

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



Medical Director  
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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 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 2016 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

## 2016 Executive Report

2016 was a dynamic year for the Regional Center for Poison Control and Prevention serving Massachusetts and Rhode Island.

- In 2016, the Poison Center managed 46,392 poison exposure and general information calls, which translates to 127 calls every day.
- 9,398 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.

## 2016 Executive Report

### Whom do we serve and why do they call?

In 2016, the Center managed a total of 46,392 incoming calls, including 41,407 exposure calls and 4,985 information calls.

2016 - Type of Call Massachusetts	Totals
Information	3,826
Exposure	32,937
Total	36,763

2016 - Type of Call Rhode Island	Totals
Information	566
Exposure	5,286
Total	5,852

\*\* The remaining 3,777 calls not noted in the above tables were received from states other than Massachusetts or Rhode Island.

### Where do poisonings happen?

Of the 41,407 exposure calls managed in 2016 by the Poison Center, 39,152 were exposures that took place in a home residence; the remaining 2,255 calls occurred in other locations including schools, workplaces and other public areas.

### Where do our calls come from?

Of the 41,407 exposure calls managed in 2016 by the Poison Center, 29,971 of the exposure calls came from a home residence, 9,398 came from health care facilities or medical professionals, and the remaining 2,038 came from various other sources such as public areas, schools or workplaces.

### Where are these poisonings managed?

In 2016 the majority of exposure calls 28,420 (69%) were managed on-site and did not require treatment at a healthcare facility.

2016 - Management Site	Totals
Onsite	28,420
Health Care Facility	12,566
Refused referral	323
Other/Unknown	98

2016 - Managed at Health Care Facility	Totals
Treated and released	3,707
Admitted: Critical	1,601
Admitted: Non-critical	1,592
Admitted: Psychiatric	1,936
Patient lost to follow up/left AMA	3,730
Unspecified level of care	0

## 2016 Executive Report

### Who are the poisoned?

Gender	2016	MA	RI
Male Exposure	19,563	15,636	2,409
Female Exposure	21,518	17,085	2,795
Unknown/Invalid/Missing	326	216	82
Total	41,407	32,937	5,286

Of the 41,407 exposure cases, 19,558 (47%) 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	2,102	1,635	205	262
1	6,025	4,598	730	697
2	6,077	4,737	679	661
3	2,954	2,309	362	283
4	1,476	1,169	168	139
5	905	728	105	72
6-12	3,019	2,530	337	152
13-19	3,315	2,799	435	81
20-29	3,317	2,602	452	263
30-39	2,466	1,945	354	167
40-49	2,048	1,662	319	67
50-59	2,112	1,708	338	66
60-69	1,471	1,204	208	59
70+	1,541	1,284	209	48
Unknown Child	226	188	24	14
Unknown Child ≤ 5	19	15	1	3
Unknown adult over 20	2,188	1,708	341	139
Unknown age	144	114	19	11
Invalid/Missing age	2	2	0	0

### What are the common agents of poisonings?

Category: Drug	Exposures	Percentage of Total Exposures
Analgesics	5,170	10.69%
Antidepressants	2,605	5.39%
Sedatives/Hypnotics/Antipsychotics	2,560	5.29%
Antihistamines	1,922	3.97%
Cardiovascular drugs	1,872	3.87%
Others	12,971	26.81%
<b>Total</b>	<b>27,100</b>	<b>56.02%</b>

## 2016 Executive Report

<b>Top Five Substances Most Frequent in Drug Related Poison Exposures – 2016</b>	
Analgesics	Ibuprofen, Acetaminophen Alone, Opioids, Acetaminophen Combination with Other Drugs, and Aspirin Alone
Antidepressants	Trazodone, Bupropion, Sertraline, Fluoxetine, and Citalopram
Sedatives/Hypnotics/Antipsychotics	Atypical antipsychotic, Benzodiazepine, Phenothiazine, Buspirone, and Sled Aid (OTC)
Antihistamines	Diphenhydramine and H2 receptor antagonist
Cardiovascular drugs	Beta Blocker, Clonidine, ACE Inhibitor, Calcium Antagonist, and Antihyperlipidemic

<b>Category: Non-Drug</b>	<b>Exposures</b>	<b>Percentage of Total Exposures</b>
Cosmetics/personal care products	4,896	10.12%
Cleaning substances (household)	3,641	7.53%
Foreign bodies/toys/miscellaneous	2,341	4.84%
Alcohols	1,230	2.54%
Pesticides	1,168	2.41%
Others	7,997	16.54%
<b>Total</b>	<b>21,273</b>	<b>43.98%</b>

<b>Top Five Substances Most Frequent in Non-Drug Related Poison Exposures – 2016</b>	
<b>Substance</b>	<b>Most Common Products</b>
Cosmetics/personal care products	Cream/lotion/make-up, Toothpaste with Fluoride, Hand sanitizers, Deodorant, and Soap
Cleaning substances (household)	Hypochlorite bleach, Wall/floor/tile cleaners, Laundry Detergents, Automatic Dishwasher Detergents, and Disinfectants
Foreign bodies/toys/miscellaneous	Glow product, Desiccant, Toys, Feces/Urine, and Bubble Blowing Solution
Alcohols	Ethanol: Beverage, Isopropanol without methyl salicylate, Isopropanol, Methanol, and Ethanol: Other
Pesticides	Pyrethroid, Rodenticides, Borate/Boric Acid, Insect Repellent with Deet, Pyrethrin

\*\* 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 2016 were recorded as unintentional. Of the 41,407 exposure calls, 6,627 were classified as intentional poisonings and of those 5,093 were recorded as suspected suicides.

<b>Intent</b>	<b>Total</b>
Suspected Suicide	5,093
Intentional Misuse	409
Intentional Abuse	686
Unknown	439

## 2016 Executive Report

<b>Definition of Intent</b>	
<b>Suspected Suicide:</b>	An exposure resulting from the inappropriate use of substance for reasons that suspected to be self-destructive or manipulative.
<b>Intentional Misuse:</b>	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.
<b>Intentional Abuse:</b>	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.
<b>Unknown:</b>	An exposure that is determined to be intentional, but the specific motive is unknown.

### What was the result of the poisoning?

Of the 41,407 exposure calls recorded in 2016, 28,138 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. 3,286 cases could not be followed.

<b>Cases Not Followed</b>	<b>Total</b>
Minimal Effect	20,699
Judged Nontoxic	7,439
Unable to Follow	3,286

In 2016, 9,926 poison exposures were followed to determine the medical outcome of the poisoning. Below are the results for those cases by category of medical outcome.

<b>Definition of Medical Outcomes</b>		
<b>Minor Effect:</b>	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.	2,451
<b>Moderate Effect:</b>	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.	3,335
<b>Major Effect:</b>	The patient exhibited symptoms as a result of the exposure. The symptoms were life-threatening or resulted in significant residual disability or disfigurement.	538
<b>Death:</b>	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.	36
<b>Unrelated Effect:</b>	Based upon all information available, the exposure was probably not responsible for the effect(s).	368
<b>No Effect:</b>	The patient developed no symptoms as a result of the exposure.	3,196

## 2016 Executive Report

### 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
13-19	2	0	Unknown Drug, Oxycodone, Lorazepam, ETOH
20-29	0	2	Tylenol, Venlafaxine
30-39	2	3	Unknown Drug, Adderal, Heroin, Cannabinoids, Cocaine, Amitriptyline, Products of Combustion
40-49	5	5	Effexor, Baclofen, Aspirin, Lamictal, Klonopin, Verapamil, Diphenhydramine, Clonazepam, Levothyroxine, Norvasc, Seroquel, Abilify, APAP, Opiates, Benzodiazepines, Hydrochloroquine, Methotrexate, Unknown Drug, Heroin, ETOH, Cocaine, Yohimbe, Gingko Biloba
50-59	2	3	Digoxin, Verapamil, Unknown Drug, Metformin, Requip
60-69	1	5	Cyanide, Oxycodone, Hydrogen Peroxide, Atenolol, Amitriptyline, Klonopin, Tylenol, Diltiazem CD,
70+	1	3	Nifedipine, Metoprolol, Digoxin, Ambien, Unknown Drug
Unknown	1	1	Digoxin, Diltiazem, Warfarin, Alprazolam, Cocaine, Clonazepam
<b>Total</b>	<b>14</b>	<b>22</b>	

2016 Deaths by State	Total
Massachusetts	27
Rhode Island	9

**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.

<b>Exposure Calls for all Substances, Top 5 Drug categories</b>	
<b>Analgesics</b>	
Ibuprofen	1,732
Acetaminophen Alone	1,492
Opioids	712
Acetaminophen Combination	551
Aspirin Alone	320
Others	363
<b>Category Total</b>	<b>5,170</b>
<b>Antidepressants</b>	
Trazodone	386
Bupropion	379
Sertraline	377
Fluoxetine	272
Citalopram	229
Others	962
<b>Category Total</b>	<b>2,605</b>
<b>Sedatives/hypnotics/antipsychotics</b>	
Benzodiazepine	1,282
Atypical Antipsychotic	846
Phenothiazine	123
Buspirone	57
Sleep Aid (OTC)	31
Others	221
<b>Category Total</b>	<b>2,560</b>
<b>Antihistamines</b>	
Diphenhydramine	845
H2 receptor antagonist	162
Others	915
<b>Category Total</b>	<b>1,922</b>
<b>Cardiovascular Drugs</b>	
Beta Blocker	401
Clonidine	357
Calcium Antagonist	238
Antihyperlipidemic	192
ACE Inhibitor	243
Others	441
<b>Category Total</b>	<b>1,872</b>
<b>Total Top 5 Drug</b>	<b>14,129</b>
<b>Total Drug Overall (includes drug categories not listed)</b>	<b>27,100</b>



<b>Exposure Calls for all Substances, Top 5 Non-Drug categories</b>	
<b>Cosmetics/personal care products</b>	
Cream/lotion/make-up	718
Toothpaste with Fluoride	480
Ethanol-Based Hand Sanitizer	452
Deodorant	430
Soap	379
Others	2,437
<b>Category Total</b>	<b>4,896</b>
<b>Cleaning substances (household)</b>	
Hypochlorite Bleach	745
Wall/Floor/Tile Cleaners	480
Laundry Detergents	373
Automatic Dishwasher Detergent	320
Disinfectants	248
Others	1,475
<b>Category Total</b>	<b>3,641</b>
<b>Foreign bodies/toys/miscellaneous</b>	
Glow Product	513
Desiccant	442
Toy	144
Feces/Urine	139
Bubble Blowing Solution	98
Others	1,005
<b>Category Total</b>	<b>2,341</b>
<b>Alcohols</b>	
Ethanol: Beverage	911
Isopropanol without methyl salicylate	120
Isopropanol	89
Methanol	19
Ethanol: Other	18
Others	73
<b>Category Total</b>	<b>1,230</b>
<b>Pesticides</b>	
Pyrethroid	219
Rodenticide	165
Borate/Boric Acid	114
Insect Repellent with DEET	89
Pyrethrin	68
Others	513
<b>Category Total</b>	<b>1,168</b>
<b>Total Top 5 Non-Drug</b>	<b>13,276</b>
<b>Total Non-Drug Overall (includes non-drug categories not listed)</b>	<b>21,273</b>

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](http://www.maripoisoncenter.org).