

Toxalert

Maryland Poison Center
University of Maryland School of Pharmacy

Maryland Poison Center Annual Report For 1984

Poisoning is a major public health problem throughout the United States. In Maryland, the 30,000 poisonings are reported annually with unintentional poisonings involving children under five accounting for almost two-thirds of these cases. The Maryland Poison Center (MPC), a division of the University of Maryland School of Pharmacy, is designated by Maryland as the state's official poison center to handle these reports. In addition, the MPC serves as a specialty resource center for the Maryland Institute of Emergency Medical Services System (MIEMSS) [Shock Trauma].

The Maryland Poison Center has a three-pronged mission (1) to maintain a 24-hour emergency telephone service providing toxicity and treatment information to health professionals and the general public, (2) to provide public and professional education and prevention programs and materials, and (3) to conduct research in clinical toxicology. The Maryland Poison Center is one of only 30 poison centers in the United States certified by the American Association of Poison Control Centers (AAPCC) as a regional poison center. It has one satellite center, Tri-State Poison Center, at Sacred Heart Hospital in Cumberland.

Emergency Service

Operating procedures. The major component of the MPC program is its 24-hour emergency telephone service. In order to provide immediate access to toxicity and treatment information, the MPC maintains five telephone lines (3 local and 2 Maryland toll-free lines) and an ambulance/emergency room telephone hook-up through the Emergency Medical Resource Center (EMRC) at Sinai Hospital. These emergency lines are staffed 24-hours a day, every day of the year by specially-trained poison information specialists (pharmacists and registered nurses). The specialists collect information on every exposure case on an AAPCC report form, evaluate the severity of each situation, recommend specific treatment, as needed, and follow up all calls where specific treatment is recommended.

Resources. Information on over 300,000 products and drugs is contained in **Poisindex**®, a microfiche data file which serves as the MPC's major reference source. The Center also maintains an extensive library of textbooks, treatment cards and articles available for additional information. In addition, the MPC has established a network of medical and technical experts in various disciplines to provide consultation for unusual cases.

Data collection. In 1984, the MPC began to participate in a national data collection system developed by the American Association of Poison Control Centers (AAPCC). An AAPCC Cooperative Poison Center Report Form, which is completed on each human exposure, contains information on the substance and amount involved, the time of the call, the time since exposure, the age, weight and sex of the patient as well as the zip code and telephone number of the caller. All symptoms, treatment, and follow-up information are also documented. All forms are reviewed daily by the director or assistant director and case conferences with the medical director are held daily to discuss hospital admissions.

Call distribution. The MPC received 47,879 poison-related calls in 1984. Of these, 28,987 calls involved actual human exposures; the remaining 18,892 calls were classified as inquiries. [The MPC defines an exposure call as any report of a human exposure (unintentional or intentional) to a poisonous or non-poisonous substance by any route (oral, ocular, dermal, etc.). All other requests for information are considered inquiries.]

Monthly distribution. During 1984, May was the busiest month and November was the slowest. This seasonal trend (more calls in spring and summer; fewer calls in winter) is consistent with past experience. The distribution of total calls by month for 1984 is listed below:

Total Calls By Month 1984

	Exposures		Inquiries		Total calls	
January	2,329	(8.0%)	1,756	(9.3%)	4,085	(8.5%)
February	2,013	(6.9%)	1,618	(8.6%)	3,631	(7.6%)
March	2,576	(8.9%)	1,647	(8.7%)	4,223	(8.8%)
April	2,492	(8.6%)	1,486	(7.9%)	3,978	(8.3%)
May	2,666	(9.2%)	1,676	(8.9%)	4,342	(9.1%)
June	2,484	(8.6%)	1,488	(7.9%)	3,972	(8.3%)
July	2,439	(8.4%)	1,601	(8.5%)	4,040	(8.4%)
August	2,344	(8.1%)	1,700	(9.0%)	4,040	(8.4%)
September	2,466	(8.5%)	1,475	(7.8%)	3,941	(8.2%)
October	2,512	(8.7%)	1,507	(8.0%)	4,019	(8.4%)
November	2,172	(7.5%)	1,403	(7.4%)	3,575	(7.5%)
December	2,494	(8.6%)	1,535	(8.1%)	4,029	(8.4%)
Total	28,987	(100.0%)	18,892	(100.1%)	47,879	(99.9%)

[All further statistics mentioned in this report deal with exposure calls only.]

Time of day distribution. The MPC receives the majority of its calls during the twelve hour period from 8 a.m. to 8 p.m.

Exposure Calls by Time of Day

Time of Call	Number of Calls
Midnight-4 A.M.	587 (2.0%)
4 A.M.-8 A.M.	783 (2.7%)
8 A.M.-Noon	6,819 (23.5%)
Noon-4 P.M.	6,970 (24.0%)
4 P.M.-8 P.M.	8,516 (29.4%)
8 P.M.-Midnight	4,842 (16.7%)
	28,987 (100.0%)

Geographical distribution. The MPC uses the zip code to track the source of its calls. In 1984, a geographical location could be assigned for 26,710 calls. The breakdown of exposure calls by region is listed below. It is important to note that the National Capital Poison Center in the District of Columbia also handles calls from Montgomery and Prince Georges counties, and Tri-State Poison Center serves Allegany and parts of Garrett county.

Geographical Distribution

Baltimore Metropolitan Area		18,790
Anne Arundel County	3,207	
Baltimore City	6,393	
Baltimore County	5,805	
Carroll	979	
Harford	1,400	
Howard	1,006	
National Capital		3,621
Montgomery	1,988	
Prince Georges	1,633	
Eastern Shore		1,767
Caroline	119	
Cecil	448	
Dorchester	122	
Kent	117	
Queen Annes	166	
Somerset	78	
Talbot	193	
Wicomico	382	
Worcester	142	
Southern Maryland		1,150
Calvert	298	
Charles	416	
Saint Marys	436	
Northwestern Maryland		1,382
Allegany	189	
Frederick	786	
Garrett	159	
Washington	248	

Age and sex distribution. The majority of exposures [19,620 (67.7%)] reported to the MPC involve children under five years of age. Within this group, two year olds account for 24.5% (7,112) of the cases, followed closely by the one year olds with 21.5% of the calls (6,220). Males are involved in poisonings slightly more frequently than females.

Exposure Calls by Age and Sex

AGE	MALE	FEMALE	SEX UNRECORDED	TOTAL
0-11 mos.	1,190	1,090	19	2,299
1 year	3,275	2,911	34	6,220
2	3,861	3,209	42	7,112
3	1,497	1,317	25	2,839
4	632	510	8	1,150
5-9	783	564	8	1,355
10-14	380	453	0	833
15-19	602	733	3	1,338
20-24	545	586	1	1,132
25-29	461	528	4	993
30-39	607	781	3	1,391
40-49	253	422	1	676
50-59	148	234	2	384
60-69	72	145	1	218
70+	76	161	0	237
Age Unrecorded	399	498	93	990
TOTALS	14,601 (50.4%)	14,142 (48.8%)	244	28,987

Circumstance. Acute exposures (28,749) account for 99.2% of the exposure calls received by the Maryland Poison Center; only 206 calls (0.7%) involved chronic exposures.

Calls by Circumstance

Accidental		
General		24,409
Occupational		368
Environmental		53
Misuse		568
Unknown		54
Total		25,452 (87.8%)
Intentional		
Suicidal		2,001
Misuse		474
Abuse		318
Unknown		504
Total		3,297 (11.4%)
Adverse reaction		
Drug		93
Food		17
Other		12
Total		122 (0.4%)
Unknown		94 (0.3%)
Other		12 (0.0%)

Route of exposure. Because some case data sheets list more than one route of exposure, the total (29,733) is larger than the total number of exposures (28,987).

Route of Exposure	
Ingestion	25,382 (85.4%)
Ocular	1,790 (6.0%)
Dermal	1,152 (3.9%)
Inhalation	951 (3.2%)
Bites/stings	287 (1.0%)
Parenteral	76 (0.3%)
Other	57 (0.2%)
Unknown	38 (0.1%)

Substance involved. A breakdown of exposure calls to selected substances is given below.

Substance Involved		
Pharmaceuticals		13,163
Analgesics	2,906	
Acetaminophen alone/combination	1,625	
Aspirin alone/combination	804	
Narcotics	95	
Non-steroidal anti-inflammatory	369	
Anesthetics	72	
Anticholinergic	182	
Anticoagulants	66	
Anticonvulsants	130	
Antidepressants	416	
Antihistamines	317	
Antimicrobials	776	
Antineoplastics	5	
Asthma Therapies	178	
Cardiovascular Drugs	329	
Cough and Cold Preparations	1,155	
Diagnostic Agents	5	
Diuretics	146	
Electrolytes and Minerals	474	
Eye, Ear, Nose & Throat Preparations	256	
Gastrointestinal Preparations	658	
Hormones and Hormone Antagonists	527	
Muscle Relaxants	38	
Sedative/Hypnotics/Anti-Anxiety/Anti-Psychotics	1,293	
Serums, Toxoids, Vaccines	1	
Stimulants and Street Drugs	199	
Topicals	1,137	
Veterinary Drugs	34	
Vitamins	1,071	
Unknown Drugs	218	
Miscellaneous Drugs	574	

Non Pharmaceuticals	16,349
Adhesives, Glue, Cements, Paste	222
Alcohols	1,393
Arts/Crafts/Writing products/Office supplies	370
Automotive/Aircraft/Boat products	67
Batteries	53
Bites and Envenomations	326
insects/spiders	255
mammals	9
snakes	55
Building and Construction products	73
Chemicals	1,276
Cleaning Substances—household	3,140
Cleaning Agents—Industrial	39
Cosmetics and Personal Care Products	2,098
Deodorizers—Not for personal use	170
Dyes	121
Essential Oils	39
Fertilizers	146
Fire Extinguishers	8
Food Products and Food Poisoning	199
Foreign Bodies, Toys and Miscellaneous	704
Fumes, Gases, Vapors	217
Fungicides (non-medicinal)	11
Heavy Metals (Excluding iron)	123
Herbicides	51
Hydrocarbons	1,483
Insecticides/Pesticides (see rodenticides)	794
Lacrimators	59
Matches/Fireworks/Explosives	38
Mothballs and other moth repellants	158
Mushrooms (see plants)	150
Paints, Varnishes, Lacquers	400
Photographic products	7
Plants (excluding mushrooms)	1,915
Polishes and Waxes	18
Radio-Isotopes	1
Rodenticides (see insecticides/pesticides)	173
Sporting Equipment	3
Swimming Pool and Aquarium Products	20
Tobacco Products	194
Unknown Substances	90

Treatment location. The majority of exposures reported to the MPC are handled safely in the home setting.

Treatment Location		
Non Health Care Facility	22,688	(78.3%)
Health Care Facility (in or enroute):		
Treated and released	2,059	(7.1%)
Admitted for medical care	1,161	(4.0%)
Admitted for psychiatric care/eval.	144	(0.5%)

Referred to Health Care Facility by MPC:			
Treated and released	1,282	(4.4%)	
Admitted for medical care	406	(1.4%)	
Admitted for psychiatric care/eval.	41	(0.1%)	
Referral refused	679	(2.3%)	
Other	144	(0.5%)	
Unknown	383	(1.3%)	

Fatalities. During 1984, 19 of the 28, 987 exposures resulted in death. Two of these were determined to be not poison-related and are not listed.

1984 Fatalities

Age	Sex	Substance Involved
19	M	Insulin
19	F	Ethanol, imipramine
24	F	Chlorazepate, methadone
28	F	Acetaminophen, birth control pills, amphetamine
30	M	Acetaminophen, codeine, cocaine, ethanol
40	F	Oxycodone, acetaminophen, ethanol
42	M	Heroin
47	F	Anticoagulant rodenticide
50	M	Aspirin, ethanol
50	F	Procainamide
60	M	Digoxin, furosemide, potassium
60	F	Thioridazine, valproic acid, primidone
62	M	Paint thinner containing methanol, toluene
64	F	Drain cleaner (sodium hydroxide)
65	M	Muriatic acid, ammonia/bleach
68	F	Aspirin
84	F	Procainamide

Educational Programs:

In addition to its emergency service, the MPC provides professional and public education programs throughout the state. In 1984, two on-going grants from the McNeil Consumer Products Company (one for a clinical toxicology fellowship and another for program expansion) continued to support the development and expansion of our educational programs and to provide educational materials. The McNeil fellowship grant allows a Pharm.D. graduate to obtain training in poison center administration, research, and teaching. Dr. Gregory P. Wedin, currently the director of the West Virginia Poison Center, was the MPC clinical toxicology fellow for 1983-84. Dr. Barbara M. Insley serves as the clinical toxicology fellow for 1984-85.

Professional education. Drs. Oderda and Klein-Schwartz are the coursemasters for the School of Pharmacy clinical toxicology course. This course includes first-hand observation of the MPC's operation for future pharmacy practitioners. Students from the other professional programs on the UMAB and other campuses also can receive an orientation to the Center.

An important feature of our professional education program is the statewide in-service programs. These programs provide current poison management information to emergency department and other health professionals. In 1984, the MPC staff presented 18 in-service programs. These programs, many of which were given in conjunction with the Maryland Institute of the Emergency Medical Services Systems (MIEMSS), were presented in Baltimore City (6 programs) and the following counties, Baltimore (4), Carroll (2), Frederick (1), Howard (2), Somerset (1) and Wicomico (2). Lisa Booze serves as professional education coordinator.

Toxalert, a quarterly newsletter dealing with clinical toxicology topics (Naloxone infusion, Jimonweed poisoning, holiday hazards, etc.), is another important part of our professional education program. This newsletter, edited by the poison information specialists, with M. Terry Payer serving as publication coordinator, is distributed statewide to over 600 health officers, emergency room personnel, family practice physicians and pediatricians.

In other professional activities, staff members serve on a variety of national and state committees. Dr. Oderda was elected Secretary-Treasurer of the American Association of Poison Control Centers (AAPCC) and serves on its executive, data collection, personnel proficiency and legislative affairs committees. Dr. Klein-Schwartz, who is also on the AAPCC executive committee, serves the chairperson of the personnel proficiency committee that certifies poison information specialists and is on the annual meeting abstract committee. Ms. Lucy is the co-chairperson of the AAPCC public education committee. Drs. Oderda, Klein-Schwartz, Gorman, Insley, Ms. Payer and Lucy represented the MPC at the AAPCC annual meeting in San Diego. Dr. Wedin and Mrs. Booze attended the poisoning symposium conducted by the Rocky Mountain Poison Center in Copper Mountain, Colorado. On the state level, Dr. Oderda serves as consultant to the accident prevention committee of the Maryland chapter of the American Academy of Pediatrics. Dr. Gorman is a member of the accident prevention committee of the Maryland chapter of the American Academy of Pediatrics. Ms. Lucy serves on the Board of Directors of the Safety Council of Maryland, Inc.

Public education. Poison prevention, public awareness and public relations are key parts of the community program. In cooperation with MIEMSS and the Office of Institutional Advancement, the Center developed its 1984 poison prevention campaign around the educational theme of "Poison Proof Your Home". As always, this focus was incorporated into our educational and promotional materials and activities throughout the year. Posters, poison proofing checklists, telephone stickers and radio and television public service announcements were developed and distributed to promote active poison proofing. Maryland Poison Prevention Week played a major part in introducing this theme as well as expanding an awareness of the MPC, during its thirtieth year of operation. In addition to proclamations from Maryland Governor Harry Hughes and Baltimore City Mayor William Donald Schaefer, the highpoints of the Poison Prevention Week campaign included birthday parties—complete with the Oriole Bird, cakes, and balloons—for the children in the pediatrics departments of University of Maryland Medical System/Hospital and the Johns Hopkins Hospital.

During 1984, the staff presented 20 poison prevention programs to community and business groups, and made 39 radio or television appearances. The MPC was mentioned in 37 newspaper or magazine articles. Other awareness

activities in addition to Poison Prevention Week in March (WBAL, WBFF, WJZ and WMAR-TV), included a summer safety teletest (Channel 2, WMAR-TV) and a news feature on summer safety with Vicki Cox (WMAR-TV) in June, and holiday safety in December. Radio and television interviews were given throughout the year on poison-related stories, such as chemical spills, regional programs and poison prevention issues. Also, public service spots were carried throughout the year by WBAL-TV, WJZ-TV, WMAR-TV, WBFF-TV in Baltimore and WBOC-TV in Salisbury and WHAG-TV in Hagerstown. An audio tape of the Mister Rogers poison prevention message which was developed by the Poison Prevention Week Council was distributed to every radio station in Maryland.

The University of Maryland Central Administration produced a movie which featured a segment on the Maryland Poison Center and the Howard County Government Information Channel (Cable 15) produced a 12-minute video tape program entitled "Children and Poison: What Every Parent Should Know."

Research:

Research is an important feature of the MPC program. During 1984, the staff completed a multi-center evaluation of the use of syrup of ipecac in children from 6 months to one year of age. Dr. Klein-Schwartz presented the results of the study at the AAPCC Annual Meeting in San Diego and they were accepted for publication in *Pediatrics*. Dr. Wedin's study on the relative toxicity of cyclic antidepressants was presented at the AAPCC Annual Meeting.

The staff had several articles published this year including: Litovitz, T, Klein-Schwartz, W, Oderda, GM, Easom, JM. Poison Information Providers: An Assessment of Proficiency. *American Journal of Emergency Medicine*. (1984); 2:129-137.; Oderda, GM and Klein-Schwartz, W. Poison Prevention in the Elderly. *Drug Intelligence and Clinical Pharmacy*. (1984); 18:183-185.; Klein-Schwartz, W, Gorman, RL, Oderda, GM and Baig, A. CNS Depression from Ingestion of Nonprescription Eyedrops. *American Journal of Emergency Medicine*. (1984); 2:217-218.; Klein-Schwartz, W And Oderda, GM. Jimson Weed Intoxication in Adolescents and Young Adults. *American Journal of Diseases in Children*. 1984; 138:737-739.; Benson, BE, Klein-Schwartz, W, Oderda, GM, Lucy, JS. Warning Labels: A Source of Toxicity Information for Parents. *Clinical Pediatrics*. (1984); 23:441-444.; Oderda, GM and Klein-Schwartz, W. Clinical Toxicology. In Hirschman, JL, Herfindal, ET, eds. *Clinical Pharmacy and Therapeutics*. 3rd Edition. Baltimore: Williams and Wilkins Co. (1984):2-24; Lewis, JM, Klein-Schwartz, W, Benson, BE, Oderda, GM, Takai, S. Continuous Naloxone Infusion in Pediatric Narcotic Overdose. *American Journal of Diseases in Children*. (1984); 138:944-946.; Klein-Schwartz, W, Gorman, RL, Oderda, GM, Wedin, GP, Sagger, D. Ipecac Use in the Elderly: The Unanswered Question. *Annals of Emergency Medicine*. (1984); 13:1152-1154. Wedin, G., Pennente, C. and Sachdev, S. Renal Involvement in Organophosphate Poisoning. *Journal of American Medical Association*. (1984); 252:1408.

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.

Medical consultant-Steven Grufferman, M.D.

1984-85 Clinical toxicology fellow-Barbara M. Insley, Pharm.D.

Education/communications director-Jacquelyn S. Lucy, M.A., M.Ed.

Poison information specialists-

Lisa L. Booze, BS Pharm, CPIS*

Lyn Goodrich, BSN, R.N.

Cynthia P. Hatfield, BS Pharm, CPIS

Lucy A. King, BS Pharm, CPIS

M. Terry Payer, BS Pharm, CPIS

Mary Tatar, AA, R.N.

Secretary-Annette Hurst

Maryland Green Thumb Volunteer-Hazel M. Gray

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

* AAPCC Certified Poison Information Specialist

Poison Center Seeks Slides/Photos for Presentation

The Maryland Poison Center (MPC) will present a synopsis of its successful statewide poison prevention program at the 25th Anniversary of National Poison Prevention Week Ceremony and Conference. Held at the Dirksen Senate Office Building in Washington, DC on March 17, 1986, this program will kick-off National Poison Prevention Week, March 16-22, 1986. The MPC is one of only two poison centers nationally to be selected to illustrate how to conduct a statewide poison prevention program.

As part of its presentation, the MPC would like to highlight the contribution of pharmacists, nurses, physicians, educators, day care providers, EMTs, etc. in community and school prevention programs throughout Maryland. If you have any slides and/or photographs of a school or community poison prevention presentation, please share it with the MPC. Send all materials with a brief description of the

event and the names of the participants *no later than January 31, 1986* to Jacquie Lucy, c/o the Maryland Poison Center, 20 N. Pine Street, Baltimore, MD 21201. If you have any questions about the presentation, contact Jacquie or Annette Hurst at (301) 528-7604.

About This Special Double Issue:

As you can see, this issue of *Toxalert* is different from our usual format. For the 1984 Annual Report, we have opted to use double columns for easier readability (especially for the tables) and have extended the copy to six pages. The next two issues will follow our standard four-page format.

We appreciate your continued support of *Toxalert* and encourage any suggestions, especially from our new readers, for topics or questions that you would like to see covered. Send all comments to M. Terry Payer, *Toxalert* Editor, Maryland Poison Center, 20 N. Pine Street, Baltimore, MD 21201.

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