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Final Report

A RAPID APPRAISAL OF MATERNAL HEALTH SERVICES IN SOUTH AFRICA

A HEALTH SYSTEMS APPROACH

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Centre for Health Policy 2002

Health Systems Programme

Funded by DFID

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ACRONYMS AND ABBREVIATIONS

ANC	Antenatal Care
ANC	African National Congress
C/S	Caesarean Section
CHC	Community Health Centre
CHP	Centre for Health Policy
DEPAM	Decentralised Education Programme for Advanced Midwives
DoH	Department of Health
EOC	Essential Obstetric Care
GEAR	Growth, Employment and Redistribution Strategy
HIV	Human Immunodeficiency Virus
HR	Human Resources
ICU	Intensive Care Unit
IMR	Infant Mortality Rate
MMR	Maternal Mortality Ratio
MO	Medical Officer
NCCEMD	National Committee on Confidential Enquiries into Maternal Deaths
NDoH	National Department of Health
NGO	Non-governmental Organisation
NNMR	Neonatal Mortality Rate
PCI	Perinatal Care Index
PEP	Perinatal Education Programme
PHC	Primary Health Care
PPIP	Perinatal Problem Identification Programme
PPP	Public Private Partnerships
PNC	Post-Natal Care
PNMR	Perinatal Mortality Rate
RCT	Randomised Control Trail
RDP	Reconstruction and Development Programme
SA	South Africa
SAMJ	South African Medical Journal
SADHS	South African Demographic and Health Survey
SMI	Safe Motherhood Initiative
SMIAG	Safe Motherhood Inter-Agency Group
TOP	Termination of Pregnancy

EXECUTIVE SUMMARY

Background

This report is a rapid appraisal of maternal health services in South Africa. It reflects the first activity in a five-year research programme, funded by DFID. The research project is a multi-country project involving researchers from the London School of Hygiene and Tropical Medicine, (UK) Manchester University (UK) and research institutions in Uganda, Bangladesh, Russia as well as South Africa. The programme aims to develop theoretical frameworks and methodologies to better understand health system functioning in developing countries, and to apply these insights to strengthening health system development. As part of this project maternal health has been identified as a possible probe or tracer to illuminate particular features of health system functioning and performance.

Conceptual Framework & Methodology

In researching and writing the report a conceptual framework was developed in which the context, the health system, user behavior and maternal and prenatal outcomes were considered. Morbidity and mortality outcomes, as well as women's experiences are described. In terms of the maternal health approach the strongest influence was the work carried out under the umbrella of the Safer Motherhood Initiative. From a health systems perspective this rapid appraisal was influenced by debates and perspectives in the international literature and also the research projects being undertaken at the Centre for Health Policy. Some of the particular understandings and interests that inform CHP's work include:

- A recognition that health system outcomes are influenced by factors affecting the supply of health services as well as complex community-level processes affecting the demand for those health services
- That health system and community dynamics reflect broader contextual influences
- A concern for equality and social justice
- The position that all health system development is value driven.

Information for this report was collected over a period of 3 months at the end of 2001 and beginning of 2002. The rapid appraisal included a review of published and grey literature, key informant interviews and limited secondary analysis of data sets. The main focus of the research was on routine and emergency obstetric services.

Maternal Health

In terms of maternal and perinatal outcomes South Africa does relatively badly compared to other upper-middle income countries. The Maternal Mortality Ratio of 150/100 000, and an estimated perinatal mortality rate of 40/1000 are poor considering the fact that 95.1% of women attend ANC, and 83.7% of women deliver in a medical facility.

South Africa does have a medical infrastructure, with a rough estimate of 4.1 facilities providing Comprehensive Essential Obstetric Care per 500 000 0f the public sector dependent population. South Africa also does have doctors and nurses, although there

is come concern that not enough of these work in the public sector or in rural parts of the country. Staff shortages are a problem, but still with the levels of staff that are available better maternal and perinatal outcomes should be achievable.

Quality of Care both in terms of technical and human quality of care appear to be a severe problem in maternal health care services in South Africa. There are however many attempts to improve the situation. There appears to be both political support and attempts at the National Department to improve maternal health services. The Confidential Enquiry into Maternal Deaths, and the Perinatal Care Survey are also important efforts to understand the problems and improve the quality of care.

Health system issues that need more research include:

- The patterns of inequalities that exist in the provision and utilisation of maternal health services in South Africa, and how they interact with structural inequalities that exist in South African society as a whole.
- The impact HIV/AIDS is going to have on maternal health services.
- Health seeking behavior of South African women
- Provider attitudes that exist in maternal health care services
- Understand the process of implementing policy and changing practice.

INTRODUCTION

Background to the Project

There is significant international variation in the outcomes and performance of different health services. However, attempts throughout the world to improve health service functioning, have frequently been less than impressive. Increasingly it has been argued that an analysis of the broader organisation and dynamics of individual health systems is required in order to understand the reasons for these failures.

The Centre for Health Policy (CHP) is a partner in large multi-country research programme which aims to explore the factors that constrain health services in low and middle-income countries from meeting the needs of the poor. The Health System Development Programme is funded by DFID and involves researchers from the London School of Hygiene and Tropical Medicine, the University of Manchester, as well as research institutions in Russia, Uganda, Bangladesh and South Africa. The knowledge programme will operate over five years and intends to develop theoretical frameworks and methodologies to better understand health system functioning in developing countries, and to apply these insights to strengthening health system development.

Research tools for studying the complex dynamics of health systems are still poorly developed. One approach of the Health System Development Programme will be to focus on particular health services, such as maternal health services or HIV services, and to use the analysis of these services as tracers, or probes, to illuminate particular features of health system functioning and performance.

Work on maternal health services has begun with a rapid appraisal of maternal health care in each of the participating countries. Maternal health services and the improvement of maternal mortality are internationally acknowledged as priority issues for health services development. Maternal health services are also useful as a health system probe. For one thing, maternal mortality has traditionally been accepted as a fairly specific indicator of health system functioning, unlike indicators such as infant mortality and neonatal mortality which are more influenced by factors external to the health service. Also, particular features of maternal health services, such as the need for both preventive antenatal services and emergency hospital care, provide helpful insights into broader health system performance.

Objectives of the Rapid Appraisal

The aim of this phase of the study was to conduct a rapid appraisal of maternal health services in South Africa. The main objective was not to produce a complete and detailed survey of maternal health services in the country but to provide a rapid overview that would allow the identification of potential areas for more detailed health systems research in the next phase.

The specific research objectives included:

1. To describe the organisation and functioning of maternal health services in South Africa.
2. To identify some of the key health systems issues in maternal health services in South Africa.
3. To identify priorities for future health systems research in the area of maternal health.
4. To explore the use of maternal health services as a probe to understand wider health system issues.
5. To engage with maternal health researchers and practitioners to compare insights and experiences from both programmatic and health systems approaches.

Organisation of the Report

The production of this report was difficult for a number of reasons. Firstly, we are attempting to address a number of different audiences, for example; those working in maternal health as well health systems researchers, or people familiar with South African as well as international colleagues. Secondly, the overview is intentionally superficial. The rapid appraisal allowed us to identify interesting areas for future health systems research but may not satisfy readers who are looking for a comprehensive and detailed analysis of maternal health care in South Africa. Lastly, much of the data that we would like to have included was not available, or at least not easily available. Therefore, in developing this situation analysis, we were often forced to extrapolate from incomplete data or small scale studies.

The report is organised into three main sections. The first section outlines the conceptual frameworks used in this analysis and summarises the most important methods and sources of data. There is also a brief overview of the broader contextual factors influencing health service delivery in South Africa.

The main body of the report provides a description of some of the key features of maternal health services in South Africa. It begins with a listing of conventional outcome and process indicators, and then discusses the availability of facilities and human resources for maternal health care. The parts that follow explore issues such as the quality of care, patient and provider perspectives, and inequalities in the distribution of maternal health care. This section of the report concludes with a description of current policy initiatives in the maternal health environment.

The last section of the report discusses some of the key health systems issues identified in the rapid appraisal, the limitations of this analysis, and possible areas for future health systems research.

CONCEPTUAL FRAMEWORKS

The broad conceptual framework used in this analysis is shown in Figure 1. This framework is based on insights from both the maternal health and health systems literature.

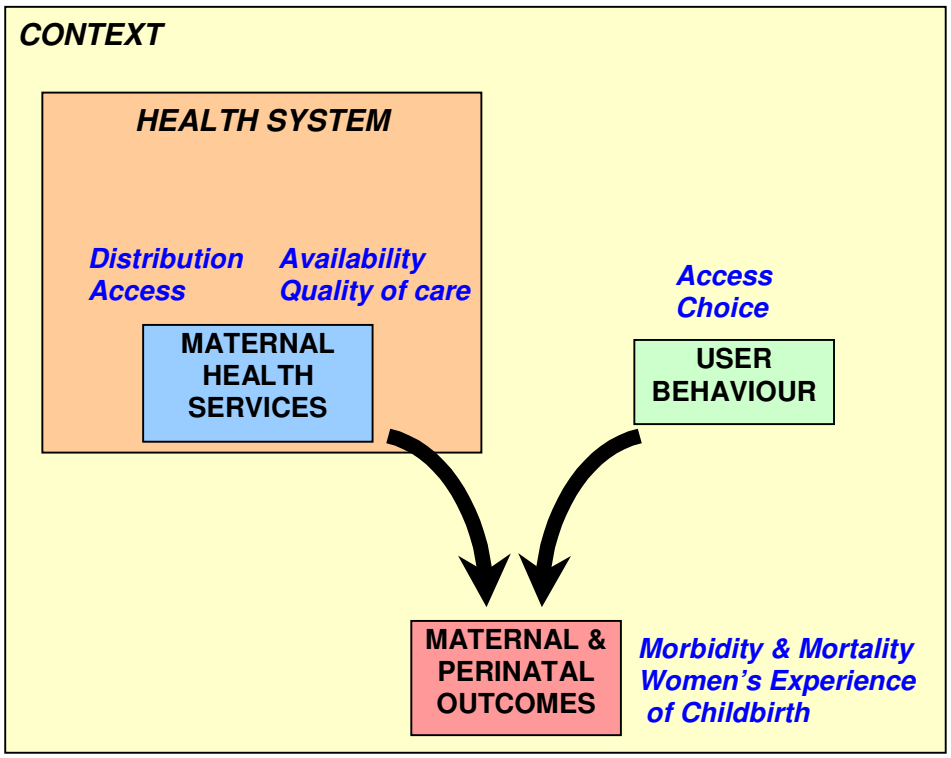


Figure 1 : Conceptual Framework of Maternal Health Rapid Appraisal

Maternal Health Approaches

The recommendations and guidelines developed as part of the Safer Motherhood Initiative (SMI) have been a key influence in the field of maternal health. The Safer Motherhood Initiative has developed and refined its approach since its inception in 1987, culminating in the Making Pregnancy Safer Programme introduced in 2001. We have taken the key messages of the Sri Lankan Technical Consultation in 1997 (Table 1), as an important consensus statement on what needs to be done to reduce maternal mortality and morbidity in the developing world (Starrs, 1998; Campbell, 2001; SMAIG, 2000).

Table 1 : Key Action Messages for Safer Motherhood.

♣ Advance Safe Motherhood through Human Rights
♣ Ensure skilled attendance at delivery
♣ Empower women
♣ Improve access to quality reproductive health services
♣ Safe Motherhood is a vital economic and social investment
♣ Prevent unwanted pregnancy and address unsafe abortion
♣ Delay marriage and first birth
♣ Measure progress
♣ Every pregnancy faces risk
♣ The power of partnership.

Source: Berer & Ravindran (1999).

We have also been influenced by human rights approaches to maternal health, developed both within the SMI and in the international women's movement (Berer & Ravindran, 1999). These perspectives highlight a number of important issues. Firstly, that maternal death should be seen as a "social injustice", and that such a definition would allow international and national legal frameworks and commitments to be invoked in tackling maternal mortality (SMAIG, 2000). Secondly, that many of the factors that influence maternal health result from "women's poor status in society, and from laws, policies and practices that hinder rather than promote their rights" (Cook & Dickens, 2001). This suggests that an understanding of problems in maternal health will also require looking at issues outside the health care system. Thirdly, the human rights approach recognises women as autonomous individuals with their own rights, which means not only the right to life and a live baby, but also to be treated with dignity and respect.

From a slightly different perspective, a number of authors have focused on broadening the definition of "good quality maternal health care" (Ronsmans, 2001a; Pitroff & Campbell, 2000; Hutton, 1999; Lavender, 2002). They have argued that biomedical outcomes are clearly important but that approaches to quality of maternal care need to be more inclusive. Patient and provider satisfaction; social, medical and financial outcomes; performance according to standards; and equity concerns are also important. Pitroff and Cambell (2000), for example, propose a "comprehensive definition of high quality maternity care" which includes:

- Provision of a minimal level of care to all pregnant women and their new-born babies,
- A higher level of care to those who need it,
- Obtaining the best possible medical outcomes,
- Providing care that satisfies the women, their families and care providers, and
- Maintaining sound financial performance and developing existing services to raise the standards of care for all women.

Health Systems Approaches

In undertaking a health systems analysis of maternal health, this rapid appraisal is clearly influenced by debates and perspectives in the international literature, but also reflects the emerging framework of the Health System Development Programme, as well as the specific priorities and approaches of the Centre for Health Policy (CHP).

Some of the particular understandings and interests that inform CHP's work include:

- A recognition that health system outcomes are influenced by factors affecting the *supply* of health services as well as complex community-level processes affecting the *demand* for those health services (Figure 1).
- That health systems and community dynamics reflect broader contextual influences (political, social, economic, and organisational).
- A concern for equity and social justice.
- The position that all health system development is value driven.
- That health care financing mechanisms, and the public-private mix in particular, are important influences on health system performance.
- That health sector reform needs to move beyond a focus on technical concerns and *formal* restructuring, and begin to address *informal* dynamics and relationships within the health system.
- A preoccupation with the specific dynamics of health service development in South Africa.

METHODS

Information for this study was collected over a period during the end of 2001 and the beginning of 2002. The rapid appraisal included a review of the published and grey literature on maternal health services in South Africa, key informant interviews, and limited analysis of secondary data .

An extensive literature search was carried out using PubMed. Significant effort was also expended in identifying relevant unpublished literature. The key sources of information are shown in Table 2.

Table 2 : Key Sources of Information

Source	References
South African Health Review 1998, 1999 and 2000	HST (1998); HST (1999); HST (2000)
National Primary Health Care Facilities Audit	Viljoen (2000)
Proceedings of the Perinatal Priorities Conference 2000, 2001, 2002	
South African Demographic and Health Survey	DOH (1999a)
Saving Mothers Report on Confidential Enquiries into Maternal Deaths	DOH (1999); DOH (2000); DOH (2001b)
Perinatal Care Survey of South Africa	MRC (2001); MRC (2002)

A number of interviews were undertaken with key informants working in the National Department of Health (NDoH), academic institutions and non-governmental organisations (NGOs).

Significant use was made of data from the first Demographic and Health Survey (SADHS) conducted in South Africa in 1998. The preliminary report was published in 1999 (DOH, 1999a) and we also had access to the draft final report (DOH, 2001a). However, some of the analyses presented in this report are new analyses using the SADHS data set. For example, the SADHS has limited information on household income. In order to analyse socio-economic differentials in access to maternal health services, data on household asset ownership was used to calculate wealth quintiles using the method of Filmer & Pritchett (1999).

Information on facilities and human resources was obtained from the NDoH and the published literature. Specific information for maternal health services was seldom available and often had to be estimated from other data sources. For example, to evaluate the availability of hospital maternal health services, routine statistical hospital returns on the number of deliveries and caesarean sections in 2000 were used to estimate which facilities were able to provide these services. Population projections derived from the 1996 Census were used to calculate population-based ratios. For some ratios, the proportion of the population without access to private health insurance was used as a proxy for the population accessing public sector services.

Scope of the Project

Maternal health care actually involves a range of health care services (Figure 2). Analyses of each of these different components would highlight different aspects of health care system functioning. Due to logistical constraints, this rapid appraisal has focused mainly on routine and emergency obstetric services.

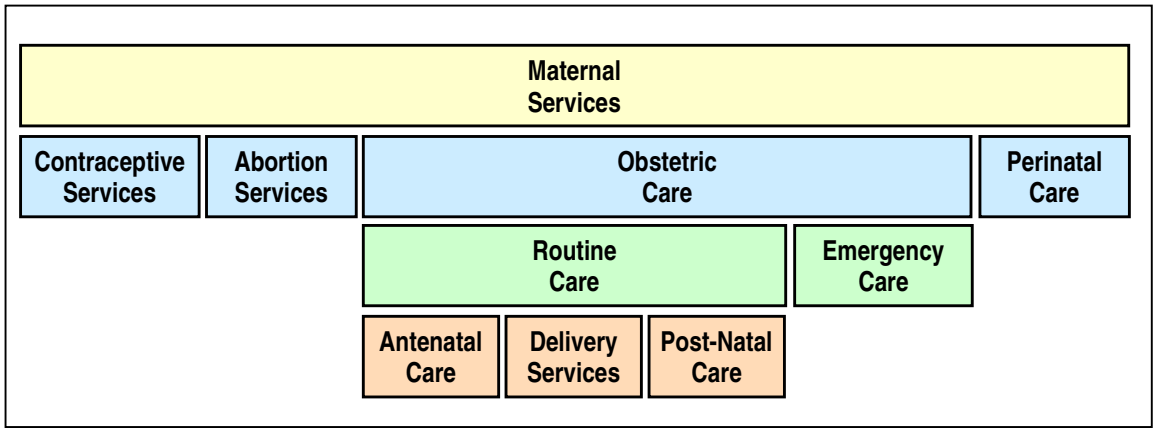


Figure 2 : Scope Of Maternal Health Services

Contraceptive and abortion services are important determinants of maternal mortality and morbidity, and of the reproductive rights afforded to women, but are not examined in any detail in this report. The development of abortion services in South Africa has received significant attention in other recent publications (Klugman & Varkey 2001).

Adverse perinatal outcomes are less rare than adverse maternal outcomes and provide important insights into maternal health care services. However, our investigations in this area have also been fairly limited.

It bears repetition that this study does not claim to be a comprehensive review or audit of maternal health services in South Africa, but aims to provide a starting point for more detailed discussions and research on health system issues in maternal health.

THE BROADER CONTEXT

Health systems development in South Africa is strongly influenced by broader political, social, economic and historical contextual factors. South Africa has a population of approximately 43 million people, 46% of whom live in rural areas. The legacy of South Africa's colonial and apartheid history is a country characterised by widespread poverty and profound inequality. The GDP per capita is $8,488 (PPP$, 1998) which classifies South Africa as a middle-income country (UNDP, 2001). However, nearly half of the population is classified as poor and suffer ill-health as a consequence, whereas, a small minority of people enjoy a standard of living and health status comparable to that in more developed countries. Human development indices for South Africa as a whole are significantly lower than for other countries with similar income levels (Table 3).

Table 3 : Comparison Of Human Development In Selected Middle Income Countries (1998)

	GNP per capita (PPP$)	Life expectancy at birth (years)	Adult literacy rate (%)	HDI	HDI ranking	Infant mortality rate (/1,000)	Maternal mortality rate (/100,000)
Uruguay	8,623	74.1	97.6	0.825	39	16	21
South Africa	***8,488***	***53.2***	***84.6***	***0.697***	***103***	***60***	***150***
Mexico	7,704	72.3	90.8	0.784	55	28	48
Poland	7,619	72.7	99.7	0.814	44	10	8
Costa Rica	5,987	76.2	95.3	0.797	48	14	29
Thailand	5,456	68.9	95.0	0.745	76	30	44
Namibia	5,176	50.1	80.8	0.632	115	57	230
Botswana	6,103	46.2	75.6	0.593	122	38	330

PPP: Purchasing power parity

Source: UNDP, 2001

South Africa's first democratic elections were held in April 1994. Since 1994, the African National Congress (ANC)-led government has embarked on a programme of political, social and economic transformation which aims to develop a society based on democracy, social justice and fundamental human rights. Significant progress has been made in normalising the political system in South Africa but progress with social and economic transformation has been slower and more complex.

The state machinery inherited by the new government has been a major impediment to change in South Africa. Other important constraints on the government's ability to effect rapid social and economic development include the impact of globalisation, significant infrastructural backlogs, poor human capital, high rates of unemployment, crime and the HIV epidemic.

Apartheid had a fundamental impact on people's health and the organisation of the health system in South Africa. The critical health problems reflect the prevailing socio-economic conditions in the country. For most of the population, mortality and morbidity rates are unacceptably high (Table 3), preventable communicable diseases are common, and diseases associated with extreme poverty still occur. At the same time, affluent groups suffer from lifestyle-related diseases more typical of developed

countries. More recently, the HIV / AIDS epidemic has become the country's most formidable health challenge, with rates of infection among the highest in the world (UNAIDS, 2000).

Although South Africa spends approximately 8.5% of GDP on health care, nearly 60% of expenditure occurs in the private sector which primarily serves the 23% of the population with private health insurance (Wolvardt & Palmer, 1997). The private sector has undergone rapid growth in the last two decades, employing an increasing proportion of doctors and other health care providers. However, the majority of South Africans still depend on the public sector for health care, particularly hospital services. Before 1994, the public health sector focused mainly on the provision of curative, tertiary level services for whites in urban centres so that health services in other areas were critically under-resourced.

The major health sector reforms of the new government include improving access to primary health care, the development of a district health system, and increased regulation of the private sector. Specific priority programmes, including maternal and child health, tuberculosis, sexually transmitted diseases, and mental health have received particular attention.

INDICATORS

Maternal Outcome Indicators

Table 4 : Traditional Maternal Health Outcome Incomes for South Africa

Outcome Measure	Figure
Maternal Mortality Ratio	150 / 100 000
Lifetime Risk	1 in 217
Proportion of deaths to women aged 15-49 from maternal causes	5%

Source: Department of Health (1999b) SADHS 1998

The figure of 150 / 100 000 from the SADHS is the most recent national estimate of the MMR. The 1998 Report on the Confidential Enquiry into Maternal Deaths estimated the Maternal Mortality Ratio for the three provinces in which they were confident of the reliability of the data. These provinces were Gauteng with an estimated ratio of 67/100 000, Western Cape with a MMR of 49.8 / 100 000 and the Free Sate with an MMR of 135/ 1000 000. Gauteng and Western Cape are the two wealthiest provinces in the country and so these results do not contradict the findings of the 1998 South African Demographic and Health Survey (SADHS).

Table 5 : Top Five Causes of Maternal Death (87.2% of maternal deaths)

Cause	% of Deaths
1. Non-pregnancy related sepsis (mainly due to AIDS)	29.7%
2. Complications of hypertension in pregnancy	22.7%
3. Obstetric haemorrhage	13.5%
4. Pregnancy related sepsis (includes septic abortions & puerperal sepsis)	12.4%
5. Pre-existing maternal disease	8.9%

Source: Department of Health (2001b)

Perinatal Outcome Indicators

Table 6 : Perinatal Outcome Indicators

Outcome Measure	Metro	City & Town	Rural
Perinatal mortality rate (>1000g)	30.0	39.4	30.9
Neo-natal death rate (>1000g)	7.6	14.8	12.1
Low birth rate ratio	18.4	17.0	12.5
Perinatal Care Index (>1000g)	1.63	2.32	2.47
Stillbirth : Neo-natal death ratio	3.05:1	1.73:1	1.6: 1

Source: Pattinson (ed) (2001)

This data is derived from 27 public hospitals, distributed throughout the country, using the PIPP (Perinatal Problem Identification Programme), combined with basic perinatal data collected by the provinces where available (Pattinson (ed), 2001). The Perinatal Care Index (PCI) was developed by Theron et al in 1985 and is calculated by dividing

the Perinatal Mortality Rate by the percentage of low birth weight babies (LBWR). It is argued that the PCI can be used to compare the quality of perinatal care between regions with different levels of socio-economic status (as measured by the LBWR). A low PCI indicates good care whereas a high PCI indicates poor care (Theron & al 1995).

Looking at the stillbirth to neonatal death ratio (SB:NND) is another measure of quality of care. In developing countries with almost no care the ratio is around one with almost as many stillbirths as neonatal deaths. As care improves, i.e. more births take place in institutions, with labour, delivery and immediate care of the neonate is supervised, the neo-natal death rate declines and the SB:NND ratio increases. Finally as antenatal care improves, the number of still births decline and the ratio decreases to one again.

Table 7 : Primary Obstetric Causes of Perinatal Deaths

Cause	% of Deaths
1. Unexplained	24.7%
2. Ante-partum haemorrhage	16.9%
3. Intra-partum asphyxia	14.0%
4. Preterm labour	12.9%
5. Hypertension	12.7%

Source: Pattinson (ed) (2001)

Process Indicators in Maternal Health

Goals for reducing maternal mortality are often expressed in terms of a reduction in the maternal mortality ratio (MMR). Collecting data on maternal mortality rates and ratios is however very difficult and costly for most developing countries. As an indicator it often does not register change over a short period of time, nor does it give information to indicate what actions are needed to improve the situation (Wardlaw & Maine, 1999; Campbell, 1999).

In response to these problems a number of “process indicators” have been developed by international agencies involved with the Safer Motherhood Initiative (SMI). Process indicators monitor the “availability and utilisation of treatment for life-threatening obstetric complications” (Wardlaw & Maine 1999). They are said to “reflect changes immediately” and to be more programme relevant. Process indicators also have the advantage over outcome indicators, such as the MMR, in that they are facility and not population based, and therefore, “generally less expensive to measure” (Wardlaw & Maine 1999). However, there have also been a number of criticisms of process indicators, and a process of trying to refine them (Campbell, 1999; Ronsmans, 2001a). Many of the internationally developed process indicators have however not been widely measured or utilised in South Africa. Those that are available are listed in Table 8.

Table 8 : Selected Maternal Health Process Indicators

Indicator	Result
Percentage of women who attendant ANC	95.1%
Percentage of women who deliver in an institution	83.7%
Percentage of women who have a skilled attendant at birth	84.4%
Caesarean section rate	15.8%
Percentage that report post-pregnancy stress incontinence	9.7%
Comprehensive Essential Obstetric services per 500,000 population ‡	~ 3.2

‡ Based on number of hospital reporting C/S to NDoH
Source: Department of Health (2001a)

Of the 95.1% of women who attended ANC, 73.1% made more than 4 visits, with the median being 5.3 visits. 62.8% of women went for their first visit before six months, with the median being 5.2 months (DOH, 2001a).

The contraceptive prevalence rate in South Africa is 62% of women aged 15 to 49. The total fertility rate for the 5 years proceeding the SADHS was 3.3% nationally (DOH, 2001a).

DESCRIPTION OF MATERNAL HEALTH SERVICES

Facilities

Introduction

The international approach to preventing maternal deaths has undergone a "paradigm shift" since the inception of the Safer Motherhood Initiative, changing from a focus on risk screening to accepting that "every pregnancy faces risk" (Maine, 1999). Following from this approach, access to Essential Obstetric Care (EOC) has been identified as a crucial factor in reducing maternal death (Starrs, 1998; SMAIG, 2000). Most process indicators actually measure progress in terms of access to EOC (see Table 8).

Facilities that provide *Basic EOC* can provide the following:

- Parenteral (intravenous or intramuscular) antibiotics
- Parenteral oxytocics (drugs which make the uterus contract to stop bleeding)
- Parenteral sedatives or anticonvulsants (for eclampsia)
- Manual removal of placenta (to stop haemorrhage)
- Removal of retained products of conception (to prevent bleeding & infection)
- Assisted vaginal delivery (to alleviate pro-longed labour)

Facilities providing *Comprehensive EOC* can provide all of the above, as well as

- Surgery (caesarean section)
- Blood transfusion (Maine, 1999)

The South African Situation

Health facilities in South Africa have not previously been categorised or analysed in terms of the EOC definitions. In Table 9, the number of facilities providing EOC in South Africa have been estimated using data from the National Health Information System on the number of normal deliveries and caesarean sections performed in public sector hospitals and clinics. For this estimate, hospitals performing caesarean sections in 2001 were assumed to be able to provide Comprehensive Essential Obstetric Care (CEOC); whereas hospitals, Maternity Obstetric Units (MOUs) or Community Health Centre (CHCs) reporting deliveries in 2001 were assumed to be able to provide Basic Essential Obstetric Care (BEOC).

The UNICEF/WHO/UNFPA Safer Motherhood Policy Statement in 1997 suggested that there should be at least 4 Basic EOC facilities and at least one facility providing Comprehensive EOC for every 500,000 population. WHO and UNFPA also recommended measuring the percentage of the population within 1 hour travel time of EOC, and set as an objective that no woman should be more than an hour away from a facility providing EOC (Campbell, 1999).

Table 9 : 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	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	407	289	229
Total		**430**	**229**
Total / 500,000 public sector population		**6.0**	**3.2**
Total facilities required to meet norm		**285**	**71**

Source: Calculated from NDoH Hospital returns, 2000

Table 9 also shows the estimated population ratios for South Africa. Because facility data was only available from the public sector, ratios were calculated using the public sector dependent population[1]. The BEOC ratio calculated for public sector patients was 6.1 / 500,000 and the CEOC ratio was 3.2 / 500,000. These figures are significantly higher than the current international norms. To meet the SMI norm, South Africa would only require a total of 285 BEOC facilities and 71 CEOC facilities in the public sector (Table 9). Unfortunately, accurate data was not available to calculate the percentage of the population within 1 hour travel time of an EOC.

South African National Guidelines on Maternal Health Services

There has been considerable confusion in South Africa about the maternal health services that should be provided at different levels of care (DOH, 2001a). As part of an attempt to clarify the situation in 2001 the Maternal, Child and Women's Health Directorate of the National Department of Health produced two major documents relating to maternal health care services in South Africa. These are the "National Maternal Health Guidelines", and the "Saving Mothers; Policy and Management Guidelines for Common Causes of Maternal Deaths". Both of these documents outline levels of care that should be provided at various levels of health service, as summarised in Table 10. They also clearly establish referral patterns for maternal health services.

[1] Estimated by the population without access to private health insurance

Table 10 : South African Guidelines on Maternal Health Services and Staffing

Level	Staff	Services Provided
Clinic	♣ Registered midwife	♣ Antenatal services ♣ Postnatal services
Health centre Midwife Obstetric Unit	♣ Registered midwife (Some with Advanced Diploma in Midwifery) ♣ Sometimes visiting Medical Officers (MOs)	♣ Antenatal services ♣ Postnatal services ♣ 24 hour delivery
Sub-District Hospital	Above plus: ♣ MOs ♣ Visiting Specialists	Above plus ♣ 24 hour C/S service
District Hospital Regional hospital	♣ MOs ♣ Specialists ♣ ICU	♣ All complex deliveries
Tertiary Hospital Central Hospital	Above plus: ♣ "Super-specialists"	

Source: National Department of Health(2001c)

However, these service standards do not necessarily reflect the current practice. For example, although all level one hospitals should all be providing 24 hour CEOC, the 2001 hospital return data suggests that a number are not performing normal deliveries and nearly 40% did not carry out any caesarean sections in the last year (Table 9). This may partly be explained by poor data and erratic hospital reporting (particularly from hospitals in the Eastern Cape), but has also been identified in a number of smaller, regional studies. A situational analysis carried out in a region in the Eastern Cape found that, out of the seven district hospitals, one was not providing Caesarean sections due to lack of sufficiently skilled staff (Jackson, 2001). Studies carried out in Mpumalanga concluded that some level one hospitals were not able to provide CEOC because of problems such as lack of working operating theatres, lack of emergency blood supply, and lack of skilled staff (Hess, 1998; Godi 2002).

Data from the 2000 National Primary Health Care Facilities Survey also shows that a number of clinics are not providing ante-natal and post-natal services as outlined in the NDoH guidelines (Figure 3). Only 87.4% of clinics provide any ANC, and this service is not available daily in 40.7% of clinics. Similarly only 84.1% of clinics are providing post-natal care, with 71.0% able to providing services on a daily basis.

Most of the Facilities Survey indicators have shown an improvement in levels of service delivery since 1997, when the survey was started. However, it is still worrying in terms of maternal health services that 23.2% of clinics do not have access to an ambulance, that 50% do not provide pregnancy testing, and that health care workers in a third of all clinics are not receiving regular supervision.

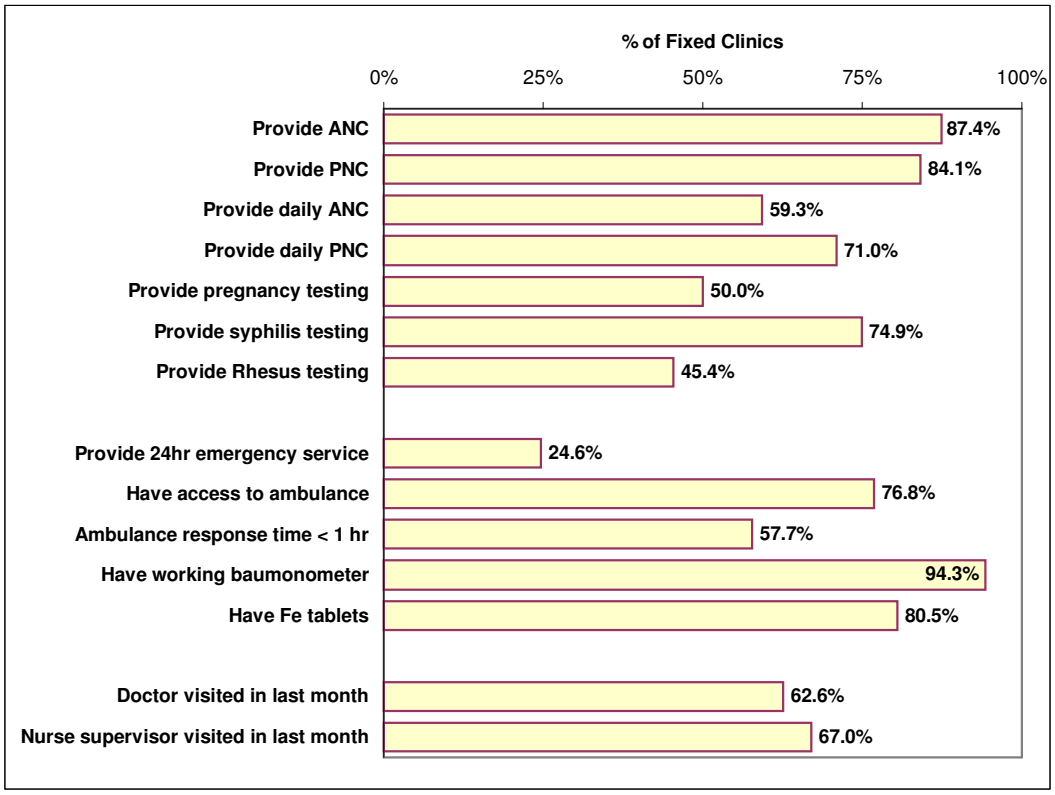


Figure 3 : Availability of Services at PHC Clinics

Source: Viljoen et al (2000)

Lack Of Facilities Contributing To Maternal And Perinatal Deaths

As part of the Confidential Enquiry into Maternal Deaths, "administrative problems" contributing to maternal deaths are assessed. This will be discussed in detail in a later section, but lack of facilities and equipment are calculated to have contributed to approximately 15% of maternal deaths (DOH, 1999a). In terms of perinatal deaths lack of ICU beds contributes to a significant number of perinatal deaths (Pattinson, 2002).

Access To Facilities From A Population Perspective

Utilisation figures of 95.1% of women attending ANC care and 83.4% delivering in a health facility suggest that lack of geographical access is not a insurmountable problem for most women in South Africa. However in terms of women who do not attend ANC and deliver at home, national population based data is not available on whether geographical distance from facilities is an explanatory factor for those who do not utilise maternal health services. There is data from a range of sources that indicate that transport is a considerable problem for women accesses maternal health care services, and has been identified as a problem in the Confidential Enquiry. The problems are related to geographical distance but also concern issues such as lack of availability of transport at night, safety of public transport, and cost (DOH, 1999a; Mokaya & Buchman 2002).

The Second Kaiser Family Foundation Survey on Health Care in South Africa carried out in 1998, interviewed over 4000 randomly selected South Africans country wide about their use of health care services. This survey did not look at utilisation of

maternal health services specifically, but of health care service as a whole. As part of the study they asked people how they travelled to the nearest facility, how long it took and what mode of transport that they used. In some cases the data was segregated for clinics and hospitals and in some cases it was not (Smith et al 1999).

In terms of travelling time approximately 1 in 6 South Africans reported spending over an hour to reach the nearest facility– but this rose to 1 in 3 rural Africans. When asked about transport used to reach care, 31% stated that they used public transport, 26% that they used private transport and 41% that they walked.

A study carried out on a much smaller scale but looking specifically at how women who were in labour travelled to health facilities, has been done at Chris Hani Baragwanath hospital in Soweto. In this study, 100 post-natal women who had delivered at CHB Hospital were interviewed. 59 of the women had used private transport, 25 had used public transport, 11 had used ambulances and 5 had walked. The median interval from decision to go to the health centre to arrival was 120 minutes. This study also found that women were paying considerable amounts of money to hire private transport to travel to hospital at night (Mokaya & Buchmann, 2002). This issue has been identified in other studies, and is commonly identified as a problem by health care workers.

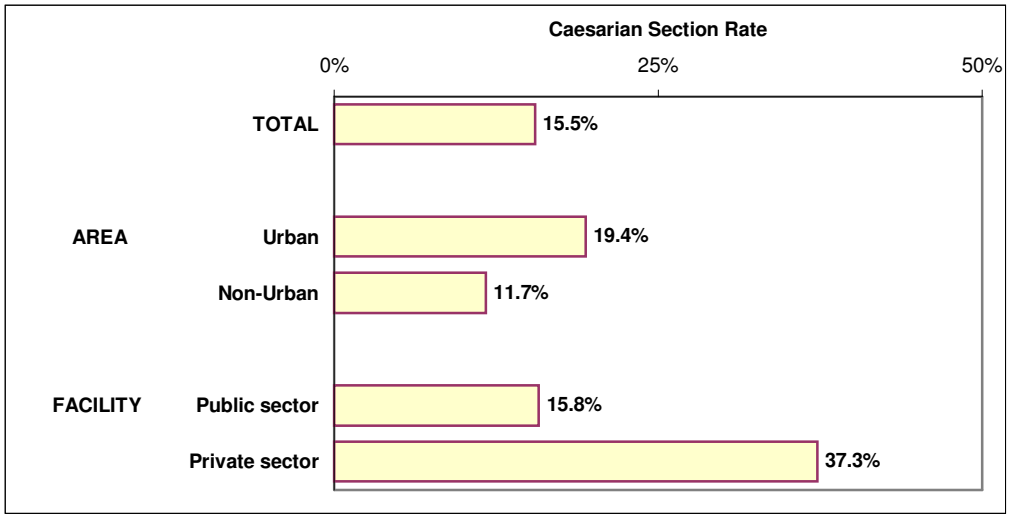


Figure 4: C/S Rates by Area and Sector

Source: Department of Health (2001) SADHS, 1998

A final source of information that gives some indication about access to CEOC is the caesarean section rate in South Africa. There has been considerable debate about how useful it is to look at the overall rate caesarean section rate as an indicator of the availability of essential obstetric services (Ronsmans 2001a). WHO/UNFPA/UNDP suggest that the rate should be between 5 and 15%, if it is below 5% then not enough caesareans are being done, implying a lack of access to CEOC facilities, and if it is above 15% then too many caesareans are being done. In the public sector the overall rate in South Africa is close to 15.9, with the urban rate being 19% and the non-urban rate is 11.9%. (See Figure 4). The impact of high levels of cephalo-pelvic disproportion, as well as HIV mean that it is difficult to say whether too many c/s are being done in the public sector. However the figures are well above the suggested minimum of 5% suggesting that many women do have access to CEOC. The problem with this indicator is however that it is illustrating over utlisation of c/s in some areas, with other women

not having access to them despite the fact that they might need them (Ronsmans 2001a).

Instead of looking at the overall c/s rates, a better measure of how a hospital is functioning may be looking at the decision to delivery interval in emergency section rates. The National Guidelines suggest that this time scale should be 30 minutes. A study carried out at Chris Hani Baragwanath Hospital, which is a large tertiary hospital, found that the mean waiting time from decision to operate was 116 minutes. In the year 2000 it was estimated that 10 babies died in the queue and in 2001 the figure was 20. (Buchmann, 2002). Explanations for this delay were given as lack of enough surgery facilities, and trained staff.

Human Resources

Introduction

"Having a health care worker with midwifery skills present at childbirth" has been identified as the most "crucial" of the key messages that emerged from the 1997 Technical Consultation on Safe Motherhood. International targets of "80% of all births assisted by skilled attendants" by 2005 have been stated as a key target to help internationally reduce maternal mortality ratios to below 125 per 100 000 (Graham et al, 2001). The emphasis of skilled attendance at birth arose partly out of reflection that previous strategies such as training traditional birth attendants - which had been promoted – had been shown not to be effective (Graham et al, 2001). Although there is now some debate about the evidence to show that having a skilled attendant at birth directly leads to decreased maternal mortality, and whether the issues are more ones of staff "responsiveness" and "skilled attendance", the percentage of births with a skilled attendant is still regarded as a key maternal health process indicator (Van Lerberghe et al 2001, Graham et al , 2001). As illustrated in Table 8, the 1998 SADHS data suggests that 84.4% of South African give birth with a skilled attendant present. In South Africa there is not a tradition of community based midwives, and in the overwhelming majority of cases if a woman had a skilled attendant at birth it means that she gave birth in a health facility.

"The term "skilled attendant" refers exclusively to people with midwifery skills (for example doctors, midwives, nurses) who have been trained to proficiency in the skills necessary to manage normal deliveries and diagnose, manage or refer complications. Ideally the skilled attendants live in, and are part of, the community they serve. They must be able to manage normal labour and delivery, recognise the onset of complications, perform essential interventions, start treatment, and supervise the referral of mother and baby for interventions that are beyond their competence or not possible in the particular setting"

"Midwifery skills are a defined set of cognitive and practical skills that enable the individual to provide basic health care services throughout the period of the perinatal continuum and also to provide first aid for obstetric complications and emergencies, including life saving measures where needed".

Figure 5. International Definition of Skilled Attendant.

Source: WHO/UNFPA/World Bank (1999).

Traditional Birth Attendants

In South Africa, unlike many other countries in Africa, Traditional Birth Attendants do not play a significant role in maternal health services, except in some remote rural communities (Mbambo 2002). According to the 1998 SADHS, only 1.5% of women give birth with the assistance of Traditional Birth Attendants. There is however evidence that many more women visit traditional healers during the pregnancy for medication and protection from witchcraft (Nolte 1998).

Table 11 : Medical Staff Population Ratios

	Nurses	Medical Practitioners	Specialist Obstetricians
Number	173,647	27,551	865
Ratio to population	1 : 240	1 : 1,512	

Source: van Rensburg, 1999; Health Professional's Council, 2001

Nurses

Nursing training in South Africa has undergone a number of changes in the last few years. Basic training for nurses now entails completing a four-year course, of which one year is midwifery. The South African Nursing Council monitors the quality of all training courses. The quality of nursing training is recognised internationally, with one of the major human resource issues in nursing, being the large numbers of skilled nurses being recruited to work overseas especially in the UK and Saudi Arabia (Godi, 2002, personal communication).

There is considerable inter-provincial as well as intra-provincial (mainly rural-urban) in the distribution of staff (Van Rensburg, 1999) but this will be discussed in more detail in a later section.

Advanced Midwifes

Of those nurses registered with the South African Nursing Council there are 246 persons on the register (as of 21/12/99) with the additional qualification of "Post-Basic Midwifery and Neonatal Nursing Science" and there are currently 15 institutions approved to offer this course

There used to be an additional qualification "Advanced Midwifery & Neonatal Nursing Science" and there are 848 nurses with this additional qualification, but no institutions are approved for this course any more".

Training

There have also been a number of efforts to improve the quality of midwifery skills among nurses working in the public sector, through in-service learning (Adar & Stevens 2000). The two main initiatives have been the Perinatal Education Programme (PEP) and the Decentralised Education Programme for Advanced Midwives (DEPAM). Both of these will be discussed further in the section of the report dealing with the policy environment.

Doctors

South Africa has 8 medical schools, over 27 thousand medical practitioners and 865 Obstetric and Gynaecology Specialists. (See Table 11). Van Rensburg (1999) estimates that the overall doctor to population ratio is 1 to 1512. This ratio is comparable with countries in the developed world. According the 1998 SADHS 30% of women give birth with a doctor present (DOH 1999b). The national picture however disguises huge disparities between the public and private sector, and also rural and urban areas. These disparities will be discussed in more detail in the section of the report dealing with inequalities. The National Department of Health recently made 1-year community service a prerequisite for registration for all doctors. It was intended that these community service doctors would serve predominantly in rural areas and other areas of the health service with severe staff shortages. The extent to which this programme has achieved its aims, and is the solution to skills shortages in the rural areas is debatable (Reid & Congo 1999). There are however numerous reports of community service doctors being the only doctors at a large number of hospitals.

Although there is an issue of a "brain train" with doctors leaving the country, South Africa at the same time also drains doctors from the rest of Africa and other parts of the world. Van Rensburg (1999) estimates that 21% of doctors working in the public sector in 1998 were foreign trained

Despite the common complaint that severe shortages of staff exist, this was not listed as a major avoidable factor in terms of maternal deaths. In the 1998 Saving Babies report it is suggested that this may be due to the fact that it is not a problem. However it might also be explained "by health care workers at the institution not thinking of adequate staffing because they have become so used to the shortages that they regard it as normal" (DOH 1999a).

Staffing Norms

One of the recommendations that has emerged out of the 1999 Saving Mother's Report was that staffing norms should be developed for maternal health services. Both the National Guidelines for Maternal Health Services (DOH 2001c), as well as the Saving Mothers Policy and Management Guidelines for Common Causes of Maternal Deaths (DOH 2001d), have outlined skills mixes that should be available at the various levels of care. (See Table 10) Setting staffing norms is however a difficult process. The first step of the process has been that the National Department of Health has asked all provinces to carry out skills audits of their maternal health services. These have been completed to varying degrees in the 9 provinces. They have not yet been published, and a complete set of provincial staffing levels were not available when writing this report.

Quality of Care

"Increasing access to obstetric care is only a first step towards the reduction of maternal mortality". (Ronsmans 2001b). Facilities and staff can be available, but the services offered in obstetric facilities often fall short of acceptable standards. Substandard obstetric care is now known to be a significant contributor to maternal mortality and morbidity in poor countries (Ronsmans 2001b, Mantel et al 1998, DOH 1999a). As discussed in the conceptual framework section of this Report there are a number of possible approaches to looking at Quality of Care in maternal health

services. In this section of the report some of the limited data available on quality of care in maternal health services is discussed. The focus has not just been on poor quality of care that leads to, or contributes to, maternal mortality and morbidity, but also care that leads to unpleasant experiences for women.

Technical Quality of Care

Although there are institutions in South Africa, both within the public and private sector, which are providing excellent technical quality of care, there is also evidence that at many institutions the technical quality of care is extremely poor (Ebrahim et al 2000, Pattinson 2002, DOH 1999a). National Guidelines have been developed from the latest international evidence-based practice body of knowledge, and in many cases training has been provided, and yet the reality seems to be that for a range of reasons these guidelines are not being implemented in many hospitals.

As part of the Confidential Enquiry into Maternal Deaths, as well as the Perinatal Care Survey, the quality of care that women and babies received is assessed. (This is by its very nature a biased sample, and may not reflect the care of women and babies who do not die). Substandard care was identified in more than half the cases of maternal and perinatal deaths. Substandard care included problems with problem identification, delayed or lack of referral for problems; not following protocols; infrequent observation; prolonged abnormal observation without action and inappropriate discharge (NCCEMD 2000). The findings of these national audits, popularly referred to as Saving Mothers and Saving Babies reports, will be discussed more fully in a later section.

Looking at issues of quality care in terms of services provided to women who undergo a “normal birth”, research carried out at 10 maternity units around Gauteng concluded that “women using state maternity services are often subjected to uncomfortable or degrading procedures for which there is no evidence or benefit” (Smith & Brown, 2001). The key findings of this study are shown in Figure 6.

There are numerous small-scale studies looking at different aspects of maternal care that illustrate problems with quality of care. It is not possible to list all of them, but the results of two are briefly described below. These are both studies that have taken place in urban settings within relatively well-resourced facilities.

A study that audited pain relief provided in the labour ward at Mowbray Hospital (Level 2) in the Western Cape found that 35.4 % of women received no pain relief in labour, and of these 65.5% did not ask for a method of pain control and 34.5 did asked but did not receive it. When interviewed all stated that they “ would have liked help”. This was in a environment with a high percentage of women having complicated labours and extra analgesic requirements. The study also found that 60.2% had no birth companion despite the fact that it has been shown tthat birth companions improve the quality of the birthing experience for women and the practice is officially encouraged in the institution (Fawcus 2002).

A study looking at Inter-Uterine Growth Retardation (IUGR) in Durban found that of the 18 cases of death due to IUGR 13 could be assessed as avoidable deaths, i.e. a death that was clearly due to an error or omission on the part of a member of the health care team. The most common problems were incorrect measurements, not correlating fundal measurements with gestational age according to dates, and even when correct measurements were taken failing to recognise that there was a problem and taking action. The study also found that women’s accounts of their last menstrual period

where often disregarded, or overruled by staff even when the women stated that they were certain leading to incorrect diagnosis of gestational age (Moran 2002).

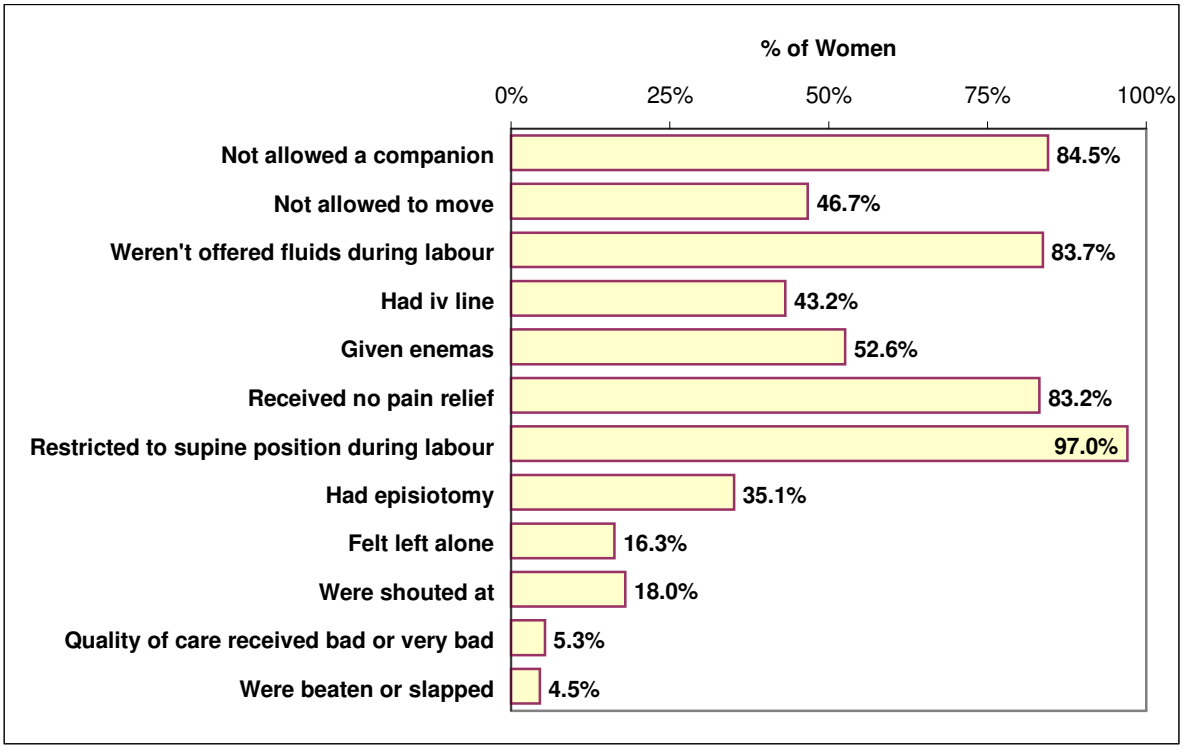


Figure 6 : Quality of Care in Hospital

Source: Smith & Brown, 2001

Human Quality of Care

Some of the most severe problems with quality of care in maternal health care services have emerged from a number of qualitative studies that have done focus groups and in-depth interviews with women about their experiences of labour wards. Jewkes et al (1998) carried out a study in a number of Midwife Obstetric Units (MOU) in Western Cape using a range of ethnographic methodologies. In interviews with both nurses and patients they discovered an a environment “strongly characterised by humiliation of patients and physical abuse”. The women interviewed complained that the midwives were “rude”, “inhuman”, and “not caring”. Young women, women who did not book, and poor women reported the most abuse. One teenager reported that the midwife told her that “she was not there when we were making love in the shack, so I shouldn’t bother her (with her pains)”. Another women reported being told to fetch a plastic sheet to deliver on. She replied that she couldn’t, and by the time the nurse returned with the sheet, the baby was already emerging. After the delivery she was told to “clean up her mess”, and to pick up the baby as the midwife said she would not “mess her hands” with him. Women were also distressed by what they perceived as neglect. Patients stated that they could understand being neglected when the unit was busy, but what distressed them was being neglected because the midwives were sleeping, chatting among themselves or watching television (Jewkes et al 1998).

In the same study midwives acknowledged severe problems in relationships with patients. Midwives complained about “unbooked women” (women who have not been for ANC) who they claimed were “lazy”, or “not wanting” to get up early in the morning.

Midwives also expressed the need to keep control of the unit, and acknowledged that this included giving patients a "mouthful" or beating them to ensure compliance. Staff also blamed other staff, labelled them as "rotten apples" or having "personality problems". Sometimes bad behaviour was attributed to the fact that the nurse was known to be studying and so had been sitting up all night working, and was consequently tired. This behaviour was all "sanctioned by other staff" and midwifes were willing to talk about it openly, knowing that they were being tape recorded (Jewkes et al 1998).

There have been a number of other studies that have recorded similar results. An evaluation of maternal heath services in the then PWV region by the Women's Health Project in 1994 found that when women were asked what they wanted from maternal health services, "by far the most common aspect of maternal health services commented on is the way in which health service treat women" (Fonn & al, 1998). One teenager stated "I choose to give birth at home because at the hospital or clinic we teenagers they treat us very bad, they hit us and insult us so it is better at home because my mother won't scold me". Other women reported that "nurses instigate each other to scold and insult you" and that "mothers deliver without assistance; they leave us alone and go to sleep". Women reported that they wished that their partners could accompany them during birth, but this was not allowed (Fonn et al 1998).

A study carried out in Acornhoek quoted a poor women reporting how midwives ridiculed her as she was not able to bring the "proper" things for the baby, and that she had decided next time to deliver at home (Hess, 1998). There are also problems with the way that Doctors treat patients. Of the over 1000 written complaints received by Gauteng province as part of their new complaints system, the most common complaint was about doctors behaviour (Moorman 2002 Personal communication).

Saving Mothers and Saving Babies

The reports of the Confidential Enquiries into Maternal Deaths and the Perinatal Care Surveys, popularly referred to as "Saving Mothers" and "Saving Babies", have been referred to throughout this report. They are not only an important source of information about maternal health in South Africa, but also play a crucial role in the policy arena, and therefore will be discussed in more detail in this section. Both of these are carried out as National Audits. The underlying motivation being that to be able to improve the situation, you first need to have a clear picture of what the problem is (DOH 1999a; Pattinson (ed) 2001).

Saving Mothers – The Process

As a strategy to reduce maternal mortality in South Africa, deaths during pregnancy, childbirth and the puerperium were made notifiable events on 1st October 1997, in terms of the National Policy Health Act, Number 116 of 1990. The Minister of Health also appointed a National Committee on Confidential Enquiries into Maternal Deaths (NCCEMD). This committee is responsible for the managing the confidential enquiry process, and has developed a reporting system for maternal deaths. The task of this committee is also:

"To make recommendations, based on the confidential study of maternal deaths to the Department of Health such that the implementation of the recommendations will result in a decrease in the maternal mortality" (DOH 1999a).

The NCCEMD resolved to make recommendations whose implementation was feasible, (affordable and practical) and that the impact should be measurable for the next comprehensive report that would be published 3 years later. So far one Comprehensive and two interim reports have been published (DOH 1999a, NCCEMD 2000).

After each maternal death a defined process takes place where the facility completes a Maternal Death Form. This form is sent to the province, and the province forwards the documentation to the Provincial Assessor. "The assessor must provide information on the primary, final and contributory causes of death and must also establish whether there were avoidable factors, missed opportunities or any other aspects of substandard care present in the maternal death" (DOH 1999a). The provincial assessor then sends it back to the province. All the documentation is then forwarded to the NCCEMD for collation and analysis. Once the data has been analysed and the report written, all data is destroyed and work begins on the next report. The report is distributed to the province who distribute it to the regions and districts (NDOH 1998). This process is illustrated in Figure 7. There is still some doubt as to whether all maternal deaths are reported, especially early pregnancy deaths. The 3rd interim report suggests that up to 200 deaths may have gone unreported, but overall the process appears to be functioning well and improving with problems only remaining in a couple of provinces (NDOH, 2001; NCCEMD 2000). A breakdown of what the provincial assessors are asked to look when dealing with a maternal death is listed in Table 12. These include the women and her environment, the administrative circumstances surrounding the care, and the standard of health care.

Table 12. The Assessment of Care System Used in the Confidential Enquiry

Level	Issues to be considered
The woman and her environment	The woman herself, her family environment (community)
Administrative circumstances surrounding the care.	Transport (e.g. lack between facilities) Barriers (e.g. hostile reception at clinics) Accessibility(e.g. lack of TOP services) Lack of personnel Lack of appropriately trained personnel Communication (between patients & health care workers or between health care workers
Standard of health care. Initial assessment i.e. history, examination & special investigations Management plan or management protocol followed Follow-up monitoring performed	Refer to Routine Care of the Patient Antenatal care Intrapartum care Postpartum care Emergency event/admission Refer to the event that lead to the death of the patient Resuscitation Anaesthesia

Source: Saving Mothers. Report on Confidential Enquiries into Maternal Deaths in South Africa 1998.

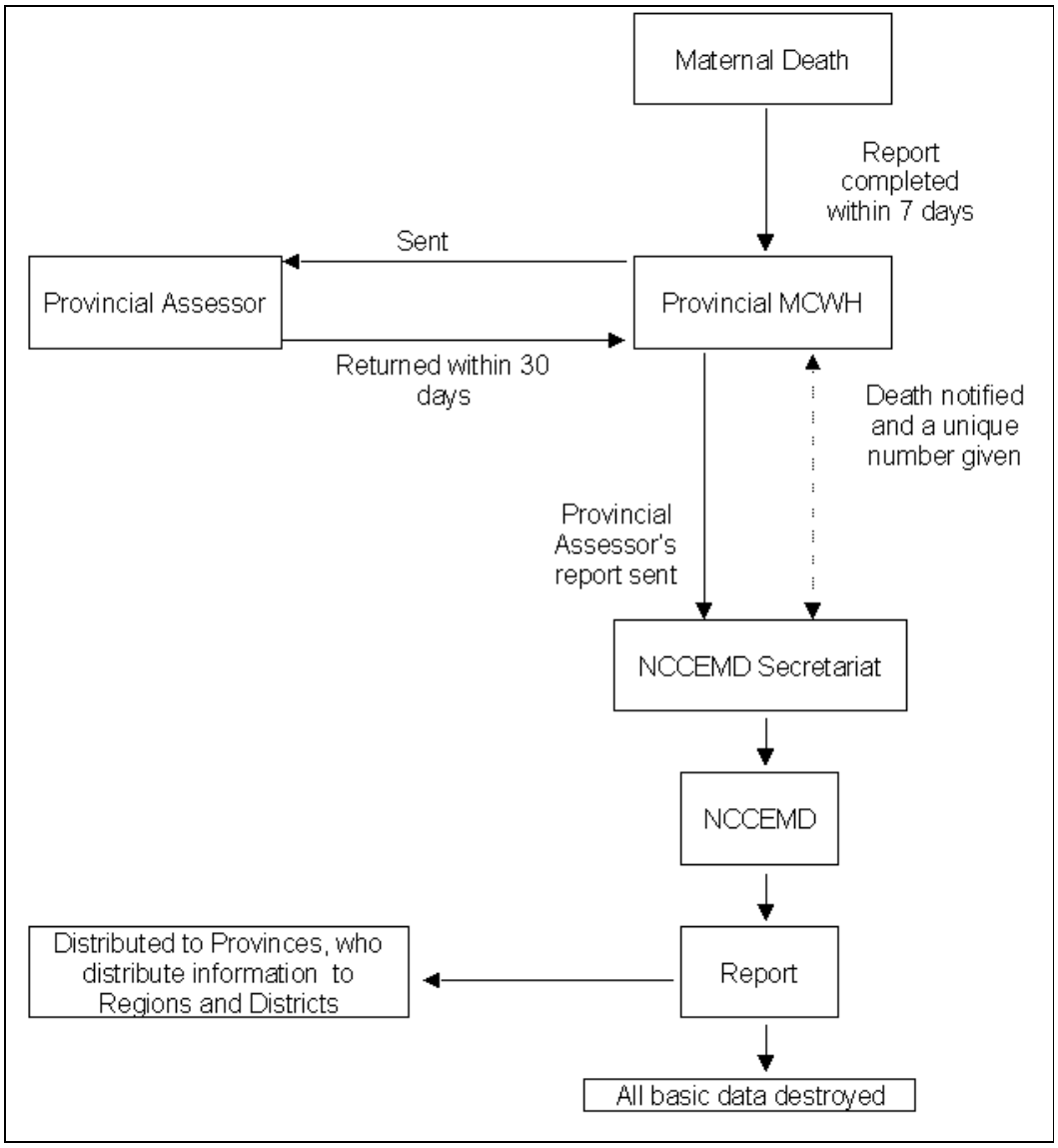


Figure 7 : The Confidential Enquiry Process

Source: http://www.doh.gov.za

Saving Mothers – The Findings

The main findings of the 3rd Interim Report on the Confidential Enquiry (DOH 2001b) in terms of causes of death are listed in the Indicators section of the report. (See Table 4). The Interim Reports do not however list as much detail in terms of avoidable factors, missed opportunities and substandard care as the full Saving Mother reports that are produced every 3 years. The results of this section therefore deal with the full findings of the 1998 Saving Mother report.

The terms “substandard care” is used to refer to “the care that the patient received, or care that was made available to her, fell below the standard which the authors considered should have been offered to her in this triennium”. Substandard care does not mean that had the care been better the maternal death would necessarily have been avoided (DOH 1999a).

In the Saving Mothers report published in 1999 a missed opportunity for preventing death related to the behaviour of the women herself or within her community in 48.8% of cases. Administrative problems were distributed throughout all levels of care, and overall contributed to the substandard care of women in 33.2% of cases. Delays in transporting patients between institutions were a problem in 13.6% of cases, with considerable provincial variation existing. The province with the most severe problems was Mpumalanga with transport delays between institutions contributing to the substandard care of 38% of the women. The other main administrative problem was lack of ICU beds. Problems with the medical care of women occurred in more than half the cases of maternal death, the majority at the primary health care level. Poor initial assessment and diagnosis of cases, especially at secondary level of care, failure to follow standard protocols at primary and secondary levels, and poor monitoring of patients at all levels of care were the common health care worker related problems (NCCEMD 2000). The Saving Mother's Report goes on to state that "it is not known whether this is due to ignorance or "laziness" on the part of the staff. A more detailed account of the missed opportunities are listed in Figure 8.

Saving Mothers – Recommendations

A key task of the NCCEMD is to produce recommendations that if implemented would lead to the reduction of maternal mortality rates in South Africa. (DOH 1999). The recommendations were formulated from the data available and were made in the context of what was assessed to be achievable in the next 3 years and what was measurable. (NCCEMD 2000). The Recommendations of the 1998 Saving Mother's Report are listed in Figure 7. These recommendations have served as a guide for activity for officials in the National and Provincial Departments of Health.

SAVING MOTHERS 1998

Overview

- ♣ 676 Maternal deaths reported in 1998
- ♣ Data available for analysis on 585 cases
- ♣ Incomplete reporting does not allow for reliable estimate of MMR
- ♣ Older women, women during their first pregnancy, and those who have had 5 or more pregnancies are at greatest risk
- ♣ Majority of deaths occurred in Level 2 hospitals

Primary Causes of Maternal Death

Direct Deaths	
1. Hypertension in pregnancy	23.2%
2. Postpartum haemorrhage	8.5%
3. Pregnancy related sepsis	7.3%
4. Acute collapse and embolism	7.3%
6. Abortion	5.7%
5. Antepartum haemorrhage	4.8%
7. Anaesthetic accidents	4.8%
8. Ectopic pregnancies	1.9%

Indirect Deaths	
1. Non-pregnancy related infections and AIDS	23.0%
2. Pre-existing maternal disease	10.4%

Avoidable Factors, Missed Opportunities and Substandard Care (% of Assessable Cases)

Patient Factors (48.8%)

- ♣ Non attendance ANC
- ♣ Infrequent attendance of ANC
- ♣ Delay in seeking help
- ♣ Self-induced TOP
- ♣ Discharged herself from hospital

Administrative Factors (33.2%)

- ♣ Delay in transport home to institution
- ♣ Delay in transport between Institutions
- ♣ Delay in admissions area
- ♣ Insufficient ICU beds
- ♣ Lack of laboratory facilities
- ♣ Lack of availability of blood transfusion
- ♣ Lack of appropriately trained medical officers
- ♣ Lack of communication between health workers

Health Worker Factors

Unprofessional Conduct (12.5%)
- ♣ Not attend patient when called
- ♣ Not attend patients over weekend
- ♣ Not see patient daily
- ♣ Not perform observations when prescribed
- ♣ Not give treatment when prescribed

Antenatal Care (38.9%)
- ♣ Problem recognition incomplete
- ♣ Prolonged abnormal observations
- ♣ Delayed referral
- ♣ Managed at inappropriate institution
- ♣ Wrong diagnosis
- ♣ Standard protocol not followed

Intrapartum Care (31.2%)
- ♣ Initial assessment incomplete
- ♣ Wrong diagnosis
- ♣ Standard protocol not followed

Postpartum Care (34.3%)
- ♣ Initial assessment incomplete
- ♣ Wrong diagnosis
- ♣ Standard protocol not followed
- ♣ Inadequate observations
- ♣ Inappropriate discharge from hospital

Emergency Care (56.8%)
- ♣ No notes
- ♣ Incomplete initial assessment
- ♣ Incomplete problem recognition
- ♣ More senior assistance not called
- ♣ More senior assistance not available
- ♣ Delayed referral
- ♣ Patient managed at inappropriate institution
- ♣ Wrong diagnosis
- ♣ Standard protocol not followed
- ♣ Delays in getting treatment performed
- ♣ Technical skill not adequate or available
- ♣ **Continued monitoring n**ot done
- ♣ Observations done infrequently/incompletely
- ♣ Failure to get special investigation results
- ♣ Prolonged abnormal observations without action

Resuscitation (28.8%)
- ♣ Airway not secured
- ♣ Breathing not supported
- ♣ Circulation not supported
- ♣ Drugs not given
- ♣ Investigations not done
- ♣ Special monitoring not performed
- ♣ Subsequent management not planned

Anaesthetic Care (25.3%)

SAVING MOTHERS 1998 - KEY RECOMMENDATIONS

1. Guidelines on managing conditions which commonly result in maternal death must be developed, distributed and implemented throughout the country.
2. Referral routes and criteria for referral must be established and implemented by 2001
3. Staffing norms and equipment norms per level of care must be established for all health institution concerned with the care of pregnant women by 2001
4. The distribution of TOP services (especially with respect to second trimester TOPs) must be expanded and the sites must be advertised to the public
5. The partogram must be used for monitoring labour in every pregnant women and problems detected on the partogram must be managed accordingly
6. Blood must be available at every institution where caesarean sections are performed
7. Medical Obstetric Clinics must be established to ensure the optimal management of women with pre-existing medical conditions, especially women with heart disease and diabetes mellitus
8. Regional anaesthesia should be promoted in all sites performing caesarean sections
9. Family planning services must intensively educate women 30 years and older or with 5 or more children about the dangers of pregnancy. Contraceptive use should be actively promoted in this group of women.
10. A National HIV/AIDS policy geared towards managing these women and dealing with the ethical considerations must be available by 2001.

Figure 8: Key Findings of Saving Mothers

Saving Babies – The Process

A national perinatal confidential enquiry would be difficult and costly to establish in South Africa due to the relatively high rates of perinatal mortality. A National Perinatal Care Survey has been organised jointly by the Medical Research Council Research Unit for Maternal and Infant Health Care Strategies and the National Department of Health which has been combining national basic perinatal data as well as data from sentinel sites which use the Perinatal Problem Identification Programme (PIPP). PIPP is a simple computer friendly that once simple perinatal data is entered calculates various perinatal care indices, describes the medical conditions that lead to the perinatal death and describes the avoidable factors, missed opportunities and substandard care that led to the deaths. There were 27 PIPP sites that were involved in collecting data for the 2000 Saving Babies Report, and 44 sites that contributed data to the Saving Babies Report 2001. All PIPP sites are requested to send their data to the MRC Unit. The aim of the project is to "give a reliable picture of perinatal care in the country" as well as to "direct health care workers to areas where the greatest improvements can be made" (Pattinson (ed) 2001).

The Saving Babies 2000 Report was produced after a workshop that was held in Nov 2000, in which users of the PIPP programme, the National and Provincial Maternal, Child and Women's Health units, the national and provincial Health Information and Epidemiology units and the Medical Research Council Research Unit for Maternal and Infant Health Care Strategies collated dated relating to perinatal care. The main areas of concern regarding the care of pregnant women, and of women during labour and post-partum were also discussed. The workshop "combined the grassroots health care workers, administrators from the national and provincial health departments and the Medical Research Council" (Pattinson (ed) 2001).

The results in the Saving Babies report are categorised into metropolitan (mega-cities), city & town area, and rural as this categorisation grouped hospitals into naturally comparable units. It was assumed that the "metropolitan grouping represents a fully functioning tiered health care system, with all patients having relatively easy access to tertiary care if needed. The city and town grouping represents areas where patients usually have easy access to primary and secondary level institutions, with some difficulty in accessing tertiary institutions. Rural grouping represents primary health care, with patients having to be referred for secondary and tertiary care.

Saving Babies – The Findings

The basic outcomes data from the Saving Babies Report 2000 is illustrated in Table 6 and Table 7 at the beginning of the indicators section of the report. Overall a PNMR for South Africa of 40/1000 births is indicated. Avoidable factors, missed opportunities and substandard care is identified by the PIPP programme and detailed in the Saving Babies report. Patient related avoidable factors were reported in 35.9% of perinatal deaths, health care related factors in 29.1% of deaths, and administrative factors in 7.4% of cases (Pattinson (ed) 2001). More details of the findings are listed in Figure 8.

SAVING BABIES 2000

Overview

- Most provinces do not have functional data collection systems
- 4,155 perinatal deaths with a birth weight of 100g or more were reported from the 123,508 births at the 27 PIPP sentinel sites

Primary Obstetric Causes of Perinatal Deaths

1. Unexplained	24.7%
2. Ante-partum haemorrhage	16.9%
3. Intra-partum asphyxia	14.0%
4. Preterm labour	12.9%
5. Hypertension	12.7%

Avoidable Factors, Missed Opportunities and Substandard Care (% of Assessable Cases)

Patient Factors (35.9%)

- No attendance at ANC
- Late initiation of ANC
- Infrequent attendance at ANC
- Delays in seeking medical care during labour
- Inappropriate response to decreased foetal movements
- Inappropriate response to rupture of membranes
- Inappropriate response to antepartum

Administrative Factors (7.4%)

- Transport delays patient to institution
- Transport delays between institutions
- Syphilis serology
- Insufficient staff
- Personnel insufficiently trained to manage
- Insufficient neonatal ICU
- Inadequate theatre facilities

Health Worker Factors (29.1%)

Unprofessional Conduct

- Doctor did not respond to call

Antenatal Care

- Overestimated foetal size
- Underestimated foetal size
- No response to poor foetal history
- No response to glycosuria
- No response to poor uterine fundal growth
- No response to hypertension
- No response to abnormal foetal position
- No response to apparent post-term pregnancy
- No response to positive syphilis serology
- No response to report of poor foetal movements
- Multiple pregnancy not diagnosed

Intrapartum Care

- Partogram not used
- No response to poor progress in labour
- Foetus not monitored
- Signs of foetal distress interpreted incorrectly
- Second stage prolonged without intervention
- Inappropriate use of forceps/vacuum
- Neonatal resuscitation inadequate
- Neonatal monitoring inadequate
- Neonatal management plan inadequate
- Delay referring patient to secondary/tertiary unit
- Delay in calling for assistance
- Delay in doctor responding to call

SAVING BABIES 2000 - KEY RECOMMENDATIONS

1. Adopt the proposed minimal data set and tool
2. Establish the process for collection of the minimum data in each province
3. Establish more PIPP sentinel sites
4. Ensure each site conducting births has the necessary equipment and protocols and that the staff are appropriately trained to manage labour and are especially trained in the use of the partogram
5. Ensure each site conducting births has the necessary equipment and protocols and appropriately trained staff to manage asphyxiated neonates
6. Ensure each site caring for premature infants has the necessary equipment and protocols and that the staff are appropriately trained in kangaroo mother care.
7. Ensure each site performing antenatal care has protocols in place for where and when to refer patients and the staff are appropriately trained therein.
8. Move to a system where the woman confirms she is pregnant also becomes the woman's first antenatal visit where she can be classified according to risk and where her further antenatal care is specifically planned.

Figure 9: Key Findings Saving Babies

Saving Babies – Recommendations

A number of "readily remedial problems" were identified in the Saving Babies 2000 report, and recommendations were made. These recommendations included improving the quality of basic perinatal data collection in the provinces, establishing more PIPP Sentinal Sites, and ensuring that all sites where deliveries are taken place have the necessary equipment, protocols and appropriately trained staff, and to set in place a system where a women has her first ante-natal visit at the same time as she confirms her pregnancy (Pattinson (ed) 2001). The full recommendations are Figure 9. The Saving Babies 2001 report is in the process of being written. Progress has been made in terms of the number of sites that are using PIPP, with the number now at 44 and rising (Pattinson 2002).

Legislation and Policy in Maternal Health

Introduction

Policy makers, health professionals and service users have all been identified as key players in developing countries in terms of making contributions to the development of of maternal health services (Campbell 2001). In this section of the report the main legislative and policy milestones in terms of maternal health are identified, and there is a brief discussion of other key initiatives, and role players.

Legislative and Policy Milestones

- South African Constitution guarantees equality for women, right to health care- including reproductive heath care, right to dignity.
- 1994 Free health care for pregnant women and children under the age of 6
- 1996 Choice on Termination of Pregnancy Act
- 1996 Maternal Child and Women's Health Policy Committee- MCWH organised in its own directorate with a National Director.
- 1997 All maternal deaths made notifiable & National Committee on Confidential Enquiries into Maternal Deaths appointed.
- 1999 Saving Mothers. Report on the Confidential Enquiries into Maternal Deaths 1998
- 1999 National Maternity Case Record
- Saving Babies. A Perinatal Care Survey of South Africa.
- 2001 Guidelines for Maternity Care in South Africa, Saving Mothers Policy & Management Guidelines

Since 1994 maternal, child and women's health has been recognised as a priority by the government. The White Paper for the Transformation of the Health Service has separate sections on "maternal, child and women's health" and considerable attention has been paid to the re-organisation of reproductive health services as a whole (Adar & Stevens 2000). Despite apparent high levels of commitment from the political and administrative leadership, with key policy initiatives in place, maternal mortality rates are still high in South Africa, and rising. Many of the causes of these maternal deaths

are avoidable, with solutions known and affordable (NCCEMD 2000). Implementation of policy appears to be one of the major stumbling blocks, and this is not unique to maternal health services (Adar & Stevens 2000).

In-Service Training

In recognition that health worker related factors contribute to a large number of maternal and perinatal deaths a number of in-service training programmes have been developed to improve the quality of care. Two of these programmes are the Decentralised Education Programme for Advanced Midwives (DEPAM) and the Perinatal Education Programme (PEP). Both of these programmes were developed by academics independently of the National Department of Health, but have been identified by the National Department as key elements in the improvement of health care worker practice (Mativandlela 1998). In the staffing norms outlined in the National Guidelines on Maternity Services it is recommended that all nurses who deal with any aspect of the birth process should be trained in PEP and that each facility should have at least one advanced midwife. The National Department of Health has asked all the provinces to do an audit of distribution of advanced midwives in all the provinces, as well as those who have completed the PEP course, but this is not yet available (Nyathikazi 2002, Personal communication).

There have been a number of evaluations that have attempted to evaluate the impact of PEP training with mixed findings. Although the content of the course is universally praised, there has been concern expressed that although completing the course increases midwives level of knowledge, and in some cases job satisfaction (Theron 1999), it does not necessarily translate into improved practice (de Kroon et al, 1998). The explanations suggested for the lack of change in practice include: individual nurses who complete the course are not always able to change practice and systems that exist in the hospitals in which they work, especially if this is within a context of unsupportive management. Nurses have been trained are also often rotated out of the labour ward. Similar problems were reported with nurses who completed the advanced midwifery training and then were rotated to male surgical wards (Mativandlela 1998).

Active Academic Community

South Africa has 8 medical schools, and a considerable number of specialist obstetricians and gynaecologists working in the public sector who have committed themselves to improving the standard of maternal health care in South Africa. There are at least three Conferences that take place every year that deal with issues of Maternal Health, and provide an environment where policy makers, academics and practitioners can get together, and share research. These conferences are the Reproductive Priorities Conference, the Perinatal Priorities Conferences, and the annual conference of the South African Society of Obstetricians and Gynaecologists. Both the Saving Mothers and the Saving Babies Reports depend heavily on the commitment of practitioners working outside the National Department of Health. There are a number of research organisations devoted to improving the quality of maternal health care including the MRC Research Unit for Maternal and Infant Strategies, and the Effective Care Unit which is based in the Eastern Cape, but attached to the University of the Witwatersrand. The Better Birth Initiative is also being piloted in South Africa. Severe Acute Maternal Mortality (SAMM) commonly known as near miss was largely defined in South Africa (Mantel et al 1988), and South African physicians are collaborations and instigator of a number of RCT trails, and key players in the

Cochrane Review. Audit is increasing being used in South African hospitals as a way of improving quality of care.

Non-Government Organisations

There has been relatively little user based activism around Safer Motherhood in South Africa. Similarly although the women's movement was instrumental in its role in liberalising the abortion legislation, it has not been vocal around the issue of maternal health. There are however a number of NGOs working in South Africa which are active in terms of supporting obstetric services. These include the Health System's Trust which is supporting services in the Eastern Cape, CHESS that is supporting projects in the Northern Province and Kwa-Zulu Natal and the Women's Health Project that has supporting reproductive health services in the Northern Cape and Northern Province.

Public Private Partnerships

Public-Private Partnerships (PPPs) are increasingly being considered by the South Africa government as a way of supporting public services. So far PPPs are not playing a major role in terms of the provision of maternal health services. There does seem to be some consideration of developing units that attract private paying clients into tertiary and secondary hospitals which supply good quality technical care. One of the first of these schemes has been running for 6 months, and is based Mowbray Hospital in the Western Cape. In this hospital a two fold strategy has been engaged upon involving converting an old nursing home to an active birthing unit designed for the use of private midwives, and the "P Midwife Obstetric Unit" where public midwives provide services to paying patients, but with better hotel facilities. This scheme has been allowed under a dispensation that the hospital deliver "one tier health care, and temporarily two tier hotel care". The money made from the charging patients is to be retained by the hospital, and to be used to improve the hotel quality of care in the public sector. This system has only been up and running for a number of months, and it is too early to do a clear analysis of the success of the project (Bergman, 2002).

Another possible area of Public-Private Partnership in maternal health services is working with General Practitioners in private practice. Research indicates that many women confirm their pregnancies with GPs early on in their pregnancies and only attend ANC services in the clinics later on in their pregnancies. Often no record of this visit is kept by the woman (Pattinson, 2001). Late onset of ANC care is indicated as a contributing factor to both maternal and perinatal deaths in South Africa (DOH 1999, Pattinson 2002). A study carried out in Thembisa comparing the quality of ANC care given in clinics and by a selection of GPs in the area, and the GPs quality of care was rated higher (Mokhondo & al 2002). These results contrast considerably with results done in the same area with GPs in terms of STI treatments, where the GPs care was shown to be of poorer quality than the service provided in public clinics (Schneider & al 1999). The policy implications of these findings are complicated. One simple step would be to encourage GPs to fill in the green maternity cards, and the clinics to supply GPs with these maternity cards. The maternity cards are a hand held record of care that the woman has achieved, and which enables a continuation of care between GPs and public clinics.

Finally, although not strictly falling into the definition of Public-Private Partnerships, there are a number of initiatives such as Pregnancy Week, and the Hands On ANC package, developed in the private sector, funded predominantly by the private sector, but have been adopted by the National Department of Health.

Inequalities In Access And Provision Of Services

Up until now in this report the emphasis has been on the overall picture in terms of maternal health services in South Africa. The overall picture disguises huge disparities in terms of almost every aspect of maternal health care. These disparities can be seen in terms of provinces, in terms of wealth, in terms of race and in terms of rural and urban.

Figure 10 shows the differences in the ratio of Comprehensive Essential Obstetric Care to 500,000 of the public sector dependent population. Although the national average is 3.2 which is well beyond the WHO/UNFPA/UNICEF programme guidelines, Eastern Cape falls just below the recommended ratios and Northern Province is only just above the recommended ratio. Part of this may be explained by the relatively paucity of hospital data from the Eastern Cape, but it also reflects the relative underdevelopment of those two provinces. The extremely high ratio of 13.7/500,000 in the Northern Cape to a large extent reflects the vast distances that exist in that province, and the relatively dispersed population. If the data was available in terms of the percentage of the population that lived within 1 hour travelling time of a facility providing CEOC the picture would probably be significantly different.

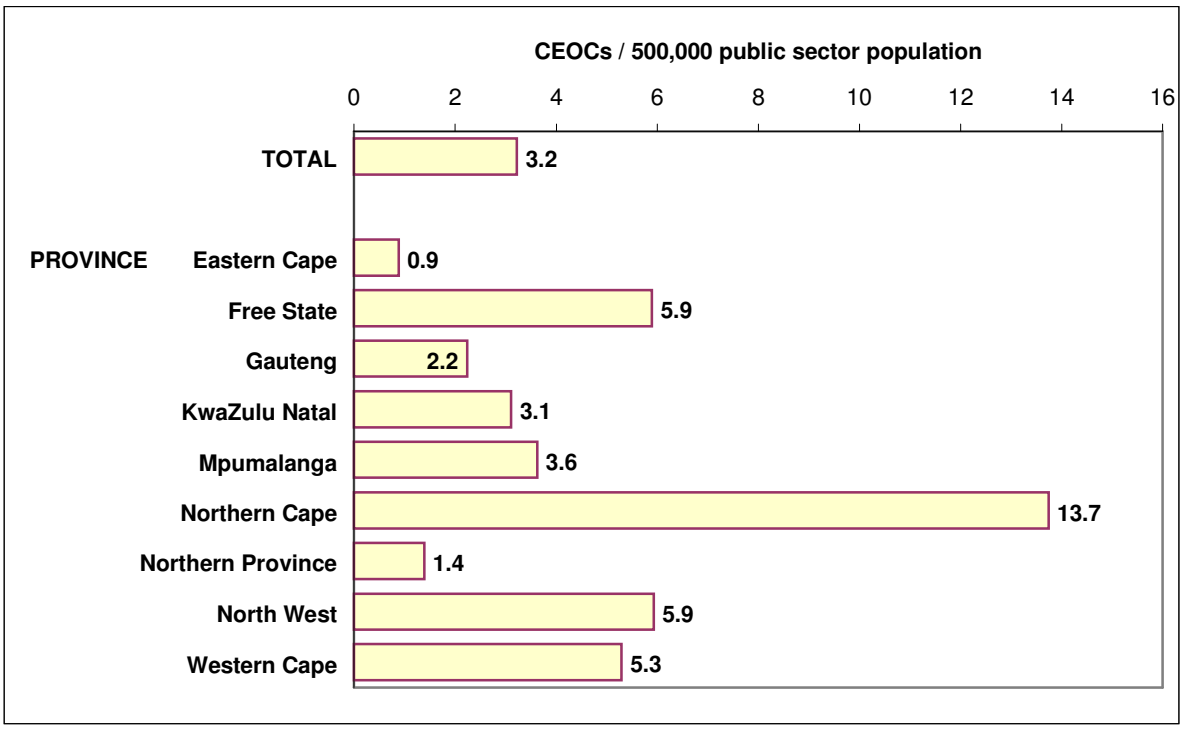


Figure 10 : Provincial Distribution of Comprehensive EOCs

Source: Calculated from hospital returns, 2000

Trained Assistant at Birth & Place of Birth Inequalities

Figure 11 breaks down the figures on women who have a trained assistant at birth. The SADHS of 1998 gives a national figure of 84.4% of women who have a trained assistant at birth. This figure hides a considerable range of percentages when the data is desegregated. While only 14% of women give birth without a doctor or nurse present overall, this rises to 23% of non-urban women, 25% of women in the Eastern Cape, and 27% of the poorest women calculated using the asset quintile.

Similar patterns exist in terms of place of delivery as illustrated in Figure 12. While 14% of births overall take place at home, this rises to 23% of rural births, and 27% of births to the poorest women. In terms of the private sector only 9% of women overall give birth in that sector, this rises to 44% of those who rank highest in the asset quintile and 63% of white South Africans. According to the SADHS of 1998 only 4% of African South Africans give birth in private facilities.

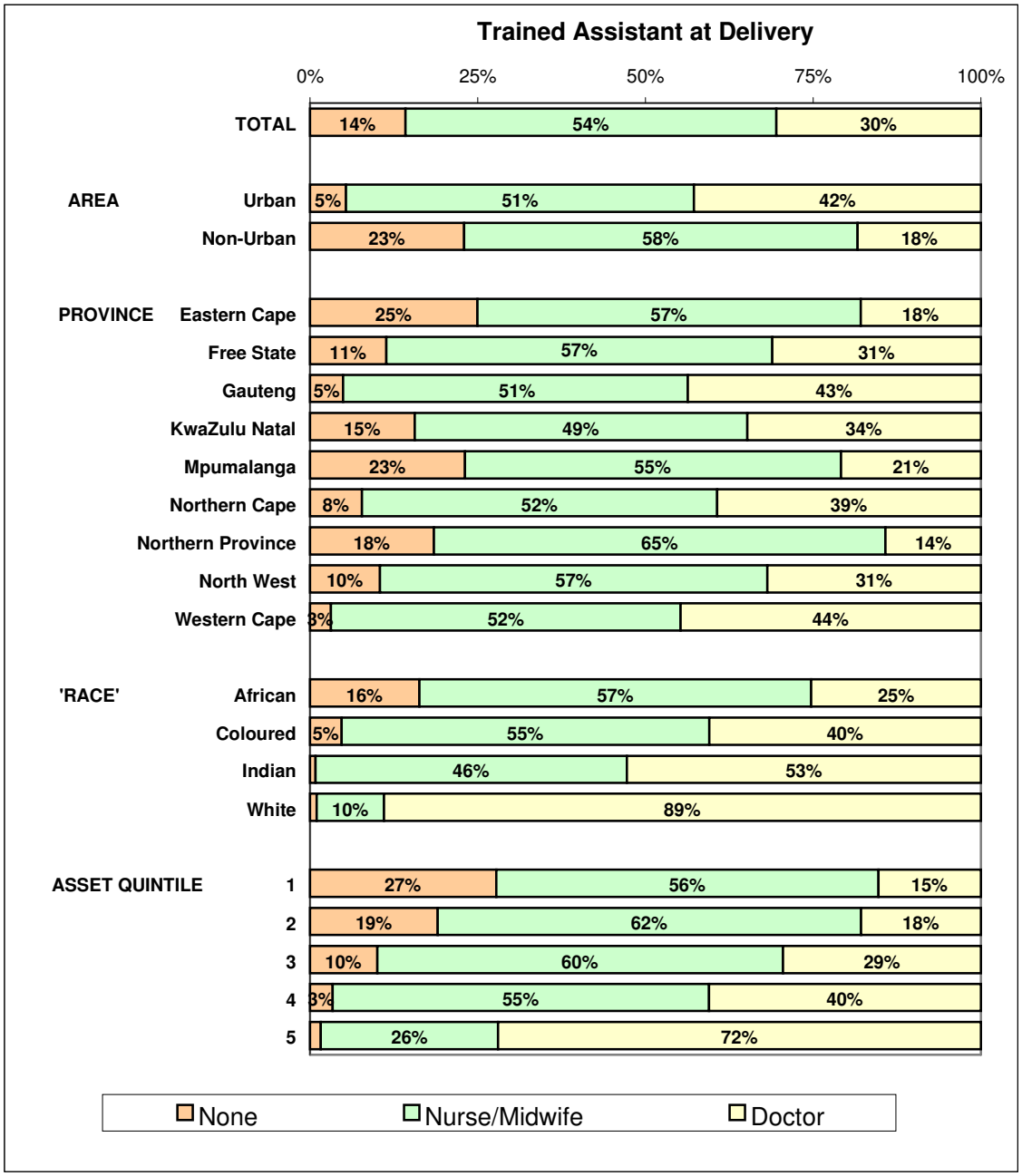


Figure 11 : Inequalities in Access to Trained Attendant at Delivery

Source: SADHS, 1998

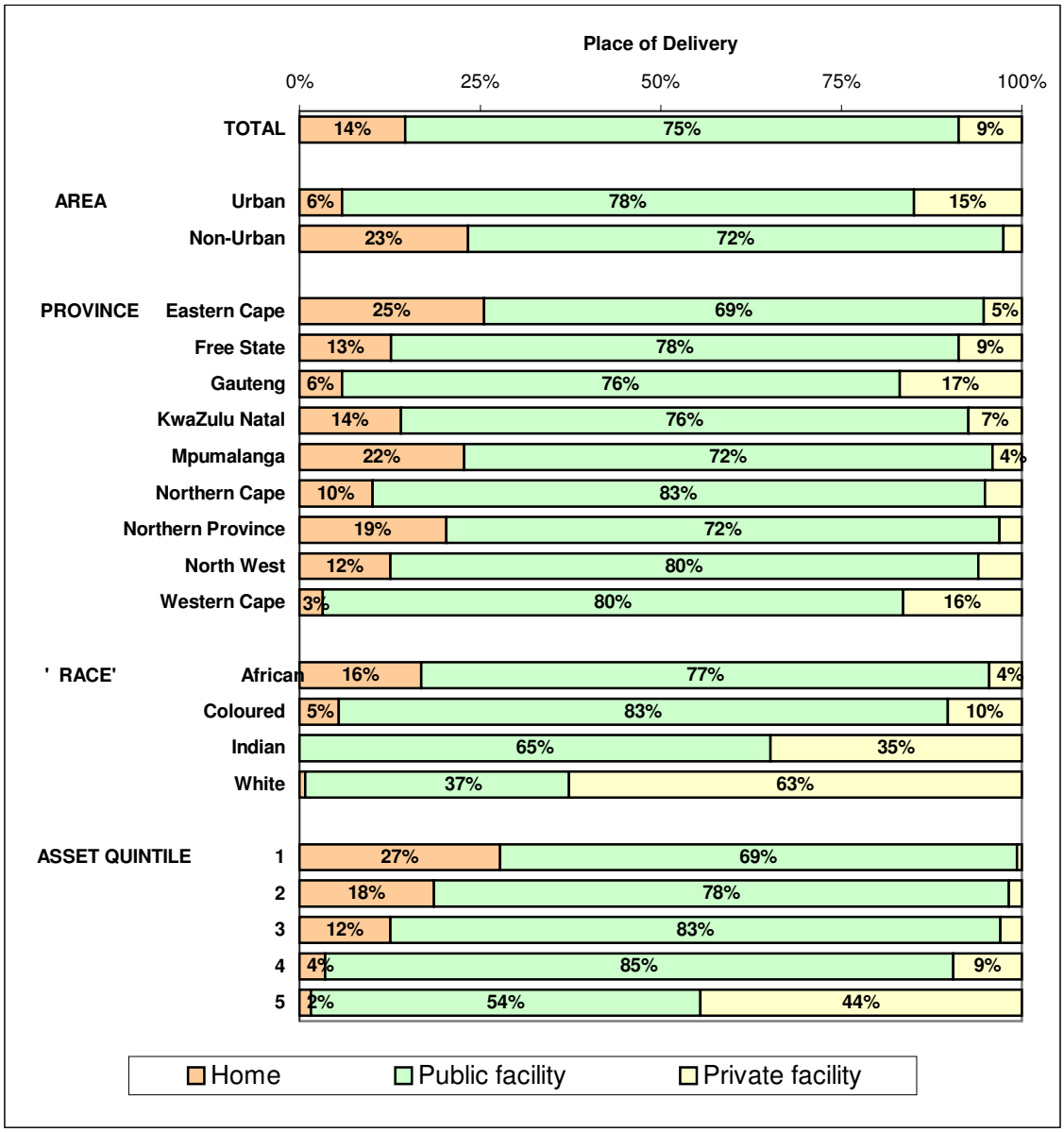


Figure 12 : Inequalities in Access to Private Sector Care

Source: SADHS, 1998

Inequalities and Health Workers

Table 13 breaks down the data on the number of health care workers in South Africa, and illustrates the differences between Provinces. Western Cape which is one of the wealthiest provinces with 9.7% of the countries population, but has 22.6% of the countries doctors. Eastern Cape which is one of the poorest provinces in South Africa has 15.5% of the South African population but only 7.1% of South Africa's doctors. One of the problems with this data is that intra-provincial differences are probably more significant that inter-provincial differences. For example Eastern Cape contains urban areas which are relatively rich, and many of the doctors may be concentrated in these areas, meaning that the true picture in terms of the ratio of doctors to patients in rural Eastern Cape is much higher (Van Rensburg 1999).

Table 13 . Comparisons of distribution of doctors & nurses in selected provinces.

	Province				Total
	Eastern Cape	Western Cape	Free State	KZN	
Total Pop	6,469,754	4,061,866	2,730,381	8,640,356	41,660,406
% of Total Pop	15.5%	9.7%	6.5%	20.7%	100%
% Pop dependent on public sector	92%	72%	82%	87%	81%
Doctors	1,963	6,214	1,528	4,699	27,551
% of total Doctors	7.1%	22.6%	5.5%	17.1%	100%
Public Sector Ratio	1:7259	1:2545	1:4515	1:4176	1:4452
Private Sector Ratio	1:453	1:225	1:469	1:387	1:389
All Nurses	22,427	25,195	12,226	33,345	173,647
% of total nurses	12.9%	14.5%	7.0%	19.2%	100%
Public Sector Ratio	1:352	1:270	1:313	1:325	1:332
Private Sector Ratio	1:94	1:79	1:95	1:110	1:109

Source. Van Rensberg D, van Rensburg N. Distribution of Human Resources. SAHR 1999

Table 13 also illustrates the considerable differentials in human resource ratios for the public and private sector. Only 27% of South Africa's doctors work in the public sector, despite the fact that 81% of South Africa's population are dependent on the public sector. One of the problems with this data is that it calculates the public sector dependent population as those who do not have medical aid. For example in maternal health care services, there is evidence that many women confirm their pregnancy with private GPs, and then access the public sector when they are closer to their delivery date (Pattinson (ed) 2001). Despite this limitation the data does give a general picture in terms of health inequalities between those with medical aid and those who are dependent on the public sector. The most extreme disparity being that in the Western Cape the ratio of the population with medical aid to number of doctors in the private sector is 1: 225. And in the Northern Province, the ratio for someone dependent on the public sector, the ratio is 1: 9780. For nurses for people with medical aid in Western Cape the ratio is 1:79, and for people dependent on the public sector in Mpumalanga the ratio is 1:469. In terms of medical specialists 24,8% work in the public sector, with the public private ratio being 1:3.04 (Van Rensburg & al 1999).

Private Sector

Relatively little is known, or published, about maternal health services in the private sector. Data from the SADHS gives some information. This data includes data showing that only 9% of women give birth in the private facility, although 63% of white South African's give birth in a private facility. The data from Van Rensburg (1999), discussed in the previous section, shows that 72.6% of general practitioners and 75.2% of

medical specialists work in the private sector. As discussed in the context section of this report spending per head in the private sector is considerably higher than in the public sector, but this information has not been broken down in term of maternal health services.

There is also very little data available on the quality of maternal care in the private sector. The only data that gives a clear picture is the caesarean rate of 37.3% from the SADHS 1998 indicates that like private sectors in many other countries in the world, the private sector has unacceptably high levels of caesarean sections. Very few maternal deaths take place in private facilities. In 1998 only 2.8% of maternal deaths occurred in private hospitals (DOH 1999a). This low figure may be partly explained by the fact that very sick women are sometimes transferred to tertiary public facilities. There has also been some speculation about under-reporting in the private sector. These figures may however reflect the socio-economic status of the patients that access private care, and the quality of care given in these institutions.

DISCUSSION

Factors affecting maternal health system outcomes.		
Context	**User Perspective**	**Health System**
Poverty & Inequality HIV Political environment Rights approach	Utilisation Barriers to access Individual, household and community attitudes and decision making Perceptions of Quality of Care Patient satisfaction Community satisfaction with services	Facilities Staff Drugs & Equipment Human Resource Development & Management Health Information Private sector

In the introduction to this report a conceptual framework was outlined that guided the writing of this report (See Figure 1). As with all frameworks, using it necessitates simplifying issues, and separating out areas that are essentially connected, but at the same time it provides a useful way of organising data and information. The conceptual framework used, suggests that poor maternal and perinatal outcomes (in terms of mortality, morbidity and patient satisfaction) that exist in South Africa are the result of the functioning of the health system, as well as user behaviour. Both of these operate in the broader context of the socio-economic and political environment of South Africa. This framework will be used to organise the discussion section of this report.

The Wider Context

In trying to understand and improve outcomes, the wider context in which health services are provided, and in which women and households make decisions need to be considered. There are numerous within the broader context of South Africa, that affect maternal health outcomes; the ones that arise most clearly from this report are poverty and inequality, HIV/AIDS and the overall political environment.

The apartheid system in South Africa created patterns of inequality and poverty in terms of race, gender and geographical disparities, which still exist to a large extent today. The relationship between poverty and poor outcomes is obvious, but the dynamics of the relationship are complicated (Van Lerberghe & De Brouwere, 2001). This relationship has not been the focus of much work in the maternal health field, and is an under-researched area in the health field as a whole. For example, neither the SADHS or the Confidential Enquiry have been able to give data on South Africa's MMR that allows the relationships between poverty and maternal mortality to be explored in detail. It was for this reason that we developed the asset quintile as a way of getting some indication of the relationship between utilisation of services and socio-economic status. The results of this analysis are listed in Figure 11 of the report and show that among the poorest women 27% give birth without the assistance of a doctor or midwife, and presumably at home.

Poverty undoubtedly needs to be tackled, and tackling poverty would undoubtedly positively impact on outcomes. At the same time outcomes can also be considerably reduced by interventions even in extremely poor communities. A number of small scale interventions in South Africa, in poor communities, have shown measurable impacts in

terms of outcomes such as perinatal mortality, while not being able to impact on the problem of poverty in the area (Jackson, 2002; Mbambo, 2002; Hess 1998).

The prevalence of HIV in South Africa is high, and HIV/AIDS undoubtedly affects maternal and perinatal outcomes. According to the Third Interim Report of the Confidential Enquiry, non-pregnancy related sepsis mainly due to AIDS, is now the leading cause of maternal deaths. Aims to reduce the maternal mortality rate in South Africa are now starting to be phrased in terms of reducing the non-Aids related maternal mortality rate. It is important that this does not translate into HIV positive women getting poorer quality care, and their deaths being regarded as inevitable.

HIV/AIDS may also have had a wider impact on maternal health services apart from increasing mortality rates. For example the impact of having more women die, may have an impact on the morale of health care workers. Research carried out in primary health care services in Soweto also seems to suggest that women who are HIV positive are particularly discriminated against by health care workers (Modiba et al, 2002). On the other hand HIV may be having a positive impact on some aspects of maternal health services (Dinat, 2002). Interim findings of the quality of obstetric services at pilot sights for programmes to reduce vertical transmission of HIV, suggests that the approach that has been developed in these programmes may be having an impact on obstetric services as a whole. These programmes place emphasis on women's right to choose and make decisions, which contrasts strongly with the midwives needing to maintain control, which was a theme that emerged out of the work of Jewkes and others and is described in the human quality of care section of this report (Jewkes et al, 1998).

The major structural transformations that has been taking place in the health sector and the public service as a whole since 1994 also form part of broader context in which maternal health services are provided, and attempts to improve outcomes are implemented. As was discussed earlier in this report there have been attempts to switch the emphasis of care from curative to preventive, to increase the importance of Primary health care, and to re-organise services in terms of districts. Overall the emphasis on preventative rather than curative care, and on providing services at a primary health care level are positive. However, the impact of these reforms on maternal health services, which depend on essential obstetric interventions being available at hospital level, is unclear. Implementation of new policies and guidelines would always be difficult in this environment (Gilson et al, 1999).

There is one area in which the overall political context appears to have had limited impact on the area of maternal health services. Much of the political debate in South Africa since 1994 has been phrased in terms of 'rights'. Much of the debate around the libaralisation of the abortion legislation in South Africa for example centred around issue of women's rights to control their bodies. Much of the debate about access to ARV's in the debate around access to treatment has been phrased in terms of right to health care. A huge campaign is currently being run around 'sexual rights' in South Africa. Very little of these rights dialogue has entered into maternal health services, and similarly many of the women's and health NGO's that have advanced these rights arguments in South Africa, have paid little or no attention to maternal health services.

User Behaviour – Access and Choice

While overall there is a high level of utilisation of services, patient related factors are still assessed to contribute to a high number of maternal and perinatal deaths (Pattinson (ed) 2001, DOH 1999a). The reasons behind women's utilisation or non-utilisation of maternal health services are a relatively under-researched area. There are however a number of studies that suggest some explanations of utilisation patterns. There is a tendency of blaming non-utilisation of services, or late utilisation of services on women, and on women's lack of education. Without adequate attention being paid to the socio-economic environment in which women make decisions, and without enough acknowledgement of the fact that women are influenced by other members of their household, and community .More research is needed to explain what the barriers are for women, and what choices they are making, how much information they have, and the impact of other household members and community members.

In terms of barriers to utilisation, with health care being provided free to all pregnant women, some studies have suggested that transport costs may be an economic barrier to women (Smith et al 1999), especially when women go into labour at night and private transport costs are exorbitant (Mokaya & Buchman, 2002).

In terms of choices that women make, qualitative studies described earlier in this report suggest that poor women are particularly victimised by staff in medical institutions (Jewkes, 1998; Hess, 1998), and this may also be an explanation why some poor women are not accessing services. There also seems to be a some evidence that women who give birth at home make this decision after having non-problematic pregnancies and non-problematic previous labours (Ndiweni & Buchman 1998). There is also some work that suggests that poor quality care has some impact on utilisation. One study discussed in this report, quoted a young women stating that she choose to give birth at home due to the fact that she knew that the nurses would shout at her at the hospital (Jewkes et al, 1998; Fonn et al, 1998). While in other countries such as Bangladesh poor quality of care is given as part of the explanation for low levels of utilisation, what is interesting in South Africa is that women appear to be making the decision to attend facilities despite widespread public discourses about poor quality of care, and negative experiences that they may have had in a previous pregnancy.

If women's experience and satisfaction with services are to be taken seriously as an outcome, alongside maternal and perinatal mortality and morbidity, then more research is needed in this area. However, we would argue that the impact of quality of services should not just be considered in terms of a possible explanation of utilisation patterns, but also in terms of women's rights to dignity and good quality health services.

Patient satisfaction with the level of care they receive, as well as family and community satisfaction is increasingly being recognised as important by authors writing about quality maternal health services. It is however widely recognised that patient satisfaction is difficult to measure with standard exit interviews often recording high levels of satisfaction, and focus groups and in-depth interviews revealing a different picture (Schneider & Lush, 2002; Ronsmans, 2001a; Kabakian-Khasholian et al, 2000). Evaluation patient satisfaction with maternal health services have the additional complication of the 'halo' effect whereby women who are interviewed in the post-natal ward, or on discharge from hospital, with a healthy baby in their arms, are much more likely to report higher levels of satisfaction, whatever method used, than women interviewed a number of weeks after the birth (Lavender, 2002).

Health System

Throughout this report the pattern that emerges, despite the incomplete data, is that overall South African maternal health services do have adequate inputs. Most of the key elements of a functioning health service are in place, in many districts and facilities, and yet the MMR is still relatively high. Part of the explanation of this fact lies in the wider context and user behaviour that have been already been discussed in this section of the report. Part of the explanation for the high MMR must also lie within the health system itself.

To refer back to the process indicators developed within the Safer Motherhood Initiative, they recommend targets of a ratio of 1 facility providing Comprehensive Essential Obstetric Care per 500,000 people, and over 80% of women having skilled attendance at birth. Both of these recommended targets are considerably lower than the levels in South Africa. This suggests that lack of facilities or staff are not major indirect causes of maternal deaths.

This argument is supported by the data on the availability of services at primary health care clinics which shows that some problem areas still exist, overall clinics do have drugs, do have referral mechanisms, do provide syphilis testing and do have iron tablets, and that the situation is improving (See Figure 3). Data from both Saving Mothers and Saving Babies, which identify issues such as shortage of ICU facilities and lack of transport as problems, but these are not the leading indirect causes of either maternal or perinatal deaths nationally.

In terms of the legislative and policy environment, South Africa also does well. Abortion is legal, and although there have been some problems with access, availability of the service, and women's knowledge, things appear to be improving (Klugman & Varkey, 2001). There has been legislative and political support for other attempts to improve women's health care as a whole, including free health care for all pregnant women and children under six (Adar & Stevens 2000). Making maternal death notifiable and setting up the Confidential Enquiry into Maternal Deaths is an example of a functioning National Audit, that appears to have an impact at all levels of the maternal health services.

In many of these policy areas there has been a difficulty with implementation and actually changing practice. Part of this may be explained by the restructuring of the health system that is occurring, with a huge range of new policy papers and guidelines being produced, and lines of reporting, and personnel changing significantly. The process of implementation of national guidelines and policies could also probably be improved, but it appears that it is health system problems such as poor quality supervision, inflexible management, and staff unwillingness to change, are a considerable barrier. The data from the Better Birth Initiative illustrated in Figure 6 of this report, suggests that women are still being submitted to unnecessary, unpleasant and sometime dangerous interventions, and that it is difficult to change these practice with interventions.

Following on from this there is evidence from a range of sources that there are considerable problems in the area of human resource development and management within the health sector. This is reflected in the report both in terms of the poor quality of care that is being provided in many cases, but also in examples of training being poor managed, management not allowing positive change in practice and supervision systems not operating. As can be seen in the summary of the results of the Saving

Mothers and Saving Babies (Figure 8 and Figure 9) substandard care by health care workers was identified in more than half the cases of maternal and perinatal deaths.

Health information systems also appear to be problematic with relevant data often not being collected, or data collection not being co-ordinated, or being collected in a way that does not facilitate planning.

The role of the private sector in terms of maternal health should also be considered in terms of the functioning of the health system as a whole. There is conflicting evidence about the quality of care that is being provided in the private sector. The Confidential Enquiry process seems to indicate that very few women die in the private sector. Research evaluating the quality of ANC care given by GP's was of better quality in the private sector than in government clinics (Mokhondo & al, 2002). At the same time the extremely high rate of caesarean sections in the private sector (see Figure 4) suggests that some problems with the quality of care.

Increased attention is now being paid to public-private partnerships with the health system as a whole, and within maternal health services. Fore example the work that is being done in Mowbray Hospital, and the research project that looked at the potential role of private GP's in providing ANC Care (Bergman, 2002; Mokhondo et al, 2002).

LIMITATIONS

The impact of AIDS on maternal health services has not been addressed in any detail, nor has the issue of PMTCT. This is a serious omission as HIV/AIDS is now the leading cause of maternal mortality in South Africa. This omission of the issue of PMTCT was partly due to the fact that a number of detailed evaluations of the PMTCT are currently underway.

Funding and resource allocation for maternal health has also not been looked at in the rapid appraisal. This was mainly due to the lack of desegregated data. Similarly it would have probably been more informative in terms of looking at issues of inequality to look at intra-provincial but this data was also not easily available. This was particularly true of data collected in the SADHS.

Much of the data that is needed to understand and evaluate the maternal health system was not available, or not easily available, and certainly not in the possession of policy makers and administrators working in maternal health. Geographical mapping of services, in relation to populations, appears not to have been done in any systematic way. Nor is very much known about human resource distribution, although this problem appears to be in the process of being rectified.

Information on the private sector in South Africa is also scarce. Apart from SADHS figures on utilisation of the service, c/section rates, and the low levels of maternal deaths in private institutions, little else appears to be available that looks at the quality of care, user perspectives and organisation of maternal health services in the private sector.

Overall a conclusion of the report is that there are severe problems with health information in maternal health services, in terms of what is collected, how it is collected and how the information is used. There also seems to be severe problems of communication between policy makers and administrators working in the MCWH Directorates and the Health Information directorates in the Departments of Health. All of these factors have inhibited our ability to paint a complete picture as we would have liked.

FUTURE RESEARCH

A number of areas of future research have been identified in the discussion and limitations section of the report. These are the following:

- Developing a better understanding of user perceptions; user-provider interactions; how nurses construct their professional identities; and how the wider health system, and various levels of the system, affect all of these issues.

- Exploring the possibility of using SAMM/Near Miss Audits, by interviewing women who survive, to obtain more information about patient related factors leading to severe acute morbidity

- Household and community based work to understand individual, household and community attitudes towards maternal health services, barriers to access, and levels of knowledge.

- The impact of decentralisation, and the prioritisation of PHC, on services such as maternal health, which combine the need for good PHC with the need for good quality hospitals, a functioning referral system and specialist care in some circumstances.

- Exploring the issue of implementation of National Guidelines. Who are the key players? What are the key channels of communication? What are the processes that take place? How could implementation be improved?

- Evaluating the success of the Confidential Enquiry. Identifying the key factors that have enabled the process to work.

- Funding and resource allocation

- The private sector and Public-Private Partnerships

CONCLUSIONS

One of the primary aims of carrying out this rapid appraisal of maternal health services in South Africa was to look at the contributions of bringing a health system understanding to maternal health services, and looking at what maternal health services can tell health system researchers about the functioning of the health system as a whole.

The findings of this report indicate that many of the problems that are facing maternal health systems are distinctly systemic. As is increasingly being recognised by those working in the field, small scale interventions at a hospital level will always be limited in what they can achieve if these wider systemic problems are not tackled.

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