

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 46,000 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 expertise in clinical consults to medical professionals throughout both states on complicated 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 2015 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

2015 Executive Report

2015 was a dynamic year for the Regional Center for Poison Control and Prevention serving Massachusetts and Rhode Island.

- In 2015, the Poison Center managed 46,896 poison exposure and general information calls, which translates to 131 calls every day.
- 8,685 of the exposure calls, often from hospital healthcare professionals, required multiple follow ups to provide the appropriate care and management of the patient.
- Over 83 physicians, nurses, and pharmacists were trained in the discipline of Toxicology and Pharmacology so that the care of future poisoned patients is ensured.

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.

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Whom do we serve and why do they call?

In 2015, the Center managed a total of 46,896 incoming calls, including 41,320 exposure calls and 5,576 information calls.

2015 - Type of Call Massachusetts	Totals
Information	4,080
Exposure	33,331
Total	37,411

2015 - Type of Call Rhode Island	Totals
Information	538
Exposure	5,236
Total	5,774

** The remaining 3,711 calls not noted in the above tables were received from states other than Massachusetts or Rhode Island.

Where do poisonings happen?

Of the 41,320 exposure calls managed in, 2015 by the Poison Center, 39,140 were exposures that took place in a home residence; the remaining 2,180 calls occurred in other locations including schools, workplaces and other public areas.

Where do our calls come from?

Of the 41,320 exposure calls managed in, 2015 by the Poison Center, 30,504 of the exposure calls came from a home residence, 8,685 came from health care facilities or medical professionals, and the remaining 2,131 came from various other sources such as public areas, schools or workplaces.

Where are these poisonings managed?

In 2015 the majority of exposure calls, 29,018 (70%) were managed on-site and did not require treatment at a healthcare facility.

2015 - Management Site	Totals
Onsite	29,018
Health Care Facility	11,908
Refused referral	371
Other/Unknown	23

2015 - Managed at Health Care Facility	Totals
Treated and released	3,532
Admitted: Critical	1,514
Admitted: Non-critical	1,624
Admitted: Psychiatric	1,733
Patient lost to follow up/left AMA	3,505
Unspecified level of care	0

Who are the poisoned?

Gender	2015	MA	RI
Male Exposure	19,727	15,857	2,494
Female Exposure	21,389	17,299	2,721
Unknown/Invalid/Missing	204	175	21
Total	41,320	33,331	5,236

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Of the 41,320 exposure cases, 1,714 (48%) 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	2,179	1,723	204	252
1	6,351	5,002	737	612
2	6,394	5,031	772	591
3	2,858	2,248	356	254
4	1,455	1,139	189	127
5	847	698	89	60
6-12	3,101	2,594	379	128
13-19	3,232	2,751	397	84
20-29	3,231	2,608	428	195
30-39	2,436	1,952	353	131
40-49	2,179	1,799	329	51
50-59	2,125	1,739	330	56
60-69	1,497	1,242	209	46
70+	1,586	1,330	223	33
Unknown Child	79	68	7	4
Unknown Child ≤ 5	27	25	1	1
Unknown adult over 20	1,617	1,281	216	120
Unknown age	122	97	17	8
Invalid/Missing age	4	4	0	0

What are the common agents of poisonings?

Category: Drug	Exposures	Percentage of Total Exposures
Analgesics	5,150	10.68%
Sedatives/hypnotics/antipsychotics	2,611	5.42%
Antidepressants	2,557	5.30%
Antihistamines	1,872	3.88%
Cardiovascular drugs	1,824	3.78%
Others	12,782	26.52%
Total	26,796	55.58%

Top Five Substances Most Frequent in Drug Related Poison Exposures – 2015

Analgesics	Acetaminophen only or in combination with other drugs, Aspirin only or in combination with other drugs, Opioids, Ibuprofen
Sedatives/hypnotics/antipsychotics	Atypical antipsychotic, Benzodiazepine, Phenothiazine
Antidepressants	Lithium, Bupropion, Trazodone, Citalopram, Fluoxetine, Sertraline, Venlafaxine, Amitriptyline
Antihistamines	H2 receptor antagonist, Diphenhydramine
Cardiovascular drugs	Ace inhibitor, Alpha blocker, Angiotensin receptor blocker, Antihyperlipidemic, Antihypertensive, Beta blocker, Calcium antagonist, Clonidine

Category: Non-Drug	Exposures	Percentage of Total Exposures
Cosmetics/personal care products	4,969	10.31%
Cleaning substances (household)	3,730	7.74%
Foreign bodies/toys/miscellaneous	2,274	4.72%
Alcohols	1,200	2.49%
Plants	1,180	2.45%
Others	8,062	16.71%
Total	21,415	44.42%

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Top Five Substances Most Frequent in Non-Drug Related Poison Exposures – 2015	
Substance	Most Common Products
Cosmetics/personal care products	Cream/lotion/make-up, Toothpaste, Deodorant, Hand sanitizers, Mouthwash, Soap, Suntan/sunscreen
Cleaning substances (household)	Automatic dishwasher detergents, Hypochlorite bleach, Disinfectants, Hand dishwashing material, Laundry detergents, Wall/floor/tile cleaners
Foreign bodies/toys/miscellaneous	Desiccant, Feces/Urine, Glass, Glow product, Toys
Alcohols	Ethanol: Beverage, Isopropanol, Isopropanol without methyl salicylate
Plants	Amygdalin/cyanogenic glycoside, Dermatitis, Gastrointestinal irritant, 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 2015 were recorded as unintentional. Of the 41,320 exposure calls, 6,355 were classified as intentional poisonings and of those 4,732 were recorded as suspected suicides.

Intent	Total
Suspected Suicide	4,732
Intentional Misuse	411
Intentional Abuse	627
Unknown	585

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 41,320 exposure calls recorded in 2015, 29,395 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. 3,111 cases could not be followed.

Cases Not Followed	Total
Minimal Effect	21,616
Judged Nontoxic	7,779
Unable to Follow	3,111

In 2015, 8,771 poison exposures were followed to determine the medical outcome of the poisoning. Below are the results for those cases by category of medical outcome.

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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.	2,040
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.	3,147
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.	468
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.	38
Unrelated Effect:	Based upon all information available, the exposure was probably not responsible for the effect(s).	281
No Effect:	The patient developed no symptoms as a result of the exposure.	2,797

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	2	5	Aspirin, Tylenol, Unknown Drug, APAP and DXM with Antihistamine, Propranolol, Bupropion, Sodium Azide
30-39	6	2	Atenolol, Risperidone, Lamotrigine, Cocaine, Opiates, Benzodiazepines, Marijuana, Unknown Drug, Lamictal, Effexor, Citalopram HBR
40-49	2	4	Tylenol, Methanol, Rodenticide, Nifedipine ER, APAP, Bisoprolol, ETOH, Triamterene and HTCZ, Trazodone, Atenolol, Unknown Drug
50-59	0	3	Buprenorphine/Naloxone, Quetiapine, ETOH, Methadone, Valium, Amlodipine, Atenolol, Atypical antipsychotic
60-69	3	4	Propranolol, Remeron coated tablet, Alprazolam Trileptal oral tablet, Amphetamine, Seroquel, Cisatracurium, Metformin HCL, ACTOS, Amlodipine, Metoprolol, Lisinopril, Citalopram, Metoprolol Succinate, Aspirin, Oxcarbazepine, Olanzapine, Levothyroxine, Prilosec Oral Capsule, Acetaminophen,
70+	4	3	Aspirin, Metoprolol, Lisinopril, Vitamin D, Crestor 5, Percocet 2.5, Household Cleaning Agent, ETOH, APAP, Digoxin, Coumadin, Vicodin, Unknown Drug
Total	17	21	

2015 Deaths by State	Total
Massachusetts	33
Rhode Island	5

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.

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Exposure Calls for all Substances, Top 5 Drug categories	
Analgesics	
Acetaminophen only or in combination with other drugs	2,186
Aspirin only or in combination with other drugs	297
Opioids	595
Ibuprofen	1,680
Others	392
Category Total	5,150
Antidepressants	
Lithium	185
Bupropion	316
Trazodone	430
Citalopram	239
Fluoxetine	280
Sertraline	298
Venlafaxine	154
Amitriptyline	147
Others	508
Category Total	2,557
Sedatives/hypnotics/antipsychotics	
Atypical antipsychotic	859
Benzodiazepine	1,294
Phenothiazine	128
Others	330
Category Total	2,611
Cardiovascular drugs	
ACE inhibitor	241
Alpha blocker	110
Angiotensin receptor blocker	104
Antihyperlipidemic	193
Antihypertensive	91
Beta blocker	407
Calcium antagonist	202
Clonidine	349
Others	127
Category Total	1,824
Antihistamines	
H2 receptor antagonist	174
Diphenhydramine	764
Others	934
Category Total	1,872
Total Top 5 Drug	14,014
Total Drug Overall (includes drug categories not listed)	26,796

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Exposure Calls for all Substances, Top 5 Non-Drug categories	
Cosmetics/personal care products	
Cream/lotion/make-up	743
Toothpaste	510
Deodorant	421
Hand sanitizers	638
Mouthwash	369
Soap	380
Suntan/sunscreen	286
Others	1,622
Category Total	4,969
Cleaning substances (household)	
Automatic dishwasher detergents	324
Hypochlorite bleach	712
Disinfectants	263
Hand dishwashing material	200
Laundry detergents	419
Wall/floor/tile cleaners	451
Others	1,361
Category Total	3,730
Foreign bodies/toys/miscellaneous	
Desiccant	445
Feces/Urine	118
Glass	105
Glow product	474
Toys	172
Others	960
Category Total	2,274
Alcohols	
Ethanol: Beverage	843
Isopropanol	75
Isopropanol without methyl salicylate	154
Others	128
Category Total	1,200
Plants	
Amygdalin/cyanogenic glycoside	85
Dermatitis	111
Gastrointestinal irritant	191
Oxalate	93
Others	700
Category Total	1,180
Total Top 5 Non-Drug	13,353
Total Non-Drug Overall (includes non-drug categories not listed)	21,415

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.