

## ABSTRACT

South Africa is performing well on certain selected maternal health process indicators; antenatal care attendance has remained over 90% since 1998; deliveries conducted by skilled health workers have increased from 84% in 1998 to 92% in 2003. Despite this, maternal mortality is on the increase, with the latest Saving Mothers Report showing that maternal mortality in the 2002-2004 triennium increased from the previous three years. The non pregnancy related infections, particularly HIV have impacted heavily on maternal mortality rates. Therefore, antenatal care, delivery and postnatal care need to place a particular focus on screening for and appropriate management of communicable diseases such as HIV infection during pregnancy and beyond.

Although antenatal care attendance is high, the services rendered such as timing of the first visit and providers' attitudes need to be critically assessed as they are also important if optimum quality of care is to be achieved.

Staff shortages, training and staff motivation appear to be particular issues in maternal health care services. The introduction of the prevention of mother-to-child transmission of HIV programme and more recently, the recommendation that women should be initiated into the antiretroviral programme during antenatal care have placed additional challenges on the maternal health services.

Postnatal care in South Africa has not been adequately prioritised as a maternal health care service. With high maternal and perinatal mortality rates found in the postnatal period there needs to be guidelines and systems put in place to ensure that care of the woman and her newborn goes beyond the delivery.

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## INTRODUCTION

The World Health Organization (WHO) estimates that reproductive ill health accounts for a third of the total disease burden for women.<sup>1</sup> Maternal morbidity and mortality is responsible for a large proportion of this figure. In 2000, the Millennium Summit issued a global call for a 75% decrease in maternal mortality, and a 2/3 reduction in under-5 child deaths by the year 2015.<sup>2</sup> This chapter sets out how the South African Strategic plan was developed by the Department of Health (DoH) and how monitoring and evaluation plans and indicators are used. The chapter also describes the South African maternal health programme including policies and guidelines, availability of services and implementation. Finally progress made to date and challenges are discussed.

## STRATEGY FOR IMPROVING MATERNAL HEALTH IN SOUTH AFRICA

South Africa (SA) has continued to develop strategies to meet the global call of reducing maternal and child mortality. The Reconstruction and Development Programme (RDP) of 1994<sup>3</sup> provided the framework for health priorities in SA and formulated goals and objectives for maternal health among other health issues. In 2000, the National Health System Committee (NHIS/SA) compiled initial Health Goals and Objectives for the country. These were then reviewed and published in the White Paper in 2000 as Health Goals, Objective and Indicators (HGOI) for 2001-2005.<sup>4</sup> The national DoH has further developed the long term strategy in the HGOI for 2006-2010.<sup>5</sup> Objectives include improving access to antiretrovirals (ARVs) for pregnant women, improving women's health and reducing maternal and neonatal mortality and morbidity. The targets include 50% of maternal service facilities with providers trained in the prevention of mother-to-child transmission of HIV (PMTCT) and ARV programmes. The goal is to reduce the maternal mortality rate by 25% from 150 to 100 per 100 000 live births, and by 50% when excluding deaths due to HIV-related diseases.<sup>5</sup>

Ten recommendations were made in the Saving Mothers document 1999-2001<sup>6</sup> and these targets were set to be

achieved by December 2004. The evaluation of the recommendations published in the Saving Mothers Report 2002-2004<sup>7</sup> found that only the Voluntary Counselling and Testing (VCT) recommendation target was achieved with quality assurance of the partogram and provision of Termination of Pregnancy (TOP) services nearing their targets.

Another strategy to improve maternal health in SA has been Pregnancy Education Week. This yearly activity aims to raise community awareness on the importance of promoting safe pregnancy through quality information and education. Pregnancy education week is held in February every year during which a number of different activities are carried out, and the media is relied on to generate awareness of this campaign.<sup>8</sup>

## INDICATORS IN MATERNAL HEALTH

There are a number of output indicators used to monitor and evaluate maternal health care services internationally. Many of the WHO<sup>9</sup> maternal health indicators for global monitoring are similar to the South African standard indicators described in Box 1. The United Nations Millennium Development Goals<sup>2</sup> also includes a maternal health target (i.e. 'reduce by three quarters the maternal mortality ratio') and the UNICEF World Summit for Children Goals includes several maternal health indicators.<sup>10</sup>



Box 1:  
Key SA Maternal Health Indicators

| Maternal health: Process Indicators   |
|---|
| <p><b>Antenatal care (ANC) coverage:</b> Proportion of pregnant women receiving some antenatal care</p> <p>DHIS data source: Estimated from the number of first ANC visits divided by the population &lt;1 year (as a proxy for the number of pregnant women)</p> <p>SADHS data source: Percentage of women surveyed who reported receiving some antenatal care from a nurse, midwife or doctor during the five years preceding the survey.</p> |
| <p><b>Antenatal visits per patient:</b></p> <p>DHIS data source: Estimated from the total number of ANC visits divided by number of first ANC visits</p> <p>SADHS data source: Median number of ANC visits reported by women surveyed during the five years preceding the survey.</p>   |
| <p><b>Births assisted by trained health personnel:</b> Percentage of women who gave birth in the 5 years preceding the survey who reported receiving assistance at delivery from a doctor, nurse or midwife.</p>  |
| <p><b>Caesarean section rate:</b> Percentage of births that are by caesarean section</p>  |
| <p><b>Women receiving tetanus toxoid injections.</b></p>  |
| Maternal health: Maternal Outcome Indicators  |
| <p><b>Maternal mortality ratio (MMR):</b> The number of women who die as a result of childbearing, during the pregnancy or within 42 days of delivery or termination of pregnancy in one year, per 100 000 live births during that year.</p>  |
| <p><b>Number of maternal deaths:</b> The number of women who die as a result of childbearing, during the pregnancy or within 42 days of delivery or termination of pregnancy in one year. (Although this information is not strictly an indicator, it has been included due to the difficulty in obtaining the denominator data to calculate MMRs accurately.)</p>  |
| Maternal health: Perinatal Outcome Indicators   |
| <p><b>Perinatal mortality rate:</b> Number of perinatal deaths per 1 000 births (perinatal period is from 28 weeks gestation / 1 000g to 7 days after delivery).</p>  |

Source: UN 2000,<sup>2</sup> WHO 2001,<sup>9</sup> UNICEF.<sup>10</sup>

## PROGRESS IN KEY MATERNAL HEALTH INDICATORS IN SOUTH AFRICA<sup>a</sup>

Table 1 shows progress made using selected process indicators.

Antenatal care attendance is high in SA and has remained over 90% since 1998.<sup>11,12</sup> It can be seen however that the figure has dropped by 3% between 1998 and 2003.

The maternal mortality rate (MMR) which was one of the indicators for evaluation, has not declined in SA over the last 10 years. In 2003 the deaths per 100 000 live births was 165 up from 135.6 per 100 000 in 2002.<sup>7</sup>

TABLE 1:  
Selected process indicators used to measure progress in maternal health care services collected in the South African Demographic Health Survey 1998 and 2003

| Maternal Health Indicator  | 1998 % | 2003 % |
|--|--------|--------|
| Antenatal care attendance  | 95     | 92     |
| Antenatal visits per patient (median)                            | 5.2    | ***    |
| Deliveries conducted by skilled health personnel                 | 84.4   | 92     |
| Delivery in a health care facility                               | 83.7   | ***    |
| One or more tetanus toxoid injections                            | 59     | 55     |
| Rate of Caesareans (ability to deal with obstetric complication) | 15.8   | ***    |
| Use of family planning   | 62.1   | 65     |

Source: DoH 2002,<sup>11</sup> DoH 2004.<sup>12</sup>

Another key source of information on antenatal care is the District Health Information System (DHIS).<sup>13</sup> Table 2 shows antenatal care coverage data obtained from the DHIS between 2000 and 2004. This is calculated as the percentage of women coming for at least one antenatal visit. The rate in 2003 from the DHIS is similar to that reported in the 2003 SADHS (92%).<sup>12</sup>

a For definition of indicators refer to the Health and Related Indicators chapter in this Review.

TABLE 2:  
Antenatal Care Coverage Data from the DHIS 2000-2004

|      | EC   | FS   | GP    | KZN   | LP    | MP    | NC    | NW    | WC   | ZA   |
|------|------|------|-------|-------|-------|-------|-------|-------|------|------|
| 2000 | 78.5 | 94.7 | 74.3  | 59.2  | 86.6  | 93.2  | 76.9  | 106.1 | 79.4 | 78.8 |
| 2001 | 91.7 | 95.9 | 91.0  | 88.8  | 99.9  | 101.1 | 97.5  | 95.8  | 83.8 | 92.6 |
| 2002 | 92.8 | 92.6 | 94.6  | 106.6 | 101.6 | 103.5 | 105.7 | 88.7  | 84.0 | 97.1 |
| 2003 | 96.4 | 86.2 | 103.6 | 113.4 | 98.8  | 101.5 | 104.4 | 87.2  | 77.1 | 99.0 |
| 2004 | 98.0 | 91.0 | 82.2  | 112.2 | 104.6 | 104.3 | 118.2 | 64.0  | 85.3 | 95.5 |

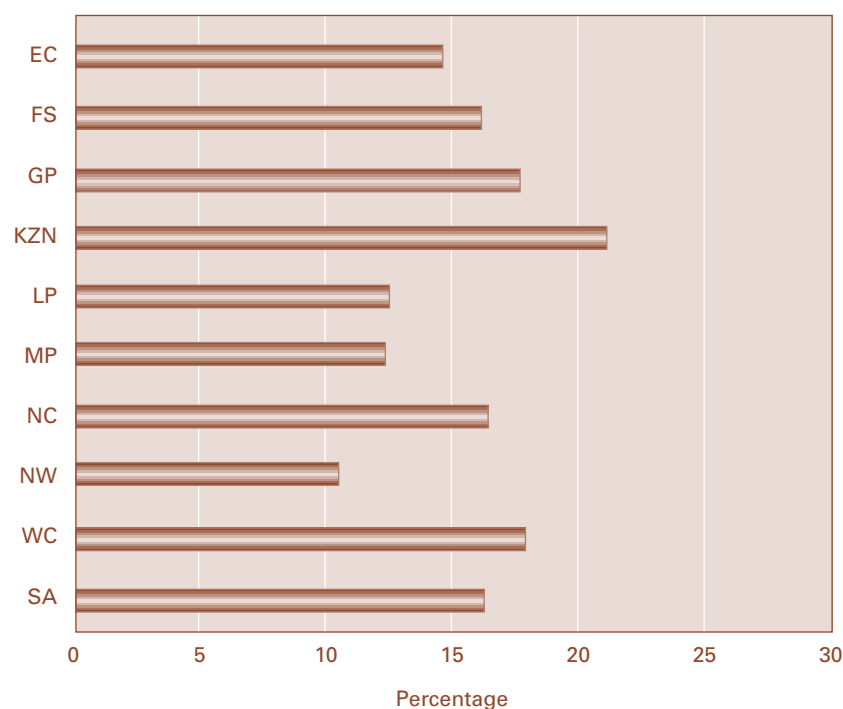
Source: DHIS, DoH. Data extracted 2003-2005.<sup>b</sup>

### CAESAREAN SECTION

While these indicators seem to reflect a relatively high rate of antenatal attendance, there needs to be further critical analysis of the services themselves. Timing of the first visit and services rendered during antenatal care are also important if optimum quality of care is to be achieved.

Caesarean section is one of the indicators of the availability of essential obstetric care. In the public sector, the number of caesarean sections carried out is theoretically reported by all hospitals as part of the hospital minimum data set. In the private sector information on the caesarean section rate is only available from the SADHS,<sup>11</sup> which indicates the rate is much higher than it should be at 37%. The rate reported by provinces in 2004 is shown in Figure 1. The highest rate is seen in KwaZulu-Natal at 21%.<sup>14</sup> This is lower than the rate reported in the same province in 2002/2003 which was 22.7%.<sup>15</sup>

FIGURE 1:  
Caesarean Section Rate by province 2004



Source: Barron et al., 2005.<sup>14</sup>

<sup>b</sup> Values over 100% result because the proxy denominator is larger than the true denominator. Work is underway to correct this.



The caesarean section rate suggests that overall there is not a shortage of facilities that can perform caesarean sections. If anything, the figures suggest that at least in some provinces there may be an over medicalisation of births with too many caesarean sections being done. This assumption would have to be further investigated before any conclusions in terms of policy could be drawn. In rural areas the caesarean section rate is generally lower with Ukhahlamba in the Eastern Cape having the lowest rate of 7.6% compared to eThekweni Metro which stood at 27.7% which can be partly attributable to referrals from other areas where caesarean sections are not conducted.<sup>14</sup>

#### PERINATAL OUTCOME INDICATORS

There are a number of key outcome indicators for perinatal care.<sup>c</sup> The perinatal care index (PCI) reflects the standard of care. Data for perinatal outcome indicators are available from the Fourth Perinatal Care Survey of SA. This survey found that the perinatal mortality rate (PNMR) for South Africa was 27.6 per 1 000 births. It also found that the most immediate problem was the management of women in labour with one in five deaths due to intrapartum asphyxia and birth trauma. The neonatal death rate (NNDR) was 9.9% per 1 000 live births.<sup>16</sup>

### MATERNAL MORTALITY RATIO AND OTHER MEASURES OF MATERNAL MORTALITY

There are three distinct measures of maternal mortality in widespread use:<sup>17</sup> the maternal mortality ratio, the maternal mortality rate, and the lifetime risk of maternal death. The most commonly used measure is the maternal mortality ratio.<sup>d</sup> This is a measure of the risk of death once a woman has become pregnant. The maternal mortality rate,<sup>e</sup> reflects the frequency with which women are exposed to risk through fertility. The lifetime risk of maternal death takes into account

both the probability of becoming pregnant and the probability of dying as a result of that pregnancy cumulated across a woman's reproductive years. All these require that there should be reliable registration or notification of vital statistics in order to be able to calculate the chosen measure.

#### MATERNAL DEATH NOTIFICATION

Maternal death (deaths during pregnancy and the puerperium) was made a notifiable condition in 1997. The National Committee for Confidential Enquiries into Maternal Deaths (NCCEMD) secretariat is responsible for coordinating the process of notification and reporting and making recommendations. In order to have a systematic standardised way of reviewing the cases of maternal death, a notification form was developed which is completed by specially trained maternal assessors. The information collected from the patient files is used to explain the primary causes of death (direct and indirect), avoidable factors, missed opportunities and standard of care. The avoidable factors component of the form addresses patient related factors which include whether the patient attended antenatal care, number and frequency of visits, and whether there was delay in seeking medical help. It also includes issues on unsafe abortions. A further component collects information on administrative factors where access to health services such as transport availability, barriers to facility entry, availability of facilities, appropriately trained staff and communication is analysed. Health care provider factors include which level of provider conducted the initial assessment, whether there were problems in the recognition or diagnosis of symptoms and if so, at which level. Whether the patient was managed appropriately at different levels of care and identifying whether a minimum standard of care was given at each level is also considered. It also looks at resuscitation provided.

The maternal mortality ratio is difficult to estimate in SA because reporting is health institution based and deaths in the community are often under-reported. Data from the Savings Mothers 1999-2001<sup>6</sup> Report indicated that the maternal mortality ratio of 150/100 000 reported in the SADHS and the first report was probably an underestimate. A more realistic figure of between 175 and 200/100 000 was estimated.<sup>6</sup>

c The perinatal mortality rate (PNMR) is the number of perinatal deaths per 1 000 births and extends from 28 weeks gestation to 7 days post delivery. The neonatal death rate (NNDR) is deaths per 1 000 births from 8 days to 28 days. The perinatal care index (PCI) is calculated by dividing the PNMR by the low birth weight rate.

d The number of maternal deaths during a given time period per 100 000 live births during the same time period.

e Refers to the number of maternal deaths in a given period per 1 000 000 women of reproductive age during the same time period.

It is also possible that there has been an increase in the maternal mortality ratio due to an increase in non pregnancy related infections such as HIV. Because of difficulties in obtaining denominator data to calculate the maternal mortality ratio, the number of maternal deaths are also reported. Reported maternal deaths in South Africa increased from 676 in 1998 to 1 173 in 2004.<sup>7</sup> Rates increased markedly between 1998 and 2004 in many provinces. Whether this was due to improved reporting or to increased deaths is not known.<sup>7</sup>

Table 3 shows the primary causes of maternal deaths in SA between 1999 and 2004 and is reported in the Saving Mothers Reports.<sup>6,7</sup> The five main causes of death remain the same and include non pregnancy related infections (including HIV), complications of hypertension, obstetric haemorrhage, pregnancy related sepsis and pre-existing maternal disease.

**TABLE 3:**  
Primary obstetric causes of maternal deaths 1999-2001 and 2002-2004

| Primary obstetric cause          | 1999-2001*   |             | 2002-2004**  |             |
|----------------------------------|--------------|-------------|--------------|-------------|
|                                  | N            | %           | N            | %           |
| <b>Direct maternal deaths</b>    | <b>1 462</b> | <b>59.8</b> | <b>1 767</b> | <b>53.6</b> |
| Hypertension                     | 507          | 20.7        | 628          | 9.1         |
| Antepartum haemorrhage           | 100          | 4.1         | 313          | 3.9         |
| Postpartum haemorrhage           | 240          | 9.8         | 213          | 9.5         |
| Abortion                         | 120          | 4.9         | 114          | 3.5         |
| Ectopic pregnancy                | 27           | 1.1         | 47           | 1.4         |
| Pregnancy related sepsis         | 210          | 8.6         | 274          | 8.3         |
| Anaesthetic related              | 76           | 3.1         | 91           | 2.8         |
| Embolism                         | 48           | 2.0         | 64           | 1.9         |
| Acute collapse (cause unknown)   | 134          | 5.5         | 107          | 3.2         |
| <b>Indirect causes</b>           | <b>939</b>   | <b>38.4</b> | <b>1 430</b> | <b>43.4</b> |
| Non pregnancy related infections | 768          | 31.4        | 1 246        | 37.8        |
| Pre existing maternal disease    | 171          | 7.0         | 184          | 5.6         |
| <b>Unknown</b>                   | <b>44</b>    | <b>1.8</b>  | <b>99</b>    | <b>3.0</b>  |
| <b>Total</b>                     | <b>2 445</b> | <b>100</b>  | <b>3 296</b> | <b>100</b>  |
| Coincidence                      | 45           | -           | 110          |             |

Source: \* Saving Mothers, DoH 2002<sup>6</sup>  
\*\* Saving Mothers, DoH 2006.<sup>7</sup>

## RELATIONSHIP BETWEEN HIV AND MATERNAL MORTALITY

The HIV infection prevalence in pregnant woman attending antenatal clinics increased slightly between 2004 (29.5%) and 2005 (30.2%).<sup>18</sup> A HIV-positive woman may be prone to greater risk during a pregnancy due to her compromised immune status and procedures conducted during labour and delivery. The Saving Mothers Report for the 2002-2004 triennium indicates that HIV testing of women improved from 37.6% in the previous triennium to 50%.<sup>6</sup> This means that of the women who died – half had been tested for HIV infection. The target for HIV testing in antenatal care has been set for 80% and therefore there still is need for improvement. Table 4 shows that non pregnancy related infections (NPRI) were the leading cause of maternal death between 2002 and 2004. In addition this proportion has increased from 31.4% in the 1999-2001 triennium to 37.4% and this also has resulted in an increased proportion of deaths in the indirect category.<sup>6,7</sup> HIV-related diseases contributed to over half (53.1%) of the deaths classified as NPRI and this was predominately due to respiratory or immune system failure. Pregnancy related sepsis following a viable pregnancy also affected a high proportion of HIV-positive women in the 2002-2004 triennium.<sup>7</sup> Of these women tested for HIV antibodies, 68% were infected. The maternal death assessment process cannot confirm that a death is related to HIV infection unless a woman has been tested. Therefore there is an assumption that there is a considerable underestimation of HIV-related deaths.

Table 4 shows the number of deaths by province in SA between 1999 and 2004. Although the figure for 2004 is lower than 2003, not all provinces submitted the data within deadlines and there has been an acknowledged level of under-reporting in some provinces.<sup>6,7</sup>



TABLE 4:  
Number of maternal deaths reported in South Africa 1999-2004

|      | EC  | FS  | GP  | KZN | LP  | MP  | NC | NW  | WC | ZA    |
|------|-----|-----|-----|-----|-----|-----|----|-----|----|-------|
| 1999 | 95  | 79  | 138 | 252 | 63  | 72  | 18 | 54  | 34 | 805   |
| 2000 | 120 | 96  | 171 | 238 | 88  | 128 | 29 | 115 | 50 | 1 035 |
| 2001 | 103 | 118 | 184 | 243 | 62  | 96  | 27 | 62  | 42 | 937   |
| 2002 | 113 | 100 | 213 | 238 | 72  | 98  | 38 | 80  | 60 | 1 012 |
| 2003 | 112 | 171 | 205 | 275 | 108 | 120 | 28 | 135 | 67 | 1 221 |
| 2004 | 145 | 161 | 251 | 209 | 101 | 75  | 40 | 111 | 80 | 1 173 |

Source: Saving Mothers, DoH 2002<sup>6</sup>  
Saving Mothers, DoH 2006.<sup>7</sup>

## AVOIDABLE FACTORS IN MATERNAL DEATHS

Table 5 shows the breakdown of avoidable factors in maternal deaths. An avoidable factor is where the death could have been prevented either within the health care system or by the patient. Data show that around half of avoidable factors were patient orientated – meaning that if a patient had acted timeously and appropriately, the problem could have been prevented.<sup>6,7</sup>

## HIV AND SYPHILIS SCREENING

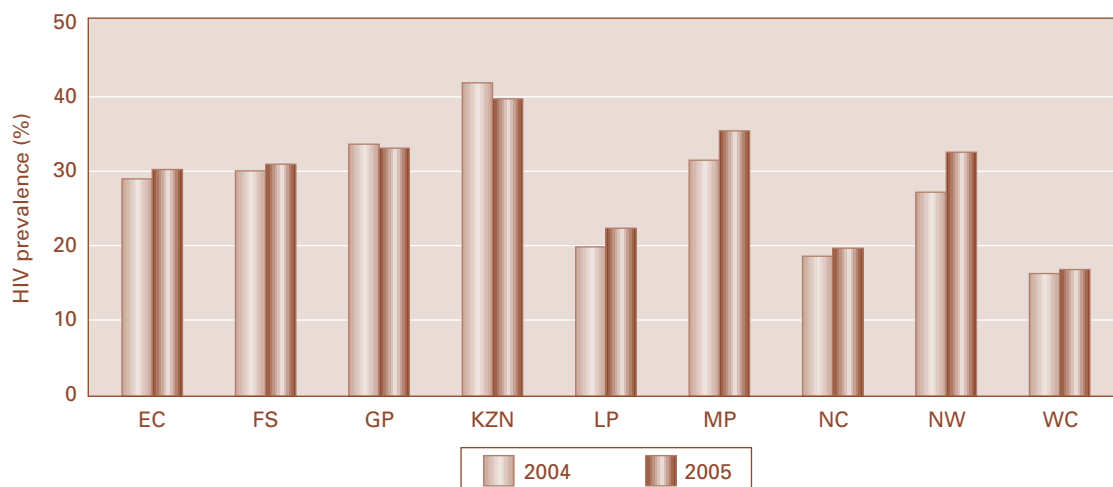
The national HIV and syphilis antenatal sero-prevalence survey is conducted among women attending public antenatal clinics in South Africa by the DoH.<sup>18</sup> The 2005 survey shows that HIV prevalence increased slightly from 29.5% in 2004 in 30.2% 2005. (Figure 2) The province with the highest prevalence (39.1%) was KwaZulu-Natal, and the lowest rates occurred in the Western Cape (15.7%).<sup>18</sup>

TABLE 5:  
Avoidable factors in maternal death cases 1999-2004

| Category                     | % of avoidable factors in accessible cases |           |
|------------------------------|--|-----------|
|                              | 1999-2001                                  | 2002-2004 |
| Patient orientated factors   | 54.1                                       | 43.9      |
| Administration               | 41.5                                       | 32.1      |
| Health care provider factors |  |           |
| Primary level                | 73.3                                       | 53.8      |
| Secondary level              | 6.07                                       | 48.3      |
| Tertiary level               | 46.7                                       | 36.5      |
| Resuscitation factors        | 27.0                                       | 22.3      |

Source: Saving Mothers, DoH 2002<sup>6</sup>  
Saving Mothers, DoH 2006.<sup>7</sup>

FIGURE 2:  
HIV prevalence by province among public sector antenatal clinic attendees in South Africa 2004-2005



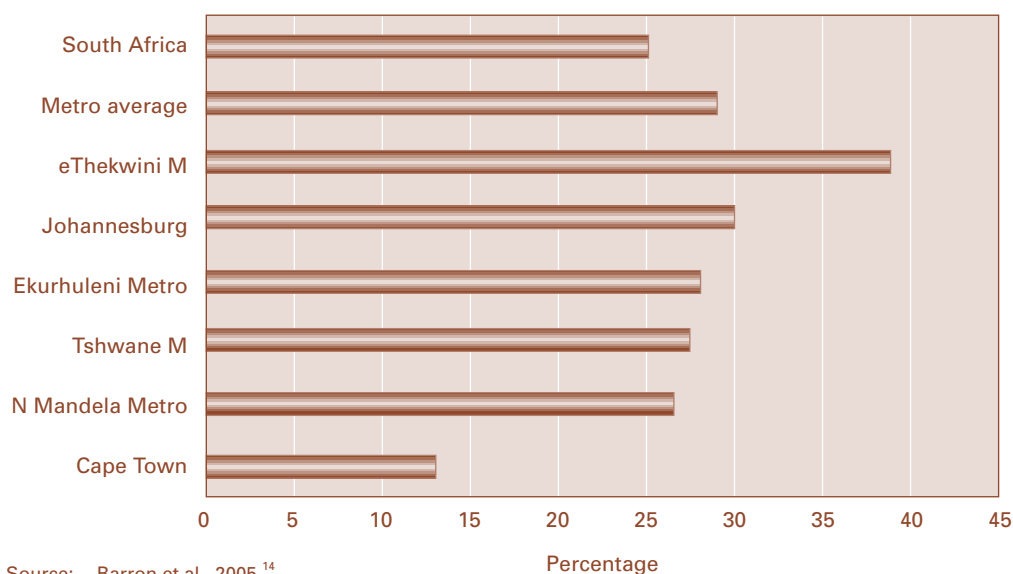
Source: DoH, 2005.<sup>18</sup>

In addition to the national seroprevalence survey there are also data on HIV prevalence at district level. The data from the DHIS concur well with that collected in the national sero-prevalence survey.

Although there are some variations within the provinces, the districts in the Western Cape and KwaZulu-Natal report the highest rates for testing (90%). Lack of data from the rural districts make it difficult to comment on any potential differences in testing and HIV prevalence.<sup>14</sup> Figure 3 shows the HIV prevalence among antenatal patients tested by Metro district.

Syphilis poses a significant risk to pregnancy and can result in a number of negative outcomes including spontaneous abortion, stillbirth and perinatal death. Congenital syphilis is a notifiable condition; however, the Health Informatics Department that collects such information and reports on notifiable conditions reports a very low level of syphilis notification from facilities. Syphilis prevalence declined steadily between 1997 (11.2%) and 2004 (1.6%), but has since increased slightly in 2005 to 2.7% (Figure 4).<sup>18</sup>

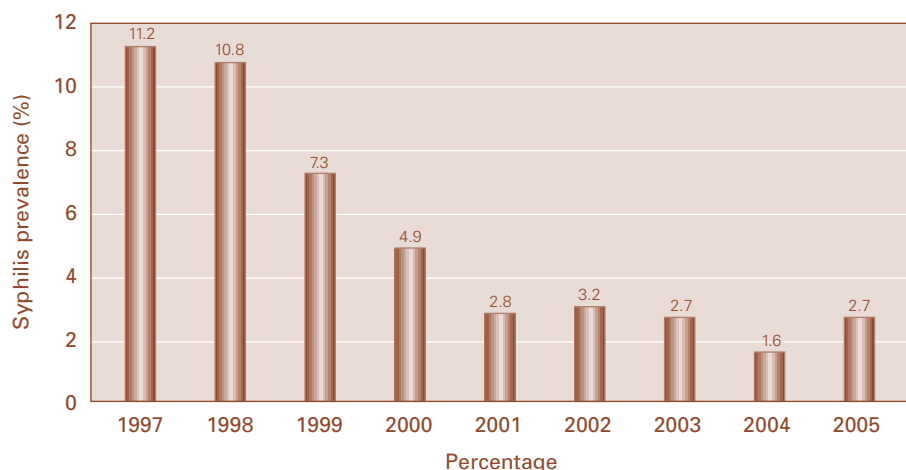
FIGURE 3:  
HIV prevalence among antenatal patients tested by Metro District



Source: Barron et al., 2005.<sup>14</sup>



FIGURE 4:  
National syphilis prevalence among antenatal clinic attendees in South Africa 1997-2005



Source: DoH, 2005.<sup>18</sup>

The high HIV prevalence rates among pregnant women and the projected rates in the general population suggest the ever-increasing need for effective interventions and programmes and strengthening partnerships that will impact on the HIV epidemic.

## MATERNAL HEALTH CARE SERVICES: POLICIES, PROGRAMMES AND GUIDELINES

The antenatal care programme is the responsibility of the Women's Health and Genetics Directorate. A number of important guidelines and policy documents have been produced by the DoH.<sup>19-21,f</sup> Although the guidelines for maternity care have been updated to include management of HIV-positive women, the policy is yet to be updated.<sup>20</sup>

The maternal health policy outlines a minimum set of national requirements for management of patients in maternal health care services. Each province is autonomous in being able to adapt or even develop their own guidelines based on the national guidelines. The policy and guidelines deal with prevention and management of pregnant patients and also specify where or what management should be provided by each

level of care. It defines the levels of care, referral systems as well as staff required to be designated in those levels of care and what services they should be rendering.

The extensive HIV epidemic in SA has led to rapid roll-out of programmes that have implications for antenatal care, delivery care, and postpartum services. The main reason for introducing VCT in maternal health services was for the administration of PMTCT which has now been rolled out in all provinces. More recently, the national roll-out of ARVs has also begun at selected hospitals. Each of these new programmes, however, has been implemented vertically and is not well integrated into existing services. The provision of an integrated and comprehensive antenatal and postnatal package poses a number of challenges in a fragmented and vertical health care system.

f These include 'Saving Mothers', Policy Guidelines for Common Causes of Maternal Deaths; Guidelines for Maternity Care in South Africa: A manual for clinics, community health centres and district hospitals', 'Human Genetics Policy Guidelines for the Management and Prevention of Genetic Disorders, Birth Defects and Disability', and the National Maternity Case Record and Guidelines for completing the National Maternity Case Record.

## GUIDELINES FOR MATERNAL CARE

The National Maternity Guidelines lay the foundation for how maternity services should be rendered.<sup>20</sup> Provinces were expected to adapt these according to their specific needs. However, no systems have been put in place to assess if all facilities have received or are utilising the guidelines. In an in-depth assessment of 141 public sector PHC facilities distributed nationally, 62% reported having maternity care guidelines available. Of these, 74% had national guidelines.<sup>22</sup>

National guidelines for maternity care were updated to incorporate PMTCT, and management of HIV-positive patients. Other issues of relevance with regard to the HIV epidemic; for example, couple counselling and HIV testing, involvement of men/companions during the maternity period and support of HIV-positive women, are also not included. The guidelines have a particular focus on the management of the five major causes of maternal death mentioned earlier in this chapter.

Some provinces are developing their own guidelines. For example, the KwaZulu-Natal DoH Maternal Child and Women's Health Directorate, with the technical support of the Population Council and Reproductive Health and HIV Research Unit (RHRU), has undertaken a systematic process in the development of new evidence-based policy and guidelines which will be available in 2007. A set of areas needing in-depth review by task teams were identified by stakeholders including: preconception, family planning, TOP, ANC, PNC, health systems issues, community participation and health promotion. Box 2 details the context in which the guidelines were developed and although they refer to KwaZulu-Natal in particular, the issues are similar in all the other provinces.

### Box 2:

#### Context of the Integrated and Evidence Based Antenatal and Postnatal Policy and Guidelines for KwaZulu-Natal

- ✧ Much of the practice of midwives is governed by the SA Nursing Council regulations which are out of date and do not address the HIV epidemic.
- ✧ No comprehensive and integrated policy and guidelines for antenatal and postnatal care are currently in use.
- ✧ Many of the practices undertaken by nurses at PHC level in the care of pregnant women are traditional rather than evidence based.
- ✧ Antenatal and postnatal care is task orientated rather than patient orientated, leading to impersonal and incomplete care, as well as contributing to staff burnout.
- ✧ Many women (22%) who die during pregnancy, labour and postnatally had not attended antenatal care
- ✧ Women attend antenatal care late during their pregnancies delaying:
  - access to testing for HIV and potentially ARV treatment;
  - the prevention of complications of previously diagnosed or undiagnosed medical conditions such as cardiac disease; and
  - complete treatment of STIs, (syphilis in particular).
- ✧ Screening for tuberculosis, domestic violence, cervical cancer and STIs does not routinely take place (except for syphilis) and are not included in routine antenatal or postnatal care.
- ✧ Postnatal care has not been formally addressed, monitored or evaluated and many women die in the postnatal period.
- ✧ Postnatal care after the immediate puerperium has centred on the baby, (and not in a focused or targeted manner) rather than the mother and baby unit.
- ✧ Limited health education and planning for the birth takes place at the antenatal visits.
- ✧ There has been no concerted effort to bring community, family and partner participation into the holistic care of pregnant women and new mothers.



## INFRASTRUCTURE AND STAFFING

### FACILITIES PROVIDING MATERNAL HEALTH CARE SERVICES IN SOUTH AFRICA

The Maternity Guidelines classify facilities into clinics, community health centres and three different levels of hospitals. The UNICEF/WHO/UNFPA Safer Motherhood Policy Statement in 1997 suggested that there should be at least 4 basic essential obstetric care (EOC) facilities and at least one facility providing comprehensive obstetric care (COC) per 500 000 population.<sup>g,23</sup> Table 6 shows what is available in SA in terms of basic and Comprehensive EOC and indicates that the country does exceed these minimum standards.<sup>24</sup>

## MATERNAL HEALTH CARE SERVICE PROVIDERS

Maternal health care services are integrated in the South African health system, therefore nursing staff providing maternal health care will normally be providing other services. Since 1985 nurse training has included basic midwifery training, which is seen as adequate to provide basic antenatal and delivery care. Advanced midwives undergo a full year of post-basic training and this equips them with skills for more specialist maternal care. Almost all doctors have been trained in basic midwifery and some specialise in Obstetrics and Gynaecology. Any facility carrying out deliveries should have at least one advanced midwife.<sup>20</sup> These guidelines stipulate the staff required for maternity care at each level of service. But this does not take into consideration the number of patients seen or the type of

Table 6:  
Essential Obstetric Care Facilities in South Africa

| Level                                    | Total | Basic EOC | Comprehensive EOC |
|--|-------|-----------|-------------------|
| Clinics                                  |       |           |                   |
| Mobile                                   | 755   | 0         | 0                 |
| Satellite clinic                         | 370   | 0         | 0                 |
| Fixed clinic                             | 3 185 |           | 0                 |
| Community health centre (CHC)            | 141   | 141       | 0                 |
| Total clinic                             | 4 451 | 141       | 0                 |
| Hospitals                                |       |           |                   |
| Level 1 Hospital                         | 265   | 220       | 161               |
| Level 2 Hospital                         | 60    | 53        | 53                |
| Level 3 Hospital                         | 6     | 6         | 6                 |
| Level 4 Hospital                         | 10    | 8         | 8                 |
| Specialised Hospital                     | 66    | 2         | 1                 |
| Total hospital                           | 407   | 289       | 229               |
| Total                                    |       | 430       | 229               |
| Total / 500 000 public sector population |       | 6.0       | 3.2               |

Source: Penn-Kekana et al., 2003.<sup>24</sup>

<sup>g</sup> The availability of essential and comprehensive obstetric care is defined as the number of facilities with functioning essential obstetric care (EOC) per 500 000 population and the number of facilities with functioning comprehensive obstetric care (COC) per 500 000 population.

care a woman may require. The 1999 Saving Mothers Report<sup>6</sup> made recommendations on the need to have staffing norms which could be specific to maternal health care services. The Saving Mothers Report for 2002-2004 suggested that lack of appropriately trained staff was a major administrative related avoidable factor in 50% of maternal deaths.<sup>7</sup>

According to the 1998 SADHS, antenatal care was obtained mainly from trained health personnel, with nurses or midwives providing care for 65.5% of pregnant women and doctors caring for 28.7%.<sup>11</sup> Doctors were

more likely to render antenatal care in urban than in non-urban areas (40.9% versus 16.8%). The lowest proportions of women attended by doctors were in Limpopo, Eastern Cape and KwaZulu-Natal. Most White women (82.1%) received antenatal care from doctors, whilst only 22.8% of African women were attended by doctors. This was even more marked in non-urban African women, with only 14.7% receiving antenatal care from doctors and most (79.5%) attended by nurses or midwives.<sup>11</sup> Traditional birth attendants are rarely used in SA and there is no training available for this category of birth attendants.

A study<sup>25</sup> investigating nursing staff dynamics and their implications for maternal health carried out in Limpopo, KwaZulu-Natal and Mpumalanga found that nursing staff turnover, shortages of staff and workload were a problem in some facilities. Staff in delivery sites were regularly rotated (73.4%) through maternity services unless they had training in advanced midwifery. This indicates that staff will gain skills during their time in delivery services but will not be permanently available to these services. Almost three-quarters (71%) of delivery services reported that they often had less staff than allocated to maternity.<sup>25</sup> Demotivation has also been identified as a problem in services.<sup>25</sup> Rural areas appeared to have specific problems with poor quality accommodation as many nurses and doctors had to live on site at the facility. Transport was a problem in rural areas for access to schools and other services. Security was also mentioned as an issue. The rural allowance was introduced to offset staff attrition; in particular, reluctance of staff to work in rural areas. It was noted that only professional nurses received the rural allowance causing some discontent with lower nursing grades who did not receive this allowance.

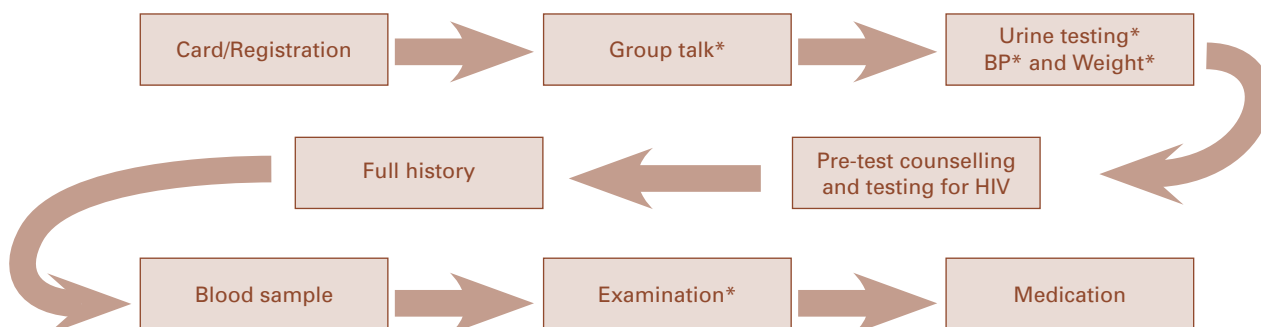
There is a shortage of nurses and doctors available to the public health sector with the shortage being more marked in the rural areas. Attempts to address these problems have been made by the national DoH. A one year community service has been enforced as a prerequisite for registration for all doctors. This appears to be providing a temporary solution for reducing the wide gap between rural and urban health services.<sup>26</sup> A number of other strategies have been implemented including the introduction of a scarce skills allowance to attract staff to both urban and rural facilities that are for many reasons unable to recruit and retain staff. For nurses in particular there has been some moves to bring nurses out of retirement to fill the shortage of vacant positions.

## ANTENATAL CARE SERVICES

Routine antenatal care for low risk women is supposed to be provided at any primary health care centre; however, a number of surveys have shown that not all clinics can provide this service. The National Primary Health Care Facilities survey showed that only 87.4% of clinics were able to provide antenatal care and this was not always provided daily.<sup>27</sup>

The guidelines for maternity care stipulate the content and procedures that should be undertaken in the first and subsequent antenatal visits.<sup>20</sup> The main components of antenatal care are indicated in the Figure 5.<sup>28</sup> The order of the procedures can vary according to the institution. The group talk includes group counselling and if a woman agrees to be tested for HIV, she is then given individual counselling and testing. All this information should be used to assess the pregnancy and identify any risk factors.

FIGURE 5:  
Routine procedure for antenatal care



Source: Beksinska et al., 2000.<sup>28</sup>

\* Procedure repeated at subsequent visits



## DELIVERY AND PUEPERIUM

In SA, it is recommended that all deliveries should take place in facilities with essential obstetric care. This could be a community health centre or any level of hospital. On admission, the clinic card is reviewed, history of labour is taken, nature of labour pains, vaginal bleeding, foetal condition and any other relevant information is taken. If a woman presents in labour without proof of antenatal care all investigations are carried out at the delivery site if she is in the early phase of labour. The woman is monitored until she delivers unless there are complications which may warrant a caesarean section.

Due to high rates of HIV infection, management of stages of labour has changed. These changes include shortening the period of rupture of membrane, reduction of number of vaginal examinations, avoiding episiotomy and the use of prophylactic antibiotics. Changes in the third stage of labour include avoiding unnecessary suctioning of the baby before delivery. All vital signs should be checked according to the guidelines.<sup>20</sup>

All women are expected to stay at the delivery facility for a minimum of 6 hours if they have no complications and women are commonly discharged within 12 hours post delivery. The majority of women deliver in a health facility and the immediate postpartum period when they are still at the health care facility provides a timely and strategic opportunity to offer a range of services. This would maintain continuity of care that started during the antenatal care visits and continued during labour and delivery, and particularly family planning. The National Contraception Policy Guidelines recommend that family planning advice should be given during the postpartum period before discharge.<sup>29</sup>

## POSTNATAL CARE

Postnatal care is an integral component of maternal care and should be focused on the following:<sup>30</sup>

- ◆ To assist the woman to return to optimal health as soon as possible after delivery;
- ◆ To ensure the infant receives the care needed to achieve and maintain optimal health and development, and

- ◆ To ensure the woman has all the information she needs to manage every day situations with her new born and family.

The definition of a maternal death includes the period up to 42 days after being pregnant. The Saving Mothers Report for 2002-2004<sup>7</sup> shows that 43.7% of emergency cases in non-pregnancy related infections leading to a maternal death were found to be in the postpartum period. For HIV and non-pregnancy related infections one of the key recommendations arising from the report was that “special attention must be paid to postnatal care, as most women succumb to ill-health at this time”.<sup>7</sup>

The guidelines for maternity care stipulate that a woman should be advised on discharge following delivery to visit her nearest clinic after 3 days. Studies have shown that maternal and neonatal mortality commonly occurs within the first 3-7 days after delivery.<sup>20</sup> There is, however, no further information in the guidelines relating to contents of postnatal care visits or postnatal visits beyond this first check up.

The National Primary Health Care Facilities survey<sup>27</sup> reported that 84.1% of clinics were providing postnatal care; however, data on postnatal attendance are not routinely collected and some studies show that women rarely attend postnatal care and that there was not a strong culture of rendering goal directed postnatal care.<sup>32</sup>

The National Contraception Policy Guidelines<sup>29</sup> makes specific mention of the 6-week postnatal check up as the second opportunity (postpartum being the first) to counsel on contraceptive choices. The policy guidelines include the need to counsel on appropriate methods depending on breastfeeding practices and intention to abstain from sexual activity.

Although postpartum care is seen as a key component of the PMTCT programme, the main focus has been on the antenatal period. Follow up rates post delivery in the PMTCT programme have been disappointing.<sup>32</sup> Postpartum care generally, and for women in a PMTCT programme, remains weak and focused primarily on the infant, with little attention being paid to maternal health and to risk behaviour following delivery. Coordinating family planning with other health services during and after pregnancy can help improve reproductive health.<sup>33</sup>

'PMTCT Plus' programmes are designed to address the needs of the woman and her family beyond delivery, but are still in their infancy. The prevention of future unwanted pregnancies as a strategy and fundamental component of PMTCT of HIV programmes has not received much attention to date.

### QUALITY OF SERVICES RECEIVED

Although integration of antenatal care has been seen as key to a quality service, in many facilities the first antenatal visit is still restricted to certain days of the week, as are the repeat visits.<sup>34,35</sup> The currently recommended visit schedule is that after a first visit between 5-19 weeks gestation, visits are scheduled every 4 weeks until 37-38 weeks. The woman should be seen again around 39/40 weeks and then at weekly intervals.<sup>20</sup> Every woman should be given antenatal care where all investigations and antenatal services rendered are recorded. It is recommended that all women receive all the services mentioned in the antenatal care services section of this chapter, however, a number of studies that have looked at what services women receive in antenatal care have found this is not done. In one study<sup>34</sup> conducted in a rural area in KwaZulu-Natal, observations were done to determine the type of services given to the patients, how the service was given, and the interaction between the providers and the patients. Table 7 summarises the types of services rendered at the first ANC visit versus those rendered at a repeat ANC visit. Two other studies conducted in the same province showed similar results.<sup>35,36</sup>

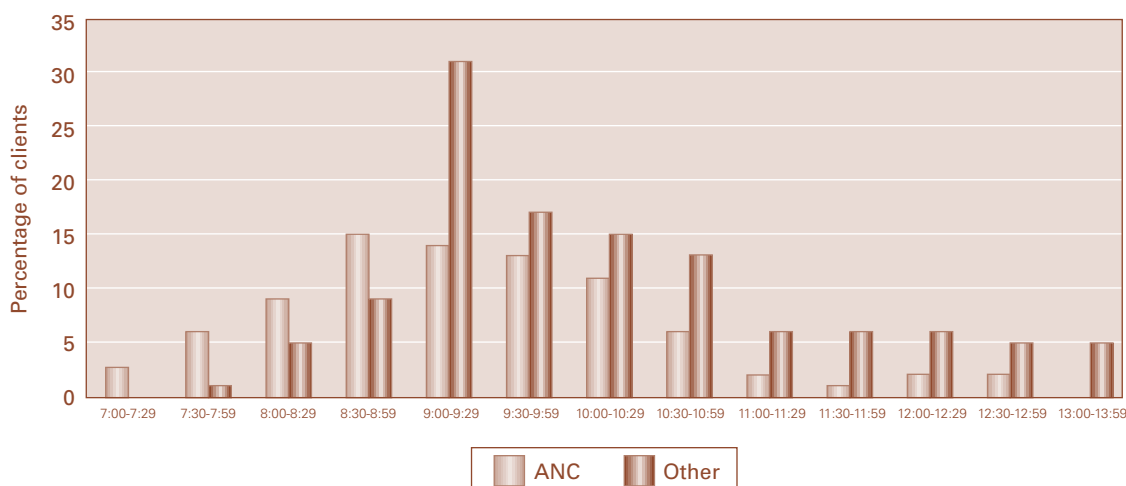
TABLE 7:  
Routine ANC services delivered in rural KwaZulu-Natal

| Type of service                     | ANC first visit<br>N = 125<br>(%) | ANC repeated<br>visit<br>N = 124<br>(%) |
|-------------------------------------|-----------------------------------|---|
| Blood Pressure measurements         | 100                               | 98                                      |
| HB assessment                       | 93                                | 18                                      |
| Need for Anti-Tetanus Toxin (ATT)   | 69                                | 50                                      |
| Blood drawn for syphilis screening  | 90                                | 15                                      |
| Supplements given (Iron and folate) | 94                                | 76                                      |
| Urine taken for protein and sugar   | 98                                | 93                                      |
| Exam external of genitalia          | 56                                | 55                                      |
| Pelvic examination                  | 24                                | 19                                      |

Source: Chege et al., 2004.<sup>35</sup>

In the public sector, women are not given appointments for an antenatal visit and many will arrive at the clinic prior to the facility opening to ensure they are seen. One study identified that 71% of women had already arrived for antenatal care by 7.30 am and no woman came after 10.30 am.<sup>28</sup> Another study found that all antenatal patients had arrived before 1pm.<sup>35</sup>

FIGURE 6:  
Distribution of patients by time of first contact



Source: Kunene et al., 2004.<sup>35</sup>



Table 8:  
Waiting and contact time with provider for antenatal patients (first and repeat visits)

| Type of visit    | Contact time with a provider (hours: minutes) | Waiting time in the clinic (hours: minutes) | Total time spent at the clinic (hours: minutes) |
|------------------|---|---|---|
| ANC 1st Visit    | 0:28  | 3:59  | 4:27  |
| ANC Repeat Visit | 0:14  | 2:46  | 2:69  |

Source: Kunene et al., 2004.<sup>35</sup>

The same study discussed above<sup>35</sup> showed that although women arrive early for their antenatal appointment and may spend several hours within the facility they have very little contact with the health providers. The average antenatal first visit patient spent almost 4 and a half hours in the clinic (Table 8) and four hours of this time were spent waiting, while only 28 minutes were spent interacting with a provider. Antenatal repeat patients spent three hours at the clinic with only 14 minutes of provider contact time, and the rest of the time was spent waiting. Waiting time could also potentially be used to provide counselling. The length of time taken to complete an antenatal appointment would require many employed women to take a whole day away from work and may potentially jeopardise their work situations.

## RELATIONSHIP BETWEEN HEALTH CARE PROVIDER AND PATIENTS

Quality of care encompasses many aspects of the health care visit. In addition to the type of service received and the quality of that particular service, there are also issues of communication and interaction between patient and provider. The nature of antenatal services in the South African public sector does not encourage good provider patient communication. Patients will often see a different provider for each procedure meaning that it is not easy to establish a relationship with any particular provider. Services are often provided without privacy in that antenatal patients will sit together and take turns in receiving a service such as blood pressure in full view of other patients. This makes it difficult for a patient to discuss any personal problems or concerns without being overheard. Women are usually grouped together and may be wearing examination gowns. This does not make it appropriate for partners to attend

the consultation.<sup>35</sup> Although many studies report that patients are generally satisfied with the quality of ANC services,<sup>36</sup> the same studies show that quality was a problem. This maybe because expectations of a service are generally low. At a national level, quality of care in contraceptive services has shown that 20% of women reported that the provider shouted or scolded the patient in a family planning setting.<sup>9</sup> Although experiences of ANC services was not sought in this questionnaire it can be assumed that as nurses rotate through services that there may be similar problems in antenatal services. Other studies have reported poor quality of care in antenatal settings.<sup>37</sup> This poor quality of care extends into the delivery, where a woman will often deliver without the support of a partner or family member. Delivery settings do not often give privacy to the woman making it difficult for partners to attend the delivery.

Poor quality of care may be related partly to low staff morale. The nursing dynamics study<sup>25</sup> found that 27% of nurses reported that they did not care for patients like they used to and two thirds (60%) felt they no longer felt motivated to work as hard as they could. Poor motivation was blamed on a number of factors including poor promotion prospects, poor management and staff shortages.<sup>25</sup>

The Saving Mothers Report for 2002-2004 looked at specific quality of care issues in HIV-positive women.<sup>7</sup> A number of personnel related factors contributed to avoidable factors leading to maternal death once a positive HIV diagnosis was made or suspected. These included fatalism and a non-caring attitude, delay in providing care and management of infective conditions. Lack of utilisation of ethical guidelines for the management of women with HIV infection was also noted. The Saving Mothers Report makes particular

reference to case studies where the health care providers appear to have not performed certain procedures or given medication because the woman was HIV-positive. The issue of neglect was raised where it appeared there was no point in treating HIV-positive woman due to the expectation that they would die anyway.

## CONCLUSIONS AND RECOMMENDATIONS

Maternal health indicators show that there have been improvements in assistance at delivery but utilisation of antenatal care although remaining high has dropped a few percentage points. There have also been some marked decreases in the number of women dying from some of the common direct causes of maternal deaths including hypertension and abortion. However, overall maternal mortality is increasing mainly due to the non pregnancy related infections as a result of the HIV-related illnesses and diseases.

The terms of reference of the NCCEMD are to include recommendations that are based on the analysis of all maternal death information collected. The Saving Mothers Report states that the implementation of the recommendations should be measured and should be within the health care resources of the country.<sup>7</sup> There are 10 key recommendations emanating from the 2002-2004 Saving Mothers Report and many of these are the same or similar to those put forward in the 1999-2001 report.<sup>7</sup> In the latest Saving Mothers Report the new recommendations are teamed with specific implementation strategies to ensure that each recommendation can meet targets set to be achieved by December 2007.

### Box 3: Summary of Saving Mothers Key Recommendations 2002-2004

1. Protocols on the management of important conditions causing maternal deaths must be available and utilised appropriately in all institutions where women deliver. All midwives and doctors must be trained on the use of these protocols.  
The following are key conditions for which relevant protocols must be available:
  - ✧ Hypertensive disorder in pregnancy
  - ✧ Obstetric haemorrhage
  - ✧ Septic abortion
  - ✧ Puerperal sepsis
  - ✧ Communicable Diseases: STIs including HIV, TB and Malaria
  - ✧ Resuscitation: Maternal and Neonatal
  - ✧ Noncommunicable diseases: Diabetes mellitus and cardiac diseases in pregnancy.
2. All pregnant women should be offered information on and screening for appropriate management of communicable and non-communicable diseases including:
  - ✧ Sexually transmitted infections (including HIV)
  - ✧ Tuberculosis
  - ✧ Malaria
  - ✧ Urinary tract infections
  - ✧ Noncommunicable diseases – Pregnancy specific conditions and pre-existing medical diseases.
3. Criteria for referral and referral routes must be established and utilised appropriately in all provinces.
4. Emergency transport facilities must be available for all pregnant and postpartum women and their babies with complications (at any site).
5. Staffing and equipment norms must be established for each level of care and for every health institution concerned with the care of pregnant women.
6. Blood for transfusion must be available at every institution where caesarean sections are performed.



7. Contraception use must be promoted through education and service provision and the number of mortalities from unsafe abortion must be reduced.
8. Correct use of the partogram should become the norm in each institution conducting births. A quality assurance programme should be implemented, using an appropriate tool.
9. Skills in anaesthesia should be improved at all levels of care, particular at level 1 hospitals.
10. Women, families and communities at large must be empowered, involved and participate actively in activities, projects and programmes aiming at improving maternal and neonatal health as well as reproductive health in general.

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