

Acute Ischemic Stroke

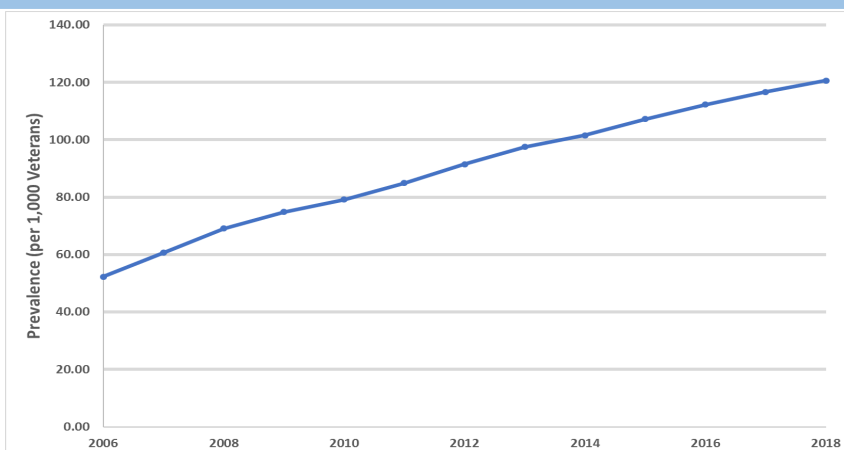
August 2019

Fact Sheet: Data on Veterans Using VA Health Care

CSPEAR fact sheets present descriptive information on the health status of Veterans and other patients using the Department of Veterans Affairs (VA) health care system. These fact sheets inform decision-making and strategic priorities within VA.

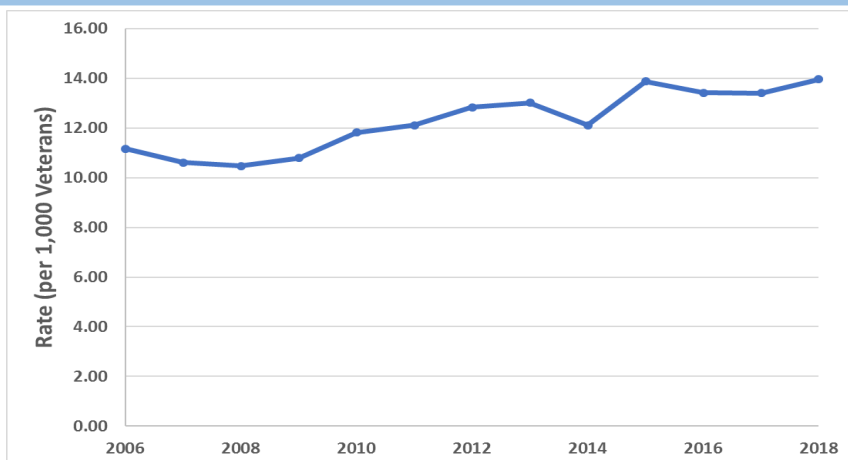
Acute Ischemic Stroke (AIS) occurs when the blood supply to the brain is cut off, often by a blood clot [1]. About 87% of all strokes are ischemic rather than hemorrhagic [2]. Stroke is the fifth leading cause of death in the United States, accounting for 5% of all deaths in 2015 [3]. Survival rates after stroke diagnosis are estimated to be 60% at 1 year and 31% at 5 years [4]. The overall rates of stroke are higher in men compared to women [5], with largest differences in middle age that attenuate with older age [6]. Stroke is also a leading cause of serious long-term disability and remains a large burden on healthcare costs [7].

Trends in AIS Prevalence, Fiscal Year 2006-2018



The prevalence of AIS among veterans using VA health care steadily increased from 2006-2018.

Trend of Initial AIS Presentation, Fiscal Year 2006-2018



The rate of initial AIS presentation among VHA users slightly increased from 2006-2018.

*Changes in coding practices were identified beginning in 2014

Fast Facts

- Between 2006-2018, there were 513,879 initial presentations of AIS diagnoses among 10,547,924 VHA users, 96.9% male
- 31% of all initial AIS presentations at the VA occurred in patients between ages 60 and 69
- Among VHA users, 69.1% of AIS cases were white non-Hispanic, 17.6% were black non-Hispanic, 8% were other race non-Hispanic, and 5.3% were Hispanic
- Beyond 30 days after AIS both Hispanics and Black Non-Hispanics had better survival rates than White Non-Hispanics

Data Source and Study Population

Data were extracted from the Corporate Data Warehouse (CDW), a national database that integrates clinical and administrative information in the Veterans Health Administration (VHA). The prevalence and first presentation of acute ischemic stroke from Oct. 1, 2005 to Sep. 30, 2018 (Fiscal Year 2006-2018) were estimated among VHA users ages 18 to 110 who either had 1 inpatient or outpatient visit at a VHA facility (N = 10,547,924). Criteria for stroke diagnosis included either 1 inpatient or outpatient ICD-9-CM code of 433.x1, 434.X [excluding 434.x0], 436, 437.0 and 437.6 or ICD-10-CM code of I63.xx9, I63.20, I63.22, I63.30, I63.40, I63.50, I63.59, I67.2, I67.6 or I67.89 [8].

Notes: This work was conducted under the research protocol approved by the VA Boston Healthcare System institutional review board (IRB# 2792). This material is the result of work supported with resources and the use of facilities at the VA Cooperative Studies Program Epidemiology Center in Boston, MA. The contents do not represent the views of VA or the US Government.

Visit [CSPEAR's website](#) or contact CSPEAR@va.gov for more information.

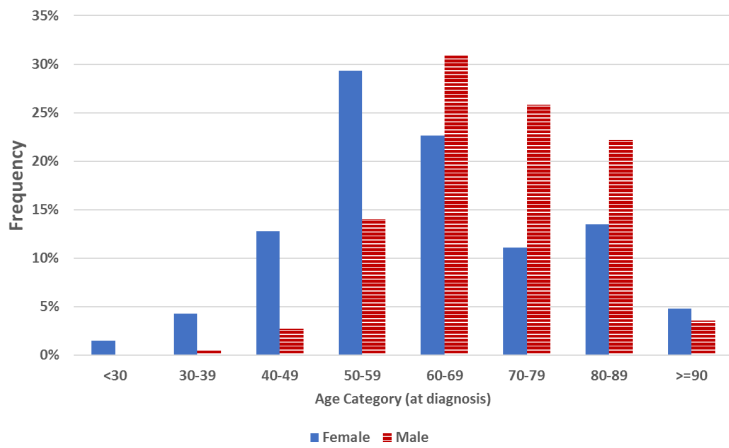
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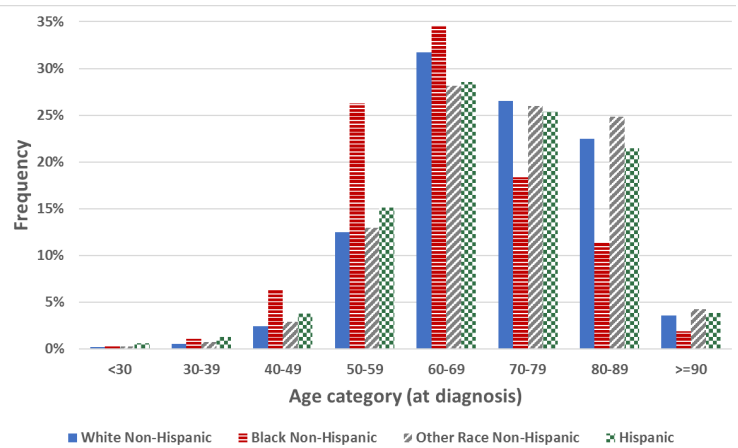
CSPEAR Fact Sheet for Acute Ischemic Stroke — continued

Age at Time of AIS Presentation by Sex, 2006-2018



Among VHA users, about 5% had an initial presentation of AIS between 2006-2018. Of those AIS cases, 96.9% were male, reflective of the overall VHA population. Females were more likely to present with AIS earlier than males. About 29% of females but only 14% of males presented with AIS at ages 50-59, while about 26% of males but only 11% of females presented at ages 70-79.

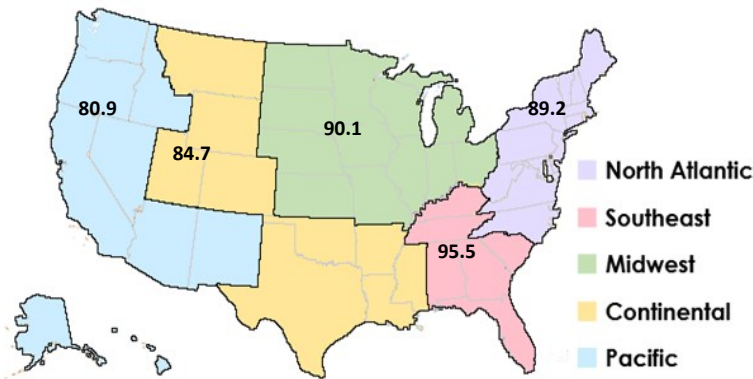
Age at Time of AIS Presentation by Race/Ethnicity, 2006-2018



Among VHA users with AIS, 69% were white non-Hispanic, 18% black non-Hispanic, and 5% Hispanic. Black Non-Hispanics were likely to present with AIS earlier than all other races/ethnicities. About 26% of black non-Hispanics, but only 12-15% of all other races/ethnicities presented at ages 50-59, while only 11% of black non-Hispanics and 21-25% of other races/ethnicities presented at ages 80-89.

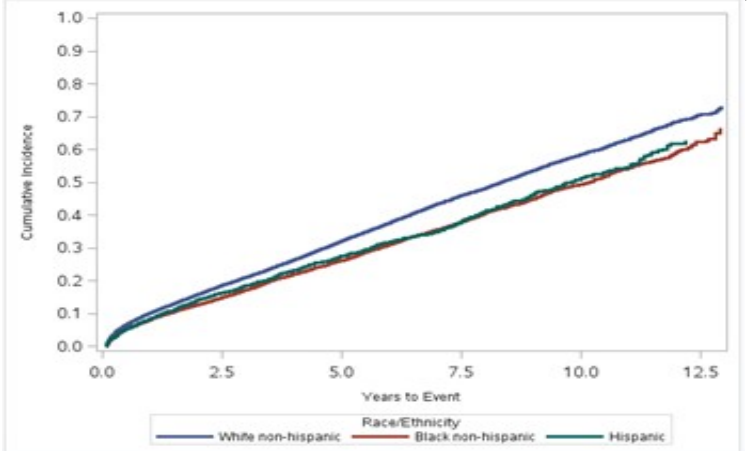
Initial Presentation of AIS by Region, 2006-2018

13 year cumulative rates per 1,000 VHA users



The highest rate of initial AIS presentation occurred in the Southeast United States.

AIS Cumulative Mortality Curves after 30 days by Race/Ethnicity



Among VHA users, Black non-Hispanics and Hispanics had better survival rates after 30 days post stroke compared to white non-Hispanics. Median survival was approximately 8.5 years for white non-Hispanics and 10.5 years for Black non-Hispanics and Hispanics [9].

Research Limitations and Challenges

- We were unable to capture AIS events that occurred outside of VHA
- Due to reliance on diagnosis codes for identification of events we were unable to identify or quantify unique AIS events because clinicians often code repeatedly for past events
- Unless an inpatient AIS diagnosis was recorded, we were unable to identify the exact date or time of AIS events since diagnosis codes were given at the time of visits, which led us to focus on first presentation of AIS in VHA rather than occurrence of incident stroke.
- Changes in coding practices were identified beginning in 2014 for unknown reasons and with no regional variation

References and Resources

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