COPD Brief

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 destroyed, the walls of the airways become swollen, or increased mucus production leads to airway obstruction.[1]

COPD cannot be cured, but treatment and changes in lifestyle behaviors, such as stopping smoking, can help slow the progress of the disease. Treatments for COPD include medicines, vaccines, pulmonary rehabilitation, oxygen therapy, surgery, and managing complications.[2] The symptoms of COPD can be managed by avoiding lung irritants, taking medications and getting vaccinated as directed by a physician, and taking other steps such as rehabilitation and continuation of ongoing medical care.

COPD is one of the 10 leading causes of disability in the United States and is among the leading causes of death. [1] Between 2008 and 2010, an estimated 12.5 million adult Americans had COPD. [3]

Risk Factors for COPD

Demographic Risk Factors

- Age
  - People aged 65-74 years are more likely to report COPD than any other age group.[4]
- *Gender*
  - Females are more likely to have COPD and die at a higher rate due to COPD .[3]
- *Genetics/Family History*
  - People with a family history of COPD are more likely to get the disease if they smoke.[1]
  - Genes have been discovered that directly influence the development of COPD.[5]

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.[6]
  - 90% of COPD-related deaths are due to smoking.[6]

- *Secondhand Smoke*
- *History of Respiratory Infections*
- *Occupational Exposure*
  - Certain occupations are associated with higher risk of COPD, such as those who work with extended exposure to dust, ash, fumes, and gases.[1]

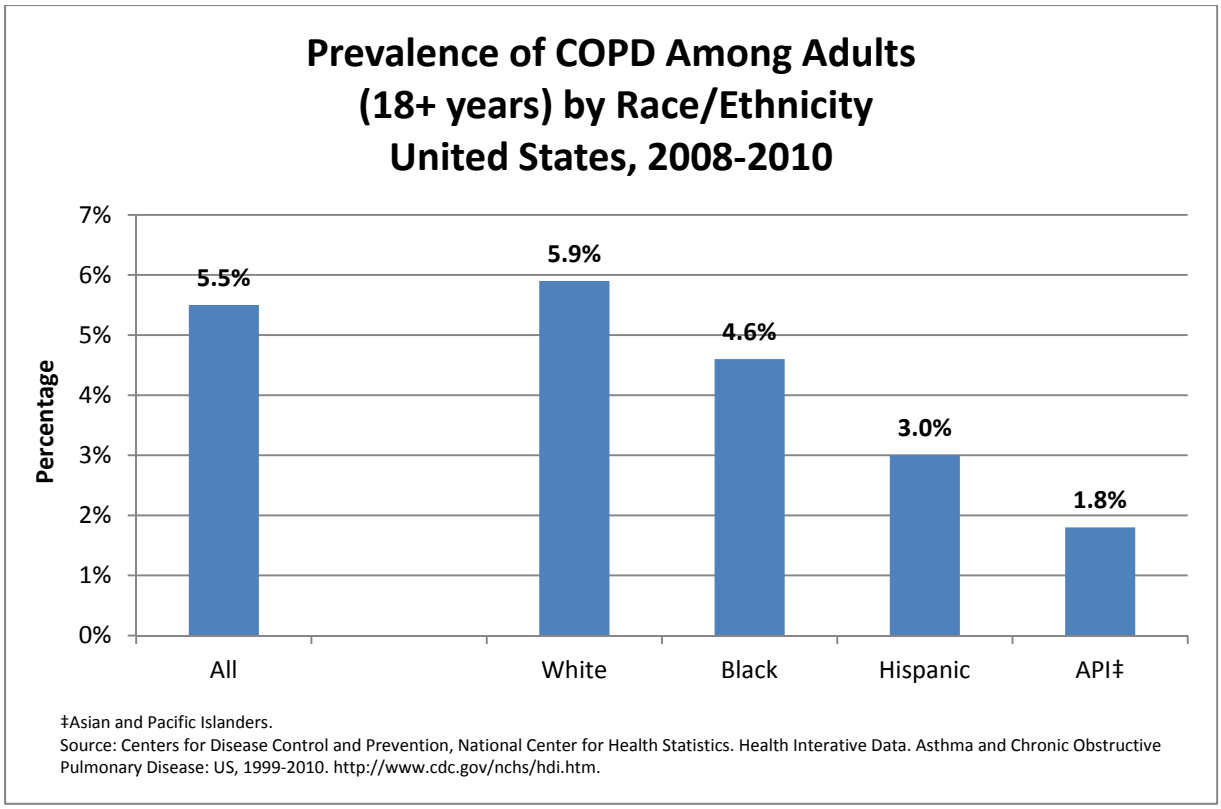
Intermediate Outcomes

- *Chronic Bronchitis*
  - Leads to inflammation and eventual scarring of the lining of the bronchial tubes, making them less able to transfer oxygen to and from the lungs.
  - In addition to difficulty breathing, the bronchial tubes become an ideal breeding place for bacterial and viral infections. [7]
- *Emphysema*
  - The progressive, irreversible destruction of the alveoli (air sacs) in the lungs. This damage creates holes in the tissue of the lower lungs, and leads to shortness of breath and an inability to transfer oxygen to the blood. [7]

National Statistics and Disparities

Statistics and Disparities

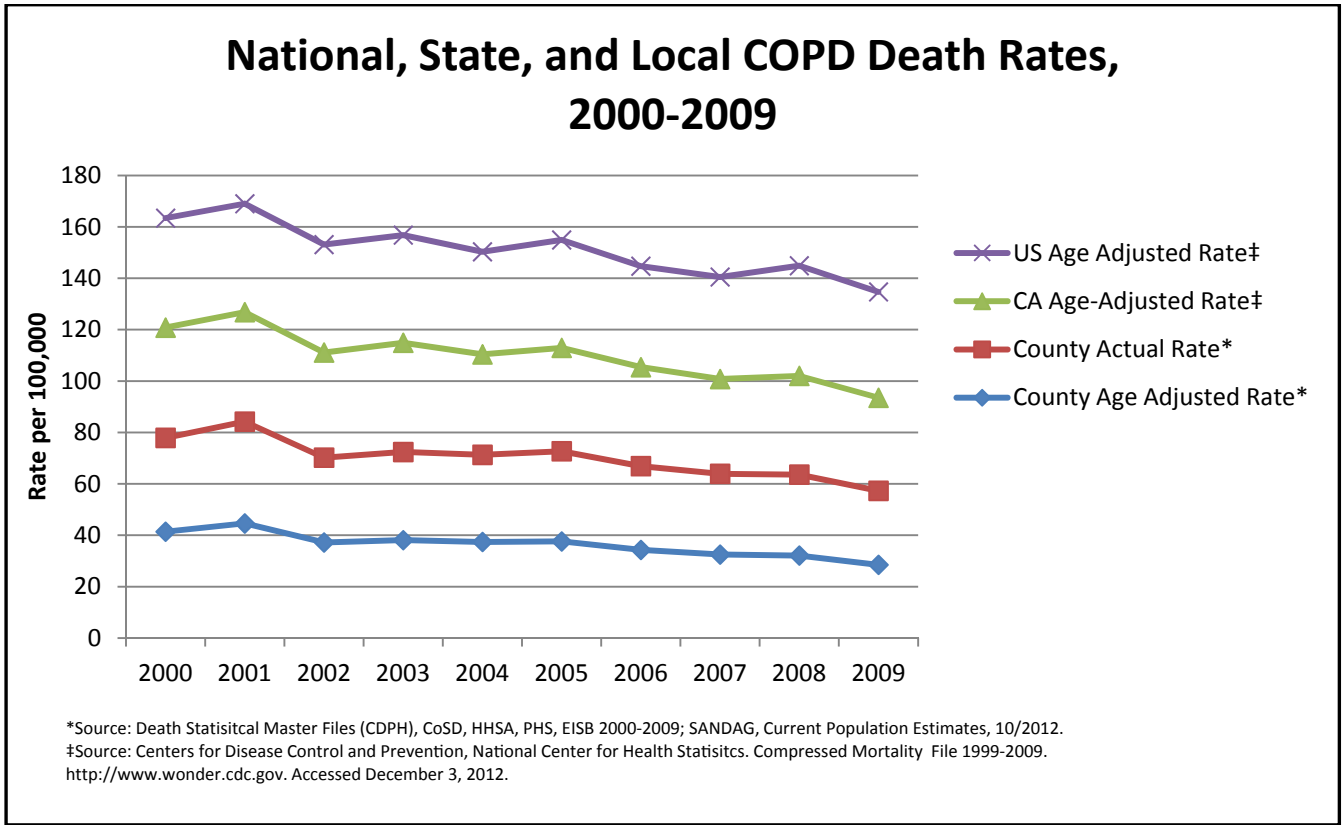
- In 2009, the rate of death due to COPD was 41.9 per 100,000.[8]
- Whites had the highest rate of death due to COPD compared to other racial/ethnic groups.[8]
- Between 1999 and 2009, the rate of death due to COPD among women rose 10%, while the rate of death among males decreased 5%.[8]
- In 2009, an estimated 739,000 hospitalizations due to COPD were reported and over 15.3 million doctors visits due to COPD were reported.[9]



Cost

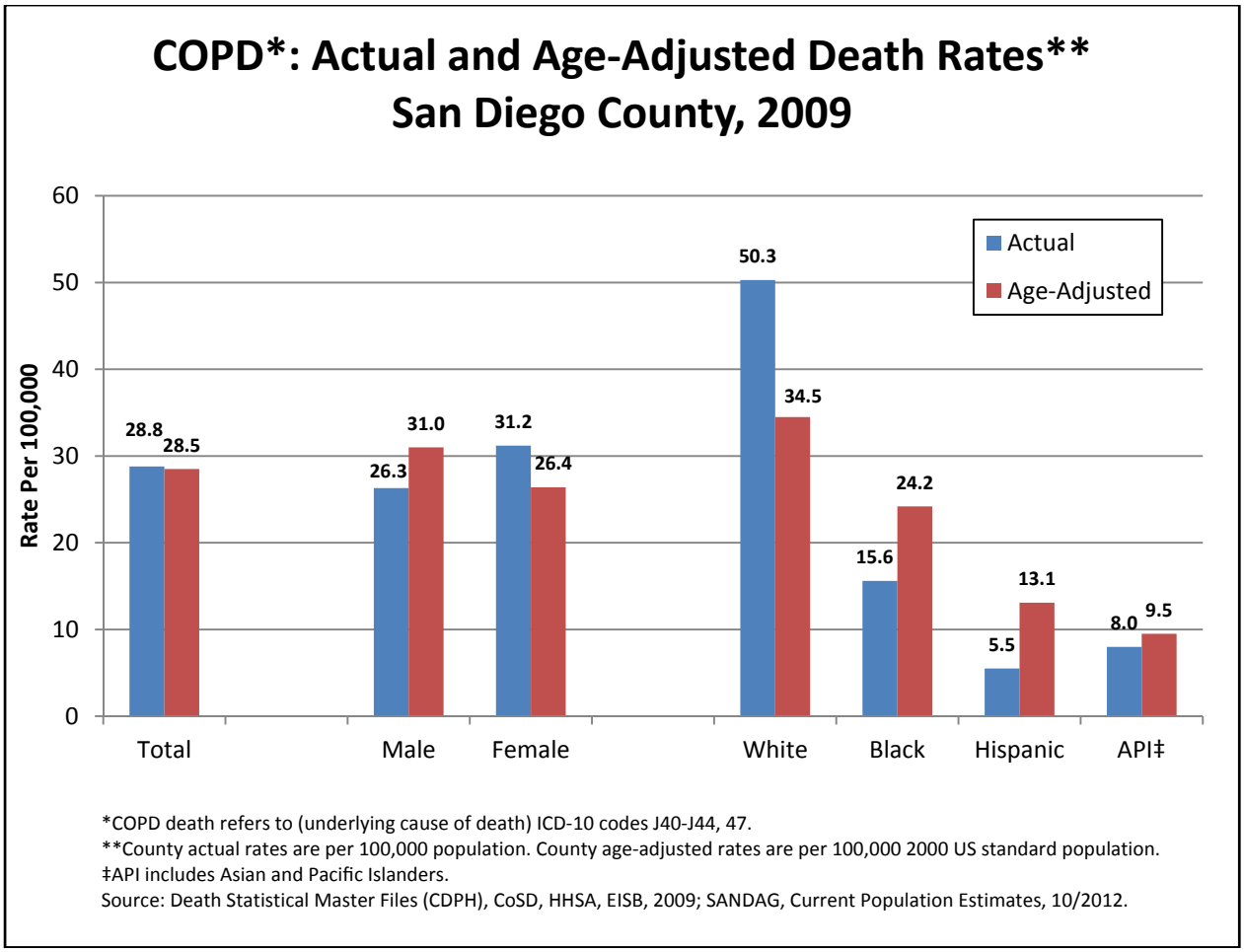
- In 2010, the annual cost for COPD was an estimated $50 billion, including $30 billion on direct healthcare costs.[7]

Local Statistics and Disparities

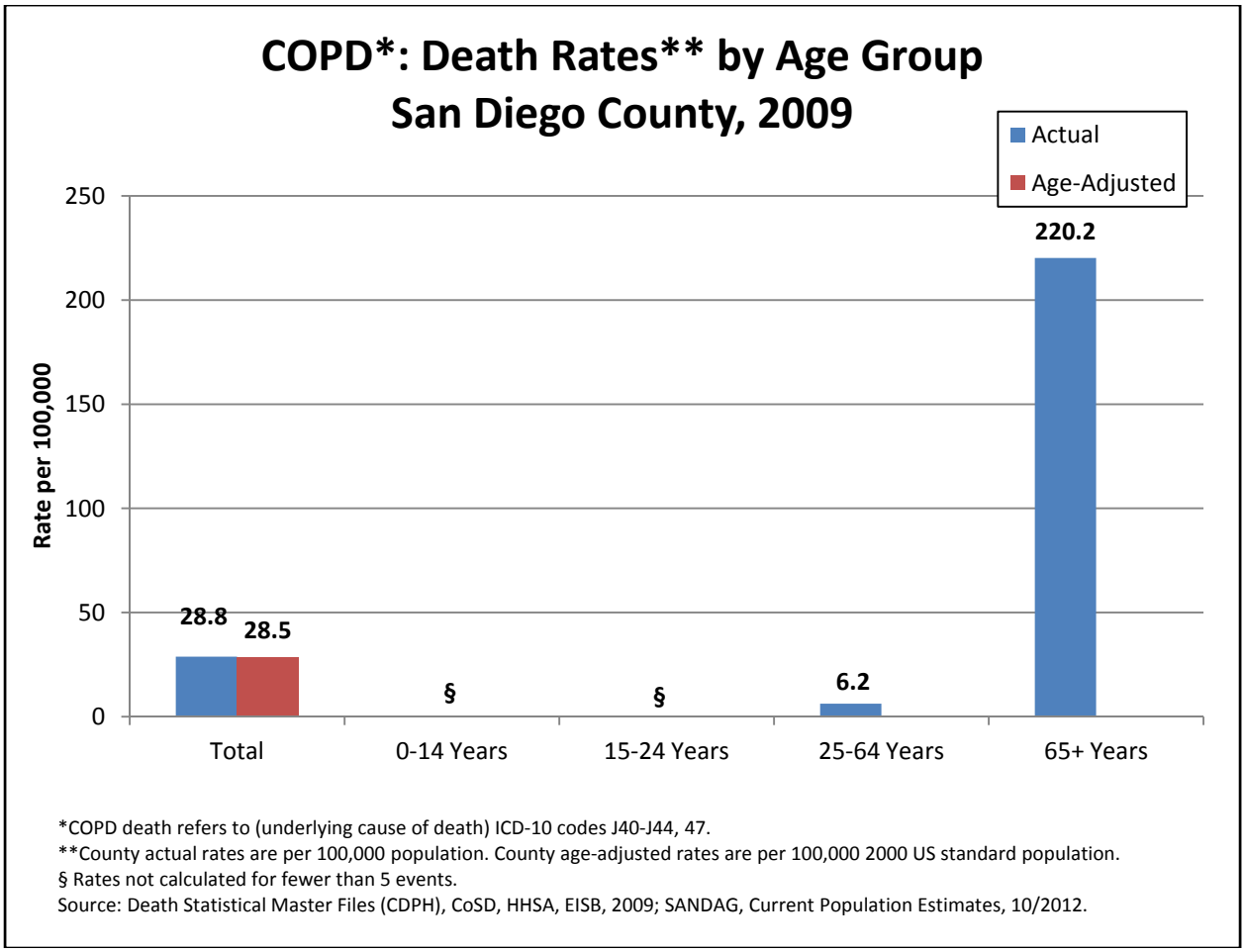


*Source: Death Statisitcal Master Files (CDPH), CoSD, HHSA, PHS, EISB 2000-2009; SANDAG, Current Population Estimates, 10/2012.
‡Source: Centers for Disease Control and Prevention, National Center for Health Statisitcs. Compressed Mortality File 1999-2009. http://www.wonder.cdc.gov. Accessed December 3, 2012.

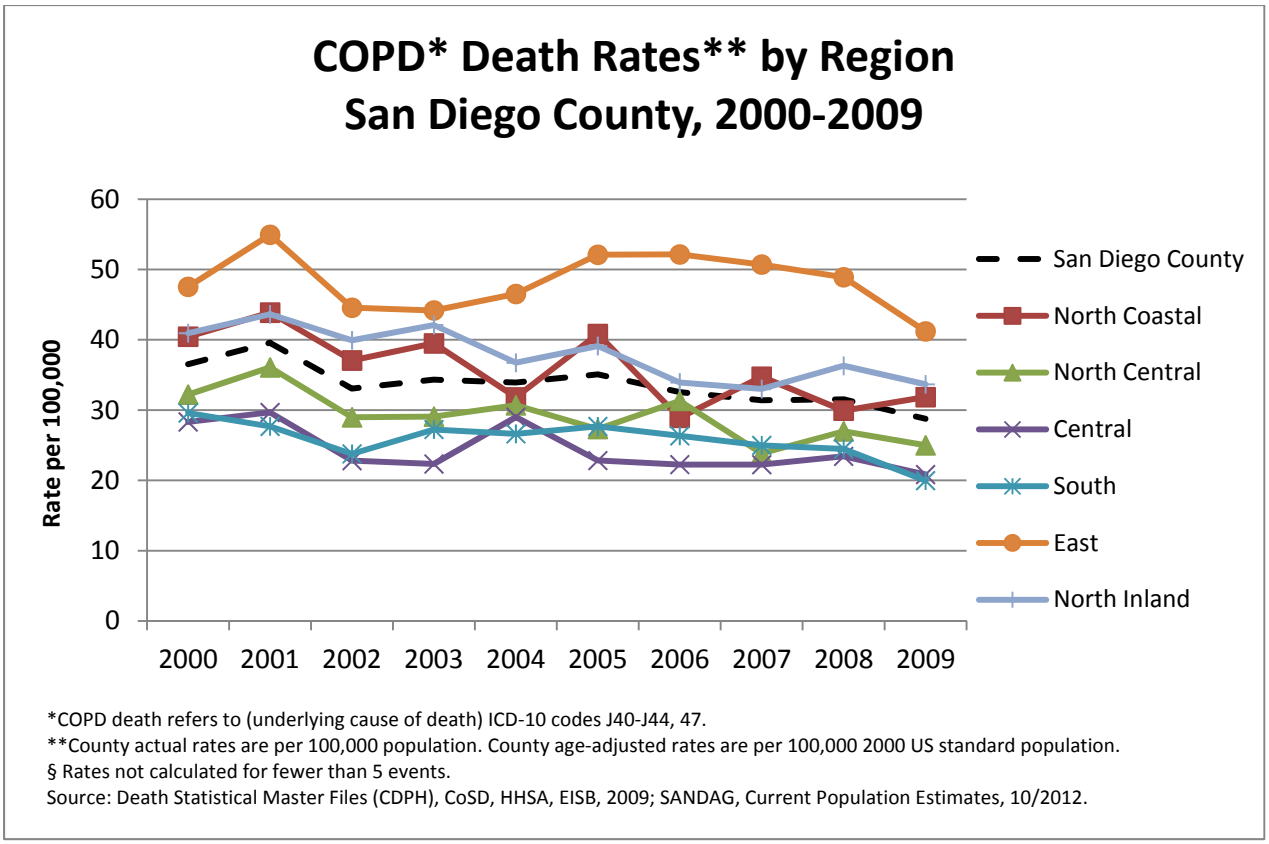
- Death rates from COPD have declined from 2000 to 2009 at the national, state, and local levels.



- In San Diego County, the age-adjusted COPD death rate was 28.5 per 100,000 residents and the actual rate of death was 28.8 per 100,000 in 2009.
- The actual rate of death due to COPD was higher among females compared to males.
- In 2009, whites had the highest actual (50.3 per 100,000) compared to other racial/ethnic groups.

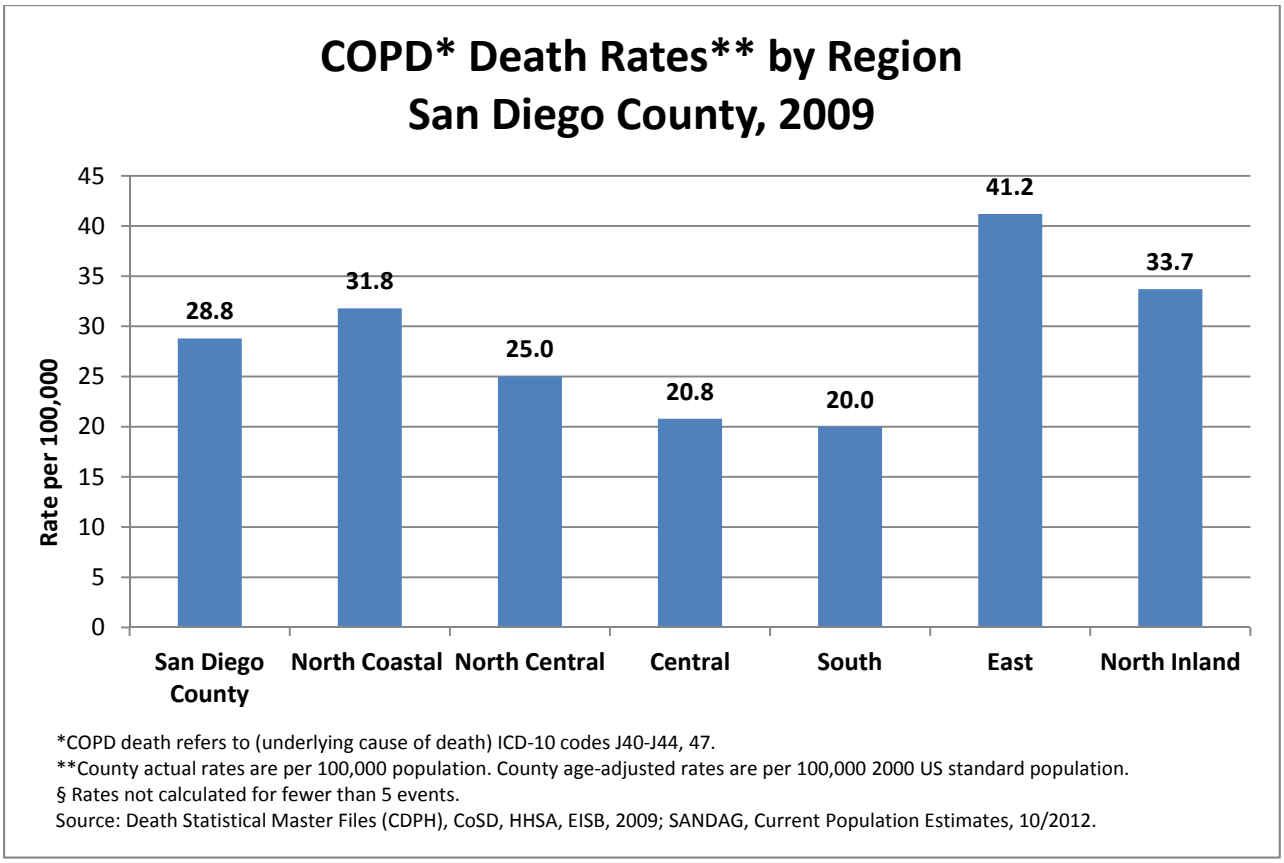


- San Diego County residents aged 65 years and over had the highest actual death rate from COPD (220.2 per 100,000) in 2009.



*COPD death refers to (underlying cause of death) ICD-10 codes J40-J44, 47.
**County actual rates are per 100,000 population. County age-adjusted rates are per 100,000 2000 US standard population.
§ Rates not calculated for fewer than 5 events.
Source: Death Statistical Master Files (CDPH), CoSD, HHSA, EISB, 2009; SANDAG, Current Population Estimates, 10/2012.

- From 2000 to 2009, the East Region of San Diego County had the highest COPD death rates.



- In 2009, the East Region of San Diego County had the highest COPD death rate, while the South Region had the lowest.

Prevention for Individuals:

- *Early Detection*
  - A pulmonary function test can detect decreased lung function and allow COPD to be treated at an earlier stage to stop the progression of the disease.[2]
  - It is estimated that 24 million Americans have impaired lung function, suggesting that COPD is under-diagnosed. This may lead to fewer treatment options because the disease will not be detected until pulmonary function is severely impacted.[2]
- *Avoidance of Pollutants and Tobacco Smoke*
  - Do not smoke or breathe air contaminated with tobacco smoke.[2]
  - Avoid home and workplace air pollutants.[2]
- *Treat Respiratory Infections*
  - Treating infections of the respiratory tract is important for preventing the initial stages of COPD.[2]

- *Visit Your Doctor on a Regular Basis*
  - Treatment of COPD requires diagnosis by a physician and careful management of medications to alleviate symptoms. Patients with advanced disease who have low blood oxygen levels are often given supplemental oxygen. [2]
- *Get a Flu Shot*
  - To avoid getting the flu, get a flu shot every year. Flu can cause serious problems for a person with COPD. Also, consider getting a pneumonia vaccine.[2]

Prevention Tools for Public Health Professionals: COPD Critical Pathway

At this time, there is not a Critical Pathway to Disease for COPD. Please check back again.

Data Sources

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[1] U.S. Department of Health & Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute. What is COPD? http://www.nhlbi.nih.gov/health/health-topics/topics/copd/. Last updated June 12, 2012. Accessed December 3, 2012.
[2] U.S. Department of Health & Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute. How is COPD Treated? http://www.nhlbi.nih.gov/health/health-topics/topics/copd/treatment.html. Last updated June 8, 2012. Accessed December 3, 2012.
[3] Centers for Disease Control and Prevention. Health Data Interactive. Asthma and Chronic Obstructive Pulmonary Disease: US, 199-2010. http://www.cdc.gov/nchs/hdi.htm. Accessed December 3, 2012.
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[6] U.S. Department of Health & Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute, COPD: Am I at Risk? http://www.nhlbi.nih.gov/health/public/lung/copd/am-i-at-risk/index.htm. Last updated June 8, 2012. Accessed December 3, 2012.
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