



SEPSIS

Sepsis is a common complication of infection that frequently results in death or serious disability. Globally, there are an estimated 30 million cases of sepsis each year, over 7 million of which end in death. In fact, sepsis is the second biggest cause of death in the world and the leading cause of preventable death. With high rates of infection, Africa is expected to be greatly affected by sepsis. Despite its massive death toll, sepsis remains widely unknown and under-prioritised—by the general public, health care workers, and influential decision-makers. Awareness of and knowledge on what sepsis is and its burden on society are critical to prevent sepsis and save lives.

What is sepsis?

Sepsis is characterised as the body's overwhelming and toxic response to an infection—leading to tissue damage, organ failure, and often death.

Causes

Sepsis is caused by various infectious agents, including bacteria and viruses. Common sources of infection include the human body itself, the environment, contaminated water and food, animals and humans—acquired both inside and outside of hospitals or clinics. Sepsis occurs when infection spreads to the whole body, resulting in an over-whelming response of the body's defence systems.

Symptoms

Patients who develop sepsis may experience a range of symptoms that are often related to where the infection originated. Common symptoms include feeling weak, chills/fever,

hypothermia, nausea, low blood pressure, and fast heart rate. If sepsis progresses, patients may experience confusion or reduced consciousness, reduced urination, severe breathlessness, inability to stand or walk unaided, multiple organ failure, shock and death.

Diagnosis and treatment

Because sepsis appears differently in different patients and infections, standardised recognition of sepsis is challenging. Typically, sepsis is diagnosed by doctors based on patient history, symptoms, and blood tests. However, the lack of an accurate and simple method to test for sepsis can result in inconsistent and delayed diagnoses. Late diagnosis is particularly dangerous for patients with sepsis as organ failure may progress quickly. It therefore requires rapid treatment to prevent serious complications and/or death.

If caught early, sepsis can typically be treated with antibiotics. Treating the

underlying infection(s) with antibiotics should be accompanied by supporting failing organs, often through the provision of fluids, oxygen and other drugs.

Prevention

The surest way to prevent sepsis is by reducing infection rates. Minimising risk of infection is best achieved through improved sanitation and hygiene [of health care workers, facilities, and food] and vaccines. Preventing acquired infections from developing into sepsis, however, requires early diagnosis and treatment of infections (often through the provision of antibiotics). Such measures are particularly important to protect vulnerable populations (e.g. children, pregnant women, and the elderly) from developing sepsis and/or worsening of the infection. Above all, awareness of sepsis and its warning signs are needed by both health practitioners and members of the public in order to accurately identify and treat sepsis.

This brief was prepared by Emma Heneine, Knowledge Translation Officer (AFIDEP), with contributions from Emmanuel Nsutebu (Royal Liverpool and Broadgreen University Hospital NHS Trust), Jamie Rylance (Liverpool School of Tropical Medicine) and Shevin Jacob (Liverpool School of Tropical Medicine).

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African Research Collaboration on Sepsis (ARCS)

This fact sheet was developed as part of the ARCS, a Global Health Research Group awarded by the National Institute for Health Research (NIHR) and led by the Liverpool School of Tropical Medicine (LSTM). Running from 2018 to 2021, ARCS operates within three African countries, Malawi, Gabon and Uganda. ARCS brings together African and UK expertise across the applied health spectrum to tackle sepsis, learning from the UK's experience in reducing sepsis mortality.



Creating sustainable partnerships between research and clinical organisations, Ministries of Health, non-government organisations, and commercial sectors, ARCS is establishing a network across the three countries and focuses on the following four objectives: 1) to deliver high quality sepsis research training; 2) to establish commonly agreed sepsis care quality indicators for Africa which could form the bedrock of monitoring and evaluation programmes; 3) to pilot test innovative sepsis care interventions; and 4) to test the feasibility of novel clinical trial platforms for answering key sepsis questions for Africa.

ARCS is led by LSTM Principal Investigators, Dr Shevin Jacob and Dr Jamie Rylance. Implementing partners include the African Institute for Development Policy (AFIDEP), Malawi-Liverpool Wellcome Trust (MLW), the UK's National Health Service (NHS), Queen Elizabeth Central Hospital (QECH), Walimu, and Center of Medical Research Lambaréné (CERMEL), and other key NGOs (the Global Sepsis Alliance and Worldwide Radiology).

African Sepsis Alliance (ASA)

The ASA is a close ARCS collaborator and a leader in the fight against sepsis in Africa. Founded in 2016, the ASA is a non-profit organisation and member of the Global Sepsis Alliance (GSA).

The ASA provides leadership to reduce suffering and deaths caused by sepsis in Africa. It does this by collaborating with African countries and international professional bodies dedicated to improving outcomes from sepsis. In addition to GSA, ASA is supported by the African Federation of Critical Care Nurses, the World Federation of Critical Care Nurses, as well as other international organisations such as the WHO.

The ASA intends to radically alter the prospects of those who suffer with sepsis in order to give them the opportunity for long, independent, and productive lives. The ASA provides support for doctors, nurses, patients, and governments to recognise sepsis warning signs, prevent delays in treatment, and provide high-quality supportive care. It has run conferences for health care workers, developed online training material and been involved in advocacy. The opportunities for impact are huge, and the ASA is uniquely positioned to make this happen through its growing network of doctors and nurses in at least 15 countries. ASA members are multidisciplinary leaders in the fields of medical and nursing care, as well as policy. It is chaired by Dr Emmanuel Nsutebu and run by an executive board.

To learn more visit <https://www.africansepsisalliance.org/> and <https://www.lstmed.ac.uk/arcs> or contact Emmanuel Nsutebu at emmanuel.nsutebu@nhs.net.

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