NYC Health

NYC Vital Signs

December 2017
Volume 16, No. 6

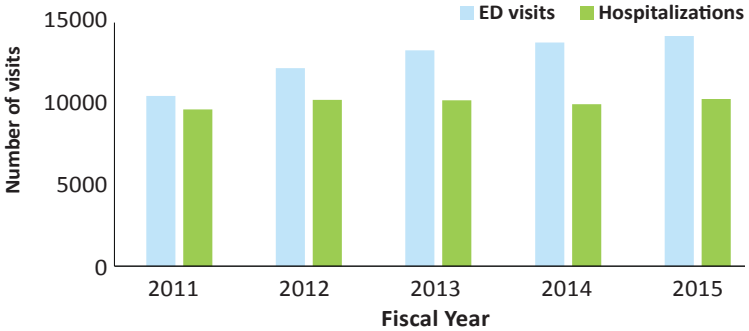
Patterns of Alcohol-related Injuries among New York City Residents

In 2015, more than half (57%) of adult New Yorkers consumed alcohol during the past 30 days. Among current drinkers, 29% reported binge drinking at least once during the past 30 days and 9% reported heavy drinking.[1] Excessive alcohol consumption* is associated with increased morbidity and mortality. During the period Oct 1, 2014 to Sept 30, 2015 (the 2015 federal fiscal year, referred to as 2015 in this report), there were nearly 116,000 emergency department (ED) visits, and more than 88,000 inpatient hospitalizations related to alcohol consumption.[2] The most common diagnosis for alcohol-related ED visits was alcohol abuse (68%), consistent with acute alcohol consumption; for alcohol-related hospitalizations, which tend to be associated with more severe illness and injury, the most common diagnosis was alcohol dependence (50%), consistent with chronic alcohol abuse.[2] Alcohol was attributed to 1,955 deaths among New Yorkers in 2015. More than half of these deaths (55%) were due to chronic conditions (e.g., cancer, liver disease). Forty-five percent were due to acute conditions, including injuries, such as alcohol poisoning, motor-vehicle crashes and homicide.[3]

This report describes alcohol-related injuries that resulted in ED visits or hospitalizations among NYC residents during 2015. Recommendations on page four highlight opportunities for New Yorkers and healthcare providers to reduce harms of excessive alcohol use and address both acute and chronic alcohol-related conditions.

The number of alcohol-related injuries treated in New York City hospitals has increased over the past five years

Alcohol-related injury emergency department visits and hospitalizations, New York City, 2011-2015



Annual data defined by the federal fiscal year, October 1 to September 30 each year.
Source: New York State Department of Health, SPARCS, 2010-2015

- In 2015, there were more than 435,000 ED visits for injuries. Of those, 14,171 were for alcohol-related injuries, an increase from 2011 (10,480 visits).
- In 2015, there were nearly 55,000 hospitalizations for injuries. Of those, 10,287 were for alcohol-related injuries, an increase from 2011 (9,661 visits).

Definitions: *Excessive alcohol consumption, as defined by the Centers for Disease Control and Prevention (CDC),[4] includes binge drinking (four or more drinks for women, five or more drinks for men on one occasion), heavy drinking (more than two drinks per day for men and more than one drink per day for women) and any drinking by those under 21 years of age or by pregnant women.

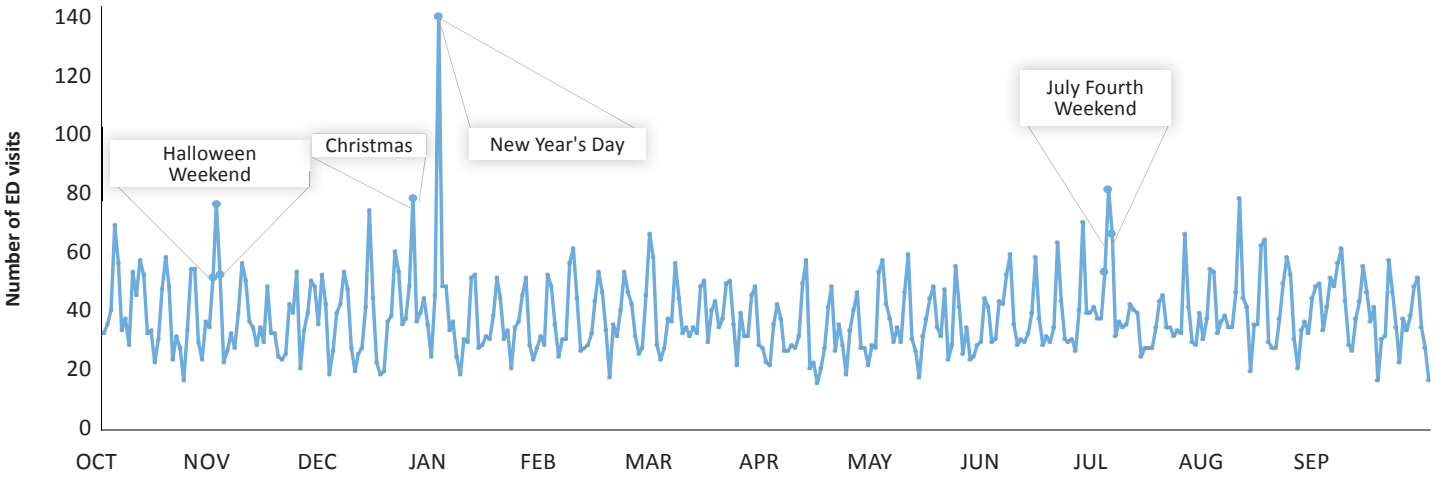
Data Source: Statewide Planning and Research Cooperative System (SPARCS) (October 1, 2009-September 30, 2015) is an administrative database of all hospital discharges reported by New York State (NYS) hospitals to the NYS Department of Health. Alcohol-related injuries are coded according to the International Statistical Classification of Diseases and Related Health Problems-9th Revision framework (ICD-9). Data presented in this report are limited to New York City (NYC) residents ages 13 to 84 treated in NYC hospitals and include emergency department (ED) visits (patient treated and released) or hospitalizations (patient admitted regardless of whether they entered through the ED) with both an external cause of injury code (E code) and an alcohol-related diagnosis code. Alcohol and drug related detoxification and rehabilitation hospitalizations are excluded. Injury definitions are based on the CDC ICD-9 Injury Matrix. For more information visit: cdc.gov/injury/wisqars/ecode_matrix.html and health.ny.gov/statistics/sparcs/. Data include live discharges only. Rates were calculated using US Census 2015 population data. Race is not presented due to the unreliable nature of the information collected.

This publication uses data based on the Federal Fiscal Year, October 1 to September 30. This timeframe was analyzed due to the conversion ICD-9 to ICD-10 on October 1, 2015.

ED visits for alcohol-related injuries are more frequent around major holidays

- The number of ED visits for alcohol-related injuries was highest around major holidays and holiday weekends.
- New Year's Day had the highest number of alcohol-related injury ED visits on a single day (141 ED visits for alcohol-related injuries). Other holidays with increased numbers of ED visits for alcohol-related injuries included Fourth of July weekend (203 over three days), Halloween weekend (182 over three days) and Christmas (79 on one day).
- Alcohol-related injuries were more common on weekends (average of 52 visits vs. 34 visits on weekdays).

Emergency department visits for alcohol-related injuries among New York City residents treated in New York City hospitals, October 2014-September 2015

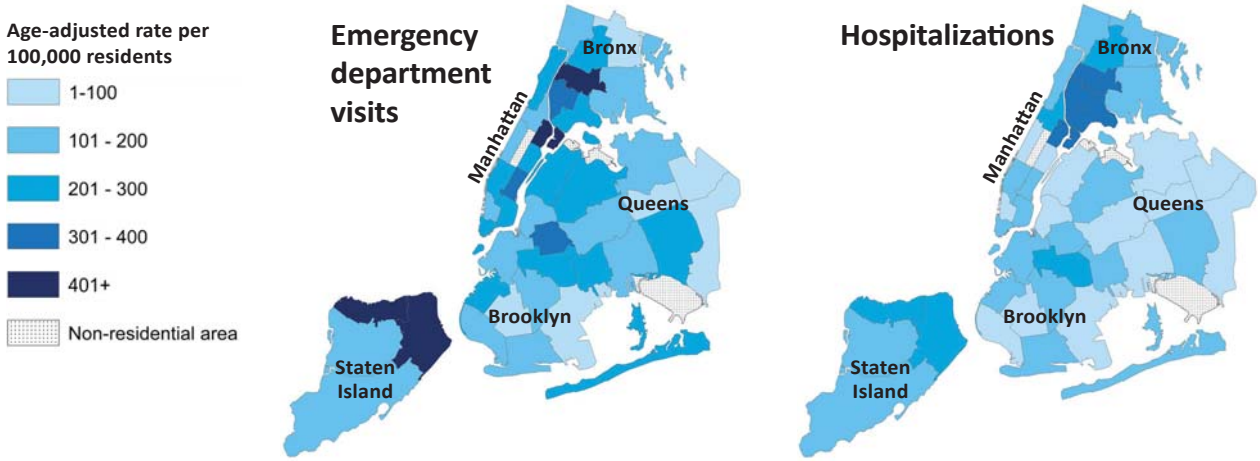


Source: New York State Department of Health, SPARCS, October 1, 2014-September 30, 2015

Rates of alcohol-related injury visits to EDs and hospitalization discharges are elevated in similar neighborhoods

- Residents of Port Richmond, Crotona-Tremont, East Harlem, Stapleton-St. George and Gramercy Park-Murray Hill had the highest rates of ED visits for alcohol-related injuries.
- Residents of East Harlem, High Bridge-Morrisania, Crotona-Tremont, Hunt's Point-Motts Haven and Stapleton-St. George had the highest rates of hospitalizations for alcohol-related injuries.

Alcohol-related injury emergency department visits and hospitalizations by United Hospital Fund neighborhood, New York City, October 2014 - September 2015

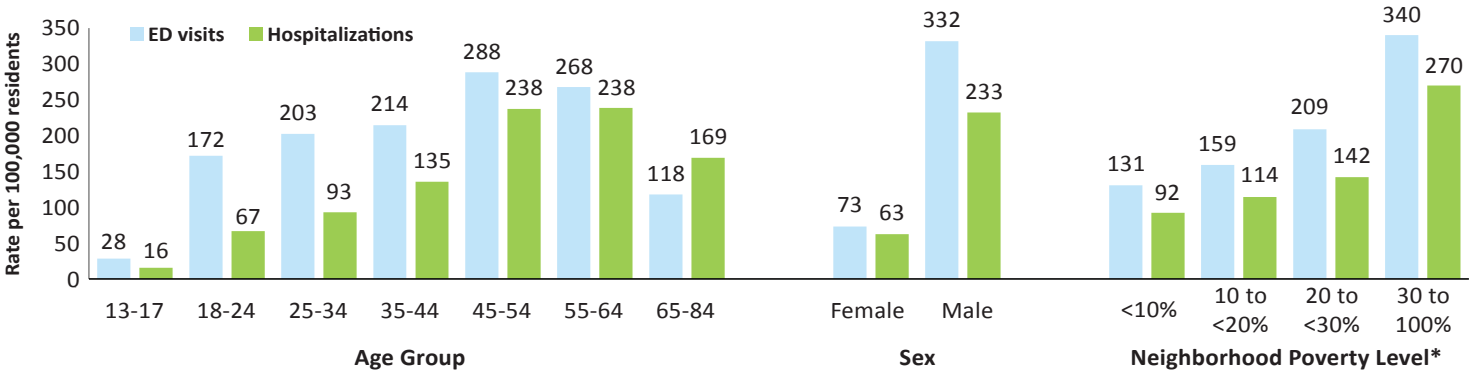


The United Hospital Fund classifies New York City into 42 neighborhoods, comprised of contiguous ZIP codes. Rates are age-adjusted to the 2000 US standard population.
Source: New York State Department of Health, SPARCS, October 1, 2014-September 30, 2015

Rates of emergency department visits and hospitalizations for alcohol-related injuries vary by age, sex and neighborhood poverty level

- New Yorkers ages 45 to 64 years had the highest rates of alcohol-related injury ED visits and hospitalizations.
- Men had much higher rates of alcohol-related injury ED visits and alcohol-related injury hospitalizations than women, accounting for 81% of ED visits and 77% of hospitalizations.
- Overall, very high poverty neighborhoods had the highest rates of alcohol-related injury ED visits and hospitalizations.

Rates of emergency department visits and hospitalizations for alcohol-related injuries by age group, sex and neighborhood poverty level, New York City, October 2014-September 2015

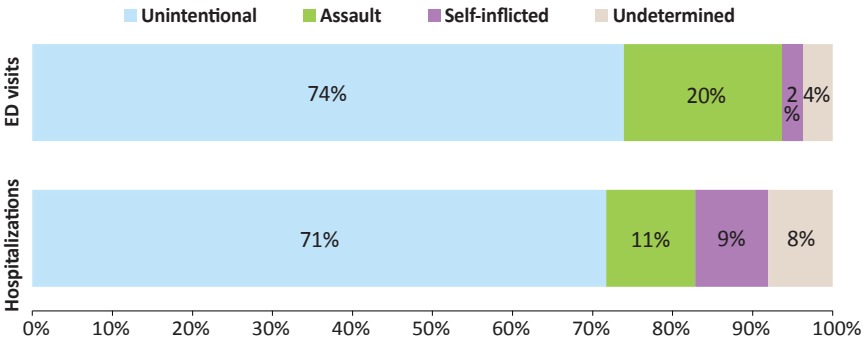


*Neighborhood poverty (based on ZIP code) defined as percent of residents with incomes below 100% of the Federal Poverty Level, per American Community Survey 2011-2015.
Rates are age-adjusted to the 2000 US standard population, except for age-specific rates.
Source: New York State Department of Health, SPARCS, October 1, 2014-September 30, 2015

Most alcohol-related injuries are unintentional, with more than 50% due to falls

- Nearly three-fourths of alcohol-related injuries seen at hospitals were unintentional (74% of ED visits and 71% of hospitalizations), with falls being the leading cause of unintentional injury.
- One in five (20%) ED visits and one in nine (11%) hospitalizations for alcohol-related injuries were due to assaults.
- Two percent of ED visits and 9% of hospitalizations for alcohol-related injuries were due to self-inflicted injuries.

Intent of alcohol-related injuries, New York City, 2014-2015



Source: New York State Department of Health, SPARCS, October 1, 2014-September 30, 2015

Top specified causes of unintentional alcohol-related injuries, New York City, 2014-2015

	ED visits		Hospitalizations	
	N	%	N	%
Falls	5,951	57%	3,767	51%
Poisoning	178	2%	1,288	17%
Motor vehicle-related	468	4%	450	6%
Struck by/against	505	5%	113	2%

Source: New York State Department of Health, SPARCS, October 1, 2014-September 30, 2015

- **Intent**: Determines if the injury was caused deliberately and by whom.
  - **Unintentional**: An injury that was not deliberate, and occurred without intent to harm. This type of injury is often called an accident.
  - **Assault**: An injury resulting from intentional use of force by another person through an act of criminal negligence or violence intended to cause harm.
  - **Self-inflicted**: An injury resulting from use of force or purposeful action against oneself with the intent to cause harm to self.
  - **Undetermined**: An injury resulting from an act that was unable to be classified as accidental or purposeful.
- **Cause (mechanism)**: The specific method that brought about the injury. "Other" causes include multiple and diverse methods.
- **Injury definitions and mechanisms categories are based on the CDC ICD-9 Injury Matrix. For more information visit:** cdc.gov/injury/wisqars/ecode_matrix.html

Recommendations

All New Yorkers can reduce their risk of alcohol-related injury by adopting these harm reduction strategies:

- Eat food before and while drinking alcohol, space drinks over time and drink non-alcoholic drinks in between, or instead of alcoholic drinks.
- Drink with trusted friends or family who can help in the event of illness or injury.
- Ask their doctor if any of their medications or other substances, including prescription medication, over the counter medication and other drugs, interact with alcohol. Alcohol should be avoided when taking opioid analgesics and/or benzodiazepines, as alcohol increases the risk of overdose.
- Ask their doctor if any of their current health conditions can be exacerbated by alcohol consumption.
- Stay within low-risk drinking limits:
    - For women, no more than three drinks per occasion or more than seven drinks per week.
    - For men, no more than four drinks per occasion or more than 14 drinks per week.
    - For individuals older than 65 years, no more than one drink per day, as their tolerance may be lower than the rest of the general population.
    - Pregnant women should avoid alcohol consumption because of the potential risk to fetal development.
    - People under the age of 21 should avoid alcohol consumption. In addition to injury risks, underage drinking affects development and increases the risk of developing alcohol use disorders.

Health care providers should:

- Screen patients for unhealthy alcohol consumption using a validated questionnaire, such as the Alcohol Use Disorders Identification Test (AUDIT-C) or Screening, Brief Intervention and Referral to Treatment (SBIRT).
- Include brief interventions aimed at reducing unhealthy alcohol use as a routine practice component. See "City Health Information: Brief Interventions for Excessive Drinking": nyc.gov/assets/doh/downloads/pdf/chi/chi30-1.pdf
- Counsel patients on the risks of consuming alcohol while taking their medications, drugs or other substances, including patients who have conditions or are receiving treatment that could interact with alcohol or be exacerbated by alcohol consumption.
- Ask patients about their drinking or the drinking of family and friends, to help them identify risk factors for alcohol-related injuries, such as motor vehicle crashes, violent assaults and other injuries.

REFERENCES

1. New York City Community Health Survey. 2015. For more CHS data see NYC Epi Query: https://a816-healthpsi.nyc.gov/epiquery/CHS/CHSXIndex.html
2. New York State Department of Health, SPARCS, 2015. Data update: July 2017.
3. Li W, Sebek K ,Huynh M, Lee E, Castro A, Gurr D, Kelley D, Kennedy J, Maduro G, Lee E, Sun Y, Zheng P, and Van Wye G. Summary of Vital Statistics, 2015. New York, NY: New York City Department of Health and Mental Hygiene, Office of Vital Statistics, 2017.
4. Centers for Disease Control and Prevention (CDC). Fact Sheets - Alcohol Use and Your Health, updated July 2016. Division of Population Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention. https://www.cdc.gov/alcohol/fact-sheets/alcohol-use.htm

Definitions: Neighborhood poverty (based on ZIP code) is defined as the percentage of the population living below the Federal Poverty Level (FPL), per the American Community Survey (2011-2015), categorized into four groups: "Low poverty" neighborhoods are those with <10% of the population living below FPL; "Medium poverty" neighborhoods have 10-<20% of the population below FPL; "High Poverty" neighborhoods have 20-<30% of the population living below FPL; "Very high poverty" neighborhoods have ≥30% of the population living below FPL.
Neighborhood: The United Hospital Fund classifies New York City into 42 neighborhoods, comprised of contiguous ZIP codes. For more information visit: nyc.gov/assets/doh/downloads/pdf/ah/zipcodetable.pdf.
NOTE: Alcohol-related injury hospitalizations and emergency department visits are likely underestimated given a lack of standardized screening, patient reluctance to disclose consumption, and other challenges to accurate documentation.

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Acknowledgments: Catherine Stayton, Kinjia Hinterland, Sophia Greer, Aviva Grasso, Holly Catania, Rebecca Giglio, Michelle Nolan, and Hillary Kunins

Suggested citation: Mello E, Tuazon E, Paone D. Patterns of Alcohol-related Injury among New York City Residents. NYC Vital Signs 2017, 16(6); 1-4.