

Major study finds that bacterial infections were the second leading cause of death globally in 2019

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As the COVID-19 pandemic has laid bare, communicable diseases continue to be a major global public health threat despite advances made in medicine and treatments for many illnesses. The uneven development of global capitalism, in which lower income nations lack adequate access to clean running water, nutritious food, sanitation and health systems, makes infectious diseases a more formidable challenge for the most impoverished countries.

A study published last week in the medical journal *The Lancet* found that disease-causing bacterial infections are the second most frequent cause of death globally after ischemic heart disease and that such deaths disproportionately impact poorer countries. Bacterial infections, as opposed to those caused by viruses, were found to be responsible for one in eight deaths worldwide in 2019, prior to the outbreak of COVID-19.

For their comprehensive study, the authors drew on several sources of data to collect and analyze a considerable quantity of information. Records of 343 million individuals from 204 countries and territories were reviewed.

They found that approximately 13.7 million people died from infection-related diseases during the study period. This included data on 7.7 million deaths from bacterial infection, representing 13.6 percent of all global deaths and 56.2 percent of all infection-related deaths in that year.

The authors found that 33 bacterial pathogens were responsible for these 7.7 million deaths. Of these, five bacteria—*Staphylococcus aureus*, *Escherichia coli*, *Streptococcus pneumoniae*, *Klebsiella pneumoniae* and *Pseudomonas aeruginosa*—were responsible for 55 percent.

Specifically, they reviewed the burden of disease caused

by these pathogens across various organ systems that included: lower respiratory chest wall, cardiac, meningitis and central nervous system, bloodstream, skin and subcutaneous, kidney and urinary tract, abdominal, bones and joints, diarrheal, etc. The collected data were categorized by age and sex, geographic region and income.

The results were used to generate predictions regarding death rates in different portions of the globe and income levels. They indicate a gross disparity between groups with marked wealth differentials.

Especially striking was the difference between Sub-Saharan Africa, where data predicts an annual rate of 230.0 fatalities per 100,000 individuals, and areas with a greater proportion of high-income individuals, mainly in Western Europe and North America, which experienced only 52.0 deaths in every 100,000, the former being more than four times the latter.

An unsurprising but glaring finding is that extremes of age are more susceptible to death from bacterial infections. In particular, children in the neonatal, post-neonatal and infancy stages of life are most vulnerable to morbidity and mortality.

For instance, *Staphylococcus aureus* was the leading bacterial pathogen in most countries and led to more than 1 million deaths and 34 million years of life lost (YLL) in 2019. However, *Streptococcus pneumoniae* caused the highest YLL burden with 40.3 million due to its more significant impact on the youngest.

When broken down by age groups, *Streptococcus pneumoniae* was the leading cause of death among young children post-neonatal to four years of age with 225,000 deaths. *Klebsiella pneumoniae* was the leading pathogen in most neonatal deaths at 124,000. *Salmonella enterica* killed 49,000 children between the ages of five and 14.

In all, the 33 bacterial pathogens were associated with 304 million YLLs in 2019 alone, a staggering figure.

Christopher Murray, co-author of the study and Director of the Institute for Health Metrics and Evaluation (IHME) at the University of Washington's School of Medicine, stated in a press release, "These new data for the first time reveal the full extent of the global public health challenge posed by bacterial infections."

He added, "It is of utmost importance to put these results on the radar of global health initiatives so that a deeper dive into these deadly pathogens can be conducted and proper investments are made to slash the number of deaths and infections."

According to Authia Gray, also at the IHME and another co-author of *The Lancet* study, "These new data could act as a guide to help address the disproportionately high burden of bacterial infections in low- and middle-income countries and may ultimately help save lives and prevent people losing years of their lives to illness."

A similar study using data from during the COVID-19 pandemic would undoubtedly reveal an even worse situation as health and logistic infrastructure have been severely strained by the reckless policy of placing profits before lives.

Furthermore, the policy of mass infection has turned the pandemic into a "mass disabling event," in which billions of infections and reinfections with SARS-CoV-2 are causing compounding damage to tens of millions of people globally. Numerous studies have shown that COVID-19 can affect nearly every organ system in the body, including the immune system, leaving people less capable of defending themselves against infectious pathogens.

A compilation of the *World Socialist Web Site's* coverage of this global crisis, available in epub and print formats.

The Lancet study authors write, "This study can be used to guide strategies for reducing the burden of bacterial infectious diseases, including infection prevention and control measures, vaccine development and implementation, and the availability of basic acute care services."

The study recommends that the identification and study of disease-causing pathogens in every region and the development of medical interventions should be considered urgent priorities for the global health community.

Especially telling is the fact that "Effective antimicrobials exist for all 33 of the investigated bacteria,

yet much of the disproportionately high burden in LMICs [Low- and Middle-Income Countries] might be attributable to inadequate access to effective antimicrobials, weak health systems, and insufficient prevention programmes."

A number of what are termed "barriers" to effective employment of these antimicrobials are identified, including:

- "high out-of-pocket costs, driven by deficiencies in government funding for health and unaffordable drug prices in LMICs."
- "unwarranted antibiotic use caused by poor education of health-care providers, regulatory issues, self-medication, and restricted availability of antibiotics can lead to the wrong antimicrobial being prescribed, which, if too broad, can promote resistance and, if ineffective, risks progression of infection."
- "unstable supply chains and poor quality control can result in the desired antibiotic being unavailable or the dissemination of substandard or counterfeit antimicrobials to the consumer."

All of these barriers are directly attributable to the devastating effects of capitalism, under which the drive to maximize profit by ever-intensifying exploitation of the working class is the paramount concern, and health care for the mass of the population is an unnecessary burden on the wealth of the elite.

This is true not only in LMICs, but increasingly in advanced capitalist countries where the class divide between the wealthy upper class and the working class is becoming ever more pronounced and the health care system is being systematically gutted. Hospitals, especially in rural areas, are being closed, while health care workers are driven from the profession.

Furthermore, the criminal failure of the capitalist system to effectively address not only COVID-19 but other previously known or anticipated infectious diseases, such as monkeypox and Ebola, not to mention the devastating health and other effects of climate change, demonstrate that these recommendations will be largely ignored.

Only a socialist society can marshal the resources and scientific expertise necessary to truly address the health and welfare of humanity.



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