UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
4330 EAST WEST HIGHWAY
BETHESDA, MD 20814

Memorandum

	Date:	January 21, 2015

TO   :   The File

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SUBJECT :   Unintentional Pediatric Poisoning Injury Estimates for 2013

In 2013, there were an estimated 80,000 emergency department-treated injuries involving unintentional pediatric poisonings. Unintentional pediatric poisonings are poisonings and chemical burns[1] resulting from accidental access to a substance by a child younger than the age of 5 years. Adverse reactions, therapeutic errors, and exposures beyond the victim's control that would not be impacted by the Poison Prevention Packaging Act (PPPA) were not included in the estimates. For a full specification of out-of-scope and in-scope cases, see the Methodology section. The annual average estimated number of emergency department-treated unintentional pediatric poisoning injuries across 2011–2013 is 86,600.

Results

Staff found 2,760 cases involving unintentional pediatric poisonings in 2013 in the National Electronic Injury Surveillance System (NEISS). Based on these cases, staff computed a national estimate of 80,000 emergency department-treated injuries, with a coefficient of variance (C.V.) of 10.15 percent. The 95 percent confidence interval (C.I) for this estimate is 64,000 to 95,900. A breakdown of the estimate by diagnosis is shown in Table 1 (next page).

CPSA 6(b)(1) CLEARED for PUBLIC
☑ NO MFRS/PRVTLBLRS OR PRODUCTS IDENTIFIED
___ EXCEPTED BY: PETITION RULEMAKING ADMIN. PRCDG
___ WITH PORTIONS REMOVED: _____

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[1] Chemical burns are included in this memo because many of the substances regulated by the Poison Prevention Packaging Act cause chemical burns. Examples of such substances include: tire cleaners, etching creams, drain cleaners, and oven cleaners.

This analysis was prepared by CPSC staff and has not been reviewed or approved by,
and may not necessarily reflect the views of, the Commission.
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Table 1: 2013 Emergency Department-Treated Unintentional Pediatric Poisoning Estimates by Diagnosis*

Diagnosis (Code)	Estimate	Cases	C.V.	95% C.I.
Poisoning (68)	76,700	2,658	9.98%	61,700–91,600
Chemical Burn (49)	3,300	102	23.55%	1,800–4,800
Total[2]	80,000	2,760	10.15%	64,000–95,900

Source: National Electronic Injury Surveillance System, April 2014
* Adjusted to exclude adverse reactions, therapeutic errors, and exposures beyond the victim's control.

Table 2 gives a breakdown by year of the estimated emergency department-treated unintentional pediatric poisonings. Each diagnosis estimate and the total estimate were analyzed for a trend across years, but no statistically significant trend was found (the lowest p-value for all trends was 0.2578).

Table 2: 2011–2013 Emergency Department-Treated Unintentional Pediatric Poisoning Estimates by Year*

Diagnosis (Code)	2011	2012	2013	Average
Poisoning (68)	88,700	85,900	76,700	83,700
Chemical Burn (49)	2,400	2,800	3,300	2,800
Total[2]	91,100	88,700	80,000	86,600

Source: National Electronic Injury Surveillance System, April 2014
* Adjusted to exclude adverse reactions, therapeutic errors, and exposures beyond the victim's control.

In 2013, there were an estimated 59,400 emergency department-treated unintentional pediatric poisonings that occurred at home, or 74 percent of the total 80,000 emergency department-treated unintentional pediatric poisonings. An estimated 19,600 (25 percent) of the 2013 emergency department-treated unintentional pediatric poisonings occurred at an unknown location. The remaining injuries occurred at other locations, including streets, schools, playgrounds, and other public property.

Table 3 (next page) gives a breakdown, by the product involved, for the estimated emergency department-treated unintentional pediatric poisonings. Note that the product categories are not exclusive. It is possible for two different products to be associated with the same poisoning.

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[2] Columns may not sum to totals due to rounding.

Table 3: 2013 Emergency Department-Treated Unintentional Pediatric Poisoning Estimates by Top Ten Products*

Product	Estimate	C.V.	95% C.I.
Acetaminophen	9,800	15.87%	6,800-12,900
Blood Pressure Medications	8,100	17.03%	5,400-10,800
Unknown	4,100	18.63%	2,600-5,600
Anti-Depressants	3,800	23.20%	2,100-5,600
Narcotic Medications[3]	3,600	19.42%	2,200-5,000
Bleach	3,300	17.47%	2,200-4,400
Ibuprofen	3,100	17.31%	2,000-4,100
Laundry Packets	3,000	17.91%	1,900-4,000
Sedatives and Anti-Anxiety Medications[4]	2,800	26.93%	1,300-4,400
Diphenhydramine	2,600	20.59%	1,500-3,600

Source: National Electronic Injury Surveillance System, April 2014
* *Adjusted to exclude adverse reactions, therapeutic errors, and exposures beyond the victim's control.*

The emergency department-treated unintentional pediatric poisoning estimates decreased from 2012 to 2013 for most of the top ten products (Acetaminophen, blood pressure medications, unknown, anti-depressants, Narcotics medications, bleach, Ibuprofen, sedatives and anti-anxiety medications, and Diphenhydramine). Household cleaners poisoning was ranked seventh in 2012, but dropped to fifteenth in 2013. Laundry packets poisoning increased from number eleventh in 2012 to eighth in 2013.

Methodology

NEISS is a probability sample of approximately 100 U.S. hospitals having 24-hour emergency departments (EDs) and more than six beds. Coders in each hospital code consumer product-related data from the ED record, and then the data are transmitted electronically to the CPSC. Because NEISS is a probability sample, each case collected represents a number of cases (the case's *weight*) in the total estimate of injuries in the United States. Different hospitals carry different weights, based on stratification by their annual number of emergency department visits (Kessler and Schroeder, 1999).

Hazard Analysis staff searched NEISS for all incidents with the poisoning diagnosis (code 68) or the chemical burn diagnosis (code 49) involving children under the age of 5. All incidents were examined by Health Sciences staff for cases that were not unintentional exposures, but were generally associated with a prescribed therapeutic regimen, or an unforeseen incidental exposure from a situation outside the victim's control. These types of cases, delineated below, are out of scope because they do not directly involve a child independently accessing a poison.

  1. *Adverse Reactions:* This includes undesirable effects that occur with the proper use of a substance (*e.g.*, drowsiness after administration of an antihistamine). Allergic, hypersensitivity,

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[3] In previous reports (2011 and 2012), this category was referred to as anti-spasm medications, but narcotic medications is a better description of this product class.
[4] Benzodiazepines.

or idiosyncratic reactions to recommended doses of vaccines, antibiotics, or other medications are also included in this category.

2. *Therapeutic Errors:* Unintentional mistakes made during a prescribed or recommended course of treatment, such as: (1) a caregiver administering the wrong substance or an overdose (*e.g*., two tablespoons instead of two teaspoons) to the patient; (2) a pharmacist mislabeling the dosage instructions on a prescription; and (3) a relative giving medication to the wrong child.

3. *Incidental Exposures:* This category refers to exposures resulting from a situation beyond the control of the victim. Examples include exposures to: (1) chlorine fumes from a pool; (2) gas fumes while in a dwelling or an automobile; (3) gasoline while it is pumped into an automobile; and (4) illicit drugs *(e.g.*, cocaine, methamphetamine, marijuana) while the caregiver is using or producing them.

Hazard Analysis staff used SAS$^{®}$ version 9 to compute estimates and the associated coefficients of variation for the number of unintentional pediatric poisoning injuries. A coefficient of variation (C.V.) is the ratio of the standard error of the estimate (*i.e*., variability) to the estimate itself. This is generally expressed as a percent. A C.V. of 10 percent means the standard error of the estimate equals 0.1 times the estimate.

CC: George Borlase, EXHR; Jacqueline Ferrante, HS