

2008 ANNUAL REPORT



Maryland Poison Center University of Maryland School of Pharmacy

This report provides an overview of the Maryland Poison Center experience during 2008

“Saving lives,
saving dollars”
is a simple way of
stating what the
Maryland Poison Center
does every day.

The mission of the Maryland Poison Center is to decrease the cost and complexity of poisoning and overdose care while maintaining and/or improving patient outcomes. We are continuing to work toward this mission by conducting research on the management of poisoning and overdose patients, through public education to try to prevent poisonings from occurring, by training health professionals (pharmacists, nurses, physicians, and paramedics) in the management of poisoning and overdose care, and by working with the public health infrastructure in Maryland to help recognize poisoning challenges and working to respond to those challenges.

FROM THE DIRECTOR



Bruce Anderson

The Maryland Poison Center (MPC) started operating at the University of Maryland School of Pharmacy in 1972. Looking back at the past 36 years, it is reasonable to ask, “What impact has the MPC had on the health of Marylanders?”

In short: A HUGE one! Here are a few of the

contributions we make:

Poison centers help patients and parents. More than half of all poisonings reported to the MPC involve children less than 6 years old. What would you do if your 18-month-old child swallowed a mouthful of household bleach while “helping” with the laundry? Call the MPC! We have highly trained poison specialists (pharmacists and nurses with additional toxicology training and certification) staffing our emergency telephone lines 24 hours a day, seven days a week. These experts provide emergency treatment and triage information to callers on a wide variety of poisoning questions. The MPC staff is able to quickly and efficiently provide information on the necessary course of action for whatever the poisoning situation might be. More than 90 percent of cases involving small children are handled at home with treatment advice from MPC poison specialists. Not only does this service decrease the cost and complexity of health care for patients, but it provides immediate information and guidance to help reduce parents’ anxiety and uncertainty.

Poison centers help manage limited health care resources more efficiently. Several studies have demonstrated the financial impact of poison centers in the United States. The results reveal huge cost savings in terms of preventing unnecessary urgent care visits. Studies show that for every state-funded dollar spent on poison center services, as much as \$36 is saved by successfully managing patients at home instead of in emergency rooms. Not only do poison centers help decrease costs through avoidance of emergency room visits, they help to control costs for patients already in the

hospital. Several studies have demonstrated cost savings for hospitalized poisoned patients when poison centers were consulted; one study showed a savings of \$2,100 per patient due to reduced length of hospital stay. Poison centers really do save lives and save dollars!

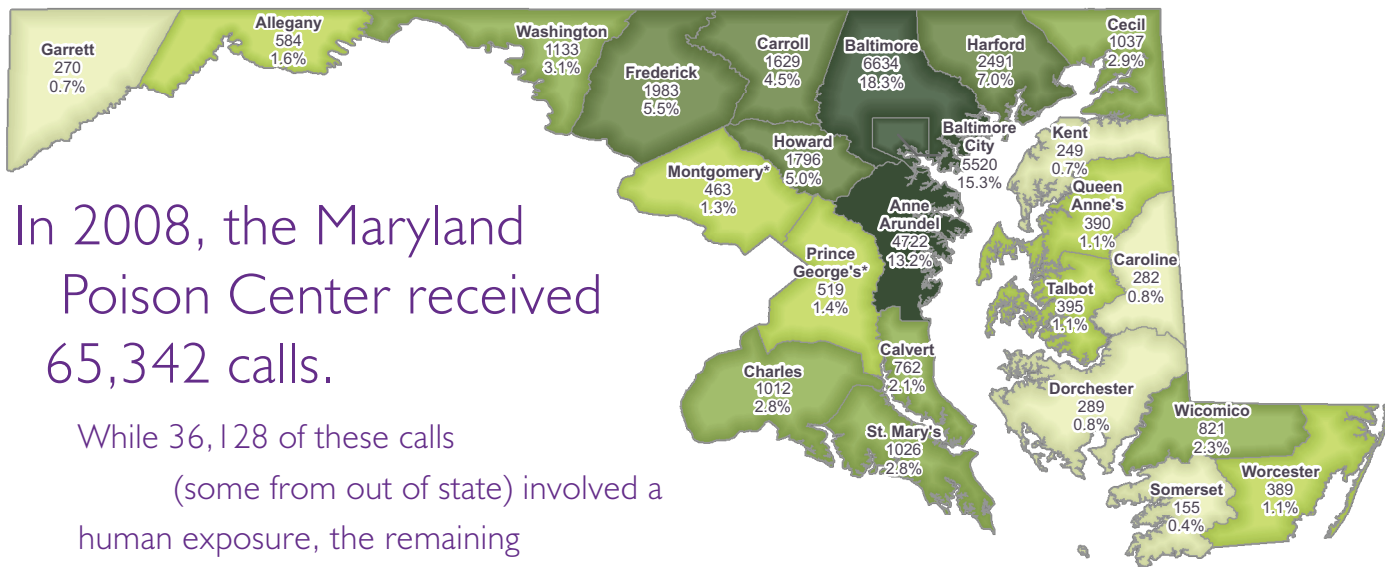
Poison centers monitor and report on potential public health problems. The MPC is part of a network of 61 poison centers across the country that documents cases in an electronic data collection format. Those cases are submitted to a national data collection system every 10 minutes. This electronic public health monitoring and reporting system is actively reviewed by both clinicians and by sophisticated software tools programmed to look for possible outbreaks of bioterrorism (e.g., anthrax, smallpox, botulism, etc.) and chemical terrorism (e.g., cyanide, nerve agents, etc.). These same tools can be used to identify other potential public health problems such as food poisoning or contamination (e.g., salmonella from peppers or melamine in pet food).

Poison centers provide health professionals with the most up-to-date information. Through in-services, continuing education programs, publications, and on-site training at the MPC, we help health professionals with the care of poisoning patients.

Poison centers educate parents and caregivers on safety issues. Since half of the calls the MPC receives concern exposures in young children, our staff members participate in public education programs and provide tens of thousands of educational materials to people of all ages throughout Maryland. Making parents and caregivers aware of poison dangers can help decrease the chances of children being exposed to toxins and can ensure that if something does happen, people know they have an expert resource that is always available.

No matter how you look at it, the MPC is a vital resource that has had, and continues to have, a huge impact on keeping Marylanders safe and healthy.

Bruce Anderson, PharmD, DABAT
Director of Operations, Maryland Poison Center
Associate Professor, Department of Pharmacy Practice
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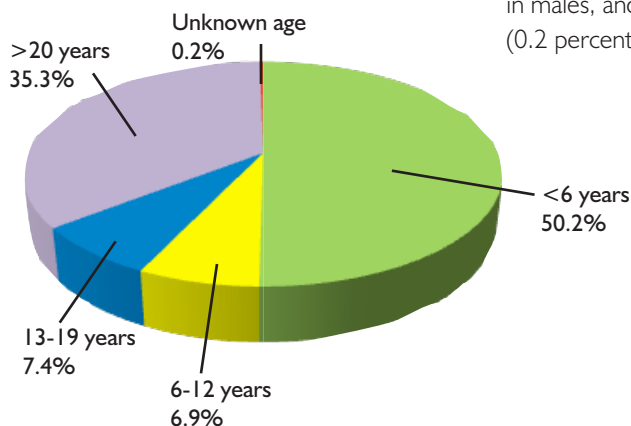
In 2008, the Maryland Poison Center received 65,342 calls.

While 36,128 of these calls (some from out of state) involved a human exposure, the remaining 29,214 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.*

AGE

50.2 percent of poison exposures involve children under the age of 6 as shown in the diagram below.



GENDER

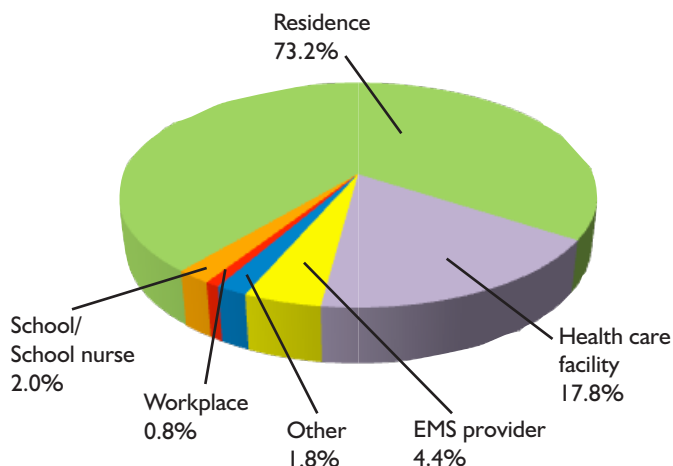
48.2 percent of exposures occurred in males, and 51.6 percent in females (0.2 percent unknown).

ANIMAL EXPOSURES

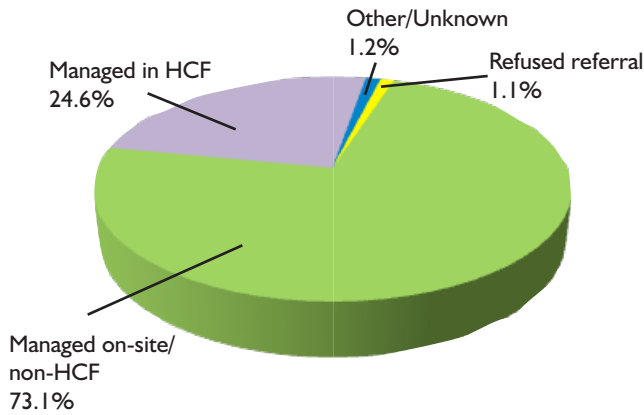
In 2008, a total of 2,431 potentially toxic exposures in animals were reported.

SITE OF CALLER

Most of the calls to the MPC came from the patient's residence or another residence (73.2 percent). Some 17.8 percent of the callers were at a health care facility (hospital, doctor's office, clinic, and others). In 4.4 percent of the cases, an emergency medical services provider (EMS, paramedics, first responders) called the MPC for treatment information. Calls originating from teachers, students and nurses in schools accounted for 2 percent of the calls in 2008.



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.



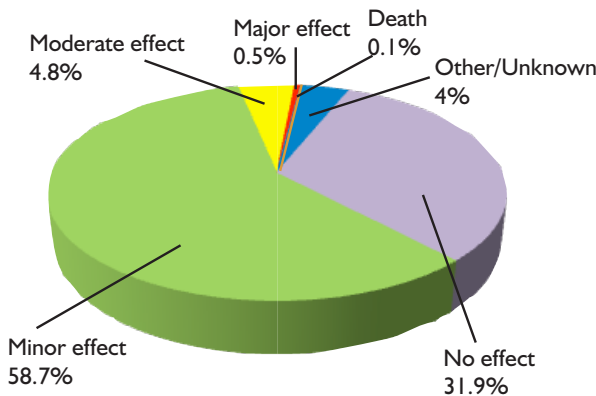
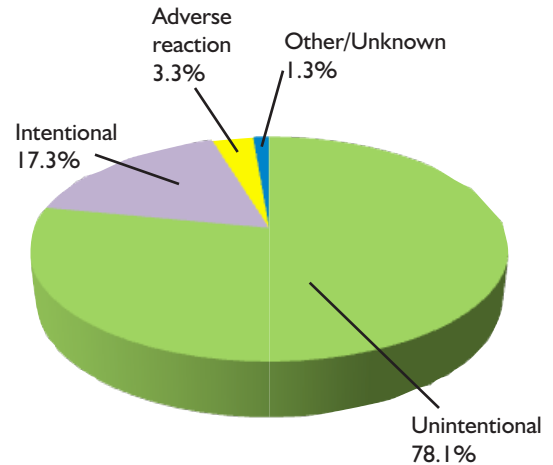
MPC SAFELY MANAGES PATIENTS AT HOME

In 2008, 73.1 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!

CIRCUMSTANCE

The people who contact the MPC do it for several reasons:

- Unintentional exposures in children and adults, occupational or environmental exposures, bites/stings, therapeutic errors, misuse of products, and food poisoning accounted for 78.1 percent of total exposures.
- Intentional exposures, due to misuse, abuse or suicide attempts, accounted for 17.3 percent of total exposures.
- Adverse reaction to drugs, food, and other substances accounted for 3.3 percent of total exposures.
- Other/unknown reasons, including malicious or contaminant/tampering, accounted for 1.3 percent of total exposures.

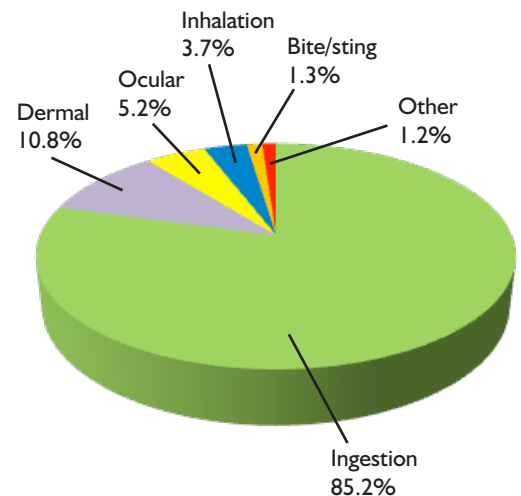


OUTCOMES

The true measure of the effectiveness of the MPC program is in patient outcomes. Although there were 37 cases reported to MPC that resulted in death (0.1 percent) in 2008, the impact of the MPC is obvious: few cases had poor outcomes. Some 90.6 percent of cases resulted in (or were expected to result in) no or minor effects. For all exposures, prompt attention is the best way to reduce the likelihood of developing severe toxicity.

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.



SUBSTANCES INVOLVED IN POISONINGS

The tables below list the most common substances involved in poisonings and overdoses reported to the MPC in 2008. Some 68.3 percent of the poisoning and overdose calls to the MPC involved a drug, while 51.6 percent of calls involved a non-drug substance. A patient may be exposed to more than one substance in a poisoning or overdose case.

DRUG SUBSTANCES			NON-DRUG SUBSTANCES		
	#	%		#	%
Analgesics	5,238	14.5	Cosmetics/Personal Care Products	4,139	11.5
Sedatives/Hypnotics/Antipsychotics	3,200	8.9	Cleaning Substances (Household)	2,881	8.0
Antidepressants	1,831	5.1	Foreign Bodies/Toys/Miscellaneous	1,976	5.5
Topical Preparations	1,520	4.2	Alcohols	1,598	4.4
Cardiovascular Drugs	1,506	4.2	Pesticides	1,062	2.9
Cold and Cough Preparations	1,409	3.9	Plants	854	2.4
Antihistamines	1,356	3.8	Arts/Crafts/Office Supplies	730	2.0
Vitamins	1,001	2.8	Food Products/Food Poisoning	674	1.9
Antimicrobials	998	2.8	Bites and Envenomations	547	1.5
Hormones & Hormone Antagonists	859	2.4	Hydrocarbons	524	1.5
Others	5,660	15.7	Others	3,601	10.0
TOTAL	24,578	68.3	TOTAL	18,586	51.6

TREATMENT

The tables below list antidotal therapies and decontamination treatments used for poisonings in Maryland during 2008. Most patients were managed conservatively with dilution (given something to eat or drink), irrigation or washing.

ANTIDOTAL THERAPIES		DECONTAMINATION TECHNIQUES	
	#		#
Naloxone	476	Dilute/Irrigate/Wash	22,830
IV acetylcysteine	266	Single-dose Activated Charcoal	2,488
Alkalinization	188	Food/Snack	1,369
Oral acetylcysteine	158	Fresh Air	879
Fomepizole	50	Other Emetic	202
Atropine	33	Lavage	97
Calcium	32	Cathartic	61
Glucagon	31	Whole Bowel Irrigation	39
Flumazenil	18	Multi-dose Activated Charcoal	36
Other Antidotes	64	Ipecac	18
TOTAL	1,316	TOTAL	28,019



Poison specialists Lyn Goodrich and Jeanne Wunderer represent the MPC at a health fair.

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

In 2008, the MPC led 164 education programs and events for public and health professional groups, reaching more than 11,400 people.

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

PUBLIC AND PROFESSIONAL EDUCATION 2008

The 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 MPC, 24/7, if a poisoning occurs.

In 2008, the MPC provided speakers and/or materials for 104 programs in 16 Maryland counties and Baltimore City. Public Education Coordinator Angel Bivens, RPh, MBA, CSPI, led programs and events that were attended by nearly 10,000 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, schools, child-care agencies, pharmacies, hospital perinatal education programs, CPR instructors, parish nurses, Red Cross, Head Start, and Healthy Start programs. In all, approximately 40,000 pieces of educational material (brochures, magnets, telephone stickers, Mr. Yuk stickers, teacher's kits, and other pieces) were distributed at these programs and by these organizations. More than 130,000 additional materials were mailed to people and groups who requested them.

The Maryland Poison Center co-sponsored three train-the-trainer programs with the National Capital Poison Center in

2008. During these programs, 120 attendees with varying professional backgrounds (health department, school nurses, EMS, insurance, nurses) were trained to provide poison prevention education programs to children, adults, and seniors.

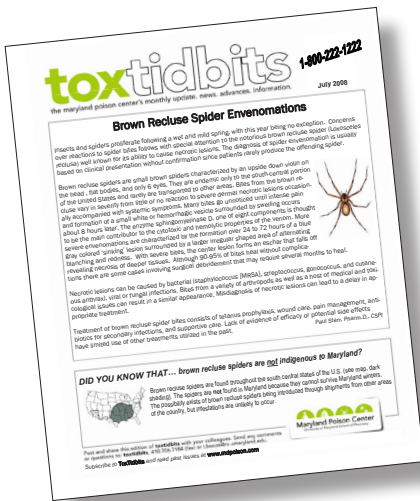
National Poison Prevention Week (March 16-22, 2008) activities included mailings to emergency departments and pharmacies throughout the state. A Poison Prevention Week poster contest for private schools in Frederick County was co-sponsored by the MPC and SafeKids Frederick County. The grand-prize poster also won third place in the National Poison Prevention Week poster contest.

The MPC is also an important resource for the media. In 2008, four television appearances were made by MPC staff to discuss various poison-related topics. Monthly podcasts were recorded for broadcast on two Web sites devoted to continuing education for health care providers: *MedicCast.com* and *Nursing-Show.com*. In all, there were 46,478 downloads of the podcasts worldwide.

Professional education is targeted toward 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. The professional education program is coordinated by Lisa Booze, PharmD, CSPI. In 2008, 60 programs were conducted at hospitals, fire departments, colleges, and state, regional, and national conferences by MPC staff. These programs were attended by more than 1,400 physicians, nurses, EMS providers, pharmacists, physician assistants, and others.

The MPC also provides on-site training for physicians, pharmacists and paramedics. More than 100 health professionals came to the MPC in 2008 to learn about the assessment and treatment of poisoned patients.

TOXTIDBITS AND POISON PREVENTION PRESS



The MPC publishes a newsletter for health professionals: *ToxTidbits*, a monthly toxicology update. The newsletter is faxed to every Maryland emergency department and e-mailed to more than 4,000 health professionals. View all issues of *ToxTidbits* on the MPC's Web site: www.mdpoison.com. To receive *ToxTidbits* by e-mail, visit our Web site or send an e-mail to mpcnewsletter-subscribe@lists.rx.umaryland.edu.

In an effort to provide additional poison prevention information to the public, a new e-newsletter was launched in 2008. *Poison Prevention Press* is a bimonthly newsletter highlighting poison prevention topics. To read issues of *Poison Prevention Press*, visit our Web site and click on "Publications." Join our email list to receive *Poison Prevention Press* by sending an email to PoisonPrevPresssubscribe@lists.rx.umaryland.edu.



ToxTidbits and *Poison Prevention Press* reach more than 4,000 health care providers and community members.



Wendy Klein-Schwartz

AWARDS

Wendy Klein-Schwartz, PharmD, MPH, the MPC's coordinator of research and education, received the 2008 W. Arthur Purdum Award from the Maryland Society of Health-System Pharmacists. This is the society's highest award designed to recognize an individual who has made significant or sustained contributions in or for health system pharmacy or has provided influential leadership in the practice of health system pharmacy at the state level.



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RESEARCH PUBLICATIONS AND PRESENTATIONS

Anderson BD, Klein-Schwartz W, Hayes B, Doyon S, Gonzales L. Changes in Caller Type for Drug Identification Calls Reported to a Regional Poison Center Over Time. North American Congress of Clinical Toxicology, Toronto, Canada, Sept. 15, 2008.

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- Maryland Department of Health & Mental Hygiene
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- Maryland Institute for Emergency Medical Services Systems (MIEMSS)
- Safe Kids Maryland State and Local Coalitions

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www.mdpoison.com

to see how you can support
the Maryland Poison Center.





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