

CARBON MONOXIDE POISONINGS

2022 Annual Report

Carbon monoxide (CO) poisoning is a reportable condition in North Carolina according to North Carolina Administrative code 10A NCAC 41C .0702. This report summarizes CO poisoning cases reported in 2022 through the North Carolina Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT), a statewide public health syndromic surveillance system. This data include cases from Emergency Department and North Carolina Poison Control cases.

Emergency Department (ED) Visits

- In 2022, there were **200 ED visits** for unintentional, non-fire related CO poisoning in North Carolina.
 - Total ED visits for CO poisoning decreased in 2022 (n = 200) compared to 2021 (n = 250) and 2020 (n = 231) (Figure 1).
 - Common exposure sources were cars, propane/kerosene heaters, power tools, work exposures, and unventilated generators.
 - ED visits occurred in all regions of the state, with similar rates across the state (Figure 2).
 - People aged 35-64 years had the highest number of ED visits in 2022 (n = 101; 50.5%) compared to other age groups (Figure 3).

Figure 1. ED visits related to unintentional, non-fire related CO poisoning by month and year, North Carolina, 2020-2022

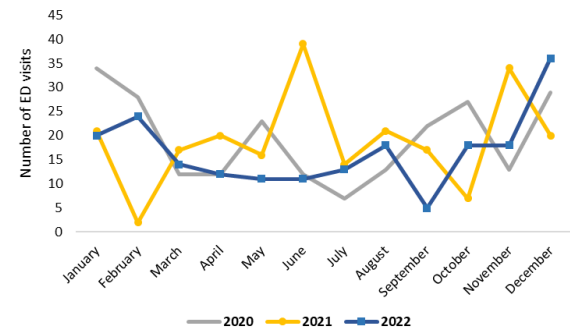


Figure 2. Rate of ED visits¹ related to unintentional, non-fire related CO poisoning by county, North Carolina, 2022

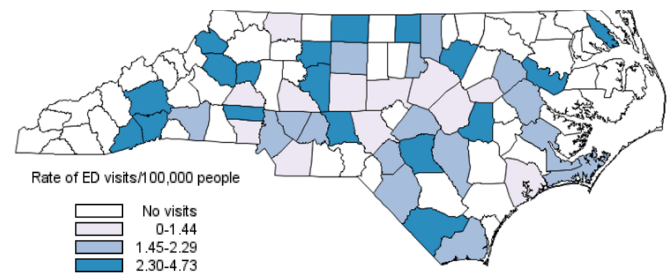
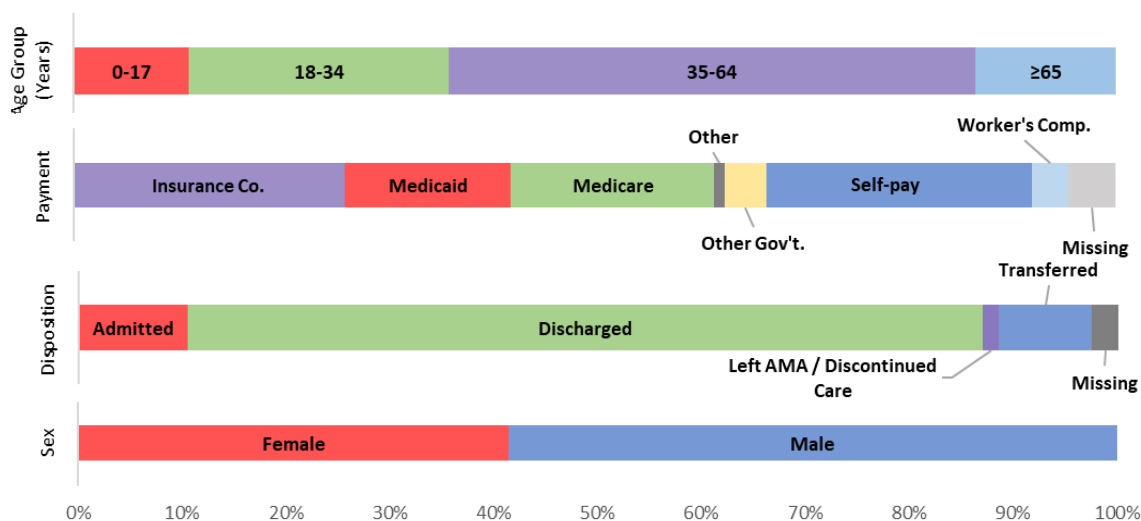


Figure 3. Characteristics of patients and ED visits related to unintentional, non-fire related CO poisoning, North Carolina, 2022



NOTE: North Carolina Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT) is a statewide public health syndromic surveillance system, funded by the NCDHHS Division of Public Health (DPH) Federal Public Health Emergency Preparedness Grant and managed through collaboration between DPH and the UNC-CH Department of Emergency Medicine's Carolina Center for Health Informatics. The NC DETECT Data Oversight Committee is not responsible for the scientific validity or accuracy of methodology, results, statistical analyses, or conclusions presented.

NC DETECT (www.ncdetect.org) search criteria for Carbon Monoxide Poisoning - Confirmed/Probable ED visits: ICD-10-CM diagnostic code 'T58.XX' for North Carolina residents who visited hospitals in NC. ED visits related to self-inflicted or fire-related exposures were excluded. NC Poison Control (NCPC) calls were filtered by substance and included when unintentional CO exposure was documented.

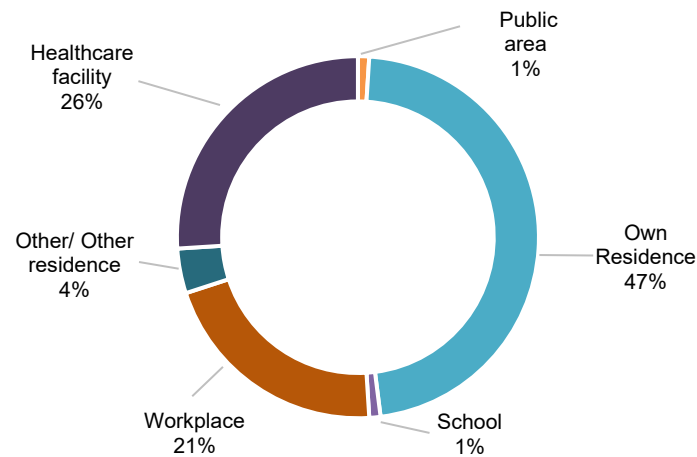
NC Poison Control (NCPC) Calls

- NCPC received 513 calls² related to unintentional CO exposure. (212 of the calls were related to the same event)
 - 136 (25%) Female
 - 146 (27%) Male
 - 258 (48%) Unknown
 - 59% were from **Mecklenburg** County
 - Greater than half, (56%) were 65+ in age
 - Private residence was the most common site (Figure 4)

Work related exposures

- 111 (21%) exposures occurred in the workplace. Common reported exposure sources were:
 - gas powered tools in an enclosed environment
 - truck exhaust
 - generator
 - gas heaters
 - propane powered saw
 - forklift propane leak
- Occupational and Environmental Epidemiology preparedness and response team and NC Occupational Safety and Health program were notified of cases meeting criteria for follow-up.

Figure 4. Site of Exposure



Hurricane Ian

- Eight ED visits related to unintentional, non-fire related carbon monoxide (CO) poisoning were identified in North Carolina potentially in relation to hurricane Ian between September 30 and October 2, 2022, from NC DETECT.
 - A greater number of ED visits was among the age group 35-64 (6) compared to other age groups.
 - There were 4 females and 4 males.
 - A greater number of ED visits for CO poisoning occurred in Alamance County (4) compared to other counties.
 - Common reported exposure sources were unspecified (7) and generator (1).
 - There were no deaths reported.
- NCPC received six calls related to unintentional CO exposure during this time.
 - All exposure sites were at the caller's own residence.

For information about CO poisoning prevention, visit https://epi.dph.ncdhhs.gov/oe/a_z/co.html

Visit the [NCDHHS Division of Public Health](#) webpage to learn more about how to prevent CO poisonings and to access educational posters, infographics, and factsheets.

- [CO Poisoning Prevention Poster](#)
- [Workplace CO prevention](#) posters, Carbon Monoxide Safety Bulletin for [Firefighters](#) and [EMS](#) Personnel
- Infographics available in: [Arabic](#), [Chinese](#), [Farsi](#), [Russian](#), [Spanish](#) and [Vietnamese](#)

¹Rates are based on 2020 population from the American Community Survey (ACS)

²We do not have ability to determine extent of overlap between CPC calls and ED visits. Therefore, they are reported separately.

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