

2013 Annual Report



Maryland Poison Center

UNIVERSITY OF MARYLAND SCHOOL OF PHARMACY

1-800-222-1222

www.mdpoison.com

Message from the Director

We live in an extraordinary time. Twenty years ago, who would have thought that we would have access to more information on a cell phone than existed in any encyclopedia? Who would have thought that people would be walking around with a device in their pocket or purse that can take pictures and movies, that can allow you to talk to anyone, text anyone, or “friend” anyone. It seems that whenever there is a question to which the answer isn’t immediately known, people reach for their cell phones, tablets or other connected devices to search for the information online. It is an amazing thing to be able to rapidly find answers to questions that in the past may only have been found in very specialized literature. This capability is incredible when the question is about Honus Wagner’s lifetime batting average or for finding out which actor played Carol Brady on the Brady Bunch. It is a much different situation when you are looking for information about a poisoning or overdose.

Poison centers across the country have seen decreases in overall call

volume over the past several years. This decrease seems to be primarily related to calls involving young children. Thirty years ago, the percentage of cases to the Maryland Poison Center involving young children was approximately 65%. This year, that percentage is approximately 45%, while the total number of human exposures has remained virtually unchanged. While it is unclear exactly why this is happening, many believe that at least some of the drop in call volume is due to young parents searching online when faced with a poisoning or overdose rather than calling the poison center.

Our message is simple: just call the experts. By dialing 800-222-1222, families are directly connected with a Certified Specialist in Poison Information. These pharmacists and nurses have more than 230 combined years of experience managing poisoning and overdose cases and have immediate access to the most up-to-date information on poisoning and overdose care. Searching for information online yields a list of random websites



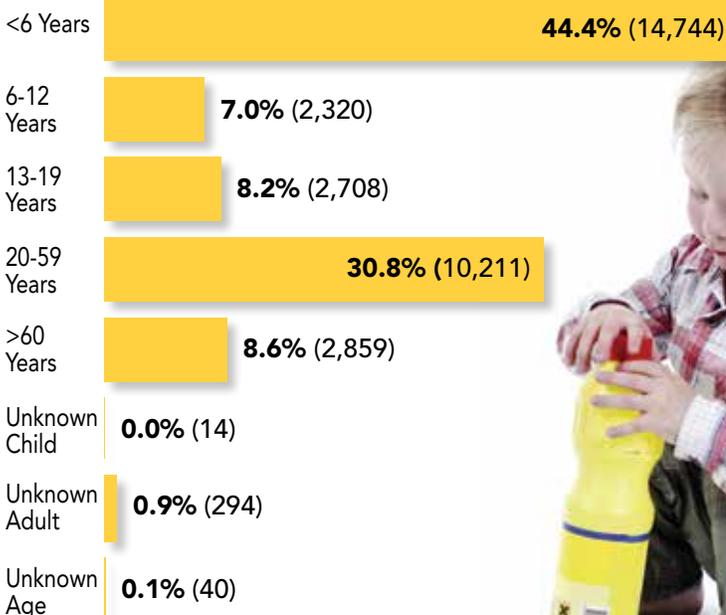
that may or may not provide correct information. In fact, some of the information found online could be harmful. Advances in technology have their benefits, but sometimes using the tried and true methods will yield more peace of mind and better results.

Bruce D. Anderson

PharmD, DABAT

Director of Operations
MARYLAND POISON CENTER
Associate Professor of Pharmacy Practice and Science
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Age



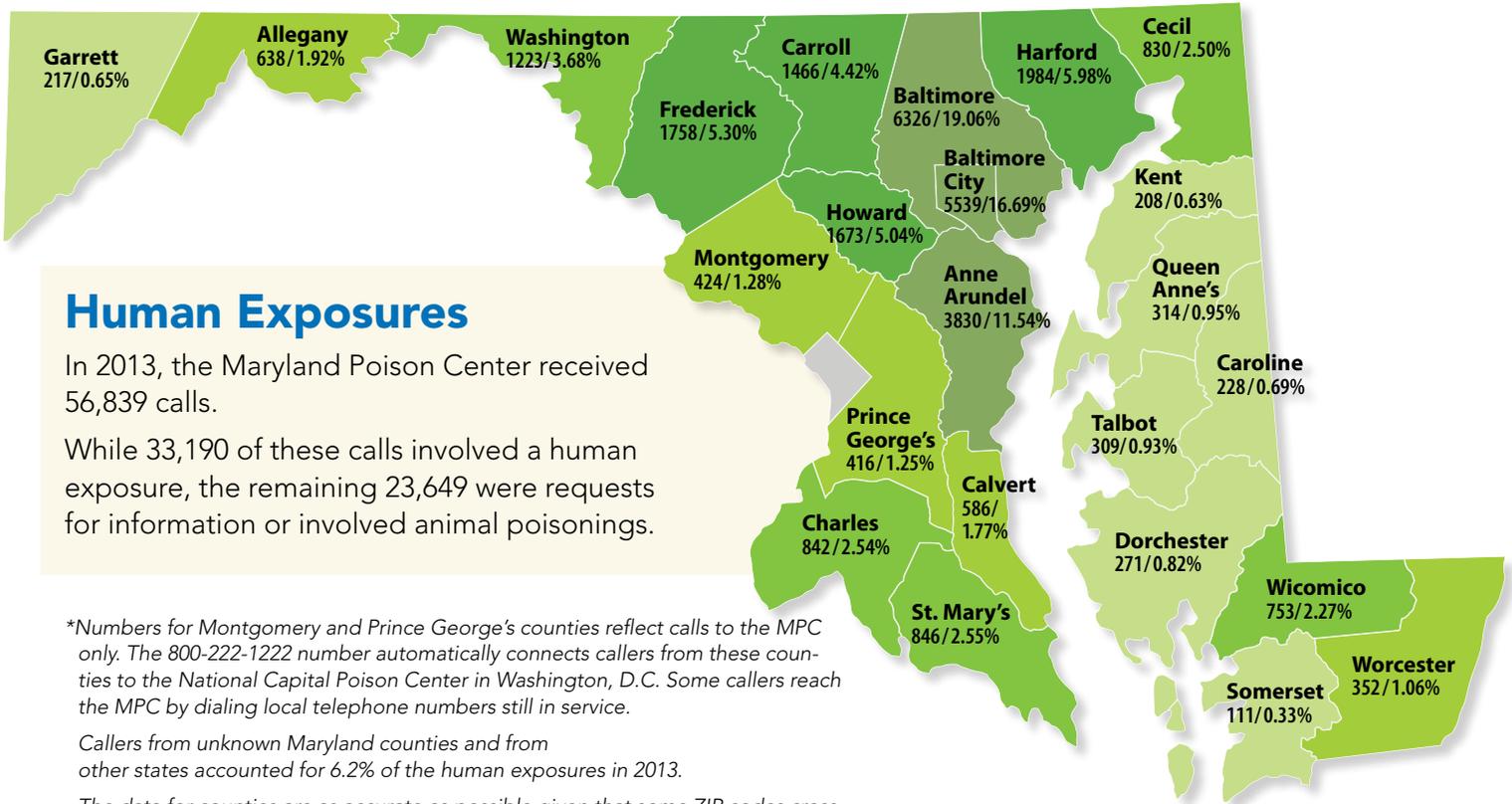
Gender

46.8 percent of exposures occurred in **males**, and **53.1 percent** in **females** (0.1 percent unknown).



Animal Exposures

In 2013, a total of **1,290 potentially toxic exposures** in animals were reported.



Human Exposures

In 2013, the Maryland Poison Center received 56,839 calls.

While 33,190 of these calls involved a human exposure, the remaining 23,649 were requests for information or involved animal poisonings.

**Numbers for Montgomery and Prince George's counties reflect calls to the MPC only. The 800-222-1222 number automatically connects callers from these counties to the National Capital Poison Center in Washington, D.C. Some callers reach the MPC by dialing local telephone numbers still in service.*

Callers from unknown Maryland counties and from other states accounted for 6.2% of the human exposures in 2013.

The data for counties are as accurate as possible given that some ZIP codes cross county boundaries.

From the Medical Director

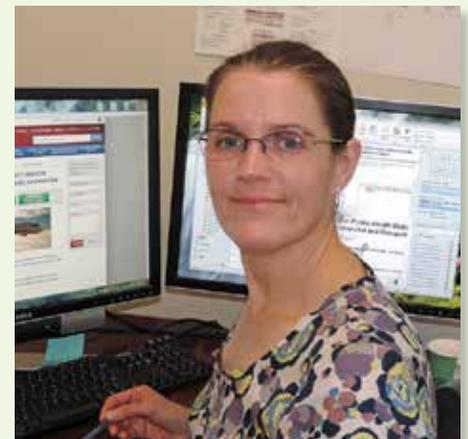
It is an honor to present the 2013 Maryland Poison Center Annual Report. Entering its fifth decade, the Maryland Poison Center is proud of its history and service to Marylanders.

This annual report outlines the impressive amount of work performed by our staff and our center's continued growth and commitment to fellow Marylanders. The Maryland Poison Center operated 24 hours per day, seven days a week and answered a total of 56,839 calls in 2013. Our poison specialists are toxicology experts who provide the most up-to-date information on the assessment and treatment of poisonings and overdoses. In addition, we actively participate in research and education to help prevent poisonings and further the understanding of how best to treat them.

Over the last year, we worked with the Maryland Alcohol and Drug Abuse Administration (ADAA), the Maryland Institute of Emergency

Medical Services Systems (MIEMSS), the Maryland chapter of the American College of Emergency Physicians (MD ACEP) and the Maryland Office of the Chief Medical Examiner (OCME) to focus on the important issues of prescription medication overdose deaths. We expanded our collaboration to local health departments in the area of overdose prevention and fatality review. Other examples of our continued commitment to help prevent poisonings included presentations on safe opioid prescribing to the Maryland Patient Safety Center and the Maryland Academy of Family Physicians. Additionally, peer-reviewed publications authored by Maryland Poison Center staff addressed the nonmedical use of prescription medications and overdose deaths.

Thanks to the continued support of the University of Maryland School of Pharmacy, the Department of Health and Mental Hygiene, the



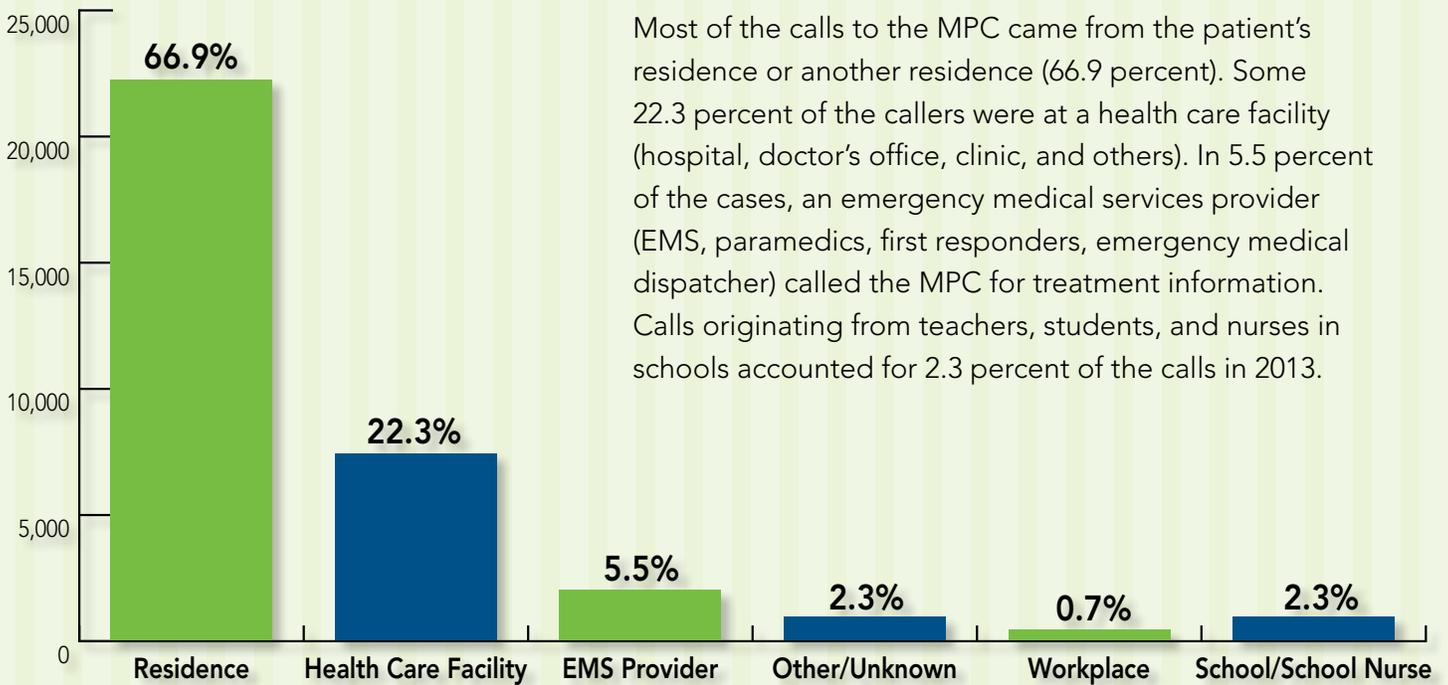
state of Maryland and the U.S. Health Resources and Services Administration, we have been able to provide the best possible service to our fellow Marylanders and will continue to do so in the future.

Suzanne Doyon
MD, FACEP, FACMT

Medical Director
MARYLAND POISON CENTER

Site of Caller

Most of the calls to the MPC came from the patient's residence or another residence (66.9 percent). Some 22.3 percent of the callers were at a health care facility (hospital, doctor's office, clinic, and others). In 5.5 percent of the cases, an emergency medical services provider (EMS, paramedics, first responders, emergency medical dispatcher) called the MPC for treatment information. Calls originating from teachers, students, and nurses in schools accounted for 2.3 percent of the calls in 2013.



MPC Safely Manages Patients at Home

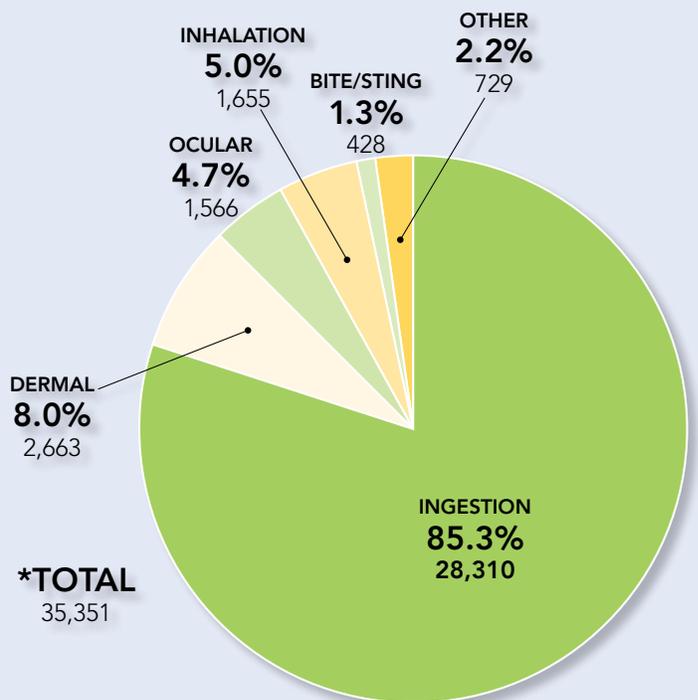
In 2013, 66 percent of all poisoning cases were safely managed at home (site of exposure), which saves millions of dollars in unnecessary health care costs compared with managing patients in a health care facility (HCF). It also allows more efficient and effective use of limited health care resources. Calling the MPC helps to save lives and save dollars!

	NUMBER	PERCENT
Managed On Site/ Non-HCF	21,853	65.8%
Managed in HCF	9,851	29.7%
Other/Unknown	1,115	3.4%
Refused Referral	371	1.1%
TOTAL	33,190	100%

Route of Exposure

The most common way that patients in Maryland were exposed to toxins was by ingestion. This includes cases of children putting substances in their mouths, patients mistakenly ingesting someone else's medicine, people accidentally brushing their teeth with a product intended for topical use, etc. The dermal route was the next most common means of exposure.

**Some cases involved multiple routes of exposure. Percentages in the chart are based on the total number of human exposures.*

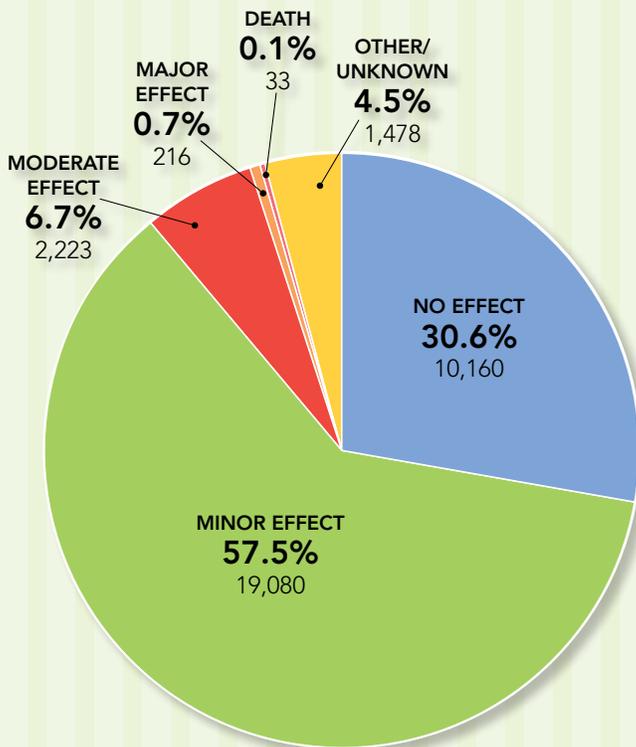


Circumstance

The people who contact the MPC have several different reasons for calling:

- Unintentional exposures in children and adults, occupational or environmental exposures, bites/stings, therapeutic errors and misuse of products, and food poisoning accounted for 75.1 percent of total exposures. Therapeutic errors (double-doses, wrong medicines taken, etc) alone accounted for 15 percent of total exposures.
- Intentional exposures, due to misuse, abuse, or suicide attempts, accounted for 20.1 percent of total exposures.
- Adverse reaction to drugs, food, and other substances accounted for 3.1 percent of total exposures.
- Other/unknown reasons, including malicious or contaminant/ tampering, accounted for 1.7 percent of total exposures.

	NUMBER	PERCENT
Unintentional	24,931	75.1%
Intentional	6,676	20.1%
Adverse Reaction	1,030	3.1%
Other/Unknown	553	1.7%
TOTAL	33,190	100%



Outcomes

The true measure of the effectiveness of the MPC program is in patient outcomes. Although there were 33 cases reported to the MPC that resulted in death (0.1 percent) in 2013, the impact of the MPC is obvious: few cases had poor outcomes. Some 88.1 percent of cases resulted in (or were expected to result in) no effects or minor effects. For all exposures, prompt attention is the best way to reduce the likelihood of developing severe toxicity.

Our mission is to decrease the cost and complexity of care while maintaining and/or improving patient outcomes. These data clearly show that we're meeting our mission.



Substances Involved in Poisonings

The tables below list the most common substances involved in poisonings and overdoses reported to the Maryland Poison Center in 2013. Some 73.1 percent of the poisoning and overdose calls to the Maryland Poison Center involved a drug, while 49.6 percent of calls involved a non-drug substance. A patient may be exposed to more than one substance in a poisoning or overdose case. Percentages in the tables are based on the total number of human exposures.

DRUG SUBSTANCES

	NUMBER	PERCENT
Analgesics	5,339	16.1%
Sedatives/Hypnotics/Antipsychotics	3,126	9.4%
Cardiovascular Drugs	1,810	5.5%
Antihistamines	1,638	4.9%
Stimulants/Street Drugs	1,154	3.5%
Topical Preparations	1,150	3.5%
Antidepressants	1,096	3.3%
Cold & Cough Medicines	1,048	3.2%
Anticonvulsants	970	2.9%
Vitamins	950	2.9%
Others	5,986	18.0%
TOTAL	24,267	73.1%
TOTAL HUMAN EXPOSURES		33,190

NON-DRUG SUBSTANCES

	NUMBER	PERCENT
Cosmetics/Personal Care Products	3,274	9.9%
Cleaning Substances(Household)	2,783	8.4%
Foreign Bodies/Toys/Miscellaneous	1,626	4.9%
Alcohols	1,505	4.5%
Pesticides	1,090	3.3%
Plants	641	1.9%
Food Products/Food Poisoning	627	1.9%
Arts/Crafts/Office Supplies	586	1.8%
Bites and Envenomations	547	1.6%
Hydrocarbons	437	1.3%
Others	3,341	10.1%
TOTAL	16,457	49.6%
TOTAL HUMAN EXPOSURES		33,190

Treatment

The tables below list antidotal therapies and decontamination treatments used for poisonings in Maryland during 2013.

Most patients were managed conservatively with dilution (given something to eat or drink), irrigation, or washing.

ANTIDOTAL THERAPIES

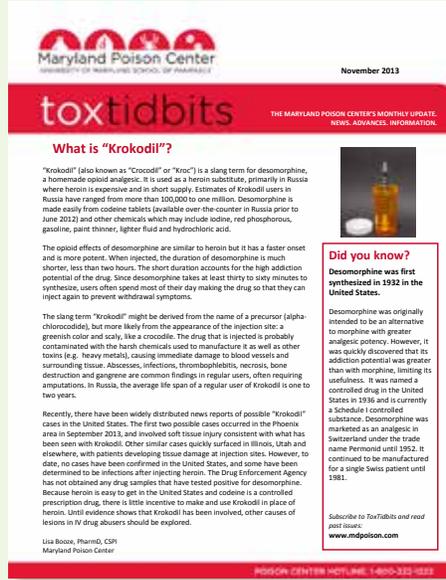
	NUMBER
Naloxone	640
IV acetylcystiene	251
Alkalinization	167
Calcium	118
Oral acetylcysteine	62
Fomepizole	56
Glucagon	39
Insulin	39
Atropine	31
Vitamin K	20
TOTAL	1,423

DECONTAMINATION TECHNIQUES

	NUMBER
Dilute/Irrigate/Wash	19,024
Food/Snack	3,542
Single-dose Activated Charcoal	1,701
Fresh Air	939
Other Emetic	259
Whole Bowel Irrigation	37
Cathartic	35
Lavage	23
Multi-dose Activated Charcoal	16
Ipecac	1
TOTAL	25,577



Poison Prevention Press and ToxTidbits



ToxTidbits and Poison Prevention Press keep health care providers and community members up-to-date on poison-related topics.

service area. **ToxTidbits: Antidote Facts** are short reviews of antidotes written by MPC staff and students. We also provide a list of recommended antidotes and stock levels for hospital pharmacies.

To receive **ToxTidbits** or **Poison Prevention Press** by email, visit our website (www.mdpoison.com) and click on "Receive Newsletter." Current and previous issues of both newsletters can be read and downloaded from the MPC website as well.

The MPC publishes **Poison Prevention Press**, an e-newsletter for the general public. Published every-other-month, the newsletter highlights various poison safety topics for all ages. Some topics presented in 2013 include "Don't Google... Just Call!," "Kids Eat the Darndest Things," "Parent Information for Senior Week," "Electronic Cigarettes and Nicotine," and "Toy Safety." **Poison Prevention Press** is sent to e-mail subscribers who are encouraged to post and share the newsletter with others.

ToxTidbits is a monthly newsletter for health professionals containing important toxicology information,

updates, and news. Some of the topics addressed in 2013 include "Ricin," "The Cinnamon Challenge," "What is Krokodil?," and "Laundry Detergent Pod Ingestions." **ToxTidbits** is sent to email subscribers and faxed to every emergency department in our

In March 2013, the MPC launched a new website. The new design is more user-friendly and provides more poison information for the public and health care professionals. Visit us at www.mdpoison.com.



Public and Professional Education 2013

The Maryland Poison Center (MPC) is well known for being an emergency telephone service that helps those who have been poisoned, including unintentional poisonings in small children, exposures to household products, occupational exposures, and intentional overdoses. But did you know that the MPC also educates thousands of people each year about poisonings and overdoses?

Our public education efforts are intended to help increase the awareness of the poisons that are found in every home, business, and school, and to help prevent poisonings from occurring. The MPC also strives to make sure that everyone knows that they can quickly and easily get information by contacting the Maryland Poison Center, 24/7, if a poisoning occurs.

In 2013, the MPC provided speakers and/or materials for 72 programs in 16 Maryland counties, Baltimore City and Washington DC. The programs and events attended by the MPC staff reached approximately 3,300 people. Several organizations partnered with the MPC to provide education to their patients, customers, clients and students. These



organizations included fire departments, police departments, hospitals, health departments, pharmacies, hospital perinatal education programs, CPR instructors, parish nurses, Red Cross, Head Start, and Healthy Start programs. In all, more than 46,000 pieces of educational materials (brochures, magnets, telephone stickers, Mr. Yuk stickers, teacher's kits, and other pieces) were

distributed at these programs and by these organizations. Approximately 104,000 additional materials were mailed to people and groups who requested them.

Sixteen county school systems and daycare centers used educational materials from the MPC in their classrooms. All told, more than 21,000 pieces of educational material were used in or handed out in schools throughout Maryland. The MPC also partnered with the Frederick County Health Department and Frederick County Public Schools to conduct a Pharmacist Adopt-A-School program, in which local volunteer pharmacists are trained to present a poison and medicine safety program to first grade students. In the spring of 2013, 12 Frederick County elementary schools participated in the program, reaching over 1,200 first grade students and their families.

National Poison Prevention Week (March 16-22, 2013) activities included mailings to emergency departments throughout the state. The MPC partnered with Safe Kids Baltimore to offer Poison Prevention Week Kits to elementary schools in Baltimore City. Schools could choose from a list



Outreach, education, and research are key elements of the MPC's services.

The MPC led 110 education programs and events for public and health professional groups, attended by over 20,000 people.

Educational materials were distributed throughout Maryland at programs, health fairs, and by community organizations.



The MPC educates thousands of people each year about poisonings and overdoses.



of activities to increase awareness of poison safety to the students and their families. In all, 12 schools participated, reaching over 5,000 students. Finally, daily Facebook posts were made providing poison safety tips.

The MPC is also an important resource for the media. Poison Center staff members are often interviewed by television, radio, and print media for their expertise in poison-related stories. The MPC is using Facebook as a means of connecting to the community. Notifications of newsletters, noteworthy toxicology information in the news, and other important tips are shared on a regular basis.

Professional education is targeted towards the special needs of health professionals. Programs and materials are designed to help the clinician better manage poisoning and overdose cases that end up in a health care facility. In 2013, 74 programs were conducted by MPC staff at hospitals, fire departments, colleges, professional conferences (state, regional, and national) and on the Internet as webinars. These programs were attended by more than 16,900 physicians, nurses, EMS providers, pharmacists, physician assistants, and others. Podcasts were recorded for broadcast on two websites devoted to continuing education for health care providers: *MedicCast.com* and *NursingShow.com*.

The Maryland Poison Center also provides on-site training for physicians, pharmacists, and EMS providers. More than 100 health professionals came to the MPC in 2013 to learn about the assessment and treatment of poisoned patients.



Research Presentations and Publications

Anderson B, Klein-Schwartz W, Tsay M. From ricin to castor oil: 12 years of toxalbumin exposures reported to U. S. poison centers. North American Congress of Clinical Toxicology, Atlanta, GA. Poster. October 2, 2013.

Anderson B, Tsay M, Klein-Schwartz W. Who's calling? Changes in types of cases managed by U. S. poison centers 2000 – 2011. North American Congress of Clinical Toxicology, Atlanta, GA. Poster. October 2, 2013.

Klein-Schwartz W. Evaluation of unintentional buprenorphine exposures in children and nonmedical use in adults. American College of Medical Toxicology-Israel Society of Toxicology Conference, Haifa, Israel. Platform. April 23, 2013.

Klein-Schwartz W, Gonzales L, Anderson B. Evaluation of quetiapine abuse and misuse reported to poison centers. European Association of Poison Control Centres and Clinical Toxicologists, Copenhagen. Poster. May 2013.

Tsay M, Anderson B, Gonzales L, Klein-Schwartz W. The toxicity and clinical outcomes of paliperidone exposures reported to U. S. poison centers. North American Congress of Clinical Toxicology, Atlanta, GA. Poster. October 2, 2013.

Dougherty P, Lee S, Lung D, **Klein-Schwartz W.** Evaluation of the use and safety of octreotide as antidotal therapy for sulfonyleurea overdose in children. *Pediatr Emerg Care* 2013; 29:292-295.

Doyon S, Klein-Schwartz W, Anderson B, Welsh C. A novel approach to informing the public about the risks of overdose and nonmedical use of prescription medications. *Am J Addict* 2013;22:108-112.

Doyon S. A Performance Improvement Guidelines Reduces Opioid Prescriptions for Emergency Department Dental Patients. *Ann Emerg Med* 2014; 63:371.

Doyon S, Klein-Schwartz W, Lee S, Beuhler M. Fatalities involving acetaminophen combination products reported to United States poison centers. *Clin Toxicol* 2013; 51:941-948.

Doyon S, Goodrich J, Tra Y, Jufer-Phipps R, Levine B, Fowler D. Analysis of overdose deaths involving methadone. *Clin Toxicol* 2013; 51:616 (abstract).

Boggs C, Ripple M, Ali Z, Brassell M, Levine B, Jufer-Phipps R, **Doyon S, Fowler D.** Anaphylaxis after injection of buprenorphine. *J Forensic Sciences Pathol* 2013 doi: 10.1111/1556-4029.12161.

Bronstein AC, Spyker DA, Cantilena LR, Green JL, Rumack BH and Heard SE (contributor: **Doyon S**): 2012 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS): 30th Annual Report. *Clin Toxicol* 2013;51:949-1229.

Lee S, **Klein-Schwartz W, Welsh C, Doyon S.** Medical outcomes associated with nonmedical use of methadone and buprenorphine. *J Emerg Med*; 2013;45:199-205.



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Acknowledgments

The following organizations deserve special thanks for their continued support of the Maryland Poison Center:

- University of Maryland School of Pharmacy
- University System of Maryland
- Maryland Department of Health & Mental Hygiene
- U.S. Department of Health and Human Services, Health Resources and Services Administration
- Maryland Institute for Emergency Medical Services Systems (MIEMSS)
- Safe Kids Maryland State and Local Coalitions
- PharmCon, Inc.



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to see how you can support
the Maryland Poison Center.



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