

# Chronic Obstructive Pulmonary Disease (COPD)

## Descriptive Summary

### What is Chronic Obstructive Pulmonary Disease (COPD)?

Chronic obstructive pulmonary disease, or COPD, is a respiratory disease that makes it hard to breathe. The disease is progressive, meaning it gets worse over time, and includes chronic bronchitis and emphysema. With COPD, less air flows in and out of the airways for one or more of the following reasons: the airways and air sacs lose their elastic quality, the walls between many of the air sacs are damaged, the walls of the airways become swollen, or increased mucus production leads to airway obstruction.<sup>1</sup>

COPD cannot be cured, but treatment and changes in lifestyle behaviors, such as quitting smoking, can help slow the progress of the disease. Treatments for COPD include medicines, pulmonary rehabilitation, oxygen therapy, surgery, and managing complications.<sup>2</sup> The symptoms of COPD can be managed by joining a COPD self-management program, wearing loose-fitting clothes, placing items in easy-to-reach places, taking medications as directed by a physician, and consulting with a physician about a diet plan and physical activities. To prevent severe flare-ups, avoid lung irritants, check the air quality of your current location, and getting vaccinated for COVID-19 and the flu.<sup>3</sup>

COPD is a major cause of disability in the United States and is the fourth leading cause of death. More than 15 million American adults suffer from COPD.<sup>1</sup>

### Risk Factors for Cancer

#### Demographic Risk Factors

- *Age*
  - People aged 65 years and older are more likely to report COPD than any other age group.<sup>4</sup>
- *Sex*
  - Females are more likely to have COPD and die at a higher rate due to COPD.<sup>4</sup>
  - In 2018, COPD was the fourth leading cause of death among women in the United States.<sup>5</sup>
- *Genetics/Family History*
  - People with a family history of COPD are more likely to get the disease if they smoke.<sup>6</sup>
  - Alpha-1 antitrypsin (AAT) deficiency, a rare genetic condition, can cause COPD.<sup>1</sup>

#### Social and Behavioral Risk Factors

- *Smoking*
  - The number one risk factor for COPD is smoking; most people who have COPD smoke or used to smoke.<sup>6</sup>
  - 75% of COPD-related deaths are due to smoking.<sup>7</sup>
- *Exposure to lung irritants*

# Chronic Obstructive Pulmonary Disease (COPD)

## Descriptive Summary

- Lung irritants include air pollution, chemical fumes, dust from the environment or workplace, smoke from home cooking, heating fuels without ventilation, and secondhand smoke.<sup>6</sup>
- *History of infections and respiratory conditions*
  - About 1 in 5 people who have COPD also have asthma.<sup>6</sup>
  - HIV and tuberculosis can increase the risk of COPD.<sup>6</sup>

### Intermediate Outcomes

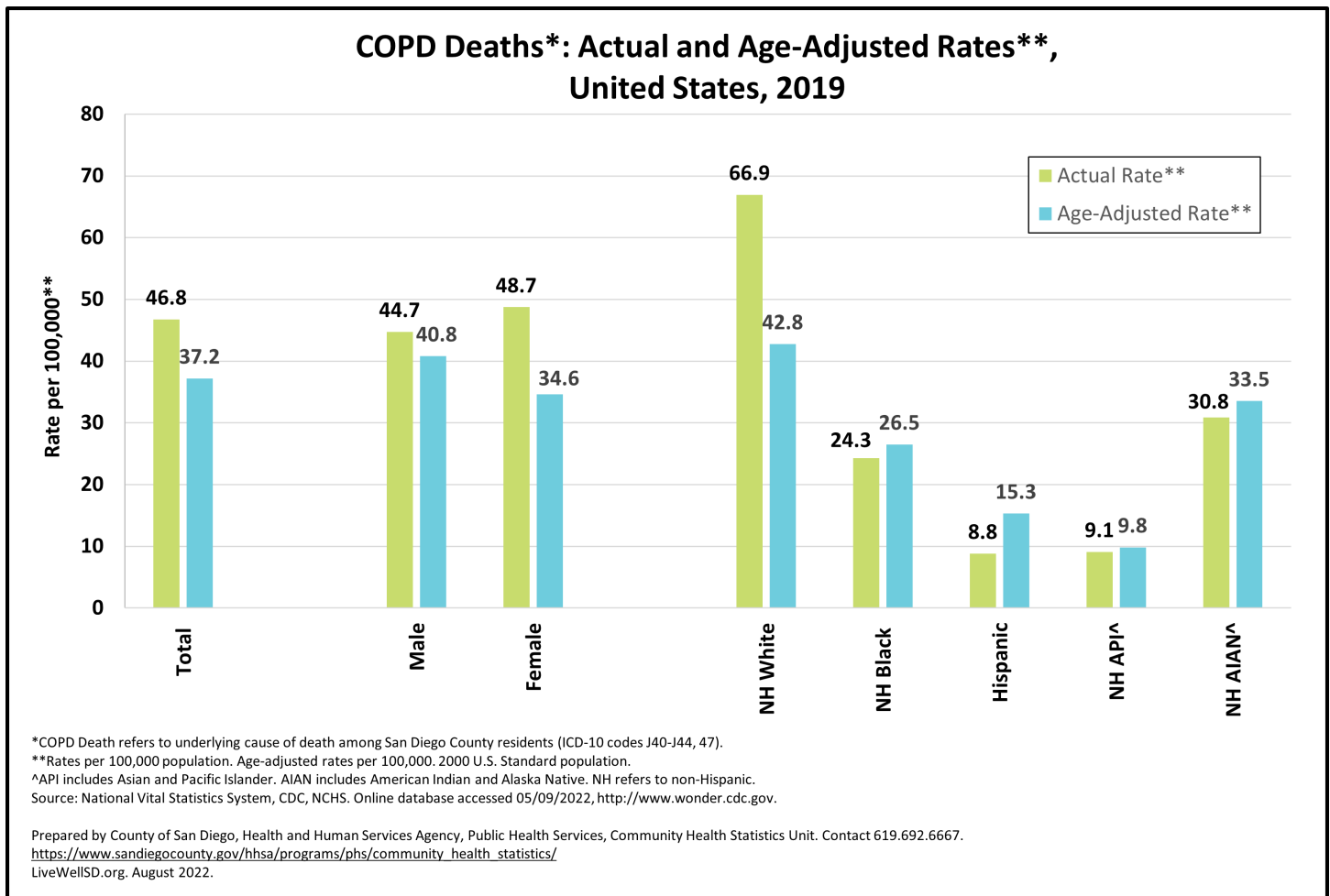
- *Chronic Bronchitis*<sup>1</sup>
  - Caused by constant irritation and inflammation in the lining of the airways.
  - Forms thick mucus in the airways and makes it difficult to breathe.
- *Emphysema*<sup>1</sup>
  - Develops when there's damage to the walls between the air sacs in the lungs, making it harder for the lungs to move air out of the body.

# Chronic Obstructive Pulmonary Disease (COPD)

## Descriptive Summary

### National Statistics and Disparities

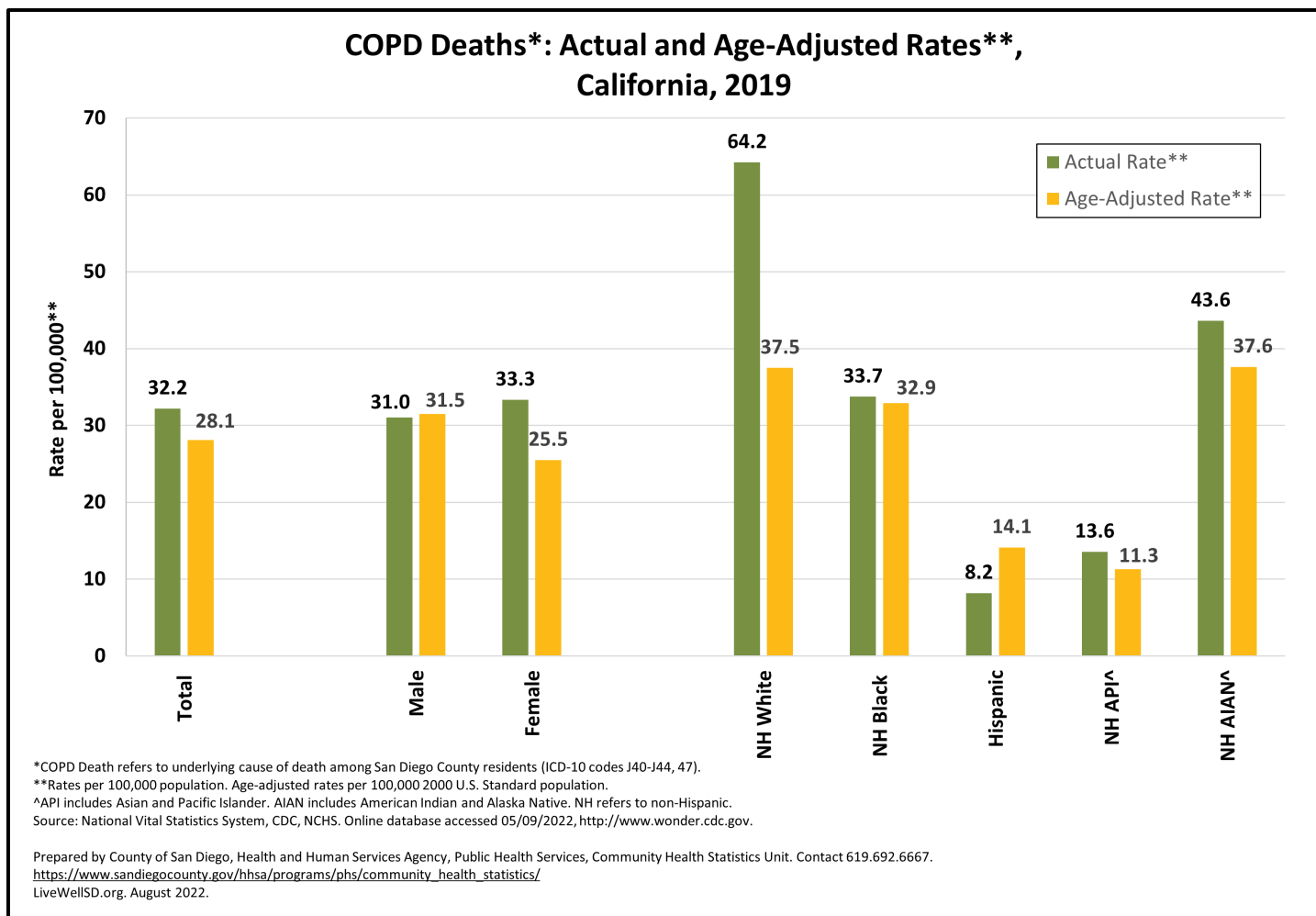
- More than 15 million Americans suffer from COPD.<sup>7</sup>
- More than 150,000 Americans die of COPD each year.<sup>7</sup>
- Between 1999 and 2018, the rate of death due to COPD among men decreased 25%, while the rate of death among women remained about the same.<sup>8</sup>
- Whites had the highest rate of death due to COPD compared to other racial/ethnic groups.<sup>8</sup>



- The age-adjusted COPD death rate in the United States was 37.2 per 100,000 residents in 2019.<sup>9</sup>
- In the United States, actual and age-adjusted COPD death rates were higher among men than women.<sup>9</sup>
- Non-Hispanic Whites had the highest age-adjusted death rate due to COPD (42.8 per 100,000 residents) while non-Hispanic Asian/Pacific Islanders had the lowest (9.8 per 100,000 residents).<sup>9</sup>

# Chronic Obstructive Pulmonary Disease (COPD) Descriptive Summary

## State Statistics and Disparities



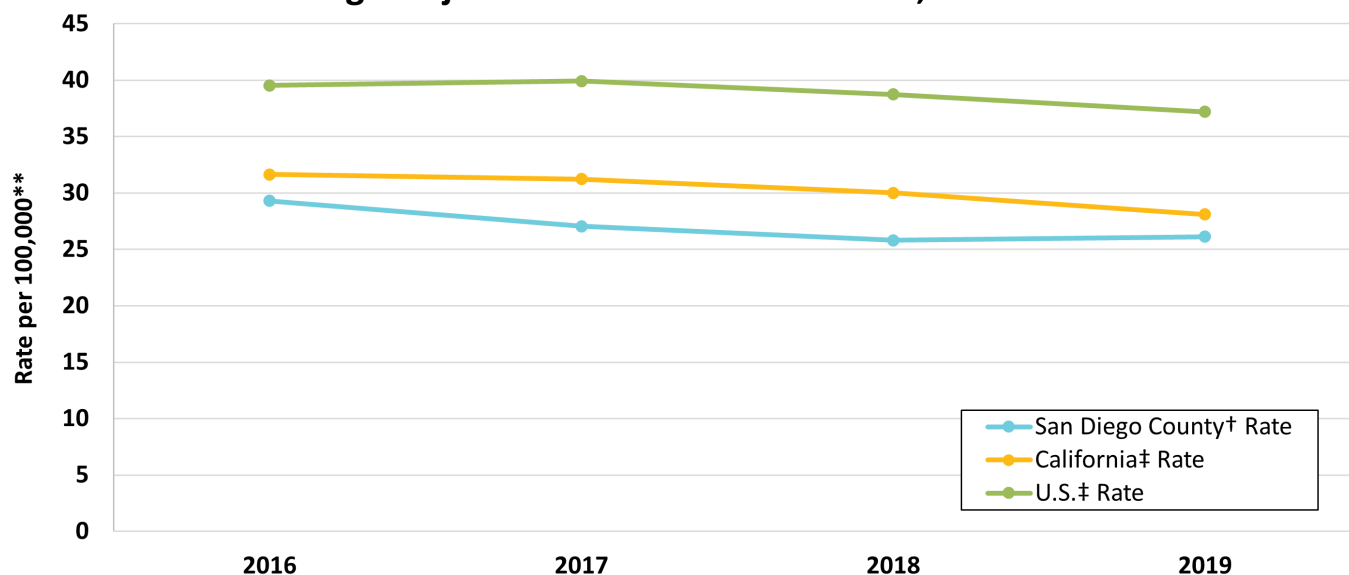
- The age-adjusted COPD death rate among California residents was 28.1 per 100,000 residents in 2019.<sup>9</sup>
- Men had a higher age-adjusted COPD death rate (31.5 per 100,000 residents) than women (25.5 per 100,000 residents).<sup>9</sup>
- Non-Hispanic American Indian/Alaska and non-Hispanic White residents in California had the highest age-adjusted COPD death rate (37.6 per 100,000 residents and 37.5 per 100,000 residents, respectively).<sup>9</sup>

# Chronic Obstructive Pulmonary Disease (COPD) Descriptive Summary



## Local Statistics and Disparities

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



\*COPD Death refers to underlying cause of death among San Diego County residents (ICD-10 codes J40-J44, 47).

\*\*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/)

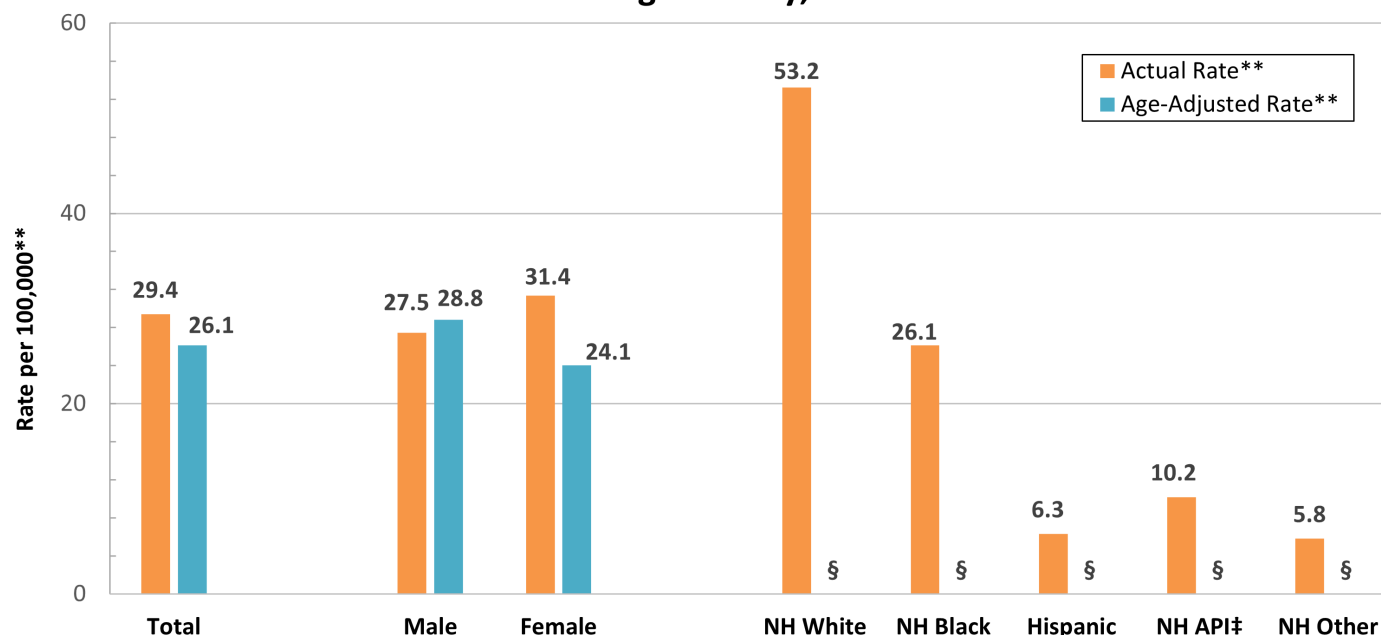
LiveWellSD.org. August 2022.

- From 2016 to 2019, the age-adjusted COPD death rates in San Diego County and California remained below the national rate.<sup>9,10</sup>

# Chronic Obstructive Pulmonary Disease (COPD)

## Descriptive Summary

**COPD Deaths\*: Actual and Age-Adjusted Rates\*\*,  
San Diego County, 2019**



\*COPD Death refers to underlying cause of death among San Diego County residents (ICD-10 codes J40-J44, 47).

\*\*Rates calculated per 100,000 residents. Age-adjusted rates are per 100,000 2000 U.S. standard population.

§ Rates not calculated for < 5 cases.

‡ API includes Asian and Pacific Islander. NH refers to non-Hispanic.

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

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

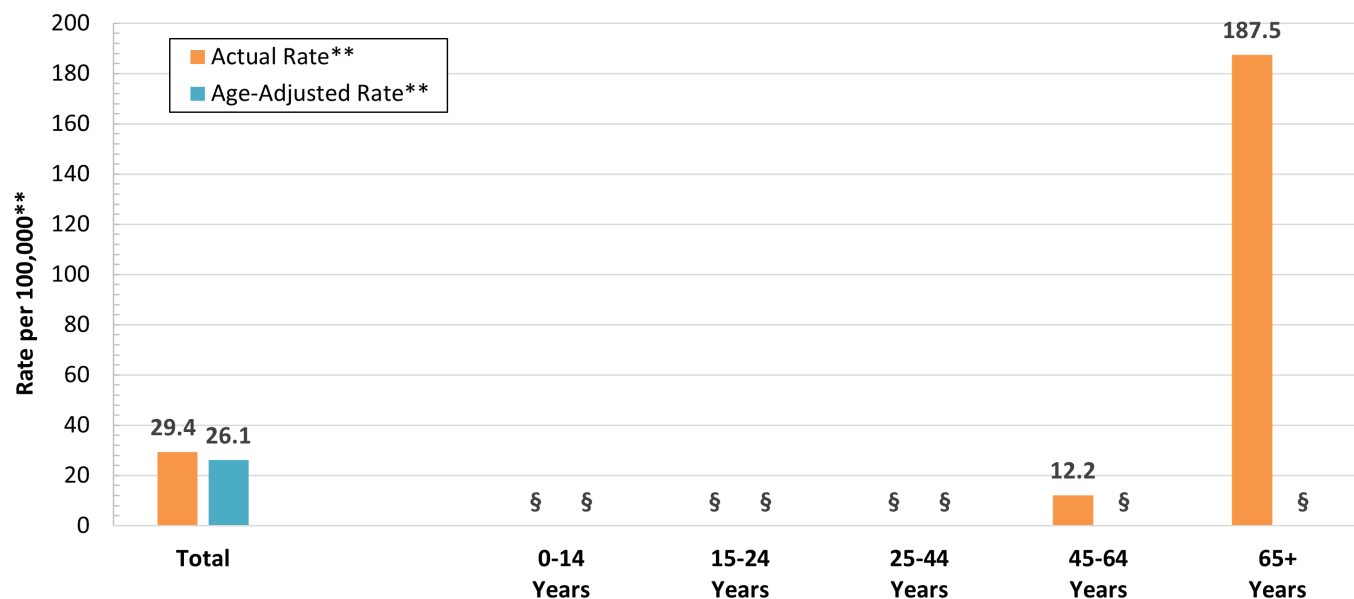
[https://www.sandiegocounty.gov/hhsa/programs/phs/community\\_health\\_statistics/](https://www.sandiegocounty.gov/hhsa/programs/phs/community_health_statistics/)

LiveWellSD.org. August 2022.

- In San Diego County, the age-adjusted COPD death rate was 26.1 per 100,000 residents and the actual death rate was 29.4 per 100,000 residents.<sup>10</sup>
- Male residents in San Diego County had a lower actual COPD death rate than female residents (27.5 per 100,000 residents versus 31.4 per 100,000 residents), but had a higher age-adjusted COPD death rate (28.8 per 100,000 residents versus 24.1 per 100,000 residents) in 2019.<sup>10</sup>
- Non-Hispanic Whites had an actual COPD death rate that was 1.8 times greater than the total actual COPD death rate in San Diego County (53.2 per 100,000 residents versus 29.4 per 100,000 residents).<sup>10</sup>

# Chronic Obstructive Pulmonary Disease (COPD) Descriptive Summary

**COPD Death\* Rates\*\* by Age Group,  
San Diego County, 2019**



\*COPD Death refers to underlying cause of death among San Diego County residents (ICD-10 codes J40-J44, 47).

\*\*Rates calculated per 100,000 residents. Age-adjusted rates are per 100,000 2000 U.S. standard population.

§ Rates not calculated for < 5 cases.

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.

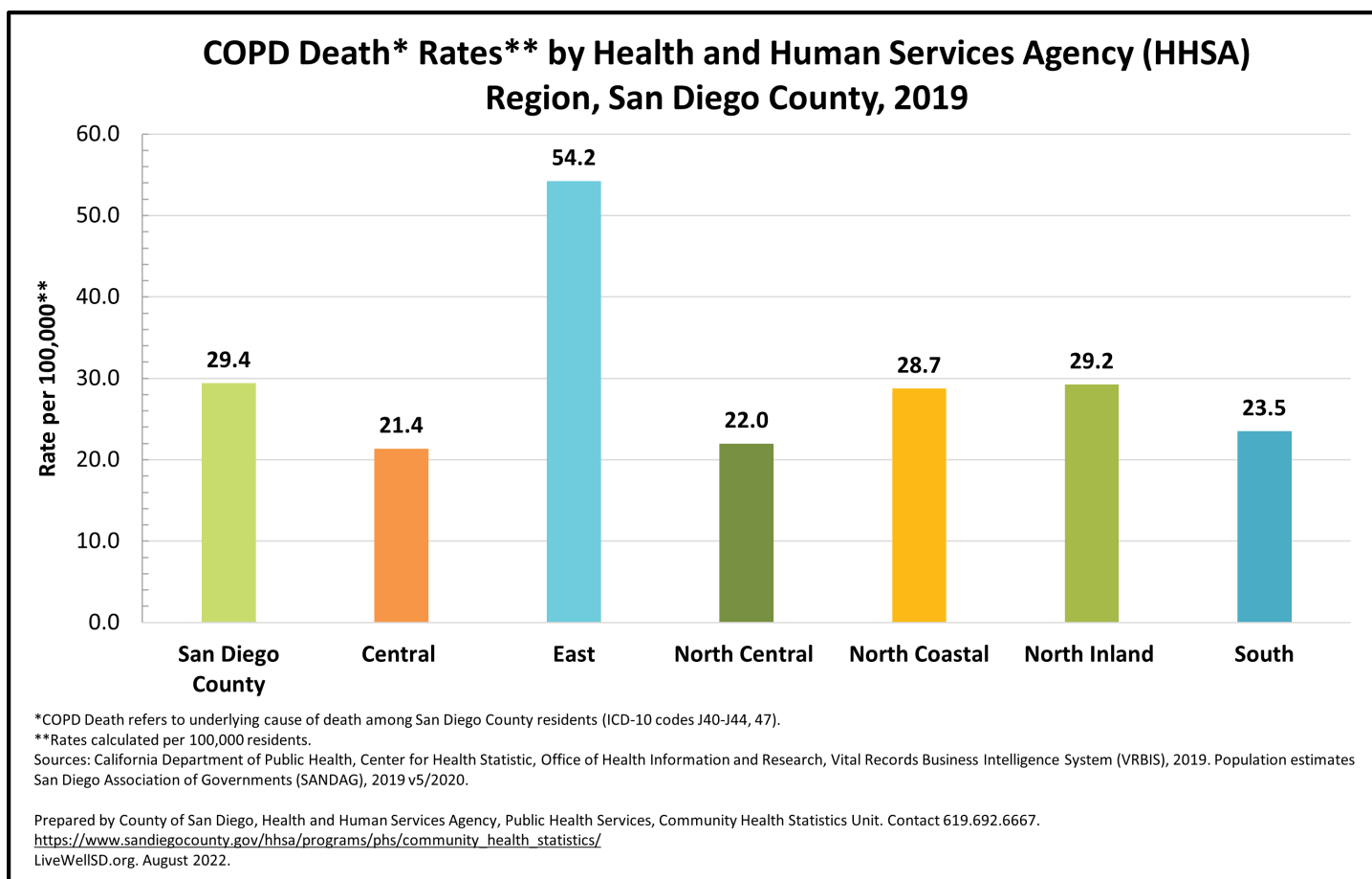
Prepared by County of San Diego, Health and Human Services Agency, Public Health Services, Community Health Statistics Unit. Contact 619.692.6667.

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

LiveWellSD.org. August 2022.

- San Diego County residents aged 65+ years had the highest actual COPD death rate compared to other age groups in 2019.<sup>10</sup>
- The actual COPD death rate among residents aged 65+ years was approximately 6.4 times the total death rate in San Diego County in 2019 (187.5 per 100,000 residents versus 29.4 per 100,000 residents).<sup>10</sup>

# Chronic Obstructive Pulmonary Disease (COPD) Descriptive Summary

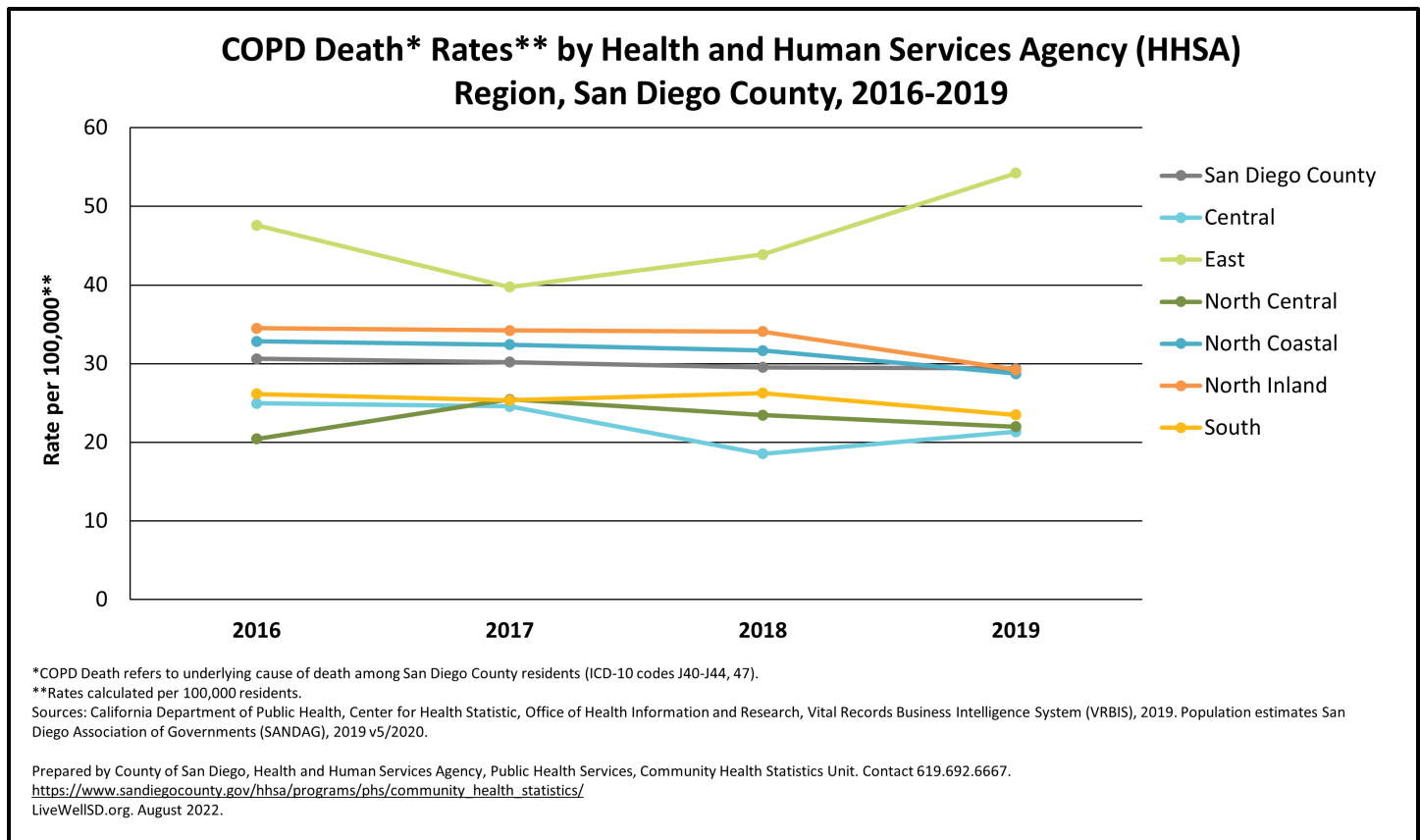


- In 2019, East Region of San Diego County had the highest COPD death rate (54.2 per 100,000 residents) while Central Region had the lowest (21.4 per 100,000 residents).<sup>10</sup>



# Chronic Obstructive Pulmonary Disease (COPD)

## Descriptive Summary



- East Region of San Diego County had the highest rate of death due to COPD from 2016 to 2019.<sup>10</sup>

### COPD and Its Complications: Prevention for Individuals

- *Abstain from smoking and avoid exposure to secondhand smoke and lung irritants*<sup>11</sup>
  - Smoking is the leading cause of COPD.
- *Visit your doctor on a regular basis and seek treatment early*
  - Treatment of COPD requires diagnosis by a physician and careful management of medications to alleviate symptoms.
  - Treatment of COPD includes medicine, pulmonary rehabilitation, prevention and treatment of lung infections, and supplemental oxygen.<sup>2</sup>
- *Get a yearly flu shot*
  - To avoid getting the flu, get a flu shot every year. Flu can cause serious problems for a person with COPD.<sup>12</sup>

# Chronic Obstructive Pulmonary Disease (COPD)

## Descriptive Summary

### Prevention Tools for Public Health Professionals: COPD Critical Pathway

There are many opportunities for public health professionals in the community to help reduce the risk of COPD and to improve the health outcomes of individuals who already have the disease. To assist in community health efforts, a *COPD Critical Pathway* was developed.

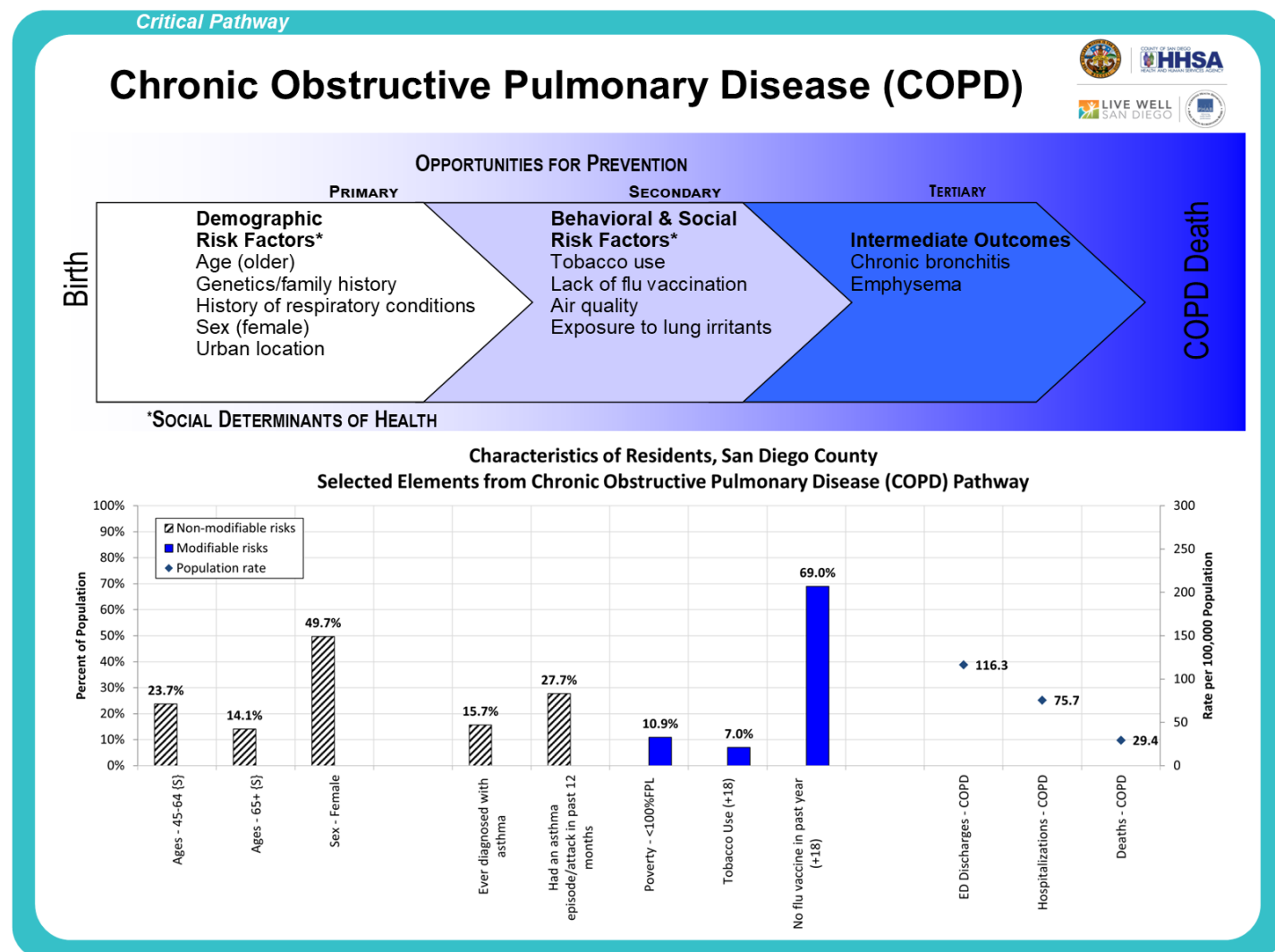
The *COPD Critical Pathway* is a tool to be used in health promotion and disease prevention efforts. Its purpose is to identify populations at greater risk for COPD, and to identify prevention and early intervention opportunities. The *COPD Critical Pathway* displays a diagram of the major risk factors and intermediate outcomes or related diseases that have an impact on, or result from, COPD. Risk factors are marked as non-modifiable (black striped bars) such as race/ethnicity or sex and modifiable (solid colored bars) such as tobacco use.

Beneath the risk factors diagram is a data grid describing the San Diego resident population in relation to selected elements of the pathway. The data grid is designed to assist in quick identification of opportunities for interventions that might have a high impact on a particular disease. The data represent all San Diegans, not only those with a particular disease. The left axis (bar) indicates the percent of the population with a known risk factor or intermediate outcome. The right axis (diamond) indicates the rate of a particular medical encounter within the population that is specified. The data are described fully in the complete version of the *Critical Pathways*.<sup>13</sup>

In addition, the Community Health Statistics Unit website ([www.SDHealthStatistics.com](http://www.SDHealthStatistics.com)) provides detailed demographic, health and facility data including maps of geographically formatted health data. Also available are links to other County data sources, state and national sites of interest. For further assistance with data or interpretation, please contact the Community Health Statistics Unit.

# Chronic Obstructive Pulmonary Disease (COPD) Descriptive Summary

## COPD Critical Pathway to Disease



County of San Diego ■ Health and Human Services Agency ■ Public Health Services ■ Community Health Statistics Unit ■ [www.SDHealthStatistics.com](http://www.SDHealthStatistics.com) ■ (619)632-6867 08/2022

# Chronic Obstructive Pulmonary Disease (COPD)

## Descriptive Summary

### Data Sources

- <sup>1</sup> National Heart, Lung, and Blood Institute. (2022). What is COPD?. <https://www.nhlbi.nih.gov/health/copd>.
- <sup>2</sup> National Heart, Lung, and Blood Institute. (2022). *COPD Treatment*. <https://www.nhlbi.nih.gov/health/copd/treatment>.
- <sup>3</sup> National Heart, Lung, and Blood Institute. (2022). *Living with COPD*. <https://www.nhlbi.nih.gov/health/copd/living-with>.
- <sup>4</sup> Centers for Disease Control and Prevention. (2021). *Basics About COPD*. <https://www.cdc.gov/copd/basics-about.html>.
- <sup>5</sup> Centers for Disease Control and Prevention. National Vital Statistics System detailed mortality data at Wonder Database website. <http://wonder.cdc.gov>. Accessed March 3, 2021.
- <sup>6</sup> National Heart, Lung, and Blood Institute. (2022). *COPD Causes and Risk Factors*. <https://www.nhlbi.nih.gov/health/copd/causes>.
- <sup>7</sup> Centers for Disease Control and Prevention. (2021). *Disease or Condition of the Week: COPD*. <https://www.cdc.gov/dotw/copd/index.html>.
- <sup>8</sup> American Lung Association. *COPD Mortality*. <https://www.lung.org/research/trends-in-lung-disease/copd-trends-brief/copd-mortality>.
- <sup>9</sup> National Vital Statistics System, CDC, NCHS. Online database accessed 05/09/2022, <http://www.wonder.cdc.gov>.
- <sup>10</sup> California Department of Public Health, Center for Health Statistic, Office of Health Information and Research, Vital Records Business Intelligence System (VRBIS), 2019.
- <sup>11</sup> National Heart, Lung, and Blood Institute. (2022). *COPD Prevention*. <https://www.nhlbi.nih.gov/health/copd/prevention>.
- <sup>12</sup> Mayo Clinic. (2020). COPD Symptoms & Causes. <https://www.mayoclinic.org/diseases-conditions/copd/symptoms-causes/syc-20353679>.
- <sup>13</sup> County of San Diego Health and Human Services Agency, Public Health Services. Community Health Statistics Unit. (2022). Critical Pathways: The Disease Continuum, COPD. August 2022.