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Health E-Stat 109: Rate of Emergency Department Visits for Alcohol-specific Diagnoses, by Sex: United States, 2003–2004 to 2021–2022

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A rising prevalence of alcohol-related emergency department (ED) visits has been observed in the United States, increasing the burden on hospital resources (1,2). From 2021 to 2023, alcohol was the most common substance involved in substance-related ED visits, outpacing opioids and cannabis (3). This report presents ED visit estimates by sex from 2003–2004 to 2021–2022 for alcohol-specific diagnoses of conditions presented in the ED that were caused exclusively by alcohol use. Data from the National Hospital Ambulatory Medical Care Survey (NHAMCS) were used for this analysis (4,5).

From 2003–2004 to 2021–2022, the count of ED visits for alcohol-specific diagnoses among males increased by 101%, from 1,986,000 to 3,998,000 visits (Figure 1, Table 1). Over the same 20-year period, the count of ED visits for alcohol-specific diagnoses among females increased by a similar percentage of 96%, from 701,000 to 1,374,000 visits. From 2003–2004 to 2021–2022, the rate of alcohol-specific diagnoses visits for males increased by 75%, from 71 to 124 visits per 10,000 population (Figure 2, Table 2). Over the same period, the alcohol-specific diagnoses visit rate for females increased by a similar percentage of 71%, from 24 to 41 visits. Throughout the period, the alcohol-specific diagnoses visit rate for males was higher than for females.

Data source and methods

NHAMCS, conducted annually by the National Center for Health Statistics from 1992 to 2022, was a national probability sample of visits to the EDs of nonfederal, general, and short-stay hospitals in the United States. Sampling design details for NHAMCS are described elsewhere (6). NHAMCS data on ED visits during 2003–2022 were used for this analysis.

Rates are based on samples of a biannual average of 968 ED visits by patients with an alcohol-specific diagnosis, representing a biannual average of about 4.32 million ED visits. Visit rates were calculated by dividing the number of ED visits by the estimates of the U.S. civilian noninstitutionalized population developed by the U.S. Census Bureau and reflect the population as of July 1 for 2003 through 2022. Data analyses were performed using SAS-callable SUDAAN software (7).

For 2003–2015, visits with an alcohol-specific diagnosis were defined by the following codes in any of the diagnosis fields: 291, 303, 305.0, 357.5, 425.5, 535.3, 571.0–571.3, 655.4, 760.71, 790.3, 980.0, and 980.9, and by any-listed cause of injury code E860.0, based on the *International Classification of Diseases, Ninth Edition, Clinical Modification* (ICD–9–CM) (8). For 2016–2022, alcohol-specific diagnoses visits were defined by the following codes in any of the diagnosis fields: F10.1, F10.2, F10.9, G62.1, I42.6, K29.2, K70.0–K70.4, K70.9, Q86.0, R78.0, T51.0, and T51.9, based on the *International Classification of Diseases, 10th Edition, Clinical Modification* (ICD–10–CM) (9). This definition is based on 100% alcohol-attributable diagnoses listed by the alcohol-related ICD codes (5).

Diagnoses that cannot be identified as alcohol-specific by NHAMCS (such as falls or motor vehicle crashes, among others) were excluded from this analysis. Alcohol-specific diagnoses that cannot be identified by either ICD–9–CM and ICD–10–CM were also excluded.

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Suggested citation

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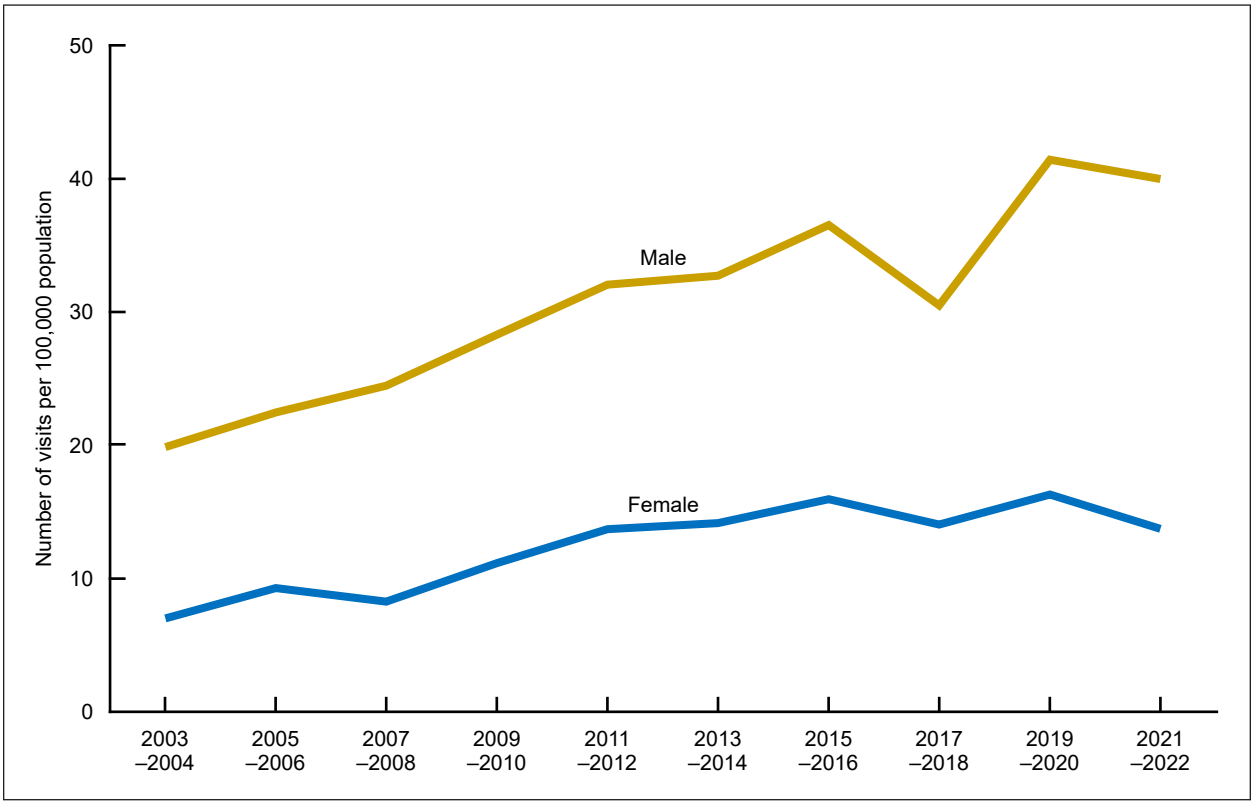
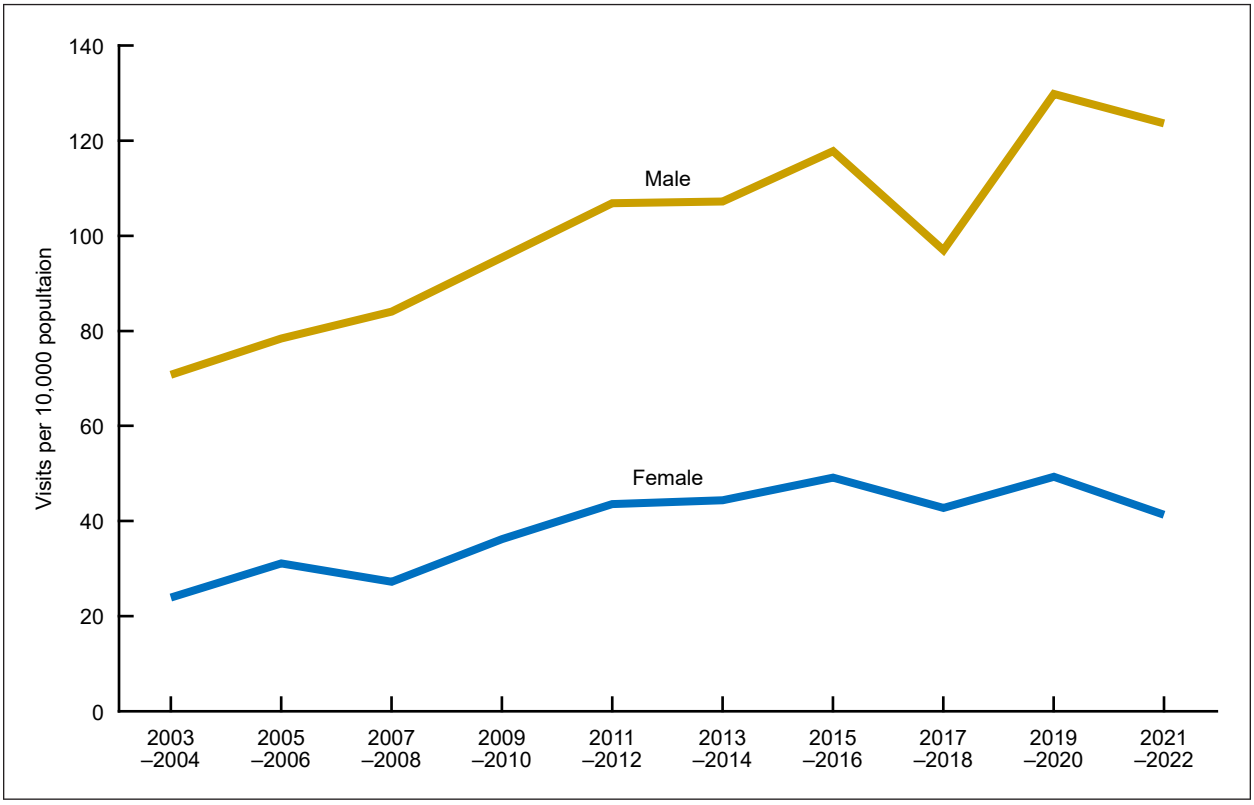
Figure 1. Annual average count of emergency department visits for alcohol-specific diagnoses, by sex: United States, 2003–2004 to 2021–2022



NOTES: Emergency department visit counts were estimated based on a 2-year annual average. Alcohol-specific diagnoses for 2003–2015 are defined as any-listed diagnosis codes 291, 303, 305.0, 357.5, 425.5, 535.3, 571.0–571.3, 655.4, 760.71, 790.3, 980.0, and 980.9, and any-listed cause of injury code E860.0, based on the *International Classification of Diseases, Ninth Edition, Clinical Modification* (ICD–9–CM). Alcohol-specific diagnoses for 2016–2022 are defined as any-listed diagnosis codes F10.1, F10.2, F10.9, G62.1, I42.6, K29.2, K70.0–K70.4, K70.9, Q86.0, R78.0, T51.0, and T51.9 based on the *International Classification of Diseases, 10th Edition, Clinical Modification* (ICD–10–CM). Not included are emergency department visits that are not specifically attributed to alcohol use, such as falls, motor vehicle crashes, and other types of injuries or conditions like cancer. To ensure parity across the study period, certain ICD–10–CM alcohol-specific diagnosis codes, such as alcohol-induced pancreatis and alcohol myopathy, were excluded.
SOURCE: National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey, 2003–2004 to 2021–2022.

Figure 2. Rate of emergency department visits for alcohol-specific diagnoses, by sex: United States, 2003–2004 to 2021–2022



NOTES: Rates per 10,000 population for males and females are based on a 2-year annual average. Rates were calculated using estimates of the U.S. civilian noninstitutionalized population developed by the U.S. Census Bureau and reflect the population as of July 1 for 2003 through 2022. Alcohol-specific diagnoses for 2003–2015 are defined as any-listed diagnosis codes 291, 303, 305.0, 357.5, 425.5, 535.3, 571.0–571.3, 655.4, 760.71, 790.3, 980.0, and 980.9, and any-listed cause of injury code E860.0, based on the *International Classification of Diseases, Ninth Edition, Clinical Modification* (ICD–9–CM). Alcohol-specific diagnoses for 2016–2022 are defined as any-listed diagnosis codes F10.1, F10.2, F10.9, G62.1, I42.6, K29.2, K70.0–K70.4, K70.9, Q86.0, R78.0, T51.0, and T51.9 based on the *International Classification of Diseases, 10th Edition, Clinical Modification* (ICD–10–CM). Not included are emergency department visits that are not specifically attributed to alcohol use, such as falls, motor vehicle crashes, and other types of injuries or conditions like cancer. To ensure parity across the study period, certain ICD–10–CM alcohol-specific diagnosis codes, such as alcohol-induced pancreatis and alcohol myopathy, were excluded.
SOURCE: National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey, 2003–2004 to 2021–2022.

Table 1. Annual average count of emergency department visits for alcohol-specific diagnoses, by sex: United States, 2003–2004 to 2021–2022

Survey year	Estimated ED visit count for females	95% confidence interval	Estimated ED visit count for males	95% confidence interval
	Number in thousands			
2003–2004	701	582–820	1,986	1,757–2,216
2005–2006	928	773–1,084	2,247	1,952–2,542
2007–2008	826	682–970	2,447	2,142–2,753
2009–2010	1,115	922–1,308	2,830	2,460–3,200
2011–2012	1,371	1,140–1,603	3,206	2,795–3,618
2013–2014	1,417	1,093–1,742	3,272	2,721–3,824
2015–2016	1,594	1,304–1,884	3,652	3,147–4,157
2017–2018	1,404	1,121–1,688	3,050	2,530–3,570
2019–2020	1,630	1,271–1,988	4,142	3,443–4,842
2021–2022	1,374	1,067–1,681	3,998	3,403–4,594

NOTES: Emergency department (ED) visit counts were estimated based on a 2-year annual average. Alcohol-specific diagnoses for 2003–2015 are defined as any-listed diagnosis codes 291, 303, 305.0, 357.5, 425.5, 535.3, 571.0–571.3, 655.4, 760.71, 790.3, 980.0 and 980.9, and any-listed cause of injury code E860.0, based on the *International Classification of Diseases, Ninth Edition, Clinical Modification* (ICD–9–CM). Alcohol-specific diagnoses for 2016–2022 is defined as any-listed diagnosis codes F10.1, F10.2, F10.9, G62.1, I42.6, K29.2, K70.0–K70.4, K70.9, Q86.0, R78.0, T51.0, and T51.9, based on the *International Classification of Diseases, 10th Edition, Clinical Modification* (ICD–10–CM). Not included are ED visits that are not specifically attributed to alcohol use, such as falls, motor vehicle crashes, and other types of injuries or conditions like cancer. To ensure parity across the observed study period, certain ICD–10–CM alcohol-specific diagnoses codes, such as alcohol-induced pancreatitis and alcohol myopathy, were excluded.

SOURCE: National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey, 2003–2004 to 2021–2022.

Table 2. Rate of emergency department visits for alcohol-specific diagnoses, by sex: United States, 2003–2004 to 2021–2022

Survey year	Visit rate per 10,000 females	Standard error	95% confidence interval	Visit rate per 10,000 males	Standard error	95% confidence interval
2003–2004	24	2.1	19.8–27.9	71	4.2	62.6–79.0
2005–2006	31	2.7	25.9–36.3	78	5.3	68.2–88.7
2007–2008	27	2.4	22.5–31.9	84	5.4	73.5–94.5
2009–2010	36	3.2	29.9–42.4	95	6.4	82.9–107.8
2011–2012	44	3.8	36.2–50.9	107	7.0	93.1–120.5
2013–2014	44	5.2	34.2–54.5	107	9.2	89.2–125.3
2015–2016	49	4.6	40.2–58.1	118	8.3	101.5–134.1
2017–2018	43	4.4	34.1–51.4	97	8.4	80.5–113.6
2019–2020	49	5.5	38.4–60.1	130	11.2	107.8–151.7
2021–2022	41	4.7	32.1–50.6	124	9.4	105.2–142.0

NOTES: The rate per 10,000 population is based on a 2-year annual average. Rates were calculated using estimates of the U.S. civilian noninstitutionalized population developed by the U.S. Census Bureau and reflect the population as of July 1 for 2003 through 2022. Alcohol-specific diagnoses for 2003–2015 are defined as any-listed diagnosis codes 291, 303, 305.0, 357.5, 425.5, 535.3, 571.0–571.3, 655.4, 760.71, 790.3, 980.0 and 980.9, and any-listed cause of injury code E860.0, based on the *International Classification of Diseases, Ninth Edition, Clinical Modification* (ICD–9–CM). Alcohol-specific diagnoses for 2016–2022 is defined as any-listed diagnosis codes F10.1, F10.2, F10.9, G62.1, I42.6, K29.2, K70.0–K70.4, K70.9, Q86.0, R78.0, T51.0, and T51.9, based on the *International Classification of Diseases, 10th Edition, Clinical Modification* (ICD–10–CM). Not included are emergency department visits that are not specifically attributed to alcohol use, such as falls, motor vehicle crashes, and other types of injuries or conditions like cancer. To ensure parity across the observed study period, certain ICD–10–CM alcohol-specific diagnoses codes, such as alcohol-induced pancreatitis and alcohol myopathy, were excluded.

SOURCE: National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey, 2003–2004 to 2021–2022.