Maryland
DEPARTMENT OF HEALTH

Maryland 2023/2024 Cold-Related Illness Surveillance Summary Report
Reporting Period November 1, 2023, to March 31, 2024
Report Date: July 17, 2024

EXECUTIVE SUMMARY

The Maryland 2023/2024 cold season occurred from November 1, 2023, through March 31, 2024. Overall, in Maryland, the 2023/2024 cold season was consistent with previous seasons and had an average low temperature of 33.5°F. MMWR Week 3 (1/14/24 – 1/20/24) had a below average temperature at 17.7°F. There was a corresponding increase in cold related emergency department (ED) and urgent care (UC) chief complaint visits with 62 visits in that week.

There were a total of 668 cold-related ED and UC chief complaint visits this cold season, with an average of 30.91 visits per week. These counts represent an increase from the 2022/2023 cold season in which there were a total of 510 visits and an average of 23.18 visits per week. This season, there were also a total of 177 ED and UC visits related to carbon monoxide (CO) exposure, with an average of 8.05 visits per week. These counts represent a decrease from the 2022/2023 cold season in which there were a total of 189 visits and an average of 8.59 visits per week due to CO exposure. For the 2023/2024 cold season, most of the cold-related illness complaints were in the 65+ age group (283 visits) which is consistent with previous cold seasons.
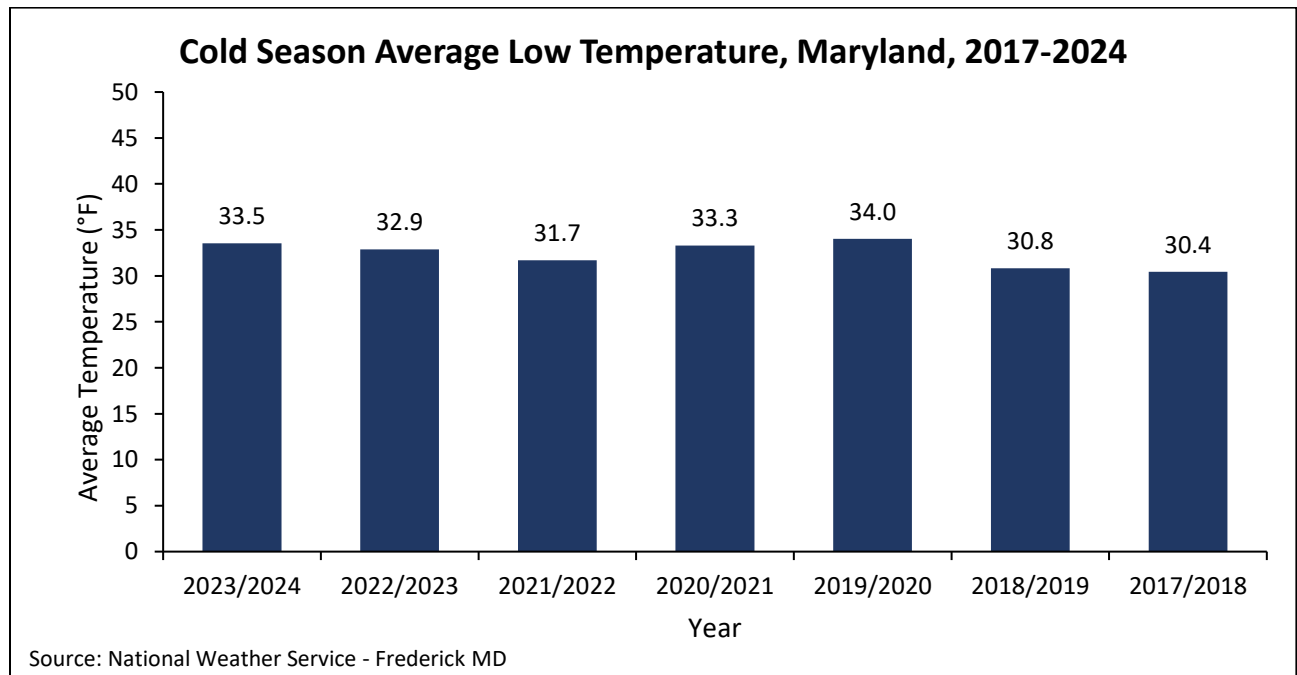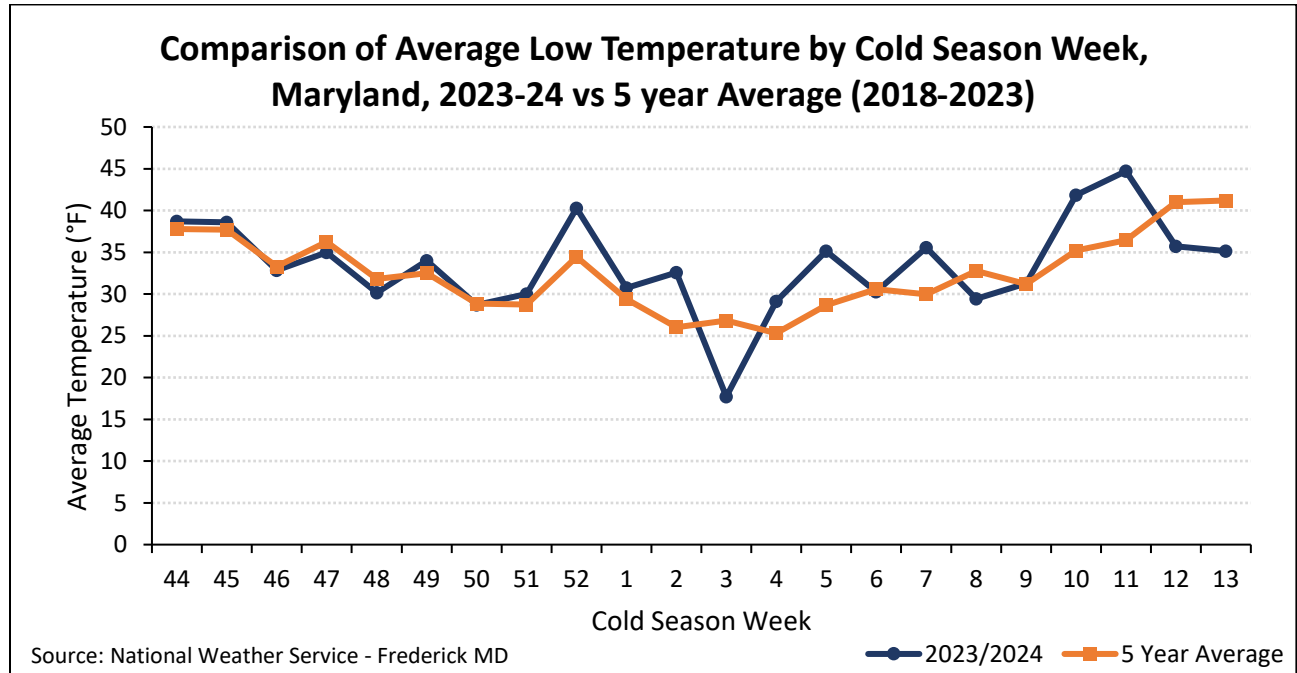
During the 2023/2024 cold season, 72 cold-related deaths were reported. This is a *significant increase* from last year (46 cold-related deaths). Deaths most frequently occurred among the 45-64 (27 deaths) and 65+ (27 deaths) age groups. There were a total of 53 male deaths compared to 19 female deaths. 14 of the 2023/2024 cold season's deaths were among individuals presumed to be experiencing homelessness.

BACKGROUND

The weekly Cold-Related Illness Surveillance Report is disseminated from November through March. The report focuses on extreme cold conditions including temperature, cold-related illness (e.g., frostbite, frostnip, hypothermia), carbon monoxide exposure and cold-related deaths in Maryland.
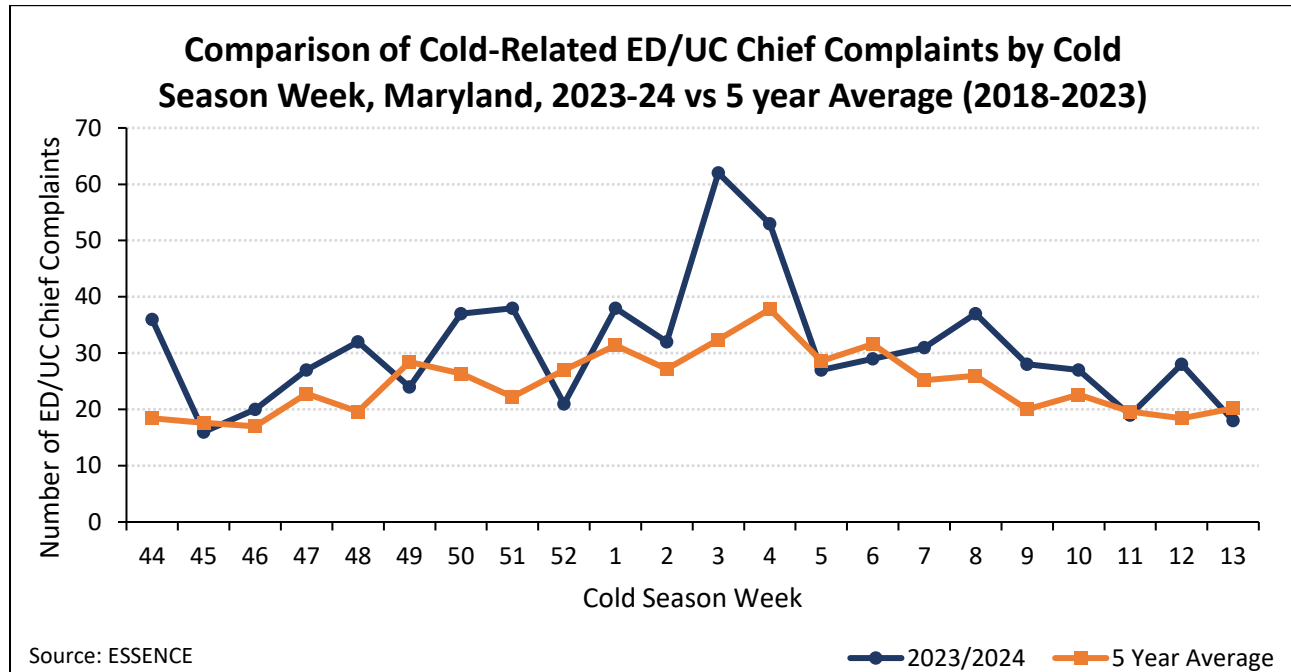
WEATHER

Overall, the 2023/2024 cold season average low temperature was comparable with the average of the last 5 seasons (2018/2019 - 2022/2023). In MMWR week 3, 2024 (1/14/24 - 1/20/24), we did see a drop in temperature with the average low temperature for that week falling to 17.7°F which corresponded to an increase in cold-related ED/UC chief complaints (62 cold-related visits).

Comparison of Average Low Temperature by Cold Season Week, Maryland, 2023-24 vs 5 year Average (2018-2023)

Source: National Weather Service - Frederick MD

Cold Season Average Low Temperature, Maryland, 2017-2024

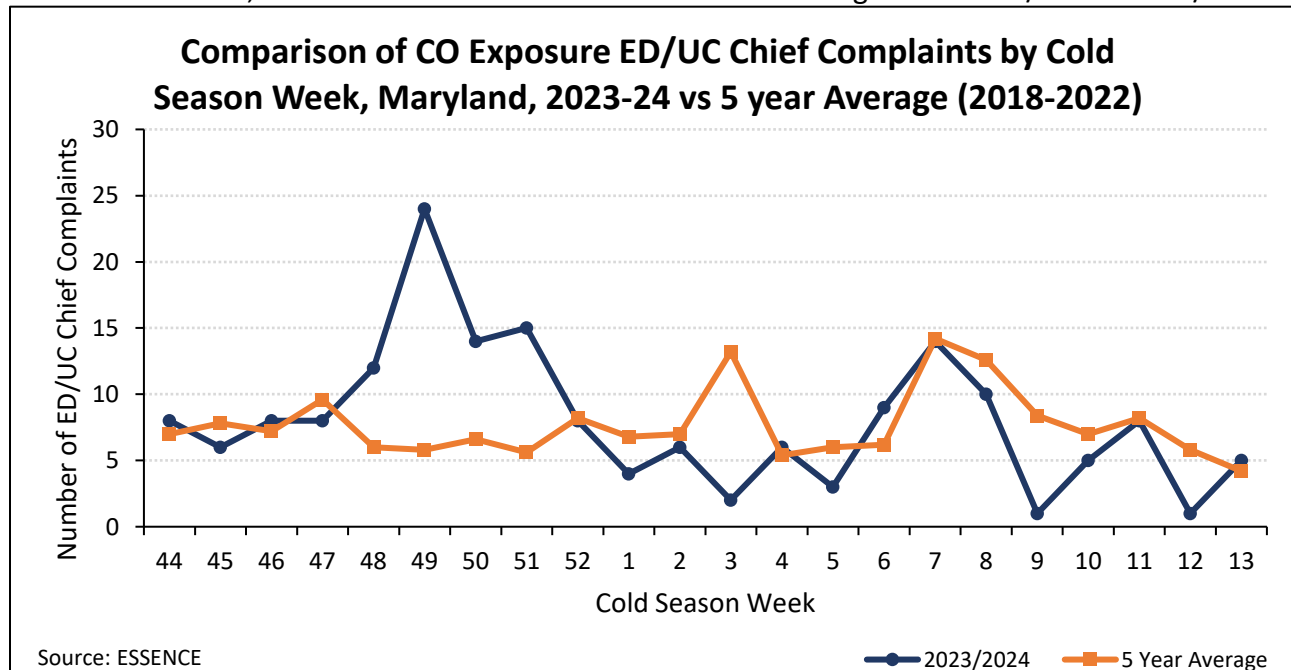Source: National Weather Service - Frederick MD

COLD-RELATED ILLNESS

The number of cold-related ED/UC chief complaints for the 2023/2024 season trended slightly higher than the average from 2018/2019 - 2022/2023 and peaked in week 3 (1/14/24 - 1/20/24), where there was a spike in chief complaints corresponding to the decrease in the weekly average low temperature recorded for week 3.
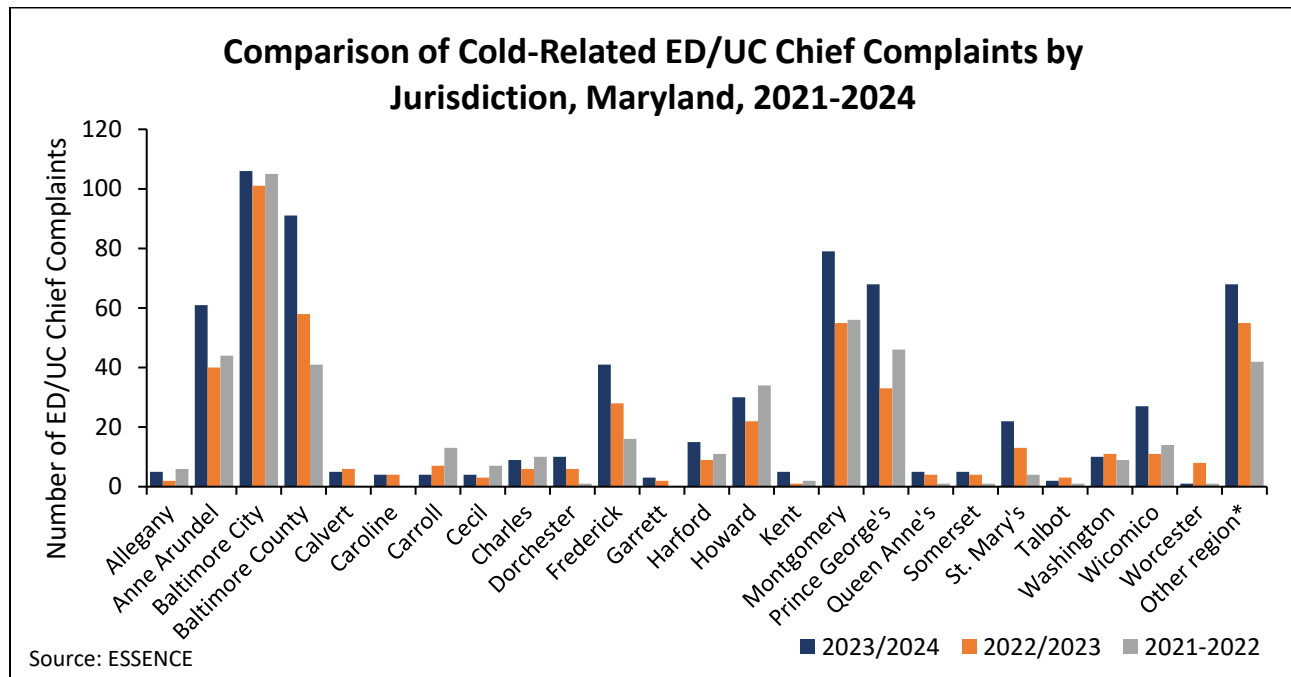
Comparison of Cold-Related ED/UC Chief Complaints by Cold Season Week, Maryland, 2023-24 vs 5 year Average (2018-2023)

Y-axis: Number of ED/UC Chief Complaints

X-axis: Cold Season Week

Source: ESSENCE

Legend: 2023/2024, 5 Year Average

Note: ESSENCE chief complaint query for cold-related illness contains the following terms: frostbite, frostnip, hypothermia, chilblain, and trench foot

As for CO exposure-related chief complaints, there were a few spikes during the 2023/2024 season but overall, the trend remained consistent with the average from 2018/2019 - 2021/2022.

Comparison of CO Exposure ED/UC Chief Complaints by Cold Season Week, Maryland, 2023-24 vs 5 year Average (2018-2022)

Y-axis: Number of ED/UC Chief Complaints

X-axis: Cold Season Week

Source: ESSENCE
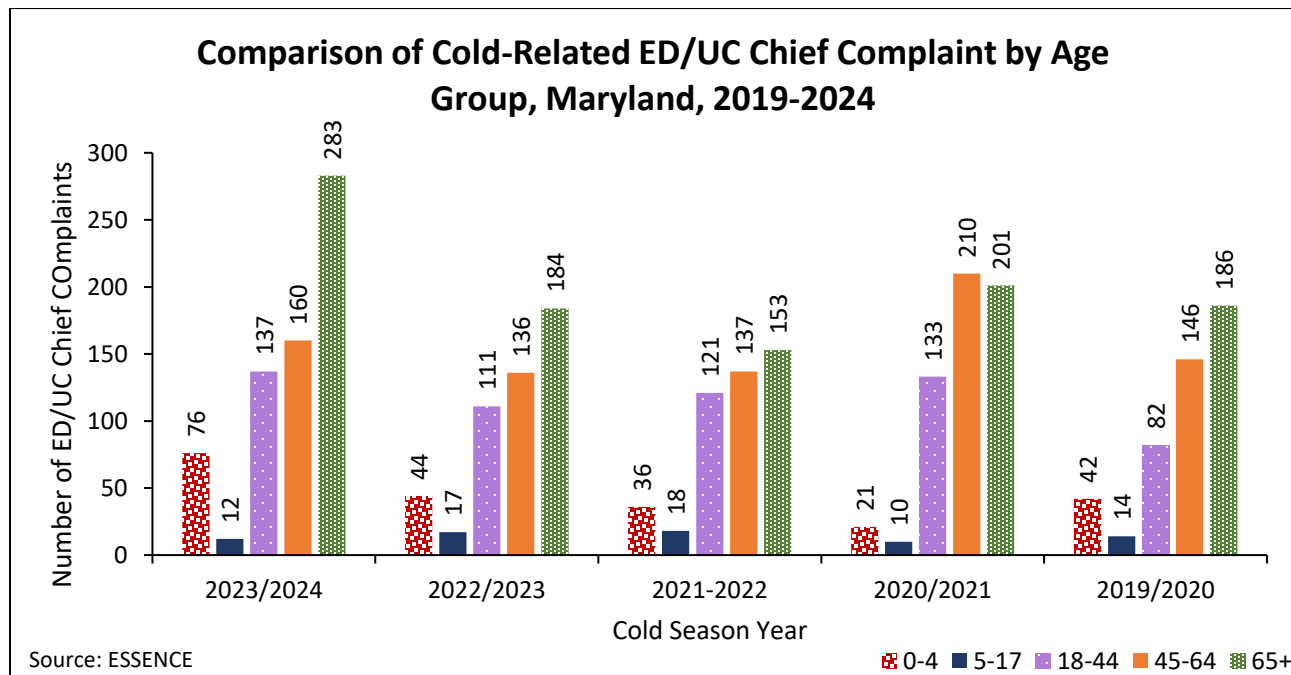
Legend: 2023/2024, 5 Year Average

3

Geographically, cold-related ED/UC chief complaint visits were highest among individuals in Baltimore City, followed by Baltimore, Montgomery, Prince George's and Anne Arundel counties.

Comparison of Cold-Related ED/UC Chief Complaints by Jurisdiction, Maryland, 2021-2024

Source: ESSENCE

Legend: 2023/2024, 2022/2023, 2021-2022

*Note: Other region indicates individuals who reside outside of Maryland and were treated within the state

In addition, cold related ED/UC chief complaint visits were highest in the 65+ age group followed by the 45–64-year age group. This trend is consistent with previous seasons (2019/2020 – 2022/2023) in which the 65+ and 45-64 age groups consistently had the highest number of cold related ED/UC chief complaint visits.

Comparison of Cold-Related ED/UC Chief Complaint by Age Group, Maryland, 2019-2024

| Cold Season Year	0-4	5-17	18-44	45-64	65+
2023/2024	76	12	137	160	283
2022/2023	44	17	111	136	184
2021-2022	36	18	121	137	153
2020/2021	21	10	133	210	201
2019/2020	42	14	82	146	186

Source: ESSENCE

Note: Weekly numbers for ED/UC chief complaint visits and CO exposure are collected throughout the season and may change as ESSENCE is updated daily. These weekly numbers may therefore not match the summary numbers which are collected at the end of the season.
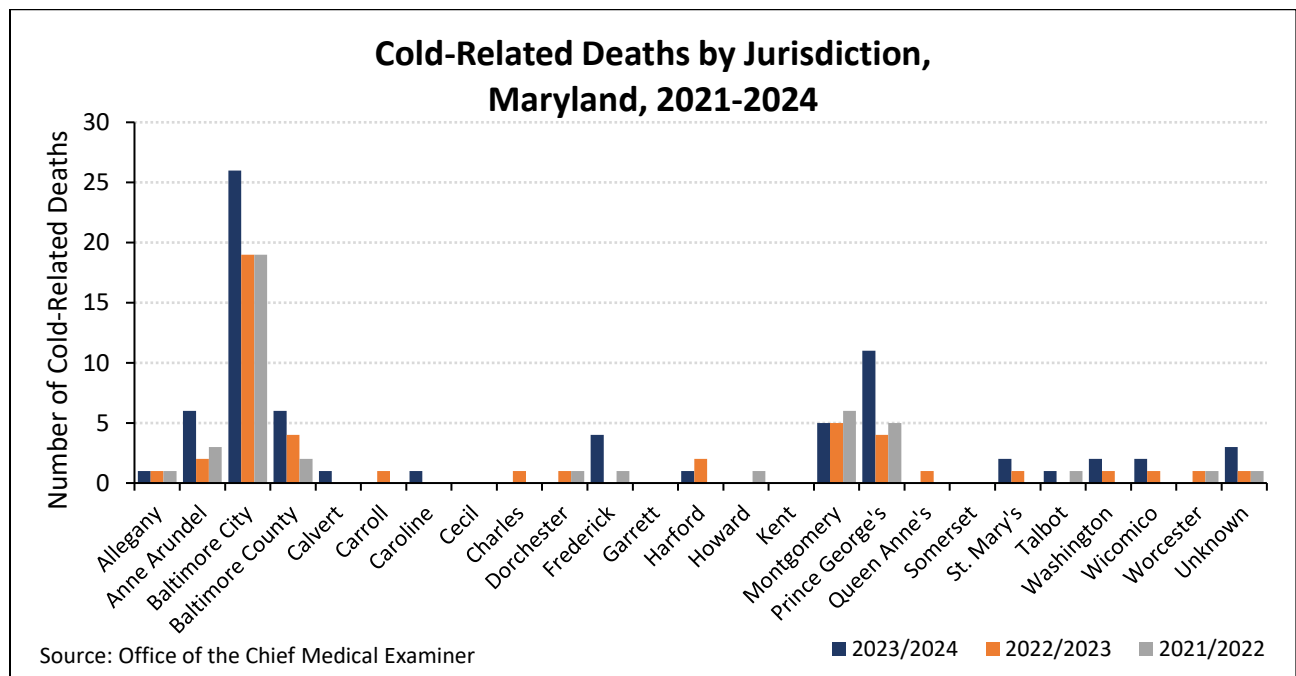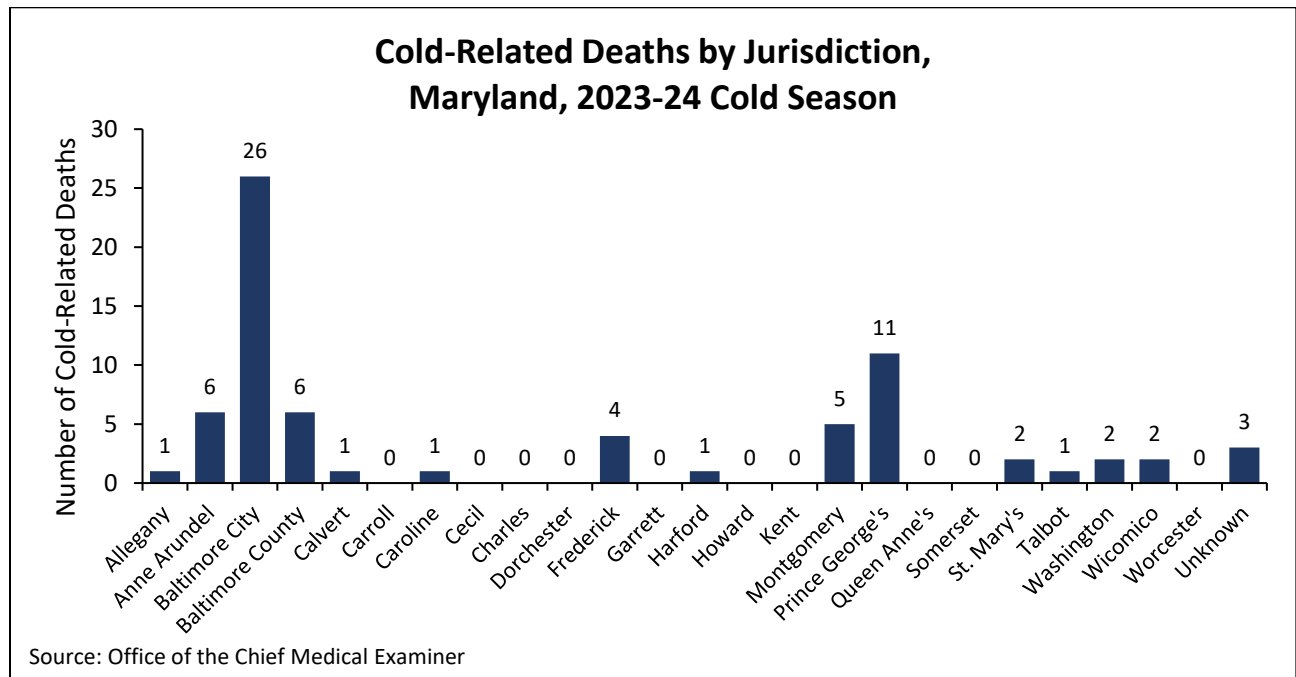
COLD-RELATED DEATHS

There were 72 cold-related deaths reported by the Office of the Chief Medical Examiner in Maryland during the 2023/2024 cold season. This count is significantly higher than in previous seasons (2018/2019 – 2022/2023).

Total Cold-Related Deaths by Year, Maryland, 2019-2024

Source: Office of the Chief Medical Examiner
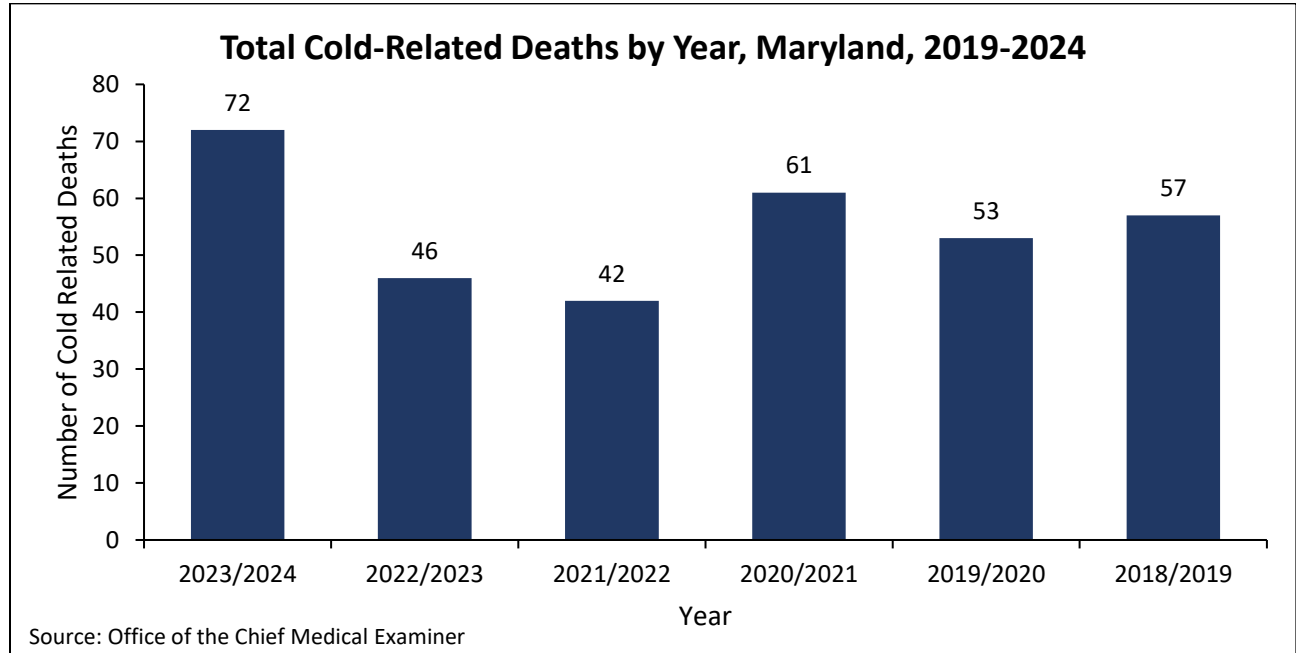
During the 2023/2024 cold season, the largest number of deaths occurred in the month of January (33 deaths). In the 2022/2023 cold season, most of the deaths occurred in December (25 deaths). Historically, the largest number of cold-related deaths have occurred in December and January of the reporting year.

Cold-Related Deaths by Month, Maryland, 2019-2024

Source: Office of the Chief Medical Examiner

November December January February March
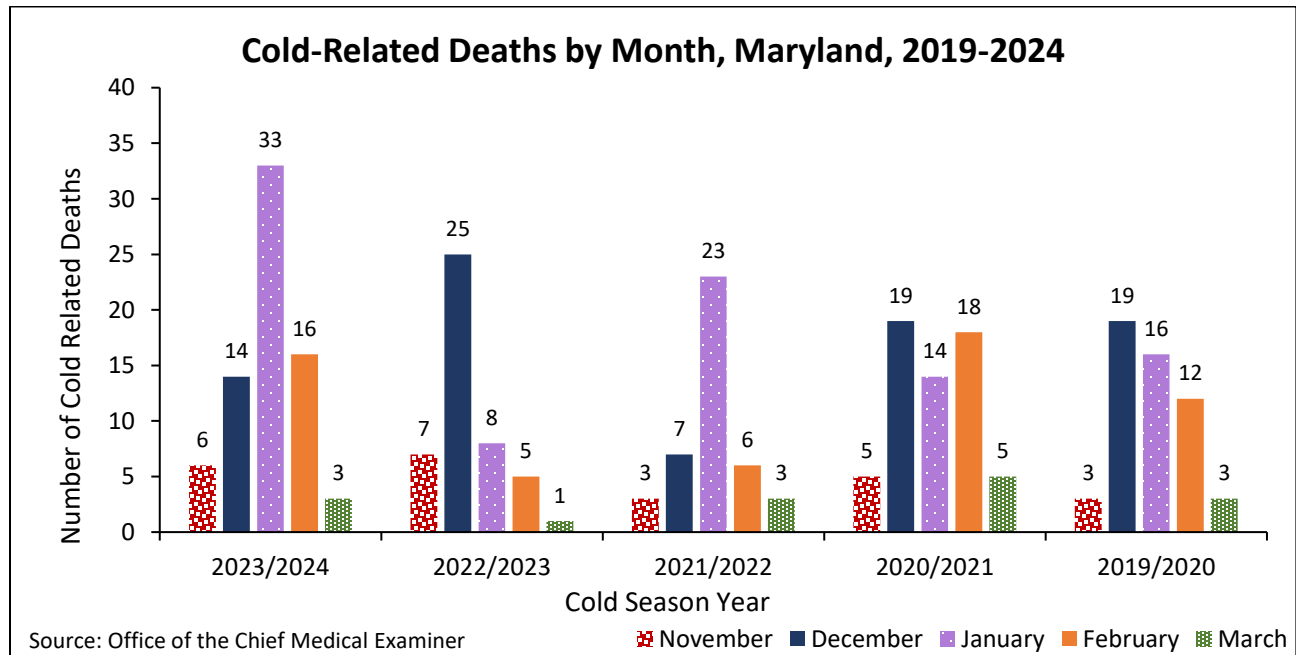
Geographically, the highest number of reported deaths occurred in Baltimore City, followed by Prince George's, Baltimore, and Anne Arundel counties. In previous cold seasons (2021/2022 – 2022/2023) the highest number of deaths were reported in Baltimore City, Montgomery, Prince George's, and Baltimore counties.

Cold-Related Deaths by Jurisdiction, Maryland, 2023-24 Cold Season

Source: Office of the Chief Medical Examiner

Cold-Related Deaths by Jurisdiction, Maryland, 2021-2024

Source: Office of the Chief Medical Examiner

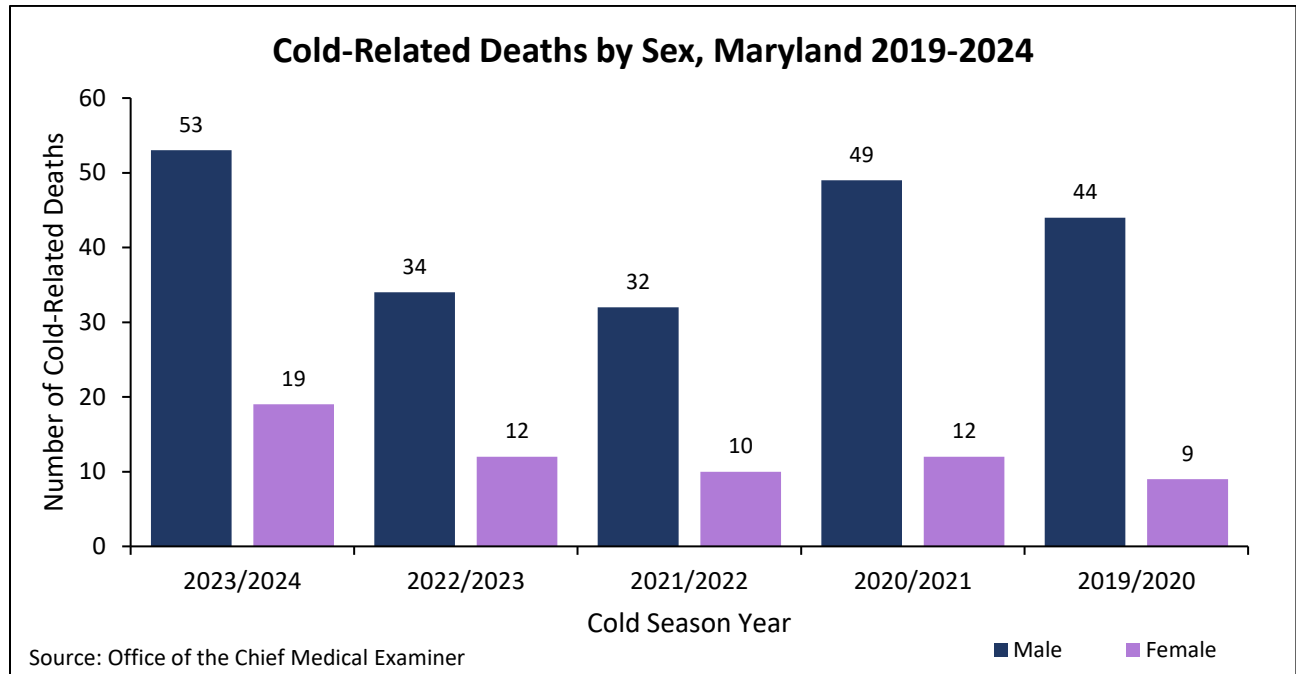Legend: 2023/2024, 2022/2023, 2021/2022

Of the 72 cold-related deaths for the 2023/2024 season, a residential address was available for 42 (58.3%) cases. 14 (19.4%) cases were indicated to be experiencing homelessness. In 16 (22.2%) cases, a residential address was not available, and it could not be determined whether the decedent was experiencing homelessness or not.

Decedent Address Availability Among Cold-Related Deaths, Maryland, 2023-24 Cold Season

- ■ Address Provided
- ■ Homeless
- ■ Not Available

22.2%

19.4%

58.3%

Source: Office of the Chief Medical Examiner
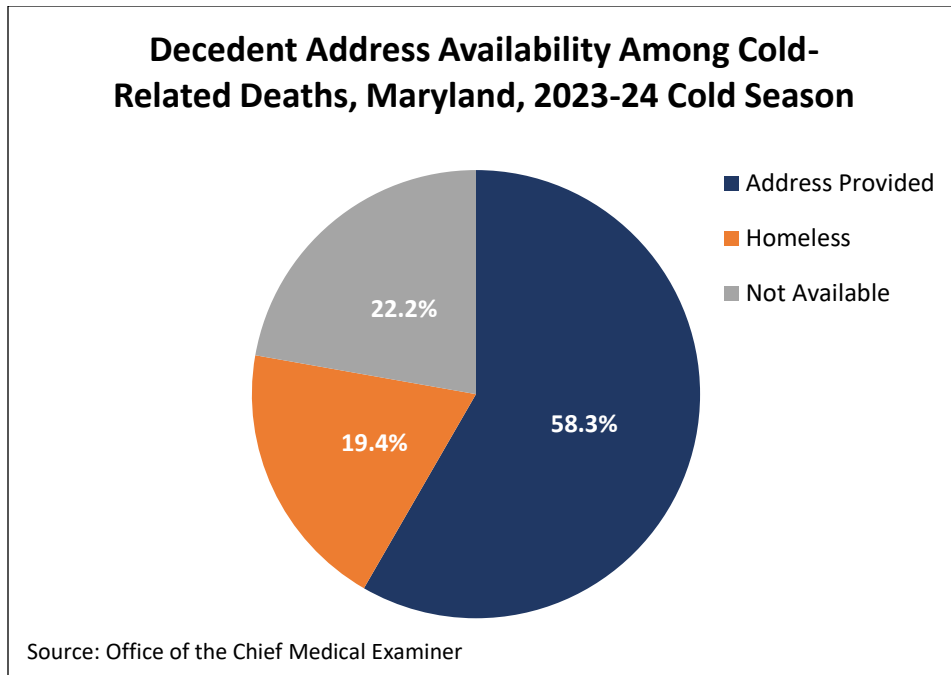
For the 2023/2024 cold season, the most deaths were recorded among individuals in the 45-64 and the 65+ age groups. This trend is consistent with previous seasons.

Cold-Related Deaths by Age Group, Maryland 2019-2024

Cold Season Year	18-44	45-64	65 and Older	Unknown
2023/2024	18	27	27	0
2022/2023	7	18	21	0
2021/2022	10	19	12	1
2020/2021	12	30	18	1
2019/2020	7	25	21	0

Number of Cold Related Deaths

Source: Office of the Chief Medical Examiner
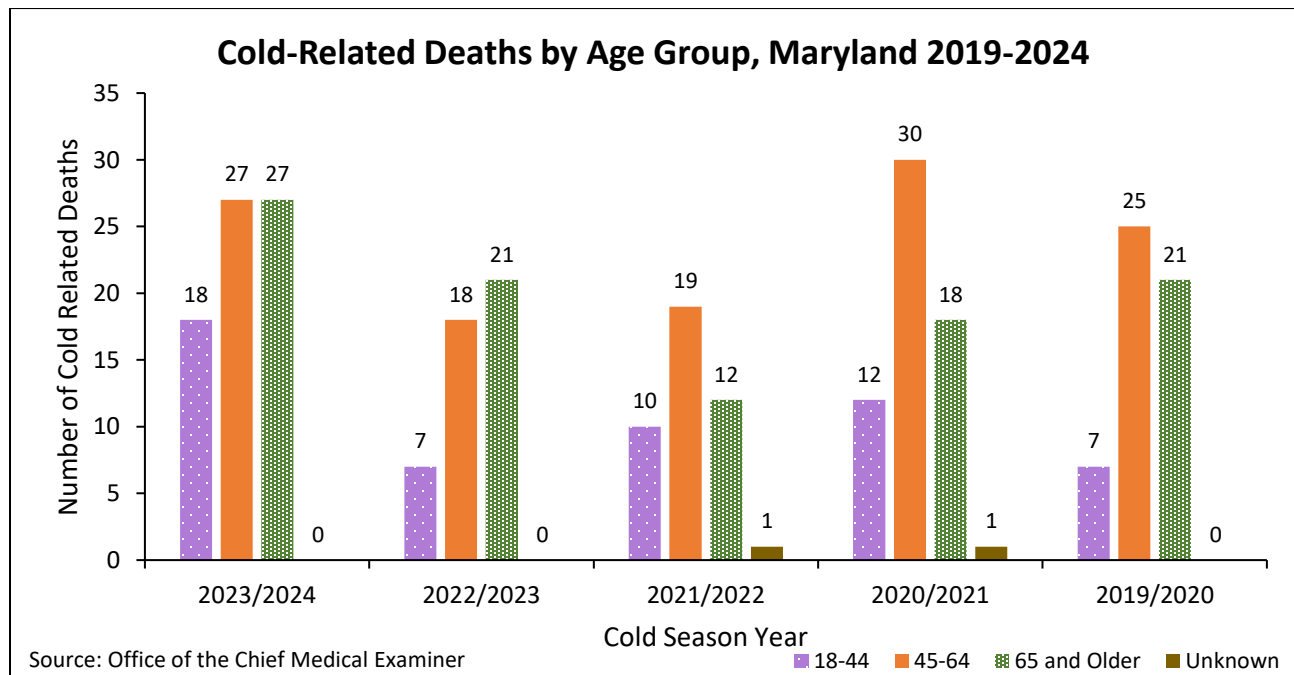
Most of the deaths reported in the 2023/2024 cold season were among males (53 deaths). This trend is also consistent with previous years.

Cold-Related Deaths by Sex, Maryland 2019-2024

Number of Cold-Related Deaths

Cold Season Year	Male	Female
2023/2024	53	19
2022/2023	34	12
2021/2022	32	10
2020/2021	49	12
2019/2020	44	9

Source: Office of the Chief Medical Examiner

This season 61% of the deaths reported having cardiovascular conditions and substance use co-occurring with hypothermia at the time of death.

Conditions Co-Occuring With Hypothermia Among Cold-Related Deaths, Maryland, 2023-24

Percentage of Deaths

Condition	Percentage
Cardiovascular	61.1%
Substance Use	61.1%
Respiratory	15.3%
Other	13.9%
Endocrine & Metabolic	11.1%
Kidney	6.9%
Liver	5.6%
Mental Illness	4.2%

Source: Office of the Chief Medical Examiner
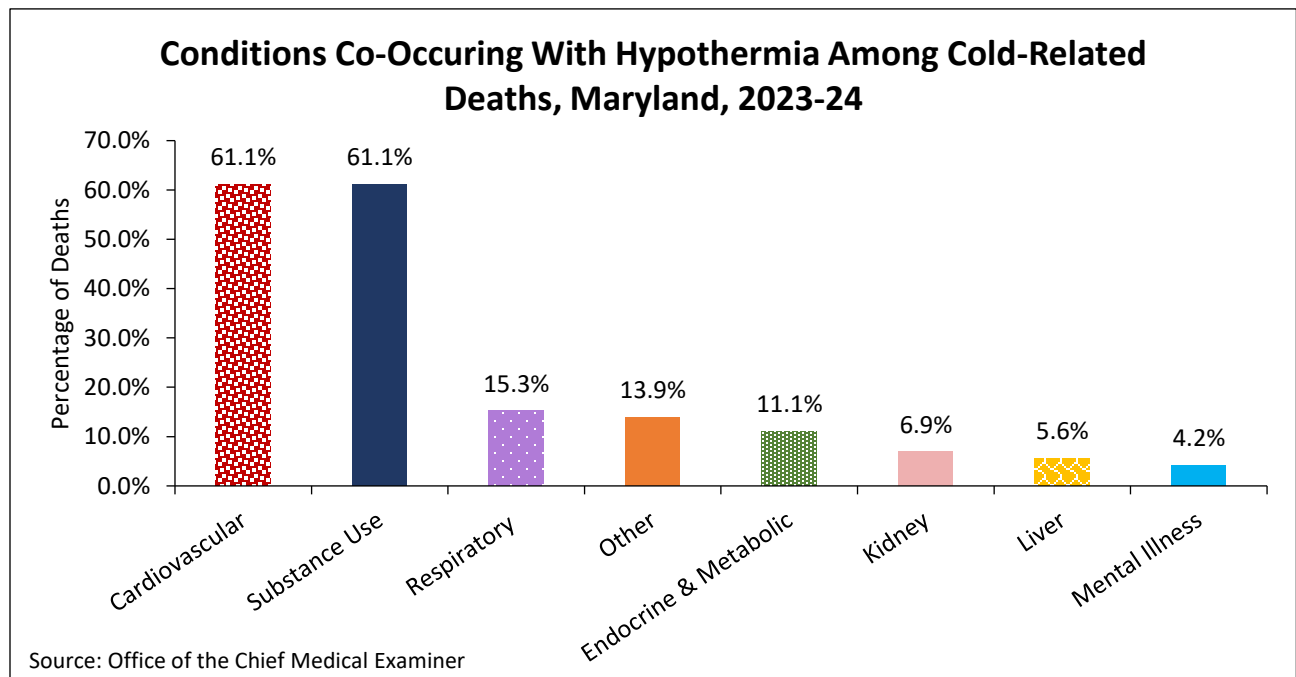
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