

Statement on Maternal Sepsis

Maternal Sepsis

Recognizing the need to foster new thinking and to catalyse greater action to address this important cause of maternal mortality



Sepsis: a leading cause of maternal deaths

Strategic approaches to reduce maternal mortality in the past 15 years have mainly focused on clinical interventions and health system strengthening (1). The greatest attention has been on postpartum haemorrhage and hypertensive disorders, the two leading direct causes of maternal mortality (2). Further reducing maternal deaths is a priority for achieving the Sustainable Development Goals (3), implementing the UN Global Strategy for Women's, Children's and Adolescents' Health and critical for the Strategies toward Ending Preventable Maternal Mortality (EPMM) (1).

However, the third most common direct cause of maternal mortality, maternal sepsis (2), received less attention, research and programming. Undetected or poorly managed maternal infections can lead to sepsis, death or disability for the mother and increased likelihood of early neonatal infection and other adverse outcomes.

Recognizing the need to foster new thinking and to catalyse greater action to address this important cause of maternal and newborn mortality and morbidity, the World Health Organization (WHO) and Jhpiego have launched the Global Maternal and Neonatal Sepsis Initiative, dedicated to focusing additional effort, energizing stakeholders and accelerating progress in the area of maternal and neonatal infection and sepsis (Box 1). The Initiative has received extensive support from the International Federation of Gynecology and Obstetrics (FIGO), International Confederation of Midwives (ICM), International Pediatric Association (IPA), Global Sepsis Alliance and the Surviving Sepsis Campaign in collaboration with the Society of Critical

Care Medicine (SCCM) and the European Society of Intensive Care Medicine (ESICM).

Defining maternal sepsis

In July 2015, Jhpiego hosted the "Enhancing the Focus on Maternal Sepsis" meeting, which developed Key Themes and a Framework for Action as a first step in recognizing and addressing the importance of maternal infection. An important outcome of this meeting was the recognition of the need for a clear, evidence-based and actionable definition for maternal sepsis. Existing definitions related to maternal sepsis may be confusing (e.g. maternal infection, puerperal sepsis, postpartum sepsis) and imprecise, potentially leading to misdiagnosis, inadequate treatment or delays in care.

A literature review on maternal sepsis definitions and identification criteria was then conducted (4). The review included all review articles related to maternal sepsis or articles reporting on the development and testing of identification criteria for maternal sepsis, as well as current guidelines, published between 2010 and 2016, with no language or geographical restrictions. Information was extracted from 27 articles, out of 245 citations identified in the systematic review, and 9 guidelines and 3 additional WHO documents. This review found several terms, definitions and sets of criteria being used to describe maternal sepsis. A substantial proportion of studies (11/27) and guidelines (7/9) included definitions that consisted of variations and attempts at adaptation of the First and Second International Consensus Definitions for Sepsis and Septic Shock, which were developed for the general adult population but excluded pregnant women.

In April 2016, WHO convened an expert consultation to discuss, develop and propose a new global definition for maternal sepsis. A multidisciplinary international panel of 48 experts was surveyed through an online and in-person consultation in March–April 2016 for their opinion on the new definition of sepsis proposed for the adult population and the importance of different criteria for identification of maternal sepsis. Members of the panel had expertise in obstetrics, midwifery, adult and obstetric critical care, infectious disease, epidemiology and public health from across all regions of the world. During the in-person meeting the definition of maternal sepsis, attributes of its identification criteria and considerations for implementation were discussed. Informed by the literature review and a structured expert consultation, the new definition of maternal sepsis reflects the thinking embedded in the 2016 Third International Consensus Definitions for Sepsis and Septic Shock (SEPSIS-3) (5). Previously defined as an infection with a Systemic Inflammatory Response Syndrome (SIRS), the SEPSIS-3 consensus shifts the focus of the definition of sepsis from inflammatory response to life-threatening organ dysfunction.

Based on this work, the new maternal sepsis definition reads as follows: maternal sepsis is a life-threatening condition defined as organ dysfunction resulting from infection during pregnancy, childbirth, post-abortion,

or postpartum period. Specific identification criteria for maternal sepsis will be developed (Box 2).

During the consultation, experts agreed on the following attributes:

- Identification criteria for maternal sepsis cases should be based on the presence of suspected or confirmed infection plus signs of mild to moderate organ dysfunction (e.g. tachycardia, low blood pressure, tachypnoea, altered mental status, reduced urinary output).
- Two sets of identification criteria will be required to fulfil two different purposes:
 - early identification of women with possible severe maternal infections to enable prompt therapeutic action; and
 - confirmation of maternal sepsis for epidemiological and disease classification purposes (confirmed maternal sepsis).
- These criteria should be simple to obtain, preferably based on bedside clinical signs, actionable and applicable to high- and low-resource settings.
- Confirmed maternal sepsis cases need to be compatible with the current International Classification of Diseases (ICD-10) and contribute to the ongoing revision of the Classification to allow comparability of data.

Box 1: The Global Maternal and Neonatal Sepsis Initiative

Vision

The Global Maternal and Neonatal Sepsis Initiative will contribute to the Sustainable Development Goals by developing solutions able to reduce maternal and neonatal deaths related to sepsis.

Goal

- Accelerate the reduction of preventable maternal and neonatal deaths related to sepsis.

Objectives

- Raise awareness about maternal and neonatal sepsis among health care providers, policy-makers and the public
- Assess the burden and management of maternal and neonatal sepsis at the global scale
- Develop and test effective strategies to prevent, detect and successfully manage maternal and neonatal sepsis.

Priority areas of work

- Strengthening Health Programmes
- Research, Development and Evidence Generation
- Innovations
- Global Advocacy

Box 2: The new WHO definition of maternal sepsis

Maternal sepsis is a life-threatening condition defined as organ dysfunction resulting from infection during pregnancy, childbirth, post-abortion, or postpartum period.

Operationalizing the new maternal sepsis definition

The operationalization of the new maternal sepsis definition guides providers to focus on actionable elements such as the administration of antibiotics and fluids, and support of vital organ functions. It also recognizes the need to act promptly, prior to laboratory confirmation. Therefore, two sets of identification criteria for maternal sepsis will be developed and tested: one pertaining to early identification of women with possible severe maternal infections (presumed maternal sepsis), and another focused on confirming the diagnosis of maternal sepsis.

Adoption and implementation of the new definition will strengthen clinical management at the facility level and focus health system improvement efforts (Fig. 1). Operationalizing the new maternal

sepsis definition is a step toward more progress in addressing maternal sepsis. Continued success, however, will require a coordinated, cohesive and strategic approach with dedicated resources on the part of international organizations and agencies, ministries of health, programme managers, researchers and donors. The Global Maternal and Neonatal Sepsis Initiative will further the development of identification criteria, prevention strategies and management bundles and promote a global mobilization with the aim of accelerating the reduction of preventable sepsis deaths during pregnancy, childbirth and postnatal period by 2030. Key advances, however, are still needed in the area of innovation, research, programme implementation and advocacy, both at the global and national levels, in order to be effective and reach more women and babies.

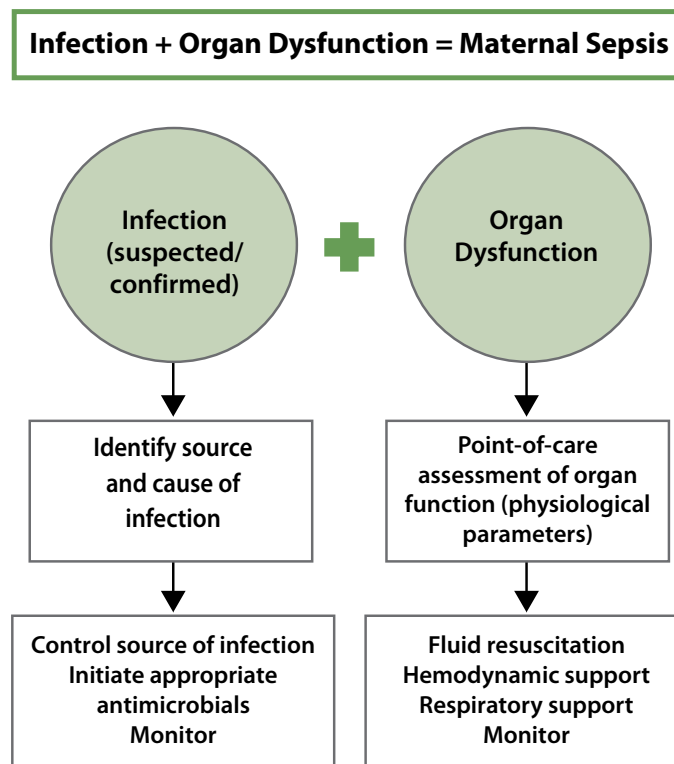


Figure 1. Approach for implementation of the new WHO definition of maternal sepsis

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This statement has been endorsed by:

Global Sepsis Alliance (GSA)	The European Society of Intensive Care Medicine (ESICM)
International Pediatric Association (IPA)	The International Confederation of Midwives (ICM)
Jhpiego	The International Federation of Gynecology and Obstetrics (FIGO)
Surviving Sepsis Campaign (SSC)	The Society of Critical Care Medicine (SCCM)

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