

COPD AS A CONTRIBUTING FACTOR TO LUNG CANCER MORTALITY IN THE UNITED STATES, 1999-2020: A CDC WONDER ANALYSIS

Maryam Majid, Saneyya Naveed, Unaiza Naimal Ali, Eisha Shakir, Arfa Furqan

BACKGROUND

People with chronic obstructive pulmonary disease (COPD) face a 4 to 6-fold higher risk of developing lung cancer compared to healthy individuals, with 40% to 70% of lung cancer patients presenting with coexisting COPD. The pooled relative risk of lung cancer in people with COPD is roughly 3.8 to 4.5 times higher than in those without COPD. Despite this, the association between Lung Carcinoma and COPD remains relatively unexplored. This study examines morbidity and mortality trends due to COPD in patients with Lung Carcinoma.

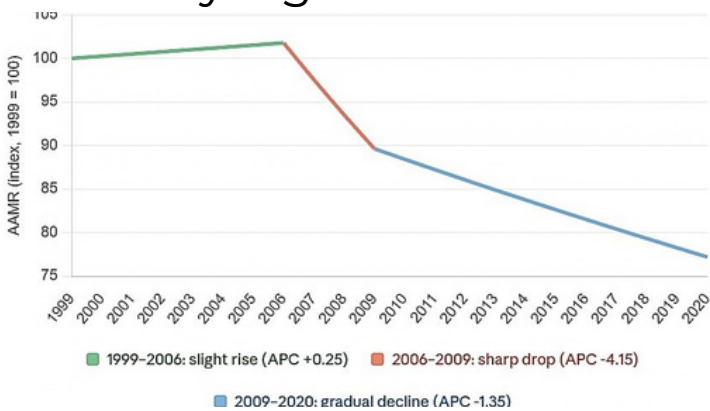
METHODS

- CDC WONDER data (1999-2020) identified deaths from COPD (ICD:J44.9) in patients with Lung Cancer (ICD:C34). Age-adjusted mortality Rates (AAMR) were calculated per 1,000,000.
- We explored trends by age, gender, race, census region and urbanization. Joinpoint regression analysis estimated Annual Percent Change (APC) and Average Annual Percent Change (AAPC), with $p < 0.05$ considered significant.

FINDINGS

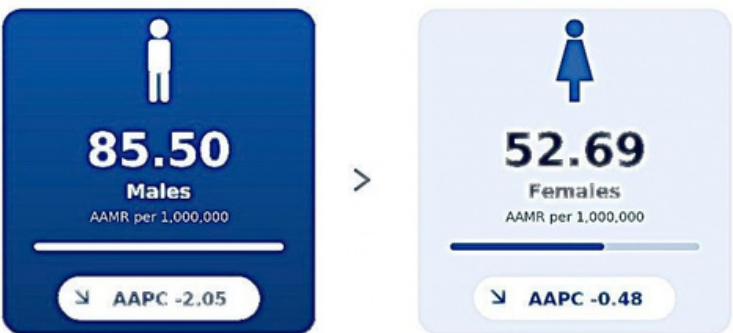
OVERALL ANALYSIS

Total 492,283 deaths were recorded from 1999 to 2020. AAMR increased slightly from 1999-2006 (APC: 0.25), declined sharply from 2006-2009 (APC: -4.15), followed by a gradual decline till 2020 (APC: -1.35).



DISPARITIES IN GENDER

Females showed an initial increase from 1999-2005 (APC: 1.29), AAMR declined overall in both Males (85.50), (AAPC: -2.05) and Females (52.69), (AAPC: -0.48).



REGIONAL DISPARITIES

The Midwest had the highest AAMR (77.97), (AAPC: -0.81), and Northeast the lowest (55.72), (AAPC: -1.71).



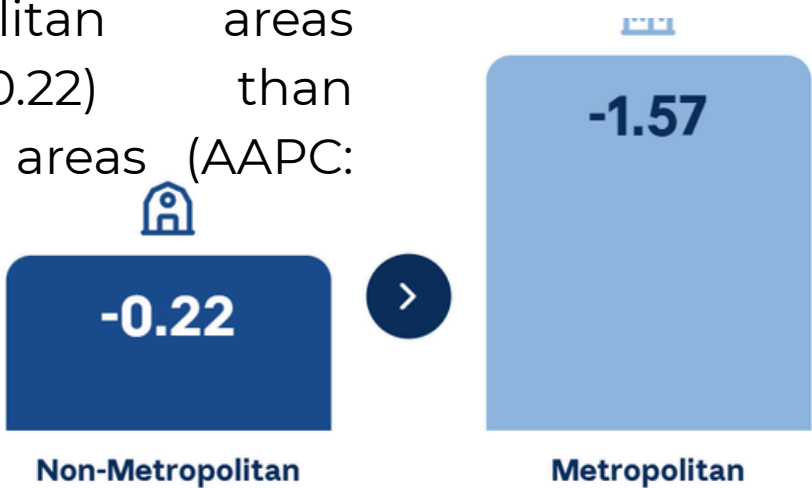
RACIAL DISPARITIES

White individuals showed the highest trends (AAPC: -1.06), and Asians or Pacific Islanders the lowest (AAPC: -2.73).



METRO VS. NON-METRO

Higher AAMR was found in Non-metropolitan areas (AAPC: -0.22) than Metropolitan areas (AAPC: -1.57).



DISPARITIES IN AGE

Mortality peaked at ages 75-84 (AAPC: -0.95) and was least in ages 35-44 (AAPC: -3.53).



CONCLUSION

Overall, AAMR decreased from 1999-2020, with Males consistently exhibiting higher mortality. The Midwest reported the highest AAMR, while the Northeast had the lowest. Mortality was highest in White individuals, Non-metropolitan areas and those aged 75-84 years. These patterns emphasize the need for focused interventions including targeted prevention, allocating resources and integrated care.