

# Toxalert

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This issue provides an excellent opportunity to look back on our accomplishments in 1997 and look forward to the challenges ahead. In only two years, we've seen our human case call volume increase by 8.25%. Despite this increase, the percentage of patients safely managed at home increased by over 6.5%. The Maryland Poison Center is saving even more health care dollars by managing more patients safely and inexpensively at home. Our challenges for the future are to:

1. Increase our visibility in the community;
2. Decrease the cost and complexity of care for poisoning patients while maintaining and/or improving outcomes.

## 1997 STATISTICAL REPORT

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 for Maryland. In addition, the MPC serves as consultation center for the Maryland Institute for Emergency Medical Services Systems. This report presents an overview of MPC poisoning data for 1997. Additional information is available upon request. In 1997, the MPC received 57,189 calls. While 39,065 of these calls involved a human exposure, the remaining 18,072 were requests for information where no exposure had occurred.

### AGE

The majority of poison exposures (54.3%) involve children under the age of six.

Age (Years)	Number	%
<1	2,466	6.3
1	6,828	17.5
2	6,729	17.2
3	2,914	7.5
4	1,378	3.5
5	898	2.3
6-12	2,914	7.5
13-19	3,160	8.1
20-29	3,093	7.9
30-39	3,586	9.2
40-49	2,188	5.6
50-59	1,172	3.0
60-69	622	1.6
>70	855	2.2
Unknown Child	7	0.0
Unknown Adult	210	0.5
Unknown Age	45	0.1
<b>Total</b>	<b>39,065</b>	<b>100.0</b>

### GENDER

Examination of calls for gender shows 49.5% male, 50.5% female and 0.02% unknown.

### GEOGRAPHIC DISTRIBUTION

Area of Maryland	Number	%
Allegany County	577	1.0
Anne Arundel County	7,207	12.6
Baltimore County	11,063	19.3
Baltimore City	10,612	18.6
Calvert County	810	1.4
Caroline County	306	0.5
Carroll County	2,148	3.8
Cecil County	995	1.7
Charles County	1,076	1.9
Dorchester County	283	0.5
Frederick County	1,596	2.8
Garrett County	297	0.5
Harford County	3,045	5.3
Howard County	2,871	5.0
Kent County	275	0.5
Montgomery County	3,915	6.8
Prince Georges County	3,039	5.3
Queen Annes County	429	0.8
Saint Marys County	1,026	1.8
Somerset County	156	0.3
Talbot County	450	0.8
Washington County	1,123	2.0
Wicomico County	629	1.1
Worcester County	652	1.1
<i>Maryland Total</i>	<i>54,580</i>	<i>95.4</i>
Other/Unknown	2,609	4.6
<b>Total</b>	<b>57,189</b>	<b>100.0</b>

### SITE OF EXPOSURE

Site of Exposure	Number	%
Residence	36,671	93.7
Workplace	922	2.4
School	784	2.0
Public Area	294	0.8
Health Care Facility	62	0.2
Restaurant	38	0.1
Other	264	0.7
Unknown	30	0.1
<b>Total</b>	<b>39,065</b>	<b>100.0</b>

MARYLAND POISON CENTER  
UNIVERSITY OF MARYLAND SCHOOL OF PHARMACY

75.2% of all patients were treated at home with poison center assistance. That means 29,395 people did not incur the costs and the stress of calling 911, their doctor, or going to the hospital. Using our best estimates of usual costs for emergent treatment of poisoning patients in hospitals, the Maryland Poison Center saved \$14,697,500 in unneeded health care costs in 1997.

**CIRCUMSTANCE**

Acute exposures account for 94.2% of the total calls, acute-on-chronic exposures account for 4.5% of calls and 1.3% are chronic exposures.

Reason	Number	%
<b>Unintentional</b>		
General	23,810	60.9
Occupational	722	1.8
Environmental	686	1.8
Therapeutic Error	3,256	8.3
Misuse	2,983	7.6
Bite/Sting	730	1.9
Food Poisoning	351	0.9
Unknown	3	0.0
<b>Total</b>	<b>32,541</b>	<b>83.3</b>
<b>Intentional</b>		
Suicidal	4,636	11.7
Misuse	568	1.5
Abuse	433	1.1
Unknown	37	0.1
<b>Total</b>	<b>5,674</b>	<b>14.5</b>
<b>Other</b>		
Contaminant/Tampering	56	0.1
Malicious	136	0.4
<b>Total</b>	<b>192</b>	<b>0.5</b>
<b>Adverse Reaction</b>		
Drug	404	1.0
Food	78	0.2
Other	162	0.5
<b>Total</b>	<b>644</b>	<b>1.7</b>
Unknown	14	0.0
<b>Total</b>	<b>39,065</b>	<b>100.0</b>

**DECONTAMINATION**

Treatment	Number	%
Ipecac	562	1.4
Charcoal (single)	3,558	8.6
Charcoal (multiple)	201	0.5
Lavage	661	1.6
Cathartic	3,321	8.0
Other emetic	139	0.3
Whole Bowel Irrigation	48	0.1
Dilute/irrigate/wash	30,591	74.0
Fresh air	1,721	4.2
Food	528	1.3
<b>TOTAL</b>	<b>41,330</b>	<b>100.0</b>

**TREATMENT LOCATION**

Treatment Location	Number	%
Non Health Care Facility (HCF)	29,395	75.2
<b>Referred to HCF by MPC</b>		
Treated & Released	1,314	
Admitted for Medical Care	231	
Admitted for Psych Care	160	
Refused Referral	568	
Lost to Follow Up	195	
<b>Total Referred</b>	<b>2,468</b>	<b>6.3</b>

**Patient Already in HCF**

Treated & Released	3,821	9.8
Admitted for Medical Care	1,621	4.1
Admitted for Psych Care	1,078	2.8
Lost to Follow Up	195	0.5
<b>Total Already in HCF</b>	<b>6,715</b>	<b>17.2</b>
Other	463	1.2
Unknown	24	0.1
<b>Total</b>	<b>39,065</b>	<b>100.0</b>

**ROUTE OF EXPOSURE**

Route of Exposure	Number	%
Oral	32,221	75.5
Ocular	2,688	6.3
Dermal	4,651	10.9
Inhalation	1,899	4.4
Bite/Sting	736	1.7
Parenteral	158	0.4
Aspiration	292	0.7
Other	37	0.1
Unknown	15	0.0
<b>Total</b>	<b>42,697</b>	<b>100.0</b>

**MEDICAL OUTCOME**

The medical outcome is assessed based on the inherent toxicity of the agent and the severity of the clinical manifestations.

Medical Outcome	Number	%
No Effect/Non Toxic	29,095	74.5
Minor Effect	6,726	17.2
Moderate Effect	1,565	4.0
Major Effect	152	0.4
Death	25	0.0
Unrelated Effect	842	2.2
Unknown/Potentially Toxic	660	1.7
<b>Total</b>	<b>39,065</b>	<b>100.0</b>

**AGENTS INVOLVED**

Agents	Number
<b>Drugs</b>	
Analgesics	3,171
Anesthetics	110
Anticholinergics	69
Anticonvulsants	535
Antidepressants	1,416
Antihistamines	809
Antimicrobials	848
Asthma Therapies	311
Cardiovascular Drugs	991
Cough & Cold Preparations	1,931
Diuretics	49
Electrolytes/Minerals	259
Eye, Ear, Nose, Throat Preparations	65
Gastrointestinal Preparations	1,040
Hormone Products	648
Muscle Relaxants	201
Sedative Hypnotics/Antipsychotics	1,567
Stimulants/Street Drugs	684
Topicals	1,322

(Agents Continued from page 2)

Veterinary Products	67	
Vitamins	906	
Miscellaneous	632	
Unknown Drugs	17	
<b>Total Drugs</b>	<b>17,648</b>	<b>44.6%</b>
<b>Non-Drugs</b>		
Alcohols	1,212	
Arts, Crafts, Writing Products, Office Supplies	1,161	
Automotive Products	244	
Batteries	107	
Bites & Envenomations	815	
Building & Construction Products	138	
Chemicals	993	
Cleaning Substances-Household	3,646	
Cosmetics/Personal Care Prod.	4,471	
Deodorizers	314	
Fertilizers	76	
Fire Extinguishers	75	
Food Products & Food Poisoning	307	
Foreign Bodies	2,036	
Fumes, Gases, Vapors	703	
Heavy Metals (excluding iron)	57	
Herbicides	61	
Hydrocarbons	965	
Insecticides	603	
Lacrimators	77	
Mothballs	300	
Mushrooms	103	
Paints, Varnishes, Lacquers	533	
Plants	2,026	
Polishes and Waxes	156	
Rodenticides	275	
Swimming Pool/Aquarium Products	110	
Tobacco Products	145	
Miscellaneous/Unknown Substances (Non-Drugs)	256	
<b>Total Non-Drugs</b>	<b>21,965</b>	<b>55.4%</b>
<b>Total Agents</b>	<b>39,613</b>	<b>100%</b>

**DEATHS**

The Maryland Poison Center was consulted on 24 patients who died as a result of the poisoning

Age (yrs)	Sex	Agent(s)
6	F	Oxycodone, Imipramine
15	F	Gasoline
16	M	Butane
20	M	Ethanol
30	M	Paraquat
36	M	Promethazine, Methadone
37	M	Sulfuric acid
40	F	Methanol
41	M	Ethylene glycol
42	F	Amitriptylline
42	M	Cardizem CD, Mevacor
43	F	Unknown
43	M	Acetaminophen
47	M	Diphenhydramine
48	F	Perfume

50	M	Acetaminophen, Percocet
51	M	Carbon monoxide
52	M	Kitty litter, Lithium
53	F	Morphine, Fioricet
58	M	Nortriptylline, Fluvoxamine, Lorazepam
63	M	Acetaminophen, Ethanol
77	F	Triavil, Atenolol, Alprazolam
81	F	Salmonella
90	F	Meprobamate, Doxepin

**EDUCATIONAL PROGRAMS**

The MPC offers a statewide program of hospital inservices and presentations at grand rounds, paramedic training classes and EMS conferences. Poison center staff conducted 19 presentations in 1997. Toxalert, a newsletter for health professionals, offers current toxicity and treatment information on a variety of topics as well as the MPC's annual report. The MPC also acts as a training site for pharmacy, nursing and paramedic students, emergency medicine, family practice and pediatric residents and fellows, and pharmacy residents. The MPC provides public education through presentations, displays, brochures, Mr. Yuk stickers, audiovisual materials, Teacher's Resource Kits and interaction with the media.

**PUBLICATIONS/ PRESENTATIONS**

Klein-Schwartz W, Smith GS. Agricultural and horticultural chemical poisonings: Mortality and morbidity in the U.S. *Annals of Emergency Medicine*. 1997; 29:232-238.

Litovitz TL, Smilkstein M, Felberg L, Klein-Schwartz W, Berlin R, Morgan JL. 1996 Annual Report of the American Association of Poison Control Centers Toxic Exposure Surveillance System. *American Journal of Emergency Medicine* 1997; 15:447-500.

Poisoning. Chesapeake Critical Care Consortium, Greater Baltimore Medical Center, January 21, 1997.

Management of Life-Threatening Poison Exposures. *Emergency Medicine Grand Rounds*. Bayview Medical Center. April 8, 1997.

Poisoning Overview. Department of Pediatrics. Sinai Hospital of Baltimore, July 15, 1997.

Poisoning. Chesapeake Critical Care Consortium, Union Memorial Hospital, August 5, 1997

Salicylate Poisoning. Morbidity and Mortality Conference. Department of Pediatrics. Johns Hopkins Hospital. September 4, 1997.

**For a complete listing of Research and Presentations, please contact the Maryland Poison Center at 410-706-7604.**

**The MPC provides speakers and educational materials for health professionals and the public. For more information call (410) 706-7604.**

**MARYLAND POISON CENTER  
ADVISORY BOARD**

The following individuals gave their time and energies to help provide guidance and support to the Maryland Poison Center Advisory Board:

<b>David Booze</b>	<b>Astra-Merck</b>
<b>Lamont Corprew</b>	<b>WJZ TV 13</b>
<b>Susan Gilson</b>	<b>MD Safe Kids</b>
<b>Richard Gorman</b>	<b>Pediatrician</b>
<b>Lucien Tancil</b>	<b>Liberty Medical Center</b>
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