

Matters obstetric (and gynaecological) and neonatal

Much of this month's *SAMJ* deals with the above. South Africa (SA)'s current level of maternal mortality is far higher than the 2015 Millennium Development Goal (MDG) 5 target of 38 maternal deaths per 100 000 live births,^[1] meaning that this country has failed to fully meet the MDG 5 maternal health goal – to reduce the maternal mortality rate by three-quarters and achieve universal access to reproductive health. But the good news is that over 90% of women are receiving antenatal care, and there is a relatively high contraceptive prevalence rate of over 60%.^[1]

Giving birth is risky in Africa, where most women deliver without skilled care and inequalities in care during pregnancy remain real. Progress in reducing the number of teenage pregnancies has stalled, putting more young mothers at risk; poverty and lack of education perpetuate high adolescent birth rates; and progress in expanding the use of contraceptives by women has slowed, use of contraception being lowest among the poorest and least-educated women.

It is self-evident that 'maternal mortality is both a multidimensional health and broader developmental challenge, and that improved sexual and reproductive health is also dependent on a range of other factors including education, decent work, safety, clean water and sanitation, and adequate transport facilities.'^[1] The United Nations (UN) is focusing now on Sustainable Development Goals (SDGs) – 2015 is the Time for Global Action.^[2] In this context, *The Lancet* has suggested that the UN's Open Working Group, with its proposed 17 SDGs for the post-2015 era, beginning with: 'End poverty in all its forms everywhere', seek Utopia ... these 17 SDGs 'are fairy tales, dressed in the bureaucratise of intergovernmental narcissism, adorned with the robes of multilateral paralysis, and poisoned by the acid of nation-state failure.'^[3]

At the recent World Economic Forum meeting in Davos,^[4] the call was made for the perfectly real possibility of avoiding 40% of premature deaths between 2010 and 2030. This quantitative target for a 2015 SDG was broken down by cause of death: two-thirds of child, maternal and infectious disease deaths averted, together with one-third of premature deaths from non-communicable diseases (NCDs) and injuries. More recently, *The Lancet* pointed out that 'In all major countries, except where the effects of HIV or political disturbances predominated, the risk of premature death has been decreasing in recent decades, and it will fall even faster over the next few decades if the new SDGs get the big causes of death taken even more seriously.'

To appreciate SA's current obstetric status, the two Forum articles by Pattinson, who heads the South African Medical Research Council's Maternal and Infant Health Care Strategies Unit, are required reading.

Safety versus accessibility in maternal and perinatal care

Pattinson^[5] asserts that the starting point is the staff required to provide a *safe* maternity unit in the community health centres (CHCs) where most women deliver. Assuming that the appropriate equipment is available and the facility is open 24 hours a day, 7 days a week, *at a minimum there need to be 10 professional nurses with midwifery/advanced midwives* to ensure safety for mother and baby in every maternity unit. Two norms are used that represent two extremes: the World Health Organization (WHO) norm, being the minimum number of professional nurses required to provide a maternity service, and the Greenfield norm, developed with SA circumstances in mind and viewed as the ideal, even if unattainable at present. Happily most of SA's maternity units fall some way in between the two. To be cost-effective, safe units should do a minimum of 500 - 1 200 deliveries per year.

Pattinson insists that the solution to making maternity units both safer and more cost-effective is to realign services, so that all are properly functioning and are open 24 hours a day, 7 days a week. This will,

however, make maternity services less accessible unless there is a system for the *efficient and rapid transfer of emergency cases*. Realignment of services and most of all improved emergency transport are not impossible to achieve, as demonstrated by the example of the Free State Province, where maternal mortality was halved by providing dedicated maternity care ambulances to expedite interfacility transport and by consolidating the caesarean section (CS) services.^[6]

Basic and comprehensive emergency obstetric and neonatal care in 12 SA health districts

Pattinson and colleagues^[7] found that the ability of CHCs and district hospitals to perform the lifesaving services of basic and comprehensive emergency obstetric and neonatal care (EmONC) in many of the districts was not consistently available. The three essential components of EmONC are:

- Healthcare providers with sufficient knowledge and skills to recognise, stabilise and treat or refer the patient
- Healthcare facilities with the essential lifesaving services available, such as capacity to perform CS
- An efficient interfacility transfer system.

If these were universally in place in SA, they would prevent approximately 9 000 maternal and perinatal deaths.

Maternal death and CS in SA

In the latest (2011 - 2013) *Saving Mothers* report, the National Committee for Confidential Enquiries into Maternal Deaths (NCCEMD) highlights the large number of maternal deaths associated with CS.^[8] The most serious issue remains bleeding during or after CS – of all the mothers who died during or after a CS, one-third suffered hypovolaemic shock (as a final cause of death).

The risk of a pregnant woman dying as a result of CS during the 2011 - 2013 triennium was almost three times that for vaginal delivery: the case fatality rate, expressed as the number of fatalities per 10 000 causally related to mode of delivery, was 6.7/10 000 for vaginal births and 18.9/10 000 for delivery by CS. The greatest problem was at district hospital level.

Of the 1 243 mothers who died during or after a CS, 42 (3.38% of all CS deaths) died as a result of bleeding problems during the procedure, and 180 (14.5% of all CS deaths) died from haemorrhage following the procedure. Deaths were assessed as clearly avoidable in 70% of cases of bleeding during CS and in 72% of cases of bleeding after CS; only 1.8% of women who died were assessed as having no suboptimal care. Additional deaths of patients undergoing CS occurred in relation to pre-eclampsia and eclampsia (six times increased risk of dying), anaesthesia, pregnancy-related sepsis (three times increased risk of dying), and acute collapse and embolism (combined, a five times increased risk of dying).

The authors offer concrete recommendations aimed at reducing deaths from bleeding during or after CS, from CS in hypertensive conditions, from acute collapse, from embolism following CS and from post-CS sepsis.

They conclude by suggesting that everyone involved in surgical delivery should make a concentrated effort to decrease the number of deaths associated with the procedure. Accepting that medical students are ill-equipped to do surgery after graduation, yet are expected to do this major invasive procedure in women 'with complex, altered physiology where complications that can challenge even a highly skilled doctor can arise within seconds', they ask: 'Could CS skills training not be incorporated into the undergraduate medical curriculum?'

In my own opinion the answer should be an emphatic 'No'. Rather, the realignment of services to which Pattinson refers has to occur to consolidate the CS services while ensuring interfacility transport

by providing dedicated maternity care ambulances.^[6] This is surely reinforced by the findings of the NCCEMD^[9] that the following major causes of the 2011 - 2013 deaths from hypovolaemia ascribed to haemorrhage were:

- Inadequate utilisation of uterotonic agents
- Poor recognition of the severity of blood loss
- Inadequate surgical skill
- Delays in relaparotomy and/or referral in case of post-CS bleeding.

The recognition and execution of the above are unlikely to be in the skills set of a newly qualified doctor.

Management of obstetric haemorrhage

In their Forum article, Farina and Fawcus^[9] offer recommendations for the routine prophylactic administration of oxytocin for the medical management of uterine atony at and after CS. These are summarised in the table on p. 273.

Intrapartum asphyxia and hypoxic ischaemic encephalopathy

A retrospective study at Chris Hani Baragwanath Hospital^[10] reveals an incidence of asphyxia of 15/1 000 or 10/1 000 live births respectively, depending on need for assistance with breathing or Apgar score <7 at 5 minutes. Whichever definition is used, the incidence of asphyxia in this study is very high compared with that reported in developed countries, which approximates 1 - 5/1 000 live births. The overall incidence of encephalopathy in these infants was predictably high at 8.5/1 000 live births. Of such infants, 15 - 20% will die in the neonatal period while 25 - 30% of survivors will develop permanent neurodevelopmental abnormalities, including cerebral palsy.

MMed supervision

In my editorial last month,^[11] I alluded to a rash of articles offered for publication derived from MMed theses, the mentorship of which is placing considerable strain on academics^[12] because potential supervisors meeting all qualifying criteria are a scarce resource in many medical school departments. This month, Rout *et al.*^[13] suggest a 'path out of the swamp' for MMed supervision ... that of joint supervision. This is required reading for those tasked with having their young mentees succeed!

Food insecurity in informal settlements in urban SA

The topic for World Health Day 2015 is food safety.^[14] Unsafe food is linked to the deaths of an estimated 2 million people annually – including many children. Naicker *et al.*^[15] address the problem of food insecurity in households in informal settlements in urban SA in their Forum article, highlighting, perhaps predictably, the much higher level of food insecurity of our citizens who live in urban informal settlements, where poverty levels dictate the degree of such insecurity. Households with children are more likely to be food insecure. Confirming the well-documented finding that poor socioeconomic status is predictive of food insecurity, lack of full-time employment of the head of the household is significantly associated with an increased risk.

Another outcome of this study, in the context of the epidemic of NCDs, is the increased trend in consumption of fast foods, which climbed by 18% between 2006 and 2009, and has been sustained at this higher level of consumption in subsequent years!

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*Pattinson RC, Makin JD, Pillay Y, van den Broek N, Moodley J. Basic and comprehensive emergency obstetric and neonatal care in 12 South African health districts. *S Afr Med J* 2015;105(4):256-260. [<http://dx.doi.org/10.7196/SAMJ.9181>]

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