0	0
Exotic Snakes: Non-Poisonous	68	66	4	17	38	66	0	0	0	32	3	18	6	0	0
Exotic Snakes: Poisonous	73	71	2	19	41	71	0	0	0	57	0	15	26	2	0
Insects															
Ant or Fire Ant Bites	1,585	1,526	548	220	615	1,505	5	10	6	144	35	332	89	2	0
Bee, Wasp, or Hornet Stings	7,984	7,890	1,554	1,421	4,129	7,883	2	0	4	804	59	2,318	428	13	0
Caterpillars	1,319	1,303	329	341	564	1,272	19	3	8	143	41	386	65	0	0
Centipede or Millipede Bites	1,323	1,313	195	215	735	1,307	2	1	0	122	35	373	37	0	0
Mosquito Bites	309	295	94	54	114	293	0	0	2	39	2	88	17	0	0
Other Insect Bites and/or Stings	10,694	10,525	2,222	1,651	5,200	10,378	35	79	11	1,635	292	1,994	583	15	0
Scorpion Stings	15,522	15,495	1,495	2,972	9,893	15,488	3	0	2	1,478	76	2,104	676	29	1
Tick Bites	1,921	1,891	430	334	873	1,888	1	2	0	360	66	286	46	1	0
Mammals															
Bat Bites	608	600	76	134	306	581	1	1	0	361	103	63	10	0	0
Cat Bites	840	838	89	167	461	838	0	0	0	541	8	246	51	0	0
Dog Bites	2,008	2,002	301	725	776	2,000	1	0	1	1,490	13	561	204	7	0
Fox Bites	12	12	0	0	9	12	0	0	0	8	2	1	0	0	0
Human Bites	39	36	6	4	21	27	0	8	0	21	0	5	4	0	0
Other Mammal Bites	857	850	95	188	388	834	2	4	0	446	46	181	18	1	1

(*Continued*)

Table 22A. Demographic profile of SINGLE-SUBSTANCE nonpharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Raccoon Bites	156	154	14	23	88	153	0	1	0	85	16	29	8	0	0
Rodent or Lagomorph Bites (Squirrels, Rats, Mice, Gerbils, Hamsters, Rabbits, etc.)	1,477	1,459	324	416	510	1,437	5	13	2	391	70	313	21	0	0
Skunk Bites	187	183	20	31	89	175	1	5	1	15	15	36	4	0	0
Miscellaneous Bites and Envenomations															
Other or Unknown Animal Bites	362	357	55	61	191	354	0	0	0	125	11	115	37	2	0
Other or Unknown Reptile Bites	722	706	242	237	184	682	11	2	8	129	53	190	22	0	0
Unknown Types of Insect or Spider Bite and/or Envenomation	4,308	4,272	738	698	2,513	4,247	7	8	2	578	44	499	168	2	0
Miscellaneous Snake Bites and Envenomations															
Unknown or Known Non-Poisonous Snake Bites	1,301	1,288	108	436	645	1,285	0	1	1	460	48	539	51	3	0
Unknown Types of Snake Envenomation	1,678	1,662	126	440	994	1,659	1	0	1	1,206	58	699	353	26	1
Snakes															
Copperhead Envenomations	1,287	1,268	50	227	931	1,262	4	0	1	1,176	12	377	678	30	0
Coral Envenomations	99	98	2	19	66	98	0	0	0	89	5	40	26	7	0
Cottonmouth Envenomations	189	185	8	24	143	183	1	0	0	160	5	62	73	6	0
Rattlesnake Envenomations	1,158	1,130	53	157	873	1,120	7	1	2	1,013	27	239	550	78	1
Unknown Crotalid Envenomations	516	511	23	129	339	511	0	0	0	465	10	158	240	14	0
Spiders															
Black Widow Spider Bites and/or Envenomations	2,524	2,511	202	349	1,750	2,503	3	3	1	996	114	630	396	18	0
Brown Recluse Spider Bites and/or Envenomations	1,564	1,545	116	191	1,026	1,534	2	2	6	515	41	353	244	11	0
Other Necrotizing Spider Bites and/or Envenomations	173	169	26	23	97	169	0	0	0	43	9	55	16	0	0
Other Spider Bites and/or Envenomations	8,085	8,041	939	1,379	4,763	8,017	5	5	2	1,491	138	1,826	495	6	0
Tarantula Bites and/or Envenomations	103	101	6	26	54	98	1	0	2	19	5	33	1	0	0
Category Total:	73,202	72,475	10,808	13,912	40,464	72,033	127	151	71	17,151	1,537	15,729	5,835	277	5
Building and Construction Products															
Insulation															
Asbestos	485	431	39	41	234	422	1	1	3	100	68	28	10	0	0
Fiberglass	937	887	378	151	259	857	10	9	10	94	92	178	25	0	0
Other Types of Insulation	111	106	36	8	42	102	1	0	2	22	9	22	3	0	0
Unknown Types of Insulation	490	456	270	39	121	439	8	2	6	38	68	59	15	0	0
Urea or Formaldehyde Insulations	13	13	3	2	6	12	1	0	0	6	1	6	1	0	0
Miscellaneous Building and Construction Products															
Caulking Compounds and Construction Putties	2,667	2,588	1,904	174	403	2,544	18	7	19	213	517	193	30	0	0
Cement or Concrete (Excluding Glues)	1,453	1,397	409	74	755	1,359	12	4	16	538	162	291	264	9	0
Other Types of Building or Construction Products	2,870	2,683	1,526	219	720	2,602	34	15	29	460	459	399	142	5	0
Soldering Flux	261	258	98	28	106	242	1	4	11	72	42	82	16	1	0
Unknown Types of Building or Construction Products	115	110	20	16	47	108	0	0	1	28	10	23	12	0	0
Category Total:	9,402	8,929	4,683	752	2,693	8,687	86	42	97	1,571	1,428	1,281	518	15	0
Chemicals															
Acids															
Hydrochloric Acid	2,539	2,115	143	416	1,277	2,033	39	16	18	783	189	723	260	7	1
Hydrofluoric Acid	859	748	32	33	588	731	6	1	6	608	82	262	200	7	0
Other Types of Acid	5,531	4,783	672	753	2,642	4,594	93	25	51	1,676	508	1,454	596	17	2
Unknown Types of Acid	240	208	15	30	135	196	1	8	3	89	11	54	38	2	0

(*Continued*)

Table 22A. Demographic profile of SINGLE-SUBSTANCE nonpharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Miscellaneous Chemicals															
Acetone (Excluding Nail Polish Removers)	1,151	966	347	115	418	883	43	12	12	285	167	196	47	2	0
Alkalis (Excluding Cleaning Agents, Bleaches, Batteries, and Detergents)	4,117	3,571	580	508	2,028	3,401	72	37	39	1,762	334	1,089	637	55	0
Ammonia (Excluding Cleaning Agents)	3,561	2,711	706	349	1,291	2,520	116	34	23	945	293	807	279	15	1
Borates or Boric Acid (Excluding Topicals and Pesticides)	2,796	2,539	1,239	266	840	2,359	92	40	35	414	594	242	48	3	0
Chlorates (Excluding Matches and Fireworks)	33	26	3	6	15	24	2	0	0	10	1	11	2	0	0
Cyanides (Excluding Rodenticides)	238	174	2	6	127	125	25	13	1	121	56	39	11	7	3
Dioxins	6	5	0	0	4	4	0	1	0	4	1	1	0	0	0
Ethylene Glycol (Excluding Automotive, Aircraft, or Boat Products)	797	611	47	49	418	334	207	25	3	398	74	84	75	107	14
Formaldehyde or Formalin	951	839	111	165	429	756	36	10	21	343	111	262	43	1	0
Ketones	489	403	130	23	211	382	8	1	11	196	72	130	47	2	0
Methylene Chloride (Excluding Paint Strippers)	258	219	51	38	104	215	3	0	1	78	34	57	22	2	0
Nitrates and Nitrites (Excluding Medications and Substances of Abuse)	1,417	1,311	445	477	315	1,168	108	22	7	247	285	177	40	11	1
Other Chemicals	12,979	11,170	4,295	1,784	3,970	10,133	433	211	334	2,524	2,095	1,889	647	35	2
Other Chemicals – Unknown If Toxic	88	82	67	3	10	77	0	4	1	8	10	2	4	0	0
Other Glycols (Excluding Automotive, Aircraft, or Boat Products)	1,035	847	397	81	259	779	35	8	18	245	170	158	44	2	0
Phenol or Creosotes (Excluding Disinfectants)	374	346	32	32	212	333	3	1	3	156	30	103	46	2	0
Strychnine (Excluding Rodenticides)	40	34	14	3	14	23	6	3	2	14	8	4	1	1	0
Toluene Diisocyanate	642	601	155	69	296	575	13	5	7	147	69	113	27	0	0
Unknown Chemicals	4,220	3,927	987	577	1,724	3,232	138	291	158	1,330	528	864	306	28	1
Category Total:	44,361	38,236	10,470	5,783	17,327	34,877	1,479	768	754	12,383	5,722	8,721	3,420	306	25
Cleaning Substances (Household)															
Automatic Dishwasher Detergents															
Automatic Dishwasher Detergents: Granules	3,600	3,537	3,015	90	335	3,502	14	15	5	118	1,008	459	20	1	0
Automatic Dishwasher Detergents: Liquids	3,437	3,390	2,953	78	301	3,369	14	4	3	131	1,050	429	21	0	0
Automatic Dishwasher Detergents: Tablets	1,866	1,854	1,742	33	63	1,843	3	4	3	67	565	245	1	0	0
Automatic Dishwasher Rinse Agents	1,062	1,026	890	19	82	1,017	7	1	1	91	208	198	11	0	0
Other or Unknown Types of Automatic Dishwasher Detergent	7,322	7,267	6,804	109	274	7,240	9	13	3	232	2,005	1,120	22	1	0
Bleaches															
Bleaches: Borates	280	247	147	15	71	236	4	2	2	37	49	46	5	0	0
Bleaches: Hypochlorite (Liquid and Dry)	37,890	32,429	14,145	3,119	12,735	30,239	1,396	398	273	6,128	5,277	8,612	990	23	2
Bleaches: Non-Hypochlorite	479	417	192	33	154	387	16	1	11	64	70	116	12	0	0
Bleaches: Other or Unknown (Household)	437	352	156	33	135	324	17	8	1	92	45	82	24	1	0
Cleansers															
Anionic or Nonionic Cleansers	2,284	2,104	1,664	100	265	2,049	32	9	11	176	463	242	27	0	0
Other or Unknown Types of Household Cleanser	1,702	1,517	854	124	428	1,422	53	21	12	341	316	309	51	1	0
Disinfectants															
Disinfectants: Hypochlorite (Non-Bleach Products)	14,650	12,331	4,813	1,403	4,827	11,416	553	182	144	2,554	1,668	3,022	488	7	1
Disinfectants: Other or Unknown	7,563	7,162	4,858	700	1,272	6,860	171	61	55	664	1,543	1,292	102	6	0
Disinfectants: Phenol	1,550	1,516	951	253	261	1,403	67	42	3	138	361	208	25	3	0
Disinfectants: Pine Oil	4,060	3,717	2,274	258	1,031	3,457	173	48	16	662	1,124	796	76	8	0

(*Continued*)

Table 22A. Demographic profile of SINGLE-SUBSTANCE nonpharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Drain Cleaners															
Drain Cleaners: Acids	57	40	7	1	26	40	0	0	0	12	5	8	7	0	0
Drain Cleaners: Alkalis	3,861	3,217	561	245	1,954	2,972	170	30	30	972	502	827	360	30	3
Drain Cleaners: Hydrochloric Acid	345	179	22	22	112	162	11	0	6	31	52	70	10	0	1
Drain Cleaners: Other or Unknown	780	616	113	62	335	580	22	3	8	166	82	145	59	6	0
Drain Cleaners: Sulfuric Acid	432	345	36	25	218	332	5	1	6	137	31	91	74	5	0
Fabric Softeners/Antistatic Agents															
Fabric Softener/Antistatic Agent: Other or Unknown	9	9	9	0	0	9	0	0	0	1	3	0	0	0	0
Fabric Softeners/Antistatic Agents: Aerosol or Spray	172	163	147	3	10	160	1	1	1	5	33	16	0	0	0
Fabric Softeners/Antistatic Agents: Dry or Powder	6	6	6	0	0	6	0	0	0	2	0	0	0	0	0
Fabric Softeners/Antistatic Agents: Liquid	1,044	978	783	43	132	951	10	2	15	86	223	106	5	0	0
Fabric Softeners/Antistatic Agents: Solid or Sheet	553	540	459	24	44	530	4	2	4	13	84	35	1	0	0
Glass Cleaners															
Glass Cleaners: Ammonia Containing	4,324	3,925	3,265	269	329	3,783	97	35	8	255	904	486	23	2	0
Glass Cleaners: Anionics or Nonionics	197	177	124	16	32	167	4	4	0	13	42	26	1	0	0
Glass Cleaners: Isopropanol	3,146	2,894	2,276	223	331	2,792	72	19	3	229	692	327	17	0	0
Glass Cleaners: Other or Unknown Types of Household	1,571	1,409	1,096	110	161	1,335	53	12	5	148	335	165	11	1	0
Hand Dishwashing															
Anionic or Nonionic Hand Dishwashing Detergents	5,498	5,060	3,294	376	1,179	4,844	85	73	49	310	577	922	46	2	1
Other or Unknown Types of Household Hand Dishwashing Detergent	3,329	3,073	1,902	242	768	2,916	61	62	29	144	371	440	24	0	0
Laundry Additives															
Enzyme and/or Microbiological Laundry Additives	100	90	52	3	27	89	1	0	0	22	14	25	5	0	0
Laundry Bluing and/or Brightening Agents (without Detergent)	45	41	19	7	9	40	1	0	0	5	6	6	0	0	0
Laundry Detergent Boosters	49	36	21	2	11	34	2	0	0	2	11	6	0	0	0
Other or Unknown Laundry Additives or Miscellaneous Products	2,617	2,448	2,054	147	206	2,370	38	29	9	168	529	301	19	0	0
Water Softeners	52	48	21	5	13	46	0	1	0	4	7	6	0	0	0
Laundry Detergents															
Laundry Detergents: Granules	4,121	3,919	3,165	173	472	3,835	59	8	15	474	781	754	50	1	0
Laundry Detergents: Liquids	4,945	4,724	3,529	261	770	4,587	98	19	16	561	814	1,012	69	5	1
Laundry Detergents: Other or Unknown Types of Household Laundry Detergent and/or Fabric Cleaner	134	116	71	11	25	106	4	4	2	24	18	21	8	0	0
Laundry Detergents: Soaps	79	71	46	6	15	68	1	1	1	10	15	10	4	0	0
Laundry Prewash/Stain Removers															
Laundry Prewash/Stain Removers: Aerosol or Spray Solvent Based	391	374	326	19	21	370	1	1	2	70	57	78	20	0	0
Laundry Prewash/Stain Removers: Aerosol or Spray Surfactant Based	292	282	264	3	12	281	0	1	0	62	53	54	12	0	0
Laundry Prewash/Stain Removers: Dry Solvent Based	1	1	1	0	0	1	0	0	0	1	1	0	0	0	0
Laundry Prewash/Stain Removers: Dry Surfactant Based	109	109	96	3	5	108	1	0	0	8	21	8	3	0	0
Laundry Prewash/Stain Removers: Liquid Solvent Based	965	917	725	38	112	902	7	4	3	133	292	148	16	0	0
Laundry Prewash/Stain Removers: Liquid Surfactant Based	2,878	2,763	2,461	88	162	2,731	20	4	7	375	520	467	78	3	0

(*Continued*)

Table 22A. Demographic profile of SINGLE-SUBSTANCE nonpharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Laundry Prewash/Stain Removers: Other or Unknown	2,621	2,519	2,024	120	310	2,475	25	5	12	263	531	545	42	1	0
Laundry Prewash/Stain Removers: Other or Unknown Solvent Based	113	105	88	1	13	102	1	1	1	22	20	23	4	0	0
Laundry Prewash/Stain Removers: Other or Unknown Surfactant Based	95	91	85	1	4	91	0	0	0	7	12	11	2	0	0
Miscellaneous Cleaners															
Miscellaneous Cleaning Agents: Acids	1,974	1,722	1,060	87	471	1,667	23	11	18	327	434	399	85	1	0
Miscellaneous Cleaning Agents: Alkalis	9,514	8,707	5,786	535	2,044	8,376	182	69	63	1,425	1,890	1,489	299	9	0
Miscellaneous Cleaning Agents: Anionics or Nonionics	7,364	6,729	4,833	419	1,217	6,497	103	48	66	775	1,376	1,102	109	4	0
Miscellaneous Cleaning Agents: Cationics	2,647	2,464	1,314	227	697	2,231	109	92	26	485	575	508	76	0	0
Miscellaneous Cleaning Agents: Ethanol (Excluding Automotive Products)	612	594	442	75	68	574	10	8	2	42	137	62	5	0	0
Miscellaneous Cleaning Agents: Glycols (Excluding Automotive Products)	858	806	511	86	170	772	21	6	7	117	171	145	17	1	1
Miscellaneous Cleaning Agents: Isopropanol (Excluding Automotive Products and Glass)	1,918	1,865	1,127	473	199	1,734	87	31	9	206	466	280	23	0	0
Miscellaneous Cleaning Agents: Methanol (Excluding Automotive Products)	17	17	5	1	9	17	0	0	0	5	4	7	0	0	0
Miscellaneous Cleaning Agents: Other or Unknown Household Cleaning Agents	5,308	4,819	3,220	417	932	4,587	101	68	46	714	1,128	906	119	3	0
Miscellaneous Cleaning Agents: Phenol (Excluding Disinfectants)	5	5	3	1	1	5	0	0	0	0	1	1	0	0	0
Miscellaneous Cleaning Substances (Household)															
Ammonia Cleaners (All Purpose)	1,346	999	365	103	441	936	46	8	7	196	162	227	44	4	0
Carpet, Upholstery, Leather, or Vinyl Cleaners	5,617	5,271	4,148	220	742	5,162	46	15	44	651	1,123	877	88	5	0
Hydrofluoric Acid or Bifluoride Wheel Cleaners	78	77	23	6	45	75	2	0	0	57	10	32	14	0	0
Starches, Fabric Finishes, or Sizing	521	508	434	22	44	496	8	1	3	18	97	45	1	1	0
Oven Cleaners															
Oven Cleaners: Acids	10	8	2	1	3	8	0	0	0	3	2	3	1	0	0
Oven Cleaners: Alkalis	2,008	1,938	436	236	1,042	1,852	34	16	28	754	219	530	279	11	0
Oven Cleaners: Detergent Types	16	16	6	1	8	16	0	0	0	3	5	1	0	0	0
Oven Cleaners: Other or Unknown	387	365	84	56	182	338	12	8	6	116	41	87	31	2	0
Rust Removers															
Rust Removers: Acids Other Than Hydrofluoric Acid Types	691	609	246	35	278	586	15	7	0	150	128	161	40	2	0
Rust Removers: Alkalis	3	3	0	0	3	3	0	0	0	1	0	1	1	0	0
Rust Removers: Hydrofluoric Acid	315	295	43	13	214	269	10	7	8	134	63	134	35	0	0
Rust Removers: Other or Unknown	176	152	23	13	88	139	2	1	9	40	18	42	22	0	0
Spot Removers/Dry Cleaning Agents															
Spot Removers/Dry Cleaning Agents: Anionics or Nonionics	200	184	156	7	19	181	1	1	1	19	52	24	4	0	0
Spot Removers/Dry Cleaning Agents: Glycols	362	342	233	26	54	335	3	0	4	43	104	64	4	0	0
Spot Removers/Dry Cleaning Agents: Isopropanol	42	41	28	2	9	41	0	0	0	9	8	9	3	0	0
Spot Removers/Dry Cleaning Agents: Other Halogenated Hydrocarbon Containing Products	46	45	23	8	11	44	0	0	0	12	9	9	4	0	0

(*Continued*)

Table 22A. Demographic profile of SINGLE-SUBSTANCE nonpharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Spot Removers/Dry Cleaning Agents: Other Hydrocarbon and/or Non-Halogenated Containing	564	520	259	47	174	501	7	4	7	132	111	148	21	1	0
Spot Removers/Dry Cleaning Agents: Other or Unknown	146	136	100	6	24	134	1	0	1	27	33	23	7	0	0
Spot Removers/Dry Cleaning Agents: Perchloroethylene	25	24	18	3	2	22	0	2	0	7	9	5	2	0	0
Toilet Bowl Cleaners															
Toilet Bowl Cleaners: Acids	6,346	4,301	1,787	399	1,774	4,119	132	12	27	775	953	1,540	227	13	2
Toilet Bowl Cleaners: Alkalis	3,015	2,668	1,784	121	611	2,607	45	4	12	370	807	508	70	3	0
Toilet Bowl Cleaners: Other or Unknown	2,582	2,305	1,766	78	362	2,246	37	2	12	246	573	256	40	3	0
Wall/Floor/Tile Cleaners															
Wall/Floor/Tile/All-Purpose Cleaning Agents: Acids	2,650	2,311	1,563	134	515	2,235	35	13	26	397	640	557	64	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Alkalis	7,935	7,037	4,839	421	1,455	6,771	162	42	48	1,113	1,655	1,366	222	6	1
Wall/Floor/Tile/All-Purpose Cleaning Agents: Anionics or Nonionics	7,446	6,753	4,246	516	1,685	6,434	223	49	31	1,138	1,433	1,120	111	3	1
Wall/Floor/Tile/All-Purpose Cleaning Agents: Cationics	2,767	2,452	1,634	197	489	2,337	72	18	18	328	476	458	51	1	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Ethanol	237	217	180	15	17	206	2	6	3	9	44	24	0	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Glycols	2,082	1,851	1,465	95	234	1,803	28	9	8	143	476	276	21	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Isopropanol	700	643	545	28	57	628	7	2	6	48	177	100	5	0	0
Wall/Floor/Tile/All-Purpose Cleaning Agents: Other or Unknown	1,571	1,429	952	81	312	1,360	31	8	22	216	379	262	44	1	0
Category Total:	213,214	191,379	120,295	14,127	46,754	182,923	4,980	1,699	1,343	27,481	39,379	38,103	5,034	181	14
Cosmetics/Personal Care Products															
Dental Care Products															
False Teeth Cleaning Agents	1,573	1,550	301	70	1,047	1,499	36	5	5	78	297	115	7	0	0
Other Dental Care Products (Excluding Fluoride Supplements)	5,627	5,528	2,689	946	1,548	5,304	97	7	113	219	850	465	23	0	0
Toothpastes (with Fluoride)	23,468	22,910	20,610	956	1,085	22,165	246	106	386	383	4,395	1,119	43	1	0
Toothpastes (without Fluoride)	2,309	2,209	1,959	85	142	2,134	13	5	56	31	378	101	4	0	0
Hair Care Products															
Curl Activators	55	52	38	3	10	50	2	0	0	10	17	9	3	0	0
Hair Coloring Agents (Excluding Peroxides)	2,572	2,489	1,002	227	1,015	2,077	26	4	378	495	421	578	153	0	0
Hair Oils	369	364	313	20	27	362	1	0	1	66	67	56	10	0	0
Hair Relaxers (with Other Alkalines)	610	601	476	30	77	586	2	1	12	277	165	195	64	2	0
Hair Relaxers (with Other Non-Alkalines)	83	80	65	2	8	75	1	0	4	30	27	20	3	0	0
Hair Relaxers (with Sodium Hydroxide)	763	747	536	40	137	713	7	0	24	359	148	237	96	5	0
Hair Rinses, Conditioners, Relaxers	2,289	2,182	1,859	120	175	2,124	33	5	18	160	433	213	27	0	0
Hair Sprays	1,976	1,783	1,230	173	309	1,580	180	9	11	264	405	286	42	0	1
Other Hair Care Products (Excluding Peroxides)	3,249	3,123	2,251	218	514	2,956	53	3	108	429	552	434	95	5	0
Permanent Wave Solutions	312	305	187	24	73	285	4	0	16	110	56	91	32	0	0
Shampoos	6,863	6,512	5,159	464	732	6,263	178	13	51	487	942	991	71	1	0
Miscellaneous Cosmetics/Personal Care Products															
Baby Oils	2,291	2,233	2,045	57	96	2,200	19	5	7	161	516	208	17	1	0
Bath Oils and/or Bubble Baths	3,895	3,817	3,468	197	119	3,753	31	2	29	144	665	318	17	0	0
Creams, Lotions, and Make-Up	28,088	27,248	23,636	1,168	2,003	26,617	230	46	333	757	4,082	1,262	93	4	0
Deodorants	24,682	24,419	22,258	1,105	877	23,813	285	65	241	603	3,416	1,478	83	2	0
Depilatories	1,355	1,323	365	255	575	897	62	10	354	275	123	314	132	3	0
Douches	159	156	131	5	16	151	3	0	2	8	36	7	1	0	0

(*Continued*)

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	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Eye Products	1,475	1,399	1,210	45	104	1,366	6	3	24	51	204	66	14	0	0
Lipsticks and Lip Balms (with Camphor)	1,001	975	877	56	31	953	8	1	10	26	201	67	0	0	0
Lipsticks and Lip Balms (without Camphor)	4,442	4,278	4,035	156	71	4,214	23	3	34	63	540	133	11	0	0
Perfumes, Colognes, and Aftershaves	14,692	14,329	12,044	1,227	873	13,816	364	89	44	1,058	3,215	2,799	79	1	0
Peroxides	9,983	9,605	3,931	866	4,038	9,025	202	55	307	734	1,444	1,526	153	8	0
Powders Made of Material Other Than Talc	2,052	2,009	1,850	68	71	1,981	19	4	5	129	338	352	24	2	0
Powders Made of Talc	2,607	2,526	2,195	150	147	2,465	38	14	7	271	513	518	42	0	0
Soaps (Bar, Hand, or Complexion)	19,475	18,755	14,400	1,517	2,369	18,009	342	151	235	781	2,759	1,965	114	3	0
Suntan and/or Sunscreen Products	13,106	12,903	11,622	686	463	12,668	43	20	168	458	1,728	1,699	79	1	0
Mouthwashes															
Mouthwashes: Ethanol Containing	10,963	10,331	3,580	2,073	3,912	8,985	1,213	66	46	1,193	1,783	1,069	246	12	0
Mouthwashes: Fluoride Containing	6,002	5,937	4,276	1,278	327	5,872	36	1	23	54	1,114	119	3	0	0
Mouthwashes: Non Ethanol Containing	1,108	1,052	516	218	270	999	42	1	9	59	202	71	10	0	0
Mouthwashes: Unknown	189	178	61	43	53	166	7	1	3	18	33	12	4	0	0
Nail Products															
Acrylic Nail Adhesives	1,295	1,281	529	360	339	1,237	28	7	8	425	132	339	85	2	0
Acrylic Nail Primers	247	233	195	9	22	231	0	1	1	74	53	55	15	1	0
Acrylic Nail Removers	53	49	26	3	17	44	0	0	5	11	8	12	1	0	0
Miscellaneous Nail Products	1,123	1,077	720	50	255	1,052	12	1	10	190	232	214	42	0	0
Nail Polish Removers (Acetone Containing)	2,347	2,289	1,726	190	319	2,215	50	18	6	255	593	367	24	1	0
Nail Polishes	10,667	10,364	9,460	455	336	10,261	75	12	11	534	1,878	1,135	42	0	0
Other Nail Polish Removers	1,356	1,328	1,028	128	144	1,286	28	7	7	122	363	223	13	2	0
Unknown Nail Polish Removers	7,713	7,434	5,351	735	1,114	7,200	161	48	16	815	1,748	1,050	61	1	0
Category Total:	224,484	217,963	170,210	16,478	25,860	209,649	4,206	789	3,128	12,667	37,072	22,288	2,078	58	1
Deodorizers															
Air Freshener															
Air Fresheners: Aerosols	2,774	2,694	2,010	347	262	2,579	69	33	9	237	472	509	34	4	0
Air Fresheners: Liquids	9,102	9,010	8,140	383	394	8,895	76	29	5	704	2,157	1,482	73	0	0
Air Fresheners: Solids	5,048	5,012	4,566	160	223	4,971	25	10	5	254	1,131	470	14	2	0
Air Fresheners: Unknown Form	2,367	2,340	2,005	157	139	2,285	33	7	12	184	592	358	22	0	1
Miscellaneous Deodorizers															
Diaper Pail Deodorizers (Excluding Moth Repellents)	16	16	13	1	1	16	0	0	0	0	3	1	0	0	0
Other Types of Deodorizer (Not For Personal Use)	4,465	4,307	3,268	242	655	4,173	70	21	41	486	999	676	54	1	0
Toilet Bowl Deodorizers	555	533	440	29	53	521	8	2	2	67	147	65	4	2	0
Unknown Types of Deodorizer (Not for Personal Use)	70	66	45	7	12	62	2	2	0	13	18	9	2	0	0
Category Total:	24,397	23,978	20,487	1,326	1,739	23,502	283	104	74	1,945	5,519	3,570	203	9	1
Dyes															
Miscellaneous Dyes															
Dyes: Fabrics	464	451	333	63	33	433	4	5	7	31	109	19	2	0	0
Dyes: Foods (Including Easter Egg)	1,247	1,194	983	153	44	1,146	33	2	13	28	183	50	2	0	0
Dyes: Leathers	110	107	80	11	10	107	0	0	0	10	31	1	0	0	0
Dyes: Other	596	549	245	189	85	512	6	5	25	68	85	38	14	10	0
Dyes: Unknown	81	77	46	10	10	65	1	2	8	14	11	8	2	0	0
Category Total:	2,498	2,378	1,687	426	182	2,263	44	14	53	151	419	116	20	10	0
Essential Oils															
Miscellaneous Essential Oil															
Cinnamon Oil	530	483	303	103	63	388	60	10	25	35	48	192	9	0	0
Clove Oil	491	463	320	27	98	429	10	2	20	86	131	93	8	0	0
Eucalyptus Oil	502	476	289	35	116	449	16	4	7	113	134	90	20	2	0
Miscellaneous Essential Oils	6,819	6,651	5,746	287	495	6,555	40	19	36	562	1,560	1,079	65	3	0

(*Continued*)

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	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Pennyroyal Oil	24	21	3	1	15	11	8	1	1	7	4	1	0	1	0
Tea Tree Oil	1,090	1,035	673	83	235	968	23	2	42	162	293	157	30	1	0
Category Total:	9,456	9,129	7,334	536	1,022	8,800	157	38	131	965	2,170	1,612	132	7	0
Fertilizers															
Miscellaneous Fertilizers															
Household Plant Foods (Generally for Indoor Plants)	2,436	2,343	1,435	261	534	2,300	18	13	10	89	444	88	7	0	0
Other Types of Fertilizer	1,880	1,702	1,110	195	323	1,652	16	5	28	126	332	118	18	2	0
Outdoor Fertilizers	3,094	2,953	1,963	266	594	2,879	21	16	34	151	679	189	22	1	0
Plant Hormones	49	44	14	3	21	41	0	1	2	10	13	5	0	0	0
Unknown Types of Fertilizer	122	102	57	13	26	97	3	0	2	13	24	13	5	0	0
Category Total:	7,581	7,144	4,579	738	1,498	6,969	58	35	76	389	1,492	413	52	3	0
Fire Extinguishers															
Miscellaneous Fire Extinguisher															
Miscellaneous Fire Extinguishers	3,354	3,275	316	917	1,436	2,978	93	156	19	709	564	810	143	1	0
Category Total:	3,354	3,275	316	917	1,436	2,978	93	156	19	709	564	810	143	1	0
Food Products/Food Poisoning															
Bacterial Food Poisoning (Documented)															
Botulism	152	143	29	10	79	127	2	3	8	33	36	2	7	10	0
Other Types of Bacterial Food Poisoning (Salmonella, Shigella, Vibrio, Staphylococcus, Streptococcus, etc.)	853	804	189	116	387	726	3	56	18	136	89	115	37	1	1
Unknown Types of Bacterial Food Poisoning	11,127	10,973	1,585	1,580	6,248	10,297	19	116	508	1,157	757	2,124	520	11	0
Ichthyosarcotoxins															
Ciguatera Poisoning	176	168	7	15	129	156	0	0	12	103	5	46	54	5	0
Clupeotoxic Fish Poisoning	16	14	1	0	11	10	0	0	4	6	2	1	0	0	0
Other Types of Seafood Poisoning	111	103	10	15	61	74	1	3	25	32	5	25	16	1	0
Paralytic Shellfish Poisoning	147	133	3	20	94	108	1	0	24	32	6	31	19	2	0
Scombroid Fish Poisoning	199	190	13	16	132	138	1	0	50	38	3	67	19	2	0
Tetrodon Poisoning	138	134	12	44	64	128	4	1	1	33	11	32	11	1	1
Miscellaneous Food Products/Food Poisoning															
Capsicum Peppers (Exclude Non-Food)	4,982	4,881	855	946	2,412	3,940	120	45	767	306	91	1,969	148	0	0
Monosodium Glutamate (MSG)	111	101	12	9	64	29	0	1	69	18	6	18	10	0	0
Other Adverse Reactions to Food	2,706	2,552	642	385	1,029	1,003	49	114	1,364	438	131	646	191	7	0
Unknown Types of Suspected Food Poisoning	9,771	9,614	1,145	1,354	5,900	9,330	11	66	181	1,034	234	1,876	541	3	0
Category Total:	30,489	29,810	4,503	4,510	16,610	26,066	211	405	3,031	3,366	1,376	6,952	1,573	43	2
Foreign Bodies/Toys/Miscellaneous															
Miscellaneous Foreign Bodies/Toys/Miscellaneous															
Ashes	391	351	299	13	29	341	5	2	2	21	52	30	3	0	0
Bubble Blowing Solutions	5,089	5,047	4,740	229	61	4,998	33	9	7	124	672	739	22	1	0
Charcoals	487	452	368	25	43	437	7	2	6	15	85	25	0	0	0
Christmas ornaments	595	588	485	25	50	585	3	0	0	41	128	42	3	0	0
Coins	4,124	4,063	3,304	632	86	3,964	87	5	0	1,363	1,067	407	46	6	0
Desiccants	42,592	42,382	37,895	2,512	1,382	41,948	300	109	16	1,447	5,650	254	7	1	0
Feces/Urine	6,386	5,668	4,656	333	457	5,476	33	149	6	166	786	106	8	0	0
Glass	6,435	6,344	1,519	881	2,656	6,207	31	68	33	362	1,016	260	22	0	0
Glow Products	19,213	19,186	12,901	5,738	334	18,914	231	12	17	774	2,336	3,617	83	1	0
Incense (Punk)	297	289	234	13	26	278	7	1	3	25	46	27	0	1	0
Other Types of Foreign Body, Toy, or Miscellaneous Substance	25,268	24,179	16,403	3,755	2,884	23,298	437	226	164	2,130	4,107	1,070	157	4	0
Soil	2,444	2,116	1,775	133	168	2,077	20	3	15	68	310	109	14	0	0
Toys	9,910	9,839	7,635	1,917	197	9,675	110	21	26	700	1,530	624	31	3	0

(*Continued*)

Table 22A. Demographic profile of SINGLE-SUBSTANCE nonpharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Unknown Types of Foreign Body, Toy, or Miscellaneous Substance	914	896	663	135	67	869	11	10	3	69	144	62	7	0	0
Thermometers															
Thermometers: Mercury	3,646	3,628	1,076	1,081	904	3,566	40	6	12	241	757	36	3	0	0
Thermometers: Other	1,620	1,610	596	420	373	1,554	21	29	5	82	304	64	1	0	0
Thermometers: Unknown	712	707	243	197	206	703	3	1	0	49	50	3	5	0	0
Category Total:	130,123	127,345	94,792	18,039	9,923	124,890	1,379	653	315	7,677	19,040	7,475	412	17	0
Fumes/Gases/Vapors															
Miscellaneous Fumes/Gases/Vapors															
Carbon Dioxide	427	414	42	153	160	379	27	1	4	80	57	67	22	1	0
Carbon Monoxide	14,461	13,257	1,773	2,273	6,781	12,877	270	15	40	5,450	2,602	3,544	1,141	171	47
Chloramine Gas	809	786	35	90	584	760	24	1	0	174	84	269	97	0	0
Chlorine Gas	4,953	4,749	411	870	2,869	4,567	105	6	65	1,500	226	1,821	737	13	0
Chlorine Gas (When Household Acid is Mixed with Hypochlorite)	1,482	1,434	72	158	1,062	1,392	39	0	2	415	112	576	285	0	0
Hydrogen Sulfide (Sewer Gas)	1,193	1,076	118	78	530	1,058	6	0	10	323	207	253	85	11	2
Methane and Natural Gas	4,539	4,279	860	568	1,940	4,239	15	3	12	752	1,162	728	123	3	0
Other Types of Fume, Gas or Vapor	1,533	1,395	139	216	717	1,294	48	13	32	381	209	356	114	4	4
Polymer Fume Fever	10	10	2	0	7	10	0	0	0	0	5	1	1	0	0
Simple Asphyxiants	2,585	2,378	263	575	1,173	2,165	180	8	15	702	282	668	224	17	1
Unknown Types of Fume, Gas or Vapor	2,245	2,183	106	479	907	2,052	19	87	15	395	193	640	148	1	0
Category Total:	34,237	31,961	3,821	5,460	16,730	30,793	733	134	195	10,172	5,139	8,923	2,977	221	54
Heavy Metals															
Miscellaneous Heavy Metals															
Aluminum	1,145	1,057	589	85	279	1,023	9	16	6	64	135	40	12	0	0
Arsenic (Excluding Pesticides)	962	857	179	65	495	573	12	117	16	458	133	69	58	7	1
Barium, Soluble Salts	40	25	4	14	6	22	0	0	3	8	0	6	2	0	0
Cadmium	81	45	5	6	27	32	1	1	5	26	10	3	1	2	0
Copper	830	696	107	226	278	628	27	12	17	200	87	208	30	1	0
Fireplace Flame Colors	13	12	9	1	1	12	0	0	0	1	1	1	0	0	0
Gold	2	2	0	0	1	2	0	0	0	1	0	0	0	0	0
Lead	3,085	2,921	1,307	680	688	2,722	35	44	30	1,087	612	139	73	8	0
Manganese	59	34	5	11	13	30	2	0	1	16	3	7	2	1	0
Mercury (Other)	130	115	25	17	53	89	5	8	4	33	28	9	7	1	0
Mercury, Elemental (Excluding Thermometer)	2,283	2,207	266	541	948	1,973	102	47	36	520	498	80	30	5	2
Metal Fume Fever	725	683	39	69	501	637	30	2	13	184	19	190	77	3	0
Other Types of Heavy Metal	2,646	1,882	699	237	709	1,653	95	27	93	395	366	183	61	8	0
Thallium	25	23	5	2	10	13	0	6	1	10	4	1	4	0	0
Unknown Types of Heavy Metal	70	66	14	3	27	59	0	4	1	22	11	2	2	0	0
Category Total:	12,096	10,625	3,253	1,957	4,036	9,468	318	284	226	3,025	1,907	938	359	36	3
Hydrocarbons															
Miscellaneous Hydrocarbons															
Benzene	150	118	11	15	76	110	3	1	1	72	23	33	6	1	0
Carbon Tetrachloride	35	31	1	4	23	30	0	0	0	8	4	6	0	0	0
Diesel Fuels	1,333	1,275	194	94	759	1,216	44	3	9	279	166	440	51	3	0
Freon and Other Propellants	7,573	7,273	712	1,613	3,728	5,874	1,212	99	55	2,069	1,341	1,662	588	53	6
Gasolines	16,534	16,103	3,548	2,678	8,249	14,903	1,010	91	59	2,576	2,254	5,476	491	30	0
Kerosenes	1,277	1,209	580	126	405	1,133	52	16	3	352	237	343	56	2	0
Lamp Oils	1,837	1,816	1,416	64	287	1,778	26	7	4	592	471	459	137	20	1
Lighter Fluids and/or Naphtha	2,749	2,563	1,419	259	693	2,431	71	38	12	842	564	674	169	9	1
Lubricating Oils and/or Motor Oils	4,921	4,625	2,981	337	1,010	4,499	64	44	12	739	1,497	719	92	2	0
Mineral Seal Oil	26	24	18	2	4	23	1	0	0	5	8	4	1	0	0
Mineral Spirits	2,176	1,980	661	237	887	1,840	87	29	17	633	356	541	137	7	1
Other Types of Halogenated Hydrocarbon	447	393	98	39	210	371	9	6	5	145	41	142	47	0	1

(*Continued*)

Table 22A. Demographic profile of SINGLE-SUBSTANCE nonpharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Other Type of Hydrocarbon	5,172	4,826	2,392	475	1,556	4,581	138	47	47	1,243	1,181	1,128	210	8	0
Toluene and/or Xylene (Excluding Adhesives)	922	758	135	76	451	691	52	4	6	325	104	239	73	5	1
Turpentine	490	428	147	42	202	373	46	6	1	152	91	92	20	1	0
Unknown Types of Hydrocarbon	715	628	252	87	234	552	60	12	4	225	131	160	45	3	0
Category Total:	46,357	44,050	14,565	6,148	18,774	40,405	2,875	403	235	10,257	8,469	12,118	2,123	144	11
Industrial Cleaners															
Miscellaneous Industrial Cleaners															
Industrial Cleaner: Disinfectants	2,850	2,707	270	316	1,666	2,496	171	22	13	895	269	927	307	10	0
Industrial Cleaner: Other or Unknown	1,527	1,378	329	161	720	1,280	45	32	14	600	179	483	142	1	0
Industrial Cleaners: Acids	1,458	1,272	402	82	638	1,189	47	13	19	359	221	341	85	6	1
Industrial Cleaners: Alkalis	2,827	2,624	730	299	1,335	2,484	82	28	24	1,284	320	897	381	26	1
Industrial Cleaners: Anionics or Nonionics	939	828	429	85	263	788	25	8	6	169	130	191	26	1	0
Industrial Cleaners: Cationics	894	839	187	123	435	766	49	11	8	317	123	287	54	0	0
Category Total:	10,495	9,648	2,347	1,066	5,057	9,003	419	114	84	3,624	1,242	3,126	995	44	2
Information Calls															
Food Information Calls															
Information Calls About Food Products, Additives or Supplements	12,919	11,413	6,961	1,538	2,192	9,679	541	248	898	1,030	1,498	1,182	221	11	0
Information Calls About Possibly Spoiled Foods	17,981	17,564	5,143	2,866	7,320	16,507	52	359	618	772	2,157	1,169	188	2	0
Miscellaneous Information Calls															
Administrative Information	1	1	0	0	1	1	0	0	0	0	0	1	0	0	0
Drug Information	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Medical Information	2	2	1	0	1	1	0	0	1	1	0	0	0	1	0
Poison Information	4	4	2	0	1	4	0	0	0	1	2	1	0	0	0
Category Total:	30,908	28,984	12,107	4,404	9,515	26,192	593	607	1,517	1,804	3,657	2,353	409	14	0
Lacrimators															
Miscellaneous Lacrimators															
Lacrimators: Capsicum Defense Sprays	4,009	3,979	635	1,455	1,272	2,917	182	700	45	534	147	1,831	112	2	0
Lacrimators: CN (Chloroacetophenone)	1,066	1,054	171	307	429	743	46	203	14	182	52	452	86	1	0
Lacrimators: CS (O-Chlorobenzylidene Malonitrile)	43	43	3	5	22	41	2	0	0	21	9	12	10	0	0
Lacrimators: Other	23	20	1	2	14	19	1	0	0	11	1	8	1	0	0
Lacrimators: Unknown	274	255	43	65	111	196	5	43	5	58	11	111	7	1	0
Category Total:	5,415	5,351	853	1,834	1,848	3,916	236	946	64	806	220	2,414	216	4	0
Matches/Fireworks/Explosives															
Miscellaneous Matches/Fireworks/Explosives															
Explosives	273	257	158	43	42	234	14	6	3	62	54	37	10	1	0
Fireworks	720	714	606	66	31	700	8	3	2	72	215	62	11	0	0
Matches	741	726	656	31	30	717	6	3	0	25	161	9	1	0	0
Other Types of Match, Firework, or Explosive	56	53	36	12	5	51	1	0	1	10	16	13	4	1	0
Unknown Types of Match, Firework, or Explosive	6	6	5	0	1	6	0	0	0	0	1	0	0	0	0
Category Total:	1,796	1,756	1,461	152	109	1,708	29	12	6	169	447	121	26	2	0
Mushrooms															
Miscellaneous Mushrooms															
Group 1 Mushrooms: Cyclopeptides	42	42	5	4	28	30	10	0	2	32	9	5	10	6	3
Group 1A Mushrooms: Cyclopeptides Orellanine	4	4	3	0	1	4	0	0	0	3	2	0	0	1	0
Group 2 Mushrooms: Muscimol (Ibotenic Acid)	42	37	11	6	19	19	17	0	0	27	8	7	10	4	0

(*Continued*)

Table 22A. Demographic profile of SINGLE-SUBSTANCE nonpharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Group 3 Mushrooms: Monomethylhydrazine (MMH)	39	35	6	2	21	30	0	0	4	16	7	6	4	0	0
Group 4 Mushrooms: Muscarine and Histamine	42	41	4	4	29	27	8	0	5	25	4	13	14	0	0
Group 5 Mushrooms: Coprine	26	23	5	3	10	21	1	0	1	4	9	8	0	0	0
Group 6 Mushrooms: Hallucinogenics (Psilocybin and Psilocin)	758	574	28	308	189	82	479	4	7	429	37	92	248	9	0
Group 7 Mushrooms: Gastrointestinal Irritants	168	156	73	29	50	120	25	0	11	65	43	53	11	3	0
Mushrooms: Miscellaneous, Non-Toxic	190	170	73	17	69	133	6	2	26	43	50	37	11	0	0
Mushrooms: Other Potentially Toxic	95	89	56	12	20	78	3	0	8	27	24	11	5	0	0
Mushrooms: Unknown	4,628	4,473	2,880	772	708	3,831	544	9	70	1,696	1,998	506	252	16	1
Category Total:	6,034	5,644	3,144	1,157	1,144	4,375	1,093	15	134	2,367	2,191	738	565	39	4
Other/Unknown Nondrug Substances															
Miscellaneous Other/Unknown Nondrug Substances															
Other Non-Drug Substances	23,642	22,467	13,077	2,991	4,676	20,458	590	625	610	2,939	4,111	2,978	593	44	2
Unknown Substances Unlikely to be Drug Products	6,184	5,920	1,774	739	2,463	4,159	196	803	318	1,919	655	763	311	62	0
Category Total:	29,826	28,387	14,851	3,730	7,139	24,617	786	1,428	928	4,858	4,766	3,741	904	106	2
Paints and Stripping Agents															
Miscellaneous Paints and Stripping Agents															
Other Types of Paint, Varnish or Lacquer	477	424	154	47	183	409	7	1	7	95	65	88	24	0	0
Unknown Types of Paint, Varnish or Lacquer	7,095	6,729	4,641	478	1,280	6,561	87	24	49	703	1,047	506	110	4	0
Varnishes and Lacquers	1,248	1,155	364	100	509	1,112	14	5	23	203	177	255	56	0	0
Paints															
Anti-Algae Paints	30	28	2	2	19	27	0	0	1	5	0	11	1	0	0
Anti-Corrosion Paints	62	55	16	9	26	47	1	0	6	17	9	18	5	1	0
Oil-Base Paints	2,650	2,491	676	561	1,018	2,241	172	22	48	541	352	561	112	10	0
Water Base Paints (Acrylic, Latex, etc.)	4,190	4,099	3,179	254	535	4,014	32	6	42	279	737	292	30	1	0
Wood stains	745	706	320	65	256	682	7	3	12	85	123	126	10	2	0
Stripping Agents															
Methylene Chloride Stripping Agents	505	484	76	44	310	465	9	0	10	161	37	184	44	2	0
Other Types of Stripping Agent	618	584	157	58	311	565	10	1	7	233	59	185	73	4	0
Unknown Types of Stripping Agent	94	84	8	8	53	80	3	0	0	39	4	25	15	1	0
Category Total:	17,714	16,839	9,593	1,626	4,500	16,203	342	62	205	2,361	2,610	2,251	480	25	0
Pesticides															
Fumigants															
Aluminum Phosphide	35	32	0	2	18	31	1	0	0	24	3	16	7	0	0
Methyl Bromide	8	6	0	2	4	3	0	0	3	3	3	3	0	0	0
Other Fumigants	32	30	1	4	17	27	1	0	2	8	4	5	4	0	0
Sulfuryl Fluoride	163	151	31	14	90	146	1	1	3	18	16	16	1	1	0
Unknown Fumigants	83	76	4	5	46	73	2	0	1	23	2	12	11	0	0
Fungicides (Non-medicinal)															
Carbamate Fungicides	178	128	29	20	62	116	4	4	3	45	28	19	6	2	0
Copper Compound Fungicides	55	47	5	0	33	45	1	0	1	9	5	13	1	0	0
Mercurial Fungicides	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0
Non-Mercurial Fungicide	3	1	0	0	1	1	0	0	0	0	0	0	0	0	0
Other Types of Non-Medicinal Fungicide	805	656	132	62	375	628	6	6	16	107	116	142	15	2	0
Other/Unknown Type of Non-Medicinal Fungicide	4	3	2	1	0	3	0	0	0	0	0	0	0	0	0
Phthalimide Fungicides	83	32	18	5	8	32	0	0	0	5	5	5	0	0	0
Unknown Types of Non-Medicinal Fungicide	43	33	12	1	18	30	1	0	2	6	7	4	3	0	0
Wood Preservatives	218	208	26	12	148	199	3	1	4	36	21	30	7	0	0

(*Continued*)

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	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Herbicides (Including Algaecides, Defoliants, Desiccants, Plant Growth Regulators)															
2,4-D or 2,4,5-T	34	29	9	1	17	28	1	0	0	5	4	4	3	0	0
Carbamate Herbicides (Excluding Metam Sodium)	12	10	4	1	5	8	2	0	0	5	5	0	1	0	0
Chlorophenoxy Herbicides	2,134	1,883	520	127	1,037	1,788	23	6	57	345	446	384	63	6	0
Diquat	181	153	34	8	97	146	2	0	4	35	38	40	7	1	0
Glyphosate	4,268	3,921	1,081	283	2,195	3,711	44	24	129	671	878	1,019	84	2	5
Other Types of Herbicide	1,513	1,190	313	90	655	1,144	16	3	23	246	246	267	30	4	0
Paraquat	72	57	6	3	40	47	4	1	2	36	9	19	8	0	1
Paraquat and Diquat Combinations	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Triazine Herbicides	379	307	79	15	169	290	6	1	9	64	51	79	12	0	0
Unknown Types of Herbicide	364	288	73	38	135	260	4	7	16	63	37	47	18	1	0
Urea Herbicides	63	50	21	5	18	46	3	0	1	13	13	9	2	1	0
Insecticides (Including Insect Growth Regulators, Molluscicides, Nematicides)															
Carbamate Insecticides Alone	2,317	2,153	891	149	918	2,003	78	21	44	467	419	301	65	17	2
Carbamate Insecticides in Combination with Other Insecticides	327	320	77	26	164	303	7	2	5	46	51	61	16	0	0
Chlorinated Hydrocarbon Insecticides Alone	453	405	152	48	168	361	17	1	25	98	86	59	10	0	0
Chlorinated Hydrocarbon Insecticides in Combination with Other Insecticides	259	250	112	23	89	239	1	5	5	41	32	65	10	0	0
Insect Growth Regulators	136	79	46	5	22	75	0	1	3	12	14	6	2	0	0
Metaldehyde	229	223	68	10	121	214	3	1	4	31	49	34	5	0	0
Nicotine (Excluding Tobacco Products)	9	8	5	0	3	8	0	0	0	1	2	1	0	0	0
Organophosphate in Combo with Chlorinated Hydrocarbon (Fixed-Combo)	1	1	0	0	1	1	0	0	0	0	1	0	0	0	0
Organophosphate Insecticides Alone	3,620	3,274	1,002	296	1,540	3,079	88	18	72	824	712	732	164	21	3
Organophosphate Insecticides in Combination with Carbamate Insecticides	100	97	35	7	47	93	1	1	2	18	24	17	1	1	0
Organophosphate Insecticides in Combination with Non-Carbamate Insecticides	918	867	176	84	512	821	19	7	19	151	135	197	29	1	0
Organophosphate/Carbamate/Chlorinated Hydrocarbon (Fixed-Combo)	4	4	1	1	2	4	0	0	0	0	2	0	1	0	0
Other Types of Insecticide	9,632	9,059	4,538	683	3,045	8,762	82	19	180	773	1,800	1,053	118	7	1
Piperonyl Butoxide & Pyrethrins (without Carbamate or O.P.)	305	285	124	40	107	272	3	0	10	44	49	53	13	0	0
Pyrethrins	5,211	4,857	1,830	619	1,930	4,497	119	29	202	731	837	920	150	10	0
Pyrethrins Only (Alone)	104	104	36	10	52	102	1	0	1	13	10	9	4	0	0
Pyrethroids	22,620	21,480	5,919	2,199	11,063	20,057	506	140	734	3,293	3,508	5,184	732	26	0
Rotenone	78	73	10	6	46	70	0	0	3	14	5	24	1	0	0
Unknown Types of Insecticide	4,155	3,769	1,037	368	1,722	3,402	102	89	148	951	454	714	167	9	0
Veterinary Insecticide/Pesticide Product (For Pets-Flea Collars, etc.)	168	162	50	20	74	152	3	0	7	19	26	20	6	1	0
Miscellaneous Pesticides															
Arsenic Pesticides	279	275	190	14	58	272	0	2	1	20	94	8	1	0	0
Borates and/or Boric Acid Pesticides (Excluding Other Uses)	4,706	4,641	3,954	168	409	4,558	41	16	22	315	1,218	173	13	0	0
Metam Sodium	4	4	1	0	2	4	0	0	0	3	0	0	1	0	0
Repellents															
Animal Repellents	406	397	146	56	154	371	5	6	15	38	38	114	12	1	0
Insect Repellents (Exclude Lacrimators)	47	47	21	6	18	39	1	2	5	7	4	16	1	1	0
Insect Repellents with DEET	6,875	6,740	4,298	1,166	1,029	6,329	65	51	283	587	1,018	2,141	120	4	0
Insect Repellents without DEET	1,527	1,482	1,101	162	166	1,417	12	8	42	77	280	243	18	0	0

(*Continued*)

Table 22A. Demographic profile of SINGLE-SUBSTANCE nonpharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Naphthalene Moth Repellents (Excluding Deodorizing Products)	1,445	1,408	957	104	250	1,376	25	1	3	284	451	97	24	0	0
Other Types of Moth Repellent	5	5	3	0	2	4	1	0	0	2	2	1	0	0	0
Paradichlorobenzene Moth Repellents (Excluding Deodorizing Products)	127	124	84	3	30	118	3	1	2	15	24	9	1	0	0
Unknown Types of Moth Repellent	2,230	2,193	1,322	152	485	2,104	50	18	14	375	583	143	32	3	0
Rodenticides															
ANTU (1-naphthalenylthiourea)	7	7	1	6	0	3	0	1	3	1	1	4	0	0	0
Bromethalin Rodenticides	558	529	392	26	75	488	28	7	2	165	165	6	3	1	0
Cholecalciferol Rodenticides	14	12	10	0	2	11	1	0	0	5	2	2	0	0	0
Cyanide Rodenticides	2	2	0	0	1	2	0	0	0	2	0	1	0	0	0
Long-Acting Anticoagulant Rodenticides	11,146	10,873	9,546	329	793	10,462	311	69	19	2,971	3,313	135	28	15	0
Other Types of Rodenticide	691	669	476	56	101	641	15	9	1	70	190	36	7	4	0
Sodium Monofluoroacetate	5	5	2	0	3	5	0	0	0	1	2	2	0	0	0
Strychnine Rodenticides	93	76	12	5	40	46	9	16	1	30	17	3	2	3	0
Unknown Types of Rodenticide	1,467	1,350	937	62	241	1,173	101	51	8	544	358	50	18	2	1
Warfarin Type Anticoagulant Rodenticides	341	328	273	9	41	307	13	5	2	121	136	6	1	2	0
Zinc Phosphide Rodenticides	101	92	25	2	55	79	10	0	2	36	23	17	6	1	0
Category Total:	93,454	88,022	42,260	7,619	30,770	83,128	1,846	651	2,165	14,963	18,072	14,790	2,065	150	13
Photographic Products															
Miscellaneous Photographic Products															
Developers, Fixing Baths, Stop Baths	198	172	20	76	58	165	3	1	3	54	22	66	5	0	0
Other Types of Photographic Product	323	298	221	19	45	292	4	0	2	20	51	19	3	0	0
Photographic Coating Fluids	5	5	3	1	0	4	0	1	0	0	1	0	0	0	0
Unknown Types of Photographic Product	7	6	4	1	1	6	0	0	0	1	1	0	0	0	0
Category Total:	533	481	248	97	104	467	7	2	5	75	75	85	8	0	0
Plants															
Miscellaneous Plants															
Plants: Amygdalin and/or Cyanogenic Glycosides	3,223	3,120	1,991	583	426	2,925	100	11	81	149	614	116	12	1	0
Plants: Anticholinergics	1,040	940	362	362	188	505	409	1	13	501	169	80	292	21	0
Plants: Cardiac Glycosides (Excluding Drugs)	1,494	1,449	843	256	283	1,381	47	8	11	218	415	91	17	1	0
Plants: Colchicine	17	17	10	4	2	16	1	0	0	2	7	1	0	0	0
Plants: Depressants	283	245	146	37	49	196	35	2	9	26	50	16	4	0	0
Plants: Gastrointestinal Irritants (Excluding Oxalate Containing Plants)	9,773	9,406	6,877	1,080	1,167	8,911	290	16	170	761	1,844	830	153	5	0
Plants: Hallucinogenics (Code as Street Drug Unless Plant Part Involved)	497	427	147	153	99	225	183	7	11	151	75	62	69	0	0
Plants: Nicotine (Excluding Tobacco Products)	125	104	47	19	31	96	7	0	1	34	29	24	12	1	0
Plants: Non-Toxic	9,518	8,984	6,971	1,040	724	8,433	192	18	328	356	1,163	432	91	5	0
Plants: Other Toxic Types	5,024	4,756	3,403	730	474	4,439	214	6	91	419	1,146	296	80	9	1
Plants: Oxalates	7,210	7,078	5,719	798	462	6,827	184	16	44	348	1,536	1,151	56	2	0
Plants: Skin Irritants (Excluding Oxalate Containing Plants)	7,445	7,007	3,701	1,037	1,757	6,459	163	42	332	579	890	753	233	4	0
Plants: Solanine	1,906	1,790	908	210	533	1,696	35	2	54	247	420	200	33	5	0
Plants: Stimulants	180	161	59	38	53	140	14	1	5	21	60	17	9	2	0
Plants: Toxalbumins	206	195	72	34	73	166	20	2	4	80	61	36	6	2	0
Plants: Unknown Toxic Types or Unknown if Toxic	15,118	14,497	10,586	2,082	1,411	13,793	461	15	215	1,372	3,527	1,104	185	9	0
Category Total:	63,059	60,176	41,842	8,463	7,732	56,208	2,355	147	1,369	5,264	12,006	5,209	1,252	67	1
Polishes and Waxes															
Miscellaneous Polishes and Waxes															
Floor Waxes, Polishes, or Sealers	613	576	347	32	155	563	10	0	3	96	141	101	19	0	0
Furniture Polishes	2,280	2,181	1,877	90	185	2,135	27	12	7	239	719	289	31	4	0

(*Continued*)

Table 22A. Demographic profile of SINGLE-SUBSTANCE nonpharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Miscellaneous Polishes and Waxes (Excluding Mineral Seal Oils)	3,282	3,172	2,476	165	419	3,121	23	11	14	358	862	363	56	1	0
Category Total:	6,175	5,929	4,700	287	759	5,819	60	23	24	693	1,722	753	106	5	0
Radioisotopes															
Miscellaneous Radioisotopes															
Miscellaneous Non-Radiopharmaceutical Isotopes	286	264	28	28	139	226	6	6	19	80	40	23	6	0	0
Category Total:	286	264	28	28	139	226	6	6	19	80	40	23	6	0	0
Sporting Equipment															
Miscellaneous Sporting Equipment															
Fishing Baits	57	56	38	14	2	50	5	1	0	1	12	4	0	0	0
Fishing Products, Miscellaneous	12	10	7	0	3	9	0	0	1	0	3	1	0	0	0
Golf Balls (Including Liquid Center of Golf Balls)	14	14	2	5	6	14	0	0	0	3	0	5	1	0	0
Gun Bluing Compounds	39	36	15	3	17	31	4	0	1	14	7	12	1	0	1
Hunting Products, Miscellaneous	372	363	211	65	71	322	17	16	1	107	125	40	7	0	0
Other Types of Sporting Equipment	19	19	15	1	3	19	0	0	0	1	4	1	1	0	0
Category Total:	513	498	288	88	102	445	26	17	3	126	151	63	10	0	1
Swimming Pool/Aquarium															
Miscellaneous Swimming Pool/Aquarium															
Algicides	1,987	1,898	623	355	799	1,840	28	6	24	383	230	548	187	3	0
Aquarium Products, Miscellaneous	1,990	1,902	1,603	101	160	1,870	16	10	5	147	505	126	10	0	0
Bromine Shock Treatments	147	132	42	15	60	122	3	0	6	21	24	47	9	0	0
Chlorine Shock Treatments	3,531	3,354	562	869	1,652	3,246	37	5	61	875	217	1,411	421	8	0
Other Types of Swimming Pool or Aquarium Product	2,135	1,926	530	403	866	1,817	18	6	81	420	267	650	139	6	0
Swimming Pool and Aquarium Test Kits	236	208	161	17	24	203	5	0	0	24	61	16	5	0	0
Category Total:	10,026	9,420	3,521	1,760	3,561	9,098	107	27	177	1,870	1,304	2,798	771	17	0
Tobacco Products															
Miscellaneous Tobacco Products															
Chewing Tobacco	830	806	726	33	37	780	21	1	4	221	249	250	17	1	0
Cigarettes	5,876	5,691	5,295	105	219	5,579	58	23	22	978	1,989	1,101	67	1	0
Cigars	118	111	96	1	12	103	4	1	3	22	45	20	3	0	0
Filter Tips Only (i.e., Butts)	156	154	141	2	9	152	2	0	0	22	59	20	3	0	0
Other Types of Tobacco Product	97	85	47	9	16	75	5	1	4	12	19	11	4	0	0
Snuff	450	436	379	21	24	418	12	1	3	119	123	142	16	1	0
Unknown Types of Tobacco Product	829	786	626	30	99	720	27	7	26	190	228	161	24	1	0
Category Total:	8,356	8,069	7,310	201	416	7,827	129	34	62	1,564	2,712	1,705	134	4	0
Waterproofers/Sealants															
Miscellaneous Waterproofers/Sealants															
Waterproofers/sealants: aerosols	90	82	24	16	40	72	6	0	4	40	3	29	18	2	0
Waterproofers/sealants: liquids	13	12	3	1	8	12	0	0	0	2	2	7	1	0	0
Waterproofers/sealants: solids	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0
Waterproofers/sealants: unknown form	9	8	0	1	6	8	0	0	0	4	1	2	1	0	0
Category Total:	113	103	27	19	54	93	6	0	4	46	6	38	20	2	0
Weapons of Mass Destruction															
Miscellaneous Weapons of Mass Destruction															
Anthrax	10	9	0	0	6	6	0	3	0	2	1	0	0	0	0
Other Biological Weapons	63	54	8	6	36	44	1	3	3	11	4	6	1	1	0
Other Chemical Weapons	74	62	2	2	53	59	0	2	0	43	11	19	12	0	0
Other Suspicious Powders	10	10	0	0	7	7	0	2	0	2	3	0	0	0	0
Other Suspicious Substances (Non-Powder)	2	2	0	1	1	1	0	1	0	0	0	0	0	0	0
Suspicious Powders in Envelope or Package	19	18	0	2	8	12	0	5	0	7	5	4	1	0	0
Category Total:	178	155	10	11	111	129	1	16	3	65	24	29	14	1	0
Nonpharmaceuticals Total:	1,314,438	1,204,673	684,572	141,012	302,852	1,137,570	35,499	10,709	17,154	170,202	204,737	182,098	36,018	2,310	178

(*Continued*)

Table 22B. Demographic profile of SINGLE-SUBSTANCE pharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Analgesics															
Acetaminophen Alone															
Acetaminophen Alone, Adult	41,486	27,790	8,896	6,997	10,566	16,276	10,904	20	350	13,650	7,348	2,727	1,518	511	43
Acetaminophen Alone, Pediatric	32,063	29,432	27,318	1,877	162	29,065	224	11	100	3,666	6,820	283	42	15	3
Acetaminophen Alone, Unknown if Adult or Pediatric	7,296	4,664	1,789	1,075	1,561	2,714	1,792	4	48	2,454	1,211	445	349	130	8
Acetaminophen Combinations															
Acetaminophen in Combination with Other Drugs, Adult Formulations	23,479	14,155	3,182	3,310	6,847	5,553	8,132	16	305	8,498	3,007	2,912	1,833	214	5
Acetaminophen in Combination with Other Drugs, Pediatric Formulations	614	539	494	42	3	537	1	0	1	83	180	25	1	0	0
Acetaminophen with Codeine	4,646	2,532	738	571	1,060	1,394	837	3	278	1,135	613	462	132	16	0
Acetaminophen with Hydrocodone	26,166	11,726	2,201	1,803	6,724	5,517	5,208	52	764	5,698	2,591	1,990	767	171	21
Acetaminophen with Other Narcotics or Narcotic Analogs	1,778	804	146	120	500	365	379	3	52	450	163	114	76	19	2
Acetaminophen with Oxycodone	9,502	4,545	959	582	2,608	2,270	1,738	27	429	2,062	997	785	310	66	5
Acetaminophen with Propoxyphene	5,143	2,391	446	319	1,463	1,135	1,102	5	120	1,301	549	467	202	51	4
Acetylsalicylic Acid Alone															
Acetylsalicylic Acid Alone, Adult Formulations	7,208	4,153	1,733	1,021	1,272	2,335	1,709	1	81	2,077	1,027	505	515	61	8
Acetylsalicylic Acid Alone, Pediatric Formulations	867	569	431	94	34	511	42	0	16	98	176	11	10	0	0
Acetylsalicylic Acid Alone, Unknown if Adult or Pediatric Formulations	10,290	5,454	1,711	1,442	2,065	2,543	2,682	1	126	3,245	1,170	946	885	108	16
Acetylsalicylic Acid Combinations															
Acetylsalicylic Acid in Combination with Other Drugs, Adult Formulations	1,676	965	341	138	429	616	267	6	59	356	207	146	85	14	0
Acetylsalicylic Acid in Combination with Other Drugs, Pediatric Formulations	12	10	7	3	0	10	0	0	0	3	8	1	0	0	0
Acetylsalicylic Acid with Carisoprodol	103	54	3	6	42	15	36	0	2	39	5	22	6	3	0
Acetylsalicylic Acid with Codeine	122	67	14	6	43	26	37	0	3	44	17	18	14	0	0
Acetylsalicylic Acid with Other Narcotics or Narcotic Analogs	42	19	1	2	14	6	9	0	4	8	4	4	0	0	0
Acetylsalicylic Acid with Oxycodone	62	31	8	3	14	14	10	0	6	10	8	3	3	0	0
Acetylsalicylic Acid with Propoxyphene	13	4	0	1	3	3	1	0	0	2	1	0	0	0	0
Miscellaneous Analgesics															
Non-Aspirin Salicylates (Excluding Topicals and/or Gastrointestinal Drugs)	433	333	204	26	87	263	43	0	25	80	84	30	14	0	0
Other Analgesics	689	618	357	64	168	559	19	1	37	86	120	118	14	1	0
Phenacetin	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phenazopyridine	1,439	1,204	933	68	171	1,103	45	0	54	229	438	120	17	2	0
Salicylamide	6	5	3	0	1	5	0	0	0	1	2	0	0	0	0
Unknown Analgesics	214	92	24	26	26	42	44	0	4	52	16	15	7	0	0
Nonsteroidal Antiinflammatory Drugs															
Colchicine	379	230	52	14	154	166	16	2	45	112	47	47	21	5	0
Cyclooxygenase-2 Inhibitors	1,378	807	395	76	290	699	56	0	50	135	226	35	12	0	0
Ibuprofen	85,686	68,648	50,302	9,261	7,811	58,723	9,063	25	690	11,134	16,082	2,907	553	48	0
Ibuprofen with Hydrocodone	140	108	32	25	44	65	32	0	9	27	22	13	1	0	0
Indomethacin	603	372	108	43	188	239	75	0	55	106	76	48	11	2	0
Ketoprofen	125	66	31	8	23	47	16	0	3	21	24	3	1	0	0
Naproxen	12,827	7,881	2,877	1,688	2,890	5,115	2,280	4	441	2,377	1,942	849	173	12	1
Other Types of Nonsteroidal Antiinflammatory Drug	6,344	3,716	1,482	382	1,566	2,994	493	2	206	854	960	328	57	3	1
Unknown Types of Nonsteroidal Antiinflammatory Drug	12	7	4	0	2	5	0	0	2	0	2	0	0	0	0

(*Continued*)

Table 22B. Demographic profile of SINGLE-SUBSTANCE pharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Opioids															
Codeine	965	616	234	131	204	449	109	1	51	158	123	71	17	1	0
Meperidine	493	255	46	37	154	129	92	1	23	135	52	41	35	8	0
Methadone	4,770	2,177	276	221	1,416	805	1,088	83	132	1,466	251	384	448	178	20
Morphine	3,762	1,969	313	188	1,234	1,051	665	30	173	986	353	293	219	57	6
Other or Unknown Narcotics	9,639	5,344	1,428	488	2,885	2,671	1,880	113	563	3,130	802	1,191	778	241	15
Oxycodone Alone or in Combination (Excluding Combination Products with Acetaminophen or Acetylsalicylic Acid)	7,692	3,741	674	538	2,126	1,980	1,415	61	191	1,825	700	615	289	85	11
Pentazocine	113	71	10	6	46	28	25	1	15	36	14	11	7	3	0
Propoxyphene	330	131	25	12	81	68	52	0	9	64	27	26	14	3	1
Tramadol	9,623	5,172	979	731	3,057	2,236	2,478	35	351	3,101	1,172	1,015	779	149	1
Other Acetaminophen and Acetylsalicylic Acid Combinations															
Acetaminophen and Acetylsalicylic Acid with Other Ingredients	8,459	5,936	2,888	1,185	1,648	3,911	1,791	4	198	2,361	1,621	848	298	13	2
Acetaminophen and Acetylsalicylic Acid without Other Ingredients	374	251	121	42	77	174	62	0	11	75	69	28	16	2	0
Category Total:	329,064	219,654	114,216	34,672	61,759	154,432	56,949	512	6,082	73,430	51,327	20,902	10,529	2,192	173
Anesthetics															
Inhalation Anesthetics															
Nitrous Oxide	192	149	21	56	66	78	45	2	24	61	17	36	22	2	0
Other Types of Inhalation Anesthetic	132	91	7	8	58	70	10	3	3	55	13	26	10	2	0
Local and/or Topical Anesthetics															
Dibucaine	29	27	16	2	8	27	0	0	0	3	8	3	0	0	0
Lidocaine	1,631	1,433	671	173	483	1,247	71	3	105	326	356	183	55	12	0
Other or Unknown Local and/or Topical Anesthetic	6,110	5,815	4,104	457	1,023	5,382	136	12	278	771	1,899	643	84	15	0
Miscellaneous Anesthetics															
Ketamine and Analogs	114	55	11	6	29	17	25	2	8	46	3	10	24	2	0
Other Types of Anesthetic	33	24	11	2	9	20	1	1	2	8	5	8	2	0	0
Unknown Types of Anesthetic	9	7	3	1	1	4	0	0	1	0	1	2	0	0	0
Category Total:	8,250	7,601	4,844	705	1,677	6,845	288	23	421	1,270	2,302	911	197	33	0
Anticholinergic Drugs															
Miscellaneous Anticholinergic Drugs															
Anticholinergic Drugs (Excluding Cough and Cold Preparations, and Plants)	10,798	8,548	462	205	6,747	8,103	266	13	140	743	1,354	292	161	20	0
Category Total:	10,798	8,548	462	205	6,747	8,103	266	13	140	743	1,354	292	161	20	0
Anticoagulants															
Miscellaneous Anticoagulants															
Glycoprotein IIIa/IIb Inhibitors	8	8	0	1	5	5	0	0	3	7	2	2	2	0	0
Heparins	276	225	35	9	149	156	14	4	48	107	50	18	36	1	0
Other Antiplatelets	2,677	1,022	303	22	605	951	32	0	37	145	218	30	9	0	0
Other Types of Anticoagulant	47	39	21	0	16	32	2	0	5	29	16	5	1	1	1
Unknown Types of Anticoagulant	48	45	36	2	4	40	2	2	1	24	10	0	0	0	0
Warfarin (Excluding Rodenticides)	4,004	2,422	1,035	79	1,143	2,119	180	12	98	746	612	59	120	21	0
Category Total:	7,060	3,761	1,430	113	1,922	3,303	230	18	192	1,058	908	114	168	23	1
Anticonvulsants															
Miscellaneous Anticonvulsants															
Carbamazepine	4,351	2,330	551	363	1,297	1,242	802	5	214	1,517	389	619	437	69	0
Other Types of Anticonvulsant (Excluding Barbiturates)	27,270	12,382	3,637	2,340	5,665	7,941	3,599	33	706	5,511	3,306	2,292	968	96	0
Phenytoin	3,785	2,337	251	140	1,801	1,078	601	6	560	1,715	359	563	567	48	0
Primidone	259	120	24	9	79	100	15	0	5	45	35	19	7	0	0
Succinimides	122	87	39	41	7	80	3	0	4	22	29	12	5	1	0
Unknown Types of Anticonvulsant (Excluding Barbiturates)	15	6	1	0	3	5	1	0	0	2	0	0	0	0	0

(*Continued*)

Table 22B. Demographic profile of SINGLE-SUBSTANCE pharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Valproic Acid	8,462	3,444	555	767	1,939	1,709	1,361	7	294	2,020	895	649	397	56	1
Category Total:	44,264	20,706	5,058	3,660	10,791	12,155	6,382	51	1,783	10,832	5,013	4,154	2,381	270	1
Antidepressants															
Cyclic Antidepressants															
Amitriptyline	5,683	2,530	478	374	1,546	1,024	1,382	5	65	1,842	456	526	568	192	5
Amoxapine	24	7	0	1	4	1	3	0	1	4	0	2	0	1	0
Cyclic Antidepressants Formulated with a Benzodiazepine	37	11	3	1	7	4	7	0	0	9	2	5	3	0	0
Cyclic Antidepressants Formulated with a Phenothiazine	87	40	6	6	26	13	23	0	4	25	4	10	7	2	0
Desipramine	110	47	11	6	28	27	19	0	1	32	6	5	9	2	0
Doxepin	1,038	427	49	45	304	170	232	1	17	302	62	104	80	39	3
Imipramine	517	231	73	56	93	131	78	0	19	126	69	33	38	8	0
Maprotiline	7	4	2	0	2	3	0	0	1	1	1	0	0	0	0
Nortriptyline	903	413	67	69	252	216	173	0	17	238	93	70	62	18	3
Other Types of Cyclic Antidepressant	2,589	1,026	198	143	620	518	403	9	62	637	204	201	178	64	0
Protriptyline	18	7	1	0	6	4	2	0	1	5	2	1	0	0	0
Unknown Types of Cyclic Antidepressant	20	6	2	0	4	1	2	0	0	6	1	1	2	0	1
Miscellaneous Antidepressants															
Lithium	6,492	3,349	209	502	2,439	1,141	1,223	5	815	2,638	586	643	997	147	4
Monoamine Oxidase Inhibitors	300	139	14	16	98	78	32	1	27	75	34	17	28	3	0
Other Types of Antidepressant	25,022	11,136	3,123	1,693	5,617	6,811	3,734	53	451	6,045	3,369	1,741	1,216	283	10
Selective Serotonin Reuptake Inhibitors	44,287	20,011	5,976	5,099	7,759	11,152	7,921	62	764	9,739	6,448	3,144	1,173	90	2
Trazodone	13,458	5,211	540	982	3,308	1,666	3,382	6	103	3,616	1,099	1,581	641	35	0
Unknown Types of Antidepressant	104	24	5	1	10	10	10	0	2	15	4	0	1	0	0
Category Total:	100,696	44,619	10,757	8,994	22,123	22,970	18,626	142	2,350	25,355	12,440	8,084	5,003	884	28
Antihistamines															
Miscellaneous Antihistamines															
Cimetidine and Other Histamine-2 Blockers	9,212	7,132	5,854	352	780	6,768	243	4	107	619	1,879	229	20	0	0
Diphenhydramine Alone (Over the Counter)	5,976	4,794	3,474	563	679	4,041	658	3	72	1,179	1,192	635	215	17	0
Diphenhydramine Alone (Prescription)	27	12	11	0	1	12	0	0	0	1	5	1	0	0	0
Diphenhydramine Alone (Unknown if Over the Counter or Prescription)	29,373	20,982	11,850	3,452	5,045	15,381	5,077	15	388	6,820	4,679	3,049	1,717	184	3
Other Antihistamines Alone (Excluding Cough and Cold Preparations)	43,494	31,239	18,425	6,523	5,442	27,360	3,154	30	585	5,949	8,512	2,275	826	49	0
Category Total:	88,082	64,159	39,614	10,890	11,947	53,562	9,132	52	1,152	14,568	16,267	6,189	2,778	250	3
Antimicrobials															
Anthelmintics															
Diethylcarbamazine	82	76	32	4	33	73	1	0	2	3	10	2	1	0	0
Other Types of Anthelmintic	1,677	1,595	991	138	392	1,515	38	5	33	184	453	116	10	0	0
Piperazine	433	428	367	19	38	418	9	1	0	70	150	20	1	0	0
Unknown Types of Anthelmintic	4	4	3	0	1	4	0	0	0	0	0	0	0	0	0
Antibiotics															
Systemic Antibiotic Preparations (Oral, Intravenous, Intramuscular)	39,993	32,997	17,586	4,513	8,805	27,385	1,289	33	4,195	4,050	5,488	2,429	700	64	0
Topical Antibiotic Preparations (Dermal, Otic, Ophthalmic, Nasal)	7,843	7,521	5,551	492	1,153	7,265	80	5	164	211	1,232	373	40	0	0
Unknown Types of Antibiotic Preparation	418	294	149	37	76	231	14	1	46	44	40	36	4	1	0
Antifungals															
Systemic Antifungal Preparations (Oral, Intravenous, Intramuscular)	1,704	1,391	849	124	342	1,240	28	0	122	180	297	87	25	1	0
Topical Antifungal Preparations (Dermal, Otic, Ophthalmic, Nasal)	9,497	9,133	6,993	336	1,469	8,869	53	6	198	569	1,571	590	71	1	0

(*Continued*)

Table 22B. Demographic profile of SINGLE-SUBSTANCE pharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Unknown Types of Antifungal Preparation	12	12	8	0	3	10	0	0	2	5	3	1	1	0	0
Antiparasitics															
Antimalarials	830	544	135	77	278	444	41	3	52	165	130	62	34	5	0
Metronidazole	1,378	867	296	79	411	678	51	1	135	140	140	73	21	1	0
Other Types of Antiparasitic	41	39	18	6	10	31	1	0	6	9	9	4	1	1	0
Antituberculars															
Isoniazid	332	237	48	102	78	110	83	0	36	161	54	22	32	48	1
Other Types of Antitubercular	18	6	1	1	3	6	0	0	0	1	1	0	0	0	0
Rifampin	109	70	26	8	31	55	3	0	12	19	14	10	6	1	0
Antivirals															
Amantadine	240	88	39	12	34	66	10	0	11	33	26	11	5	1	0
Antiretrovirals	525	278	72	15	152	209	53	1	14	92	65	20	11	1	0
Other Anti-Influenza Agents	291	248	74	63	96	204	8	0	33	17	38	15	3	0	0
Systemic Antiviral Preparations (Oral, Intravenous, Intramuscular)	1,640	1,302	570	183	476	1,130	76	3	89	183	289	73	20	4	0
Topical Antiviral Preparations (Dermal, Otic, Ophthalmic, Nasal)	238	231	102	21	89	211	3	0	17	10	45	21	3	0	0
Unknown Types of Antiviral Preparations	383	268	98	37	108	221	17	0	29	43	51	14	6	2	0
Miscellaneous Antimicrobials															
Other Types of Antimicrobial	99	88	61	4	15	83	1	0	4	14	21	10	0	0	0
Unknown Types of Antimicrobial	22	11	4	1	5	9	1	0	1	1	1	1	0	0	0
Category Total:	67,809	57,728	34,073	6,272	14,098	50,467	1,860	59	5,201	6,204	10,128	3,990	995	131	1
Antineoplastics															
Miscellaneous Antineoplastics															
Antineoplastic Drugs	1,714	1,322	306	79	770	1,148	29	2	138	433	284	124	81	10	4
Category Total:	1,714	1,322	306	79	770	1,148	29	2	138	433	284	124	81	10	4
Asthma Therapies															
Miscellaneous Asthma Therapies															
Albuterol	6,349	5,693	4,303	773	504	5,261	224	17	176	702	1,373	540	252	7	0
Aminophylline or Theophylline	347	217	39	16	153	143	37	0	31	124	46	30	38	16	2
Leukotriene Antagonist or Inhibitor	12,782	10,894	8,797	1,632	374	10,658	175	0	55	870	2,448	132	8	0	0
Non-Selective Beta Agonists	1,098	1,035	167	366	442	987	28	0	17	350	68	452	147	1	0
Other Asthma Therapeutic Agents	374	269	80	27	135	197	37	0	31	103	67	30	33	8	0
Terbutaline and Other Beta-2 Agonists	3,063	2,664	962	408	1,094	2,458	111	12	81	256	561	145	95	8	0
Unknown Asthma Therapeutic Agents	7	5	1	0	4	4	0	0	1	2	1	0	1	0	0
Category Total:	24,020	20,777	14,349	3,222	2,706	19,708	612	29	392	2,407	4,564	1,329	574	40	2
Cardiovascular Drugs															
Miscellaneous Cardiovascular Drugs															
Alpha Blockers	2,290	1,047	283	41	650	911	80	1	52	288	346	64	70	5	0
Angiotensin Converting Enzyme Inhibitors	15,131	7,131	3,164	602	3,040	6,381	554	4	174	1,860	2,707	239	180	13	0
Angiotensin Receptor Blockers	7,016	3,595	1,228	203	1,948	3,320	196	4	66	816	1,284	154	77	4	0
Antiarrhythmics	1,322	762	138	30	539	697	26	0	37	291	283	50	48	9	3
Antihyperlipidemics	12,360	5,747	2,722	367	2,312	5,374	163	2	199	491	1,106	119	29	3	0
Antihypertensives (Excluding Diuretics)	3,590	2,086	806	487	721	1,805	223	1	39	924	776	261	219	26	0
Beta Blockers (Including All Propranolol Cases)	21,282	9,787	3,035	740	5,517	8,433	1,091	9	212	3,807	3,953	413	653	54	6
Calcium Antagonists	10,398	4,840	1,430	245	2,926	4,257	416	1	143	2,247	1,988	253	360	63	12
Cardiac Glycosides	2,632	1,615	243	52	1,273	966	67	7	515	1,108	292	130	490	115	17
Clonidine	6,526	3,679	1,525	1,203	836	2,892	662	13	78	2,310	879	797	770	95	0
Hydralazine	484	203	75	14	104	173	21	0	8	73	75	13	10	0	0
Long-Acting Nitrates	946	324	104	21	185	293	21	0	7	102	131	20	22	1	0
Nitroglycerin	1,561	1,151	772	43	275	1,006	110	3	26	365	549	59	32	2	0
Nitroprusside	38	36	1	5	28	10	0	0	26	32	8	2	7	3	0
Other Types of Cardiovascular Drug	444	244	121	10	99	226	8	0	8	52	76	13	6	1	1

(*Continued*)

Table 22B. Demographic profile of SINGLE-SUBSTANCE pharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Other Types of Vasodilator	1,293	893	312	100	390	676	100	20	91	291	255	102	40	3	0
Unknown Types of Cardiovascular Drug	69	38	13	4	15	27	9	0	1	20	8	4	2	1	0
Unknown Types of Vasodilator	37	22	8	1	11	17	4	0	1	7	3	7	2	0	0
Vasopressors	2,980	2,550	544	747	1,025	2,447	68	1	25	1,061	229	995	291	8	0
Category Total:	90,399	45,750	16,524	4,915	21,894	39,911	3,819	66	1,708	16,145	14,948	3,695	3,308	406	39
Cold and Cough Preparations															
Acetaminophen and Acetylsalicylic Acid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine															
Acetaminophen and Acetylsalicylic Acid with Decongestant and/or Antihistamine Combinations without Phenylpropanolamine or Opioids	82	58	44	7	7	50	6	0	2	16	15	6	3	0	0
Acetaminophen, Acetylsalicylic Acid, and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	131	107	77	15	15	90	15	1	1	33	34	13	3	0	0
Acetaminophen, Acetylsalicylic Acid, and Opioid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	11	9	4	2	3	6	3	0	0	4	1	0	1	0	0
Acetaminophen and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine															
Acetaminophen and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	291	201	91	76	32	124	74	0	2	84	49	30	32	0	0
Acetaminophen, Phenylpropanolamine, and Codeine Combinations with Decongestant and/or Antihistamine	9	4	0	1	3	3	0	0	1	0	1	2	0	0	0
Acetaminophen, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	338	248	186	31	24	221	21	0	5	61	78	26	5	0	0
Acetaminophen, Phenylpropanolamine, and Other Opioid Combinations with Decongestant and/or Antihistamine	3	1	1	0	0	1	0	0	0	0	0	0	0	0	0
Acetaminophen Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine															
Acetaminophen and Codeine Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	44	29	15	5	8	24	4	0	1	8	5	3	0	0	0
Acetaminophen and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	17,970	11,684	7,440	2,068	1,865	9,624	1,645	10	338	2,892	2,971	1,281	275	16	0
Acetaminophen and Other Opioid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	50	36	26	3	7	32	4	0	0	12	11	3	1	0	0
Acetaminophen with Decongestant and/or Antihistamine Combinations without Phenylpropanolamine or Opioids	6,489	4,481	2,875	860	657	3,612	719	3	130	1,164	1,160	406	228	9	0

(*Continued*)

Table 22B. Demographic profile of SINGLE-SUBSTANCE pharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Acetaminophen, Acetylsalicylic Acid, and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine															
Acetaminophen, Acetylsalicylic Acid, and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	25	16	6	3	7	11	5	0	0	8	5	3	1	0	0
Acetaminophen, Acetylsalicylic Acid, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	111	80	62	13	4	75	3	0	2	12	25	8	1	0	0
Acetaminophen, Acetylsalicylic Acid, Phenylpropanolamine, and Opioid Combinations with Decongestant and/or Antihistamine	6	6	2	2	2	5	0	0	1	0	2	1	0	0	0
Acetylsalicylic Acid and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine															
Acetylsalicylic Acid and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	29	22	11	7	4	18	4	0	0	7	1	2	3	0	0
Acetylsalicylic Acid, Phenylpropanolamine, and Codeine Combinations with Decongestant and/or Antihistamine	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acetylsalicylic Acid, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	20	14	10	3	1	10	2	0	2	3	2	2	0	0	0
Acetylsalicylic Acid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine															
Acetylsalicylic Acid and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	35	29	18	5	5	23	3	0	3	5	7	3	1	0	0
Acetylsalicylic Acid and Other Opioid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	1	1	0	1	0	0	1	0	0	1	0	1	0	0	0
Acetylsalicylic Acid with Decongestant and/or Antihistamine Combinations without Phenylpropanolamine or Opioids	68	43	20	11	8	28	12	0	3	17	7	5	4	1	0
Antihistamine and/or Decongestant with Phenylpropanolamine															
Antihistamine and/or Decongestant with Phenylpropanolamine and Codeine	23	20	10	6	1	17	3	0	0	4	7	1	2	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine and Dextromethorphan	918	740	561	128	47	667	55	0	14	135	214	80	24	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine and Other Opioid	39	28	15	6	5	22	2	0	2	10	9	4	0	0	0
Antihistamine and/or Decongestant with Phenylpropanolamine without Opioid	4,188	3,572	3,195	306	58	3,481	57	0	34	502	1,035	328	30	1	0
Antihistamine and/or Decongestant without Phenylpropanolamine															
Antihistamine and/or Decongestant with Codeine without Phenylpropanolamine	1,280	1,064	577	223	242	943	77	0	35	219	315	144	27	0	0
Antihistamine and/or Decongestant with Dextromethorphan without Phenylpropanolamine	17,334	14,521	9,467	3,627	1,287	11,217	3,039	8	222	4,150	3,266	2,022	1,314	63	0

(*Continued*)

Table 22B. Demographic profile of SINGLE-SUBSTANCE pharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Antihistamine and/or Decongestant with Other Opioid without Phenylpropanolamine	2,275	1,857	932	327	535	1,593	169	0	83	505	509	341	63	4	1
Antihistamine and/or Decongestant without Phenylpropanolamine and Opioid	21,419	16,294	11,044	2,282	2,583	14,740	1,146	11	339	2,877	4,536	1,366	419	38	2
Miscellaneous Cold and Cough Preparations															
Acetaminophen in Combination with Dextromethorphan (Without Decongestants or Antihistamines)	223	175	135	21	17	157	15	0	2	39	56	12	4	1	0
Acetylsalicylic Acid in Combination with Dextromethorphan	7	5	3	2	0	5	0	0	0	2	2	0	1	0	0
Expectorants or Antitussives (Without Narcotics or Narcotic Analogs)	3,911	2,854	1,514	433	770	2,517	227	4	102	468	649	189	42	8	0
Non-Acetylsalicylic Acid Salicylates in Combination with Dextromethorphan	15	13	11	1	1	13	0	0	0	2	4	0	0	0	0
Other Dextromethorphan Preparations	15,865	12,590	6,944	3,106	2,245	10,204	2,037	6	289	2,933	2,570	1,588	738	22	1
Other Phenylpropanolamine Preparations (Excluding Street Drugs and Diet Aids)	296	250	123	13	100	244	3	0	3	21	67	9	2	0	0
Other Types of Cough and Cold Preparation (Excluding Phenylpropanolamine, Dextromethorphan, Acetaminophen, and Acetylsalicylic Acid)	2,420	1,920	1,365	271	234	1,749	97	1	71	253	504	162	38	1	0
Unknown Types of Cough and Cold Preparation	1,229	680	303	229	107	391	247	2	30	326	127	112	73	7	0
Non-Acetylsalicylic Acid Salicylates and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine															
Non-Acetylsalicylic Acid Salicylates and Phenylpropanolamine Combinations with Decongestant and/or Antihistamine without Opioid	5	3	2	1	0	3	0	0	0	1	1	0	0	0	0
Non-Acetylsalicylic Acid Salicylates, Phenylpropanolamine, and Dextromethorphan Combinations with Decongestant and/or Antihistamine	10	9	9	0	0	9	0	0	0	1	3	1	0	0	0
Non-Acetylsalicylic Acid Salicylates, Phenylpropanolamine, and Opioid Combinations with Decongestant and/or Antihistamine	1	1	0	0	0	0	1	0	0	1	0	0	0	0	0
Non-Acetylsalicylic Acid Salicylates with Decongestant and/or Antihistamine without Phenylpropanolamine															
Non-Acetylsalicylic Acid Salicylates and Dextromethorphan Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	14	14	8	6	0	12	2	0	0	3	5	0	0	0	0
Non-Acetylsalicylic Acid Salicylates and Opioid Combinations with Decongestant and/or Antihistamine without Phenylpropanolamine	4	2	0	1	1	1	1	0	0	1	2	0	0	0	0
Non-Acetylsalicylic Acid Salicylates with Decongestant and/or Antihistamine without Phenylpropanolamine and Opioid	2	2	2	0	0	2	0	0	0	0	1	0	0	0	0
Category Total:	97,192	73,683	47,108	14,102	10,885	61,944	9,699	46	1,717	16,780	18,256	8,154	3,335	171	4
Diagnostic Agents															
Miscellaneous Diagnostic Agents															
Diagnostic Tablets for Glucose or Ketones	1	1	0	0	1	1	0	0	0	1	0	0	0	0	0

(*Continued*)

Table 22B. Demographic profile of SINGLE-SUBSTANCE pharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Other Types of Diagnostic Agent	690	634	179	45	294	526	8	0	100	216	112	124	38	6	0
Unknown Types of Diagnostic Agent	12	12	4	2	4	10	0	0	2	5	1	0	0	1	0
Category Total:	703	647	183	47	299	537	8	0	102	222	113	124	38	7	0
Dietary Supplements/Herbals/Homeopathic															
Amino Acids															
Creatine	201	152	63	42	39	85	22	0	44	51	27	17	13	0	0
Other Amino Acid Dietary Supplements	521	384	232	46	91	318	26	2	35	77	70	33	11	2	0
Botanical Products															
Blue Cohosh	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Citrus Aurantium (Single Ingredient)	7	4	3	0	1	3	0	0	1	2	0	0	0	0	0
Echinacea	330	251	197	35	14	235	9	0	6	14	47	9	2	0	0
Ginkgo Biloba	123	61	36	9	14	53	3	0	3	14	15	10	2	0	0
Ginseng	168	111	59	16	33	80	13	1	16	24	20	15	9	2	0
Kava Kava	52	29	4	9	12	9	10	2	6	10	3	4	7	0	0
Ma Huang/Ephedra (Single Ingredient)	99	64	20	4	35	30	21	0	11	30	13	9	8	2	0
Multi-Botanicals with Citrus Aurantium	165	131	52	30	45	78	37	0	16	60	37	34	13	0	0
Multi-Botanicals with Ma Huang	433	310	143	53	103	195	71	1	43	135	89	63	34	0	0
Multi-Botanicals without Ma Huang or Citrus Aurantium	2,350	1,897	1,024	318	495	1,285	344	2	252	567	448	269	150	10	0
Other Single Ingredient Botanicals	2,397	1,815	1,109	146	452	1,527	101	6	178	247	359	151	54	6	0
St. John's Wort	194	118	76	12	27	90	19	0	9	20	29	7	2	0	0
Valerian	216	122	41	18	60	66	32	1	21	45	23	14	6	0	0
Yohimbe	204	146	37	17	81	58	26	1	60	91	26	18	42	1	0
Cultural Medicines															
Asian Medicines	119	94	47	4	34	74	7	0	12	33	29	11	7	1	0
Ayurvedic Medicines	12	9	6	1	2	7	2	0	0	3	0	2	0	0	0
Hispanic Medicines	16	12	6	0	5	7	2	0	3	6	4	2	0	0	0
Other Cultural Medicines	38	28	17	1	9	20	2	0	5	11	6	1	3	0	0
Hormonal Products															
Androgen or Androgen Precursor Dietary Supplements	110	76	44	8	23	60	6	0	8	21	18	5	4	0	0
Glandular Dietary Supplements	49	37	32	0	4	33	2	0	1	3	5	0	0	0	0
Melatonin	4,059	3,231	2,195	628	339	2,740	424	1	58	448	699	347	10	1	0
Phytoestrogen Dietary Supplements	56	39	22	3	13	30	1	0	8	6	7	3	2	0	0
Miscellaneous Dietary Supplements/Herbals/Homeopathic															
Homeopathic Agents	11,437	10,901	10,091	277	418	10,579	116	11	189	546	2,375	227	57	1	0
Unknown Dietary Supplements or Homeopathic Agents	2,715	2,274	1,506	255	435	1,839	164	11	247	507	432	196	118	10	0
Other Dietary Supplements															
Blue-Green Algae	127	119	41	27	32	111	1	1	6	21	19	22	2	0	0
Glucosamine (with or without Chondroitin)	764	521	395	20	84	488	8	0	25	31	118	16	0	0	0
Other Single Ingredient Non-Botanical Dietary Supplements	730	507	360	46	81	442	18	0	44	72	106	19	15	2	0
Category Total:	27,693	23,443	17,858	2,025	2,981	20,542	1,487	40	1,307	3,095	5,024	1,504	571	38	0
Diuretics															
Miscellaneous Diuretics															
Furosemide	2,857	1,086	482	81	478	988	70	3	22	248	279	105	38	0	0
Other Types of Diuretic	1,824	826	380	80	321	725	54	3	40	191	217	54	34	2	0
Thiazide	4,751	1,988	946	185	776	1,785	163	0	36	419	558	108	38	1	0
Unknown Types of Diuretic	1,277	484	231	38	190	418	41	0	25	97	100	36	18	0	0
Category Total:	10,709	4,384	2,039	384	1,765	3,916	328	6	123	955	1,154	303	128	3	0
Electrolytes and Minerals															
Miscellaneous Electrolytes and Minerals															
Calcium and Calcium Salts	17,038	15,295	14,160	595	433	15,087	144	12	42	341	2,448	227	27	1	0
Chromium, Trivalent	349	294	152	29	96	267	10	0	16	44	64	16	8	0	0
Colloidal Silver	66	54	14	5	29	35	6	0	13	18	5	2	2	0	0

(*Continued*)

Table 22B. Demographic profile of SINGLE-SUBSTANCE pharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moder ate	Major	Death
Fluoride (Excluding Vitamins, Hydrofluoric Acid & Mouthwashes)	3,234	3,062	2,682	267	81	2,992	22	2	45	109	646	182	10	0	0
Iron and Iron Salts (Excluding Vitamins with Iron)	4,479	3,378	2,082	279	868	2,912	289	5	162	905	921	315	86	3	0
Magnesium and Magnesium Salts	1,050	845	355	86	353	691	79	6	61	121	139	107	17	2	0
Multi-Mineral and Multi-Herbal Dietary Supplement	1,640	1,310	775	169	339	919	216	1	164	510	375	191	124	4	0
Multi-Mineral Dietary Supplements	219	158	112	8	31	133	12	1	11	26	24	11	6	0	0
Other Types of Electrolyte or Mineral	80	71	26	13	26	57	5	0	9	14	11	12	2	0	0
Potassium and Potassium Salts	1,624	687	287	40	308	605	52	0	28	117	179	23	11	4	0
Selenium and Selenium Salts	199	126	36	8	64	80	2	15	27	34	20	18	8	1	0
Sodium and Sodium Salts	3,325	2,783	1,669	421	511	2,472	207	47	49	404	531	393	42	4	3
Unknown Types of Electrolyte or Mineral	12	12	6	1	5	10	2	0	0	5	2	2	1	0	0
Vanadium and Vanadium Salts	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Zinc and Zinc Salts	1,098	917	566	81	227	837	24	0	52	85	134	75	18	0	0
Category Total:	34,414	28,992	22,922	2,002	3,371	27,097	1,070	89	679	2,733	5,499	1,574	362	19	3
Eye/Ear/Nose/Throat Preparations															
Miscellaneous Eye/Ear/Nose/Throat Preparations															
Topical Steroids For Eye/Nose/Throat	2,245	1,795	1,047	306	338	1,678	35	2	78	76	275	164	14	2	0
Nasal Preparations															
Other Nasal Decongestants or Sympathomimetics (Excluding Tetrahydrazoline)	2,557	2,422	1,117	268	855	2,209	52	12	145	285	666	254	31	1	0
Other Types of Nasal Preparation	757	719	478	30	171	695	8	2	13	30	114	80	8	0	0
Tetrahydrozoline, Nasal Preparations	30	29	24	2	2	26	1	1	0	11	15	2	2	1	0
Unknown Types of Nasal Preparation	5	5	1	1	2	4	0	0	1	0	1	0	1	0	0
Ophthalmic Preparations															
Contact Lens Products	3,481	3,370	1,821	308	1,011	3,286	26	15	40	563	391	657	131	3	0
Glaucoma Medications	280	249	68	13	144	216	2	1	28	52	46	32	13	2	0
Other Ophthalmic Sympathomimetics	1,123	1,051	587	150	239	860	55	92	38	220	395	83	13	1	0
Other Types of Ophthalmic Preparation	1,681	1,578	835	154	464	1,447	40	21	70	98	212	117	27	2	0
Tetrahydrozoline, Ophthalmic Preparations	2,226	2,159	1,412	248	402	1,805	96	220	24	544	898	133	49	5	0
Unknown Types of Ophthalmic Preparation	64	52	22	14	11	33	3	9	6	12	10	11	1	0	0
Otic Preparations															
Combination Products	2,521	2,468	1,212	342	746	2,435	7	2	22	210	469	687	37	0	0
Other Types of Otic Preparation	2,198	2,175	914	198	862	2,149	9	0	14	241	315	612	42	3	0
Unknown Types of Otic Preparation	78	75	25	10	23	74	0	0	1	10	10	22	5	0	0
Throat Preparations															
Other Types of Throat Preparation	567	515	209	127	145	465	33	3	14	59	131	45	5	1	0
Throat Lozenges with Local Anesthetics	376	331	179	58	67	312	13	0	5	19	91	12	4	1	0
Throat Lozenges without Local Anesthetics	1,525	1,413	1,208	124	68	1,361	34	0	17	51	275	51	5	0	0
Unknown Types of Throat Preparation	2	2	1	1	0	2	0	0	0	0	1	0	0	0	0
Category Total:	21,716	20,408	11,160	2,354	5,550	19,057	414	380	516	2,481	4,315	2,962	388	22	0
Gastrointestinal Preparations															
Antacids															
Antacids: Other Types	10,469	9,966	9,239	368	283	9,820	91	7	48	167	1,427	95	8	0	0
Antacids: Proton Pump Inhibitors	10,825	6,440	3,961	389	1,741	6,044	200	2	186	505	1,430	172	29	0	0
Antacids: Salicylate-Containing	3,117	2,808	2,320	247	200	2,629	91	2	80	236	672	99	9	2	0
Antidiarrheals															
Antidiarrheals: Diphenoxylate and Atropine Containing	435	265	127	25	92	203	40	0	20	145	91	44	19	0	0
Antidiarrheals: Loperamide	1,589	1,272	847	84	293	1,105	97	0	64	328	513	91	21	1	1

(*Continued*)

Table 22B. Demographic profile of SINGLE-SUBSTANCE pharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Antidiarrheals: Non-Narcotic Containing (Excluding Salicyl Containing)	40	29	23	1	5	29	0	0	0	2	8	0	0	0	0
Antidiarrheals: Other Narcotic Containing	1	1	0	1	0	0	1	0	0	1	0	1	0	0	0
Antidiarrheals: Paregoric Containing	12	10	4	0	5	9	1	0	0	4	2	3	1	0	0
Antispasmodics															
Antispasmodics: Anticholinergic Containing	3,352	1,811	916	230	574	1,506	200	2	92	582	582	181	110	5	0
Antispasmodics: Other Types	66	45	19	7	17	33	9	0	2	19	12	6	1	1	0
Miscellaneous Gastrointestinal Preparations															
Laxatives	16,110	14,429	10,640	1,072	2,254	13,375	496	118	409	1,244	2,120	1,402	159	3	0
Other Types of Gastrointestinal Preparation	11,271	9,896	8,453	396	870	9,357	229	10	288	812	1,838	268	124	13	0
Unknown Types of Gastrointestinal Preparation	29	17	10	1	3	14	1	0	2	2	2	2	0	0	0
Category Total:	57,316	46,989	36,559	2,821	6,337	44,124	1,456	141	1,191	4,047	8,697	2,364	481	25	1
Hormones and Hormone Antagonists															
Miscellaneous Hormones and Hormone Antagonists															
Androgens	380	316	109	29	142	230	48	3	32	95	39	42	17	4	0
Corticosteroids	10,241	8,391	4,551	906	2,432	7,682	137	9	544	628	1,199	296	96	5	0
Estrogens	1,778	1,145	733	78	236	992	38	4	110	108	207	78	13	3	0
Insulin	5,013	4,321	158	161	3,610	3,956	290	10	47	1,577	1,715	226	649	37	1
oral Contraceptives	9,670	8,264	6,850	724	511	7,702	429	9	110	568	1,381	190	7	2	0
Other Hormone Antagonists	546	421	155	35	204	376	27	1	17	60	74	11	5	2	0
Other Hormones	836	639	226	123	244	558	28	6	44	151	189	50	20	4	0
Progestins	1,706	1,469	851	158	328	1,199	30	5	232	207	240	158	20	0	0
Selective Estrogen Receptor Modulators	408	241	83	11	129	230	3	1	7	33	82	6	1	1	0
Thyroid Preparations (Including Synthetics and Extracts)	13,005	9,006	5,026	554	2,957	8,710	191	2	90	1,032	1,858	138	32	3	0
Unknown Hormones or Hormone Antagonists	26	14	8	1	3	11	2	1	0	4	4	0	1	0	0
Oral Hypoglycemic															
Oral Hypoglycemics: Biguanides	6,538	3,098	778	309	1,806	2,636	370	4	77	767	894	197	110	17	4
Oral Hypoglycemics: Other or Unknown	949	484	166	24	253	405	25	0	52	168	185	24	29	3	0
Oral Hypoglycemics: Sulfonylureas	4,308	1,850	987	82	726	1,571	162	7	93	1,323	788	63	405	49	0
Oral Hypoglycemics: Thiazolidinediones	1,471	510	252	36	203	464	28	0	18	177	236	9	19	1	0
Category Total:	56,875	40,169	20,933	3,231	13,784	36,722	1,808	62	1,473	6,898	9,091	1,488	1,424	131	5
Miscellaneous Drugs															
Other Miscellaneous Drugs															
Allopurinol	712	301	149	23	111	266	24	0	8	49	95	11	2	1	0
Disulfiram	283	75	8	2	50	32	17	3	22	30	10	8	11	1	0
Ergot Alkaloids	227	166	91	18	49	133	10	1	20	100	73	17	14	0	0
Levo-Dopa and Related Drugs	991	526	181	16	300	467	39	0	19	165	116	70	38	1	0
Neuromuscular Blocking Agents (Succinylcholine, Curare, etc.)	25	18	3	0	11	10	3	1	4	12	5	2	3	1	0
Nicotine Pharmaceuticals	1,174	1,082	589	136	297	868	66	21	126	275	332	215	28	0	0
Other Types of Miscellaneous Prescription or Over the Counter Drug	20,999	14,339	6,318	1,614	5,450	12,281	881	47	1,071	3,081	3,332	1,756	517	34	2
Category Total:	24,411	16,507	7,339	1,809	6,268	14,057	1,040	73	1,270	3,712	3,963	2,079	613	38	2
Muscle Relaxants															
Miscellaneous Muscle Relaxants															
Carisoprodol (Formulated Alone)	8,677	3,614	290	406	2,668	835	2,632	5	49	2,844	447	1,203	740	104	0
Cyclobenzaprine	9,525	4,190	1,399	576	1,958	2,343	1,698	3	97	2,451	1,086	895	473	84	0
Methocarbamol	1,601	775	189	123	420	411	324	2	24	396	215	142	49	6	0
Other Types of Skeletal Muscle Relaxant	7,305	3,353	726	429	1,992	1,656	1,478	12	151	1,986	687	663	537	141	2
Unknown Types of Muscle Relaxant	211	48	11	8	22	16	30	0	1	27	10	9	5	0	0
Category Total:	27,319	11,980	2,615	1,542	7,060	5,261	6,162	22	322	7,704	2,445	2,912	1,804	335	2

(*Continued*)

Table 22B. Demographic profile of SINGLE-SUBSTANCE pharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moder ate	Major	Death
Narcotic Antagonists															
Miscellaneous Narcotic Antagonists															
Miscellaneous Narcotic Antagonist	288	131	3	11	100	49	42	8	29	85	11	26	37	2	0
Category Total:	288	131	3	11	100	49	42	8	29	85	11	26	37	2	0
Radiopharmaceuticals															
Miscellaneous Radiopharmaceutical															
Miscellaneous Radiopharmaceuticals	41	33	7	2	15	18	0	0	14	14	4	2	2	0	0
Category Total:	41	33	7	2	15	18	0	0	14	14	4	2	2	0	0
Sedative/Hypnotics/Antipsychotics															
Barbiturates															
Long Acting Barbiturates	2,362	1,345	356	103	798	937	322	7	40	581	326	198	156	40	3
Short or Intermediate Acting Barbiturates	298	158	15	15	114	101	46	2	7	90	30	49	17	4	1
Unknown Types of Barbiturate	59	20	2	4	11	4	13	0	0	15	3	2	2	0	0
Miscellaneous Sedative/Hypnotics/Antipsychotics															
Atypical Antipsychotics	43,540	19,062	3,085	4,817	10,136	7,657	10,208	62	874	13,391	3,568	5,226	3,614	486	6
Benzodiazepines	78,443	30,856	6,569	4,006	17,800	11,518	18,062	286	503	20,332	6,234	9,292	2,877	332	8
Buspirone	2,551	858	190	147	456	429	377	4	41	430	255	143	51	5	0
Chloral Hydrate	183	108	31	14	60	45	52	1	8	85	15	35	22	9	0
Ethchlorvynol	2	1	0	0	1	1	0	0	0	0	0	0	0	0	0
Glutethimide	4	2	2	0	0	2	0	0	0	1	0	1	0	0	0
Meprobamate	40	19	3	1	15	8	11	0	0	16	5	4	6	1	0
Methaqualone	9	5	0	0	4	0	5	0	0	4	0	1	2	0	0
Other Types of Sedative/Hypnotic/Anti-Anxiety or Anti-Psychotic Drug	24,916	12,061	1,716	1,872	7,548	5,204	6,258	23	404	7,195	1,903	3,840	1,239	105	2
Phenothiazines	4,744	2,158	431	298	1,256	1,159	743	8	218	1,258	418	390	438	30	0
Sleep Aids, Over the Counter Only (Excluding Diphenhydramine)	1,503	854	129	123	533	257	567	2	11	581	148	172	182	20	1
Unknown Types of Sedative/Hypnotic/Anti-Anxiety or Anti-Psychotic Drug	281	110	9	12	71	22	80	5	0	91	13	25	21	2	0
Category Total:	158,935	67,617	12,538	11,412	38,803	27,344	36,744	400	2,106	44,070	12,918	19,378	8,627	1,034	21
Serums, Toxoids, Vaccines															
Miscellaneous Serums, Toxoids, Vaccines															
Miscellaneous Serums, Toxoids and Vaccines	2,508	2,252	451	351	1,116	1,704	6	2	529	702	202	402	102	4	0
Category Total:	2,508	2,252	451	351	1,116	1,704	6	2	529	702	202	402	102	4	0
Stimulants and Street Drugs															
Diet Aids															
Diet Aids: Phenylpropanolamine and Caffeine Combinations	10	8	2	2	3	5	1	0	2	3	1	1	1	0	0
Diet Aids: Phenylpropanolamine Only	34	21	8	1	10	16	1	0	2	7	5	3	1	0	0
Other Types of Diet Aid, Over the Counter Only	220	178	87	35	51	116	34	0	26	71	53	25	23	0	0
Other Types of Diet Aid, Prescription Only	99	79	47	10	20	63	11	0	5	32	27	10	4	3	0
Unknown Types of Diet Aid	97	64	26	12	23	33	19	0	11	30	12	12	12	0	0
Miscellaneous Stimulants and Street Drugs															
Amphetamines and Related Compounds	12,425	8,408	3,010	3,110	2,004	5,856	2,058	40	369	4,087	2,116	1,447	1,147	67	6
Amyl or Butyl Nitrites (Street Drugs)	95	72	5	0	45	41	29	1	1	28	9	19	10	4	0
Caffeine	4,852	3,661	1,208	1,170	1,090	1,920	1,258	21	427	1,281	602	751	470	11	1
Cocaine	6,351	2,075	87	229	1,508	261	1,695	43	14	1,737	419	281	474	121	18
Ephedrine	423	315	185	30	88	240	58	1	13	83	66	49	33	2	0
gamma-Hydroxybutyric Acid including Analogs or Precursors	448	297	11	34	218	65	154	55	8	232	23	57	91	37	0
Hallucinogenic Amphetamines	2,168	1,357	24	560	587	129	1,110	73	20	1,031	77	244	365	52	4
Heroin	1,919	988	20	124	752	100	806	49	19	853	108	149	265	147	9
Lysergic acid diethylamide (LSD)	357	204	2	110	73	20	170	13	1	146	11	29	78	10	0
Marijuana	4,009	1,020	129	422	359	280	644	41	41	601	125	192	174	15	0

(*Continued*)

Table 22B. Demographic profile of SINGLE-SUBSTANCE pharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Mescaline/Peyote	116	103	28	19	42	79	21	0	3	30	1	24	12	1	0
Methamphetamines	1,587	914	110	110	548	343	500	33	16	641	110	140	224	33	2
Methylphenidate	9,522	6,851	1,706	3,937	1,075	5,463	1,097	17	234	2,190	1,755	991	584	16	0
Other Hallucinogens	21	16	1	4	10	1	15	0	0	11	1	0	8	0	0
Other Stimulants (Excluding Amphetamines)	54	29	8	9	11	19	7	0	3	11	7	5	1	1	0
Other Street Drugs	24	14	3	5	4	5	8	0	0	8	5	4	0	1	0
Phenylcyclohexylpiperidine (PCP)	747	329	20	44	238	68	234	5	2	270	20	62	124	24	0
Phenylpropanolamine Containing Look Alike Drugs	1	1	0	1	0	0	1	0	0	0	0	0	1	0	0
Unknown Hallucinogens	8	5	0	2	3	2	2	1	0	2	0	2	1	0	0
Unknown Stimulants or Street Drugs	156	89	4	27	45	13	51	7	9	66	7	25	18	6	0
Category Total:	45,743	27,098	6,731	10,007	8,807	15,138	9,984	400	1,226	13,451	5,560	4,522	4,121	551	40
Topical Preparations															
Miscellaneous Topical Preparations															
Acne Preparations	3,278	3,167	1,889	586	543	2,956	49	5	155	186	601	359	36	1	0
Boric Acid or Borates (As Antiseptics, Excluding Insecticides)	92	85	38	4	32	78	4	0	2	7	20	6	1	0	0
Calamine (Including All Caladryl Type Products)	3,915	3,823	3,008	132	597	3,797	14	2	8	144	570	194	9	0	0
Camphor	10,808	10,606	8,686	486	1,152	10,377	136	10	73	1,013	3,059	1,303	70	16	0
Camphor and Methyl Salicylate Combinations	2,209	2,195	1,925	94	153	2,162	13	1	18	214	717	299	3	0	0
Diaper Care and Rash Products	45,196	44,640	42,902	576	922	44,553	53	10	23	543	6,008	794	13	2	0
Hexachlorophene Containing Antiseptics	39	39	17	6	13	35	2	0	2	13	10	7	0	0	0
Hydrogen Peroxide 3%	13,401	13,129	5,382	1,138	5,572	12,808	229	31	51	617	1,595	1,681	52	3	0
Iodine or Iodide Containing Antiseptics	1,246	1,127	389	185	444	971	77	11	60	213	252	208	33	1	0
Mercury Containing Antiseptics	113	111	77	6	22	102	5	0	3	12	25	7	3	0	0
Methyl Salicylate	9,207	9,116	7,183	554	1,093	8,920	75	24	93	713	2,069	1,459	51	0	0
Minoxidil, Topical	149	142	53	10	64	124	3	1	14	27	37	11	7	1	0
Other Types of Rubefacient or Liniment (Excluding Camphor and Methyl Salicylate)	3,301	3,235	2,084	167	809	2,921	31	3	277	188	526	567	42	0	0
Other Types of Topical Antiseptic	7,571	7,423	5,594	895	769	7,054	203	121	37	382	1,890	654	34	4	0
Podophyllin	44	44	13	6	19	29	4	0	11	18	8	10	4	1	0
Silver Nitrate	203	170	24	76	49	147	6	2	14	40	25	36	9	0	0
Topical Steroids (Including Otic, Ophthalmic, and Dermal Preparations)	10,032	9,742	7,271	555	1,585	9,617	32	5	84	194	1,320	329	16	1	0
Topical Steroids in Combination with Antibiotics (Including Otic, Ophthalmic, and Dermal Preparations)	1,396	1,358	728	147	383	1,331	3	1	22	82	172	215	11	0	0
Wart Preparations and Other Keratolytics	1,704	1,676	1,093	205	320	1,595	20	2	56	204	352	286	36	2	0
Category Total:	113,904	111,828	88,356	5,828	14,541	109,577	959	229	1,003	4,810	19,256	8,425	430	32	0
Unknown Drug															
Miscellaneous Unknown Drug															
Miscellaneous Unknown Drugs	20,178	15,237	5,519	2,824	5,325	8,123	4,176	735	950	8,875	2,893	1,819	1,642	536	20
Category Total:	20,178	15,237	5,519	2,824	5,325	8,123	4,176	735	950	8,875	2,893	1,819	1,642	536	20
Veterinary Drugs															
Miscellaneous Veterinary Drugs															
Miscellaneous Veterinary Drugs without Human Equivalent	3,037	2,852	1,039	202	1,343	2,723	45	3	77	339	588	432	62	2	0
Category Total:	3,037	2,852	1,039	202	1,343	2,723	45	3	77	339	588	432	62	2	0

(*Continued*)

Table 22B. Demographic profile of SINGLE-SUBSTANCE pharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Vitamins															
Miscellaneous Vitamins															
Other Types of Vitamin	995	802	479	93	192	624	55	2	121	123	128	84	24	2	0
Unknown Types of Vitamin	815	594	430	91	54	539	31	2	20	73	163	21	3	0	0
Multiple Vitamin Liquids: Adult Formulations															
Multiple Vitamin Liquids: Adult Formulations with Fluoride (No Iron)	7	6	3	2	1	6	0	0	0	0	0	0	0	0	0
Multiple Vitamin Liquids: Adult Formulations with Iron (No Fluoride)	163	118	70	9	34	105	5	0	8	13	17	7	1	0	0
Multiple Vitamin Liquids: Adult Formulations with Iron and Fluoride	10	8	4	0	2	8	0	0	0	1	0	0	0	0	0
Multiple Vitamin Liquids: Adult Formulations without Iron or Fluoride	222	154	90	26	31	140	8	0	6	21	26	13	3	0	0
Multiple Vitamin Liquids: Pediatric Formulations															
Multiple Vitamin Liquids: Pediatric Formulations with Fluoride (No Iron)	332	306	299	6	1	305	0	0	1	11	48	8	0	0	0
Multiple Vitamin Liquids: Pediatric Formulations with Iron (No Fluoride)	531	510	492	12	4	500	1	1	8	31	109	19	0	0	0
Multiple Vitamin Liquids: Pediatric Formulations with Iron and Fluoride	30	29	29	0	0	28	0	0	1	0	1	1	0	0	0
Multiple Vitamin Liquids: Pediatric Formulations without Iron or Fluoride	409	386	366	16	3	380	2	1	3	21	63	20	1	0	0
Multiple Vitamin Tablets: Adult Formulations															
Multiple Vitamin Tablets: Adult Formulations with Fluoride (No Iron)	33	31	27	2	2	31	0	0	0	0	7	0	0	0	0
Multiple Vitamin Tablets: Adult Formulations with Iron (No Fluoride)	7,584	6,298	4,779	331	1,023	5,959	220	1	110	593	1,461	218	21	0	0
Multiple Vitamin Tablets: Adult Formulations with Iron and Fluoride	51	39	27	2	5	38	1	0	0	0	1	1	0	0	0
Multiple Vitamin Tablets: Adult Formulations with Iron Carbonyl (No Fluoride)	73	65	49	9	7	59	4	0	1	13	25	3	0	0	0
Multiple Vitamin Tablets: Adult Formulations without Iron or Fluoride	3,963	2,946	2,065	299	498	2,629	180	3	129	338	633	142	41	0	0
Multiple Vitamin Tablets: Pediatric Formulations															
Multiple Vitamin Tablets: Pediatric Formulations with Fluoride (No Iron)	948	880	835	38	5	875	5	0	0	23	150	11	1	0	0
Multiple Vitamin Tablets: Pediatric Formulations with Iron (No Fluoride)	13,078	12,526	11,184	1,220	100	12,288	198	5	29	896	2,862	475	19	2	0
Multiple Vitamin Tablets: Pediatric Formulations with Iron and Fluoride	100	89	76	12	1	88	1	0	0	3	23	3	0	0	0
Multiple Vitamin Tablets: Pediatric Formulations with Iron Carbonyl (No Fluoride)	25	24	21	3	0	23	0	0	1	4	6	1	0	0	0
Multiple Vitamin Tablets: Pediatric Formulations without Iron or Fluoride	23,419	22,755	17,467	5,049	141	21,763	943	14	20	726	4,178	382	10	0	0

(*Continued*)

Table 22B. Demographic profile of SINGLE-SUBSTANCE pharmaceuticals exposure cases by generic category (this table can be viewed separately online at www.informahealthcare.com/ctx)

	No. of case mentions	No. of single exposures	Age			Reason				Treated in Health care facility	Outcome				
			<6	6–19	>19	Unint	Int	Other	Adv rxn		None	Minor	Moderate	Major	Death
Multiple Vitamins, Unspecified Adult Formulations															
Multiple Vitamins, Unspecified Adult Formulations with Fluoride (No Iron)	7	7	5	1	1	7	0	0	0	2	2	2	0	0	0
Multiple Vitamins, Unspecified Adult Formulations with Iron (No Fluoride)	2,150	1,581	1,175	121	237	1,491	65	3	20	187	389	53	4	1	0
Multiple Vitamins, Unspecified Adult Formulations with Iron and Fluoride	8	3	2	0	1	3	0	0	0	0	2	0	0	0	0
Multiple Vitamins, Unspecified Adult Formulations without Iron or Fluoride	65	45	28	9	7	41	2	0	2	5	3	4	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations															
Multiple Vitamins, Unspecified Pediatric Formulations with Fluoride (No Iron)	34	30	28	2	0	30	0	0	0	4	4	0	1	0	0
Multiple Vitamins, Unspecified Pediatric Formulations with Iron (No Fluoride)	184	175	158	16	1	173	1	0	1	13	24	5	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations with Iron and Fluoride	9	7	6	1	0	6	1	0	0	0	0	0	0	0	0
Multiple Vitamins, Unspecified Pediatric Formulations without Iron or Fluoride	410	391	299	90	2	376	14	0	1	17	57	13	0	0	0
Other Vitamins															
Other B Complex Vitamins	4,149	3,011	2,433	125	360	2,847	75	1	74	176	556	55	13	1	0
Vitamin A	750	637	489	43	78	591	18	1	26	45	114	26	9	0	0
Vitamin B3 (Niacin)	2,988	2,495	681	366	1,227	1,224	382	1	880	451	165	794	102	2	0
Vitamin B6 (Pyridoxine)	377	232	178	12	35	211	9	0	12	19	28	9	3	0	0
Vitamin C	2,111	1,546	1,244	163	104	1,440	82	0	21	64	262	63	3	0	0
Vitamin D	1,561	1,221	388	53	675	1,103	22	2	92	150	197	68	10	0	0
Vitamin E	1,083	772	644	33	80	737	18	0	16	36	140	19	3	0	0
Category Total:	68,674	60,719	46,550	8,255	4,912	56,668	2,343	37	1,603	4,059	11,844	2,520	272	8	0
Total Pharmaceuticals	1,543,812	1,049,594	571,543	142,936	289,696	827,205	175,964	3,640	35,796	277,477	231,368	110,774	50,614	7,217	350
Total Nonpharmaceuticals + Pharmaceuticals	2,858,250	2,254,267	1,256,115	283,948	592,548	1,964,775	211,463	14,349	52,950	447,679	436,105	292,872	86,632	9,527	528

The frequency of any injury rests on the definition used. National Center for Health Statistics (NCHS) defined a poisoning as the "event resulting from ingestion of or contact with harmful substances including overdoses or incorrect use of any drug or medication."[11] NCHS reported that the age-adjusted death rate for poisoning doubled from 1985 through 2004 to 10.3 deaths per 100,000 population. The rise was most evident from 1998 to 2000 when the poison fatalities increased an average of 8.2% per year.[11]

The CDC National Center for Injury Prevention and Control latest poison data available are for the year 2006.[12] Their system reports 37,286 deaths from a US population of 298,362,973 and produces an age adjusted rate of 12.37 per 100,000 population [ICD-10 codes: X40-X49,X60-X69,X85-X90,Y10-Y19, Y35.2, *U01(0.6, 0.7)].[12] This is in contrast to the 1,229 fatalities captured by NPDS during this time period.[1]

In 2005 (latest CDC report for this comparative data), 23,618 (72%) of the 32,691 poisoning deaths in the United States were unintentional, and 3,240 (10%) were of undetermined intent.[13] Unintentional poisoning death rates have been rising steadily since 1992. NPDS reported 2,005,307 unintentional exposures out of 2,403,539 total exposures reported. Unintentional poisoning was second only to motor vehicle crashes as a cause of unintentional injury death in 2005.[13] Among people 35–54 years old, unintentional poisoning caused more deaths than motor vehicle crashes. In the United States in 2005, 5,833 (18%) of the 32,691 poisoning deaths were intentional; 5,744 were suicides and 89 were homicides.[13] NPDS reported 308,483 intentional exposures for 2005.

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Disclaimer

The American Association of Poison Control Centers (AAPCC; http://www.aapcc.org) maintains the national database of information logged by the country's 61 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).

Appendix A – Acknowledgments

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Poison Centers

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The initial review of reported fatalities and development of the abstracts was the responsibility of the staff of the participating poison centers. These poison centers and individuals are listed at the beginning of this report.

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**These reviewers further volunteered to read the top ranked 200 abstracts and judged to publish or omit.*
***These individuals reviewed the pediatric fatalities.*

Surveillance team

Surveillance was carried out by a team of 10 medical and clinical toxicologists working across the country in a distributed system who provided daily monitoring of surveillance anomalies throughout 2008:

Alfred Aleguas, PharmD, DABAT
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Regional Poison Center (RPC) Fatality Awards

This year the AAPCC and the Fatality Review team recognized several Regional Poison Centers (RPCs) for their extra effort in a variety of categories reflected by their preparation of fatality reports and prompt responses to reviewer queries during the review process. The awards were presented at the September 2009, North Amercian Congress of Clinical Toxicology meeting in San Antonio, Texas:

First Center to Complete all Cases – Pittsburgh Poison Center, closed the last of their cases September 1, 2008
Highest Percentage with Autopsy Reports – Oklahoma Poison Control Center, 97.4% of 153 cases
Highest Overall Quality of Reports – Carolinas Poison Center, 5.38 of possible 10 for their 56 fatalities
Most Abstracts Published in 2008 Annual report – a 3-way tie – Children's Hospital of Michigan Regional Poison Control Center (Detroit), Hennepin Regional Poison Center (Minneapolis), and Carolinas Poison Center (Charlotte)
Outstanding Case Preparation – Long Island Regional Poison & Drug Information Center. Honorable mention: National Capitol, Oklahoma, Florida Tampa, New Jersey, Carolinas Most Helpful Regional Poison Center Staff – Georgia Poison Center, Honorable mention: Carolinas, and Long Island.

Appendix B – data definitions

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).

Reason for exposure

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 nonpharmaceutical substance. Unintentional misuse differs from intentional misuse in that the exposure was unplanned or not foreseen by the patient.
Bite/sting: All animal bites and stings, with or without envenomation, are included.
Food poisoning: Suspected or confirmed food poisoning; ingestion of food contaminated with microorganisms is included.
Unintentional unknown: An exposure determined to be unintentional, but the exact reason is unknown.
Suspected suicidal: An exposure resulting from the inappropriate use of a substance for reasons that are suspected to be self-destructive or manipulative.
Intentional misuse: An exposure resulting from the intentional improper or incorrect use.

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

A reported death is coded as "indirect" if no inquiry was placed to the poison center. For example, if the case was obtained from a medical examiner who queries the PC about interpretation of post mortem reports.

Appendix C – abstracts of select cases

Abstracts of the 89 cases selected (see Selection of Abstracts for Publication) and 1 addendum from 1,315 human fatalities judged related to a poisoning exposure as reported to U.S. Poison Centers in 2008. A structured format for abstracts was optional in the preparation of the abstracts and was used in the abstracts presented. Abbreviations, units and normal ranges omitted from the abstracts are given at the end of this appendix

Abstracts

Case 6. Acute ethanol ingestion: undoubtedly responsible.
Scenario/Substances: 23 y/o male ingested an unknown amount of alcohol 10 hours prior, found comatose by EMS, given D50% en route to the ED without effect.
Physical Exam: Unresponsive male, BP 130–140/96, HR 120, without spontaneous respirations. Pupils fixed and dilated, gag reflex absent.
Laboratory Data:

Na 147	Cl ---	BUN 31	Glu 522
	HCO_3 13	Cr 1.9	

Ca 7.8, anion gap 23, serum osmolality 357, pH 6.91. Ethanol 402 mg/dL. Toxicology screen, acetaminophen and salicylate not detected.
Clinical Course: In ED, patient was intubated, ventilated and sedated with IV propofol. Sodium bicarbonate was given. At 14 hours post-ingestion, 2 sequential cardiac arrests occurred, pupils remained fixed and dilated; the patient expired at 25 hours post-ingestion.
Autopsy Findings: Ante mortem ethanol in blood (specimen not dated or timed) 0.37 gm/100 ml. No other drugs detected. Death due to acute ethanol intoxication.

Case 44. Acute hydrofluoric acid Ingestion, Dermal: undoubtedly responsible.
Scenario/Substances: A 12 month old female got hydrofluoric acid on her hands and put her hands in mouth after the bottle of the product fell onto the child's walker. The child vomited 1–2 times at home and became lethargic per father and EMS who transported directly to tertiary care pediatric ED by helicopter.
Physical Exam: In ED awake, alert, no apparent distress. BP 92/38, HR 166, RR 38, T 37°C, O_2 sat 100%. No oral burns noted and the remainder of exam unremarkable.
Laboratory Data: (2.5 hr post exposure):

Na 141	Cl 111	BUN 14	Glu 79
K 4.0	HCO_3 15	Cr 0.2	

Calcium 6.8, ECG sinus tachycardia, ventricular rate of 175, QRS 54 ms, QT/QTc 256/436 ms, PR 94 ms, and nonspecific ST abnormality.
Clinical Course: In ED IV access, cardiac monitoring established with pulse oximetry and reverse trendellenburg. Irrigation

of the child's hand occurred 2–3 h post exposure. The child was resting comfortably. While sleeping 4 hr post exposure, posturing with apnea and Torsade de pointes occurred. Positive pressure ventilation, CPR was started. Resuscitation included 6 g calcium, 6 g magnesium sulfate, 0.7 mg epinephrine, and defibrillation. Resuscitation was unsuccessful and she expired 4.5–5 h post exposure.
Autopsy Findings: No anatomic pathology was identified. The cause of death was ruled cardiac arryhthmia due to hypocalcemia due to hydrogen fluoride poisoning.

Case 57. Acute antifreeze (ethylene glycol) ingestion: undoubtedly responsible.
Scenario/Substances: 65 y/o male was brought to the ED due to loss of consciousness of unknown cause.
Laboratory Data: HCO_3 4 (from ABG), Ca 8.9, Cr 2.0, BUN 13, osmolar gap 150.
Clinical Course: Upon arrival to the ED he was obtunded. Day 2 ethylene glycol was reported >3000 mg/L, glycolic acid >3000 mg/L, methanol and ethanol were negative. The patient was started on hemodialysis. Day 3 fomepizole was given prior to a second session of hemodialysis, post-dialysis ethylene glycol was 295 mg/L. On Day 4 he developed a fever of 41.1° C seizures, treated with sodium bicarbonate, IV lorazepam, and a cooling blanket. He did not respond and died on Day 4.
Autopsy Findings: Cause of death was ethylene glycol overdose.

Case 58. Acute ethylene glycol ingestion: undoubtedly responsible.
Scenario/Substances: 69 y/o male ingested 1 "cup" of antifreeze and presented an unknown time later to the ED with altered mental status.
Past Medical History: Hypertension, sleep apnea, osteomyelitis, hypercholesterolemia.
Physical Exam: Confused male with constricted pupils, BP 210/70, HR 103, RR 40.
Laboratory Data: ABG-pH 6.96, pCO_2 11, PO_2 131 (on O_2), HCO_3 2.3; K 6.8, Cr 1.8, BUN 11, anion gap 27, Serum ethylene glycol 156 mg/dL; serum methanol not detected; toxicology serum screen for ethanol, salicylate and acetaminophen not detected. Head CT: diffuse cerebral edema.
Clinical Course: Patient was intubated, sedated, received IV fluids, sodium bicarbonate, fomepizole, and mannitol. Hemodialysis performed. Multiple tonic clonic seizures treated with levetiracetam and valproic acid. Cr increased to 6.6. The patient remained unresponsive with anoxic brain injury. Comfort measures were instituted and he expired on Day 12.
Autopsy Findings: Pulmonary edema, cardiomegaly, acute tubular necrosis and oxalate crystal deposition in renal tubules. Cause of death was acute ethylene glycol poisoning.

Case 61. Acute crotalid envenomation: undoubtedly responsible.
Scenario/Substances: A 37 y/o male was bitten on his right thumb by a rattlesnake at home. He called his wife, who arrived 30 min later and found him blue and unresponsive with vomitus. EMS intubated, defibrillated and began CPR.
Past Medical History: Asthma; 2 prior rattlesnake bites with reported "allergy" to rattlesnake venom.
Physical Exam: Unresponsive; small (<1 cm) laceration on right thumb; pupils fixed and dilated. Respiratory and metabolic acidosis. Asystole converted to VF, then VT. Respiratory arrest; T 35.6°C.
Clinical Course: In the ED, the patient was given sodium bicarbonate, epinephrine, atropine, methylprednisolone, diphenhydramine, 6 vials of antivenom, norepinephrine, lidocaine, clindamycin, levoquinalone, IV fluids, midazolam, epinephrine, vecuronium, naloxone and vitamin K. At ~4 hours post exposure, PT 19.6 seconds; PTT 40.5 seconds; fibrinogen 155 mg/dl; platelets 232; WBC 19.7; Hgb 19.1, Hct 56.8%. After stabilizing the patient, he was flown to a tertiary hospital. Six more vials of antivenom were given. No ecchymosis or oozing noted. Day 2, he was not on norepinephrine or sedation, still on ventilator; shaking; swelling to hand; thumb was black; on insulin infusion; on antibiotics; diphenhydramine and 4 units of fresh frozen plasma given; given. On Day 2 his platelets were 142; PTT 29.6 seconds; INR 1.5; fibrinogen 223 mg/dl; D-Dimer 11.09 mcg/mL; fibrin degradation product >40 mcg/mL. On Day 3 he had GCS 5T; on lantus, albuterol nebulizer, morphine, hydrocortisone, antibiotic; vitamin K; poor urine output; on NG feeding; tip of thumb necrotic. His platelets were 84, fibrinogen 330 mg/dl; AST 44; ALT 451; WBC 21.2; Hgb 11.5; Hct 33.2%. On Day 4, he had no cough or gag reflex; GCS 3T. On Day 5, the patient's family requested comfort measures only and he expired on Day 6
Autopsy Findings: Not done

Case 64. Acute jellyfish stings: probably responsible.
Scenario/Substances: A 70 y/o male was swimming in the ocean off a Florida beach when he was stung by a Portuguese Man O' War. Local wound care was applied by the lifeguard including application of vinegar and removal of nematocysts. The patient collapsed ~25 min after the sting as he was walking away from the lifeguard stand. EMS found him in cardiopulmonary arrest and transported him to the ED.
Past Medical History: cardiac disease with a pacemaker/automatic cardioverter defibrillator.
Clinical Course: He arrived in the ED in cardiopulmonary arrest. Pacer spikes were noted on the electrocardiogram, but there were no spontaneous respirations or pulse, resuscitation was stopped, and he was pronounced dead.
Autopsy Findings: Not available
Case 66. Acute sulfuric acid ocular and dermal: undoubtedly responsible.
Scenario/Substances: 18 y/o male suffered burns oropharynx, neck, face, and chest, when acid was thrown in his face during an altercation. He was intubated by EMS during transport to the ED.
He presented in the ED with 2nd and 3rd degree burns to his face, neck, and upper chest. Stabilized and evacuated by air to an out of state burn center.

Physical Exam: 2nd and 3rd degree burns and edema of the oropharynx, neck, face, and chest.
Clinical Course: He was placed on a ventilator and received IV fluids and sedation while his skin and eyes were irrigated. He was stabilized and transferred to the burn center ICU. Esophagogastroduodenoscopy showed injury to his oropharynx. Bronchoscopy revealed inhalation injury at the level of the carina. He had debridement of the anterior neck and chest with placement of a graft. Subsequently he developed bilateral bronchopneumonia, abdominal compartment syndrome, and acute renal failure. A decompression laparotomy was performed but his respiratory function continued to decline and he expired on Day 8.
Autopsy Findings: Cause of death: complications of acid burns to the oropharynx, face, neck, and chest. Incidental findings were cardiomegaly and bilateral ventricular hypertrophy

Case 72. Acute nitrate/nitrite inhalation: undoubtedly responsible.
Scenario/Substances: A 33 y/o male was found unresponsive with"Jungle juice" (an ethanol beverage) and a head cleaner containing ethyl chloride found nearby.
Physical Exam: Unresponsive with agonal respirations, O_2 sat in the 80s%. SBP in the 80s; cyanotic with mottled skin.
Laboratory Data: The methemoglobin level was reported after the patient expired at > 70%.
Clinical Course: The patient was brought to the ED by EMS. He was given 1 dose of methylene blue and naloxone with no apparent response. He became pulseless, was intubated and CPR was administered per ACLS protocols. He could not be resuscitated and expired shortly after arriving at the hospital.
Autopsy Findings: The cause of death was chemical asphyxiation due to methemoglobin due to "huffing" of volatile substances. Postmortem methemoglobin saturation was 41.2%.

Case 84. Acute antifreeze (ethylene glycol) ingestion: undoubtedly responsible.
Scenario/Substances: 50 y/o male became be very unsteady and lethargic. His wife assumed that he had taken too much of his methadone, but when she later attempted to wake him and he had a seizure, she called EMS.
Laboratory Data:
Day 1: ABG-pH 6.9/pCO_2 32/pO_2 111, total Ca 5.8, Na 155, K 5.4, CO_2 8, Cr 3.5, CK 366, ethanol and acetaminophen not detected, urine drug screen negative; TProt in CSF 148 mg/L; glucose in CSF 146 mg/dL; PT 16.5, WBC 44.2, platelets 449. Urinanalysis: protein 75, glucose 50, blood 4+.
Day 2: K 2.8, HCO_3 17, Cr 6.2, CK 812, CKMB 10.3, troponin 0.097, WBC 19.8, PT 16.7, d-dimer 3.79, serum osmolality 341, lactic acid 5.3, pH 7.18, ionized Ca 0.88, methanol not detected; ethylene glycol 24.8 mg/dL.
Day 3: AST 71, Total Ca corrected to 8.1 mg/dL. Day 4: WBC 17.8, Cr 3. Day 5: AST 109. Day 6: K 5.5, BUN 81, Cr 6.5. Day 7: BUN 81, Cr 6.7, Alk Phos 142, AST 71.
Clinical Course: Upon arrival to the ED, the patient was intubated, IV fluids, sodium bicarbonate, and antibiotics were initiated for hypotension, profound acidosis and suspected sepsis and he was admitted to the ICU. Fomepizole was started when his ethylene glycol 24.8 mg/dL was reported. He was in renal failure (Cr 4.7) with poor urine output. On Day 2, the patient was hemodialyzed and fomepizole was continued. Day 3: dialysis was performed and sodium bicarbonate and norepinephrine were continued. CxR revealed severe lung consolidation. IV calcium replacement was administered. An EEG was consistent with encephalopathy. Insulin and insulin glargine were given for hyperglycemia. On day 5, the patient showed minimal response including gag reflex, corneal reflex and pupillary reflex. Repeat EEG showed moderate abnormality with increased generalized slowing, poor organization of background activity suggesting diffuse encephalopathic process. The family elected for comfort measures only and the patient expired on Day 7.
Autopsy Findings: Not available.

Case 85. Acute antifreeze (ethylene glycol) ingestion: undoubtedly responsible.
Scenario/substance: 50 y/o male found unresponsive in the trunk of a car was suspected of drinking ethylene glycol after finding that a friend had died from ethylene glycol ingestion. He was reportedly taking his wife's alprazolam as well. He was transported to the ED.
Physical Exam: In the ED he was unresponsive to pain and had a gag reflex and responsive pupils. Vital signs were "stable" and he was not intubated.
Laboratory Data: pH 7.06, HCO_3 8, K 5.8, Cr 1.36. Urine: no crystals, no ketones. Calculated osmolality 299, anion gap 24. Ethanol, salicylate and acetaminophen not detected.
Clinical Course: No response to naloxone; started on fomepizole, folate, pyridoxine, and thiamine based on acidosis and recent history of a friend with ethylene glycol poisoning. He was retransferred to a tertiary care hospital, intubated and begun on hemodialysis. Labs were BUN 27, Cr 2.7, K 7.9, HCO_3 < 10, AST 36, lactate 2.4, INR 1.2. He received sodium bicarbonate and calcium chloride IV. Ethylene glycol 26,089 mg/L. Despite dialysis and fomepizole he developed ARDS and/or aspiration pneumonia and expired on Day 2.
Autopsy Findings: No autopsy performed.

Case 87. Acute antifreeze (ethylene glycol) ingestion: probably responsible.
Scenario/Substances: A 51 y/o female was found unresponsive at home in the early morning with a suicide note after having been seen the night before. Her parents managed her medications because of concerns about overdose. EMS found her breathing spontaneously but unresponsive; unresponsive to naloxone 2 mg IM en route to the hospital.
Past Medical History: depression, bipolar disorder, prior suicide attempts. Medications included lithium, duloxetine, zolpidem, simvastatin, lorazepam, trazodone, rabeprazole.
Physical Exam: ED: GCS 3, BP 155/72, HR 98, RR 21 (intubated, on ventilator), T (rectal) 35.4°C, pupils 4–5 mm. Exam otherwise unremarkable.

Laboratory Data: ABG-pH 6.89/pCO_2 27/pO_2 524/HCO_3 5.2 on FiO_2 100%. Na 147, K 5.1, HCO_3 7; BUN 12, Cr 1.36, glucose 295. osmolality 332, osmol gap 18 mmol. Ethanol, acetaminophen, salicylate all not detected. Lithium 0.03 mmol/L. ECG showed sinus rhythm, QRS 78 ms, QTc 472 ms, CxR mild pulmonary congestion. UA showed trace protein and blood, questionable crystals.
Clinical Course: Naloxone IV and flumazenil IV were given in the ED without response. Based on the severe acidosis and the osmol gap, the home was searched for antifreeze – the patient's daughter called the hospital to report she had found a ¾ empty 1-gallon container of antifreeze in the bathroom. In addition, the family found an empty bottle of ziprasidone that had been filled a week before. Ethylene glycol level from admission was 17 mg/dL, reported 2 days after arrival. Fomepizole was started and IV sodium bicarbonate was given. The family declined permission for dialysis. The next day the patent remained completely unresponsive and the Cr had increased to 3.81. The patient's family requested comfort measures only and the patient expired on Day 2.
Autopsy Findings: The ME determined the cause of death to be ethylene glycol toxicity.

Case 90. Acute ethylene glycol ingestion: undoubtedly responsible.
Scenario/Substances: A 55 y/o female ingested an unknown amount of ethylene glycol and was found at home unresponsive with posturing.
Past Medical History: Prior CVA; medications included estrogen, buspirone, and sertraline.
Physical Exam: Unresponsive, BP 146/90, HR 72.
Laboratory Data: Initial ED values: ABG-pH 6.69/pCO_2 24/pO_2 229/HCO_3 2.8, lactate 53 mg/dL, anion gap 27, BUN 9, Cr 1.1, glucose 140 mg/dL, CK and troponin: normal. Day 1: WBC 23.6, glucose 308, Cr 2.0, BUN 11, pCO_2 7, Na 150, K 6.1, ethanol 14 mg/dL, serum osmolality 466. Labs 10 hr after admission; lactic acid 30 mg/dL, pH, 7.1.

Day 2, ethylene glycol level 4570 mg/L.
Day 3: ethylene glycol level 211 mg/dL, BUN, 11; creatinine 1.9, CT head: small subdural hematoma.
Clinical Course: After transfer to the second hospital, IV sodium bicarbonate and fomepizole were given. Hemodialysis was started when the ethylene glycol level returned; fomepizole was continued. Seizures occurred and a lorazepam infusion was started; norepinephrine was required to support BP. On Day 3 hemodialysis was repeated Comfort measures were instituted on Day 4 and he expired on Day 5.
Autopsy Findings: A hospital blood sample contained ethylene glycol 5300 mg/L. No other substances were detected on toxicology screens. Blunt head trauma with an acute, small subdural hemorrhage was also found.

Case 98. Acute cyanide Unknown: undoubtedly responsible.
Scenario/Substances: A 72 y/o male intentionally ingested cyanide. A the suicide note at the scene warned responders of the presence of cyanide. The medical examiner's office requested guidance about the handling of the body.

Autopsy Findings: Pulmonary congestion and edema, cerebral edema, lacerations, abrasions, and contusions throughout the body. Postmortem toxicology: cyanide 18 mg/L in femoral blood; carboxyhemoglobin saturation of heart blood 6.7%, and ethanol 0.04 g/100 mL in femoral blood. Cause of death was cyanide poisoning.

Case 107. Acute ethylene glycol monobutyl ether Inhalation/nasal: probably responsible.
Scenario/Substances: 25-y/o male inhaled the fumes from an aluminum cleaner while at work cleaning a truck 3 weeks prior to clinical evaluation. He became acutely ill, but recuperated in a couple of days and returned to work. Two days prior to presenting he returned to work, repeated the exposure and the symptoms returned but were more severe. The patient presented to his primary care physician's office with complaints of acute shortness of breath, cough, hemoptysis, dizziness, severe chest pains with deep breathing, and a sore throat. The patient was started on steroids and a budesonide/formoterol inhaler. He stated he felt better after 2 days of treatment, but his symptoms suddenly worsened during the night and his physician instructed him to go to the ED.
Past Medical History: He had history of depression, alcohol abuse, hypertension and 1-pack per day smoking for 8 years.
Physical Exam: On arrival in the ED, with shortness of breath, coughing, hemoptysis, dizziness, chest pain with cough, and a sore throat. bilateral lung crackles, tachycardia, and depressed affect. BP 118/69, HR 109, RR 25 and T 37.6°C.
Laboratory Data: Electrolytes, BUN, Cr, glucose, ALT, AST, CK, CK-MB, and, troponin were WNL. WBC 21.5, Hgb 8.9, Hct 26, ABG-pH 7.46/pCO_2 33.9/pO_2 67.3
Clinical Course: The patient was admitted with acute dyspnea secondary to chemical pneumonitis. His CxR showed diffuse bilateral alveolar infiltrates. He was started on methylprednisolone, ciprofloxacin, urosemide. He had hemolytic anemia. Day 4 he received 2 units of packed red blood cells early in the day and later became hypertensive and tachycardic with respiratory distress requiring intubation and ventilation and a propofol infusion. Day 6 a bumetanide infusion and dialysis for oliguric renal failure with metabolic acidosis, hyperkalemia and anemia. He was started on vancomycin and piperacillin with tazobactam infusions after blood cultures for fever. The patient had a cardiac arrest on Day 6, was resuscitated, but died on Day 7.
Autopsy Findings: Severe pulmonary congestion and edema related to pneumonia, fibrosis, and diffuse aveolar damage, hepatic inflammation with cirrhosis, severe renal edema and congestion. The cause of death was complications of cleaning chemical inhalation.

Case 115. Acute cleaner (alkali) Ingestion (with aspiration): undoubtedly responsible.

Scenario/substance: A 54 y/o male accidentally drank an alkaline degreaser solution that had been stored in a diet green tea plastic bottle. He presented to the local ED ~30 min post-ingestion.
Past Medical History: obesity
Physical Exam: Respiratory distress with posterior oropharyngeal edema.
Clinical Course: The patient's airway continued to swell. Attempts to intubate were unsuccessful, as were attempts at cricothyrotomy; the anesthesia team performed an emergency tracheotomy. The patient suffered a cardiorespiratory arrest, and attempts at resuscitation were unsuccessful. The patient expired ~2 hr post-ingestion.
Autopsy Findings: The patient had massive upper airway edema. The base of the tongue and epiglottis were erythematous and markedly edematous. The upper airway was occluded by the supraglottic tissues which had marked erythema and edema. The esophagus showed subtle mucosal erythema. The proximal fundus of the stomach had mucosal erythema and focal mucosal erosion. Aortic blood was negative for ethanol. The cause of death was determined to be asphyxia secondary to massive upper airway edema and laryngospasm secondary to sodium hydroxide ingestion and aspiration.

Case 119. Acute cleaner (acid) ingestion: undoubtedly responsible.
Scenario/Substances: A 70 y/o female was taken to the ED after a suspected ingestion of a toilet bowl cleaner containing 15–25 % hydrochloric acid, and resembled a smoothie drink often consumed by the patient.
Past Medical History: Alzheimer dementia and hypertension.
Clinical Course: The patient was awake and not complaining of any pain on examination in the ED, HR 120, RR 28. Initial K 5.9. The patient developed rapidly progressive abdominal pain and suffered perforation of her bowel. She was not taken to surgery and died within 24 hours after presentation.
Autopsy Findings: Extensive necrosis of stomach, duodenum and small bowel.

Case 130. Acute food poisoning, bacterial ingestion: probably responsible.
Scenario/Substances: 26 y/o male noticed gradual onset of cramping abdominal pain and development of watery diarrhea during the night and a temp of 38.7°C. The patient had eaten at a restaurant 3 days earlier which had been associated with an atypical E Coli food poisoning outbreak.
Past Medical History: Healthy; the patient denied any history of peptic ulcer disease or similar abdominal problems.
Physical Exam: The patient presented to the ED after awaking with bloody diarrhea. T 36.6°C, BP 147/85, HR 81, RR 20, O_2 sat 97% on room air. Abdomen, peri umbilicular tenderness.
Laboratory Data: Bilirubin 1.7, AST 43, WBC 14.8, 79 segs and 8 bands, INR 1.01, PTT 26, Hgb 17.1, Hct 49%; calculated osmolality 278 mOsm/L. Day 2: WBC 48,000 with 22 % bands and 58 % segs; CO2 18;; Later bilirubin 1.5; Glucose 156; K 5.1; Hgb 18.4; Platelets 118, Hct 57.6 %; Urinalysis: nitrites positive, blood trace, white cells trace, ketones trace, glucose trace, protein 3+, casts 5–10 /hpf fine granular.
Clinical Course: Admitted to noncritical care unit to have stools checked for C. difficile, shigella, and salmonella as well as amylase, lipase, SED rate and a urinalysis. He received normal saline IV for 4 hours and then D5 1/2 normal saline with K. Started on metronidazole, levofloxacin and vancomycin. WBC increased to 29.0. Abdominal cramping with tenderness in the left and right lower quadrants. Day 2 transferred larger hospital where his condition deteriorated. A flexible sigmoidoscopy examination demonstrated normal appearing rectal mucosa and a large amount of blood in the colon. Ciprofloxacin therapy was initiated. Developed DIC, thrombocytopenia, ARDS, and cardiac arrest. Resuscitated successfully and hemodialysis initiated. The patient had a second cardiopulmonary arrest and expired on the Day 4.
Autopsy Findings: Hemorrhagic necrotizing colitis with relative rectosigmoid sparing, stomach and small bowel ischemic changes. Hemorrhagic mesenteric lymph nodes and serosanguinous ascites (1000 ml). Acute pneumonia with bilateral serosanguinous effusions (400 ml). Hemorrhagic infarction of the liver and the spleen was congested with hemorrhage and hilar vein thrombosis. Adrenal hemorrhagic necrosis. Heart demonstrated edema and ischemic changes. Cerebral edema with ischemic changes. Renal cortical necrosis and extreme edema. Ethanol was not detected. Multiple postmortem blood, colon and stool cultures were negative. A nasopharyngeal swab for virus culture was negative. Multiple tissue sections submitted to the CDC for immunohistochemical testing and serologic studies showed no evidence of infection with E. coli O111. Several hundred individuals became sick with an acute intestinal illness and ~70 were hospitalized for severe bloody diarrhea and abdominal pain. Many patients subsequently tested positive for E. coli O111. A single restaurant where the patient dined was reported to be a common source.

Case 131. Acute foreign body ingestion: undoubtedly responsible.
Scenario/Substances: He tried to swallow cocaine packets while in police custody. Cardiac arrest before arrival to the ED and EMS resuscitated.
Physical Exam: In the ED: BP 98/67, HR 101,, O_2 sat 97%. ET tube in place, not responsive, fixed pupils equal at 5–6 mm, muscle spasms.
Laboratory Data: Na 167, Cr 1.8, CK 3085. Urine drug screen positive for cocaine metabolite.
Clinical Course: ICU bronchoscopy showed small bags of cocaine which were removed. He became hypertensive and was treated with labetalol but never became responsive. Developed diabetes insipidus and renal insufficiency. Declared brain dead, was given, comfort care was instated and expired Day 4.

Autopsy Findings: Complications of foreign body obstruction, cocaine use, atherosclerotic heart disease, pulmonary emphysema, pleural effusions. Serum cocaine 0.16 mg/L, benzoylecgonine 2.84 mg/L, cocaethylene not detected.

Case 164. Acute carbon monoxide inhalation: undoubtedly responsible.
Scenario/Substances: 43 y/o male attempted suicide by redirecting the car exhaust into the passenger compartment. He was found pulseless, after being missing for 15 min. CPR was initiated and he was transferred to an ED where he was resuscitated. He was then transferred to a tertiary care facility for hyperbaric oxygen.
Past Medical History: Depression
Clinical Course: Vital signs at the tertiary care facility 200/120, HR 147, RR 14. The patient is intubated and unresponsive with a GCS 3. He had non specific movements of his head occasionally. Pupils were equal and reactive 3 mm. Otherwise exam was unremarkable. On admission the ABG-pH 7.39/pCO_2 32/pO_2 543, lactic acid 4.7 mMol/L

Na 141	Cl	BUN 10	Glu 321
K 4.4	HCO_3 17	Cr 1.3	

anion gap 18, troponin 0.22, WBC 24.2, Hgb 16.5, Hct 50.5, platelets 407, carboxyhemoglobin 8%. Day 2 troponin 3.51 and later to 6.52. AST 71, ALT 32, CK 702. He received hyperbaric oxygen therapy for 3 hours. He declined neurologically while in the ICU; his pupils became fixed and constricted and the corneal reflex was lost. His blood pressure became unstable despite fluid resuscitation and vasopressors. He experienced an episode of SVT treated with amiodarone. He failed an apnea test and, after discussion with the family, comfort measures were instituted and he expired.
Autopsy Findings: ME documented an initial Carboxyhemoglobin 50.5%.

Case 202. Acute mercury parenteral: undoubtedly responsible.
Scenario/Substances: A 36 y/o male apparently injected himself with elemental mercury an unknown time before arriving at ED. He had complaints of fever, diarrhea, headache, cough and pruritus.
Past Medical History: The patient had been to the ED about 10 days prior with complaints of fever, sore throat, generalized itching and a macular rash. He was given diphenhydramine, but symptoms did not improve.
Clinical Course: In the ED complaining of fever, diarrhea and headache on the left side. CxR and CT scan showed mercury deposits in the lungs and within the right heart cavities. Succimer and IV antibiotics were started on Day 3. On Day 5, the patient had nausea, emesis, diarrhea, numbness and tingling of the feet, weakness in the extremities, blurred vision and was producing blood-stained sputum. On Day 6, the patient's urine mercury was 552 mcg/dl, serum mercury was 224 mcg/dl, urine lead was 24 mcg/dl and cadmium was 6.1 mcg/dl. On Day 7, he was transferred to the ICU and oral n-acetylcysteine was begun. On Day 8, he was febrile, had diffuse bone pain, was agitated, tachycardic and had urticarial rash on his chest and abdomen. On Day 9, succimer was held due to leukopenia. His WBC was 1.9. On Day 11, his AST peaked at 465, his ALT peaked at 344 and his CK peaked at 43002. He was intubated on Day 10 and vasopressors were begun on Day 11. DMPS (2,3-dimercaptopropane-1-sulfonate) was started on Day 12, as well as dialysis. DMPS was discontinued on Day 16 because of hypotension. The patient was anuric by Day 17. He expired on Day 18.
Autopsy Findings: Focal myocardial necrosis, pulmonary edema and bilateral pleural effusion and ascites. Blood mercury level was 39 mcg/dl. Cause of death was acute elemental mercury poisoning. Manner of death was undetermined.

Case 203. Acute mercury inhalation/nasal: undoubtedly responsible.
Scenario/substance: A 55 y/o male was boiling off elemental mercury to isolate gold from electronic components. Over the next 2 days he developed flu like symptoms, progressive chest pain, shortness of breath and swollen gums. Sheriff's Department reported that methamphetamine laboratory chemicals and paraphernalia were also discovered at the site.
Physical Exam: In the ED, 2 days after exposure, HR 80s, T 38.1°C
Laboratory Data: ABG-pH 7.4/pCO_2 33/pO_2 51; WBC was 20.9, urine positive for THC and methamphetamine; urinalysis positive for trace protein, urobilinogen, blood +1; Cr 0.9, BUN 15. Mercury level on admission 1,108 mcg/L. All other laboratory values WNL.
Clinical Course: Patient admitted to ICU and placed on oxygen. ECG normal sinus rhythm with HR in the 80s. IV fluids were initiated prior to transfer to a larger hospital. Day 2 he was intubated and ventilated. IV fluids, oxygen and BAL were administered. CxR indicated ARDS. Day 5 penicillamine administration was added. Day 9 he was hypotensive and required epinephrine and norepinephrine. Chelation with succimer was initiated. He continued to deteriorate and penicillamine was discontinued. Comfort measures were instituted and he expired on Day 10.
Autopsy Findings: No autopsy was performed. Final cause of death listed as ARDS due to toxic effects of mercury vapor inhalation.

Case 204. Acute arsenic ingestion: undoubtedly responsible.
Scenario/Substances: 57 y/o male ingested 3 grams of arsenic pentoxide 5 hours prior to arrival at ED with hematemesis.
Physical Exam: BP 92/62, HR 102, RR 20, O_2 sat 98%. Agitated, diaphoretic, anuric; HEENT: no burns; Lungs: clear, tachycardic; generalized abdominal tenderness and bloating, NEURO: nonfocal, SKIN: no rash
Laboratory Data: Initial local hospital:
WBC 16.6, Hgb 19.9, platelets 395, glucose 2598 mg/dL, Cr 2.0, K 2.6, HCO3 19, ALT 17. Tertiary care hospital: WBC 25.1, Hgb 16.7, glucose 39, Cr 1.8, K 2.6, lactate 8.2 mg/dL,

pH 7.1, INR 1.3, troponin 17.5 ng/mL, urinary arsenic 2,800 µg/L, inorganic arsenic 264 µg/L, serum arsenic 252 µg/L.
Clinical Course: Upon transfer to the tertiary care hospital, NG aspiration of the metallic stomach contents seen on abdominal xray yielded a white residue. He was intubated and received BAL IM, IV fluids, potassium, norepinephrine and antibiotics. Endoscopy and CVVHD were performed. Day 2: Maximum rates of norepinephrine, dopamine and vasodopressin were required to support BP. The patient's family elected the institution of comfort measures and he expired on Day 2.
Autopsy Findings: Not available

Case 206. Acute on chronic chloroflurocarbon Inhalation/nasal: undoubtedly responsible.
Scenario/Substances: 19 y/o male witnessed at home inhaling fluorinated hydrocarbons multiple times on the day of presentation.
Past Medical History: Inhalant abuse
Physical Exam: Mechanically ventilated, BP120/72, HR 80, RR 16, T 36.7°C, O_2 sat 88%. CxR showed interstitital edema which progressed to infiltrate.
Clinical Course: In ED had shortness of breath and chest pain; transferred to tertiary care hospital. Pulmonary embolism notfound, developed severe respiratory distress and hypoxemia which required intubation and ventilation with PEEP. He required high pressure ventilation with 100% oxygen for 9 days with failed attempts to wean. Fever prompted empiric antibiotics. Steroids were administered. Day 13: hypercarbia, hypoxemia, acidosis continued followed by a fatal cardiac arrest.
Autopsy Findings: not performed

Case 214. Acute charcoal lighter fluid injection: undoubtedly responsible.
Scenario/Substances: 40 y/o female came to the ED after intentionally injecting 40 ml of charcoal lighter fluid into her vein.
Past Medical History: History of prior suicide attempts, alcohol abuse, marijuana use, back surgery, knee surgery, s/p hysterectomy.
Physical Exam: Altered mental status, diaphoretic, systolic BP 99, HR 94.
Laboratory Data: ABG-pH 7.46, pCO2 31, pO2 70, serum bicarbonate 19, O2 sat 97% (3 L O2 NC). Salicylate, APAP, ethanol, urine pregnancy and urine tox negative. ECG: ST segment elevation.
Clinical Course: Admitted to ICU, tachypneic (RR 30–40), with abdominal pain. Respiratory status declined requiring intubation. Hypotension developed and IV vasopressin and phenylephrine were given which increased systolic BP to 94–103. Body temperature increased to 104.7 F and hyperglycemia developed. The patient expired 18 hours after presentation.
Autopsy Findings: No autopsy was performed. Cause of death was multiple organ failure and self injection IV with charcoal lighter fluid. Toxicology reported blood alcohol level of 0.10%.

Case 218. Acute mineral spirits ingestion (with aspiration): undoubtedly responsible.
Scenario/Substances: An 11 month old male became ill after ingesting an unknown amount of paint thinner. The product was in its original container, but the cap had been left off. A sibling had used the product to clean a floor and had misplaced the safety cap. The child experienced rapid onset of cough, altered mental status and an extended generalized tonic-clonic seizure of 40 min duration. Responding EMS reported finding an actively seizing child with HR 132 and RR 22.
Physical Exam: In the ED the child was unresponsive, cyanotic, actively seizing, HR 130, BP 85/61 and T 37.8°C. He exhibited a "strong paint thinner odor".
Laboratory Data: A chest X-ray taken on arrival was consistent with ARDS.
Clinical Course: The child was intubated, ventilated and given bronchodilators in the ED. A pneumothorax required chest tubes. Adequate oxygenation could not be accomplished. An NG tube on back-aspiration revealed a paint thinner-like odor. Rectal diazepam was given for the seizures, which remained refractory to treatment. The child was anuric with "multi-organ system failure". Death occurred 12 hours after presentation.
Autopsy Findings: Marked pulmonary edema and congested lungs. Hemorrhagic gastrointestinal fluids. Cerebral edema. A comprehensive postmortem blood toxicology screen was negative. Analysis of small intestines revealed the presence of petroleum distillates. Cause of death: multiple organ failure secondary to petroleum hydrocarbon toxicity.

Case 223. Acute mushrooms, cyclopeptides ingestion: undoubtedly responsible.
Scenario/Substances: 53 y/o female developed nausea and vomiting 1 day after picking, cooking and eating wild mushrooms. Symptoms began 10–12 hours after ingestion. She was brought to ED where they were concerned about possible Amanita mushroom poisoning.
Laboratory Data: AST 68, ALT 54, Cr 1.2, INR 1.1. Day 2: AST 304, ALT 223; Day 3 AST 2,060, ALT 1,723, pH 6.8, lactate 10 mmol/L, INR 5.5.
Clinical Course: Initial treatment was multiple dose activated charcoal (q 2 – 4 hr); Penicillin G 1,000,000/Kg/day IV divided every 8 hours for 24 hours, and cimetidine 300mg IV q 6 hr. Day 2: Increased LFTs and PCC recommended and she received N-acetylcysteine IV. Mental status was alert and oriented with resolution of GI complaints.
Day 3: Patient became lethargic, pH 7.1, intubation required, refractory hypotension requiring vasopressors, with HR 143. Dialysis was considered, but the patient was too hypotensive.
Day 4: Multiple cardiac arrests occurred before the fatal arrest. A sample of the meal was examined by a mycologist who confirmed Amanita bisporigera.
Autopsy Findings: Severe hepatic necrosis.

Case 224. Acute mushrooms, cyclopeptides ingestion: probably responsible.
Scenario/Substances: 55 y/o female picked mushrooms while hiking in upstate New York; developed weakness, dizziness, nausea and vomiting 24 hr after ingestion; presented to the ED 2 days later.
Physical Exam: Abdominal tenderness.
Laboratory Data: Initial AST 4200, ALT 5000, INR >20 HCO3 10.
Clinical Course:
Admitted with fulminant hepatic failure 3 days after ingestion of wild mushrooms. Treatment with N-acetylcysteine started and transfer to a liver center. 6 hr after admission: BP declined, vasopressors and intubation required. Bleeding from venipuncture sites noted, patient was considered too unstable for transfer. Patient expired 14 hours after presentation from cardiac arrest.
Autopsy Findings: Cause of death was acute fulminant hepatic necrosis due to ingestion of poisonous mushroom.

Case 228. Acute paraquat ingestion: undoubtedly responsible.
Scenario/Substances: An 8 y/o male ingested an unknown blue herbicide that had been stored in a soda bottle.
Clinical Course: At initial ED presentation, he had normal vital signs and had 1 episode of vomiting, but was otherwise asymptomatic during evaluation. CxR 4 hours post ingestion was normal and he was sent home. The child developed increasing vomiting and returned to the ED 10 days later, ataxic, lethargic, and confused with continued emesis, HR, 110; RR 50–57, O_2 sat 96% with O_2 supplementation. Laboratory results at that time were:

Na 136	Cl 90	BUN 126	Glu 139
K 3.4	HCO_3 26	Cr 2.9	

Salicylate was not detected, CK 58, AST 35, ALT 11, lactate 2.6 mg/dL, venous pH 7.44 and pCO2 40, UA showed 1+ Hgb. The herbicide was unavailable, but the parents believed the product was a chlorphenoxy compound. He was admitted for new onset renal failure, anion gap metabolic acidosis, altered mental status, hypoxia and tachypnea. A CxR revealed mediastinitis with a large right pneumothorax. During Day 1 vitals remained stable with improvement in clinical status. Paraquat was considered as a possible etiology, but no specific therapy was recommended as they were considered too risky given the unclear etiology and improving renal function. On Day 2, a chest tube was placed; IV fluids, electrolyte replacement, and supplemental oxygen were continued. Renal function continued to improve. His BP increased and nicardipine was initiated. On Day 3, chest tube removal was not tolerated and his oxygen requirement increased. A repeat CxR revealed increased consolidation and furosemide was administered for fluid overload. Alkalosis persisted; ABG pH was 7.53. Later that day, his respiratory status further declined (O_2 sat 80%), and he was intubated. CxR revealed bilateral atelectasis, pulmonary edema, and questionable pulmonary fibrosis. Anemia was treated with packed red blood cells. On Day 4, paraquat was reconsidered as a potential cause of injury; unconventional therapies were discussed including cyclophosphamide in combination with high dose steroids. The pneumothorax recurred; antibiotics were started and high flow oscillator ventilation for poor oxygenation instituted; his lungs developed hemorrhage. Except for a low serum magnesium, his electrolytes, liver function, and renal function were normal. An ABG demonstrated pH, 7.43; pCO_2, 48; and pO_2 about 50.On Day 5, the CxR improved although ventilation remained difficult. There was no improvement in ABG; pO_2 was only 27. Pulmonary surfactant was administered but not tolerated. Free air was discovered in his abdomen and epinephrine was added for a drop in BP and HR. Continued anemia was treated with additional packed red blood cells. On Day 6, the child's status further declined with continued decreases in O_2, BP, HR, and intermittent changes in heart rhythm. On day 7, dopamine was started to maintain BP but he became hypertensive and died after an unsuccessful resuscitation.
Autopsy Findings: Pleural and peritoneal effusions. Lung parenchyma was moderately congested without obvious consolidation or focal lesions. Lung sections showed diffuse alveolar damage with fibrosis and intraalveolar hemorrhage. The small bronchi were plugged with mucus and acute inflammatory cells. Analysis of urine sample obtained at the final healthcare facility on day 14 from ingestion, revealed paraquat, 0.74 mcg/mL. Cause of death was diffuse alveolar damage and fibrosis with intraalveolar hemorrhage consistent with paraquat poisoning. The ME ruled the death as accidental secondary to respiratory failure due to paraquat ingestion.

Case 242. Acute copper sulfate ingestion: probably responsible.
Scenario/Substances: 59 y/o female may have ingested a copper sulfate containing root killer. The caller was not sure if this was a suicide attempt or if the product was diluted.
Past Medical History: Bipolar disorder.
Physical Exam: Patient was mumbling her words and difficult to understand. BP 220/110; Coffee ground-like emesis.
Laboratory Data: K 7.8. Post intubation ABG-pH 7.07/ pCO_2 76/pO_2 396, Methemoglobin 2.5%.
Clinical Course: Treated for hypertension and hyperkalemia. Within a few hours, she became hypotensive and required hemodynamic support. Sodium bicarbonate given for acidosis. Within ~8 hours from she became bradycardic, had a cardiac arrest and resuscitation was unsuccessful.
Autopsy Findings: Not available

Case 243. Acute strychnine ingestion: undoubtedly responsible.
Scenario/substance: A 61 y/o male ingested trazodone, propoxyphene-acetaminophen, hydrocodone, acetaminophen-diphenhydramine, beer, and arsenic powder. Initial symptoms

included drowsiness, diaphoresis and multiple episodes of emesis. Emesis eventually became bloody.
Past Medical History: Depression
Physical Exam: Drowsy and vomiting, BP 141/74; HR 85, RR 18. Muscle contractions were present.
Laboratory Data: Initial electrolytes, liver function tests, and coagulation studies were normal. Ethanol was 30 mg/dL, acetaminophen 148 mg/L at 5 hr, salicylate was not detected.
Clinical Course: The patient received IV fluids, antiemetics, IV N-acetylcysteine and IM BAL. Within 5 hour of presentation, vomiting had subsided and mental status was normal. However, nurses reported an odd tremor. He went on to develop severe muscle spasms, hematuria, and delirium. About 8 hours later, the patient went into sudden cardiac arrest and resuscitation was unsuccessful.
Autopsy Findings: Postmortem venous blood: caffeine, dihydrocodeine 0.031 mg/L, hydrocodone 0.19 mg/L, propoxyphene 0.96 mg/L, norpropoxyphene 1.9 mg/L, oxycodone 0.060 mg/L, and strychnine 1.2 mg/L. No arsenic was detected. The death was attributed primarily to strychnine.

Case 250. Acute oxycodone ingestion: undoubtedly responsible.
Scenario/Substances: A 4 y/o female was found unresponsive and after a suspected carbon monoxide exposure. EMS found the child to be in full arrest, initiated ACLS resuscitation, gave naloxone, and transported her to the ED.
Clinical Course: Resuscitation was unsuccessful and the child was pronounced dead upon arrival to the ED.
Autopsy Findings: Subclavian blood: oxycodone > 2 mg/L (lethal per ME: 0.10 - 8.0 mg/L), oxymorphone 0.20 mg/L (oxycodone metabolite) and midazolam 0.54 mg/L (toxic per ME: 1.0 - 1.5 mg/L). Further investigation revealed the child had been playing with and is presumed to have ingested some of a grandparent's medication.

Case 253. Acute methadone ingestion, inhalation/nasal: undoubtedly responsible.
Scenario/substance: 12 y/o male found to be behaving abnormally and his 16 y/o brother suspected drug use. The next morning he was found unresponsive. The family found him pulseless and apneic and performed CPR and EMS.
Past Medical History: Attention-deficit hyperactivity disorder. Medications included amphetamine/ dextroamphetamine and atomoxetine.
Physical Exam: On initial presentation, the patient was in cardiac arrest. He was resuscitated to a pulse, 90's; blood pressure, 60/30 to 110/60; T, 96° F.
Laboratory Data: During resuscitation, ABGs & electrolytes were ABG-pH 6.73/pCO_2 47/pO_2 574/HCO_3 6.2,

Na 149	Cl 97	BUN 15	Glu 180
K 7.5	HCO_3 23	Cr 1.2	

troponin was 1.9 ng/mL; CK, 393, MB fraction 23.2, myoglobin, 1957 mcg/L. His urine drug screen was positive for methadone, benzodiazepines, and THC.
Clinical Course: In the ED the patient received standard PALS care with a loading dose of phenobarbital. Naloxone and flumazenil were given with no response. Return of spontaneous circulation occurred 90 min after his arrest, but return of spontaneous respiration did not occur. After intubation and resuscitation, the patient was transferred to a tertiary care facility's ICU. On arrival, BP 78/56; HR 103, and he had significant cardiac dysfunction. He was on an induced hypothermia protocol, which was discontinued after 6 hours due to refractory hypotension. Treatment with dopamine, epinephrine, insulin, phenytoin, and steroids was provided. On Day 2 HR 102; BP 94/58; RR 24 (ventilator), T, 98.5° F with a warming blanket, Na 150, K 3.2; ionized Ca 5.4; BUN 33; Cr, 3; ALT, 2088; AST, 4729; bilirubin, 1.1; INR 2.94; lactate, 10.7 mmol/L. ABG-pH 7.2/pCO_2 37/pO_2 64/HCO_3 14.7 /BE -13, phenytoin 11 mcg/mL. On Day 3 an EEG showed no cortical brain activity. A cerebral perfusion study on Day 4 supported the diagnosis of brain death. Comfort measures were instituted and he expired on Day 3.
Autopsy Findings: Bloody fluid **(**antemortem) methadone 0.24 mg/L, nicotine (trace amounts). The cause of death was methadone and benzodiazepine toxicity.

Case 266. Acute acetaminophen ingestion: undoubtedly responsible.
Scenario/Substances: A 17 y/o female arrived 28 hours post acetaminophen ingestion.
Past Medical History: Schizophrenia, bi-polar disorder, anxiety, prior suicide attempts. She was paraplegic from a previous motor vehicle collision. Medications included quetiapine, venlafaxine, escitalopram, and lorazepam.
Physical Exam: She presented afebrile with nausea and vomiting.
Laboratory Data: The initial acetaminophen level was 138 mcg/mL ~28 hours post ingestion, AST 1,946, ALT 1,699, bilirubin 3.6 and PT 55.7. Day 2 AST 10,050, ALT 7,940, INR 12.6, bilirubin 4.5.
Clinical Course: IV N-acetylsteine was started and transferred for possible transplantation. Liver function and enzymes worsened. On Day 2 intracranial pressure began to rise and was treated with pentobarbital and mannitol. CT scan the following day showed herniation. Thefamily elected comfort measures only and the patient expired on Day 6.
Autopsy Findings: Cause of death was acute liver failure due to hepatic necrosis due to acute acetaminophen intoxication. Manner of death was suicide.

Case 281. Acute methadone ingestion: undoubtedly responsible.
Scenario/Substances: 19 y/o male found unresponsive at home without spontaneous pulse or respirations after suspected abuse of methadone. He received 20 min of CPR by EMS with return of pulses and was transported to the ED.

Past Medical History: No prior hospitalizations or surgeries.
Physical Exam: BP 120/70, HR 100, RR 16 on mechanical ventilation, pupils fixed at 5 to 6 mm.
Laboratory Data: Na 145, K 3.7, Cl 110, bicarbonate 21 (was 16), BUN 27, Cr1.5, PT 15.4, INR 1.42, CK 5,059, WBC 21.0, platelets 310, APAP & ASA not detected, head CT negative for acute intracranial event.
Clinical Course: The patient arrested again in the ED treated successfully with an additional 40 min of resuscitation. He was then transferred to a tertiary hospital. On the second Day he was given naloxone 8 mg resulting in tachycardia (from 50 to 90), hypertension (SBP 200) and piloerection. Methadone 92 ng/mL on admission and 54 ng/mL 48 hrs post ingestion. However his level of consciousness did not change (Glasgow coma score) and he remained ventilator dependent. His initial EEG was found to have burst suppression and subsequent EEGs were isoelectric. Based on the isoelectric EEG, negative cold calorics, brainstem reflexes and no other signs of brain function he was pronounced dead on Day 4.
Autopsy Findings: ME gave cause of death as methadone intoxication.

Case 288. Acute salicylate ingestion: undoubtedly responsible.
Scenario/Substances: 20 y/o female ingested salicylate 325 mg tablets. From a bottle of 500 tablets, 379 were missing.
Physical Exam: In the ED ~14 hours after the ingestion she complained of nausea and vomiting and of being weak and tired. She denied tinnitus or abdominal pain. HR 67 to 110 (highest when she was actively vomiting), BP 124/85, RR 28, afebrile, O_2 sat 100% on room air.
Laboratory Data: salicylate 101 mcg/mL, ABG-pH 7.49/ pCO_2 16/pO_2 130, Na 143, K 4.3, Cl 105, HCO_3 13, BUN 10, Cr 1.1, glucose 137, tox screen: negative for tricyclic antidepressants, positive for salicylate.
Clinical Course: Four hours after presentation to the ED (18 hours post ingestion) she had a seizure and arrested. While attempting to place a Quentin catheter for dialysis she developed a widened QRS, went into VT and then VF and was unable to be resusciated. Her organs were harvested for transplantation.
Autopsy Findings: External examination only due to tissue donation. Cause of death was severe metabolic acidosis due to acute salicylate intoxication. Antemortem blood salicylate was 700 mcg/mL.

Case 290. Acute methadone ingestion: undoubtedly responsible.
Scenario/Substances: A 20 y/o female presented in cardiac arrest after consuming unknown amounts of carisoprodol, alprazolam, and methadone. The medications were not believed to be hers. EMS found the patient cyanotic and cold to touch, pupils were fixed and dilated. During intubation gastric contents were noted in the pharynx. CPR was begun, she was found to be in VF, treated with defibrillation.
Past Medical History: chronic pain, anxiety, previous suicide attempts.
Clinical Course: ED: resuscitation that included naloxone (6 mg), epinephrine, and atropine was applied. The patient was declared dead before other suggested therapies could be attempted.
Autopsy Findings: External: several tattoos and piercings, multiple non-fatal contusions. Internal exam showed vascular congestion, patchy pneumonia, and cellular debris consistent with aspiration pneumonia. Myocardial ischemia on microscopy was attributed to hypotension. Aortic blood: methadone 0.27 mg/L, alprazolam 0.057 mg/L trace meprobamate and atropine. Ileac vein methadone 0.30 mg/L, Liver methadone 1.7 mg/kg. The cause of death was methadone toxicity.

Case 291. Acute fentanyl (transdermal) inhalation: undoubtedly responsible.
Scenario/Substances: A 20 y/o male was found unresponsive by his parents in his home after smoking a 25 mcg fentanyl patch in a tin foil pipe. He was found face down in his pillow in the bedroom. The father attempted CPR at home and in their car en route to the ED while the mother drove.
Past Medical History: drug abuse including alcohol and marijuana since 14 y/o, smoking heroin.
Physical Exam: On arrival in the ED, the patient was unresponsive, and asystolic. He received 4 mg of naloxone without response.
Clinical Course: Resuscitative efforts continued for 45 min in the ED without response. He was transported to a regional hospital. Lab: Na 138, Cl 108, lactic acid 4.6 mmol/L, Cr 2.0, AST 831, salicylate 4.8 mg/dL, acetaminophen not detected, urine toxicology screen negative. Absent brainstem reflexes. He was stabilized on pressor therapy with dopamine and norepinephrine. The patient was challenged with escalating doses of naloxone up to a total dose of 15 mg without response. He developed multi-organ failure with shock liver and acute renal failure. The parents requested comfort measures only and the patient expired on Day 2.
Autopsy Findings: Antemortem blood: negative for carisoprodol and meprobamate, fentanyl 9.6 ng/mL, norfentanyl 1.2 ng/mL. Cause of death: acute fentanyl intoxication.

Case 342. Acute salicylate ingestion: probably responsible.
Scenario/Substances: 25 y/o female found unresponsive. She was brought to the ED by EMS, who reported that all pill counts and medications were "accounted for." The patient was unable to provide any history. It was mentioned that she had reported feeling hot earlier and had taken her clothing off.
Past Medical History: schizophrenia, bipolar disorder, and diabetes. Medications included risperidone, metformin, glipizide, atenolol, clonazepam and levothyroxine.
Physical Exam: Initial exam in the ED revealed BP 102/63, HR 164, RR 44, T 41.1°C. She was unconscious and in severe respiratory distress. Skin was warm and dry. Pupils were not recorded. Bowel sounds were present. There was no rigidity or abnormal muscle movements.

Laboratory Data: ABG-pH 7.47/pCO_2 22/pO_2 224 on 15 L nonrebreather mask. Na 143, K 3.5, CO2 17, BUN 27, Cr 1.9, CK 472, WBC 25.0.
Clinical Course: Serum salicylate was 96.5 mg/dL; ethanol nondetectable; urine tox screen negative. The patient was treated with IV fluids, sodium bicarbonate (boluses and infusion), and application of ice packs and a cooling blanket. The T fell to T 39.4°C. She remained deeply comatose. Before the planned hemodialysis could be carried out the patient developed complete heart block followed by asystole and could not be resuscitated. She expired ~3 h after arrival in the ED.
Autopsy Findings: Not available.

Case 380. Acute on chronic acetaminophen/butalbital/ caffeine ingestion: undoubtedly responsible.
Scenario/Substances: 29 y/o male presented to hospital after an intentional ingestion of sertraline and acetaminophen/ diphenhydramine combination tablet.
Past Medical History: Psychiatric disorder
Physical Exam: BP 175/99, HR 144 and afebrile. The patient was confused and agitated alternating with episodes of obtundation. Pupils were noted to be dilatated and the patient had positive bowel sounds. Patient was confused.
Laboratory Data: ALT 37, AST 20, troponin 0.015, ammonia 90 mM/L.

Acetaminophen (mg/mL)	Time (hr post presentation)
360	1
210	7
124	13
317	19
350	23
287	27
43	38
14	44

The maximal AST 447; ALT 95 on Day 3. EKG sinus tachycardia with a rate of 144, QRS 99, QTc 551.
Clinical Course: Intubated on presentation and given activated charcoal. He started on IV acetylcysteine initially 150 mg/kg over 1 h followed by 12.5 mg/kg for 4 h and 6.25 mg/kg for 16 h, the patient was converted to intermittent 70 mg/kg at ~24 h post ingestion. When his acetaminophen levels started to rise he was started on whole bowel irrigation with polyethylene glycol solution. An attempt was made to extubate the patient on Day 2 but he vomited, aspirated and was subsequently reintubated. He had a myocardial infarction on Day 4, comfort measures were instituted and he expired.
Autopsy Findings: Cause of death: Complications of Acetaminophen intoxication. Antemortem blood acetaminophen 350 mg/mL, and sertraline 29 ng/mL.

Case 423. Acuity unknown methadone ingestion: probably responsible.
Scenario/Substances: A 32 y/o male found by family at home, not breathing, with no detectable pulse and evidence of vomiting and aspiration; was successfully resuscitated by EMS prior to ED arrival. Family reported the patient had been started on methadone less than a week earlier and increased dosage within the last few days. One day earlier, patient noted to have trouble breathing.
Physical Exam: Bradycardia.
Clinical Course: The patient received naloxone 6 mg which improved HR followed by naloxone infusion prior to transfer to another hospital. Upon arrival, hypotension required vasopressors; CT head: changes consistent with anoxic brain injury and herniation with compression of the brainstem. The patient expired 19 hr after presentation.
Autopsy Findings: Herniation of the cerebellar tonsils and symmetric flattening of gyri. Post-mortem blood: methadone 0.30 mcg/mL, methadone metabolite (EDDP) 0.19 mcg/mL.

Case 441. Acuity unknown fentanyl transdermal ingestion: Dermal: undoubtedly responsible.
Scenario/Substances: 34 y/o male was found dead in a car with family pictures and was taken to the medical examiner. Tablets of citalopram were found at the scene.
Autopsy Findings: Cerebral edema, pulmonary edema and early decompositional changes noted. Nine fentanyl patches (25 mcg/hr) found on left chest. Post-mortem blood: fentanyl 12 ng/mL, norfentanyl 6.2 ng/mL, alprazolam 0.25 mg/L. Cause of Death was mixed drug intoxication (fentanyl and alprazolam).

Case 515. Acute on chronic methadone ingestion: undoubtedly responsible.
Scenario/Substances: 41 y/o male was found cyanotic in coma, possibly down for 12 hours with a suicide note. He responded to naloxone and was placed on a continuous infusion. He said he took methadone 280 mg.
Past Medical History: seizures, COPD, heroin abuse, previous suicide attemps, prior gunshot to head, dilated cardiomyopathy. Medications included clonidine, albuterol, ibuprofen, and methadone
Physical Exam: T 33.9°C; after naloxone BP 116/49, HR 79, RR 25, and O_2 sat 99% on 2 liters nasal O_2.
Laboratory Data: ABG-pH 7.02/pCO_2 46/pO_2 135,

Na 144	Cl 101	BUN 24
K 6.1	HCO_3 29	Cr 3.2

lactic acid 7.7, CK 20,000, QRS 142, QTc 449. Toxic alcohol panel was negative.
Clinical Course: Compartment syndrome in his upper extremeties treated with fasciotomy. He remained sedated, on the ventilator after surgery, with worsening oliguric renal failure and hypotension requiring norepinephrine. AST peaked at 3,281 and Cr at 6.6 mg/dl. He expired on Day 2.

Autopsy Findings: Severe hemorrhagic bilateral pulmonary edema. Pericardial blood methadone 0.63 mg/L and EDDP (methadone metabolite) 0.1 mg/L.

Case 518. Acute butalbital/ acetaminophen/caffeine ingestion: undoubtedly responsible.
Scenario/substance: A 41 y/o female was found unresponsive and cyanotic by her spouse. She had last been seen 24 hours prior. A bottle of acetaminophen with diphenhydramine was found near her bed.
Past Medical History: fibromyalgia depression. Medications included carisoprodol, acetaminophen with hydrocodone, and venlafaxine
Physical Exam: In the ED she was cyanotic, HR 90–100, T (rectal) 32.8°C; withdrew to pain and occasionally moved extremities.
Laboratory Data: ABG-pH 6.99/HCO_3 10, CK 7488, INR 8.0; aPTT 78 seconds, acetaminophen 46 mcg/mL; salicylate 12.4 mg/dL; ethanol 57 mg/dL. Her urine drug screen was positive for cyclic antidepressants and benzodiazepines.
Clinical Course: In the ED, 4 mg naloxone and flumazenil were given with no response. She was intubated without any sedation and received sodium bicarbonate; norepinephrine, dopamine, and epinephrine. N-acetylcysteine and morphine infusions were begun. The patient's repeat HR 111; BP 84/37; RR 30. The initial EEG showed minimal brain activity. She remained hypotensive over the next 36 hours. She received fresh frozen plasma, whole blood, and insulin. She was begun on continuous veno-venous hemodiafiltration for refractory acidosis. Her CK rose to 38,480, troponin to 53.6, INR to 9, AST 7560, ALT 6876, glucose 760. She developed aspiration pneumonitis and pancreatitis. The family requested comfort measures only and the patient expired on Day 2.
Autopsy Findings: Massive centrilobular necrosis of the liver, moderate to severe bronchopneumonia, acute tubular necrosis of the kidney, full thickness necrosis and hemorrhage of the small intestine. Admission blood oxymorphone <0.05 mg/L. Femoral blood (antemortem): acetaminophen 53 mcg/mL, diphenhydramine 0.33 mcg/mL, hydroxyzine 0.076 mcg/mL, O-desmethylvenlafaxine 0.40 mcg/mL, venlafaxine 0.29 mcg/mL. Aortic blood (post-mortem): diphenhydramine 0.63 mcg/mL, O-desmethylvenlafaxine 0.75 mcg/mL, morphine 1.3 mg/L (likely from palliative care), venlafaxine 0.72 mcg/mL. Live: diphenhydramine 14 mg/kg, O-desmethylvenlafaxine 2.2 mg/kg, venlafaxine 3.5 mg/kg. The cause of death was multi-system organ failure due to oxymorphone, acetaminophen, and diphenhydramine toxicity.

Case 520. Acute fentanyl transdermal ingestion: undoubtedly responsible.
Scenario/Substances: 41-y/o white female presented to the ED with nausea and vomiting after an episode of coffee grounds emesis with epigastric and right upper quadrant "stabbing "pain. Admitted to the hospital a fentanyl patch applied. She ingested her fentanyl patch while outside on a smoking break. She returned to her room where she was later found unresponsive, bradycardic, hypotensive and apneic.
Past Medical History: Renal cell carcinoma, status post nephrectomy, ovarian cancer, right lower extremity deep venous thrombosis, gastroesophageal reflux, pancreatitis.
Physical Exam: HR 111, BP 136/97, RR 16, T 37.8°C, O_2 sat 98% on 50% FiO_2, PEEP 5 cm H_2O. Intubated with coarse breath sounds, persistent left lateral gaze, pupils 3 mm, equal and reactive. GCS 5, responsive to deep tactile stimulation.
Laboratory Data: Hgb 11.1, WBC 22.4 INR 2.0, K 3.1, Ca 7.9, phosphate 2.2 mEq/L, albumin 2.9 gm/dL, AST 239, ALT 1,503, CK 4,610, CK-MB 64.6, troponin-I - 3.92, ABG-pH 7.35/pCO_2 42/pO_2 108/HCO_3 23.1
Clinical Course: After resuscitation CPR, intubation, vasopressors, and naloxone infusion and transferred to the ICU. No response to naloxone and she was weaned from her vasopressors with maintenance of adequate blood pressure. Head CT showed no acute abnormality, echocardiogram showed diminished LV systolic function; acute renal failure and rhabdomyolysis developed which responded to bicarbonate and fluid resuscitation. She was subsequently found to have evidence of diffuse anoxic brain injury on head CT. Comfort measures were instituted and she in died in hospice.
Autopsy Findings: External examination only. Cause of death as listed by the coroner was complications of substance abuse.

Case 535. Chronic acetaminophen ingestion: undoubtedly responsible.
Scenario/substance: 42-y/o male alcoholic ingested acetaminophen hourly for 1 week to treat chronic pain.
Past Medical History: Alcoholism, pancreatitis, hypertension, hypothyroidism and antisocial personality disorder.
Physical Exam: In ED he presented with nausea, vomiting, anorexia, abdominal pain, dark urine. Alert and oriented, with jaundice, dehydration, tremor and ataxia.
Laboratory Data: **A**dmission acetaminophen 76 μg/mL. AST peaked at 14,782 and then fell to 83 prior to death. Venous pH 7.18. Peak values Cr 5.2, INR 4.8, ammonia 131, bilirubin 26.5. K fell to 1.6.
Clinical Course: Treated with IV N-acetylcysteine, vitamin K, fresh frozen plasma and lactulose. Due to his alcoholism he was not a transplant candidate. On Day 2, the patient became somnolent and had encephalopathy (Grade IV) on Day 3 with oliguria elevated ammonia, unresponsive and required intubation. Developed renal failure, persistent acidosis, hypokalemia, and pancytopenia and was dialyzed. Insulin and multiple antibiotics administered. He deteriorated, mechanical ventilation was withdrawn and he was transferred to hospice for comfort care. He became bradycardic, hypotensive, arrested and expired on Day 10.
Autopsy Findings: No autopsy was performed.

Case 556. Acute hydrocodone, multiple drugs parenteral: undoubtedly responsible.

Scenario/Substances: 44 y/o female admitted 17 days earlier for COPD exacerbation and was to be discharged on Day 7, but had a witnessed grand mal seizure (no seizure history). The seizure was attributed to excessive meperedine administration, no further meperedine was administered, and no further seizure activity occurred. On Day 17, the patient was very anxious about her discharge and upcoming legal problems and complained of constipation and was noted to be diaphoretic and slightly tachycardic but her physical exam wasunremarkable. Later on Day 17she was cyanotic, dyspneic, diaphoretic and hypotensive with complaints of cramping and abdominal pain. A cup of white paste which appeared to be made from crushed tablets and water along with a syringe was found in her room. Bottles of hydrocodone with acetaminophen, tramadol, and promethazine, all of which had been filled the previous day, were found empty in her room. The patient denied injecting this mixture into her indwelling central line but a white powdery mixture was suctioned from her central line. She had apparently crushed 55 hydrocodone/acetaminophen tablets, 33 tramadol tablets, and 20 promethazine tablets, mixed them with water and injected this mixture into her central line.
Past Medical History: Hypertension, asthma, COPD, HIV (14 + years), migraines with aura, chronic pain, head injury 4 years prior, anemia, bipolar depression, substance abuse history included opiates, cocaine, and tobacco. Her medications included efavirenz + emtricitabine +tenofovir combination product, paroxetine, salmeterol, and albuterol.
Physical Exam: Post injection, the patient was cyanotic and dyspneic, BP 91/57, HR 127, O_2 sat 95% on nasal O_2. Her lungs were clear without wheezes. She complained of cramping and abdominal pain, had diffuse, moderate tenderness in her lower abdomen with some bowel sounds in the LLQ. CT of chest, abdomen, and pelvis were negative for bowel infarction.
Laboratory Data: Urine drug screen was positive for opiates and benzodiazepines shortly after the injection. Glucose was 425 (repeat, 252), amylase 216, lipase 24, lactic acid 4.2 mmol/L, Na 128, K 7.6, Cl 92, HCO_3 20, BUN 40, Cr 1.54, calcium 6.9, troponin and CK normal., albumin 2.5 g/dl, total bilirubin 2.6, AST 459, ALT 607, phosphorous 15 mg/dl. Initial
Clinical Course: The patient was transferred to the MICU. ECG after injection showed sinus tachycardia with mild ST depression which evolved to ST elevations and markedly peaked T waves 3.5 hrs later then signs of an acute anterior infarct 20min later. K was markedly elevated and calcium, insulin, and glucose were given. Sodium bicarbonate was administered for a worsening anion gap acidosis. Despite documentation of a "physiologic" acetaminophen level, n-acetylcysteine was started. The patient had a cardiac arrest, CPR including epinephrine, atropine, lidocaine, naloxone, amiodarone, was unsuccessful and the patient died.
Autopsy Findings: **A**ortic blood: hydrocodone 0.37 mg/L, morphine 0.076 mg/L, paroxetine 0.31 mg/L; atropine dihydrocodeine, lidocaine, N-desmethyltramadol, tramadol were present; and promethazine was trace. Iliac vein blood: hydrocodone 0.31 mg/L, morphine 0.063 mg/L, and tramadol 1.4 mg/L. Urine (bladder) hydrocodone 0.081 mg/L, morphine <0.050 mg/L. Lungs histopathology: massive small arterial vessel and capillary foreign bodies composed of refractile, polarizable, clear layered sheet like material and dark purple colored crystalline material surrounded by early thrombus formation. Scattered interstitial granulomata with similar material were noted. Other organ systems were unremarkable other than being consistent with preexisting disease states. The cause of death hydrocodone and tramadol toxicity in combination with acute massive micro-foreign body thromboemboli consistent with parenteral injection of medication.

Case 587. Acute on chronic salicylate ingestion: undoubtedly responsible.
Scenario/Substances: 47 y/o female with a 3 day history of headache, blurred vision and unsteady gait presented to the ED reporting having taken 4 baby aspirin tablets 3–4 times per day for an unknown period of time.
Past Medical History: Prior admission (6 mos earlier) for salicylate poisoning with cerebral edema requiring hemodialysis after intentional overdose.
Physical Exam: BP 133/82, HR 78, RR 16.
Laboratory Data: Venous blood gas: pH 7.47, PCO2 30, calculated HCO3 21.

Na 140	Cl 113	BUN 33	Glu 68
K 5.0	HCO_3 14	Cr 1.9	

WBC 7.8, Hgb 14.4, Hct 43, platelets 308, PT 10.4 sec, INR 1.0, APAP not detected, salicylate 46.6 mg/dL. ECG: normal sinus rhythm, QRS and QTc interval. CT head showed diffuse cerebral edema.
Clinical Course: IV sodium bicarbonate bolus then infusion was given to alkalinize the serum. Hemodialysis was initiated. 6 hr after admission, salicylate: 32 mg/dL; patient lethargic. Day 2: intubation, mechanical ventilation with sedation and paralysis performed. Salicylate: undetectable. ICP monitor showed increased pressure, therapeutic hypothermia and mannitol infusions. Day 6: CT head shows right-sided epidural hematoma which was surgically evacuted. Post operatively ICP was normal until Day 8 when ICP was again elevated and a myocardial infarction occurred. Pentobarbital coma was induced for ICP but the patient expired on Day 15.
Autopsy Findings: Cerebral swelling with bilateral tonsillar and left uncal herniation, evidence of hypoxic-ischemic encephalopathy, and small residual epidural hemorrhage; Severe coronary artery atherosclerosis, cardiac dilation and hypertrophy, left ventricular endocardial fibrosis, and severe aortic atherosclerosis: Acute bronchopneumonia, mild COPD, pulmonary congestion and edema, pleural effusions and ascites; Left renal artery stenosis with scarring of the left kidney. The cause of death was complications of acetylsalicylic acid overdose.

Case 588. Acute acetaminophen/hydrocodone ingestion: undoubtedly responsible.
Scenario/Substances: 47 y/o female was found down at home for an unknown time after taking an estimated 100 acetaminophen with hydrocodone and an unknown number of carisoprodol tablets.
Past Medical History: History of of chronic pain with increasing abdominal pain recently, fibromyalgia, obsessive/compulsive disorder and multiple prior suicide attempts.
Physical Exam: Obtunded and unresponsive; obvious respiratory effort; hypotensive with regular heart rate and rhythm.
Laboratory Data: Initial APAP level 396 mcg/mL, INR 1.7, liver transaminases in the 300's. Day 2: INR 4.5 (after phytonadione). Later AST 14,012, ALT 2789, and ammonia 44 mcg/mL.
Clinical Course: The patient was intubated in the ED and given IV fluids for hypotension with no effect. The patient was transferred to a liver transplant center. Hepatic failure worsened, INR 12.1, bilirubin 5 mg/dL. Cerebreal edema was noted; the patient was denied transplant candidacy due to the history of drug dependence and non-compliance with medical directives.The patient remained unresponsive, experienced seizure activity and expired on Day 8.
Autopsy Findings: Blood: acetaminophen 434.4 mg/L, carisoprodol 12.2 mg/L, hydrocodone 0.86 mg/L, hydromorphone 26.4 mg/L. Cause of death: multi-organ failure due to acute intoxication with hydrocodone, acetaminophen and carisoprodol. Manner of death was suicide.

Case 607. Acute acetaminophen/caffeine/salicylate ingestion: undoubtedly responsible.
Scenario/Substances: A 48 y/o female ingested ~30 tablets of Extra Strength Excedrin. She was taken to the ED ~2 hours after the ingestion.
Physical Exam: On arrival in the ED awake and alert, and complaining of nausea and vomiting. T 36.4°C, BP 143/86, RR 20.
Laboratory Data: At 2.5 hours after ingestion, salicylate 36 mg/dL, acetaminophen 121 mg/L, AST 68, ALT 79, BUN 8, Cr 0.8, Na 143, K 3.6, HCO_3 14.4, urine toxicology screen was negative.
Clinical Course: In the ED N-acetylcysteine was begun by NG tube and anti-emetics were given. Eight hours after presentation she became "restless and shaky and with cramps in the legs". HR 146, RR 22–24. BP 149/100 and she was afebrile. A salicylate level 5.5 hours after presentation was 51.4 mg/dL and 81 mg/dL at 11 hours. Twelve hours after presentation she became agitated, HR 224. An ABG-pH 7.35, pCO2 12, HCO_3 6.6. Intubation and ventilation were initiated. Hemodialysis was not performed on this patient. Following a dose of IV labetalol, given in an attempt to control heart rate, the patient suffered a cardiac arrest from which she could not be resuscitated.
Autopsy Findings: No autopsy was performed.

Case 612. Chronic acetaminophen ingestion: undoubtedly responsible.
Scenario/Substances: A 48 y/o female with chronic pain was taking acetaminophen (extended release) for headache 8 to 10 tablets or more on a daily basis. She was on a steadily decreasing dose of sustained release oxycodone 10 mg bid and fentanyl patch 25 mcg q 72 hours. Over 3 weeks, she developed very dark urine and became fatigued. PCP Dx dehydration and increased oral fluid intake. She became increasingly nauseated, and jaundiced. PCP referred her to the ED.
Past Medical History: History of hypertension, anxiety, chronic headaches, mechanical low back pain, degenerative knee arthritis, chronic narcotic use, ethanol, marijuana and crystal methamphetamine abuse. Medications included: fentanyl, sustained release oxycodone, acetaminophen, naproxen, alprazolam, clonazepam, quetiapine, olmesartan, gabapentin, fluoxetine, escitalopram, cyclobenzaprine and bismuth subsalicylate.
Physical Exam: In the ED the patient denied confusion, trouble walking or any motor weakness. No ascites noted. Admitted to the ICU, HR 108; mental status was intact, flapping asterixis, grossly jaundiced, icteric sclera and palmar erythema.
Laboratory Data: Acetaminophen not detected, INR 1.9 to 7.8; glucose 85 to 145; BUN 6 to 8; Cr 0.7 to 3.4; albumin 1.8 to 2.7; TProt 4.9 to 6.7; alk phos 200 to 300; bilirubin 14.1 to 17.7; AST 1246 to 4090; ALT 640 to 909; ammonia 79 to 90. Abdominal CT no portal hypertension small ascites related to inflammation.
Clinical Course: Hepatitis screens negative. She reported she had stopped taking acetaminophen ~5 days prior to admission. Hepatic function and enzymes were abnormal. Admitted to ICU for IV N-acetylcysteine, later changing to oral dosing. Encephalopathic and was started on lactulose. On admission Cr 0.8 and BUN 8. Cr increased but not BUN, urine output was 90 cc. Decreasing mental status with hypotension resolved with IV fluids. Encephalopathy worsened and the lactulose was increased. Transferred to a liver transplant center, but denied due to social issues and BMI qualification. The patient's family elected the institution of comfort measures she expired on Day 14.
Autopsy Findings: Cause of death hepatic necrosis due to acetaminophen. Manner of death was accidental.

Case 633. Acute morphine ingestion: probably responsible.
Scenario/substance: A 51 y/o female was found to have altered level of consciousness by a friend at home. EMS found her apneic and asystolic, Initiated CPR, intubated, and gave epinephrine, atropine, and naloxone with return of sinus rhythm prior totransport to the ED.
Past Medical History: Fibromyalgia, chronic back pain, bipolar disorder, migraine headaches, meningitis. A friend reported that the patient was taking liquid morphine for chronic lower back pain and sometimes doubled up on her dose.
Medications included pregabalin, duloxetine, diazepam, acetaminophen/hydrocodone, and topiramate.

Physical Exam: ED: apneic with, fixed and dilated pupils, GCS 3, BP 71/41, HR 77, T (rectal) 34.4°C, O_2 Sat 100%.
Laboratory Data: WBC 19.5, Hgb 9.9, K 5.9, HCO_3 17, BUN 23, Cr 2.7, Glucose 322, AST 1330, ALT 1163, CK 2321, urine tox screen: positive for amphetamines, benzodiazepines and opiates;acetaminophen not detected.
Clinical Course: The patient received dopamine for hypotension, head CT suggested cerebral edema. She was admitted to the ICU where IV hydration and supportive care were continued. She had no change in her neurologic status over the course of several days, EEG was consistent with brain death. The patient's family requested comfort measures only and the patient expired.
Autopsy Findings: no significant abnormalities on gross examination. Microscopic examination: scattered aggregates of bile-like pigments consistent with aspiration. Premortem blood (afternoon of admission): diazepam 0.12 mg/l, nordiazepam 0.30 mg/l, d-methamphetamine 0.51 mg/l, d-amphetamine 0.13 mg/dl, morphine 0.84 mg/l, topiramate 3.6 mg/l, THC, fentanyl, and ethanol not detected, Cause of death: cardiopulmonary arrest due to acute multi-drug toxicity.

Case 689. Acute salicylate ingestion: probably responsible.
Scenario/substance: 55 year-old female was found by her husband and told him she had taken acetaminophen, aspirin and a cold medication.
Past Medical History: Depression
Laboratory Data: Initial acetaminophen 74 mcg/mL (unknown time after ingestion), salicylate 34 mg/dL. Later salicylate at unknown time 84 mg/dL. ABG-pH 7.43/PCO2 17/PO2 89/HCO3 11.
Clinical Course: Admitted to ICU. IV N- acetylcysteine given. Day 2: transferred to hospital floor, became febrile (T 40°C), with confusion, had a grand mal seizure followed by a cardiac arrest and death. The patient did not receive activated charcoal or sodium bicarbonate therapy.
Autopsy Findings: Post-mortem blood: salicylate 83 mg/dL, acetaminophen 39 mg/L. doxylamine 0.09 mg/L; urine drug screen negative. Cause of death was acute salicylate toxicity with pulmonary edema.

Case 703. Acute salicylate ingestion: undoubtedly responsible.
Scenario/Substances: 56 y/o male intentionally ingested 9 grams of aspirin, developed nausea and vomiting and was transported to the ED three hours post ingestion.
Physical Exam: Awake, alert and oriented. BP 202/78 HR 95 RR 30–40 (initial), then 20, 96% O_2 sat. T 36.9°C.
Laboratory Data:
ABG-pH 7.51/pCO_2 27.1/pO_2 107 (2L, NC)

Na 135	Cl --	BUN 17	Glu ---
K 4.4	HCO_3 22	Cr 0.7	

WBC 19.6, Hgb 18.0, platelets 233, PTT 32.7, INR 1.0. APAP not detected, ASA 85.6 mg/dL. Urine pH 6.5 prior to IV sodium bicarbonate.
Clinical Course: Serial oral activated charcoal and nephrology consultation for dialysis recommended on admission. Repeat salicylate 7 hours post ingestion: 116 mg/dL; ABG-pH 7.46/pCO_2 21/pO_2 56/HCO_3 15; glucose 451 mg/dL. IV fluids and sodium bicarbonate given continuously from ED arrival; insulin infusion later added for hyperglycemia. 10 hr post ingestion: agitation required sedation, while being prepared for dialysis, the patient arrested and expired.
Autopsy Findings: No autopsy was performed. Toxicology listed salicylate 994 without units but a normal range of 20–300 was provided by the testing laboratory.

Case 766. Acute salicylate ingestion: probably responsible.
Scenario/Substances: A 73 y/o female was brought to an ED with altered mental status. Her husband reported to ED staff that she may have consumed unknown amount of salicylate over an unknown period of time.
Past Medical History: Nonspecific psychiatric history.
Physical Exam: Awake but non-verbal. BP 150/57, HR 98, RR 28 and O2 sat 99%.
Laboratory Data: Salicylate 113 mg/dL, ABG-pH 7.4/pCO_2 27/HCO_3 17.9, BUN 33, Cr 1.1, WBC 21.0.
Clinical Course: She developed irreversible cardiac arrest about 2 hours after presentation as she was being transported to have a dialysis catheter inserted.
Autopsy Findings: No structural cause of death. Femoral blood salicylate 98.5 mg/dL. Jugular blood salicylate 116 mg/dL, naproxen 78 mcg/mL, donepezil was 0.11 mcg/mL. Coroner cause of death was suicide caused by multiple drug ingestion.

Case 819. Acute bupropion ingestion: undoubtedly responsible.
Scenario/Substances: 17 y/o female ingested about 190 bupropion 150 mg tablets.
Past Medical History: Previous history of bupropion overdose with seizure activity.
Clinical Course: Admitted to the ICU and intubated, ventilated and IV fluids. Hypotension treated with vasopressors. Partial complex seizures were unsuccessfully treated with fosphenytoin and benzodiazpines. After successful cardioconversion, 20% Intralipid therapy was initiated. Despite aggressive supportive care the patient expired within 12 hours of hospitalization.
Autopsy Findings: Recent contusion at the tip of the tongue. Pulmonary congestion and edema with pleural effusions, ascites and pericardial effusion. Multiple scars on the front of the forearms/wrists. 144 tablets in the stomach and 43 tablets present in the small intestine. Cause of death was seizure disorder due to bupropion overdose. Manner of death was suicide.

Case 821. Acute on chronic bupropion ingestion: undoubtedly responsible.
Scenario/Substances: An 18 y/o male took bupropion and gabapentinin as a suicide gesture. He had called and texted several friends and his mother after the ingestion.

Past Medical History: Bipolar disease in the manic phase, suicidal ideation with several involuntary holds, first occurring in the 4th grade, marijuana use. Medications included bupropion, aripiprazole, gabapentin and lorazepam.
Clinical Course: When he arrived in the ED by ambulance which he had called himself he was awake and talking. HR 111 BP 138/78, RR 16, T 37.7°C, O2 sat 98% on room air. Electrolytes were normal, HCO_3 was 17. Three hours post ingestion his speech was slurred and he had difficulty following directions. At 3.5 hr he had a grand-mal seizure. He received activated charcoal and was placed in 4-point soft restraints. Seizures increased in frequency until he was in status. He developed a wide complex bradycardia and arrested. Resuscitation attempts with atropine, epinephrine and sodium bicarbonate were unsuccessful. A pacemaker was placed but he could not be resuscitated and died about 5.5 hours after the ingestion.
Autopsy Findings: Severe pulmonary congestion and edema, gastric contents consistent with activated charcoal administration, Wellbutrin tablet fragments in the gastric contents. Blood concentrations : bupropion 2200 ng/mL, hydroxybupropion 2600 ng/mL, aripiprazole 330 ng/mL, lorazepam 22 ng/mL. No other drugs were detected. Cause of death acute bupropion toxicity.

Case 824. Acute on chronic antidepressant ingestion: contributory.
Scenario/substance: 19 y/o female found by her parents in her room with a decreased level of consciousness after taking an unknown amount of her own bupropion extended release tablets and clonazepam. A suicide note was found and her left wrist had a laceration. EMS transported her to the ED.
Past Medical History: morbid obesity, depression, bipolar disorder, and previous suicide attempts.
Physical Exam: The patient was drowsy with an abnormal affect upon arrival in the ED. Her pupils were equal and reactive to light. T (axillary) 39.3°C, BP 129/70, sinus tachycardia 115, RR 16.
Laboratory Data: APAP, ASA and EtOH not detected. Her urine drug screen was positive for benzodiazepines. Na 153, K 6.3, CK 1974, ABG-pH 6.3/pCO_2 93.
Clinical Course: 125 grams of activated charcoal were given via NG tube 1 hour after admission. 1 hour after receiving naloxone and flumazenil she had 3 seizures. She was paralyzed, sedated and intubated. A norepinephrine infusion was started for hypotension and she was admitted to the ICU. She was given a loading dose of phenytoin, which was replaced with propofol and alorazepam infusion. She received multiple antibiotics for positive sputum cultures, chest tube insertions for bilateral pneumothoraces. By Day 9 she had develoed ARDS and extensive subcutaneous emphysema, hyperglycemia, and electrolyte imbalance. Comfort measures were instituted and she expired on Day 12.
Autopsy Findings: The lung parenchyma was firm, variegated red and exuded copious amounts of edema fluid with several thromboemboli in the small arteries, and organization. Microscopic analysis showed an organizing pneumonia, alveolar edema and hyalie membrane formation, with acute pulmonary thromboemboli. The liver showed shock liver with certilobular necrosis. The gross examination of the brain was normal. The cause of death was reported to be complications of drug overdose, with morbid obesity being a contributing factor. The manner of death was suicide.

Case 836. Acute olanzapine, carvedilol, bupropion ingestion: probably responsible.
Scenario/Substances: 29 y/o male found cyanotic and unresponsive at home with 3 empty medication bottles (olanzapine, carvedilol, bupropion) nearby. Patient was last seen awake and alert the evening prior to arrival. EMS gave 2 mg of naloxone IV, oxygen and 50% dextrose without effect.
Past Medical History: Substance abuse.
Physical Exam: Unresponsive, dyspneic, with agonal respirations, BP 117/74, HR 70, RR 16, T 33.9°C, O_2 sat 93%, pupils 2–3 mm, minimally responsive. Neuro: rigidity, minimally responsive to noxious stimuli and sternal rub. Laboratory Data:

Na 140	Cl 105	BUN 10	Glu 152
K 4.2	HCO_3 23	Cr 0.7	

Ca 8.4, T. Tprot 7.3, albumin 4, bilirubin 0.2, AST 24, ALT 36, CPK 136, INR 0.4, PTT 30.6, ABG-pH 7.44/pO2 138/pCO2 37, O2 sat. 99.3%; urine pH 6; specific gravity 1.025, CPK MB 1.2, troponin I 0, WBC 4.1, Hgb 14.8, Hct 42.6, platelets 161, ethanol 104 mg/dL, APAP negative; ASA 3.3 mg/dL, urine tox negative for benzodiazepines, barbiturates, opioids, cocaine, amphetamine, PCP, methadone and THC. CT head and CxR were unremarkable.
Clinical Course: O2 and IV fluids were given in ED. Clinical deterioration ensured over the next few hours; the patient expired on Day 2 from cardiac arrest.
Autopsy Findings: Bupropion: femoral blood 8.49 mg/L; antemortem blood 0.63 mg/L; liver 6.05 mg/Kg; gastric contents 397 mg recovered. Olanzapine: femoral blood 0.17 mg/L; antemortem blood 1.03 mg/L; liver 4.73 mg/Kg
gastric contents 12.1 mg recovered. ethanol: antemortem blood 0.08 g%; blood, vitreous: not detected.

Phenytoin: femoral blood 14.7 mg/L. Lorazepam: blood: therapeutic concentration.

Case 844. Acute on chronic antidepressant ingestion: undoubtedly responsible.
Scenario/substance: A 36 y/o female was reported to intentionally ingest 21 bupropion (extended release) 300 mg, 21 sertraline 100 mg, and 21 cyclobenzaprine 10mg. She was transported by EMS to ED.
Past Medical History: Bipolar disorder, cocaine abuse, prior drug overdoses including 1 less than 1 month earlier. Medications included bupropion, sertraline, and cyclobenzaprine.

Physical Exam: Initially, the patient was slightly drowsy HR 128. She was also noted to have tremors, and possible seizure during transport
Laboratory Data: Low serum glucose, elevated CK, normal cardiac enzymes, urine drug screen positive for cocaine.
Clinical Course: Within 30 min of arrival, the patient became markedly agitated and combative; given lorazepam, haloperidol, and diphenhydramine. Cardiac arrest followed 5 min after onset of agitation. Resuscitation, including intubation, sodium bicarbonate, atropine, and epinephrine, was unsuccessful. She expired within 1 hour of initial presentation.
Autopsy Findings: Autopsy intact tablets of bupropion in her stomach (7 tablets). Aortic blood: for bupropion 3.0 mg/L, threobuproprion > 40 mg/L, sertraline 1.4 mg/L, norsertraline 2.0 mg/L, benzoylecgonine 0.23 mg/L, cocaethylene 0.024 mg/L, and diphenhydramine 0.28 mg/L. Atropine, erythro bupropion, and morpholinol bupropion were detected, but not quantified, cycyclobenzaprine of < 0.25 mg/L and cocaine and ethanol were not detected. Vena cava blood demonstrated bupropion 2.3 mg/L, norsertraline 7.5 mg/L, sertraline 4.7 mg/L and threobupropion 22 mg/L. Liver: norsertraline of 36 mg/kg, sertraline of 13 mg/kg and threobupropion of 140 mg/kg. Death was felt to be a due to a combination of bupropion, sertraline and cocaine.

Case 866. Acute sertraline ingestion: probably responsible.
Scenario/substance: A 31-y/o female was found unresponsive and cyanotic at home by her boyfriend. According to the boyfriend the patient had prescriptions for hydrocodone, carisoprodol and diazepam. EMS found her in asystole. She responded to epinephrine with return of spontaneous circulation, unresponsive to naloxone or to D50 given for a blood glucose of 28 mg/dL and she was transported to the ED.
Past Medical History: depression, anxiety
Physical Exam: Atraumatic, GCS was 3, pupils fixed and dilated, lungs clear tachycardia.
Laboratory Data: WBC 12, K 6, Cr 2.6, glucose 140, AST 800, ALT 500, troponin 0.33, CK 336. Urine toxicology screen positive for benzodiazepines and opiates; APAP, ASA and EtOH were not detected.
Clinical Course: She was intubated upon arrival in the ED. Head CT showed no acute intracranial injury. She became hypotensive, dopamine infusion was started and she was admitted to the ICU. BP 151/106, HR 110, T 37.1°C, O_2 Sat 87% bagged. Norepinephrine was added for pressor support, but her condition continued to deteriorate and she was noted to be posturing on Day 3. EEG's showed no significant brain activity. The patient's family elected the institution of comfort measures she expired on Day 7.
Autopsy Findings: Ischemic infarction of basal ganglia, citalopram 1300 ng/mL, urine positive for oxazepam, temazepam, morphine and hydrocodone. Cause of death "narcotic and sedative drug intoxication."

Case 914. Acute on chronic venlafaxine (extended release): ingestion: undoubtedly responsible.
Scenario/Substances: A 58 y/o female was found in her car with lacerations to her wrists. She reported taking a large number of tablets (later determined to be ~100 tablets of extended release venlafaxine 150 mg). She seized in the ambulance en route to the ED.
Past Medical History: Depression
Physical Exam: Altered mental status (postictal), HR 150's and hypotensive, volar wrist lacerations bilaterally.
Laboratory Data: Initial: K 3.1, lactate 2.0 mmol/L, ABG-pH 7.29/pCO_2 49/pO_2 67/HCO_3 23. Several hours later ABG-pH 7.33/pCO_2 44/pO_2 125/HCO_3 22; CK (maximum) 451, troponin 1.42. From day of admission, serum venlafaxine 20,000 ng/mL Carbon monoxide and urine drugs of abuse screen were negative.
Clinical Course: She was intubated and received adenosine for SVT without effect. Fluid and norepinephrine were given for hypotension. Whole bowel irrigation was started and then stopped due to problems with gastric/duodenal access. Further investigation revealed a large bezoar, most of which was removed endoscopically and found to be comprised, at least in part, of venlafaxine. The patient developed symptoms of cardiac failure ~24 hours into the course, with an ejection fraction of < 15%. Insulin infusion was started and intraaortic balloon pump placed. She went to the cardiac catheterization lab to determine possible CAD and had a cardiac arrest in the lab. She was resuscitated and placed on dopamine. Comfort measures were instituted on Day 5 and she expired.
Autopsy Findings: Cause of death was listed as venlafaxine overdose.

Case 928. Acute diphenhydramine ingestion: undoubtedly responsible.
Scenario/Substances: A 25 y/o male was found unconscious on the floor of his apartment. Near his body were empty boxes originally containing 120 capsules of diphenhydramine 25 mg (3 g total)
Past Medical History: depression, psoriasis.
Physical Exam: On transport to the ED, the patient was unconscious. T 42.2°C, HR 80–110, BP 94/48.
Laboratory Data: ECG QRS prolonged, AST 2052, total bilirubin 1.4, BUN 29, Cr 2.5. Ethanol, APAP and salicylate were undetected. CK 208,000.
Clinical Course: IV hydration and sodium bicarbonate was given, with subsequent narrowing of the QRS width. 90 min after presentation, T was 43.3°C. Pancuronium was administered for hyperthermia, but was not effective.
Autopsy Findings: Postmortem toxicology revealed a diphenhydramine level of 7.2 mg/L. (based on a Vd of 3.5 L/kg this 86.4 kg body contained 2.18 g of diphenhydramine). No other toxic, traumatic or other cause of death was revealed by autopsy.

Case 943. Acute on chronic antineoplastic drug ingestion: undoubtedly responsible.

Scenario/Substances: 58 y/o female was prescribed methotrexate once weekly but took it before dialysis three times a week for unknown time period.
Past Medical History: Rheumatoid arthritis, end stage renal disease on hemodialysis
Laboratory Data: WBC 0.3, platelets 20, Hgb 11.5.
Clinical Course: Patient was hospitalized for 2 days before the dosing error was discovered and admission labs returned. Leucovorin 180 mg IV was given and dialysis performed. Hemorrhagic shock occurred with bleeding from all orifices and into soft tissues. The family decided to withdraw medical care and the patient expired
Autopsy Findings: Not available

Case 944. Acute methotrexate injection: probably responsible
Scenario/Substances: 67 y/o male admitted for scheduled chemotherapy with high-dose methotrexate (MTX) 20 g and bevacizumab for glioblastoma. Renal function was adequate and urine alkalinization was accomplished prior to MTX infusion. One day after the infusion an abnormally high serum level of MTX was found; the patient was confused and slightly agitated.
Physical Exam: Confused, GCS 14; BP 118/68, HR 78, RR 21 T 37.1 C.
Past Medical History: Glioblastoma multiforme, congestive heart failure, CAD, hypertension, gout.
Laboratory Data: Initial: BUN 3, Cr 0.7: Post-infusion: MTX 403 umol/L (toxic at >1.0 umol/L); 12–24 h post infusion: WBC 2.5, platelets 44, Hct 31.
Clinical Course: High-dose leucovorin, sodium bicarbonate infusion, and continuous hemodialysis were applied. Serum MTX declined over 16 hours to 1.43 umol/L. The MTX concentrations fluctuated between 0.33 and2.09 umol/L. The course was complicated by, mental status changes, anuria, renal failure, pancytopenia, sepsis, and atrial fibrillation. One dose of carboxypeptidase was administered. Despite resolution of toxic MTX levels, mental status declined, multisystem organ failure occurred. Comfort measures were instituted and she expired on Day 62.
Autopsy Findings: autopsy not performed.

Case 950. Acute metoprolol and flecainide ingestion: undoubtedly responsible.
Scenario/Substances: 14 y/o male ingested unknown amounts of his father's metoprolol and flecainide. Two empty bottles of flecainide and 1 empty bottle of metoprolol were found at the scene. The patient's citalopram medication bottle did not appear to have any missing medication. Prehospital the patient was awake and talking.
Past Medical History: Depression with treatment that included citalopram.
Physical Exam: In the ED: unresponsive, hypotensive (weak pulse), and bradycardic.
Laboratory Data: ECG showed a wide complex bradycardia and a long QTc.
Clinical Course: Upon arrival in ED he had a generalized seizure and remained unresponsive, intubated. He was never tachycardic. Resuscitation included epinephrine, atropine, sodium bicarbonate, high dose insulin, calcium chloride, and glucagon, but the patient remained pulseless and he was pronounced dead in the ED.
Autopsy Findings: Blood concentrations: flecainide 12 mcg/mL, citalopram 420 ng/mL, metoprolol 140 ng/mL. Cause of death was mixed drug overdose.

Case 959. Acute ingestion of a cardiac glycoside-containing aphrodisiac (Piedra): undoubtedly responsible
Scenario/Substances: 35 y/o male took one pill of "piedra", believed to be an aphrodisiac. EMS found him with chest and epigastric pain of several hours duration and brought him to the ED.
Physical Exam: Bradycardia and hypotension in the field treated with atropine 1 mg. ED: BP 118/66, HR 110
Laboratory Data:

Na 135	Cl 107	BUN 14	Glu 180
K 5.9	HCO_3 20	Cr < 1.0	

Digoxin 2.9 mcg/mL, initial K 7, WBC 20.5, Hct 48, platelets 484. ECG: narrow complexes with a variable AV block after atropine.
Clinical Course: The patient was treated with insulin, glucose, bicarbonate and albuterol. Bradycardia recurred, atropine 0.5 mg was given and improved BP and HR. Based on the history, bufotenin was suspected based on prior local reports of cardiac glycoside poisoning with ingestion of a resin-like aphrodisiac intended for topical use called "rock hard" or "love stone" or "piedra". Digibind, 10 vials, was given with improvement in nausea, vomiting and abdominal pain, BP and HR. Over the next 20 hrs, bradycardia, VT, and varying degrees of AV block recurred. Digibind fragments were given by slow IV infusion plus bolus of 1–2 vials as needed for vital sign instability. 35 vials in total were given as well as 2–3 doses of activated charcoal q 4 hr to the 3rd dose which produced emesis, treated by metoclopramide and normal saline IV. On Day 2 after complaining of thirst, VT developed into VF which, despite ACLS protocols with the inclusion of digibind IV, was fatal.
Autopsy Findings: Not available

Case 979. Acute verapamil ingestion: undoubtedly responsible.
Scenario/Substances: 47 y/o female presented to the ED 15 hr after self-reported ingestion of verapamil with the intention of self harm. A history of several episodes of vomiting prior to ED arrival was obtained.
Past Medical History: Medications: sucralafate, escitalopram, atorvastatin, acetaminophen/ hydrocodone, omeprazole, polyethylene glycol, sennacot, montelukast, zolpidem, synthroid, and vitamin B12.

Physical Exam: Awake, lethargic; BP 91/68, HR 41.
Laboratory Data: ABG-pH 7.24/pCO2 44/pO2 70, salicylate 2.8 mg/dL; glucose 113; BUN 85; Cr 3.6.
Clinical Course: The patient quickly became hypotensive to systolic BP 56; ECG: sinus bradycardia with first degree heart block, QRS 154 ms, QTc 366 ms. 1mg of atropine and 1 gram of calcium gluconate were given without response. Vasopressor and high-dose insulin therapy was started as the patient remained awake and anxious. 12 hours after admission the patient became unresponsive, required intubation.
Day 2, echocardiogram revealed left ventricular ejection fraction of 77%. ECG: remained junctional rhythm, mean arterial pressure in the 60s on vasopressors. CxR revealed non-cardiogenic pulmonary edema. Renal function declined: 38 hr after admission, patient had a fatal asystolic cardiac arrest.
Autopsy Findings: The cause of death was determined to be secondary to complications of an acute verapamil overdose. Post mortem whole blood revealed verapamil 2685 ng/mL, norverapamil 1733 ng/mL.

Case 1009. Acute on chronic beta blocker ingestion: undoubtedly responsible.
Scenario/Substances: 55 y/o male ingested a full bottle of his medication, refused to go to the hospital and family called EMS after he stood up and collapsed.
Past Medical History: Hypertension
Physical Exam: ED initial: nonpalpable BP, HR 60, after glucagon BP 105, temp 36.2°C, pupils fixed and dilated.
Laboratory Data: Hgb 7.8, RBC 2.23, WBC 3.1, platelets 93. Labs repeated Hgb 13.9, RBC 3.98, WBC 5.6, platelets 139, ABG-pH 7.22/pCO_2 38/pO_2 110, blood ethanol 322.
Clinical Course: EMS observed agonal breathing, unconscious, unresponsive and sinus bradycardia of 53. IV naloxone, normal saline, glucagon, pacer pads, intubated. The family requested DNR and life support was removed.
Autopsy Findings: Cardiomegaly, fibrosis and fatty changes of liver with pulmonary and systemic visceral congestion. Mild myocyte hypertrophy and focal interstitial fibrosis of the myopericardium, portal tracts exhibited lymphocyte infiltrate with fibrosis and marked hepatosteatosis. Post mortem blood: y ethanol 187, metoprolol 95,000 ng/mL, delta-9 THC 5.8 ng/mL, and positive for nicotine and cotinine. Cause of death was suicide from overdose of metoprolol.

Case 1045. Acute amiodarone ingestion: undoubtedly responsible.
Scenario/Substances: 82 y/o female presented to the hospital after an intentional ingestion of 28 tablets of amiodarone 200 mg.
Past Medical History: Arthritis, arrhythmia, chronic renal insufficiency and insulin-dependant diabetes mellitus.
Physical Exam: The patient was obtunded, hypothermic BP 70/30; HR 30–40.
Laboratory Data: APAP & ASA not detected, tricyclic antidepressant screen was negative; urine drug screen was negative; troponin was negative; bicarbonate 15 mEq/L; pH 7.38; pCO_2 34; pO_2 157; BUN ; Cr 2.5 ; glucose 135, Glucose declined to 40. EKG bradycardia with a rate of 40, QRS 120.
Clinical Course: Intubated on presentation, given activated charcoal and started on sodium bicarbonate infusion for the prolonged QRS, given a bolus of dextrose, atropine and an infusion of glucagon and insulin, and dopamine. Whole bowel irrigation with polyethylene glycol. The patient initially responded, but hypotension and bradycardia recurred. A transvenous pacemaker was inserted but blood pressure did not improve. Insulin was titrated up to 3 u/kg/hr and dextrose 25 gm/hr and BP rose to 100 systolic on Day 2. The insulin and glucagon infusions were discontinued on Day 4, and the patient had recurrence of hypotension and bradycardia which again responded to high dose insulin and glucagon. Pulmonary edema developed and an EEG on Day 6 that showed poor electrical activity. Comfort measures were instituted and she expired.
Autopsy Findings: Not provided

Case 1048. Chronic digoxin ingestion: contributory.
Scenarios/Substances: 86 y/o female was brought to the ED with nausea, vomiting, diarrhea, and lower extremity edema. While ambulating from the car to the hospital she fell and struck her head. She arrived in the ED awake and alert, however she was bradycardic, hypotensive and hypothermic.
Past Medical History: Atrial fibrillation, CAD (s/p CABG), mitral and tricuspid stenosis, hypothyroid disease. Medications: digoxin, coumadin, furosemide, amlodipine and benazepril, spironolactone, and levothyroxine.
Physical Exam: Awake, alert and shivering; BP 60/48, P 35–40, T 31.1°C, RR 18, O_2 sat 99% on room air. Pupils reactive and 3 mm. Skin, cool and dry, HEENT normal. Lungs bilateral basilar rales. Heart, grade 3/6 mid systolic possible diastolic murmur at the apex. abdomen normal, extremities pitting lower edema, weak pulses, moved all extremities, slightly confused.
Laboratory Data: WBC 4.6, Hgb 9.6, Hct 32, platelets 296,

Na 133	Cl 99	BUN 72	Glu 109
K 6.6	HCO_3 23	Cr 2.9	

ionized Ca 1.13, Mg 2.9, phosphorous 6.9, CK 104, CK-MB 18.3 ng/ml, CK-MB Index 17.6%, troponin 0.06, acetaminophen 12.6 mcg/mL, ALT 391, AST 431, alk phos 103, bilirubin 0.7, direct bilirubin 0.3, INR 13.5, PTT 63.2 sec, digoxin 3.5 µg/L, B-type natriuretic peptide 125 pg/mL, urinalysis: specific gravity 1.03, glucose 100, large blood, protein 300 mg/dL; ECG: atrial fibrillation, ventricular rate 35–40, diffuse low voltage, QRS 130ms, QTc 490 ms, no ST changes; CxR: Enlarged cardiac silhouette; right pleural effusion; Head CT: No acute pathology; chronic atrophy and lacunar infarcts.
Clinical Course: Warming blanket, 3 mg atropine IV had no effect in HR; 3 vials digibind (120 mg) IV; sodium polystyrene 30 g PO; 25 g D50 and 10 U regular insulin IV; vitamin

K 5 mg and 4 units of fresh frozen plasma. A urinary catheter was placed. Hypotension (70–80 systolic BP) despite 2 L normal saline; norepinephrine10 µg/min given. Hypothermia resolved over 5 hours; HR remained 40–50 with systolic BP 90 norepinephrine, mental status worsened; dialysis not feasible due to coagulapathy. 10 hr after admission, K 5.9, free digoxin level 2.7, serum Cr 3.1. Unsuccessful attempts to wean off the norepinephrine; patient became refractory to NE and dopamine was added. No significant clinical improvement was seen, urine output declined. The patient's family elected the institution of comfort measures and she expired on Day 4.
Autopsy Findings: No autopsy was performed.

Case 1057. Acute on chronic amlodipine ingestion (with aspiration): undoubtedly responsible.
Scenario/substance: A 91 y/o female mistakenly ingested 10.8 gm of recently prescribed diltiazem extended release formulation.
Past Medical History: Atrial fibrillation, dementia, anxiety, and osteoarthritis. Medications included: furosemide, levothyroxine, digoxin, esomeprazole, doxepin, temazepam, and warfarin.
Clinical Course: At 2 hours after ingestion, she exhibited depressed mental status, BP 80/50, PR 50. Skin was cool and clammy with peripheral cyanosis. ECG demonstrated complete AV block with a functional escape. Initial blood studies were normal, but the patient developed progressive hyperglycemia (450 mg/dl) and metabolic acidosis (pH 7.1, serum bicarbonate 17, lactate 3.7 mmol/L) during resuscitation procedures. K 3.5 mEq/L, digoxin 1.7 ng/mL, acetaminophen and salicylate were not detected. A CxR showed pulmonary edema. A bedside cardiac ultrasound demonstrated global hypokinesis that progressively worsened. Cardiac enzymes did not suggest ischemia. INR 2.1, Cr 1.55. Other treatments given included intubation, and administration of norepinephrine, glucagon, Ca gluconate, and high dose insulin. CxR was consistent with aspiration or pulmonary edema. External pacing was added without consistent capture. Asystole occurred 5 hour after ingestion and the patient was pronounced dead.
Autopsy Findings: Peripheral blood (antemortem) diltiazem 3.8 mg/L. Cause of death was accidental diltiazem overdose.

Case 1060. Acute on chronic flecainide ingestion: undoubtedly responsible.
Scenario/Substances: A 23 month old 11 kg male on oral flecainide for SVT, ingested ~100 mL of 10 mg/mL (total 1 gram) flecainide. The child had a seizure, became somnolent, and was transported to the ED via private vehicle.
Past Medical History: SVT diagnosed in utero; preterm birth at 32 weeks; febrile seizures; ear infection.
Physical Exam: In the ED the patient was lethargic, appropriate but after a grand mal tonic-clonic seizure became bradycardic at HR 50 with widened QRS, QT and PR intervals and was unresponsive.
Laboratory Data: Initial flecainide level was 3.19 mcg/mL (reference range 0.2 to 1 mcg/mL), K 2.6; Ca 7.5; TProt 4.9, AST 106; ALT 58. WBC 62.8 with left shift; Hgb 10.2, Hct 29.9, ABG-pH 7.35/pCO_2 25/pO_2/$HCO_3$14.
Clinical Course: Intubated, CPR performed; VT resembling Torsades de Pointes, $MgSO_4$ given. Epinephrine, atropine, and sodium bicarbonate administered. Two intraosseous lines were placed due to difficulty with IV access. HR increased to 80's - 90's with continued widened QRS and widened intervals. BP was 62/50. Cardioversion was attempted at 5 joules, then synchronized 10 joules with HCO_3 along with an amiodarone bolus. Wide complex tachycardia with palpable pulses continued, but BP was not obtainable. A 20% lipid bolus was given at 2 mL/kg and subsequent infusion of 8 mL/kg over 1 hour was planned, but interrupted and took several hours. The patient was transffred to a tertiary care center and given an isoproterenol infusion for bradycardia and hypotension; systolic BP in the 70's with continued wide ventricular complexes. External pacing pads increased the HR to 80; internal jugular catheter for transvenous pacing with good capture took place. Another lipid bolus at 12 mL/kg and an infusion of 8 mL/kg/hour was given. Severe neurological abnormality with lack of cortical or brain stem responses and no carotid arterial supply to the supratentorial or infratentorial brain was noted. The patient was pronounced brain dead on Day 2.
Autopsy Findings: Hypoxic encephalopathy due to aberrant cardiac rhythms due to flecainide intoxication. Blood positive for flecainide. Manner of death was accidental.

Case 1063. Acute antihistamine ingestion: undoubtedly responsible.
Scenario/substance: 21y/o male found on the floor with a suicide note and multiple empty bottles of diphenhydramine. Maximum possible ingestion was estimated at 8700 milligrams.
Past Medical History: depression and previous suicide attempts.
Physical Exam: The patient was confused upon arrival to the emergency room. T 36.9°C, HR 115, BP 170/101, RR 42.
Laboratory Data: APAP & ASA not detected, urine drug screen was negative.
Clinical Course: The patient was intubated and ventilated. He experienced 3 consecutive seizures and was treated with lorazepam 3mg. Whole bowel irrigation was initiated and IV fluids given. He was sent to the ICU and expired within several hours of his arrival to the ED.
Autopsy Findings: Stomach contained ~100 ml of white, pasty, granular pill type material with a slight blue tinge Antemortem blood diphenhydramine 3.26 mg/L. The death was determined to be the result of intentional overdose with diphenhydramine and the manner of death was suicide.

Case 1076. Acute on chronic loperamide ingestion: undoubtedly responsible.
Scenario/substance: 21 y/o male ingested up to 800 loperamide tablets (1600 mg) and was found apneic and pulseless at

home. EMS initiated CPR including epinephrine, naloxone, and intubation and restored rhythm.
Past Medical History: Chronic diarrhea and abdominal pain; previous loperamide overdose.
Physical Exam: In ED hypotensive (64/28) and agitation required propofol.
Laboratory Data: pH 7.26, anion gap, glucose 283, Cr 1.7.
Clinical Course: Developed myoclonus, opisthotonous, rigidity, severe anoxic encephalopathy and aspiration pneumonia. Transferred to hospice and expired 11 days after admission.
Autopsy Findings: Cause of death was anoxic encephalopathy and bronchopneumonia due to resuscitated cardiac arrest and loperamide intoxication.

Case 1095. Acute drotrecogin alpha: parenteral: contributory.
Scenario/Substances: A 22 y/o female presented to a HCF acutely ill, was diagnosed with meningitis and received infusion of 8900 mcg of drotrecogin alpha over 1 hour instead of over the intended 12 hours.
Past Medical History: Present diagnosis of meningitis; otherwise normal healthy adult
Laboratory Data: Before medication error: INR 1.42, PTT 37; ~9 hours after error: INR 4.18; PTT > 300, fibrinogen 105.
Clinical Course: Patient was admitted to ICU in critical condition with full supportive measures and was noted to have active bleeding. Her condition continued to deteriorate. She was also in acute renal failure and continuous renal replacement therapy was initiated. She arrested and was resuscitated twice. She received fresh frozen plasma x 12 units, cryoprecipitate x 2 units, and platelet phoresis x 10 units. She developed a pneumothorax and required placement of chest tube. She expired on the day after medication error.
Autopsy Findings: Not available.

Case 1133. Acute alprazolam ingestion and parenteral administration: undoubtedly responsible.
Scenario/substance: 26 y/o female hospitalized for asthma. Found in cardiopulmonary arrest on the day after the self-administered alprazolam overdose. Six empty 10 ml syringes were found under her pillow, as well as a bottle of alprazolam with 64 missing tablets and two empty 1 mL vials of promethazine injectable, 25 mg/mL. A nearly empty bottle of fabric softener was also found.
Past Medical History: Major depression, anxiety disorder, borderline personality disorder, bipolar disorder, Munchhausen Syndrome, Munchhausen Syndrome by Proxy, hypertension, asthma.
Laboratory Data: Na 149, K 9.5, Hgb 10, platelets 5 (254 on admission), glucose 551, WBC 17.5. Urine and blood screens positive for benzodiazepine, caffeine. Blood alprazolam 120 ng/mL (range in 7 fatal suicides: 122–2100 ng/mL).
Clinical Course: Found apneic, pulseless. Resuscitation attempted with intubation, epinephrine, naloxone, flumazenil, sodium bicarbonate, calcium, insulin/glucose and dopamine. Resuscitation unsuccessful and the patient expired.
Autopsy: Acute alprazolam toxicity and foreign body granulomas of both lungs, extensive. Lung sections showed birefringent foreign body material.

Case 1136. Acute olanzapine ingestion: undoubtedly responsible.
Scenario/Substances: A 28 y/o female called her boyfriend and told him that she had taken an overdose of her medications. EMS found her in a room with pills scattered on the floor and bottles of atenolol, pregabalin, quetiapine and alprazolam. She was in cardiac arrest with PEA. CPR initiated with intubation, an intraosseous line was started and atropine and epinephrine were given prior to transport to the ED.
Past Medical History: depression and prior suicide attempts.
Physical Exam: On arrival in the ED she remained pulseless and apneic, with a slow, wide complex rhythm.
Clinical Course: Despite aggressive resuscitation efforts including epinephrine, atropine, sodium bicarbonate glucagon for 30 min in the ED the patient expired.
Autopsy Findings: There was ~40 mL of beige-colored particulate fluid possibly consisting of multiple pill fragments. Blood was positive for benzodiazepines, ethanol, caffeine, nicotine, quetiapine and bupropion metabolite. Ethanol 102 mg/dL, alprazolam 390 ng/mL (therapeutic range 10–100 ng/mL), quetiapine 4500 ng/mL (therapeutic range 286–828 ng/mL). The cause of death was acute mixed drug ingestion.

Case 1140. Acute doxylamine ingestion: undoubtedly responsible.
Scenario/Substances: A 30 y/o male ingested 200 tablets of Unisom and then called 911. There were multiple empty packages of Unisom and antiretroviral medications at his bedside. When EMS arrived, he was initially conversant with garbled speech then subsequently had a grand mal seizure lasting about 45 seconds. He was given D50W for glucose on the mid 60's. Activated charcoal was withheld in the field to minimize aspiration hazard and transported him to the ED.
Past Medical History: He was on antiretroviral medication. He had been admitted previously to the ED with altered mental status. He used alcohol, marijuana and diazepam to manage environmental stress and depression. Medical record indicated he had access to tricyclic antidepressants, ziprasidone, escitalopram and lorazepam.
Physical Exam: On arrival in the ED, the patient was unresponsive; the BP was 212/133, HR 117, O2 Sat 96% on non-rebreathing bag. After intubation, pupils were dilated and non-reactive, the oropharynx, lungs and abdomen were unremarkable. Extremities were flaccid after the seizure; there as no evidence of injury.
Laboratory Data: Initial glucose 153, Na 148, K 2.1, HCO_3 6, lactic acid 35 mmol/L, INR 1.6, Hct 47.1%, WBC 12.4, platelets 381, salicylate 3.2 mg/dL, APAP 6.8 mg/L, valproic acid, phenytoin and digoxin were not detected. Carbamazepine 0.5mg/L, phenobarbital 1.5 mg/L

Clinical Course: The patient had a grand mal seizure lasting 40 seconds in the ED treated by lorazepam. The ECG showed a wide complex tachycardia with a rate of about 120. He developed VT which deteriorated to PEA after DC countershock. CPR was performed including epinephrine, atropine, and naloxone but he remained pulseless with a bradycardia. He was given 3 boluses of sodium bicarbonate followed by bicarbonate IV infusion, which resulted in a transient palpable pulse for only 5–10 seconds. He remained bradycardic and in PEA and did not respond to continued CPR and ACLS and he was pronounced dead

Autopsy Findings: The stomach contained 400 mL of green turbid fluid without identifiable food material and a white-green pill residue within the pylorus. Both lungs were congested with moderately edematous parenchyma. There was atherosclerotic coronary artery disease, but no evidence of occlusive thrombus or regional wall infarction. Blood levels: citalopram <0.1 mg/l, diphenhydramine 14.1 mg/l, doxylamine 17.5 mg/l. Gastric contents: diphenhydramine:1,320 mg, doxylamine 124 mg. Cause of death: acute Unisom (diphenhydramine and doxylamine) intoxication

Case 1199. Acute cocaine ingestion: undoubtedly responsible.

Scenario/Substances: 14 y/o male in ingested an unknown amount of either heroin or crack cocaine during an police arrest. In custody vomited up a baggie and then promptly re-ingested the contents.

Clinical Course: Arrived at the ED in full arrest and resuscitation was not successful and he was pronounced dead shortly after arrival, within an hour of ingesting the contents of the baggie.

Autopsy Findings: Stomach contents were positive for cocaine. Blood: cocaine 10.5 mg/L, benzoylecgonine 3.14 mg/L. The cause of death was acute cocaine intoxication.

Case 1204. Acute MDMA ingestion: undoubtedly responsible.

Scenario/Substances: 18 y/o female was driving with a friend when she suddenly lost consciousness and began vomiting. She reportedly had ingested "home-made, double-strength" MDMA. She was brought to the ED by private vehicle. A pill with an unrecognized imprint was brought with the patient that appeared to have been an illicit manufacture.

Physical Exam: Unresponsive to stimuli, with twitching noted

Laboratory Data: Urine drug screen showed positive for methamphetamine and cocaine. Na 160, K 4.9, BUN 12, Cr 1.1 Ca 9.6, CK 239, CK-MB 17.8, Troponin 2.3.

Clinical Course: The patient experienced a short episode of VT that resolved spontaneously. She was intubated and placed on mechanical ventilation. HR 119. CT showed evidence of cerebral edema and she was transferred to a tertiary medical facility. The patient continued to deteriorate with intermittent ventricular arrhythmias and increasing hypotension requiring pressors. Repeat CT showed increasing cerebral edema with closures of ventricles. Pupils were 6 mm and fixed. There was no response to stimuli. After 48 hours the patient was declared dead and became an organ donor.

Autopsy Findings: Blood from the initial ED arrival revealed MDMA 274 ng/mL and was negative for methamphetamine and cocaine

Case 1210. Acute heroin Parenteral: undoubtedly responsible.

Scenario/Substances: 21 y/o female was found unresponsive in a bathroom stall by a co-worker. A syringe was found in the stall near the patient. EMS found her comatose, administered naloxone 4 mg IV without response, intubated her and brought to ED.

Past Medical History: No known medical problems or family history of disease.

Physical Examination: Hypotensive, on respirator; GCS 3. Pupils fixed, with dolls eye movements, corneal reflexes absent. No trauma, rashes or track marks.

Laboratory Data:

Na 137	Cl 101	BUN 9	Glu 315
K 3.3	HCO_3 11	Cr < 1.1	

Acetaminophen and salicylate not detected, urine pregnancy test negative; ethanol <10; urine tox positive for opiates; CxR: pulmonary edema; head CT: no noted bleed or injury.

Clinical Course: Hypotension requiring dopamine, norepinephrine, and phenylephrine infusions. Upon ICU transfer, the patient had PEA, was resuscitated before having an asystolic rhythm 1 hr later. The patient expired 7 hours after initial presentation.

Autopsy Findings: Pulmonary congestion and edema. Post mortem blood concentrations: codeine <0.1 mg/L, morphine 0.10 mg/L; vitreous: codeine <0.01 mg/L, morphine 0.05 mg/L, and 6-monoacetyl morphine 0.01 mg/L. Cause of death was accidental heroin intoxication.

Case 1212. Acute on chronic heroin parenteral: probably responsible.

Scenario/Substances: 22 y/o female, known drug abuser arrested and released and was sent to a crisis center and then home. Found by her parents unconscious in respiratory arrest with a syringe still in her arm and six empty and 2 full bags of heroin. EMS found her in cardiac arrest, CPR with intubation, epinephrine, atropine and naloxone with return of vital signs.

Past Medical History: Prior admissions for drug overdose including one 2 weeks prior from which she had been discharged to rehabilitation.

Physical Exam: On arrival to the ED her BP was 139/86, HR 124, T was 33.3°C.

Laboratory Data: ABG-pH 7.16/pCO_2 40, QRS 100 ms, QT/QTc 372/499 ms, Na 137, K 3.6, Cl 96, BUN 11, Cr 1.8, glucose 146. AST 419, ALT 278, INR 1.3, salicylate, acetaminophen, ethanol were not detected. Head CT showed cerebral edema and diffuse subarachnoid hemorrhage,

intraventricular hemorrhage and new infarctions of the basal ganglia.
Clinical Course: Patient was **t**reated to correct her acidosis, but she remained moribund. She developed polyuria consistent with diabetes insipidus treated with vasopressin. Brain perfusion study showed no cerebral flow. Repeat head CT shortly before death showed protrusion of the cerebellar hemispheres into the foramen magnum. Declared dead on Day 2 and organs were harvested for transplantation.
Autopsy Findings: Cerebral edema and congestion, atelectasis of both lower lobes of lung. Premortem blood: morphine or fentanyl were not detected. Post mortem urine revealed acetaminophen level of 2.35 mg/L and free morphine 0.09 mg/L.

Case 1217. Acute caffeine ingestion: undoubtedly responsible.
Scenario/Substances: A 23 y/o female ingested 100 fat-burner weight loss capsules (cola nut, cactus extract, white willow bark, grapefruit extract, chitosan, caffeine 250 mg, green tea, guarana and garcinia).
Past Medical History: Venlafaxine for depression, cocaine abuse, prior suicide attempts and psychiatric hospitalizations. Smoked 1 pack per day.
Clinical Course: She suddenly became diaphoretic and tachycardic en route to the ED. When she arrived at the ED 1 hour after the ingestion she was anxious, but otherwise asymptomatic. BP 135/109, HR 139, RR 28. On physical exam she was diaphoretic. Following the gastric lavage (90 min post-ingestion), which returned a large quantity of reddish-purple soup and pill fragments that were consistent with the ingestion, the patient had a tonic seizure and was given lorazepam. Seven min following the seizure, the patient went into a VF and was resuscitated. CK exceeded 500,000 on Day 1. Activated charcoal was given and ~36 hours after presentation, she was stable enough to undergo a session of hemodialysis. At ~43.5 hours after initial presentation, she went into an unspecified heart block and then VF from which she could not be resuscitated. A caffeine level drawn upon presentation returned following the patient's death: 189 mg/L.
Autopsy Findings: Not available

Case 1243. Acute cocaine ingestion: undoubtedly responsible.
Scenario/Substances: 32 y/o male swallowed cocaine during a law enforcement traffic stop and while in police custody, started vomiting. An estimated 50 - 60 rocks of cocaine were seen in his emesis. EMS were called and found the patient unresponsive in cardiac arrest. He was revived at the scene with naloxone and a dopamine infusion was started prior to the onset of seizure activity.
Laboratory Data: Admission: urine drug screen positive for cocaine and PCP, APAP & ASA not detected, AST 91, ALT 139. Post intubation on Fi02 50%. ABG-pH 7.35/pCO_2 31.2/pO_2 231/HCO_3 21/BE -5.
Clinical Course: In the ED the patient had fixed, dilated pupils, was intubated and ventilated. An infusion of naloxone was started prior to transfer to the ICU with a BP 90/77, HR 134. The dopamine infusion was stopped and a phenylephrine infusion started. The naloxone infusion continued. Day 2

Na 147	Cl 112	BUN 76	Glu 145
K 5.3	HCO_3 18	Cr 8.4	

measured serum osmolarity 330 mOsm/kg. Day 5: BUN 103, Cr>10. He had episodes of hyperthermia (to 38.4°C) which also appeared to affect his BP (up to 185/105). His HR stayed in the 140 to 150 range. He received labetalol, mannitol, furosemide, and antibiotics. All medications, with the exception of antibiotics, pantoprazole, IV fluids, and total parenteral nutrition were stopped on Day 4. He was dialyzed on Days 3 - 6 for acute renal failure. His pupils remained fixed and dilated and he started posturing. He remained unresponsive on a ventilator throughout hospitalization. An EEG performed on Day 8 showed acute anoxic encephalopathy. A CT scan showed bilaterally thrombosed internal carotids without evidence of cerebral blood flow. Comfort measures were instituted and he expired on Day 8.
Autopsy Findings: Massive pulmonary edema. The brain was edematous and soft, with a small subarachnoid hemorrhage over the brainstem. Both carotid arteries were thrombosed. Antemortem blood was positive for cocaine metabolites. A brain sample showed ecgonine methyl ester at 10.3 mg/kg, cocaine at 2.71 mg/kg and benzoylecgonine at 4.66 mg/kg. Cause of death: cocaine intoxication.

Case 1246. Acute on chronic cocaine ingestion: undoubtedly responsible.
Scenario/Substances: A 32 y/o male swallowed several baggies of cocaine when he was stopped by law enforcement. He was transported to the ED.
Physical Exam: BP 200/120, HR 142, highest, T 36.7°C, diaphoretic and shivering.
Laboratory Data: Urine tox screen was positive for cocaine, THC, opiates. acetaminophen not detected.
Clinical Course: Admitted to the ICU where whole bowel irrigation was started. Developed diarrhea and a distended abdomen. His T increased to 37.7°C. A nicardipine infusion was started for hypertension resulting in a BP of 138/68; Plantar reflex was present; pupils were 2+ and sluggish, on propofol; intubated and placed on a ventilator; seizures every 3 minutes lasting about 60 seconds and he was started on benzodiazepines and phenytoin. The ambient T of the room was cooled and patient T to 36.4°C. His abdomen was no longer distended; the patient was placed on a labetalol infusion for persistent hypertension. Tonic-clonic activity and EEG showed epileptiform activity in the frontal lobe which stopped, but started in other areas of the brain;Glasgow coma scale 4. Significant anoxic brain injury was suspected. Day 9: he arrested and could not be resuscitated.
Autopsy Findings: Healing abrasions on the face, torso and extremities; empty cellophane packet found in gastric contents,

pulmonary edema, cardiac hypertrophy. Antemortem blood: cocaine 95 ng/mL, benzoylecgonine 2500 ng/mL, no other drugs detected. Cause of death was anoxic/ischemic encephalopathy secondary to cocaine intoxication.

Case 1251. Acute cocaine ingestion: undoubtedly responsible.
Scenario/Substances: A 38 y/o male ingested "a large amount of crack cocaine" During a police stop. In the ensuing altercation the patient was "tasered" several times before being handcuffed. EMS arrived, but he refused to answer questions, refused an IV line, and become anxious and sweaty. He was transported to the hospital and admitted to EMS that he had ingested a couple of large packages of cocaine.
Clinical Course: He continued to be uncooperative, HR 160, BP 180/systolic. Shortly after arrival in the ED he abruptly seized and became bradycardic and hypotensive. He was intubated and resuscitative measures were unsuccessful and the patient expired less than 1 hour after arrival.
Autopsy Findings: Stomach contained ~16 white-beige objects measuring ~1 cm in diameter consistent with ingested crack cocaine. The heart was enlarged (480 gm) with concentric 2 cm left ventricular hypertrophy with evidence of atherosclerotic cardiovascular disease and scattered epicardial petechiae. Antemortem blood: cocaine 3200 ng/mL, benzoylecgonine 3100 ng/mL, delta-9-thc 2.9 ng/mL, delta-9-carboxy-THC 31 ng/mL, lorazepam 300 ng/mL (therapeutic range 50–240 ng/mL) [he had been given lorazepam in the hospital after the seizure.]. The cause of death was acute cocaine intoxication.

Case 1253. Acute cocaine ingestion: probably responsible.
Scenario/Substances: 39 y/o male brought to ED by police 2 days following an arrest when police suspected ingestion of cocaine.
Physical Exam: Hypertension, tachycardia, and agitation.
Laboratory Data: Initial: Cr 0.9, troponin 0.02, urine toxicology positive for cocaine and benzodiazepines; Day 5: Cr 3.5; Day 6: Cr 6.0, troponin 9.2.
Clinical Course: CT scan abdomen showed a large number of foreign bodies. On the day of admission surgery was performed to remove 15 "packets" believed to contain cocaine from the stomach. Post-operatively he became agitated; CT abdomen showed two foreign bodies in the colon.
Day 2: Colonoscopy removed two more "packets". The packets were 2–3 inch thin balloons. One packet removed during colonoscopy was ruptured.
Day 3: He continued hypertensive and tachycardic (BP 180/110 HR 120) on a mechanical ventilator. A third CT scan of the abdomen did not show any foreign bodies. IV lorazepam drip and phentolamine were given for hypertension without resolution. Whole bowel irrigation was initiated, but was discontinued due to abdominal distention. IV infusion of nicardipine was used to control BP, but HR remained elevated. The patient expired during cardiac arrest on Day 6.
Autopsy Findings: The medical examiner stated that the brain, myocardium, bowels and kidneys appeared grossly normal, but in the distal small bowel 2 small burst "packets" were found.

Case 1260. Acute cocaine exposure: contributory.
Scenario/Substances: 42 y/o male found unresponsive and profoundly hypertensive in a known drug house and brought to the ED.
Past Medical History: Significant for cocaine use and smoking and history of head trauma 1 week prior to admission.
Physical Exam: Unresponsive, BP 240/140 to 300/200, HR 53–190. Pupils fixed and dilated (6 mm), absent corneal reflexes bilaterally.
Laboratory Data: ECG: QRS 120 ms, QTc 464 ms; Head CT: actively bleeding large subarachnoid hemorrhage. Chemistries were WNL, except glucose: 178; salicylate, acetaminophen, ethanol; negative; urine drug screen positive for cocaine.
Clinical Course: The patient was intubated, given sublingual nitroglycerin and started on nitroprusside infusion. No respiratory effort over the ventilator was noted; life support was withdrawn four hours after ED arrival and the patient expired.
Autopsy Findings: The cause of death was subarachnoid and intraventricular hemorrhage due to ruptured cerebral artery aneurysm. Cocaine was found to be a contributory cause. Iliac blood: benzoylecgonine 0.23 mg/L, ecgonine methyl ester was positive.

Case 1265. Acuity unknown cocaine Unknown: probably responsible.
Scenario/substance: 45 y/o male became agitated after a drug stop and police restraint. He was tasered once, got up and tried to run again, and was tasered a second time and became unresponsive. EMS was called, noted PEA, and administered naloxone, atropine and epinephrine. He was intubated and ventilated during transport to the ED.
Past Medical History: left ventricular hypertrophy, psychiatric disorder, and cocaine abuse.
Physical Exam: In the ED: T 39.9°C, BP 148/108, HR 140. His pupils were 3 mm and reactive to light. He was intubated and mechanically ventilated.
Laboratory Data: glucose 300, ethanol 14 mg/dl, APAP & ASA not detected. ABG-pH 6.90/pCO_2 47/pO_2 527/HCO_3 9.3, urine drug screen was positive for cocaine, ammonia 334 umm/L, AST 123, ALT 106.
Clinical Course: Metabolic acidosis was treated with multiple doses of sodium bicarbonate. Despite aggressive care in the ICU, he expired about 8.5 hours after admission to the ED,
Autopsy Findings: Generalized cerebral edema early degenerative neuronal changes consistent with hypoxia. Bronchilitis. Focal hemorrhages at the attachments of the chordae tendinae of the heart, and microscopic revealed acute infarction with hemorrhage. Cause of death: 1) excited delirium,

with cardiac dysrhythmia, myocardial infarction and hypoxic brain injury, metabolic acidosis and hyperthermia. 2) Cocaine intoxication with benzoyl ecgonine 1.56 mg/L, and ecgonine methyl ester at 0.371 mg/L in antemortem blood. Cocaine and cocaethylene were not detected. 3) Complications of cardiac arrest following violent suggle with restraint and deployment of electronic control device. The manner of death was deemed accidental.

Addendum

Case. Acute N-acetylcysteine parenteral.
Scenario/substance: An 18 y/o female took an unknown amount of acetaminophen 2 hours before arriving in the ED.
Past Medical History: The patient had recently found out she was pregnant.
Laboratory Data: Initial acetaminophen was 200 mcg/mL at 4 hours (all times refer to hours post ingestion), AST 20, ALT 14.
Clinical Course: In the ED, she was awake and alert, equal reactive pupils HR 123, BP 116/69, RR 18–20; weight 50 kg. She received activated charcoal and IV N-acetylcysteine (NAC) was started at 3.5 hours: Loading Dose 150 mg/kg over 1 hr, Second Dose 50 mg/kg/hr x 4 hr (instead of over 4 hr), Third Dose and 100 mg/kg/hr x 16 hr (instead of over 16 hr). Seizures began approximately 17 hours and continued until 23 hours. The patient aspirated charcoal and gastric contents and was intubated. Normal saline, phenytoin, lorazepam, and propofol were given. Day 2 vital signs were: HR 113, BP 133/63, RR 20. Approximately 26 hours: acetaminophen < 10 mcg/mL, AST 30, ALT 16, INR 2.1. NAC was re-started ~29 hours (dosage according to package insert instructions). At 32 hours her BP was 67/34, pupils 9 mm and non-reactive, no cough, gag, or corneal reflexes were found leading to the Dx of brain death. During evaluation for organ donation, the patient developed a bradydysrhythmia, leading to asystole and expired at 41 hours.
Autopsy findings: Cerebral edema, herniation, acute pneumonia due to aspiration of gastric contents, acute myocardial ischemia. The liver was not grossly or microscopically necrotic. The cause of death was "complications from acetaminophen toxicity" but did not exclude the possibility of a NAC overdose.

NB: The above abstract is included as an addendum to this report because of the potential importance of the case and the initial lack of agreement between the regional poison center (RPC) and the fatality managers as to RCF based on the information then available. Details of the initial physical exam and dose administered were not received until the time of page proofs. The RPC authors believed the appropriate RCF = 1, undoubtedly responsible and opined "Given the initially reported NAC dose, the elevated INR consistent with an extremely high serum NAC level, the cerebral injury and lack of hepatic injury, death appears to be much more likely due to NAC overdose".

Abbreviations & Normal ranges for Abstracts

Disclaimer – all laboratories are different, units and normal ranges are provided for general guidance only. These values were taken from Harrison's.[14], Goldfrank.[15] or Dart .[16]
Serum electrolyte summary table

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

ABG	= arterial blood gases
ABG-pCO_2	= partial pressure of carbon dioxide [38–42] mmHg
ABG-pH	= hydrogen ion concentration [7.38–7.42] mmHg
ABG-pO_2	= partial pressure of oxygen [90–100] mmHg
ACLS	= advanced cardiac life support, protocol for the provision of cardiac resuscitation
Alk phos	=alkaline phosphatase [13–100] U/L
ALT	= Alanine aminotransferase [7–41] U/L = (SGPT)
AMA	= against medical advice
Ammonia	= [250–80] mcg/dL = [15–47] mcmol/L
ARDS	= acute respiratory distress syndrome
AST	= Aspartate aminotransferase [12–38] U/L = (SGOT)
AVblock	= atrio-ventricular block
BAL	– British anti-Lewisite
BE	= base excess, mmol/L
Bicarbonate	= [22–26] mEq/L
Bilirubin	= total [0.3–1.3] mg/dL, direct [0.1, 0.4] mg/dL, indirect [0.2, 0.9] mg/dL
BLQ	= below the limit of quantitation
BMI	= body mass index
BP	= Blood Pressure, systolic/diastolic, mmHg (Torr)
BUN	- see Urea nitrogen
C	= degrees Centigrade
Ca	= calcium, [8.7–10.2] mg/dL
CAD	= coronary artery disease
CABG	= coronary artery bypass graft
CK	= creatinine kinase (CPK), total: [39–238] U/L females, [51–294] U/L males
Cl	= chloride [102–109] mEq/L
COHb	= COHb
COPD	= chronic obstructive pulmoary disease
CPR	= cardio pulmonary resuscitation
Cr	= creatinine [0.5–0.9] mg/dL females, [0.6–1.2] males,
CT	= computed tomography (CAT scan)
CVA	= cerebrovascular accident
CVVHD	= continuous venovenus hemodialysis
CxR	= chest radiograph, chest xray
Day	= when capitalized, Day = hospital day, i.e., days since admission
Dx	= diagnosis

ECG	= electrocardiogramECG, leads = I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6
ED	= emergency department, in these abstracts refers to the initial health care facility
EDDP	= principal methadone metabolite
EEG	= electroencephalogram
ELISA	= enzyme-linked immunosorbent assay
EMS	= emergency medical services, paramedics, the first responders
ER	= extended release (sustained release)
FiO_2	= fraction of inspired oxygen
g/dL	= grams per deciliter
GCS	= Glasgow Coma Score, ranges from 3 to 15
Glu	= glucose, fasting [75–110] mg/dL
HCF	= health care facility
HCG	= human chorionic gonadotropin test for pregnancy
HCO_3	= bicarbonate
HCP	= health care provider
Hct	= hematocrit [35.4–44.4] females, [38.8–46.4]% males
Hgb	= hemoglobin [12.0–15.8] g/dL females, [13.3–16.2] g/dL males
HIV	= human immunodeficiency virus
HR	= heart rate, beats per min
hr	= hour(s)
ICU	= intensive care unit
IgE	= immunoglobulin E
IM	= intramuscular
INR	= international normalized ratio (PT to control) [0.8-1-2]
IU/L	= international units per Liter
IV	= intravenous
K	= potassium, [3.5–5] mEq/L
kg	= kilogram
L	= Liter
Lactate	= lactic acid [4.5–14.4] mg/dL arterial, [4.5–19.8] mg/dL venous
Leukocyte count	= white blood count [3.54–9.06] $10^3/mm^3$
mcg/dL	= micrograms per deciliter
mcg/L	= micrograms per Liter
mcg/min	= micrograms per minute
mcg/mL	= micrograms per milliliter
mcmol/L	= micromoles per liter
MDA	= 3,4-methylenedioxyamphetamine
MDMA	= methylenedioxymethamphetamine (ecstasy)
ME	= medical examiner
mEq	= milliequivalents
mEq/L	= milliequivalents per Liter
Mg	= magnesium [1.5–2.3] mg/dL
mg	= milligrams
mg/dL	= milligrams per deciliter
mg/kg	= milligrams per kilogram
mg/L	= milligrams per Liter
min	= minutes
mmol/L	= millmoles per Liter
mosm/kg	= milliosmoles per kilogram
mosm/L	= milliosmoles per Liter
MRI	= Magnetic Resonance Imaging
ms	= milliseconds
NG	= nasogastric
ng/mL	= nanograms per milliliter
NS	= normal saline
O_2 sat	= oxygen percent saturation [94–100]% at sea level
OR	= operating room
Osm	= osmole
PALS	= pediatric advanced life support
PC	= poison center (= PCC, or Poison Control Center)
PCP	– primary care provider
PEA	= pulseless electrical activity
PEEP	= positive end expiratory pressure
Platelets	= platelet count [150–400] $\times 10^9$/L
PO	= per os ("by mouth" in Latin)
Potassium	= [3.5–5] mEq/L
PR	= P-R interval [120–200] msec on the ECG
PT	= prothrombin time, INR is preferred, but PT may be used if INR is not available
PTA	Prior to admission
PTT	= partial thromboplastin time [26.3–39.4] sec
QRS	= ECG QRS complex duration [60–100] msec
QT	= Q to T interval on the ECG waveform, varies with heart rate
QTc	= QT interval corrected for heart rate, usually QTcB = QT/RR½ (Bazett correction) 1–15 y-o [<440] msec, adult male [<430] msec, adult female [<450] msec
RBC	= red blood cell(s)
RR	= respiratory rate, breaths per minute
sec	= seconds
SVT	= supraventricular tachycardiaF
s/p	= status post
T (oral)	= Temperature (oral) [36.4, 37.2]°C or
T (rectal)	= Temperature (rectal) [36.4, 37.2]°C or
T (tympanic)	= Temperature (tympanic) [36.4, 37.2]°C
THC	= tetrahydrocannabinol
Tprot	= total protein
Troponin I	= normal range [0–0.08] ng/mL, Cut-off for MI > 0.04 ng/mL
U/dL	= units per deciliter
U/L	= units per liter
U/mL	= units per milliliter
UA	= urinalysis
Urea nitrogen (BUN)	= [6–17] mg/dL
VF	= Ventricular fibrillation
VT	= Ventricular tachycardia
WBC	= white blood count, see leukocyte count
WNL	– within normal limits
y/o	= years old