

Emergency Department Visit Rates by Selected Characteristics: United States, 2019

Christopher Cairns, M.P.H., Jill J. Ashman, Ph.D., and Kai Kang, M.P.H.

Key findings

Data from the National Hospital Ambulatory Medical Care Survey, 2019

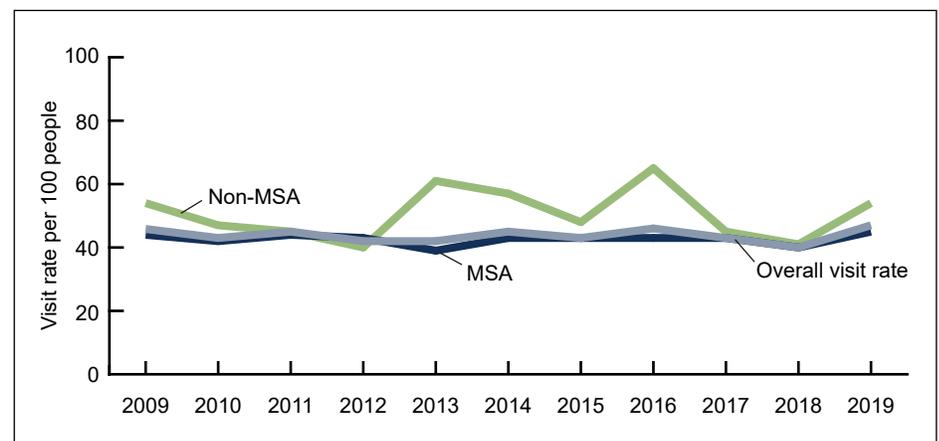
- The overall emergency department (ED) visit rate (47 visits per 100 people in 2019) and visit rates by metropolitan statistical area (MSA) status did not change between 2009 and 2019.
- The ED visit rate was highest for infants under age 1 year (123 visits per 100 people) followed by adults aged 75 years and over (66 per 100).
- The ED visit rate for non-Hispanic Black people (87 visits per 100 people) was higher than the rate for people from all other racial and ethnic groups.
- The ED visit rate for patients with private insurance was lowest, while the rate for patients with Medicaid or Children's Health Insurance Program/State Children's Health Insurance Program was highest compared with all other primary expected sources of payment.

In 2019, an estimated 151 million emergency department (ED) visits occurred in the United States and about 22% of adults aged 18 and over had visited the ED in the past 12 months (1,2). This report presents ED visit rates by selected characteristics, including metropolitan statistical area (MSA) status, age, sex, race and ethnicity, and health insurance status. Data for this report are from the National Hospital Ambulatory Medical Care Survey (NHAMCS), an annual nationally representative survey of nonfederal, general, and short-stay hospitals (3,4).

What were the ED visit rates overall and by MSA status, and did these rates vary during 2009–2019?

- The overall ED visit rate remained stable from 2009 (45 visits per 100 people) through 2019 (47 per 100) (Figure 1); the ED visit rate for MSAs also remained stable from 2009 (44 visits per 100 people) through 2019 (45 visits per 100).

Figure 1. Emergency department visit rates, by year and metropolitan statistical area: United States, 2009–2019



NOTES: MSA is metropolitan statistical area. Based on annual samples of emergency department visits made by patients from 2009 through 2019. The overall visit rates are based on sets of estimates of the U.S. civilian noninstitutionalized population as developed by the U.S. Census Bureau's Population Division. Population estimates for MSA are based on estimates of the U.S. civilian noninstitutionalized population from the National Health Interview Survey, compiled according to the Office of Management and Budget definitions of core-based statistical areas. More information about MSA definitions is available from: <https://www.census.gov/programs-surveys/metro-micro.html>. Access data table for Figure 1 at: <https://www.cdc.gov/nchs/data/databriefs/db434-tables.pdf#1>.

SOURCE: National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey, 2009–2019.



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Health Statistics

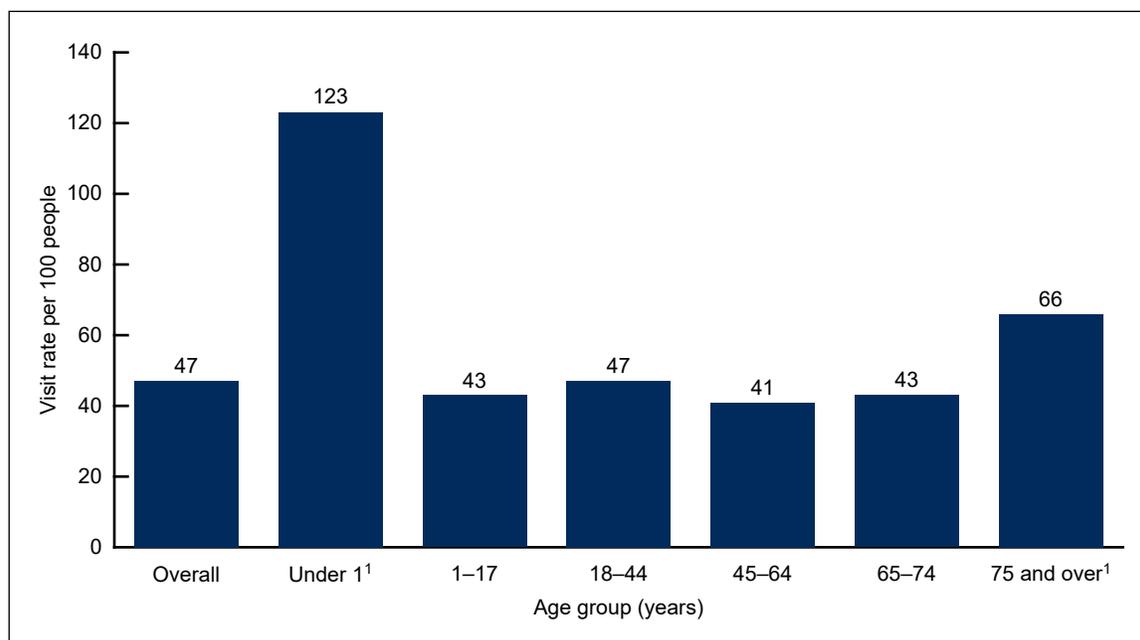


- While ED visits rates for non-MSAs varied over this period, the change was not statistically significant, with a rate of 54 visits per 100 people in 2019.

What were the ED visit rates for each age group, and did these rates vary?

- In 2019, the ED visit rate for infants under age 1 year was 123 visits per 100 infants, which was highest compared with all other age groups (Figure 2).
- The ED visit rate for adults aged 75 and over was 66 visits per 100 people, which was higher than the rates for all other age groups, except infants under 1 year.
- ED visit rates were similar for all other age groups, ranging from 41 to 47 visits per 100 people.

Figure 2. Emergency department visit rates, by age group: United States, 2019



¹Significantly different from all other age groups.

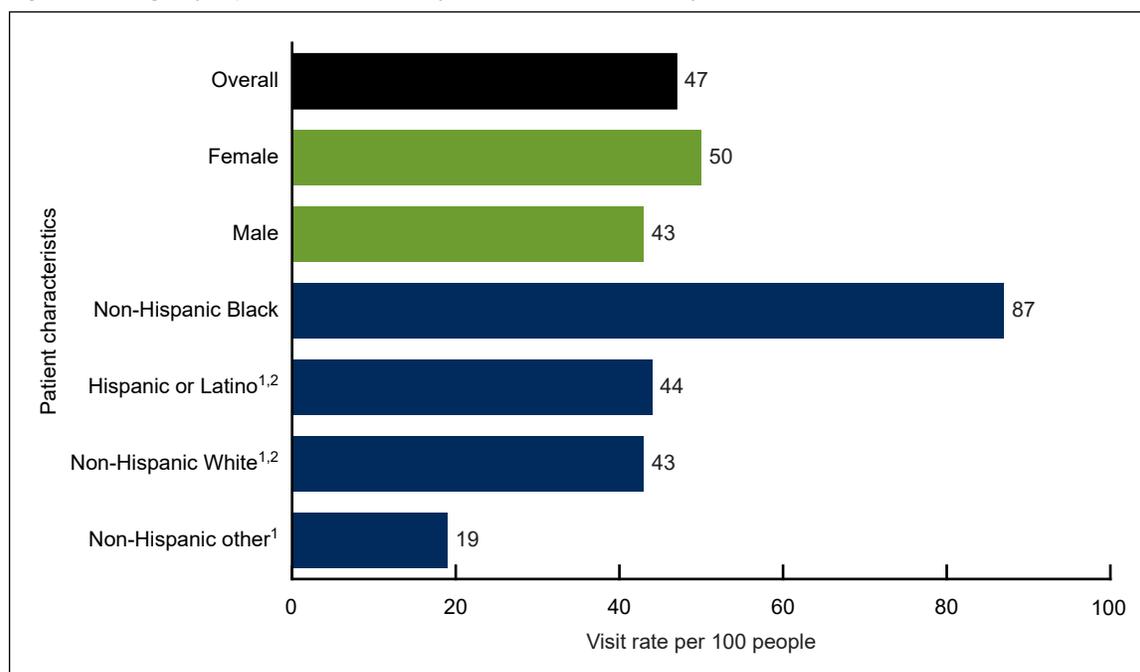
NOTES: Based on a sample of 19,481 emergency department (ED) visits made by patients in 2019, representing an annual average of approximately 151 million ED visits. Visit rates are based on the July 1, 2019, set of estimates of the U.S. civilian noninstitutionalized population as developed by the U.S. Census Bureau's Population Division. Access data table for Figure 2 at: <https://www.cdc.gov/nchs/data/databriefs/db434-tables.pdf#2>.

SOURCE: National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey, 2019.

What were the ED visit rates by sex and by race and ethnicity, and did these rates vary?

- The observed difference in the ED visit rate for females (50 visits per 100 females) and males (43 visits per 100 males) was not significantly different (Figure 3).
- In 2019, the ED visit rate for non-Hispanic Black people was 87 visits per 100 people, which was higher than the rates for people from all other racial and ethnic groups shown.
- The ED visit rate for non-Hispanic other people (includes American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander people, and people with two or more races) was 19 visits per 100 people, which was lower than the rate for non-Hispanic White, non-Hispanic Black, and Hispanic or Latino people.
- The ED visit rates for Hispanic or Latino people (44 per 100 people) and non-Hispanic White people (43 per 100) were similar.

Figure 3. Emergency department visit rates, by sex and race and ethnicity: United States, 2019



¹Significantly different from Non-Hispanic Black people.

²Significantly different from Non-Hispanic other people.

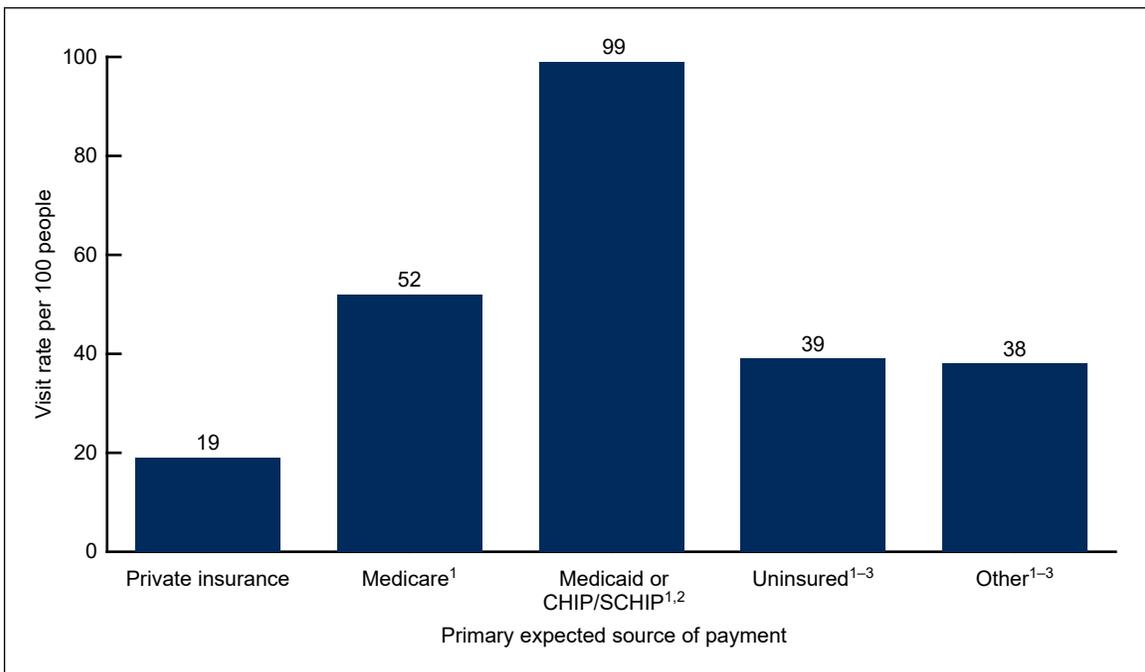
NOTES: Based on a sample of 19,481 emergency department (ED) visits made by patients in 2019, representing an annual average of approximately 151 million ED visits. Visit rates are based on the July 1, 2019, sets of estimates of the U.S. civilian noninstitutionalized population as developed by the U.S. Census Bureau's Population Division. Race and Hispanic ethnicity were collected separately, imputed, and converted into a single combined variable that includes non-Hispanic White, non-Hispanic Black, Hispanic, and non-Hispanic other people. For 2019, 19.7% of race data and 17.4% of ethnicity data were missing for ED visits, and race and ethnicity were imputed for these missing records. Race and ethnicity data were imputed on the data file using a model-based, single, sequential regression imputation method. Missing race values were imputed to be White, Black, or other. Hispanic ethnicity was imputed to be Hispanic or non-Hispanic. Non-Hispanic other people represent 3.7% of weighted visits. Non-Hispanic other includes Asian, Native Hawaiian or Other Pacific Islander, or American Indian or Alaska Native people; and people of two or more races. Access data table for Figure 3 at: <https://www.cdc.gov/nchs/data/databriefs/db434-tables.pdf#3>.

SOURCE: National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey, 2019.

What were the ED visit rates for each primary expected source of payment, and did these rates vary?

- The ED visit rate was highest for patients with Medicaid or Children’s Health Insurance Program/State Children’s Health Insurance Program (CHIP/SCHIP) (99 visits per 100 people) (Figure 4).
- The ED visit rate was lowest for patients with private insurance (19 visits per 100 people).
- The ED visit rate for patients with Medicare (52 per 100 people) was higher compared with rates among uninsured patients (39 per 100) and patients with another primary expected source of payment (38 per 100).

Figure 4. Emergency department visit rates, by primary expected source of payment: United States, 2019



¹Significantly different from Private insurance.

²Significantly different from Medicare.

³Significantly different from Medicaid or CHIP/SCHIP.

NOTES: CHIP/SCHIP is Children’s Health Insurance Program/State Children’s Health Insurance Program. Based on a sample of 19,481 emergency department (ED) visits made by patients in 2019, representing an annual average of approximately 151 million ED visits. Figure excludes 13.5% (weighted) of visits for which data were missing or blank. Visit rates are based on patient’s primary expected source of payment and proportional insurance data from the 2019 National Health Interview Survey, calculated from: <https://www.cdc.gov/nchs/nhis/2019nhis.htm>. Access data table for Figure 4 at: <https://www.cdc.gov/nchs/data/databriefs/db434-tables.pdf#4>.

SOURCE: National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey, 2019.

Summary

This report examines 2019 ED visit rates by selected characteristics and presents trends from 2009 through 2019. The overall ED visit rate and visit rates by MSA status did not change significantly between 2009 and 2019. The ED visit rate for infants under age 1 year was higher than the rates for all other age groups, and the rate for adults aged 75 and over was higher than the rates for all other age groups, except infants. The ED visit rate for non-Hispanic Black people was higher than the rates for people from all other racial and ethnic groups. The ED visit rate for patients with Medicaid or CHIP/SCHIP was higher than the rates for all other sources of payment, and the rate for private insurance was lower than the rates for all other sources of payment. This report shows that there is wide variation in ED visit rates by selected characteristics.

Definitions

ED visit rates: Calculated by dividing the number of ED visits by estimates of the U.S. civilian noninstitutionalized population (obtained from the U.S. Census Bureau’s Population Division) for selected characteristics including age, sex, and race and ethnicity. Visit rates for MSA are based on estimates of the U.S. civilian noninstitutionalized population from the National Health Interview Survey, compiled according to the Office of Management and Budget definitions of core-based statistical areas. More information about MSA definitions is available from: <https://www.census.gov/programs-surveys/metro-micro.html>. Visit rates for patient’s primary expected source of payment are based on patient’s primary expected source of payment and proportional insurance data from the 2019 National Health Interview Survey, calculated from: <https://www.cdc.gov/nchs/nhis/2019nhis.htm>.

Primary expected source of payment: During data collection, all sources of payment were collected. For patients with more than one source of payment, the hierarchy below was used (with Medicare counted first and self-pay and no charge counted last) to collapse payments into one mutually exclusive variable (primary expected source of payment).

- Medicare: Partial or full payment by Medicare plan includes payments made directly to the hospital as well as payments reimbursed to the patient. Charges covered under a Medicare-sponsored prepaid plan are included.
- Medicaid or CHIP/SCHIP: Partial or full payment by Medicaid or CHIP/SCHIP plan includes payments made directly to the hospital or reimbursed to the patient. Charges covered under a Medicaid-sponsored prepaid plan (HMO) or “managed Medicaid” are included.
- Private: Partial or full payment by a private insurer (such as BlueCross BlueShield), either directly to the hospital or reimbursed to the patient. Charges covered under a private insurance-sponsored prepaid plan are included.
- Uninsured: Includes self-pay and no charge or charity. Self-pay are charges paid by the patient or patient’s family that will not be reimbursed by a third party. Self-pay includes visits for which the patient is expected to be responsible for most of the bill, even if the patient never actually pays it. This does not include copayments or deductibles. No charge or charity are visits for which no fee is charged (such as charity, special research, or teaching).

- Other: Includes Worker's Compensation and other sources of payment not covered by the above categories, such as TRICARE, state and local governments, private charitable organizations, and other liability insurance (such as automobile collision policy coverage).

Race and ethnicity: Race and Hispanic ethnicity were collected separately, imputed, and converted into a single combined variable that includes non-Hispanic White, non-Hispanic Black, Hispanic, and non-Hispanic other people. Non-Hispanic other includes Asian, Native Hawaiian or Other Pacific Islander, and American Indian or Alaska Native people, and people with two or more races. For 2019, 19.7% of race data and 17.4% of ethnicity data were missing for ED visits; race and ethnicity were imputed for these missing records. Race and ethnicity data were imputed on the data file using a model-based, single, sequential regression imputation method (3,4). Missing race values were imputed to be White, Black, or other. Hispanic ethnicity was imputed to be Hispanic or non-Hispanic.

Data source and methods

Data for this report are from NHAMCS, an annual nationally representative survey of nonfederal, general, and short-stay hospitals (3,4). NHAMCS provides data on the use and provision of ambulatory care services in hospital emergency departments. In 2019, the weighted NHAMCS response rate was 82.9%. Data analyses were performed using the statistical packages SAS version 9.4 (SAS Institute, Cary, N.C.), SAS-callable SUDAAN version 11.0 (RTI International, Research Triangle Park, N.C.), and Joinpoint Regression Program version 4.7.0.0. Two-tailed *t* tests with a significance level of $p < 0.05$ were used to determine statistically significant differences between ED visit rates.

About the authors

Christopher Cairns, Jill J. Ashman, and Kai Kang are with the National Center for Health Statistics, Division of Health Care Statistics.

References

1. Cairns C, Kang K. National Hospital Ambulatory Medical Care Survey: 2019 emergency department summary tables. 2022.
2. Clarke TC, Schiller JS. Early release of selected estimates based on data from the January–June 2019 National Health Interview Survey. National Center for Health Statistics. May 2020. Available from: <https://www.cdc.gov/nchs/data/nhis/earlyrelease/EarlyRelease202005-508.pdf>.
3. National Center for Health Statistics. 2019 NHAMCS micro-data file. Hyattsville, MD. 2021.
4. National Center for Health Statistics. 2019 NHAMCS micro-data file documentation. Hyattsville, MD. 2021.

**U.S. DEPARTMENT OF
HEALTH & HUMAN SERVICES**

Centers for Disease Control and Prevention
National Center for Health Statistics
3311 Toledo Road, Room 4551, MS P08
Hyattsville, MD 20782-2064

FIRST CLASS MAIL
POSTAGE & FEES PAID
CDC/NCHS
PERMIT NO. G-284

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300

For more NCHS Data Briefs, visit:
<https://www.cdc.gov/nchs/products/databriefs.htm>.



NCHS Data Brief ■ No. 434 ■ March 2022

Keywords: emergency care • hospital characteristics • patient characteristics • National Hospital Ambulatory Medical Care Survey

Suggested citation

Cairns C, Ashman JJ, Kang K. Emergency department visit rates by selected characteristics: United States, 2019. NCHS Data Brief, no 434. Hyattsville, MD: National Center for Health Statistics. 2022. DOI: <https://dx.doi.org/10.15620/cdc:114424>.

Copyright information

All material appearing in this report is in the public domain and may be reproduced or copied without permission; citation as to source, however, is appreciated.

National Center for Health Statistics

Brian C. Moyer, Ph.D., *Director*
Amy M. Branum, Ph.D., *Associate Director for Science*

Division of Health Care Statistics

Carol J. DeFrances, Ph.D., *Acting Director*
Alexander Strashny, Ph.D., *Associate Director for Science*

For e-mail updates on NCHS publication releases, subscribe online at:
<https://www.cdc.gov/nchs/email-updates.htm>.

For questions or general information about NCHS:
Tel: 1-800-CDC-INFO (1-800-232-4636)
TTY: 1-888-232-6348
Internet: <https://www.cdc.gov/nchs>
Online request form: <https://www.cdc.gov/info>

ISSN 1941-4927 Print ed.
ISSN 1941-4935 Online ed.