

An illustration of a woman with dark hair tied back, wearing a purple top and a gold hoop earring. She is looking down at a baby she is holding. The baby has dark hair and is looking up with its mouth open. The background is a light yellow color.

# Saving Mothers 2011-2013: Sixth report on the Confidential Enquiries into Maternal Deaths in South Africa

Executive Summary

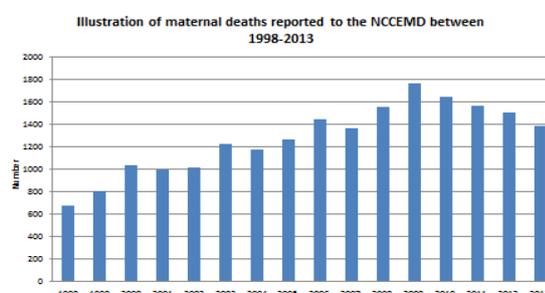
Compiled by the National Committee for Confidential Enquiry into  
Maternal Deaths



## Saving Mothers 2011-2013: Executive Summary

### Deaths of women during pregnancy have declined

**482 (27%) fewer deaths were reported to the NCCEMD in 2013 than in 2009**



### Causes of maternal deaths (3Hs: HIV, Haemorrhage, Hypertension)

- The most common cause of deaths was Non-Pregnancy Related Infections group (34%); 90% of women dying in this group were HIV positive. There has been a 25% reduction in deaths in this group since 2008-2010. This decline is most likely due to the HIV screening and treatment programme.
- Bleeding during or after pregnancy is the second most common cause of maternal death. More than half of these women (53%) had caesarean sections.
- Two thirds of all maternal deaths are due to Non-pregnancy Related Infections, bleeding during or after pregnancy and complications of hypertension in pregnancy

### Summary of findings

Data was entered on 4452 deaths in pregnancy, childbirth and the puerperium for the period 2011-2013. The institutional maternal mortality ratio (iMMR) has **decreased** from 176.22/100000 live births in 2008-2010 to 154.06/100000 live births in 2011-2013. The iMMR decreased in district and tertiary hospitals but there was a slight increase in regional hospitals.

In 2011-2013, the “big 5” causes of maternal deaths were non-pregnancy related infections (NPRI) (34.7%, mainly deaths due to HIV infection complicated by tuberculosis (TB), PCP and pneumonia), obstetric haemorrhage (15.8%), complications of hypertension in pregnancy (14.8%), medical and surgical disorders (11.4%) and pregnancy related sepsis (9.5%, includes septic miscarriage and puerperal sepsis). These five account for 86.2% of maternal deaths. Caesarean section was associated with more than half of obstetric haemorrhage deaths. TB was the most common cause of deaths from non-pregnancy related infections and was probably underdiagnosed in a number of other women.

The HIV status was known for 87% of women who died; 65% of whom were HIV positive, a small decrease from 70% in 2008-2010. Almost 90% of women who died from NPRI were HIV positive. Of these, 55% were on HAART, compared to 36% in 2008-2010.

The iMMR of deaths due to complications of hypertension in pregnancy has declined 18% from 2002-2004 till 2011-2013, but iMMR due to obstetric haemorrhage has increased 25% from 2002-2004 till 2011-2013. The iMMR was three times higher for caesarean section; 66.6 per 100000 live births for vaginal birth and 185.8 per 100000 live births for caesarean section.

Poor clinical assessment, delays in referral, not following standard protocols and not responding to abnormalities in monitoring of patients were the most common health care professional avoidable factors. Lack of appropriately trained doctors and nurses has emerged as a significant contributory factor in maternal deaths being recorded in 15.6% and 8.8% for doctors and nurses respectively.

## Key topic specific messages to improve care

### Caesarean section

- A safe caesarean section (CS) service means having adequate resources including adequate numbers of knowledgeable and skilled staff who can manage surgical and anaesthetic complications of CS. Criteria for accreditation of CS sites should be developed to ensure that hospitals provide a safe CS service. This may result in the CS service being closed in some facilities and consolidation of health care professionals into viable working units.

### HIV and TB

- TB is the most common cause of death in the Non-Pregnancy Related Infections group. All pregnant women (irrespective of HIV status) should be screened for TB. Pregnant HIV positive woman should be screened for TB at each health interaction during pregnancy and the postnatal period and given prophylaxis with Isoniazid or fast tracked for treatment if TB is demonstrated.

### Haemorrhage

- Prevent anaemia by providing iron and folate supplementation to all pregnant women
- Ensure safe use of uterotonics in labour.
- Ensure appropriate doses for uterotonics for prophylaxis and treatment of PPH at caesarean section as well as after vaginal delivery.
- Practice emergency drills for haemorrhage; with a focus on problem recognition, resuscitation and practical procedures e.g. manual removal of the placenta, uterine compression sutures
- Ensure safe and adequate supplies of blood and blood products

### Hypertension

- Have clear referral criteria for hypertensive disorders of pregnancy
- Screen all antenatal patients for hypertension and refer according to criteria
- All pregnant women should be given calcium supplementation
- Practice emergency drills in complications of hypertension

## Areas for action<sup>1</sup>

### Policy-makers, service planners, Health Professions Council, Nursing Council and Professional Organisations

- **Continue focus on HIV:** Two-thirds of the maternal deaths were HIV positive; although a reduction from the previous year, attention must still be focussed on screening and treatment of HIV positive women
- **Ensure safe caesarean section sites:** The mortality rate of women having caesarean sections was three times higher than those having normal deliveries. More than half of the women dying of obstetric haemorrhage had caesarean sections. Efforts must be made to ensure the facilities performing caesarean sections can do so safely, which requires adequate numbers of doctors with relevant surgical and anaesthetic skills. Facilities which are unable to perform safe CS should not offer a CS service. Accreditation of facilities performing caesarean sections should be considered.
- **Improve intern training:** Lack of appropriately trained doctors and nurses was thought to be a significant contributory factor in 15.6% and 8.8% of assessable maternal deaths, up from 9.3% and 4.5% in 2008-2010 respectively. Lack of appropriately trained doctors was recorded as a significant factor in 47%, 27% 24% and 19% of maternal deaths due to anaesthesia, obstetric haemorrhage, pregnancy related sepsis and complications of hypertension respectively. The quality of intern training must be thoroughly examined and the hospitals training interns must be properly evaluated. All interns should complete the ESMOE course and its anaesthetic module before being registered as community service doctors. Before being allowed to manage maternity cases independently, a doctor's clinical competence, including competence in performing caesarean section, should be assessed and confirmed. Further training must be arranged for the doctor as required to attain competence.
- **Emergency Medical Services must prioritise transfer of maternity emergencies.** At least 1 in 10 maternal deaths were associated with transport delays.
- **Engage the community.** MomConnect is a successful example of this and provides the essential knowledge on when and where to go to receive the appropriate care.

### Chief Executive Officers (CEOs), District Managers, Clinical Managers, Heads of Maternity

- **Maternity units must have more than eighty percent of their staff trained in ESMOE:** Sixty percent of the maternal deaths were thought to be possibly or probably avoidable. ESMOE has been shown to improve knowledge and skills of health care professionals and has been associated with a reduction in maternal and neonatal deaths.
- **Obstetric and neonatal emergency drills (EOST exercises) must be conducted at least monthly:** Maternal deaths due to obstetric haemorrhage and hypertension were thought to be possibly and probably preventable in 89% and 67% of cases respectively
- **Contraceptives, including hormone tablets, barrier methods and long-acting reversible contraceptives must to be integrated into all relevant health contacts and through community engagement:** Prevention of pregnancy in teenagers and women over 34 years will reduce the number of maternal deaths
- **Ensure priority inter-facility emergency transport**

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<sup>1</sup> Indicators are available in the Comprehensive report

- **All hospitals must provide a safe caesarean section service:** This might involve consolidation of services within the district. This includes a safe anaesthetic service.
- **Attend maternal and perinatal death review meetings:** Action plans for preventing recurrence of maternal and perinatal deaths should be made at these meetings and must be followed up at the next meeting.
- **High risk antenatal clinics must be established and made accessible to all pregnant women requiring their services:** This will require innovations; such as specialist outreach clinics or advanced midwife run high risk clinics in rural areas.
- **Monitor implementation of the basic and comprehensive emergency obstetric and neonatal signal functions in their facilities:** District managers have to ensure pregnant women have access to the signal functions in the district.

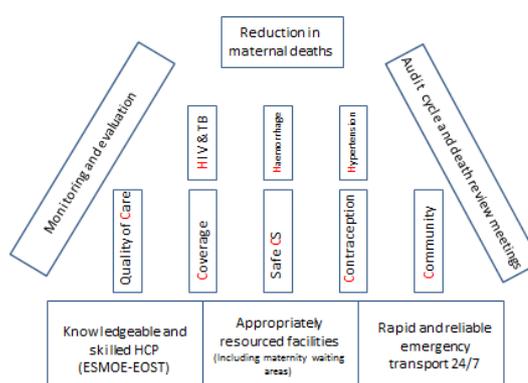
### Doctors, nurses and allied health workers who work in or cover maternity service

- **Participate in obstetric and neonatal emergency drills**
- **Improve knowledge and skills by attending ESMOE courses**
- **Know and apply the latest HIV screening and treatment protocols**
- **Discuss contraception with all men and women of reproductive age at all relevant health interactions**
- **Engage in maternal and perinatal death review processes**

## Conclusions

There has been a significant reduction in maternal deaths in the 2011-2013 triennium and this reduction is mostly due to a decrease in deaths due to NPRI; however to maintain this fall much more still needs to be done. Assessors classified sixty percent of maternal deaths to be possibly or probably preventable indicating mostly poor quality of care during the antenatal, intrapartum and postnatal periods. Three conditions have been identified that contribute to the two-thirds of preventable maternal deaths, namely non-pregnancy related infections, obstetric haemorrhage and complications of hypertension in pregnancy.

Reduction of maternal deaths can be achieved quickest by taking action to reduce deaths due to HIV, haemorrhage and hypertension and involving all levels of the health care system from policy makers to health care professionals to the community. To achieve the reduction clinicians need to provide quality care to all pregnant women (in all areas), safe caesarean sections, prevent unwanted pregnancies and engage the community to ensure the women know what to do when (5 C's). This is built upon a health system that has knowledgeable and skilled health care professionals, facilities that have the appropriate resources and an effective emergency service to rapidly transport patients to the appropriate level of care. To ensure continued functioning of this the service must continually be monitored and evaluated and where appropriate remedial action taken where appropriate.



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