

CHRONIC LOWER RESPIRATORY DISEASE MORTALITY IN ADULTS WITH HEMATOLOGIC MALIGNANCIES: A 25-YEAR NATIONAL PERSPECTIVE ON TRENDS AND DISPARITIES IN THE UNITED STATES

Rumman Javed¹, Prachi Dawer², Muhammad Raza³, Muhammad Mukhlis¹, Aizaz Anwar Khalid⁴, Muhammad Naseem¹, Sohail Anwar⁵, Javeria Naeem⁶, **Saleha Jahangir¹**, Bakht Rahman⁷, Zia Ur Rahman¹

¹ Ayub Medical College, Abbottabad, Pakistan, ² University College of Medical Sciences, New Delhi, India, ³ Ayub Teaching Hospital, Abbottabad, Pakistan, ⁴ Peshawar Medical College, Peshawar, Pakistan, ⁵ Northwest Health – Porter, Valparaiso, IN, USA, ⁶ Khyber Teaching Hospital, Peshawar, Pakistan, ⁷ Clovis Community Medical Center, Clovis, CA, USA



INTRODUCTION

- Adults with hematologic malignancies face an elevated risk of **chronic lower respiratory disease (CLRD)**.
- Cumulative exposure to immunosuppressive therapy, smoking and environmental pollutants drives this risk.
- The long-term burden and temporal trends remain poorly quantified nationally.

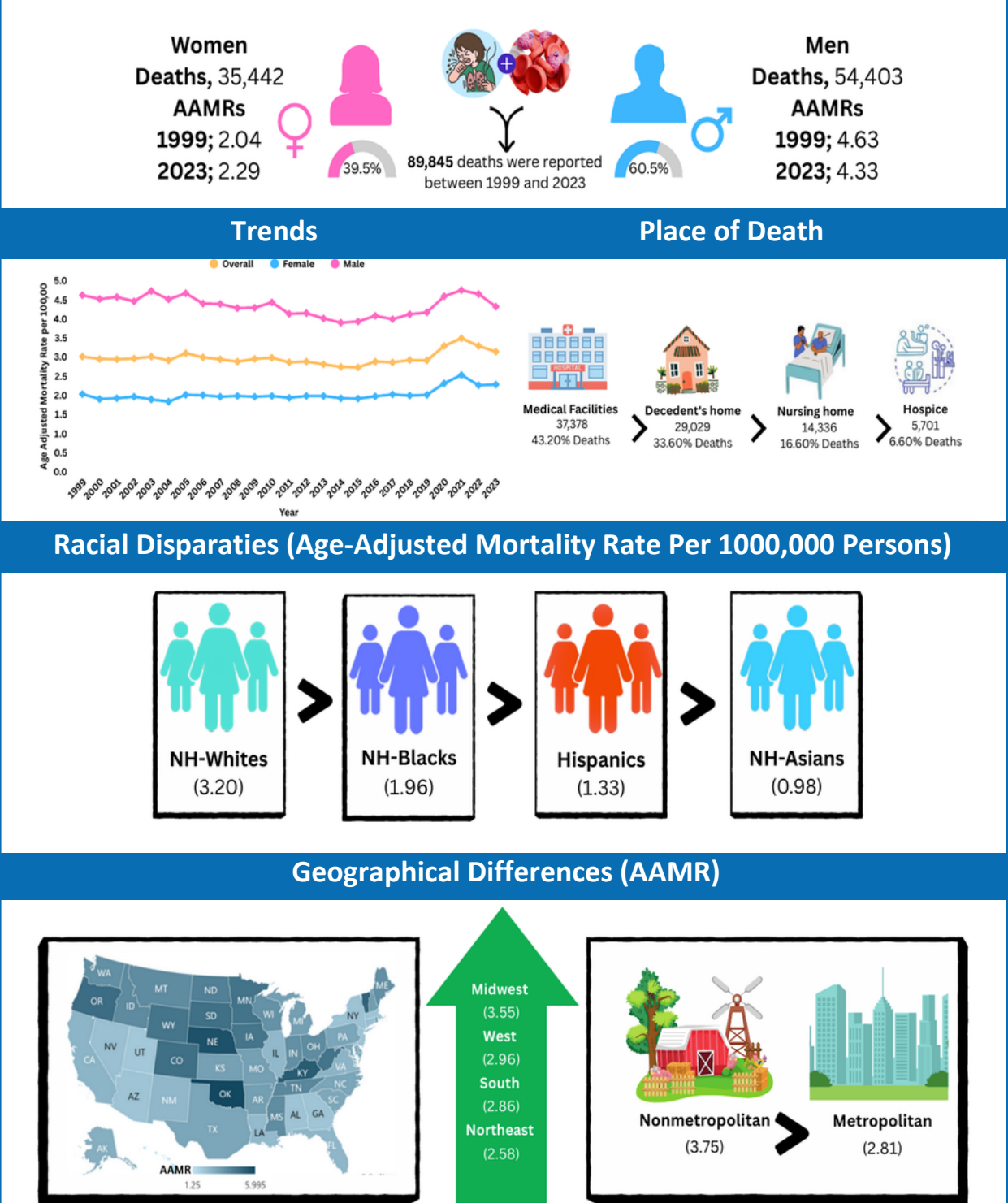
OBJECTIVES

- Quantify national CLRD-associated mortality in this population, **1999–2023**.
- Characterise disparities by sex, race, region, urbanization, age and state.

METHODOLOGY

- Data source: **CDC WONDER**, 1999–2023.
- Population: individuals aged **≥45 years**.
- Hematologic malignancies**: ICD-10 C81–C85, C88, C90–C95, listed in multiple-cause-of-death fields.
- Concurrent **CLRD**: ICD-10 J40–J47.
- Age-adjusted mortality rates (AAMRs) per 100,000 extracted.
- Joinpoint regression used for annual percent change (APC) and average annual percent change (AAPC) with 95% CIs.
- Statistical significance defined as $p < 0.05$.

CENTRAL ILLUSTRATION



RESULTS

- 89,845** deaths were recorded from **1999 to 2023**.
- AAMR** rose marginally from 3.02 to 3.15 (AAPC +0.1554; 95% CI –0.75 to 1.07).
- Men** were at higher risk (AAMR 4.35) than **women** (2.03); 54,403 vs 35,442 deaths.
- Non-Hispanic White** individuals had the highest AAMR (3.2), then **non-Hispanic Black** (1.95) and Hispanic or Latino individuals (1.25).
- The **Midwest** carried the highest regional burden (AAMR 3.55).
- Rural areas**: AAMR 3.87, AAPC +1.03 (0.37 to 1.70) versus **urban** 2.74, AAPC +0.23 (–0.30 to 0.77).
- Top 90th percentile states**: Oklahoma, Nebraska, Kentucky; lowest 10th: Hawaii, District of Columbia, Utah.
- Adults aged ≥ 85 years had the highest mortality (AAMR 9.95; AAPC +1.35; –0.50 to 3.24).

CONCLUSION

- CLRD**-related deaths among adults aged ≥ 45 years with hematologic malignancies rose overall between 1999 and 2023.
- Burden is **concentrated among men**, non-Hispanic White individuals, the oldest adults and rural populations.
- Findings underscore the need for integrated respiratory-oncology care, tobacco cessation and proactive pulmonary screening in **survivorship models**.