

Regional Center for Poison Control and Prevention Serving Massachusetts and Rhode Island



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A message from the Medical Director

The Regional Center for Poison control and Prevention Serving Massachusetts and Rhode Island provides a critical public service – the management and treatment of poisoning exposures. This year we helped over 45,000 individuals and healthcare providers understand and treat poison exposures, ranging from the simple to the life-threatening.

Our services are confidential and we are focused on exceptional patient care and customer service. Highly trained poison specialists are available to help answer questions 24 hours a day, 7 days a week, at no charge. Not only do we offer reassurance to parents of children who have gotten into too much toothpaste, or share our knowledge with elderly callers who have concerns about their medications, we also offer our specialized expertise in clinical consults to medical professionals throughout both states on complicated and potentially life threatening medical cases.

The Poison Center is also a cost saving mechanism for the treatment and triage of poison exposures. Over 70% of all cases in Massachusetts and Rhode Island are successfully treated at the site of the exposure – thereby eliminating the need for those callers to seek care at their local emergency department.

It is unknown who and when we will help next, but we do know that poisonings happen – and we are always committed and prepared to react appropriately. We are charged to meet the challenges of the year ahead as we grow stronger as an organization in our work to serve the public and healthcare professionals of Massachusetts and Rhode Island.

The Poison Center recognizes that poisonings are a preventable injury. In response, the Poison Center's Public Education Committee continues its work to reduce both unintentional and intentional poisonings through prevention education and public awareness of the Center's services.

I hope you'll find our 2017 Annual Report useful, as a tool to better understand who we are, and what we are able to do for the people of our region.

Michele M. Burns, MD, MPH
Medical Director

2017 Executive Report

2017 was a dynamic year for the Regional Center for Poison Control and Prevention serving Massachusetts and Rhode Island.

- In 2017, the Poison Center managed 45,500 poison exposure and general information calls, which translates to 125 calls every day.
- 9,537 of the exposure calls, often from hospital healthcare professionals, required multiple follow ups to provide the appropriate care and management of the patient.

Mission:

The mission of the Regional Center for Poison Control and Prevention is to provide assistance and expertise in the medical diagnosis, management and prevention of poisonings involving the people of Massachusetts and Rhode Island.

By maintaining its excellent standard of care in both clinical research and professional development, the Center continually strives to improve the quality of medical care given to its patients.

In addition, the Center develops and implements public education and information campaigns to prevent injuries due to intentional and unintentional poisonings.

What is a poisoning?

A poisoning is caused by any substance that has a toxic, or damaging, effect to the tissues and/or systems of the body upon exposure. Exposures can occur through ingestion, inhalation or through dermal and ocular contact.

Any substance may become a poison if used incorrectly, or in the wrong amount, or by a person with a particular sensitivity to the product. Common poisons include household products, industrial and environmental chemicals, medications (prescription, over-the-counter, veterinary, herbal), illicit drugs, and bites and stings.

Whom do we serve and why do they call?

In 2017, the Center managed a total of 45,500 incoming calls, including 40,724 exposure calls and 4,776 information calls.

2017 - Type of Call Massachusetts	Totals
Information	3,688
Exposure	32,207
Total	35,895

2017 - Type of Call Rhode Island	Totals
Information	507
Exposure	5,098
Total	5,605

** The remaining 4,000 calls not noted in the above tables were received from states other than Massachusetts or Rhode Island.

Where do poisonings happen?

Of the 40,724 exposure calls managed in 2017 by the Poison Center, 37,990 were exposures that took place in a home residence; the remaining 2,734 calls occurred in other locations including schools, workplaces and other public areas.

Where do our calls come from?

Of the 40,724 exposure calls managed in 2017 by the Poison Center, 28,813 of the exposure calls came from a home residence, 9,537 came from health care facilities or medical professionals, and the remaining 2,374 came from various other sources such as public areas, schools or workplaces.

Where are these poisonings managed?

In 2017 the majority of exposure calls 27,414 (67%) were managed on-site and did not require treatment at a healthcare facility.

2017 - Management Site	Totals
Onsite	27,414
Health Care Facility	12,663
Refused referral	475
Other/Unknown	172

2017 - Managed at Health Care Facility	Totals
Treated and released	3,832
Admitted: Critical	1,480
Admitted: Non-critical	1,793
Admitted: Psychiatric	2,125
Patient lost to follow up/left AMA	3,433
Unspecified level of care	0

Who are the poisoned?

Gender	2017	MA	RI
Male Exposure	19,283	15,202	2,362
Female Exposure	21,143	16,760	2,695
Unknown/Invalid/Missing	298	245	41
Total	40,724	32,207	5,098

Of the 40,724 exposure cases, 18,521 (45%) of the calls involved children 5 years of age and younger. Specifically the greatest number of exposure calls in age categories involved one and two year olds.

Age	Total	MA	RI	Other
<1	2,099	1,614	201	284
1	5,807	4,392	651	764
2	5,554	4,251	628	675
3	2,743	2,134	293	316
4	1,362	1,044	149	169
5	931	757	99	75
6-12	3,208	2,639	392	177
13-19	3,335	2,786	438	111
20-29	3,216	2,513	473	230
30-39	2,373	1,847	373	153
40-49	2,040	1,660	303	77
50-59	1,990	1,620	305	65
60-69	1,541	1,254	227	60
70+	1,558	1,286	208	64
Unknown Child	142	121	12	9
Unknown Child ≤ 5	25	22	0	3
Unknown adult over 20	2,541	2,058	315	168
Unknown age	259	209	31	19
Invalid/Missing age	0	0	0	0

What are the common agents of poisonings?

Category: Drug	Exposures	Percentage of Total Exposures
Analgesics	5,165	10.79%
Antidepressants	2,652	5.54%
Sedatives/Hypnotics/Antipsychotics	2,439	5.09%
Cardiovascular Drugs	1,964	4.10%
Antihistamines	1,851	3.87%
Others	12,818	26.82%
Total	26,889	56.21%

Top Five Substances Most Frequent in Drug Related Poison Exposures – 2017	
Analgesics	Ibuprofen, Acetaminophen Alone, Opioids, Acetaminophen Combination with Other Drugs, and Aspirin Alone
Antidepressants	Trazodone, Bupropion, Sertraline, Fluoxetine, and Citalopram
Sedatives/Hypnotics/Antipsychotics	Benzodiazepine, Atypical antipsychotic, Phenothiazine, Buspirone, and Sled Aid (OTC)
Cardiovascular Drugs	Beta Blocker, Clonidine, ACE Inhibitor, Calcium Antagonist, and Antihyperlipidemic
Antihistamines	Diphenhydramine, H2 Receptor Antagonist

Category: Non-Drug	Exposures	Percentage of Total Exposures
Cosmetics/personal care products	4,485	9.37%
Cleaning substances (household)	3,655	7.63%
Foreign bodies/toys/miscellaneous	2,132	4.45%
Pesticides	1,184	2.47%
Plants	1,163	2.43%
Others	8,328	17.44%
Total	20,947	43.79%

Top Five Substances Most Frequent in Non-Drug Related Poison Exposures – 2017	
Substance	Most Common Products
Cosmetics/personal care products	Cream/lotion/make-up, Ethanol-Based Hand sanitizers, Deodorant, Toothpaste with Fluoride, Soap
Cleaning substances (household)	Hypochlorite bleach, Miscellaneous Cleaners, Wall/Floor/Tile Cleaners, Laundry Detergents, Automatic Dishwasher Detergents
Foreign bodies/toys/miscellaneous	Glow product, Desiccant, Toys, Feces/Urine, Glass
Pesticides	Insecticides, Repellents, Rodenticides, Herbicides, Fungicides
Plants	Gastrointestinal Irritant, Amygdalin/Cyanogenic Glycoside, Dermatitis, Non-Toxic, Oxalate

** Please note that total drug and non-drug exposures are greater than total exposure calls as many people were exposed to multiple substances.

What was the intent related to the poisoning?

The majority of poison exposures in 2017 were recorded as unintentional. Of the 40,724 exposure calls, 6,586 were classified as intentional poisonings and of those 5,155 were recorded as suspected suicides.

Intent	Total
Suspected Suicide	5,155
Intentional Misuse	344
Intentional Abuse	757
Unknown	330

Definition of Intent	
Suspected Suicide:	An exposure resulting from the inappropriate use of substance for reasons that suspected to be self-destructive or manipulative.
Intentional Misuse:	An exposure resulting from the intentional improper or incorrect use of a substance for reasons other than the pursuit of a psychotropic or euphoric effect.
Intentional Abuse:	An exposure resulting from the intentional improper or incorrect use of a substance where the victim was likely attempting to achieve a euphoric or psychotropic effect. All recreational use of substances for any effect is included.
Unknown:	An exposure that is determined to be intentional, but the specific motive is unknown.

What was the result of the poisoning?

Of the 40,724 exposure calls recorded in 2017, 27,259 cases did not require follow-up by the Poison Center staff because the exposure was judged to cause only minimal effect or to be a non-toxic event. 3,414 cases could not be followed.

Cases Not Followed	Total
Minimal Effect	18,321
Judged Nontoxic	8,938
Unable to Follow	3,414

2017 Executive Report

In 2017, 10,051 poison exposures were followed to determine the medical outcome of the poisoning. Below are the results for those cases by category of medical outcome.

Definition of Medical Outcomes		
Minor Effect:	The patient exhibited some symptoms as a result of the exposure, but they were minimally bothersome to the patient. The patient has returned to a pre-exposure state of well-being and has no residual disability or disfigurement.	2,661
Moderate Effect:	The patient exhibited symptoms as a result of the exposure that were more pronounced, more prolonged or more of a systemic nature than minor symptoms.	3,556
Major Effect:	The patient exhibited symptoms as a result of the exposure. The symptoms were life-threatening or resulted in significant residual disability or disfigurement.	505
Death:	The patient died as a result of the exposure or as a direct complication of the exposure which was unlikely to have occurred had the toxic exposure not preceded the complication. Only included are those deaths that are probably or undoubtedly related to the exposure.	23
Unrelated Effect:	Based upon all information available, the exposure was probably not responsible for the effect(s).	435
No Effect:	The patient developed no symptoms as a result of the exposure.	2,837

Summary of death cases

The deaths listed below are those cases reported to the Poison Center by health care facilities for the management of a suspected poisoning that resulted in a fatal outcome. In those cases where several substances were ingested, the cause of death was determined by the substance deemed to have had the most toxic effect.

Age	Male	Female	Substances
20-29	5		Seroquel, Cocaine, Stuffers, Diuretics, Aspirin, Carbon Monoxide
30-39	3	3	Metoprolol Succinate Extended-Release Oral Tablet, Amlodipine, HCTZ, Seroquel, KCL, Escitalopram, Fentanyl, Heroin, ETOH, Unknown Drug, MDMA, Cocaine, Amphetamine, Methadone and Related Agents, Acetaminophen
40-49	1	3	Unknown Drug, ETOH, Acetaminophen, Bupropion, Klonopin
50-59	2	1	Doxepin, Hydroxyzine, Carbon Monoxide, Cyanide, Zzzquil Oral Capsule
60-69		3	Cartia XT Oral Capsule, Citalopram and Related Agents, Wine, Amitriptyline, Vicodin, Valium, Unknown Drug
70+		2	Acetaminophen, Metformin
Total	11	12	

2017 Deaths by State	Total
Massachusetts	15
Rhode Island	8

Most Common Substances by Category

The following tables describe the incidence of the most common exposures reported to the Center, divided by pharmaceutical (drug) and non-pharmaceutical (non-drug) substances and by frequency of the most common substances within each category.

Exposure Calls for all Substances, Top 5 Drug categories	
Analgesics	
Ibuprofen	1,758
Acetaminophen Alone	1,575
Opioids	564
Acetaminophen Combination	482
Aspirin Alone	284
Others	502
Category Total	5,165
Antidepressants	
Trazodone	424
Bupropion	409
Sertraline	357
Fluoxetine	316
Citalopram	217
Others	929
Category Total	2,652
Sedatives/hypnotics/antipsychotics	
Benzodiazepine	1,162
Atypical Antipsychotic	834
Phenothiazine	146
Buspirone	74
Sleep Aid (OTC)	33
Others	190
Category Total	2,439
Cardiovascular Drugs	
Beta Blockers	447
Clonidine	362
ACE Inhibitor	245
Calcium Antagonist	229
Antihyperlipidemic	205
Others	476
Category Total	1,964
Antihistamines	
Diphenhydramine	743
H2 Receptor Antagonist	172
Others	936
Category Total	1,851
Total Top 5 Drug	14,071
Total Drug Overall (includes drug categories not listed)	26,889

Exposure Calls for all Substances, Top 5 Non-Drug categories	
Cosmetics/personal care products	
Cream/lotion/make-up	728
Ethanol-Based Hand Sanitizer	410
Deodorant	373
Toothpaste with Fluoride	368
Soap	357
Others	2,249
Category Total	4,485
Cleaning substances (household)	
Hypochlorite Bleach	779
Miscellaneous Cleaners	629
Wall/Floor/Tile Cleaners	426
Laundry Detergents	352
Automatic Dishwasher Detergents	268
Others	1,201
Category Total	3,655
Foreign bodies/toys/miscellaneous	
Glow Product	468
Desiccant	341
Toy	161
Feces/Urine	125
Glass	86
Others	951
Category Total	2,132
Pesticides	
Insecticides	759
Repellents	195
Rodenticides	133
Herbicides	69
Fungicides	26
Others	2
Category Total	1,184
Plants	
Gastrointestinal Irritant	159
Amygdalin/Cyanogenic Glycoside	120
Dermatitis	112
Non-Toxic	107
Oxalate	87
Others	578
Category Total	1,163
Total Top 5 Non-Drug	12,619
Total Non-Drug Overall (includes non-drug categories not listed)	20,947

2017 Executive Report

Thank you for reading our Annual Report. If you are interested in more information about the Regional Center for Poison Control and Prevention please contact us at 1-800-222-1222 or visit our website www.maripoisoncenter.org.