

Editorial

The Crucial Role of Midwives in Preventing Maternal Sepsis: It All Started in a Maternity Ward

Every year, over 100 million patients around the world suffer from Healthcare-associated Infections (HAIs). Of these infections, one of the worst is sepsis, which causes a total of 16 million deaths around the world every year [1]. Hand hygiene is key in infection prevention and microbial transmission, including sepsis. Most HAIs are due to healthcare workers' hands. Sepsis is often underreported because it is caused by a number of different pathogens (bacterial, viral, and fungal) [2].

Sepsis is a life-threatening dysfunction of vital organs that is caused by a dysregulated response to infection [3]. It causes serious complications, especially in low- and middle-income settings, and is a major cause of morbidity and mortality for mothers and babies [4].

In its early stages, sepsis is difficult to diagnose and often, patients are in critical conditions by the time they are diagnosed.

Each year 3 million newborns are affected by sepsis and 500,000 of them die as a result [5]. Maternal sepsis is one of the leading causes of mortality, and represents 11% of maternal deaths [6]. This high maternal and neonatal mortality rate due to sepsis could be reduced with improved practices that include hand hygiene, a clean healthcare environment, sterile medical tools, and implementation of infection prevention core components by caregivers [1]. During deliveries, the main tool that midwives use is their hands, as they constantly run vaginal inspections and check the cervix dilatation, which makes the role of hand hygiene especially important.

Nurses, midwives, and other healthcare professionals are in direct contact with patients while providing them care, but they can also transfer bacteria and viruses to patients while working. This is one of the most common reasons that HAIs are transmitted, but they can be prevented by a simple gesture: hand hygiene [7]. Studies proved that using alcohol-based handrub during appropriate times of providing care, as defined by the World Health Organization (WHO) 5 Moments for Hand Hygiene, is effective in avoiding infection transmission [8]. It is also a very good investment as preventing infections costs far less to healthcare systems and countries than treating them does [9]. This is the reason why the WHO has dedicated the 5th of May as the international hand hygiene day since 2009 with the "Save Lives: Clean Your Hands" campaign [10].

The WHO has declared 2020 as the Year of the Nurse and the Midwife [11]. The 5th of May is a perfect time to celebrate the role of nurses and midwives in infection prevention, and the importance of hand hygiene in their work. Moreover, the International Confederation of Midwives has designated the 5th of May as the Midwifery Day since 1991 so the momentum of both designated days will be celebrated around the world [12].

Midwives have a fundamental role in the well-being of mothers and newborns. They accompany women from the first day of their pregnancy through, and even after their delivery. They are trained in both medical and psychological fields, and help mothers with activities such as breastfeeding and are there to support both them and their partners. Midwives often act as the link between newborns, their parents, and primary care physicians, thus helping to ensure the health and development of the infant. Although the exact nature of their work may vary somewhat around the world but they remain indispensable for the health of women and babies in health systems around the world [5].

1. WHERE HAND HYGIENE IN HEALTHCARE STARTED

On this 5th of May, it is also a good opportunity to remember that the origins of hand hygiene as we know it today were in the maternity ward. The father of hand hygiene, Ignác Philipp Semmelweis practiced as a professor's assistant in the obstetrics department of the Vienna General Hospital. As he began his career in 1846, he faced the shocking reality of the maternity ward: childbed fever was a common issue for the 19th century women [13]. Many of new mothers died of puerperal fever after giving birth but it never was considered a preventable disease. Semmelweis wanted to understand what was happening, and started his surveillance. The Vienna General Hospital had two connected wards, one mostly run by midwives and another with medical students and doctors. His observations showed that between these two wards, the mortality rate was much higher with doctors than midwives. The interesting part was that pregnant women ready to deliver were randomly assigned to a different ward based on the day of the week. While trying to figure out why this was so, a colleague, Jakob Kolletschka, died of a similar disease after injuring himself accidentally with a scalpel during an autopsy. Doctors and medical students were frequently doing autopsies and postmortem examinations before being called to delivery rooms, which was not the case for midwives [14].

Semmelweis soon presented his hypothesis about "cadaverous particles" remaining on hands and being transferred to women. He believed that clean practices could help to avoid childbed fever, and tried different solutions to wash his hands. He chose a chlorinated lime solution as he found it to be better at removing bad odors after autopsies. He implemented hand hygiene practices among the physicians to test his hypotheses, and lowered the rate of childbed fever to the level of the

ward where the midwives worked [15]. Nothing was “inevitable” about the childbed fever—the doctors’ hands were the culprits!

2. TODAY’S CALL

The importance of hand hygiene was not accepted at Semmelweis’ time, even if it proved itself effective. This shows changing human behavior is difficult, and this is why the WHO began this yearly hand hygiene campaign and developed their multimodal strategy. Although rates of childbed fever have been markedly reduced today, many women are still dying of sepsis after labor. We should take the opportunity of this 5th of May to celebrate hardworking nurses and midwives as well as highlight the crucial role that they play in infection prevention for mothers and babies. It isn’t just clean practice, it’s lifesaving. The WHO makes this clear in the message for midwives for World Hand Hygiene Day: “Your hands make all the difference for mothers and babies [11].”

CONFLICTS OF INTEREST

Didier Pittet works with WHO in the context of the WHO initiative “Private Organizations for Patient Safety – Hand Hygiene”. The aim of this WHO initiative is to harness industry strengths to align and improve implementation of WHO recommendations for hand hygiene in healthcare indifferent parts of the world, including least developed countries. In this instance, companies/industries with a focus on hand hygiene and infection control-related advancement have the specific aim of improving access to affordable hand hygiene products as well as through education and research. All listed authors declare no financial support, grants, financial interests or consultancy that could lead to conflicts of interest.

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