

Maternal mortality: the shameful state in the Sudan

What role can the anaesthetist play to improve the outcome of pregnant women?

Maternal death is the death of a woman while pregnant, or within 42 days of termination of the pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes.¹

The maternal mortality ratio (MMR) represents the risk associated with each pregnancy. Currently, the global MMR is approximately 400 per 100 000 live births, with significant inequality between developed and developing countries.² Despite recent advances, more than 99% of maternal deaths occur in the developing world. Most developed regions of the world now have an MMR that is lower than 15 per 100 000 live births.³

In August 2006, the Federal Ministry of Health in Sudan published a strategy on reproductive health for the years 2006-2010.⁴ The report contained worrisome numbers, such as an MMR of 509 per 100 000 births, an infant mortality ratio of 68 per 100 000, and a neonatal mortality ratio (NMR) of 31 per 1 000. In 2009, when following-up on this report, the Federal Ministry of Health in Sudan issued a ministerial decree for the formation of a national maternal death registry (NMDR). Maternal death was made notifiable for the first time. The NMDR committee published its long-awaited first report in early 2011,⁴ in collaboration with United Nations agencies, the World Health Organization, the United Nations Children's Fund, the United Nations Population Fund and the World Bank. In this report, the committee published figures of maternal deaths which were notified to its end. It is worth noting that south Sudan states, which enjoyed self-autonomy during the 2006 census and went on to be an independent in July 2011, were not included in the 2011 report.

In its report, the NMDR committee determined the MMR to be 209 per 100 000 births in 2010, well below international estimates. Obstetric haemorrhage, eclampsia and sepsis accounted for more than half of overall mortality. This was followed by endemic illnesses. For example, the report describes death with jaundice as a surrogate to hepatitis (but no serological tests were carried out), and included anaesthetic complications. Twenty-one per cent of perioperative deaths followed emergency Caesarean sections, while 4.9% were post-elective Caesareans.⁴ Anaesthetic causes contributed 3.2% to all deaths.

Unsurprisingly, demographically, states that were affected by the civil war, i.e. Blue Nile, North Darfur and South Darfur, scored the three top spots in the ranking.

Twenty-nine cases were attributed to anaesthetic complications, representing 3.2% of all recorded casualties. Unfortunately, the report did not detail what mode of anaesthetic was deployed, i.e. general versus regional, nor what the complications were exactly. As this letter is being written, I am aware of efforts that are underway to audit anaesthetic practice in obstetric practice nationwide. The result of this exercise is eagerly awaited.

Maternal and foetal mortality were unacceptably high in sub-Saharan Africa⁵ in 2010. Of the 40 top countries with the highest MMR, 37 were African.⁶ Various publications, reports and audits, African and international, have examined the causes behind these high numbers. Factors ranging from poor antenatal and perinatal care, obstetric haemorrhage and lack of transfusion resources, suboptimal use of regional anaesthesia, infection and sepsis, to low rates of Caesarean section, abortions, inadequate supervision of trainee anaesthetists and lack of appropriate monitoring, have all been identified.⁷⁻¹⁰

In an attempt to tackle this significant challenge, we propose a three-point plan which is cost-effective, but by no means new, to decrease mortality in general, and anaesthetic-related mortality specifically.

Training and supervision

Training under supervision is mandatory until satisfactory possession of the basic key components in respect of clinical skills, knowledge and other attributes that are necessary for progress in the speciality. In our local setting, this is even more relevant as most anaesthetics are administered by medical auxiliary personnel who do not possess in-depth physiology and pharmacological knowledge which can be applied to complicated cases.

Increasingly, simulation training has become a valuable tool for teaching and maintaining core skills in anaesthesia.¹¹ Although the capital cost of establishing simulation centres is high, its benefits are far-reaching and outweigh the risks of multiple avoidable deaths.

Referral system

Proper linkage between primary healthcare services and first referral units upwards is crucial to provide health care to people in any country. This kind of coordination is beneficial for patients, and also builds professional relationships between healthcare workers at the district hospitals and health professionals at the first referral facility.

Preanaesthetic antenatal clinics

Antenatal referral permits time for the preparation of an appropriate management plan for labour and delivery. The aims of antenatal anaesthetic assessment include identifying problems or potential problems, arrangement of the necessary investigations, referral to specialists or specialist centres for advice and/or treatment, and timely commencement of therapy.

United Nations' figures indicate that a mother dies every minute. Ninety-eight per cent of deaths occur in developing countries. Anaesthetists are at the front line combating maternal mortality causes. Implementing simple cost-effective measurements, such as anaesthetic antenatal clinics and structured training programmes, would be an initial step towards achieving this goal. However, a major drop in MMR rates across the continent can only be achieved with strong political commitment and enhanced efforts.

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