



# STROKE

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*Disease Information Packets – Slide Set*  
*Public Health Services, Community Health Statistics*  
*08/2022*



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# What is Stroke?



- Stroke is a type of cardiovascular disease that occurs when blood and oxygen are unable to reach the brain due to blockage or rupturing of a blood vessel.
  - Without proper nutrients and oxygen, the deprived part of the brain begins to die.



# Types of Strokes



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## ■ Ischemic Stroke:

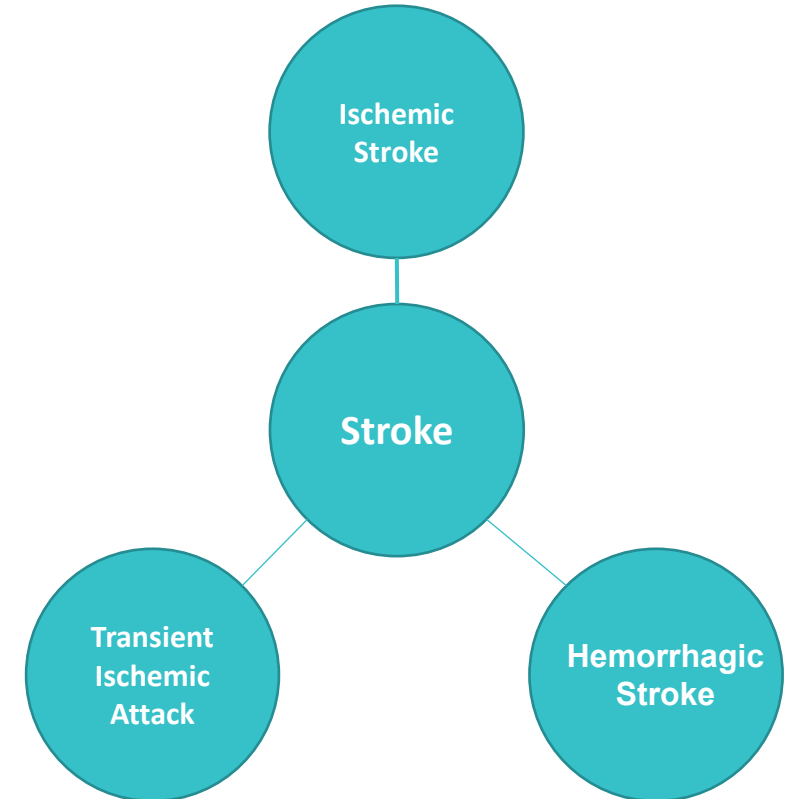
- Occurs when blood vessels to the brain are blocked by blood clots, plaque or other particles.

## ■ Hemorrhagic Stroke:

- Occurs when a blood vessel that supplies blood to the brain bursts and leaks blood into the brain.

## ■ Transient Ischemic Attack (TIA or “mini-stroke”):

- Occurs when a blood vessel that supplies blood to the brain is blocked for a short period of time.
- Is a warning sign for a future stroke and is still considered a medical emergency.



# Effects of Strokes



- **After a stroke, some effects may reside even after recovery:**
  - Paralysis/weakness on both or one side of the body.
  - Trouble with thinking, awareness, attention, learning, judgment, and memory.
  - Problems understanding or forming speech.
  - Trouble controlling or expressing emotions.
  - Numbness or strange sensations.
  - Pain in the hands and feet that worsens with movement and temperature changes.
  - Trouble with chewing and swallowing.
  - Problems with bladder and bowel control.
  - Depression.

# Demographic Risk Factors



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## ■ Age

- The risk of stroke increases with age, but strokes can occur at any age.
- After the age of 55, the risk of stroke more than doubles every ten years.

## ■ Genetics and family history

- The risk of stroke is higher if a family member has had a stroke before 65 years.
- Genetic disorders such as sickle cell anemia, a genetic blood disorder of red blood cells, increases the risk for stroke.



# Demographic Risk Factors



## ■ Sex

- The incidence of stroke and death from stroke is higher among females compared to males of all ages.
- Pregnancy increases stroke risk.
- Women who smoke or who are on birth control pills, and who have other risk factors, also have a higher stroke risk.

## ■ Race/ethnicity

- Blacks, Hispanics, American Indians, and Native Alaskans are more likely to suffer a stroke than Non-Hispanic Whites and Asians.
- Blacks have a higher death rate due to stroke compared to non-Hispanic Whites.

Source: Centers for Disease Control and Prevention. (2022). *Know Your Risk for Stroke*. [https://www.cdc.gov/stroke/risk\\_factors.htm](https://www.cdc.gov/stroke/risk_factors.htm).

American Stroke Association. (2021). *Stroke Risk Factors Not Within Your Control*. <https://www.stroke.org/en/about-stroke/stroke-risk-factors/stroke-risk-factors-not-within-your-control>.

Centers for Disease Control and Prevention. (2022). *Women and Stroke*. <https://www.cdc.gov/stroke/women.htm>.

# Social and Behavioral Risk Factors



- **High blood pressure**
  - The most important controllable risk factor and is a leading cause of stroke.
- **Heart disease**
  - Coronary artery disease causes plaque build up in the arteries and blocks oxygen-rich blood flow to the brain.
- **Atrial fibrillation**
  - Increases the risk of stroke by 4-6 times on average.



Source: American Stroke Association. (2021). *Risk Factors Under Your Control*. <https://www.stroke.org/en/about-stroke/stroke-risk-factors/risk-factors-under-your-control>.

Centers for Disease Control and Prevention. (2022). *Know Your Risk for Stroke*. [https://www.cdc.gov/stroke/risk\\_factors.htm](https://www.cdc.gov/stroke/risk_factors.htm).

National Institute of Neurological Disorders and Stroke. (2022). *Atrial Fibrillation and Stroke*. <https://www.ninds.nih.gov/health-information/disorders/atrial-fibrillation-and-stroke>.

Centers for Disease Control and Prevention. (2022). *About Stroke*. <https://www.cdc.gov/stroke/about.htm>.

# Social and Behavioral Risk Factors



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- **Transient ischemic attacks (TIAs)**

- More than 1 in 3 people who have a TIA and don't get treated have a major stroke within 1 year.

- **Diabetes**

- People with diabetes are twice as likely to have heart disease or a stroke compared to people without diabetes.

- **High cholesterol levels**

- Consumption of fatty foods can cause cholesterol build up in the blood and formation of blood clots, leading to a stroke.



# Social and Behavioral Risk Factors



## ■ Tobacco use

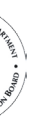
- Smoking can damage the heart and blood vessels.
- Nicotine increases blood pressure.

## ■ Heavy alcohol consumption

- Excessive alcohol consumption can lead to an increase in blood pressure, which increases the risk for stroke.

## ■ Physical inactivity

- Being inactive can increase the risk of stroke, as well as other chronic diseases.



# National Statistics and Disparities



- Stroke was the 5<sup>th</sup> leading cause of death in the United States in 2019.
- For 2019, stroke accounted for 1 of every 19 deaths in the United States.
- On average, someone will have a stroke in the United States every 40 seconds.
- Nearly 795,000 Americans have a new or recurrent stroke each year.

## Top 10 Leading Causes of Death in the US, 2019

1. Heart Disease: 659,041
2. Cancer (malignant neoplasms): 599,601
3. Accidents (unintentional injuries): 173,040
4. Chronic lower respiratory diseases: 156,979
5. Stroke (cerebrovascular diseases): 150,005
6. Alzheimer's Disease: 121,499
7. Diabetes Mellitus: 87,647
8. Nephritis, nephrotic syndrome and nephrosis: 51,565
9. Influenza and pneumonia: 49,783
10. Intentional self-harm (suicide): 47,511

Source: National Vital Statistics Reports. (2021). Deaths: Leading Causes for 2019. <https://www.cdc.gov/nchs/data/nvsr/nvsr70/nvsr70-09-508.pdf>.

Centers for Disease Control and Prevention. (2022). *Disease or Condition of the Week: Stroke*. <https://www.cdc.gov/dotw/stroke/index.html>.

Tsao, C. W., Aday, A. W., Almarazooq, Z. I., Alonso, A., Beaton, A. Z., Bittencourt, M.S., Boehme, A. K., Buxton, A. E., Carson, A. P., Commodore-Mensah, Y., Elkind, M. S. V., Evenson, K. R., Eze-Nliam, C., Ferguson, J. F., Generoso, G., Ho, J. E., Kalani, R.,

Khan, S. S., Kissela, B. M., & Knutson, K. L. (2022). Heart Disease and Stroke Statistics—2022 Update: A Report from the American Heart Association. *Circulation*, 145(8).

<https://doi.org/10.1161/cir.0000000000001052>.

# National Statistics and Disparities



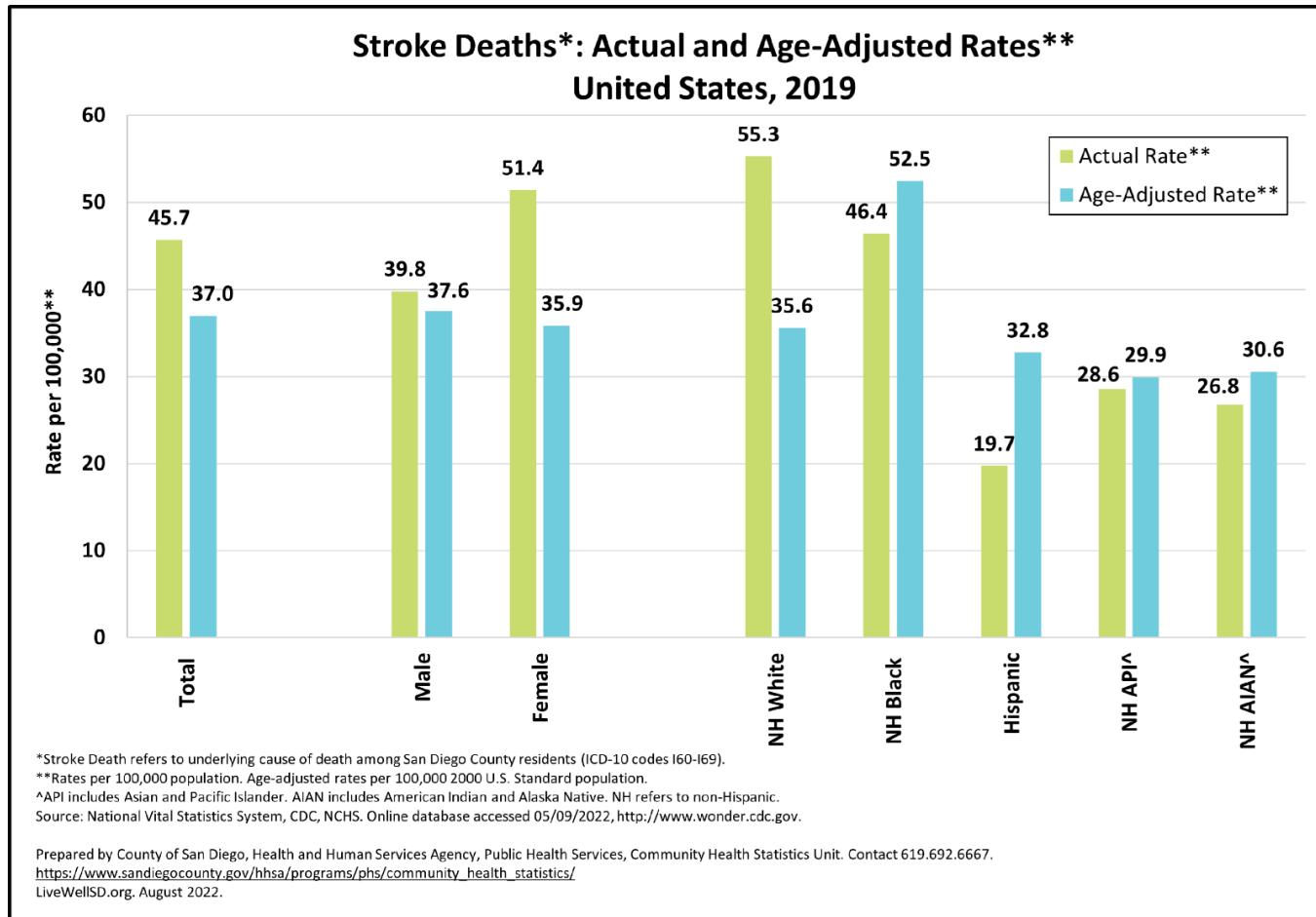
- The highest death rates due to stroke are in the southern United States.
- Each year, about 55,000 more women than men have a stroke.
- African American adults have almost twice the risk of first-ever stroke compared to White adults.



Source: Tsao, C. W., Aday, A. W., Almarzooq, Z. I., Alonso, A., Beaton, A. Z., Bittencourt, M. S., Boehme, A. K., Buxton, A. E., Carson, A. P., Commodore-Mensah, Y., Elkind, M. S. V., Evenson, K. R., Eze-Nliam, C., Ferguson, J. F., Generoso, G., Ho, J. E., Kalani, R., Khan, S. S., Kissela, B. M., & Knutson, K. L. (2022). Heart Disease and Stroke Statistics—2022 Update: A Report from the American Heart Association. *Circulation*, 145(8). <https://doi.org/10.1161/cir.0000000000001052>.

Centers for Disease Control and Prevention. (2022). *Disease or Condition of the Week: Stroke*. <https://www.cdc.gov/dotw/stroke/index.html>.

# National Statistics and Disparities



- In the United States, the age-adjusted stroke death rate was slightly higher among men than women.
- The age-adjusted stroke death rate among non-Hispanic Blacks was nearly 1.5 times greater than the age-adjusted stroke death rate among non-Hispanic Whites.

# National Disparities

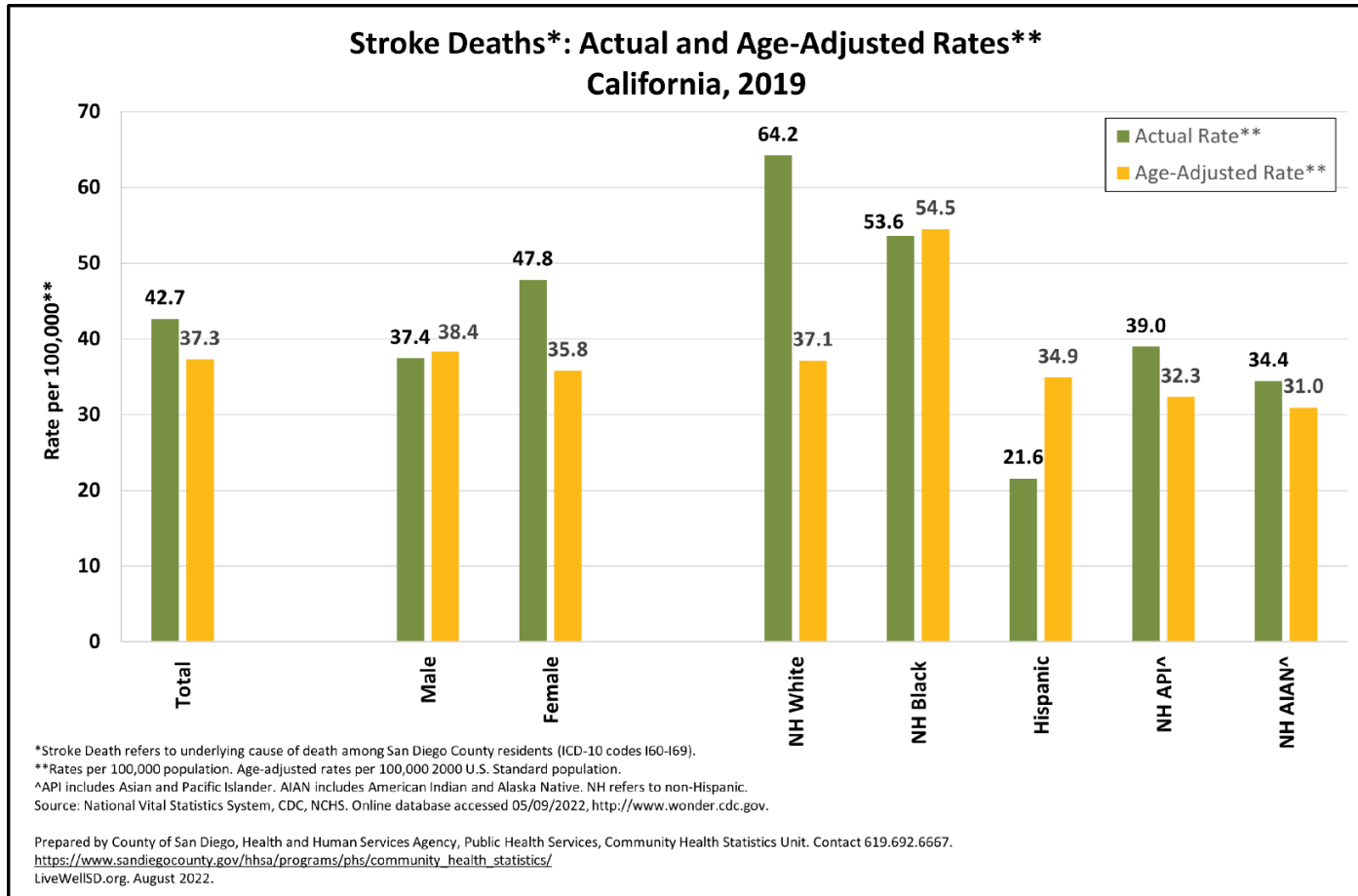


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- Stroke costed an estimated \$33.4 billion in 2017-2018.
  - Includes outpatient hospital visits, inpatient stays, emergency department visits, prescriptions and home health care.



# State Statistics and Disparities

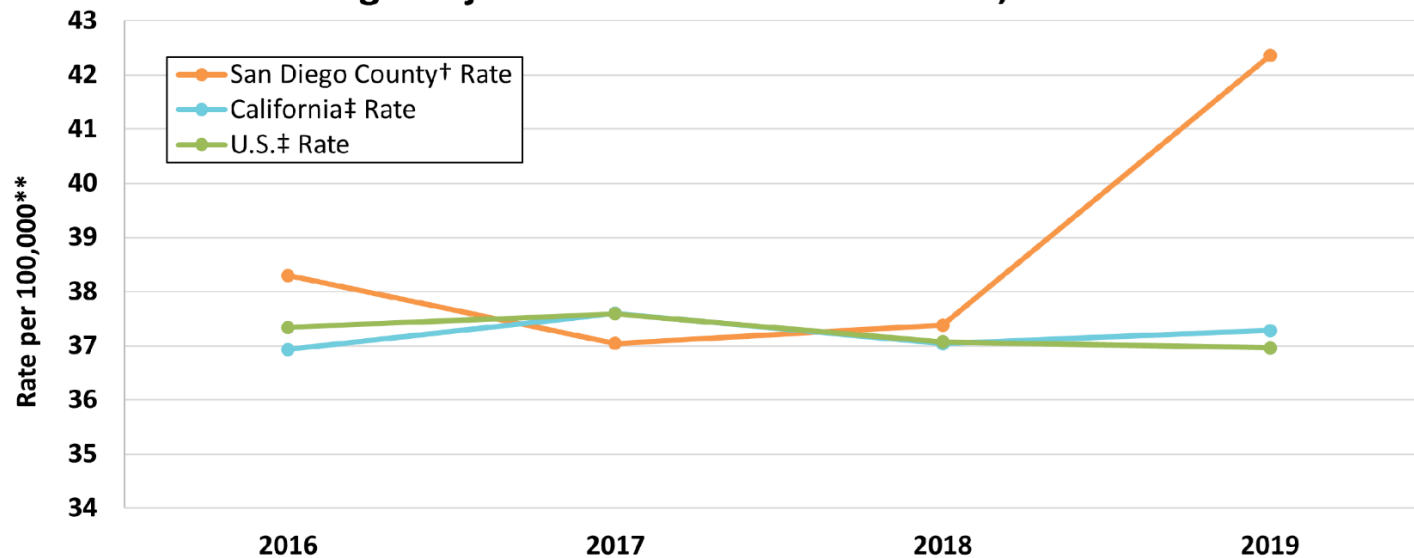


- In California, the age-adjusted stroke death rate was slightly higher among males than females.
- Non-Hispanic Blacks had the highest age-adjusted stroke death rate followed by non-Hispanic Whites.

# Local Statistics and Disparities



**National, State, and Local  
Age-Adjusted Stroke Death\* Rates\*\*, 2016-2019**



\*Stroke Death refers to underlying cause of death among San Diego County residents (ICD-10 codes I60-I69).

\*\*Age-adjusted rates are per 100,000 2000 U.S. Standard population.

†Sources: California Department of Public Health, Center for Health Statistics, Office of Health Information and Research, Vital Records Business Intelligence System (VRBIS), 2019. Population estimates San Diego Association of Governments (SANDAG), 2019 v5/2020.

‡Source: National Vital Statistics System, CDC, NCHS. Online database accessed 05/09/2022, <http://www.wonder.cdc.gov>.

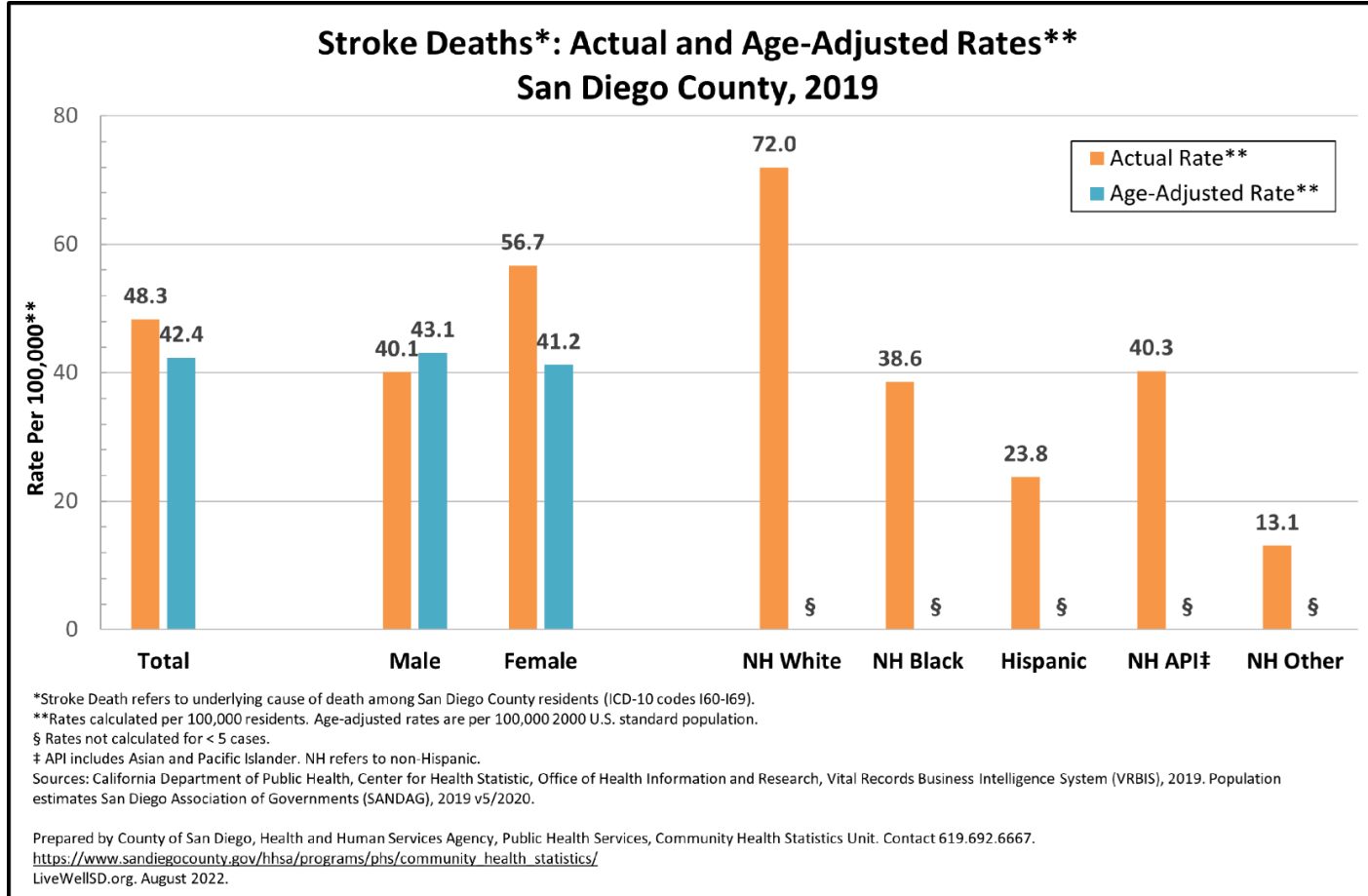
Prepared by County of San Diego, Health and Human Services Agency, Public Health Services, Community Health Statistics Unit. Contact 619.692.6667.

[https://www.sandiegocounty.gov/hhsa/programs/phs/community\\_health\\_statistics/](https://www.sandiegocounty.gov/hhsa/programs/phs/community_health_statistics/)

LiveWellSD.org. August 2022.

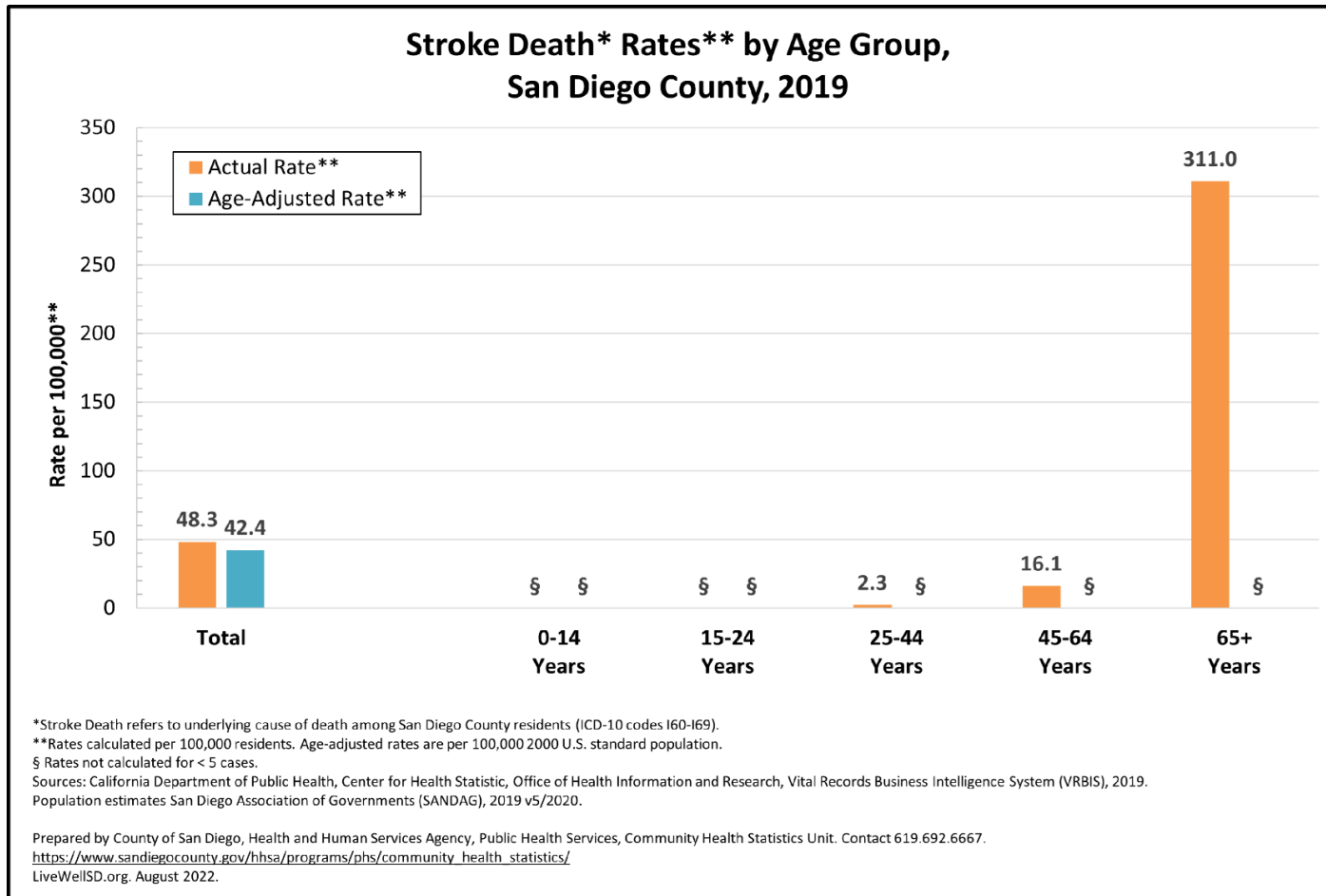
- In 2016, 2018 and 2019, age-adjusted stroke death rates in San Diego County surpassed state and national rates.

# Local Statistics and Disparities



- In San Diego County in 2019, males and females had similar age-adjusted stroke death rates.
- Non-Hispanic White residents had the highest stroke death rate compared to other racial/ethnic groups.

# Local Statistics and Disparities

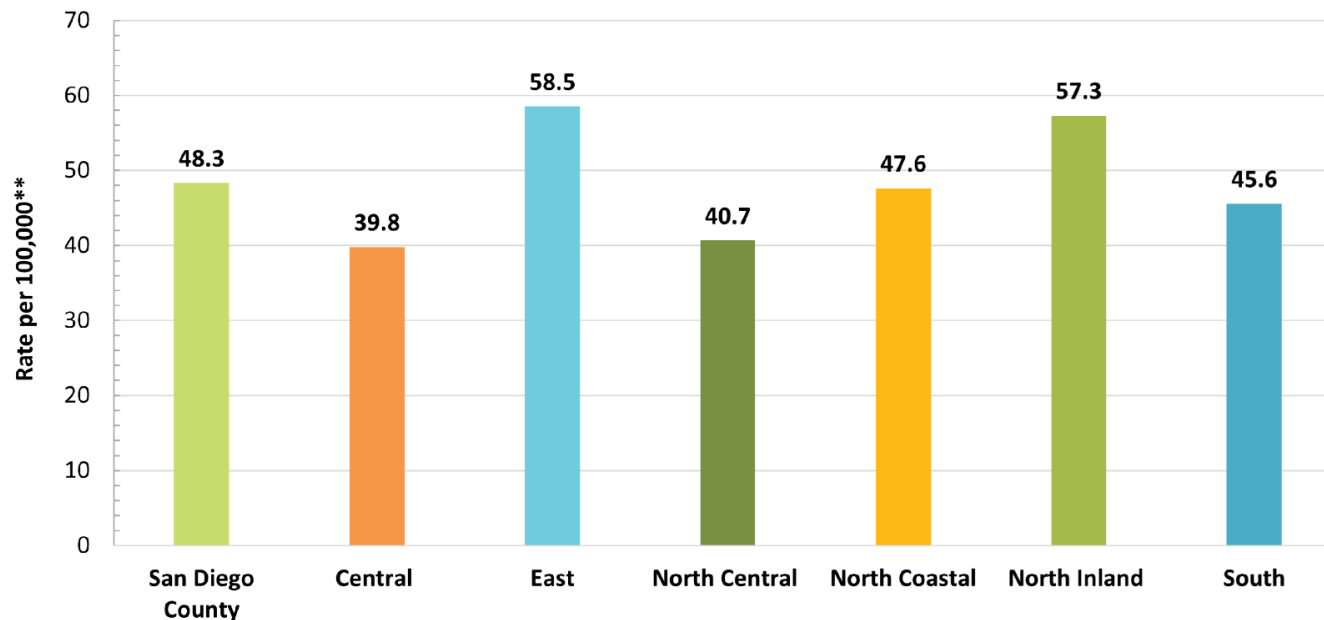


- In 2019, the actual stroke death rate was highest among San Diego County residents aged 65+ years.
- The stroke death rate among residents aged 65+ years was nearly 6.4 times greater than the total San Diego County stroke death rate.

# Local Statistics and Disparities



**Stroke Death\* Rates\*\* by Health and Human Services Agency (HHSA) Region, San Diego County, 2019**



\*Stroke Death refers to underlying cause of death among San Diego County residents (ICD-10 codes I60-I69).

\*\*Rates calculated per 100,000 residents.

Sources: California Department of Public Health, Center for Health Statistics, Office of Health Information and Research, Vital Records Business Intelligence System (VRBIS), 2019. Population estimates San Diego Association of Governments (SANDAG), 2019 v5/2020.

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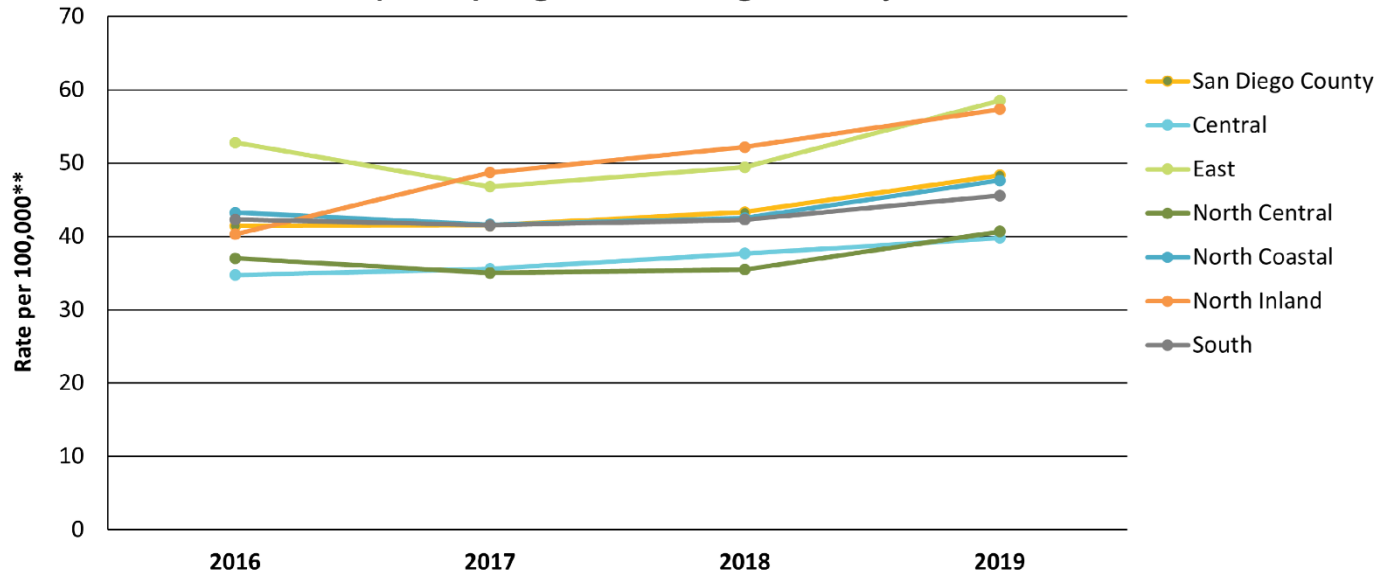
LiveWellSD.org. August 2022.

- In 2019, East Region of San Diego County had the highest death rate due to stroke, while Central Region had the lowest.
- East Region and North Inland Region had stroke death rates that were higher than the county stroke death rate.

# Local Statistics and Disparities



**Stroke Death\* Rates\*\* by Health and Human Services Agency (HHSA) Region, San Diego County, 2016-2019**



\*Stroke Death refers to underlying cause of death among San Diego County residents (ICD-10 codes I60-I69).

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LiveWellSD.org. August 2022.

- In San Diego County, East Region and North Inland Region had the highest rates of stroke deaths from 2017 to 2019.
- Overall, the rates of stroke deaths increased from 2017 to 2019 in every region and the county.

# Prevention



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## To decrease the risk of stroke:

- Lower blood pressure.
- Eat healthy foods.
- Maintain a healthy weight.
- Exercise regularly.
- Control blood sugar.
- Lower blood cholesterol.
- Manage stress.
- Moderate alcohol consumption.
- Don't smoke.
- Take medicine as instructed.



Source: Centers for Disease Control and Prevention. (2022). Prevent Stroke: What You Can Do. <https://www.cdc.gov/stroke/prevention.htm>.

# Know the Warning Signs of a Stroke

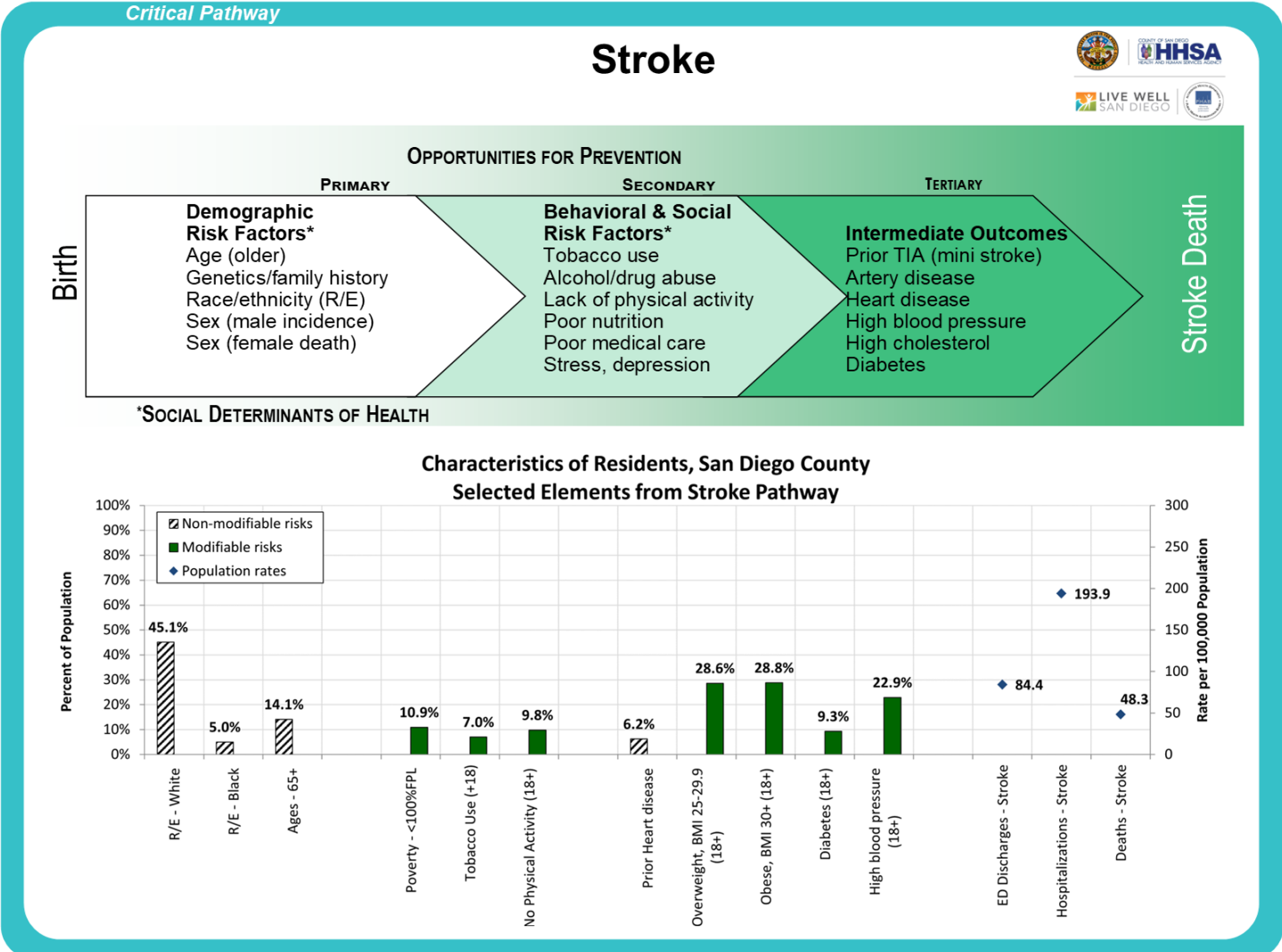


- Sudden numbness or weakness of the face, arm, or leg
- Sudden confusion, trouble speaking or understanding
- Sudden trouble walking, dizziness or loss of balance or coordination
- Sudden trouble seeing in one or both eyes
- Sudden severe headache with no known cause
- Sudden chest pain

**If warning signs appear, call 9-1-1 immediately.**



# Critical Pathway for Stroke



# Contact Us



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For more information, including data, resources and reports from the  
County of San Diego's Community Health Statistics Unit:

[www.SDHealthStatistics.com](http://www.SDHealthStatistics.com)

(619)692-6667