



Providing Quality Health Services in Malawi

Addressing Puerperal Sepsis in Malawi



A call to renewed action

Globally puerperal sepsis accounts for about 15% of all maternal deaths. However, in Malawi, it is the leading cause of maternal mortality. It contributes 9.3% according to the confidential inquiry of maternal deaths in Malawi (July 2012 – September) ¹.

The maternal mortality ratio in Malawi is at 439/100,000 live births,² where 63.2% of the deaths occur in the postnatal period³. Puerperal sepsis is a genital tract infection that occurs at any time from the rupture of membranes during labour and up to 42 days afterward. It is accompanied with two or more of the following conditions: pelvic pains, high body temperature (oral temperature 38.5°C or above) an abnormal genital discharge like pus with a foul odor, and delay in the reduction of the uterus (< than 2cm / day with in the first, eight days)⁴, among other symptoms.

Some of the factors that contribute to puerperal sepsis include poor personal hygiene, poor infection prevention techniques during delivery, and anemia. Delays in timely



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reporting to the health facility for early diagnosis and treatment, and lack of essential medications to manage the problem increases the risk of death from puerperal sepsis. There are global efforts to raise awareness of the problem and provide solutions. These include the World Health Organization (WHO) Puerperal Sepsis Management⁵; 70th World Health Assembly Resolution on improving the Prevention, Diagnosis, and Management of Sepsis⁶; Statement on Maternal Sepsis⁷; and Global Maternal Sepsis and Awareness Campaign Study.⁸

As part of infection prevention and control, the following recommendations have been made:

- ➊ include prevention, diagnosis, and treatment of sepsis in national health systems
- ➋ reduce antimicrobial resistance and promote the appropriate use of antimicrobials under the global action plan

However, despite these recommendations, women continue to die from puerperal sepsis, especially in low resource settings. To learn about the gaps contributing to maternal deaths as a result of puerperal sepsis, the University of Malawi and AMREF Africa conducted a study from December 1, 2015, in three sites: Matawale Health Centre, Southern Region; Nkhotakota and Ntchisi District hospitals, Central Region. Data was collected through an organizational ethnography that used participant observation, in-depth interviews, and record reviews. Twenty files of complicated cases were reviewed, and this policy brief focuses on findings from three puerperal sepsis cases.

¹Ministry of Health (2019). Confidential Enquiry into Maternal Deaths in Malawi Final: Lilongwe, Malawi.

²National Statistical Office (NSO) [Malawi] and ICF. (2017). 2015-16 Malawi Demographic and Health Survey Key Findings. Zomba, Malawi, and Rockville, Maryland, USA. NSO and ICF.

³Ministry of Health. (2014). Confidential Enquiry into Maternal Deaths in Malawi Final, Lilongwe, Malawi.

⁴World Health Organization (1992). The prevention and management of puerperal infections. Report of a technical working group, WHO, Geneva

⁵World Health Organization. (2008). 70th World Health Assembly Resolution on improving the Prevention, Diagnosis, and Management of Sepsis

⁶World Health Organization. (1992). The prevention and management of puerperal infections. Report of a technical working group, WHO, Geneva

⁷World Health Organization. (2017). Statement on maternal sepsis, WHO/RHR/17.02, Geneva, Switzerland.

⁸Bonet, M., Souza, J.P., Abalos, E. et al. (2018). The global maternal sepsis study and awareness campaign (GLOSS): study protocol. *Reproductive Health* 15, 16 <https://doi.org/10.1186/s12978-017-0437-8>.

The findings

From the study, we identified specific case studies that demonstrate the challenges in providing quality care and their impact on women and children. However, this policy brief focused on one study.

Case study

Jane* (not her real name), a 42-year-old woman, was admitted in the postnatal ward at a district hospital following infection from a cesarean section wound eight days after delivery. Her obstetric history indicated that she had suffered three miscarriages, and two of her new-borns had died. The new-born deaths were both due to complications of prematurity.

Jane was also diagnosed with HIV at her first ANC and was on antiretroviral treatment. Her pregnancy had no complications, and she delivered through cesarean section at 38 weeks, which resulted in one live and one stillbirth. The other baby also died after three days in the nursery. Jane was then discharged and told to come after seven days for a postnatal check. However, her wound became infected while at home, and she reported at the hospital two days after the onset of the symptoms as she was unable to get transport to the facility. At the hospital, she was admitted and put on antibiotics and prescribed wound dressing. Jane was also asked to buy brown sugar, which they could use to dress the wound.

Jane narrated: *“They told me that we should be putting sugar on the wound after it is cleaned...I buy from the*

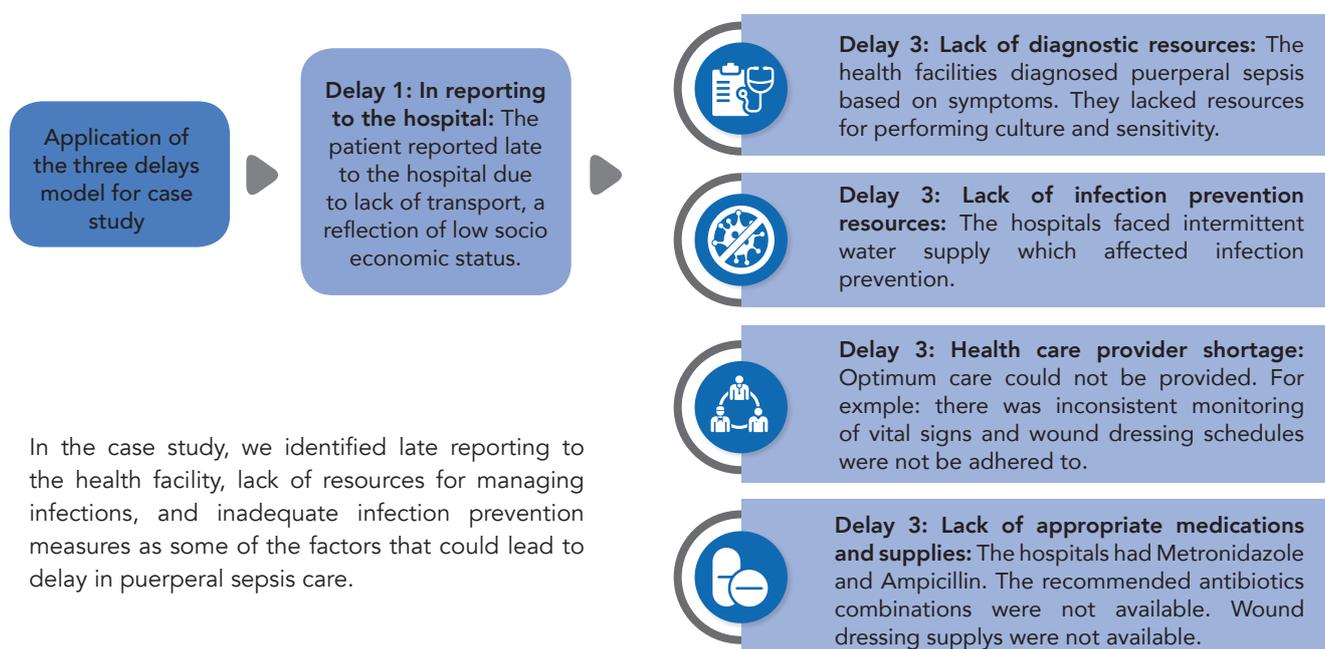
market. I told them that I do not have money, but they could not help me. So I called my brother from the village, and he brought money so that we can buy the sugar.”

Jane was told that her wound would be cleaned twice a day, but most of the time, it was only cleaned once. *“They said they would clean it twice a day, but sometimes they do it only once,”* Jane explained.

Through our research process, we learned that the nurse in charge was sometimes too busy and was not able to clean Jane’s wound as required twice a day. As a result, the wound was healing, but very slowly. Fortunately, Jane survived.

This case study shows some of the aspects captured in by the Three delays model developed by Thaddeus and Maine. The framework is used to evaluate factors contributing to delayed timely maternity care. The elements are: 1) delay in deciding to seek care; 2) delay in reaching a healthcare facility; and 3) delay in receiving care at the healthcare facility. The case study reflects two types of delay, as summarized in table 1.

Table 1: Factors Contributing to Delay in Puerperal Sepsis Care





Early Recognition

Successful management of sepsis is dependent on timely access to care, and early diagnosis is essential. As such, vital signs are crucial to the early diagnosis of sepsis, including their severity. Studies show that the use of scorecards is effective in aiding health care providers to identify the symptoms of puerperal sepsis and hence provide an early diagnosis ^{9,10}. We, therefore, recommend that all health facilities adopt the use of scorecards to ensure that women with this condition are diagnosed early enough and receive timely life-saving treatment.



Appropriate Antibiotics

Patients with puerperal sepsis should receive a proper combination of antibiotics. The suggested combinations are as follows: (a) Metronidazole and Ceftriaxone plus Ampicillin, and (b) Clindamycin and Gentamycin plus Ampicillin¹¹. These antibiotics should also be dispensed with the correct dosage.

Considering the high risk of death associated with sepsis, antimicrobial drugs need to be administered at maximum recommended dosages during the initial phase. However, the dosage should be moderated afterward to avoid impairing kidney functions. If despite the antibiotics, a woman does not respond to treatment, surgical interventions such as a hysterectomy may be considered.



Aggressive Resuscitation

Puerperal sepsis patients who are very sick should be resuscitated aggressively to prevent adverse outcomes. Acute resuscitation interventions

include the administration of intravenous fluids to maintain a normal heart rate and blood pressure. Nurses should ensure that the patient's blood pressure measurements are taken frequently and that there is an adequate supply of oxygen for the patient. The nurse should also continually monitor the patient's response to the treatment and also ensure sufficient fluids and nutrients intake.



Source control

Along with proper treatment with antibiotics, controlling the source of infection¹² is the only way to treat the cause of the sepsis. Control measures such as hysterectomy or removal of retained products of conception depend on several factors such as the patient's condition, surgical expertise, and the availability of resources. Hence need for a timely referral if such procedures cannot be carried out at that facility.



Adherence to best practices in infection prevention

The World Health Assembly calls countries to renew strategies for infection prevention and control. These include: strengthening water and sanitation infrastructure such as adequate water and handwashing facilities in health facilities. Clinicians and nurses/midwives should reinforce infection prevention practices in surgery and during childbirth¹². Health facility managers need to ensure availability and continuous supply of antiseptics and antibiotics, and also maintain high-quality standards for sterilization and storage of instruments and supplies used for labour- and childbirth-related procedures (e.g., episiotomy, vacuum extraction¹³).

⁹Torsvik, M., Gistad, L.T., Mehl A., Bangstad, I.L., Vinje L., Damas, J.K., and Solligard, E. (2016). Early identification of sepsis in hospital inpatients by ward nurses increases 30-day survival. *Critical Care*, 20:244 DOI 10.1186/s13054-016-1423-1.

¹⁰Kenzaka, T., Okayama, M., Kuroki, S., Fukui, M., Yahata, S., Hayashi, H., Hashimoto, M. (2012). Importance of vital signs to the early diagnosis and severity of sepsis: Association between vital signs and sequential organ failure assessment score in patients with sepsis. *Internal Medicine*, 51(8), 871-876.

¹¹Palaniapan, N., Menezes, M. & Wilson, P. (2012) Group A streptococcal puerperal sepsis: management and prevention. *The Obstetrician & Gynaecologist*; Volume 14(1), 9-16, DOI: 10.1111/j.1744.4667.2011.

¹²Dünser M.W. et al. (2012). Recommendations for sepsis management in resource-limited settings. *Intensive Care Medicine*, 38 (4), 557-574.

¹³World Health Organization. (2015). Improving the prevention, diagnosis, and management of sepsis, WHA68, Geneva, Switzerland.



Conclusion

Puerperal sepsis has received less attention in 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 outcomes¹³. Malawi should implement the recommended quality improvement solutions in puerperal sepsis prevention and management amidst all the challenges.

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