



**Maryland Poison Center**

*University of Maryland School of Pharmacy*

Celebrating 30 Years  
1972—2002

*Summer 2003*

# TOXALERT

## 2002 Annual Report

A Newsletter  
of the  
**MARYLAND  
POISON CENTER**

**Saving lives,  
saving dollars**  
is one of the  
simple ways of  
stating what the  
Maryland Poison  
Center does.

This report  
provides an  
overview of the  
experience of the  
Maryland Poison  
Center during  
2002.

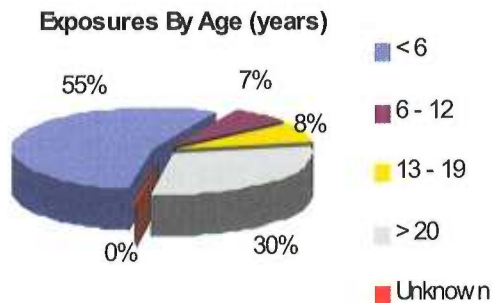
**New  
Emergency  
Number**

**800-222-1222**

The Maryland Poison Center (MPC) is a division of the University of Maryland School of Pharmacy and is certified by the American Association of Poison Control Centers as a regional poison center. In addition, the MPC serves as a consultation center for the Maryland Institute for Emergency Medical Services Systems. This report presents an overview of MPC poisoning data for 2002. In 2002, the MPC received 59,056 calls. While 34,942 of these calls involved a human exposure, the remaining 24,114 were requests for information or animal poisonings.

### AGE

The majority of poison exposures involve children under the age of six years.



### GENDER

Examination of the calls for gender shows 49% male, 51% female.

### ANIMAL EXPOSURES

Although the majority of calls to the MPC involve people, many calls involve animals. In 2002, a total of 2,107 animal exposures were reported.

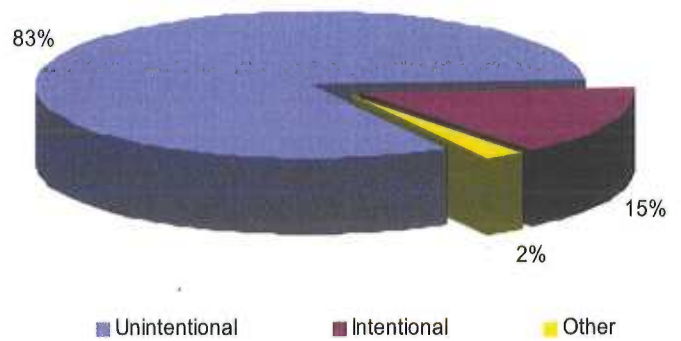
County	Human Exposures	%
Allegany	471	1.35
Anne Arundel	4,403	12.60
Baltimore	6,232	17.84
Baltimore (City)	5,405	15.47
Calvert	669	1.91
Caroline	199	0.57
Carroll	1,421	4.07
Cecil	889	2.54
Charles	852	2.44
Dorchester	231	0.66
Frederick	1,652	4.73
Garrett	245	0.70
Harford	2,205	6.31
Howard	2,035	5.82
Kent	191	0.55
Montgomery	1,813	5.19
Prince George's	1,558	4.46
Queen Anne's	336	0.96
Saint Mary's	769	2.20
Somerset	107	0.31
Talbot	373	1.07
Washington	895	2.56
Wicomico	593	1.70
Worcester	414	1.18
Other/Unknown	984	2.82
<b>Total</b>	<b>34,942</b>	<b>100.00</b>

For additional information, email [banderso@rx.umaryland.edu](mailto:banderso@rx.umaryland.edu) or visit our website at [www.mdpoison.com](http://www.mdpoison.com).

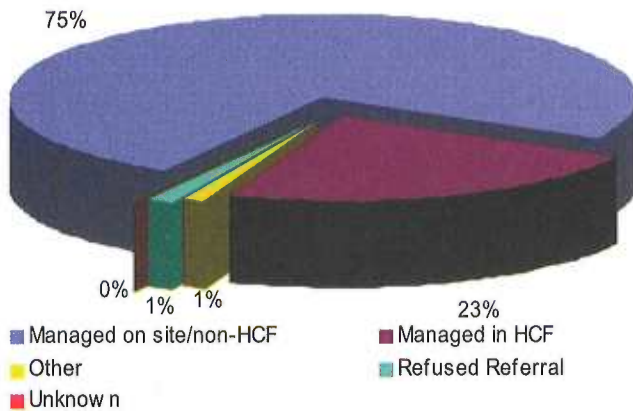
**CIRCUMSTANCE**

Acute exposures accounted for 95% of the total calls; acute-on-chronic and chronic exposures accounted for 4% and 1% of calls, respectively. The people who call the MPC have several different reasons for their exposures. The figure to the right shows the distribution of unintentional exposures (occupations, environmental, bite/sting, or others); intentional exposures (misuse, abuse or suicide attempts); other (includes adverse reactions {food or drugs}, malicious or contaminant/tampering); and unknown). **Clearly, acute unintentional exposures characterize the majority of calls to the Maryland Poison Center.**

**Reason For Exposure**



**Management Site**



**PATIENTS MANAGED SAFELY AT HOME**

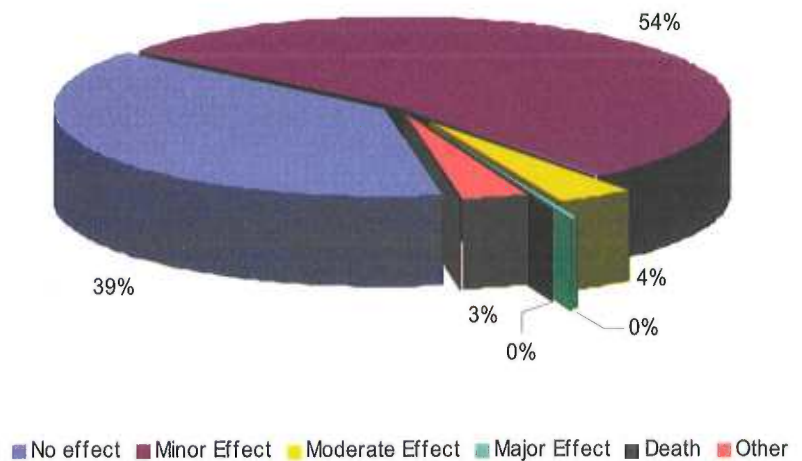
**In 2002, 75% of all poisoning cases were safely managed at home (on site).** The figure to the left describes where the cases were managed with HCF denoting a health care facility. Safely managing patients at home saves millions of dollars in unnecessary health care costs. It also allows more efficient and effective use of limited health care resources. By calling the Maryland Poison Center, we can help save lives and save dollars.

**OUTCOMES**

The true measure of the effectiveness of the MPC program is in patient outcomes. **With assistance from MPC staff, 39% cases had no effect and 54% of cases reported only minor effects from exposure.** As shown in the figure to the right, few cases had poor outcomes. There were 36 poisoning cases reported to the Maryland Poison Center that resulted in death (0.10%). The Other category contains unrelated effects, patients unable to be followed, and other effects.

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.

**Medical Outcome**



## SUBSTANCES INVOLVED IN POISONINGS

### Drug Substances

Analgesics	4,325
Sedatives	2,068
Antidepressants	1,977
Topicals	1,845
Cough & cold preparations	1,243
Cardiovascular drugs	1,193
Antihistamines	1,133
Antimicrobials	930
Hormones	770
Vitamins	681
Gastrointestinal	679
Stimulants/street drugs	639
Miscellaneous	3,429
<b>Total Drug Substances</b>	<b>20,912</b>

### Non-Drug Substances

Cosmetics/Personal Care	3,810
Cleaning	3,191
Foreign bodies	1,736
Alcohols	1,203
Plants	1,199
Arts & Crafts	859
Insecticides	715
Hydrocarbons	689
Bites & Stings	353
Chemicals	322
Fumes/gases	287
Deodorizers	271
Paints	254
Food poisoning	136
Miscellaneous	3,293
<b>Total non-drug substances</b>	<b>18,318</b>

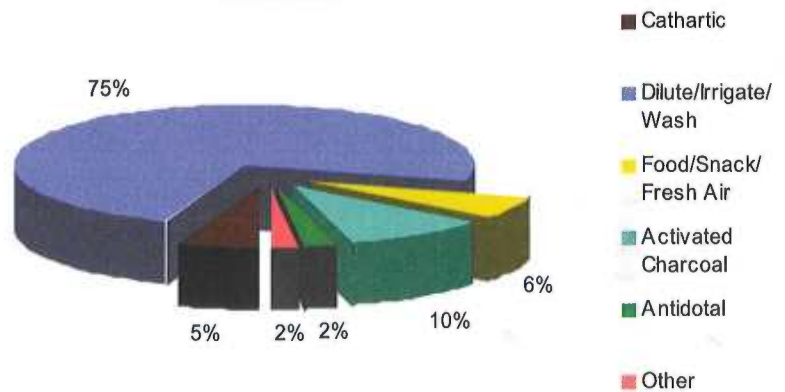
The tables on the left list the substances that were most frequently responsible for poisonings in Maryland during 2002. Please note that there are more substances documented here than there are patients reported. That's because patients can be exposed to more than one substance in a poisoning event.

## TREATMENTS PERFORMED

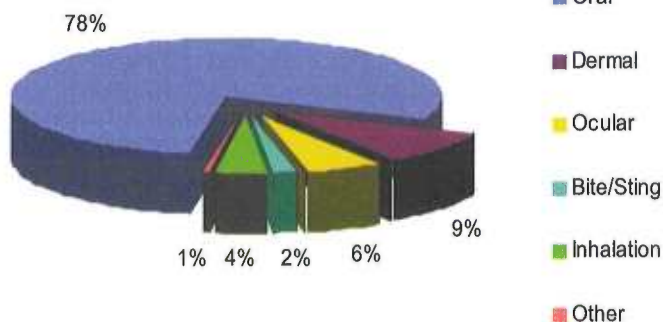
The table at right describes the treatments performed for poisoning victims. **Most patients were managed conservatively with dilution/irrigation.** Dilution is generally done for ingested toxins; irrigation is generally done for topical exposures (example: splash exposures to the eye or skin). The "other" category contains ipecac, lavage, whole bowel irrigation, emetic, and other treatments.

For all exposures, prompt attention is the best way to reduce the likelihood of developing severe toxicity. Whenever you have a poisoning question, call the experts at the Maryland Poison Center.

Treatments Performed



Route of Exposure



## ROUTE OF EXPOSURE

**By far the most common way that patients in Maryland get exposed to toxins is from ingestion.**

This includes cases of children putting toxic substances in their mouths, patients mistakenly ingesting someone else's medicines, people accidentally brushing their teeth with a product intended for topical use, etc. Dermal exposures were the next most common route of exposure.

## EDUCATION

Education is the key to effectively prevent poisonings from ever occurring and to make sure people know how to respond once a poisoning occurs. In addition to our public education effort, we are also involved in making sure health professionals know how best to manage poisoning patients, what the latest trends in poisoning are, what new drugs or drugs of abuse are available and how best to manage those patients that present with toxic exposures.

### Public Education

The Maryland Poison Center was able to reach 113 events with almost 5,500 attendees throughout the state.

The Maryland Poison Center also undertook a new marketing strategy in 2002. With assistance from a marketing company, the MPC developed a new logo and all new poison prevention materials. We have consolidated all of our printed materials into one brochure, pictured on the right. Copies of this brochure can be obtained by calling (410) 706-8122.

Finally, to increase awareness about the Maryland Poison Center and poison prevention, our website was redesigned and a new web address was chosen.

Please visit [www.mdpoison.com](http://www.mdpoison.com).



### Professional Education

Professional education programs and lectures were provided throughout the state to physicians, pharmacists, first responders, and nurses on topics ranging from bioterrorism to general management of poisoning patients, to management of patients exposed to new substances of abuse and more. The MPC ran 34 education programs for over 1,000 health professionals.

The MPC also hosted nearly 100 paramedic students, 12 emergency medicine residents, 50 pharmacy students, several pediatrics residents and fellows, family practice residents, and others. These health professionals did rotations in the MPC to see and hear how we manage poisoning patients and learn how best to manage poisoning patients they will encounter in their practices'.

### Bioterrorism Training

The MPC and the UM School of Pharmacy have been working with the Maryland Department of Health and Mental Hygiene to increase pharmacists' ability to respond to a bioterrorism release. Four training sessions were held at locations throughout Maryland. Nearly 500 pharmacists and pharmacy technicians have participated in introductory bioterrorism training. The training sessions will continue in 2003.

## RESEARCH

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Love JN, Enlow B, Howell JM, Klein-Schwartz W, Litovitz TL. Electrocardiographic changes associated with beta blocker toxicity. *Annals of Emergency Medicine* 2002; 40:603-610.

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Klein-Schwartz W, Isetts B. Patient Assessment and Consultation. In: *Handbook of Nonprescription Drugs*, 12th edition, Washington: American Pharmaceutical Association, 2002, 21-40.

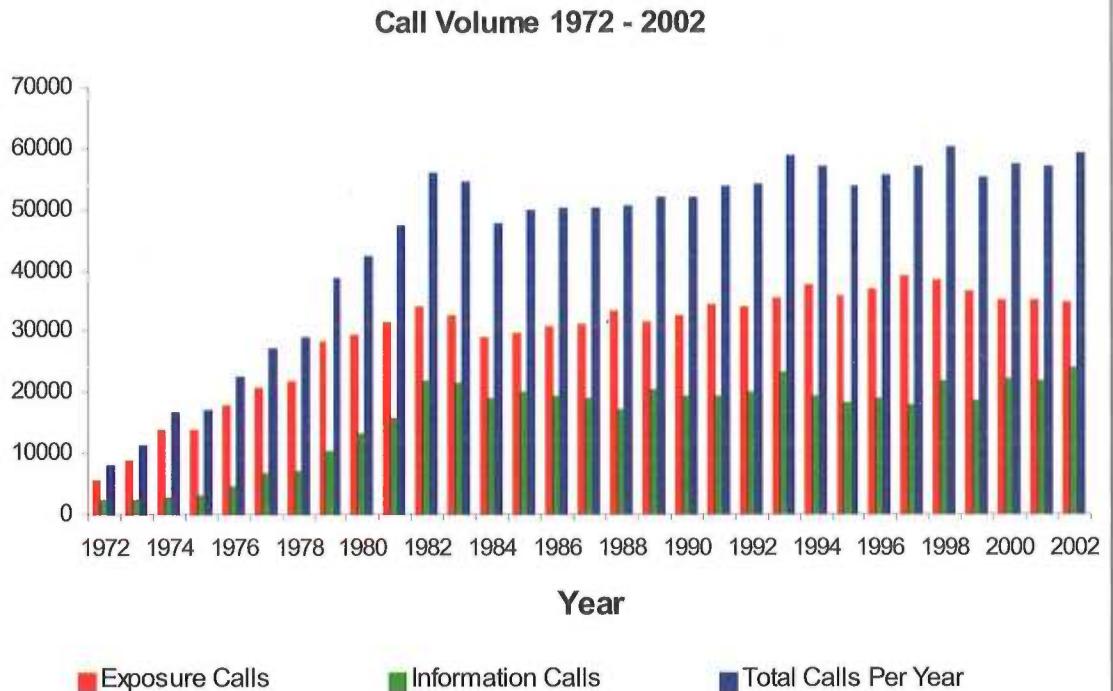
Doyon S: Anticonvulsants. In Goldfrank LR, Flomenbaum N, Lewin NA, Howland MA and Hoffman RS (eds): *Goldfrank's Toxicological Emergencies*. Seventh Edition Appleton & Lange, Norwalk, CT 2002.

**CALL VOLUME OVER 30 YEARS**

This figure illustrates the total calls received by the Maryland Poison Center over thirty years. We have seen dramatic changes in the types of calls over the years as well as major increases in call volume.

During the gas shortages of the mid 1970's, we received numerous calls from people who had ingested gasoline while they were siphoning. In 1982, we received a large increase in call volume after Tylenol® tampering

cases were reported in the media. In 1999, we received a large increase in calls following pesticide spraying to control the spread of West Nile Virus. In 2001, we responded to several hundred calls from physicians, paramedics, transportation officials and others after a train derailed in a tunnel, then caught fire and burned for several days. Later in 2001, we again responded to hundreds of callers who had concerns about anthrax.



Our call volume has increased approximately 718% from 8,223 in 1972 to 59,056 in 2002. Our commitment to providing the highest quality care for our patients has not changed.

**RESEARCH**

Research into the management of poisoning patients is critical to improving patient management. The faculty of the Maryland Poison Center have been engaged in several research projects and in publications to increase awareness of the most appropriate management of poisoning patients.

Shepherd G, Klein-Schwartz W, Anderson, BD. Acute, unintentional pediatric brodifacoum ingestions. *Pediatr Emerg Care* 2002;8(3):174-8.

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Mrvos R, Anderson BD, Krenzelok EP. Accidental injection of epinephrine from an autoinjector: Invasive treatment not always required. *Southern Med J* 2002;95:318-320.

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Klein-Schwartz W. Trends and toxicity in pediatric clonidine exposures. *Archives of Pediatrics & Adolescent Medicine* 2002; 156:392-396.

McGrath J, Klein-Schwartz W. Toxicity of pediatric guanfacine ingestions. *Annals of Pharmacotherapy* 2002; 36: 1698-1703.



# Maryland Poison Center

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### Acknowledgements

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

- ☒ University of Maryland School of Pharmacy
- ☒ Maryland Department of Health and Mental Hygiene
- ☒ US Department of Health and Human Services, Health Resources and Services Administration
- ☒ AstraZeneca
- ☒ Maryland Institute for Emergency Medical Services Systems

## 2002 Annual Report

### Maryland Poison Center Staff

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Lisa Booze, PharmD, CSPI  
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*Clinical Toxicology Fellow*

### Specialists in Poison Information

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Randy Goldberg, RN, CSPI  
Lyn Goodrich, BSN, RN, CSPI  
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Paul Starr, PharmD, CSPI  
Jeanne Wunderer, BS Pharm

Connie Mitchell...*Administrative Assistant*  
Darren Stokes...*Office Assistant*