Chicago Department of
PUBLIC HEALTH
OFFICE OF EPIDEMIOLOGY & RESEARCH *Data Brief: June 2025*

Heat-Related Emergency Department Visits during Warm Season Months: Chicago, 2022-2024

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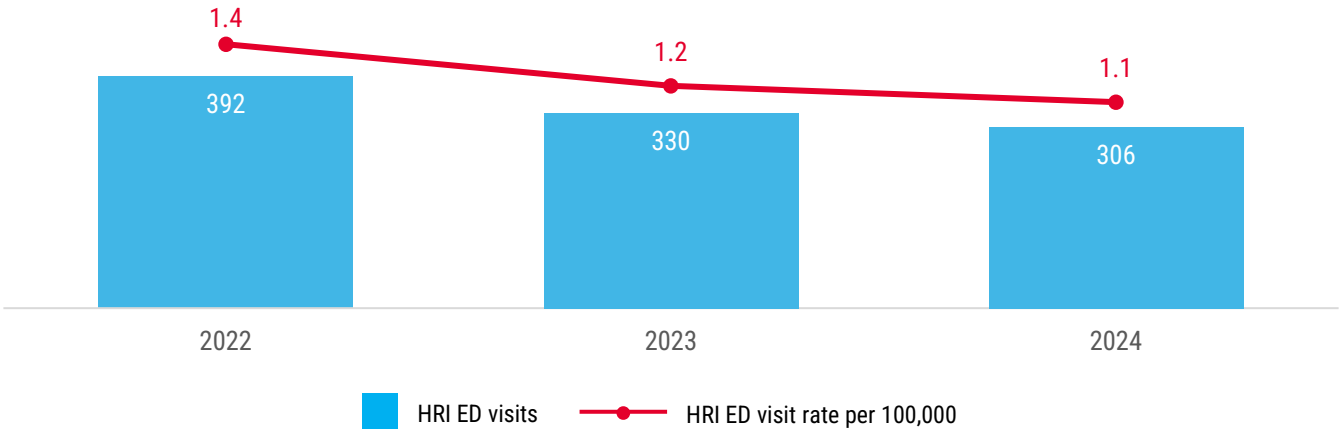
Excessive heat and humidity can lead to health complications, including death. The July 1995 Chicago Heat Wave resulted in 485 heat-related deaths and 739 excess deaths. Men, non-Latiné Blacks and older adults were disproportionately affected. Subsequent studies demonstrated that persons who were socially isolated, experiencing a medical illness, living in poverty, kept their windows closed due to fear of crime, and did not have air conditioning (AC) were at the greatest risk of dying from the extreme heat. Between 2000 and 2023, there have been 151 heat-related deaths among Chicago residents. Similar to the 1995 heat wave, deaths were higher among males, non-Latiné Blacks and older adults.

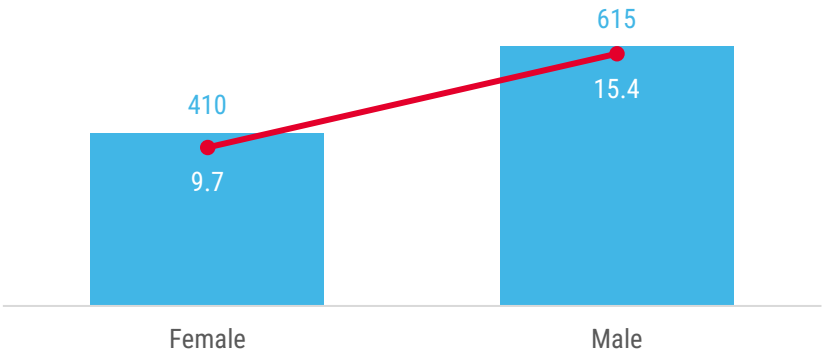
The best protection against extreme heat is using AC. However, some people do not have access to AC or can not afford it. On the hottest days in 2024, most Chicago adults (89%) used AC to stay cool at home while only 3% left to go to a cooler location, according to self-reported data from Healthy Chicago Survey. AC use varied significantly on the hottest days by race and ethnicity and federal poverty level. Non-Latiné Black adults used AC less than Latiné, non-Latiné Whites, and non-Latiné Asians adults. AC use increased with increasing annual household income.

Last year, 2024, was the warmest year on record for Chicago. Climate change will continue to make heat waves more frequent, more severe and last longer. The urban heat island effect compounds this situation, causing parts of Chicago to be warmer than others. To assess the health impact of high temperatures observed during May through September among different populations and neighborhoods, the Chicago Department of Public Health (CDPH) analyzed heat-related illness (HRI) emergency department (ED) visits occurring in the warm season months from 2022-2024.

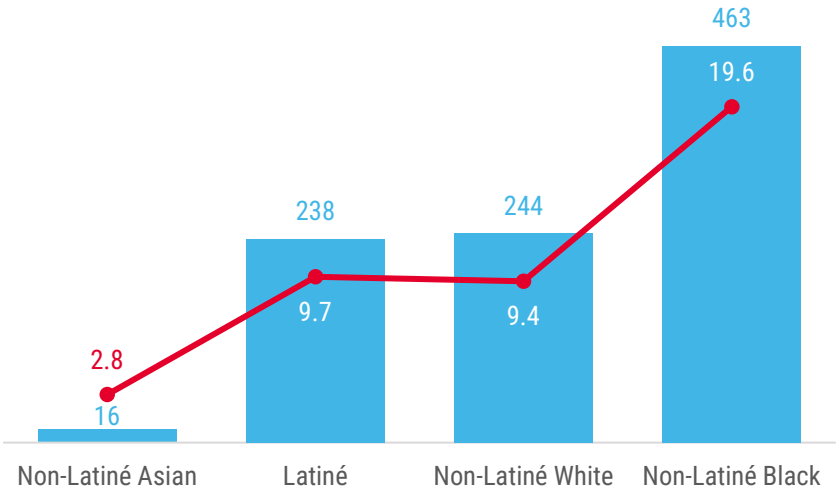
The number and rate of HRI ED visits during warm season months among Chicago residents decreased between 2022 and 2024.



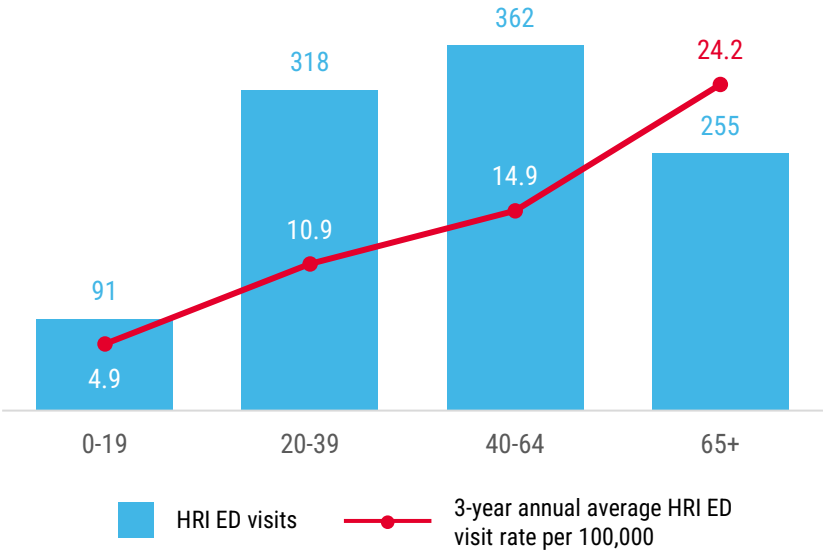
The number and rate of HRI ED visits during the warm season months are greater in males than females in Chicago during 2022 and 2024.



The number and rate of HRI ED visits during the warm season months are highest among non-Latiné Blacks and lowest among non-Latiné Asians in Chicago during 2022 and 2024.



The number of HRI ED visits during the warm season months is highest among 40-64 years olds while the rate of HRI ED visits is highest among 65 years and older in Chicago during 2022 and 2024.



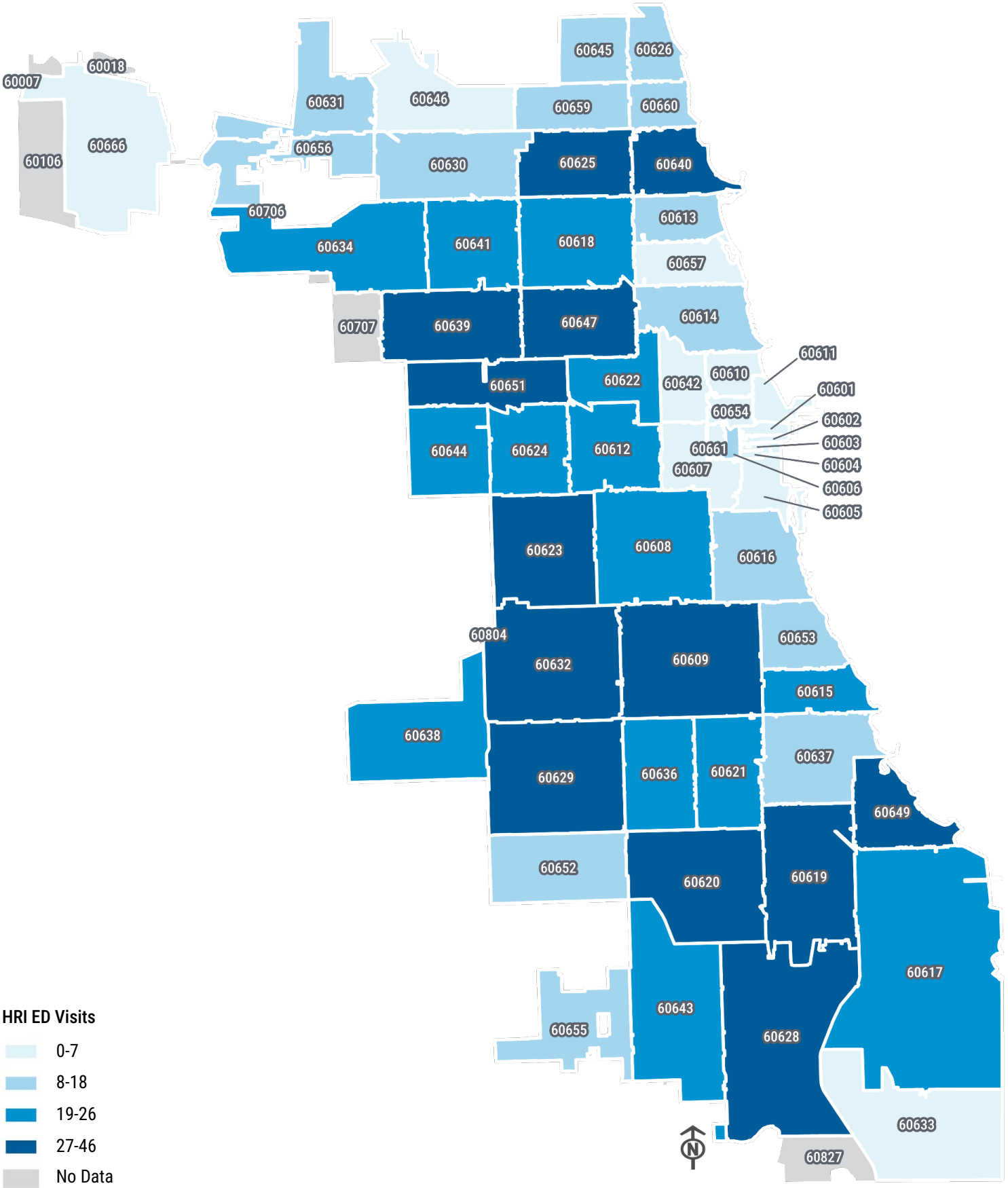
Similar to the 1995 Chicago heat wave, males, non-Latiné Blacks and older adults are disproportionately affected by HRI.

Males are more likely than females to visit an ED for HRI. Non-Latiné Blacks have twice the risk of HRI ED visits compared to non-Latiné Whites and Latiné Chicagoans and seven times the risk of non-Latiné Asians. Older adults have the highest risk of any age group, and the risk increases in a linear manner as the population ages. Note that there are more HRI ED visits in people aged 40 to 64 years than 65 years and older despite the lower rate because the size of the population of 40–64-year-olds is larger.

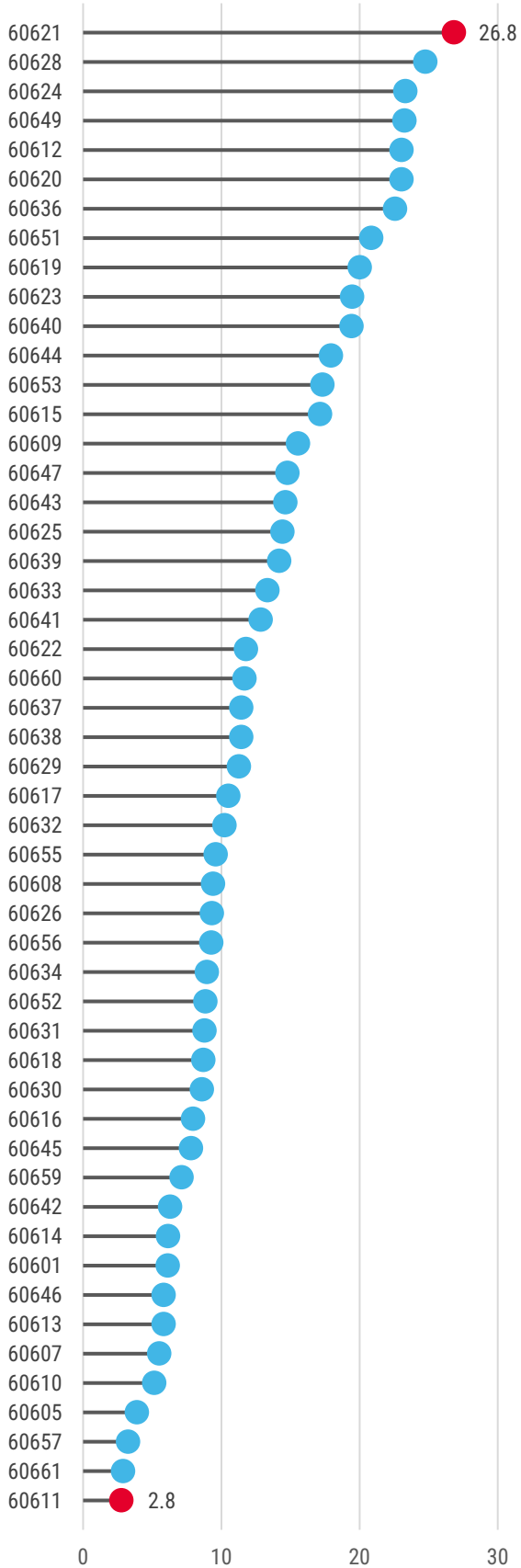
Most Chicago residents (68%) with HRI during the warm season months of 2022-2024 visited EDs in Chicago, another quarter visited EDs in Cook County and the remaining Chicago residents (7%) sought care in other Illinois hospital regions.

Considerable geographic variation of HRI ED visits exists in Chicago, with rates varying from less than 3 to greater than 25 per 100,000. North Central, West, Southwest and Far South regions have clusters within them of Zip Codes with the highest HRI ED visits. Four of these Zip Codes rank in the highest quartile for percentage of non-Latiné Black residents and 65 years and older residents. Moreover, these areas are associated with parts of Chicago identified during Heat Watch 2023 to have warmer temperatures.

The number of HRI ED visits during the warm season months varies by Zip Code of residence in Chicago during 2022 and 2024.



The 3-year annual average rate of HRI ED visits (per 100,000) during the warm season months varies by Zip Code* of residence in Chicago during 2022 and 2024.



**Excludes Zip Codes with small populations (60602, 60603, 60604, 60606) and no cases of HRI (60654).*

DATA SOURCE AND METHODS

Counts of HRI ED visits occurring in warm season months (May to September) between 2022 and 2024 were extracted from the National Syndromic Surveillance Program's Electronic Surveillance System from the Early Notification of Community-Based Epidemics (ESSENCE). HRI ED visits were identified using administrative discharge diagnosis codes and free text search of the patient's reason for visit (i.e., chief complaint). The query was limited to Chicago residents attending Illinois hospitals reporting to ESSENCE.

Differences in counts and rates of HRI ED visits were evaluated by year, gender, age, race-ethnicity, Zip Code of residence and ED location. Rates were calculated using data from the US Census American Community Survey 5-year estimates for 2019-2023.

LIMITATIONS

HRI data from the ESSENCE system are based on ED visits only and do not identify cases of HRI among persons who sought treatment elsewhere, which may result in an underestimation of HRI incidence. HRI may not be the only nor principal reason for vising the ED.

REFERENCES

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6. Healthy Chicago Survey, 2024. Data analyzed by the CDPH Office of Epidemiology & Research, May 2025.
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CDPH PREPARES FOR AND RESPONDS TO HEAT EVENTS BY:

- Tracking heat and humidity forecasts;
- Evaluating air conditioning use among sensitive populations and communities;
- Monitoring HRI trends among groups sensitive to heat;
- Developing a heat vulnerability index with academic and community partners to identify Chicago communities most at risk from extreme heat;
- Publicizing locations on cooling centers and facilities located throughout Chicago; and
- Providing public information and guidance on heat preparedness.

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Excessive heat and humidity can lead to health complications, especially over a duration of time, up to and including death. In fact, it is the number one weather-related cause of death in the United States for the last three decades.

CDPH recognizes that excessive heat impacts certain people and populations differently, and special attention should be paid to more vulnerable members of society.

Who are the populations most at-risk of heat-related illness and deaths?

- Older adults
- Children
- Pregnant people
- People who do not have air conditioning or the means to pay to run them
- Outdoor workers and emergency responders
- People with pre-existing diseases like heart disease, diabetes, and mental illness
- People experiencing homelessness
- People with disabilities
- People with electricity-dependent medical and assistive equipment

What are the signs of heat exhaustion and heat stroke?

HEAT EXHAUSTION	HEAT STROKE
• Heavy sweating • Fast pulse • Nausea or vomiting • Muscle cramps • Tiredness or weakness • Dizziness • Headache • Fainting (passing out)	All the signs of heat exhaustion; PLUS: • High body temperature (104°F or higher) • Neurological symptoms, including: » Confusion » Slurred speech » Seizures » Unconscious/coma • May have lack of sweating

How can I stay safe or help my loved ones stay safe during extreme heat?

- Stay hydrated. Drink lots of water and avoid alcohol, caffeine, and sodas.
- Limit outdoor activities and stay inside. If you do not have air conditioning, keep shades drawn and blinds closed, but windows slightly open for air circulation.
- Apply sunscreen and wear loose, light, cotton clothing and brimmed hats if you must spend time outside.
- Take cool baths and showers.
- Never leave anyone (including pets) in a parked car, even for a few minutes.
- Keep electric lights off or turned down.
- Minimize use of your oven and stove.
- Check on relatives and neighbors, including during the evening and nighttime hours.
- Make sure someone you trust has an extra key to your house for emergencies to check on you.
- Ensure access to prescription medications, oxygen, and medical devices ahead of time to avoid going outside during a heat wave.

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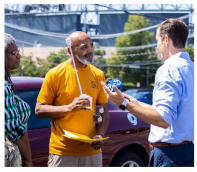
What should I do if someone nearby is experiencing symptoms of a heat-related health emergency?



- If they are alert and awake, have them drink cold water or ice slowly to rehydrate.
- If they are experiencing neurological symptoms such as confusion or unconsciousness, call 911 and seek a safe and cool indoor location right away.
- If they are vomiting, pass out, or symptoms are worsening or lasting longer than one hour, seek medical attention immediately.
- If you are unable to make contact with someone, request a wellbeing check by downloading the CHI311 app, visiting 311.chicago.gov, or calling 311.

Where can I go to stay safe during extreme heat?

- City cooling centers, libraries, and park district facilities
- Any other indoor air-conditioned public place
- A friend or relative's home that has air conditioning

What is CDPH doing to address extreme heat?

CDPH, along with the Department of Environment, Northwestern University Buffett Institute for Global Affairs Defusing Disasters Working Group, and community partners, conducted Heat Watch 2023, the NOAA Heat Watch Urban Heat Island Mapping Project, on July 28, 2023. While only a one-day snapshot, Heat Watch 2023 reaffirmed what was already suspected and known: the effects of heat are not always felt the same across the City.

Through our continued collaboration with the Defusing Disasters Working Group and other community partners, CDPH is now moving into the next phase of work to develop a community-driven, public health-based Heat Vulnerability Index, which will allow us to identify communities who are vulnerable to heat and inform where we prioritize and allocate resources.

Resources

Chicago Cooling Centers and Facilities

Heat Watch 2023

Northwestern University Buffett Institute for Global Affairs Defusing Disasters Working Group

★ The Bureau of Health Protection includes the Offices of Administration & Grants Management; Public Health Preparedness & Emergency Response; Immunization Services; Food Protection; Vector Control; and Environmental Permitting & Inspections.

FIGURE TABLES

Data table for HRI ED visits and 3-year annual average HRI ED visit rate per 100,000 occurring during May 1 – September 30: Chicago, 2022-2024

Zip Code	HRI Visits	HRI Visit Rate	Zip Code	HRI Visits	HRI Visit Rate
60601	3	6.1	60630	14	8.6
60602*	1	29.6	60631	8	8.8
60603*	0	0	60632	27	10.2
60604*	0	0	60633	5	13.3
60605	4	3.9	60634	20	9.0
60606*	9	85.1	60636	21	22.6
60607	5	5.5	60637	18	11.4
60608	23	9.4	60638	20	11.4
60609	30	15.6	60639	36	14.2
60610	7	5.2	60640	39	19.4
60611	3	2.8	60641	26	12.9
60612	24	23.1	60642	4	6.3
60613	9	5.8	60643	21	14.6
60614	13	6.2	60644	26	17.9
60615	22	17.2	60645	11	7.8
60616	13	8.0	60646	5	5.8
60617	25	10.5	60647	38	14.8
60618	24	8.7	60649	34	23.3
60619	36	20.0	60651	40	20.9
60620	46	23.1	60652	11	8.9
60621	22	26.8	60653	18	17.3
60622	19	11.8	60654	0	0
60623	45	19.5	60655	8	9.6
60624	25	23.3	60656	8	9.3
60625	34	14.4	60657	7	3.3
60626	14	9.3	60659	9	7.1
60628	44	24.8	60660	15	11.7
60629	37	11.3	60661	1	2.9

**These zip codes have small populations, use caution when making interpretations.*

FIGURE TABLES

Data table for HRI ED visits and percentage of HRI ED visits by Illinois hospital region occurring during May 1 – September 30: Chicago, 2022-2024

Illinois Hospital Region	HRI Visits	Percent HRI ED Visits
Champaign	4	0.4%
Chicago	701	68.2%
Christian	1	0.1%
Clinton	1	0.1%
Cook (not including Chicago)	252	24.5%
DuPage	21	2.0%
Jo Daveiss	1	0.1%
Kane	9	0.9%
Kankakee	1	0.1%
Kendall	1	0.1%
Lake	6	0.6%
Lee	4	0.4%
Livingston	1	0.1%
Madison	1	0.1%
McHenry	2	0.2%
Peoria	1	0.1%
Sangamon	1	0.1%
Will	3	0.3%

Suggested Citation: Bocskay K, Jorgensen E, Verklan-McInnes L, Matzke H, Sloboda A, Prachand N. Heat-Related Emergency Department Visits during Warm Season Months: Chicago, 2022-2024. City of Chicago: CDPH Data Brief, June 2025.