

# Toxalert

Maryland Poison Center  
University of Maryland School of Pharmacy

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## Maryland Poison Center 1989 Statistical Report

The MPC is a division of the University of Maryland School of Pharmacy and is designated by Maryland as the state's official poison center. In addition, the MPC serves as a specialty resource center in the Maryland Institute for Emergency Medical Services Systems and is certified by the American Association of Poison Control Centers as a regional poison center. This report presents an overview of MPC poisoning data for 1989. Additional information is available upon request. In 1989 the Maryland Poison Center (MPC) received 52,157 calls. While 31,601 of these calls involved a human exposure, the remaining 20,556 were requests for information where no exposure had occurred.

Total Calls	Numbers	%
January	4,448	8.5
February	3,688	7.1
March	4,835	9.3
April	4,517	8.7
May	4,565	8.8
June	4,409	8.4
July	4,307	8.3
August	4,363	8.4
September	4,250	8.1
October	4,597	8.8
November	4,201	8.0
December	3,977	7.6
Total*	52,157	100.0

\*This total includes both human exposures and other requests for information. Subsequent data are limited to human exposures available for analysis.

### Age

The majority of poison exposures (63.2%) involve children under the age of five. Although the incidence of poisoning is greater in children, most

severe poisonings and poisoning deaths occur in adolescents and adults.

Age (Years)	Number	%
<1	2,131	6.7
1	6,727	21.3
2	6,985	22.1
3	3,002	9.5
4	1,147	3.6
5	637	2.0
6-12	1,541	4.9
13-19	2,063	6.5
20-24	1,146	3.6
25-29	995	3.1
30-39	1,511	4.8
40-49	732	2.3
50-59	321	1.0
60-69	212	0.7
≥70	271	0.9
Unknown	2,180	6.9
Total	31,601	99.9

### Sex

Examination of calls where the sex is documented shows 50.2% male, 49.2% female and 0.6% unknown.

### Caller

Of the calls to the MPC (82.2%) come from the general public, (13.5%) from physicians and nurses, and (4.3%) come from paramedics, EMT's, pharmacists and others.

### Geographic Distribution

Overall 99.3% of exposure calls occurred in Maryland. In addition, the MPC received calls from 14 states and the District of Columbia. The distribution within Maryland is:

Area of Maryland	%
Baltimore Metropolitan Area	68.6
Eastern Shore	8.3
Federick	3.3
National Capital	12.2
Southern	5.6
Western	1.9

### Circumstance

Acute exposures account for 99.0% of the total calls while the remaining 1.0% are chronic exposures. The specific reasons for the exposures are:

Reason	Number	%
Unintentional		
General	24,411	77.2
Occupational	627	2.0
Environmental	42	0.1
Misuse	1,733	5.5
Unknown	25	0.1
Total	26,838	84.9

### Intentional

Suicidal	3,014	9.5
Misuse	588	1.9
Abuse	230	0.7
Unknown	590	1.9
Total	4,422	14.0

### Adverse Reaction

Drug	144	0.5
Food	30	0.1
Other	24	0.1
Total	198	0.6

### Unknown

Total	143	0.5
Total	31,601	100.0

### Route of Exposure

Exposures occur by several routes with the majority resulting from ingestions.

Route	Number	%
Oral	27,140	81.2
Ocular	2,277	6.8
Dermal	2,175	6.5
Inhalation	1,292	3.9
Bite/Sting	365	1.1
Parenteral	84	0.3
Other	40	0.1
Unknown	41	0.1
Total	33,414	100.0

## Site of Exposure

The most common site of exposure is the residence.

Site	Number	%
Residence	29,468	93.3
Workplace	783	2.5
School	334	1.1
Health Care Facility	237	0.7
Other	471	1.5
Unknown	308	1.0

## Treatment Location

Patients were treated both in the home and in a variety of health care settings

Treatment Location	Number	%
Non Health Care Facility (HCF)	22,545	71.3
Referred to HCF by MPC		
Treated & Released	1,957	
Admitted for Medical Care	383	
Admitted for Psych Care	97	
Refused Referral	590	
Lost to Follow Up	313	
Total Referred	3,340	10.6
Patient Already in HCF		
Treated & Released	2,846	
Admitted for Medical Care	1,554	
Admitted for Psych Care	402	
Lost to Follow Up	176	
Total Already in HCF	4,978	15.8
Other	561	1.8
Unknown	177	0.6
Total	31,601	100.1

## 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	21,509	68.1
Minor Effect	8,166	25.8
Moderate Effect	503	1.6
Major Effect	117	0.4
Death	31	0.1
Unrelated Effect	401	1.3
Unknown Potentially Toxic	873	2.8
Total	31,601	100.1

## Agents Involved

A single substance was involved in 91.0% of the cases. Up to twelve substances were taken in the other cases. Exposures to drugs accounted for 47.6% of the calls.

Agents Involved	Number
<b>Drugs</b>	
Analgesics	3,783
Anesthetics	99
Anticholinergics	59
Anticoagulants	13
Anticonvulsants	240
Antidepressants	721
Antihistamines	590
Antimicrobials	1,089
Antineoplastics	9
Asthma Therapies	372
Cardiovascular Drugs	536
Cough and Cold Preparations	2,092
Diagnostic Agents	10
Diuretics	148
Electrolytes/Minerals	315
Eye, Ear, Nose & Throat Preps	246
Gastrointestinal Preparations	706
Hormone Products	512
Muscle Relaxants	141
Sedative/Hypnotics/Anti-Anxiety/Anti-Psychotics	1,552
Serums, Toxoids, Vaccines	5
Stimulants/Street Drugs	413
Topicals	1,240
Veterinary Products	50
Vitamins	983
Miscellaneous	159
Unknown Drugs	201
Total Drugs	16,284
<b>Non-Drugs</b>	
Adhesives, Glues, Cements	299
Alcohols	1,177
Arts, Crafts, Writing, Office Supplies	571
Automotive Products	167
Batteries	146
Bites and Envenomations	386
Building and Construction Products	137
Chemicals	877
Cleaning Substances Household	3,730
Cleaning Substances Industrial	110
Cosmetics /Personal Care Prods	3,245
Deodorizers	383
Dyes	43
Essential Oils	35
Fertilizers	127
Fire Extinguishers	33
Food Products and Food Poisoning	179
Foreign Bodies	1,002

Fumes, Gases, Vapors	237
Fungicides	22
Heavy Metals (except iron)	130
Herbicides	53
Hydrocarbons	1,063
Insecticides	684
Lacrimators	79
Matches/Fireworks/Explosives	85
Mothballs	167
Mushrooms	136
Paints, Varnishes, Lacquers	358
Photographic Products	17
Plants	1,449
Polishes and Waxes	123
Rodenticides	247
Sporting Equipment	15
Swimming Pool and Aquarium Products	93
Tobacco Products	228
Unknown Substance (Non Drugs)	90
Total Non-Drugs	17,923
Total Agents	34,207

## Therapy

Supportive care is a critical component of a severely poisoned patient. Additional therapeutic maneuvers which are utilized in poisonings include decontamination, enhancing elimination and antidotal therapy. The most common home treatment modalities include ipecac syrup for oral exposures and flushing or irrigating the skin or eyes for dermal and ocular exposures. A summary of some specific therapies follows:

Decontamination	Number
Ipecac	3,698
Activated charcoal	2,623
Cathartic	2,368
Lavage	1,262
Dilute	15,720
Irrigate/wash	5,746
Fresh Air	636
Other	388
Total Decontamination	32,441
Antidotal Therapy	677
Enhancement of Elimination	
Peritoneal Dialysis	2
Hemodialysis	11
Hemoperfusion	6
Total Enhancement of Elimination	19

## Deaths

The Maryland Poison Center was consulted on 31 patients who died during 1989. In some of the following cases the cause of death was determined not to be related to the exposure.

Age	Sex	Agent(s)
0.5	M	digoxin
9	M	freon
15	M	sodium hypochlorite/ sodium hydroxide
15	M	butane
17	F	desipramine
19	M	theophylline
20	F	amitriptyline, chlorpromazine, alprazolam
25	M	methylene chloride
27	M	codeine, morphine, acetaminophen
28	M	sodium methylthiocarbamate
29	F	chlorpromazine, doxepin
30	F	cocaine, heroin, warfarin
30	F	desipramine
30	F	aspirin, acetaminophen, alprazolam
34	M	toilet bowl cleaner
35	M	sodium azide, phencyclidine
36	M	cocaine
37	F	methylprednisolone
44	M	theophylline
46	M	cocaine
51	M	flurazepam, chlorambucil, ciprofloxacin
54	F	diazepam, propoxyphene
57	M	theophylline, phencyclidine
61	M	lithium, imipramine
63	M	lithium
64	F	isopropyl alcohol
65	F	barbiturates, salicylates, benzodiazepines,
72	F	temazepam
73	M	stannous fluoride
82	M	theophylline
Adult	F	unknown industrial strength alkaline corrosive

## Educational Programs

In addition to its emergency telephone service, the MPC provides professional and public education programs throughout the state.

### Professional Education

The MPC offers a statewide program of hospital inservices. Specialists in Poison Information conducted a total of nineteen presentations in 1989. Some of these programs are given in conjunction with the MIEMSS education program. Other professional presentations include grand rounds, local conferences, etc.

A Toxicology Grand Rounds program in conjunction with the Departments of Emergency Medicine at Johns Hopkins Hospital and University of Maryland Medical System meets the first Tuesday of each month.

### Public Education

The MPC provides public education by a variety of mechanisms including presentations, distribution of brochures, loan of audiovisual materials and interaction with the media. Limited amounts of educational materials are available free. Larger quantities can be obtained at a minimal charge.

### Research

Research in clinical toxicology and poison epidemiology is an important component of the MPC program. The following presentations were made at professional meetings during 1989:

McClary KL, Klein-Schwartz W, Oderda GM. A Prospective Evaluation of Triage/Treatment Guidelines for Acute Ingestions of Caffeine. University of Maryland School of Pharmacy, Preceptor Education and Information Symposium, May 1989.

Rose SR, Gorman RL, Oderda GM, Klein-Schwartz W, Watson WA. Pharmacokinetics of Simulated Acetaminophen Overdose in Volunteers. University of Maryland School of Pharmacy, Preceptor Education and Information Symposium, May 1989.

Rose SR, Gorman RL, Oderda GM, Klein-Schwartz W, Watson WA. Treatment of liquid drug overdoses with activated charcoal. American Academy of Clinical Toxicology/American Association of Poison Control Centers Annual Scientific Meeting, Atlanta, October 11, 1989.

Kim ME, Oderda GM, Klein-Schwartz W. Toxicity of methylphenidate ingestions in children. American Association of Poison Control Centers/American Academy of Clinical Toxicology Annual Scientific Meeting, Atlanta, October 14, 1989.

Gorman RL, Khin-Maung-Gyi T, Oderda G, McElwee N, Litovitz T, Benson B, McCormick M, Krenzeloek E, Spiller H. Initial Symptoms as Predictors of Esophageal Injury of Alkaline Corrosive Ingestions. American As-

sociation of Poison Control Centers/American Academy of Clinical Toxicology Annual Scientific Meeting, Atlanta, October 14, 1989.

Gorman RL, Oderda GM. Publication of Research Presented at the Annual Scientific Meeting. American Association of Poison Control Centers/American Academy of Clinical Toxicology Annual Scientific Meeting, Atlanta, October 15, 1989.

The following articles were published or in press in 1989:

Klein-Schwartz W, Gorman RL, Oderda GM, Massaro BP, Kurt TL and Garriott JC. Three Fatal Sodium Azide Poisonings. *Medical Toxicology*, 4:219-227, 1989.

Gorman RL, Oderda GM. Penile Trauma: Small Slam Revisited. *Pediatric Emergency Care*, 5:108-9, 1989.

Oderda G. Poison Centers. In: Noji E and Kelen G (Eds) *Manual of Toxicologic Emergencies*, Year Book Medical Publishers, Chicago, 1989.

Oderda G. Anticholinergic Agents. In: Noji E and Kelen G (Eds) *Manual of Toxicologic Emergencies*, Year Book Medical Publishers, Chicago, 1989.

Oderda G. Antihistamines. In: Noji E and Kelen G (Eds) *Manual of Toxicologic Emergencies*, Year Book Medical Publishers, Chicago, 1989.

Rose SR, Oderda G. Rodenticides and Herbicides. In: Noji E and Kelen G (Eds) *Manual of Toxicologic Emergencies*, Year Book Medical Publishers, Chicago, 1989.

Klein-Schwartz W, Oderda GM, Gorman RL, Favin F, Rose SR. Assessment of management guidelines. Acute iron ingestion. *Clinical Pediatrics*, In Press.

Klein-Schwartz W and Oderda G. Geriatric Poisoning. In: Pagliaro, L.A. and Pagliaro, A.M., eds., *Problems in Geriatric Drug Therapy*, 1st edition, Hamilton, IL: Drug Intelligence Publications, Inc., In Press.

Oderda G and Korberly B. Emetics and Antiemetics. In: *Handbook of Non-prescription Drugs*, 9th edition, Washington: American Pharmaceutical Association, In Press.

Klein-Schwartz W. and Hoopes JM.  
Patient Assessment and Consultation.  
In: Handbook of Nonprescription  
Drugs, 9th edition, WASHINGTON:  
American Pharmaceutical Association,  
In Press.

Chamberlain JM, Klein-Schwartz W,  
Gorman RL. Pressure Necrosis follow-  
ing ethchlorvynol overdose. American  
Journal of Emergency Medicine, In  
Press.

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The MPC also employs part-time  
health professional students to provide  
additional coverage for the emergency  
telephones.

The Maryland Poison Center is avail-  
able to provide inservices on a variety  
of poisoning related topics to  
physicians, nurses, and other health  
care professionals at no charge. If you  
are interested and would like more in-  
formation on these inservices, please  
contact Lisa Booze at 328-7604.

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