

# **GLOBAL REPORT** **ON THE EPIDEMIOLOGY** **AND BURDEN OF SEPSIS**

Current evidence, identifying gaps  
and future directions



World Health  
Organization

Global report on the epidemiology and burden of sepsis: current evidence, identifying gaps and future directions

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In 2017, the 70th World Health Assembly adopted a historic resolution aiming to improve “the prevention, diagnosis and clinical management of sepsis”. Member States and global health leaders recognized that suffering and death from sepsis can be prevented through early diagnosis, timely and appropriate treatment, and effective infection prevention and control measures. They also urged the World Health Organization (WHO) to draw attention to the public health impact of sepsis.

Sepsis contributes significantly to preventable mortality and is the final common pathway to death for severe infectious diseases; it can also arise as a complication of injuries and non-communicable diseases. As reflected in the Sustainable

Development Goals (target 3 in particular), reducing global mortality from infectious diseases, especially in fragile populations, builds upon our progress in preventing and treating sepsis effectively. Preventing sepsis also reduces the use of antimicrobials, thus curbing the threat related to antimicrobial resistance. As sepsis represents the negative evolution of any infection when not diagnosed early enough or not treated effectively, its prevention and appropriate management are linked to achieving quality care for all in the context of universal health coverage, improving country capacity to comply with the International Health Regulations (IHR 2005), developing health emergency preparedness, implementing appropriate infection prevention and control measures, and ensuring that water, sanitation and hygiene standards are met.

However, understanding the problem of sepsis and its magnitude is challenging. This is the first WHO report on the global epidemiology and burden of sepsis. It stems from original research and existing published evidence and represents the first ever comprehensive ‘deep dive’ on this topic. To best appraise the existing evidence, WHO established a multidisciplinary group of international experts to discuss the status and limitations of research to date, and to identify approaches and priorities for improvement.

According to available estimates, approximately 20% of all-cause global deaths are due to sepsis, disproportionately affecting neonates, pregnant or recently-pregnant women, and people living in low-resource settings. Yet, our current understanding of the epidemiology of sepsis remains limited, particularly where the burden is highest, and is hampered by poor data quality, which illustrates the urgent need for this report. Furthermore, our knowledge of sepsis pathophysiology, aetiological factors, and clinical progression has evolved over time, together with its definition. Thus, strengthening national capacity for better health information systems, vital statistics and administrative data is urgently needed.

In this report, we highlight the public health impact of sepsis, with a particular focus on specific populations and those seeking health care, and we propose future directions and priorities in sepsis epidemiology research. Sepsis has many faces and can be a life-threatening condition, but it is potentially preventable and reversible. Research and policy-makers must be ready to forge partnerships to stimulate funding and help place sepsis more firmly on the list of critical health conditions to target in the pursuit of universal health coverage.

**Dr Tedros Adhanom Ghebreyesus**

Director-General

World Health Organization

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## Abbreviations and acronyms

<b>AFRINEST</b>	african neonatal sepsis trial
<b>AMR</b>	antimicrobial resistance
<b>EOS</b>	early onset sepsis
<b>ESBL</b>	extended spectrum beta-lactamase
<b>GARDP</b>	global antibiotic research and development partnership
<b>GBD</b>	global burden of disease, injuries, and risk factors
<b>GLASS</b>	global antimicrobial resistance surveillance system
<b>GLOSS</b>	global maternal sepsis study
<b>HA-sepsis</b>	health care-associated sepsis
<b>HAI</b>	health care-associated infection
<b>HCW</b>	health care worker
<b>HDSS</b>	health and demographic surveillance system
<b>HIC</b>	high-income country
<b>ICD</b>	international classification of diseases
<b>ICU</b>	intensive care unit
<b>IHR</b>	international health regulations
<b>IPC</b>	infection prevention and control
<b>LMIC</b>	low- and middle-income country
<b>LOS</b>	late onset sepsis
<b>MCEE</b>	maternal and child epidemiology estimation group
<b>MCS</b>	multi-country survey
<b>MCS-A</b>	multi-country survey on abortion
<b>MDR</b>	multidrug-resistant
<b>MRSA</b>	methicillin-resistant <i>Staphylococcus aureus</i>
<b>NCD</b>	non-communicable disease
<b>NICU</b>	neonatal intensive care unit
<b>PSBI</b>	possible serious bacterial infection
<b>SATT</b>	simplified antibiotic therapy trial
<b>SDG</b>	sustainable development goals
<b>SDI</b>	sociodemographic index
<b>SIRS</b>	systemic inflammatory response syndrome
<b>SMO</b>	severe maternal outcome
<b>SOFA</b>	sequential organ failure assessment
<b>STROBE</b>	strengthening the reporting of observational studies in epidemiology
<b>SDG</b>	sustainable development goals

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