

Antimicrobial resistance poses threat in all 35 countries in the Americas

August 8 2023



Credit: CC0 Public Domain

A total of 569,000 deaths have been linked to bacterial antimicrobial resistance (AMR) in all 35 countries of the WHO Region of the Americas, according to a new peer-reviewed paper published in *The Lancet Regional Health—Americas*. This analysis on the burden of AMR in the Americas is the most comprehensive yet for the region, providing

data for 35 countries, 23 bacterial pathogens, and 88 pathogen-drug combinations.

The study estimates more than two of every five deaths (569,000) that involved infection in the Americas in 2019 were associated with AMR; that's 11.5% of the global deaths associated with AMR. Associated deaths refer to [drug-resistant infections](#) that contributed to someone's death, but resistance may or may not have been a factor as the person might have had other underlying conditions that were also responsible for their death. A total of 141,000 deaths were attributable to AMR, making up 11.1% of the total global deaths attributable to AMR. Attributable deaths are those in which people died precisely because their resistant infections were not treatable; in these cases, AMR is considered the cause of the death.

The four AMR-related infectious syndromes causing the most fatalities in the region were bacterial respiratory infections (293,000 deaths), bloodstream infections (266,000 deaths), intra-abdominal infections (181,000 deaths), and urinary tract infections (80,000 deaths). They accounted for 89% of deaths due to bacterial infection.

The six deadliest pathogens were *Staphylococcus aureus*, *Escherichia coli*, *Klebsiella pneumoniae*, *Streptococcus pneumoniae*, *Pseudomonas aeruginosa*, and *Acinetobacter baumannii*. These pathogens were responsible for 452,000 deaths associated with AMR.

The five countries with the highest mortality rates associated with AMR were Haiti, Bolivia, Guatemala, Guyana, and Honduras. The countries with the lowest mortality rates associated with AMR were Canada, the U.S., Colombia, Cuba, Panama, Costa Rica, Chile, Venezuela, Uruguay, and Jamaica. The rankings by attributable mortality rate were generally similar, with Haiti having the highest mortality rate and Canada having the lowest.

AMR death rates by age for both associated and attributable burden had a similar pattern across countries. The estimates showed high rates of death among newborns followed by near zero rates in children under 5. Mortality slowly climbed until about age 65, at which point rates dramatically increased.

The highest death rates among newborns were in Dominica, the Dominican Republic, Guyana, Haiti, Jamaica, Suriname, and Venezuela. Antigua and Barbuda, Argentina, Canada, Chile, and Costa Rica had the lowest AMR death rates among newborns.

The nine countries with the highest mortality rates associated with AMR all either did not have an AMR National Action Plan (NAP) or had not published their AMR NAP. National action plans detail the ways in which governments can strive toward achieving the five objectives of the [global action plan on antimicrobial resistance](#) published by the World Health Organization. Chile, Colombia, Costa Rica, and the US were four of the five countries that had both published their AMR NAP and financed the plan in at least one year since 2018. They had some of the lowest AMR mortality rates.

"Bacteria have developed resistance against the medicines we invented to kill them, and these pathogens are instead killing people at rates that are higher than HIV/AIDS or malaria," said co-author and researcher Lucien Swetschinski, Institute for Health Metrics and Evaluation (IHME). "If policymakers, clinicians, scientists, and even the general public don't implement new measures now, this global health crisis will worsen and could become uncontrollable."

AMR-associated infections were the third leading cause of death in Bolivia, Brazil, Chile, Haiti, the Dominican Republic, Uruguay, and Peru, after cardiovascular diseases and neoplasms, and fourth in 22 other American countries.

"Our research shows which countries in the Americas differed by type of infection, pathogen, antibiotic resistance, and age. That's important information that will help those in power to take the necessary steps to enact new policies, improve sanitation, and develop new treatments to stop AMR in its tracks," said co-author and researcher Dr. Gisela Robles Aguilar, University of Oxford. "We must also make a concerted effort globally, regionally, and locally to develop a strong surveillance network that keeps experts informed about what's working and what's not."

In countries with high rates of infectious deaths (e.g., from pneumonia, sepsis, meningitis), such as Haiti, Bolivia, and Peru, infection prevention and control could result in the greatest reduction in AMR burden. For countries with many resistant deaths among infectious deaths, such as Chile, Mexico, and Peru, strict AMR stewardship and surveillance are necessary.

After the global burden of bacterial AMR estimates were published in [January 2022](#), IHME launched an [interactive visualization tool](#) to help raise awareness about the growing public health crisis. Two more peer-reviewed papers were also published: country-level estimates for the [WHO European Region](#) in *The Lancet Public Health* and the [33 bacterial pathogens](#) in *The Lancet*. Researchers are preparing to release additional papers.

IHME also produced policy briefs for each of the 204 [countries](#) and territories studied. They are available [online](#) to help policymakers gain a better understanding of AMR's toll and the strategies that could help reduce [death](#) and disability.

Researchers will present their findings at a panel session titled An Emerging Threat: AMR Burden at the Country Level at the [World AMR Congress](#) in Philadelphia, September 7-8.

More information: The burden of antimicrobial resistance in the Americas in 2019: a cross-country systematic analysis, *The Lancet Regional Health—Americas* (2023). [DOI: 10.1016/j.lana.2023.100561](https://doi.org/10.1016/j.lana.2023.100561) www.thelancet.com/journals/lan...93X23001357/fulltext

Provided by Institute for Health Metrics and Evaluation

Citation: Antimicrobial resistance poses threat in all 35 countries in the Americas (2023, August 8) retrieved 2 May 2024 from <https://medicalxpress.com/news/2023-08-antimicrobial-resistance-poses-threat-countries.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.