

Minnesota

Poison

Control

System

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Hennepin

Regional

Poison

Center



**2007
Annual
Report**

www.mnpoison.org

Services Provided by the Poison Center

The Minnesota Poison Control System (MPCS) provides the following services for the citizens of the State of Minnesota:

DESIGNATION

The Hennepin Regional Poison Center (HRPC) is designated by the MDH to provide poison information and toxicology consultative services to the entire state of Minnesota as the MPCS. The HRPC has met stringent criteria set forth by the AAPCC, earning the designation of a Certified Regional Poison Center.

EXPOSURE MANAGEMENT

Nationally Certified Specialists in Poison Information (CSPI) provide poison exposure assessment and management recommendations to the general public and to health care professionals throughout the State. The service is provided via a national toll-free telephone number accessible by both voice and TTY and is available 24 hours a day, 365 days a year.

TOXICOSURVEILLANCE

In partnership with the Minnesota Department of Health (MDH), American Association of Poison Control Centers (AAPCC), and chemical and federal security organizations, MPCS provides real-time surveillance looking for early warning signs of a public health event.



PUBLIC / PROFESSIONAL EDUCATION

Various programs are available and designed to promote awareness and prevention of unintentional exposures; and to improve patient management of exposures.

These programs include a Train the Trainer Program, children's safety camps and senior fairs.

On-staff pharmacists hold teaching appointments with the University of Minnesota's College of Pharmacy and participate in the education of fourth-year pharmacy students.

In addition, the staff assists in providing toxicology instruction to emergency medicine, pediatric and family medicine residents, medical students, physician assistants, nurses and paramedics.

Additional professional outreach is provided in the form of publications in professional journals, physician conferences, poster presentations and lectures. In conjunction with Regions Hospital, an accredited physician toxicology fellowship program is offered.

POISON PREVENTION MATERIALS DISTRIBUTION

Poison prevention brochures, telephone stickers, magnets and other printed materials written in various languages are available to the general public via mail or internet at www.mnpoison.org. These materials can be downloaded or ordered on-line. We also provide a video lending library.

All of the information is provided to help prevent poisoning exposures, to promote awareness of poison prevention and to increase utilization of poison control services.

This report presents an overview of the HRPC Center's data for 2007.

Additional information is available upon request.



What types of calls were received?

95,241 calls were placed to the HRPC in 2007. Of those, 54,064 (57%) calls involved human exposure to a potentially harmful substance. There were 40,556 (43%) calls for information pertaining to medications, chemicals, poison prevention, medical, and environmental concerns.

Exposure Calls by Call Type

EXPOSURES	#	%
Human Exposure	54,064	99
Animal Exposure	621	1

TOTAL EXPOSURE CALLS	54,685	100%
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INFORMATION	#	%
Drug Information	4,216	11
Drug ID	29,425	75
Poison Info	2,146	5

Prevention/ Safety/ Education	894	2
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Medical/Other	2,896	4
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Environmental/ Occupational	979	3
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TOTAL INFORMATION CALLS	40,556	100%
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GRAND TOTAL OF CALLS 95,241

How many calls were received?

The HRPC received the highest number of calls (8,355) in the month of October. The period of highest call volume occurred May through November. The average daily call volume was 261.

Call Volume

	Exposure Calls	Information Calls
Jan	4,267	2,970
Feb	4,332	2,812
Mar	4,292	3,307
Apr	4,490	3,242
May	4,794	3,518
June	4,685	3,438
July	4,731	3,557
Aug	4,640	3,625
Sept	4,638	3,491
Oct	4,737	3,609
Nov	4,738	3,430
Dec	4,331	3,557
Total Calls	54,563	40,556

The remainder of this report will detail the 54,064 human exposures calls that were managed.

Who Called?

Exposure Calls by Caller Type

	#	%
Self	7,186	13.3
Parent	28,855	53.4
Other Family	3,308	6
Daycare/Sitter	130	>0.2
Physician	4,420	8
Nurse	4,510	8
Pharmacist	140	>0.2
Other HCP	1,924	4
Other/Unknown	3,573	7
TOTAL	54,046	100%

What was the patient(s) age/gender?

Children 5 years of age and younger account for 27,539 (51%) of the exposure calls received and managed by HRPC. This age distribution has been consistent in recent years. The gender of human exposures is almost evenly divided between males and females.

Exposure Calls by Patient Age

	#	%
<=5 Years	27,539	51
6-12 Years	3,053	5
13-19 Years	3,709	7
Unk Child (<19)	426	1
Adult (20 or >)	12,836	24
Unknown Age	6,501	12
TOTAL	54,064	100%

Exposure Calls by Gender

	Male	Female	Un-known
<=5 Years	12,871	14,563	254
6-12 Years	1,751	1,202	100
13-19 Years	1,660	2,020	29
Un-known Child (<19)	81	85	111
Adult (20 or >)	5,509	7,287	40
Un-known	2,361	3,703	437
TOTAL	24,233	28,860	971

Where did exposure(s) occur and where did caller call from?

A residence (89%) was the most common exposure site for poisoning. Two and a half percent of exposures occurred in the workplace. The primary call location was the residence of the caller. Sixteen percent of the exposure calls came from a healthcare facility.

Site of Exposure

	#	%
Own Home	48,063	89
Other Home	1,678	3
Workplace	1,429	2.5
School	835	1.5
Food Service	158	.3
Public Place	608	1
Other/Unknown	911	2
HCF/Clinic	382	0.7
TOTAL	54,064	100%

Caller Location

	#	%
Own Home	39,180	72
Other Home	1,116	2
Workplace	823	1.5
School	207	0.5
Other/Unknown	4,028	7.5
HCF/Clinic	8,538	16
Food Service	12	0.1
Public Place	160	0.4
TOTAL	54,064	100%

What geographic location did calls originate from?

Fifty-two percent of calls came from the seven-county Twin Cities metropolitan area (green shaded areas in the table below).

Calls By County

County	Human Exposures 2007	County	Human Exposures 2007	County	Human Exposures 2007
Aitkin	125	Jackson	52	Ramsey	4,603
Anoka	3,128	Kanabec	186	Red Lake	35
Becker	318	Kandiyohi	355	Redwood	132
Beltrami	632	Kittson	30	Renville	139
Benton	270	Koochiching	111	Rice	614
Big Stone	48	LacQui Parle	49	Rock	87
Blue Earth	633	Lake	102	Roseau	150
Brown	264	Lake of the Woods	45	Saint Louis	2,009
Carlton	382	Le Sueur	246	Scott	1,173
Carver	840	Lincoln	41	Sherburne	831
Cass	280	Lyon	256	Sibley	103
Chippewa	87	Mahnomen	83	Stearns	1,590
Chisago	672	Marshall	42	Steele	388
Clay	447	Martin	195	Stevens	89
Clearwater	93	McLeod	364	Swift	74
Cook	43	Meeker	205	Todd	202
Cottonwood	100	Mille Lacs	442	Traverse	26
Crow Wing	744	Morrison	315	Wabasha	169
Dakota	3,626	Mower	377	Wadena	198
Dodge	137	Murray	47	Waseca	178
Douglas	331	Nicollet	230	Washington	2,171
Faribault	96	Nobles	138	Watonwan	70
Fillmore	147	Norman	64	Wilkin	95
Freeborn	251	Olmsted	1,462	Winona	340
Goodhue	460	Otter Tail	487	Wright	1,402
Grant	56	Pennington	138	Yellow Medicine	107
Hennepin	12,455	Pine	273	County Not Obtained	2,565
Houston	117	Pipestone	69		
Hubbard	212	Polk	223		
Isanti	423	Pope	62		
Itasca	417			TOTAL	54,064

Where was the exposure(s) managed?

Ninety-three percent of all exposure calls originating in the home were managed in the home.

The HRPC saves significant health care dollars by reducing unnecessary visits to emergency departments and/or medical clinics by having specialists in poison information refer only those patients that need medical attention.

The majority of poison exposures are managed at home or in a non-health care facility under the guidance of the HRPC's specialized staff.

Management Site

	#	%
Managed On-Site/ Non-Health Care Facility	40,707	75
Managed in Healthcare Facility		
HCF Treated/ Released	4,736	9
HCF Admitted: ICU	2,191	4
HCF Admitted: non-critical care	1,391	2.5
HCF Admitted: Psych	1,020	2
Lost Follow Up/ LAMA	2,500	5
Refused Referral	667	1
Other/Unknown	852	1.5
TOTAL	54,064	100%

How did the exposure(s) happen?

The most common route of exposure to potentially toxic substances was ingestion (80%).

Route of Exposure

	#	%
Ingestion	45,024	80
Inhalation	3,644	7
Aspiration	15	>0.1
Ocular	2,811	5
Dermal	3,486	6
Bites/Stings	355	>0.6
Parenteral	553	1
Other	90	>0.1
Unknown	212	>0.4
TOTAL	56,190	100%

NOTE: Total exceeds the number of exposure calls due to multiple routes of exposure in some cases.

What was the circumstance of the exposure(s)?

Out of the 54,064 exposure calls 44,740 (82 %) of them were unintentional exposures. Of these unintentional exposures 33,139 exposures fall into the "general" category which is characterized with normal childhood development behavior. The second most common cause of unintentional exposure was therapeutic errors, 5,887 of which usually involved inadvertent misuse of medication. Intentional exposures account for 14% of the total. The majority of these were individuals trying to harm themselves. Most of the serious outcomes and deaths arose from this group.

Exposure Circumstance

	#	%
Unintentional		
General	33,139	61
Environmental	1,879	4
Occupational	1,121	2
Therapeutic Error	5,887	11
Misuse	1,408	3
Bite/Sting	352	1
Food Poisoning	870	2
Unknown	84	
Total Unintentional	44,740	82%
Intentional		
Suspected Suicide	4,297	8
Misuse	1,311	2
Abuse	1,137	2
Unknown	766	1
Total Intentional	7,511	13%
Other		
Contamination/ Tampering	61	0.1
Malicious	195	0.3
Withdrawal	37	0.1
Total Other	293	.5%
Adverse Reaction		
Drug	1,258	2
Food	103	0.2
Other	159	0.3
Total Adverse Reaction	1,520	2.5%
Total Exposure Calls	54,064	

What substance(s) were involved?

Pharmaceuticals were involved in 56% of exposures and were responsible for the most severe outcomes, including death. The large percentage of exposures involving medications is one of the reasons pharmacists staff the poison center.

Chemicals, including household cleaning products, pesticides, hydrocarbons, and industrial chemicals, accounted for 30% of the exposures. The majority (16%) of chemical exposures were due to household products.

Exposures to personal care products and the other/unknown categories are rarely associated with serious outcomes. The term “Other/unknown” was used when it was not possible to identify the involved substance or place it in a specified category.

The following tables list the primary categories of agents involved in cases reported to the HRPC. In a significant number of cases, most notably intentional drug overdoses, more than one substance was involved.

Exposure Calls by Pharmaceutical Substance Type	by	
	#	%
Analgesics	7,298	21.5
Other/Unk. Drugs	3,636	10.7
Sed/Hyp/Antipsych	3,494	10.3
Antidepressants	2,963	8.7
Topical Preps	2,248	6.6
Cold and Cough	2,031	6
Cardiovascular	1,850	5.5
Vitamins	1,608	4.7
Antimicrobials	1,568	4.6
Antihistamines	1,513	4.5
Stimulant/Street Drugs	1,234	3.6
Hormones/Hormone Antagonists	1,167	3.4
GI	1,150	3.4
Anticonvulsants	1,095	3.3
Dietary Supplements/Herbals	499	1.6
Ear/Eye/Nose/Throat Products	496	1.6
Total Pharmaceuticals	33,984	

Pharmaceutical % of total exposure calls 54%

NOTE: Total exceeds the number of exposure calls due to multiple agents being involved in some cases.

Exposure Calls by Non-Pharmaceutical Substance Type	Sub-	
	#	%
Personal Care	4,934	16.9
Household Cleaner/Wax/Polish	4,535	15.5
Foreign Bodies	3,157	10.8
Alcohols	2,113	7.2
Pesticides/Fertilizers	1,987	6.8
Other/Unknown	1,809	6.3
Food Related	1,534	5.2
Plants	1,365	4.7
Arts/Crafts/Adhesives/Glues	1,282	4.4
Fume/Gas/Vapor	1,252	4.3
Building/Construction/Heavy Metal/Paint Products	1,225	4.2
Chemicals	1,118	3.8
Hydrocarbons	1,111	3.8
Bites/Stings	481	1.6
Auto/Boat	352	1.2
Industry Cleaners	274	.9
Mushrooms	270	.9
Batteries	220	.8
Tobacco	219	.7
Total Non-Pharmaceuticals	29,128	100%

Non-Pharmaceutical % of total exposure calls 46%

NOTE: Total exceeds the number of exposure calls due to multiple agents being involved in some cases.

What was the outcome of exposure(s)?

The medical outcome of an exposure is based upon the severity of the clinical effects noted during management of the exposure. In 48,019 (89%) exposures, the outcomes were non-toxic, no effect, minor effect, or reasonably assumed to produce no more than minor effects (e.g., upset stomach). Severe poisonings and death tend to occur in adolescents and adults who are intent on self-harm. Some cases of moderate and all cases of major severity could be considered life threatening. However, less than 1% of the known outcomes were life threatening or resulted in deaths. In general, these life threatening or death outcomes resulted from drug abuse or intent to harm one’s self.

Outcome of Exposure(s) continued

Exposure Outcome

	#	%
No Effect	4,085	7.6
Minor Effect	4,877	9.0
Moderate Effect	2,331	4.0
Major Effect	349	0.7
Death	34	0.06
Nontoxic	6,695	12.4
Minimal Toxicity	32,484	60.0
Potentially Toxic	1,979	3.7
Unrelated Effect	1,230	2.3
Total	54,064	100%

Outreach Education

In response to requests by the public, daycares, schools, clinics, health fairs, and other organizations, the MPCS distributed 261,791 pieces of printed material to the residents of the State. MPCS participated in over 347 education events. These included over 173 presentations to health care professionals statewide, 140 events for the general public and 34 media events as well as in-house training for 112 medical residents and



Material Requests

Posters	510
Magnets	69,843
Phone Stickers	104,032
Safety Guides (Poison, Senior, and Spanish Guides)	87,406
Total Distributed	261,791

Meet our Staff

All certified specialists in poison information (CSPI) and poison information providers (PIP) of the MPCS are uniquely trained to assess, triage and manage poisoning emergencies. The CSPIs are pharmacists and nurses who are certified as "Specialists in Poison Information" by the American Association of Poison Control Centers. The PIPs, who come from a variety of health care backgrounds, work alongside the CSPIs in managing calls from the public. The MPCS is fortunate to have consultants in a variety of specific fields including: plant and mushroom identification, snake identification and snake bite treatment, hyperbaric medicine, radiation, and occupational and environmental toxins. We also would like to thank our volunteer, who helps us with the mailing and distribution of printed material.

CSPIs and PIPs

Robert Angellis, EMT, PIP
Christine Bottema, PharmD, CSPI
Rachel Brandt, PharmD, CSPI
Angela Cortese, PharmD
Alisha Floan, PharmD, CSPI
Jeffrey Freund, PIP
Gregory Grande, RPh, CSPI
Ted Gray III, RPh, CSPI
Paul Hinck, RPh, CSPI
Scott Hokenson, RPh, CSPI
Matthew Jacobs, RPh, CSPI
Shin Kwon, PharmD
Chris Lintner, RPh, CSPI
Renee Petroski, PIP
Kevin Sell, RPh, CSPI
Shaker Shaker, PIP
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Matt Morgan, MD, +

Matt Sztajnkrzyer, MD, #

KEY:

CSPI= Certified Specialist in Poison Information

PIP= Poison Information Provider

DABAT= Diplomat American Board of Applied Toxicology

+ = Toxicology Fellow

= Certified by the ABMS medical toxicology subspecialty board

* = Certified by ABMT which was replaced in 1992 by the ABMS subspecialty certification