

Toxalert

Maryland Poison Center
University of Maryland School of Pharmacy



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Summer 1987

Maryland Poison Center 1986 Statistical Report

In 1986 the Maryland Poison Center (MPC) received 50,354 calls. While 32,789 of these calls involved a human exposure, the remaining 17,565 were requests for information where no exposure had occurred. 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 1986. Additional information is available upon request.

Total Calls	Numbers	%
January	3,812	7.6
February	3,861	7.7
March	4,217	8.4
April	4,033	8.0
May	4,213	8.4
June	4,157	8.3
July	4,590	9.1
August	4,176	8.3
September	4,205	8.4
October	4,556	9.0
November	4,285	8.5
December	4,249	8.4
Total*	50,354	100.1

*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 (64.3%) 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	2,236	7.2
1	6,462	20.8
2	6,848	22.1
3	3,114	10.0
4	1,290	4.2
5-9	1,665	5.4
10-14	933	3.0
15-19	1,527	4.7
20-24	1,174	3.8
25-29	1,008	3.2
30-34	1,536	5.0
40-49	677	2.2
50-59	392	1.3
60-69	267	0.9
≥70	291	0.9
Unknown	1,595	5.2
Total	31,015	100.0

Sex

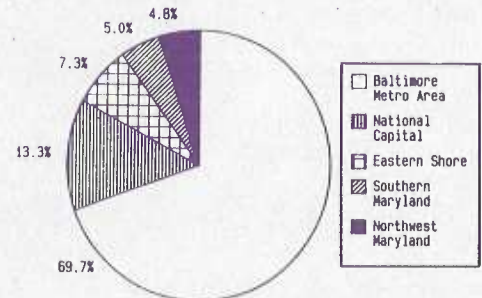
Examination of calls where the sex is documented shows a slight male predominance with males accounting for 51.7% of cases.

Caller

Most calls to the MPC come from the general public (83.3%). Physicians and nurses account for 76% of health professional calls; the remainder come from paramedics, EMT's, pharmacists and others.

Geographic Distribution

Overall 98.9% of exposure calls occurred in Maryland. In addition, the MPC received calls from 19 states and the District of Columbia. The distribution within Maryland is:



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	24,742	79.8
Occupational	718	2.3
Environmental	41	0.1
Misuse	1,216	3.9
Unknown	44	0.1
Total	26,761	86.3
Intentional		
Suicidal	2,407	7.8
Misuse	515	1.7
Abuse	306	1.0
Unknown	728	2.3
Total	3,956	12.8
Adverse Reaction		
Drug	145	0.5
Food	23	0.1
Other	17	0.1
Total	185	0.6
Unknown	113	0.4
Total	31,015	100.1

Route of Exposure

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

Route of Exposure	Number	%
Oral	26,722	83.0
Inhalation	1,279	4.0
Ocular	1,968	6.1
Dermal	1,630	5.1
Bite/Sting	384	1.2
Parenteral	96	0.3
Other	35	0.1
Unknown	70	0.2
Total	32,184	100.0

Site of Exposure

The most frequent site of exposure is the residence.

Site of Exposure	Number	%
Residence	28,930	93.3
Workplace	847	2.7
Health Care Facility	158	0.5
School	344	1.1
Other	444	0.9
Unknown	292	0.9
Total	31,015	100.0

Treatment Location

Most poison exposures either require no treatment or can be treated at home. 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.

Treatment Location	Number	%
Non Health Care Facility (HCF)	23,421	75.5
Referred to HCF by MPC		
Treated & Released	1,554	
Admitted for Medical Care	383	
Admitted for Psych Care	52	
Refused Referral	703	
Lost to Follow Up	365	
Total Referred	3,057	9.9
Patient Already in HCF		
Treated & Released	2,479	
Admitted for Medical Care	1,344	
Admitted for Psych Care	155	
Lost to Follow Up	160	
Total Already in HCF	4,138	13.3
Other	267	0.9
Unknown	132	0.4
Total	31,015	100.0

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	22,506	72.6
Minor Effect	6,495	20.9
Moderate Effect	470	1.5
Major Effect	57	0.2
Death	28	0.1
Unrelated Effect	401	1.3
Unknown Potentially Toxic	1,057	3.4
Total	31,015	100.0

Agents Involved

A single substance was involved in 92.3% of the cases. Up to twelve substances were taken in the other cases. Exposures to drugs accounted for 46% of the calls.

Agents Involved	Number
Analgesics	3,335
Anesthetics	92
Anticholinergics	135
Anticoagulants	10
Anticonvulsants	198
Antidepressants	508
Antihistamines	357
Antimicrobials	997
Antineoplastics	5
Asthma Therapies	249
Cardiovascular Drugs	435
Cough and Cold Preparations	1,735
Diagnostic Agents	7
Diuretics	154
Electrolytes/Minerals	364
Eye, Ear, Nose and Throat Preparations	258
Gastrointestinal Preparations	628
Hormone Products	568
Muscle Relaxants	104
Sedative/Hypnotics/Anti-Anxiety/Anti-Psychotics	1,504
Serums, Toxoids, Vaccines	3
Stimulants/Street Drugs	471
Topicals	1,340
Veterinary Products	26
Vitamins	1,116
Miscellaneous	179
Unknown Drugs	151
Total Drugs	14,929
Adhesives, Glues, Cements	277
Alcohols	989
Arts, Crafts, Writing Products	
Office Supplies	619
Automotive Products	122
Batteries	107
Bites and Envenomations	421
Building and Construction Products	134
Chemicals	1,070
Cleaning Substances - Household	3,520
Cleaning Substances - Industrial	41
Cosmetics and Personal Care Products	2,617

Agents Involved	Number
Deodorizers	250
Dyes	96
Essential Oils	29
Fertilizers	133
Fire Extinguishers	25
Food Products and Food Poisoning	249
Foreign Bodies	1,124
Fumes, Gases, Vapors	193
Fungicides	29
Heavy Metals (excluding iron)	129
Herbicides	49
Hydrocarbons	1,317
Insecticides	679
Lacrimators	68
Matches/Fireworks/Explosives	91
Mothballs	212
Mushrooms	134
Paints, Varnishes, Lacquers	369
Photographic Products	36
Plants	2,074
Polishes and Waxes	46
Rodenticides	289
Sporting Equipment	11
Swimming Pool/Aquarium Products	39
Tobacco Products	200
Unknown Substance (Non-Drugs)	245
Total Non-Drugs	18,033
Total Agents	32,962

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. A summary of some specific therapies follows:

Decontamination	Number
Ipecac	4148
Activated charcoal	1843
Cathartic	1667
Lavage	813
Dilute	13346
Irrigate/wash	4771
Fresh Air	530
Other	260
Total Decontamination	27378
Antidotal Therapy	574
Enhancement of Elimination	
Peritoneal Dialysis	3
Hemodialysis	12
Hemoperfusion	8
Total Enhancement of Elimination	23

Deaths

The Maryland Poison Center was consulted on 28 patients who died

during 1986. In some of the following cases the causes of death was not determined to be related to the exposure.

Age	Sex	Agent(s)
12	M	Sodium Hypochlorite
16	M	Camphorated Oil
18	F	Pentobarbital, Ethanol
19	M	Methanol
23	M	Cocaine
25	F	Heroin, Cocaine, Diazepam
26	F	Methylphenidate
27	M	Phencyclidine
29	M	Phencyclidine, Cocaine
30	M	Phencyclidine, Chloroform
31	M	Aspirin
34	M	Amobarbital, Secobarbital, Acetaminophen, Oxycodone, Diazepam
34	M	Carbamazepine
37	M	Potassium
37	M	Diffunisal
39	M	Propoxyphene, Acetaminophen
40	F	Amoxapine, Trihexyphenidyl, Lorazepam, Perphenazine
43	F	Guanabenz
47	F	Amitriptyline
49	F	Loxapine, Diphenhydramine
51	M	Benzyl alcohol
61	F	Amitriptyline, Perphenazine, Ethanol
64	F	Lithium Carbonate
65	M	Digoxin, Theophylline
67	M	Germicidal Detergent
69	M	Alprazolam, Ethanol
83	F	Secobarbital, Meprobamate
86	F	Procainamide

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. Poison Information Specialists conducted a total of 42 presentations in 1986. Some of these programs are given in conjunction with the MIEMSS education program. Other professional presentations include grand rounds, local conferences, etc.

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.

Fellowship

McNeil Consumer Products provided funds to support a Clinical Toxicology Fellowship. S. Rutherford Rose, Pharm.D. received a B.A. in Psychology and Biology from the University of Virginia in 1978 and a B.S. in Pharmacy from the Medical College of Virginia in 1983. After working for one year he began the Doctor of Pharmacy program at the Philadelphia College of Pharmacy and Science which he completed in 1986. Dr. Rose will complete his two year fellowship in June of 1988.

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 1986:

Klein-Schwartz, W., Gorman, R.L., Oderda, G.M., Massaro, B. Two Fatal Sodium Azide Poisonings. *American Academy of Clinical Toxicology-American Association of Poison Control Centers Annual Meeting*, Santa Fe, NM, September 1986.

Litovitz, T.L., Klein-Schwartz, W., Oderda, G.M., Schmitz, B.F. Clinical Manifestations of Toxicity in a Series of 784 Boric Acid Ingestions. *American Academy of Clinical Toxicology-American Association of Poison Control Centers Annual Meeting*, Santa Fe, NM, September 1986.

Goldfinger, A and Oderda, G. I.P.E.C.A.C. (Interactive Poison Expert for Classification and Control). *American Academy of Clinical Toxicology-American Association of Poison Control Centers Annual Meeting*, Santa Fe, NM, September 1986.

The following papers and chapters were published or in press in 1986:

Wedin, G.P., Oderda, G.M., Klein-Schwartz, W. and Gorman, R.L. Relative Toxicity of Cyclic

Antidepressants. *Annals of Emergency Medicine*, 15:797-804, 1986.

Oderda, G.M. and Klein-Schwartz, W. Pediatric Poisoning. In: Pagliaro, L.A. and Pagliaro, A.M., eds., *Problems in Pediatric Drug Therapy*. 2nd edition. Hamilton, IL: *Drug Intelligence Publications, Inc.*, In Press.

Oderda, G.M. and Klein-Schwartz, W. Clinical Toxicology. In Hirschman JL, Herfindal ET, eds. *Clinical Pharmacy and Therapeutics*, 4th edition. Baltimore: Williams and Wilkins Co., In Press.

Oderda, G.M., Klein-Schwartz, W. and Insley, B.M. In-vitro study of boric acid and activated charcoal. Accepted for publication in *Clinical Toxicology*.

Oderda, G.M. and Korberly, B. Emetics and Antiemetics. In: *Handbook of Nonprescription Drugs*, 8th edition, Washington: American Pharmaceutical Association, 1986.

Klein-Schwartz, W. and Hoopes, J.M. Patient Assessment and Consultation. In: *Handbook of Nonprescription Drugs*, 8th edition, Washington: American Pharmaceutical Association, 1986: 9-18.

Rosen, G., Klein-Schwartz, W., Medani, C.R. Indomethacin for Nephrogenic Diabetes Insipidus in a Four Week Old Infant. *Clinical Pharmacy*, 5:254-256, 1986.

Litovitz, T., Klein-Schwartz, W., Veltri, T., Manoguerra, A. Prescription Drug Ingestions in Children: Whose Drug? *Veterinary and Human Toxicology*, 28:14-15, 1986.

Staff Members

Director

Gary M. Oderda, Pharm.D., M.P.H.

Assistant Director

Wendy Klein-Schwartz, Pharm.D.

Medical Director

Richard L. Gorman, M.D.

Clinical Toxicology Fellow

S. Rutherford Rose, Pharm.D.

Medical Consultants

Daniel Goldstein, M.D.

Steven Grufferman, M.D.

Poison Information Specialists

Lisa L. Booze, BSPHarm, CPIS*
Debra Farcosky, BSN, R.N.
Lyn Goodrich, BSN, R.N.
Cynthia P. Hatfield, BSPHarm, CPIS
Charlotte Jankel, BSPHarm, MS
M. Terry Khin-Maung-Gyi,
BSPHarm, CPIS
Lucy A. King, BSPHarm, CPIS
Secretary
Annette Hurst
Maryland Green Thumb Volunteer
Hazel M. Gray

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

**AAPCC Certified Poison Information Specialist*

ANNOUNCEMENTS

JOBS

The Maryland Poison Center (MPC) hires full and part time registered nurses and pharmacists. It is anticipated that a position will be available this summer. For more information contact Dr. Gary Oderda at 328-7604.

PHENYLPROPANOLAMINE STUDY

The MPC will participate in a multicentered study evaluating phenylpropanolamine overdoses treated in a health care facility. Any emergency department interested in participating contact Dr. Rose at 328-7604.

PHONE NUMBER CHANGE

The non-emergency phone number for the MPC has been changed to 328-7604. Emergency lines remain 528-7701 in metropolitan Baltimore and 1-800-492-2414 elsewhere in Maryland.

The Maryland Poison Center is available to provide inservices on "The General Management of Poisonings," "Acetaminophen Poisoning," or "Cyclic Antidepressant Poisoning," to physicians, nurses, and other health care professionals at no charge. If you are interested and would like more information on these inservices, please contact Lisa Booze at 328-7604.

MARYLAND POISON CENTER
University of Maryland School of Pharmacy
20 North Pine Street
Baltimore, Maryland 21201

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