

Among Older Adults Global Fight against Antimicrobial Resistance Sees Surge in Deaths

Study provides a comprehensive estimate of the [antimicrobial resistance](#) (AMR) burden across regions, encompassing future forecasts and historical trends.



Study

The current cross-country study, conducted between 1990 and 2021, involved analyzing 204 countries, 22 pathogens, 84 pathogen-drug combinations, and 11 [infectious syndromes](#). Age-specific and all-age deaths, as well as disability-adjusted life years (DALYs) associated with and attributable to bacterial AMR, were estimated.

Multiple sources were used to obtain the data, such as literature studies, hospital discharge data, mortality surveillance, linkage data, antibiotic use surveys, single [drug resistance](#) profiles, and insurance claims data. The data covered 19,513 study location years and 520 million individual records or isolates.

Five key component quantities were estimated, including the number of sepsis-related deaths, the proportion of infectious syndrome deaths attributable to a given pathogen or infectious syndrome, the proportion of a given [pathogen](#) resistant to a specific antibiotic, and the duration of infection or excess risk of death associated with this resistance. In addition to analyzing historical data, global and regional forecasts of AMR burden until 2050 were generated under reference, Gram-negative drug, and better care scenarios.

Results

Globally, 4.71 million deaths were associated with [bacterial AMR](#) in 2021. Over the past 31 years, a 50% reduction in deaths with AMR was reported in children younger than five years of age, whereas deaths due to AMR rose by 90% in individuals 70 years of age and older.

Sepsis-related deaths rose from 8.81 million in 1990 to 11 and 18.7 million by 2019 and 2021, respectively, 7.89 million of which were due to the [coronavirus disease 2019](#) (COVID-19).

When bacterial pathogen-drug combinations were considered, deaths attributable to and associated with AMR increased from 1990 to 2019. Both estimates decreased between 2019 and 2021. The proportion of [deaths](#) with sepsis associated with AMR increased between 1990 and 2019 and declined thereafter.

The global number of DALYs attributable to and associated with AMR decreased during the study period. Significant age heterogeneity was observed in the results, with a reduction in AMR

mortality observed in children younger than five years of age compared to a rise in [AMR mortality](#) reported among individuals 25 years of age and older during the same period. Regions with the greatest number of deaths attributable to AMR were South Asia, Southeast Asia, western sub-Saharan Africa, Tropical Latin America, and high-income North America.

Deaths attributable to AMR increased the most for Staphylococcus aureus and decreased the most for S. pneumoniae. Methicillin-resistant [S. aureus](#) (MRSA) was responsible for the greatest rise in attributable burden globally.

Carbapenem resistance increased more than any other [antibiotic](#) class among Gram-negative bacteria. In 2020 and 2021, a reduction in non-COVID-related infectious diseases was reported.

Between 2022 and 2050, [global deaths](#) attributable to AMR and deaths associated with AMR could rise by 69.6% and 67%, respectively. Although age-standardized rates are expected to decrease by 2050, the forecasted future trends of AMR burden will be primarily attributed to changes in population size and the increased prevalence of comorbidities. DALYs attributable to AMR are forecasted to increase by 9.4%.

South Asia, Latin America, and the [Caribbean](#) are projected to experience the highest all-age AMR mortality rate in 2050. The largest increase in deaths will likely occur in individuals 70 years of age and older.

Under the better care scenario, between 2025 and 2050, 92 million deaths can be cumulatively averted. Furthermore, by developing a [Gram-negative](#) drug pipeline, which would involve the development and widespread distribution of novel therapeutics, 11.1 million deaths can be prevented.

Conclusion

The study findings highlight the importance of infection prevention strategies by illustrating the reduction of AMR deaths in children five years of age and younger and the concerning trend among those older than 70. Future interventions should combine prevention, research into new antibiotics, [vaccination](#), and the minimization of unnecessary antibiotic use.

Source:

<https://www.news-medical.net/news/20240919/Global-fight-against-antimicrobial-resistance-sees-surge-in-deaths-among-older-adults.aspx>