

The New York City Poison Control Center: A Public Health Perspective

Poison Control Centers (PCCs) provide free and confidential treatment advice and information 24 hours a day, seven days a week, with translation services in more than 150 languages. Calls are answered by registered pharmacists and nurses certified in poison information. PCCs aim to reduce unnecessary emergency department (ED) visits.

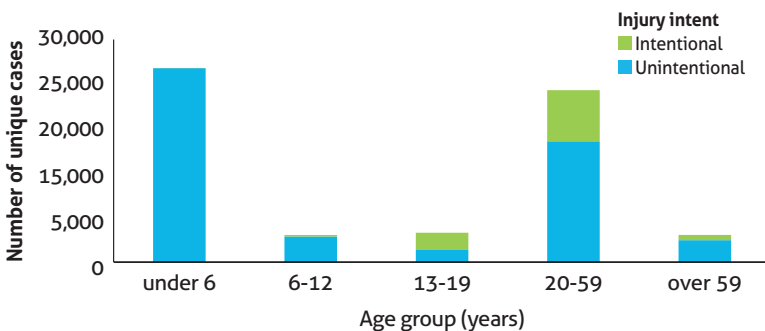
It has been estimated that every dollar invested in PCCs saves \$13.39 in health care costs and preventing lost productivity.¹ The New York City

(NYC) PCC handles calls from NYC’s five boroughs, Westchester, Nassau and Suffolk counties. In 2016, the NYC PCC managed 63,093 cases, that is, unique exposures to potential poisoning.* Calls originated from residences (69%), health care facilities (26%), work sites (2%) and public spaces (0.5%).

This report provides data on unintentional and intentional poisoning exposures as well as exposures due to medication errors reported to the NYC PCC in 2016. Recommendations to reduce the risk of poisoning are provided on page four.

The New York City Poison Control Center manages both unintentional and intentional exposures

New York City Poison Control Center cases by intent and age group, 2016



Source: NYC Poison Control Center 2016 calls from residences, public spaces, worksites and health care facilities; data shown represent unique cases

- In 2016, among potential poisoning cases, 50,051 cases (79%) were related to unintentional poisoning and 10,139 (16%) were related to intentional poisonings. The remaining 2,903 cases (5%) were categorized as unknown/other/adverse reaction.
- Among unintentional cases, 25,716 (41%) involved children under 6 years old.
- More than 6,000 potential poisoning cases were related to intentional suicide attempts. The remaining cases (about 4,000) involved intentional abuse including misuse of a substance.
- Analgesics (pain medications) were the most common class of substances involved in intentional overdoses (11% of cases).

Definitions: *Cases refer to unique human exposures to potential poisoning. Calls refer to all calls received about a potential exposure case; there may be more than one call per case.

Unintentional injury is defined as an injury that occurred without intent to cause harm, also known as an "accident".

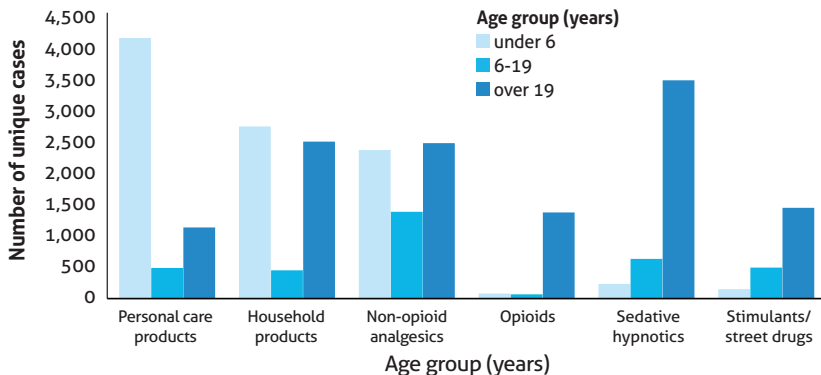
Intentional injury refers to an Injury that occurred with the intent to cause harm.

Poisoning is defined as injury resulting from ingestion, inhalation, absorption through the skin, or injection of a drug, toxin or other chemical resulting in a harmful effect (e.g., drug overdoses).

Neighborhood poverty (based on UHF) defined as percent of residents with incomes below 100% of the Federal Poverty Level (FPL) per American Community Survey, 2011-2015. Neighborhoods are categorized into four groups as follows: "Low poverty" neighborhoods are those with <10% of the population living below the FPL; "medium poverty" neighborhoods have 10 to <20% of the population below FPL; "high poverty" neighborhoods have 20 to <30% of the population living below the FPL; "very high poverty" neighborhoods have ≥30% of the population living below the FPL.

The substances involved in most common poisoning exposures vary by age group

Top categories of poisoning exposures[^] received by the New York City Poison Control Center, by age group, 2016

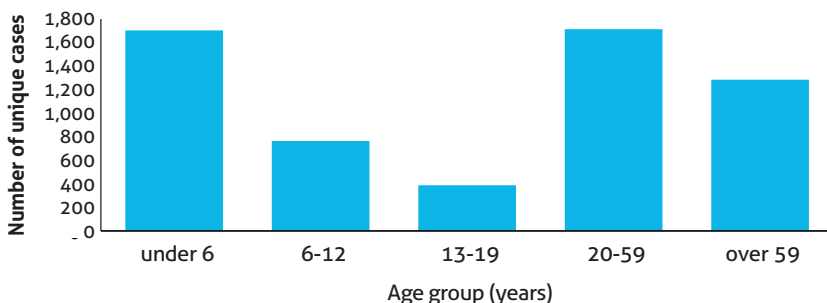


[^]Poisoning exposures include both unintentional and intentional intent. Number of unique cases=25,343
Stimulants/street drugs include synthetic cannabinoids, cocaine and amphetamines
Source: NYC Poison Control Center 2016 calls from residences, public spaces, worksites and health care facilities; data shown represent unique cases.

- Personal care products and household cleaners were the most common products involved in poisoning exposures among children younger than 6 years old. These exposures include both unintentional and intentional poisoning cases.
- Non-opioid analgesics were often involved in poisoning exposures among all age groups.
- Among adults over age 19, the number of exposures to sedative-hypnotic drugs (specifically to benzodiazepines) was two times the number of exposures to opioids and stimulants/street drugs (including synthetic cannabinoids, cocaine and amphetamines)

One in nine poisoning exposures is related to medication error

New York City Poison Control Center unintentional poisoning cases due to medication error, by age group, 2016



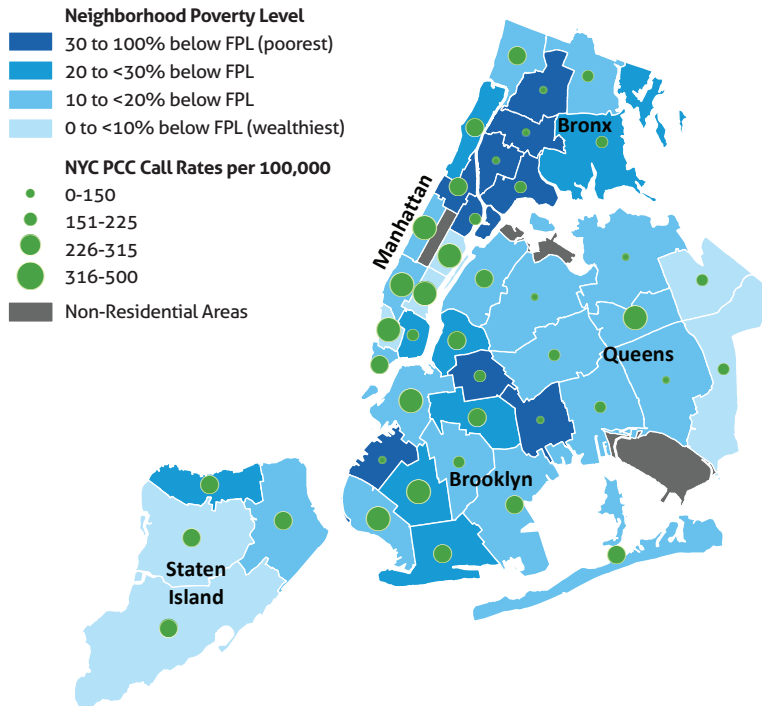
Medication error is defined as taking or giving medication incorrectly.
Source: NYC Poison Control Center 2016 calls from residences, public spaces, worksites and health care facilities; data shown represent unique cases.

- Cases of unintentional poisoning due to medication error represented 12% of the total cases (7,410) managed by the NYC PCC in 2016.
- The highest number of cases due to medication errors occurred among adults between 20 and 59 years old.
- The most common reason for medication errors across all age groups was medication inadvertently given or taken twice.
- In children younger than 6 years old, double dosing errors often resulted from multiple caregivers giving medication.

Data Sources: New York City Poison Control Center (PPC), 2016. Data include human exposures, defined as unique cases called to NYC PCC involving a human and a potential poisoning exposure. The PCC may receive more than one call per case. Residential calls are defined as any type of call placed from a residence. Calls are received from NYC’s five boroughs as well as Nassau, Suffolk and Westchester Counties.
Data source for rate denominator: NYC DOHMH population estimates, modified from US Census interpolated intercensal population estimates, 2000-2016. Updated September 2017.

Residents of high poverty neighborhoods have the lowest rate of calling the Poison Control Center

Calls to the New York City Poison Control Center by neighborhood poverty level, 2016



The United Hospital Fund classifies New York City into 42 neighborhoods, comprised of contiguous ZIP codes.

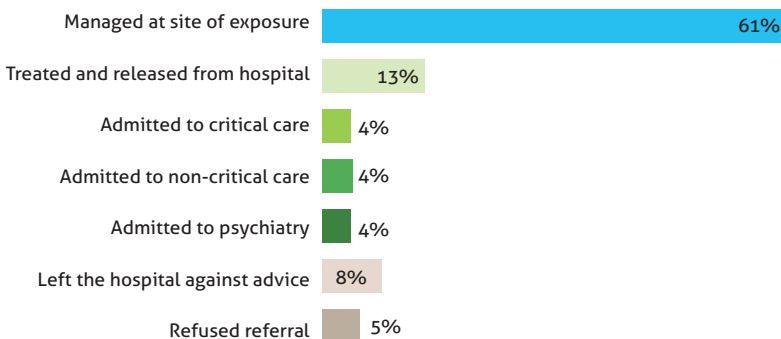
Neighborhood poverty level (based on UHF) defined as percent of residents with incomes below 100% of the Federal Poverty Level (FPL), per American Community Survey 2011-2015, in four groups: low/wealthiest (<10%), medium (10 %-< 20%), high (20 %-< 30%), and very high/poorest (>=30% below FPL).

Sources: NYC Poison Control Center 2016 exposure and information calls from residences; American Community Survey 2011-2015

- In 2016, the rate of calls from residences to NYC PCC was lower in very high poverty (poorest) neighborhoods (150 calls per 100,000 people) compared with the rate of calls from the lowest poverty (wealthiest) neighborhoods (316 per 100,000 people in the wealthiest).
- The neighborhoods with the highest call rates were in Manhattan and Brooklyn and the neighborhoods with the lowest call rates were in Queens.
- Hospitalization was a rare event. But, when it did occur, the rate of all poisoning calls resulting in hospital admission was higher in very high poverty neighborhoods compared with the lowest poverty (wealthier) neighborhoods (96 per 100,000 people in the poorest neighborhoods compared with 69 per 100,000 people in the wealthiest neighborhoods.)
- This points to the need to increase the utilization of PCC services in higher poverty neighborhoods.

Most poisoning exposure cases do not require hospitalization

Disposition of poison exposure^ cases reported to the New York City Poison Control Center, 2016



- In 2016, more than half (61%) of all potential poisoning exposure cases (38,397) were managed at the site of exposure and did not require a visit to a health care provider or ED. Almost all (96%) were unintentional poisoning exposure cases.
- Thirteen percent of cases were treated and released from the ED.
- Twelve percent of cases were admitted to the hospital (critical, noncritical or psychiatry).

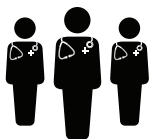
[^]Poisoning exposures include both unintentional and intentional intent.
Source: NYC Poison Control Center 2016 calls from residences, public spaces, worksites, and health care facilities; data shown represent unique cases.

Recommendations



All New Yorkers should:

- Save the NYC Poison Control Center number in their cell phones 212-POISONS (212-764-7667).
- Keep all medications, plants, household products and chemicals up high and out of reach of children.
- Store non-food products in original containers with the labels intact.
- Use a medication log to keep track of medications given to young children or older adults.
- Call the NYC Poison Control Center anytime with questions about unintentional or intentional poisonings, safe use of household products, medication dosing, side effects and interactions.



All health care providers should:

- Call the NYC Poison Control Center at 212-POISONS (212-764-7667) to report poisonings. Health care professionals are required by the NYC Health Code 11.03 to report suspected poisonings.
- Counsel all patients about poison prevention and medicine safety tips. For more information, visit nyc.gov/health and search for the term “poison proof.”
- Schedule a presentation to be conducted by the NYC Poison Control Center for your clinical staff.



All Community Providers should:

- Post the candy or medicine look alike poster at your site to raise awareness about the NYC Poison Control Center. To download the poster, visit <http://www1.nyc.gov/assets/doh/downloads/pdf/poison/candy-poster.pdf>.
- Discuss with families poison prevention strategies and when to call the Poison Control Center.
- Distribute medicine safety information to all parents and older adults.
- Obtain from the NYC Poison Control Center multilingual educational materials to distribute. You can order information free of charge using the NYC PCC order form: <http://www1.nyc.gov/assets/doh/downloads/pdf/poison/safety-material-order-form.pdf>.
- Contact the NYC Poison Control Center for workshops in English, Spanish and Chinese about poison prevention and medicine safety.
- To find more information about NYC Poison Control Center, visit nyc.gov/health and search for the term “poison control.”

REFERENCES: 1. The Lewin Group. *Final Report on the Value of the Poison Center System*. 2012



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