

# The epidemiology of incomplete abortion in South Africa

Helen Rees, Judy Katzenellenbogen, Rosieda Shabodien, Rachel Jewkes, Sue Fawcus, James McIntyre, Carl Lombard, Hanneke Truter and the National Incomplete Abortion Reference Group

**Objective.** To describe the epidemiology of incomplete abortion (spontaneous miscarriage and illegally induced) in South Africa.

**Design.** Multicentre, prospective, descriptive study.

**Setting.** Fifty-six public hospitals in nine provinces (a stratified, random sample of all hospitals treating gynaecological emergencies).

**Patients.** All women of gestation under 22 weeks who presented with incomplete abortion during the 2-week study period.

**Main outcome measures.** Incidence of, morbidity associated with and mortality from incomplete abortion.

**Main results.** An estimated 44 686 (95% CI 35 633 - 53 709) women per year were admitted to South Africa's public hospitals with incomplete abortion. An estimated 425 (95% CI 78 - 735) women die in public hospitals from complications of abortion. Fifteen per cent (95% CI 13 - 18) of patients have severe morbidity while a further 19% (95% CI 16 - 22) have moderate morbidity, as assessed by categories designed for the study which largely reflect infection. There were marked inter-provincial differences

and inter-age group differences in trimester of presentation and proportion of patients with appreciable morbidity.

**Conclusions.** Incomplete abortions and, in particular, unsafe abortions are an important cause of mortality and morbidity in South Africa. The methods used in this study underestimate the true incidence for reasons that are discussed. A high priority should be given to the prevention of unsafe abortion.

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Incomplete abortions, whether induced or spontaneous, are common reasons for admission to gynaecological wards in South Africa and many other countries. Internationally it is estimated that approximately 20 million unsafe induced abortions are performed yearly, i.e. one unsafe abortion for every 10 pregnancies.<sup>1</sup> Induced abortion is one of the leading causes of maternal death worldwide, causing an estimated 13% of pregnancy-related deaths. For those women who survive, it is a major cause of maternal morbidity. It is estimated that in Africa, 20 - 35% of maternal deaths are attributable to unsafe abortion practices.<sup>2</sup> In South Africa official estimates of the incidence of illegal abortion from the old Department of National Health and Population Development (DNHPD) range between 6 000 and 120 000 compared with 800 - 1 000 legal abortions.<sup>3</sup>

Data on illegal abortion are notoriously difficult to collect because of the legal and cultural constraints that often exist.<sup>4-7</sup> Relatively little is known about the magnitude of health problems caused by induced abortions in Africa where, in most parts, the procedure is illegal.<sup>8</sup> The social and cultural context in which abortions are performed is often not understood and little is known of the characteristics of women who resort to induced abortion. A major challenge is to identify the induced abortion cases in such an environment. Over the past few years the World Health Organisation has recognised that the high incidence of abortion and its sequelae is central to women's health. In order to research this sensitive health problem, the WHO has recommended that the focus of research move from 'illegal' or 'induced' abortions to 'unsafe abortions', i.e. the termination of pregnancy performed or treated by untrained or unskilled persons.<sup>9</sup> Although this definition emphasises the effect of the procedures on women, causes of unsafe abortion include barriers to access to health services, such as poverty or geographical distance.

Health facility records are one option for identifying cases of unsafe abortion, but tend to underestimate the rate. They may not include those patients who have uncomplicated induced abortions, those who die before reaching the hospital, poorer women and those with poor access to services. The results therefore do not accurately reflect what is happening in the population. Nevertheless, health facilities are a convenient place to locate cases. Population-based surveys are an alternative, but result in substantial underreporting.

In South Africa there have been no systematic attempts to investigate the epidemiology of incomplete abortion, unsafe/induced abortions or abortion-related deaths. Estimates are difficult to make because abortion is illegal,

Reproductive Health Research Unit, Department of Obstetrics and Gynaecology, University of the Witwatersrand, Johannesburg

Helen Rees, MB BChir, MA, MRCGP

James McIntyre, MB BS, MRCOG

Centre for Epidemiological Research in Southern Africa, Medical Research Council, Tygerberg, W Cape

Judy Katzenellenbogen, MSc (Med), BSc Hons, BSc (Occ Ther)

Rosieda Shabodien, BSc (Physio)

Rachel Jewkes, MB BS, MSc, MFPHM, MD

Carl Lombard, PhD

Hanneke Truter, MSc

Department of Obstetrics and Gynaecology, Groote Schuur Hospital, Cape Town

Sue Fawcus, MA, MB BS, MRCOG

The National Incomplete Abortion Reference Group's members come from each of the academic Departments of Obstetrics and Gynaecology in South Africa: Professor Hennie Cronje, University of the Orange Free State; Dr Paul Duminy, University of Stellenbosch; Professor Martin Marivate, MEDUNSA; Professor Jack Moodley, University of Natal/MRC Pregnancy Hypertension Research Unit; Professor Bob Pattinson, University of Pretoria

and routine data on abortion collected at health facilities are scanty and often incomplete.<sup>7</sup> It is widely accepted that maternal mortality figures are underreported, so that the real impact of unsafe abortion practices on maternal mortality and morbidity is difficult to quantify. Furthermore, there is no standardised approach to the collection of maternal morbidity data.

In 1993 interested clinicians and researchers formed a group to co-ordinate a national initiative aimed at systematically researching the impact of unsafe abortion practices in South Africa. This group developed a series of research projects aimed at improving the understanding of the problem and at suggesting appropriate interventions in this field. The research questions and methodology were designed co-operatively by the group, who also assisted with logistic aspects of the data collection.

The research initiative had four components: (i) the epidemiology of women admitted to public hospitals with an incomplete abortion; (ii) the hospital management of unsafe abortion;<sup>10</sup> (iii) women's experiences of illegal abortion;<sup>11</sup> and (iv) an analysis of the economic costs of induced abortion to the public sector in South Africa.<sup>12</sup>

This paper reports on the first of the studies, the epidemiology of incomplete abortion in South Africa.

## Methods

This hospital-based study prospectively collected descriptive data on all women who presented with incomplete abortions to selected public hospitals in South Africa. All the public hospitals in the nine provinces of South Africa responsible for treating women with gynaecological problems in 1994, were included in the sampling frame. The sample design was a stratified (non-proportional) random one, with stratification by province and hospital size ( $\leq 500$  beds, 501 - 799 beds,  $> 799$  beds). The sample included all public hospitals with  $> 800$  beds and a random selection of smaller hospitals, stratified by province. Altogether 61 public hospitals were included in the sample (19 hospitals with  $\leq 500$  beds, 21 hospitals with 501 - 799 beds and 21 with  $> 799$  beds).

The data from all but 3 hospitals were collected during the last fortnight of September 1994. Because of industrial action, 3 hospitals collected data during the last 2 weeks of October. All women who presented with incomplete abortion, including spontaneous or induced abortions, to all wards of the hospital, and who were under 22 weeks' gestation were included in the study. Women admitted with threatened abortions or with legal abortions were excluded from the study.

A standardised, pre-tested, data capture sheet on all women who fitted the study criteria was completed by health personnel. The information collected was almost the same as is routinely recorded for such patients in hospital records. The data sheet included information on demographic characteristics, reproductive history, contraceptive use, clinical picture on admission, treatment received and outcome, and was designed to be completed from the case notes. Only hospital folder numbers were recorded on the data sheet for the duration of hospital stay, after which all identifiers were removed to ensure anonymity.

A clinician based at each hospital was responsible for data collection, with the support of the study fieldworkers. Information was collected on all women presenting with incomplete abortions at all possible hospital sites, e.g. the intensive care unit, gynaecological units, medical wards and female surgical wards. After completion of the main study, data were collected on a stratified random sample of 6 hospitals to verify that all cases had indeed been included in the study. Fieldworkers traced women from theatre and ward admission books, and hospital records were examined. A standard data capture sheet was used to abstract information which would allow an assessment of the state of underreporting and systematic bias. All cases of maternal death were verified with the hospitals concerned. Ethical approval was obtained from the relevant committees of participating institutions.

The study investigators developed three clinical severity categories for the purpose of data analysis and interpretation. These are shown in Table 1. Where appropriate, calculations are based on population estimates for 1994 of 11 620 000 women aged 12 - 49 years, 1 156 000 live births<sup>13</sup> and 7 000 recorded stillbirths<sup>14</sup> (this is known to be an underestimate). Adjustment for the sampling design was made and weighted percentage distributions were calculated. Associations between clinical findings and patient characteristics were tested by means of chi-squared tests adjusted for the sampling design and cluster effect of the hospitals.

**Table 1. Definition of severity categories**

Severity categories	Definition	
Low	Temp. $\leq 37.2^\circ\text{C}$	and
	No clinical signs of infection	and
	No system or organ failure	and
	No suspicious findings on evacuation	
Moderate	Temp $37.3 - 37.9^\circ\text{C}$	or
	Offensive products	or
	Localised peritonitis	
High	Temp. $\geq 38^\circ\text{C}$	or
	Organ failure	or
	Peritonitis	or
	Pulse $\geq 120$	or
	Death	or
	Foreign body/mechanical injury on evacuation	

## Results

The response rate from the hospitals was 92% (56/61). From these, data capture sheets on 803 women were returned. After adjustment for sampling, it is estimated that 44 686 (95% CI 35 633 - 53 709) women per year are admitted to South Africa's public hospitals with incomplete abortions that are either spontaneous miscarriages or illegally induced. The incidence of women with incomplete abortion who present to hospital per 100 000 women aged 12 - 49 years is therefore 385 (95% CI 307 - 462) and the rate per 1 000 live births is 39 (95% CI 31 - 46). In the 6 hospitals covered in the validation study, an average of 35% (range 16.6 - 50%) more cases was identified than the number of data capture sheets returned.

The age range of the women in the sample was 14 - 49 years, with a mean of 27.7 years (SD 6.8). Adolescents (14 - 20 years) formed 15.3% (122) of the sample. Using South Africa's old race categories, 84% of the women were black, 11% coloured, 4% Asian and 1% white. The proportion who were married was 29.4%, 66.8% were single and the rest divorced or widowed. Of those for whom data were available, only 53.5% had ever used contraception.

The clinical profile of the women on admission is shown in Table II. The median parity was 1 (range 0 - 8) and the interquartile range 1 - 2. According to the admitting doctors' best clinical estimate, 61.3% (494) of women were in the first trimester of pregnancy. There was no difference in the percentage in the lowest severity category between first- and second-trimester patients (both 66%). The relationship between demographic characteristics of the women and clinical findings is detailed in Tables III - V, which show variations in trimester status, severity and findings on evacuation by province, age group and race category, respectively. Examination of parity revealed that women of lower parity were significantly more likely to have offensive products than those of higher parity ( $P = 0.009$ , Mantel-Haenszel chi-square). Women under the age of 20 years were found to be three times more likely to have offensive products than those over 20 (odds ratio = 3.0); they were also significantly more likely to have evidence of mechanical injury ( $P = 0.006$ ).

On admission the median temperature was 37°C (range 35.4 - 40.3°) and the interquartile range was 36.7 - 37.2°C. The median pulse rate was 84/min (range 60 - 146) and the interquartile range 80 - 92/min. The median diastolic blood

pressure was 70 mmHg (range 0 - 120) and the interquartile range 66 - 80 mmHg. The median haemoglobin level was 11 mg/dl (range 3.1 - 17.8) and the interquartile range 10 - 12 mg/dl.

**Table II. Clinical findings on admission**

	No.*	%	95% CI (of %)
Signs of infection (not exclusive)			
None	627	78.1	75.7 - 81.6
Offensive discharge	129	16.1	13.7 - 19.0
Tender uterus	96	12.1	10.2 - 15.0
Localised peritonitis	17	2.1	1.2 - 3.4
Generalised peritonitis	2	0.2	0.0 - 0.9
Septicaemic shock	4	0.5	0.1 - 1.3
Tetanus	—		
Signs of organ failure (not exclusive)			
None	777	96.8	95.3 - 97.9
DIC	4	0.5	0.1 - 1.3
Respiratory distress syndrome	1	0.1	0.0 - 0.7
Hypovolaemic shock	15	1.9	1.1 - 3.1
Renal failure	2	0.2	0.0 - 0.9
Findings on evacuation (not exclusive) (N = 753)			
Offensive products	140	18.4	15.8 - 21.6
Mechanical injury to genitalia	29	3.9	2.6 - 5.5
Foreign body	9	1.2	0.6 - 2.4
Severity categories (exclusive)			
Low	533	66.4	62.3 - 69.5
Middle	149	18.6	16.1 - 21.6
High	121	15.0	12.6 - 17.7

\* N = 803, unless otherwise stated.

**Table III. Interprovincial variations in percentage distributions of clinical findings (all figures after adjustment for sampling)**

	E Cape	Mpumalanga	Free State	Gauteng	KwaZulu-Natal	N Cape	N Province	North-West	W Cape
No. of cases	128	105	18	348	548	7	276	63	220
in 2 week period (%)	(7.4%)	(6.1%)	(1.6%)	(20.3%)	(24.5%)	(0.5%)	(16.1%)	(3.7%)	(12.8%)
(approximate 95% CIs†)	(0.5 - 14.4)	(0.7 - 16.0)	(0.1 - 2.8)	(8.9 - 31.6)	(13.4 - 50.5)	(0.1 - 1.5)	(2.4 - 33.8)	(1.2 - 8.1)	(1.1 - 24.5)
Cases per 100 000 women aged 14 - 64 years*	6.5	13.2	2.3	15.8	21.0	3.8	19.2	6.4	18.6
(approximate 95% CIs)	(0.9 - 12.0)	(0.01 - 34.5)	(0.01 - 5.9)	(6.28 - 25.4)	(7.6 - 34.3)	(0.04 - 11.4)	(0.007 - 42.1)	(0.01 - 13.7)	(2.0 - 35.1)
Proportion in second trimester	29.0%	50.6%	88.5%	42.8%‡	23%‡	71.4%	34.2%	47.2%	29.1%
Severity categories									
Low	91.0%	68.6%	88.5%	56.4%§	75.8%	100%	67.7%	83.2%	71.9%
Middle	7.4%	30.2%	11.5%	22.9%§	11.6%	—	16.0%	9.9%	13.8%
High	1.6%	1.2%	—	20.6%§	12.6%	—	16.3%	6.9%	14.3%
Findings on evacuation (not exclusive)									
Offensive products (N = 748)	8.0%¶	—	—	22.7%	22.9%	—	14.8%	18.2%	7.5%
Mechanical injury (N = 749)	—	—	—	2.7%	5.7%	—	11.3%	3.0%	2.1%
Foreign body (N = 750)	—	—	—	2.0%**	0.5%	—	—	—	—

\* Source: 1993 data. Development Bank of South Africa. South Africa's nine provinces: a human development profile. April, 1994.

† Since the sample size for certain provinces is very small the precision of the estimate is low. This is reflected in the 'large' standard errors and the wide confidence intervals. For the provinces where the lower confidence interval was 0 the lower limit was taken as the raw count divided by the estimated total of 1 714 x 100%, and the taking of the lower 95% confidence interval limit of this %.

‡ Significant difference in the proportion of cases in the second trimester,  $P < 0.008$  ( $\chi^2$  test).

§ Significant difference in the proportion of cases in each severity category between Gauteng and the Western Cape, Eastern Cape and Northern Province,  $P < 0.001$  ( $\chi^2$  test).

¶ Significant difference in the proportion of cases with offensive products between provinces,  $P < 0.002$  ( $\chi^2$  test).

|| Difference between provinces not significant,  $P < 0.055$  ( $\chi^2$  test).

\*\* Difference between provinces not significant,  $P < 0.599$  ( $\chi^2$  test).

**Table IV. Percentage distributions of clinical findings by age group**

	Under 21 yrs (95% CIs) (N = 122)	21 - 30 yrs (95% CIs) (N = 410)	Over 30 yrs (95% CIs) (N = 264)	P-value ( $\chi^2$ test)
Proportion of cases	15.3% (12.6 - 17.7)	51.5% (47.7 - 54.7)	33.2% (30.4 - 37.1)	—
Proportion in second trimester	47.5% (30.4 - 56.8)	37.1% (32.7 - 42.4)	37.5% (31.7 - 44.3)	0.099
Severity categories				
Low	61.5% (52.3 - 70.3)	67.6% (62.7 - 72.1)	65.9% (57.5 - 70.0)	0.282
Middle	18% (11.9 - 26.5)	17.3% (13.9 - 21.6)	21.2% (16.3 - 26.1)	
High	20.5% (14.0 - 29.2)	15.1% (11.6 - 18.9)	12.9% (9.0 - 17.7)	
Findings on evacuation (not exclusive)	N = 110	N = 382	N = 249	
Offensive products	35.4% (26.6 - 45.2)	15.9% (12.2 - 19.6)	15% (11.7 - 20.0)	< 0.0001
Mechanical injury	9.7% (5.1 - 17.2)	3.1% (1.4 - 4.8)	2.4% (0.8 - 5.2)	0.006
Foreign body	1.8% (0.2 - 6.4)	1.3% (0.4 - 3.0)	0.8% (0.1 - 2.9)	0.588

Of the 803 women, 60 (7.5%) had definitely induced their abortions. Some women admitted inducing the abortion while others had objective evidence of interference. This included foreign objects such as sticks and catheters in the vagina, cervix or uterus, or signs of injury to these areas.

Three maternal deaths were reported by participating hospitals during the 2-week study period. After adjustment for sampling, it is estimated that 425 (95% CI 78 - 735) women die annually in South Africa after presenting to

public hospitals with incomplete abortion, giving a maternal mortality rate of 37/100 000 live births (95% CI 7 - 64). The women who died were aged 15, 21 and 27 years; all were black and one had two children. All died of complications of illegal abortion, with one reporting having used a mixture of Dettol, blue soap and Super Rose lotion to induce the abortion.

## Discussion

This study revealed that each year a large number of women present to public hospitals with incomplete abortion. Many experience appreciable morbidity and a small but significant number die. The hospital-based nature of the study means that data are not available for women presenting to private GPs or hospitals, those who do not seek formal care or those who die from complications outside of hospital.

The study design can legitimately be criticised. It would have been preferable if the participation rate had been 100%; however, large multicentre studies are unusual in developing countries, as they present difficulties in co-ordination, especially on a low budget. In this context, a 92% participation rate is very good. The non-participating hospitals were in a variety of provinces and were from all three hospital-size strata. There is no reason to believe that they would have unduly biased the final results.

Another concern in the interpretation of the data was whether the 2 weeks chosen were 'typical' or whether variations could have been predicted as part of an annual pattern. To avoid this, admissions with incomplete abortion to two large teaching hospitals were examined over a 2-year period for monthly variations in order to determine seasonal fluctuations in cases. No consistent variations were found.

The validation study was retrospective, but this normally has the effect of reducing the number of cases which can be traced, the opposite effect from that which was found. The detected underreporting is indicative of failures in quality control; these resulted from the extensive devolution of data

**Table V. Percentage distributions of clinical findings by race category**

	Black (95% CIs) (N = 660)	Coloured (95% CIs) (N = 88)	Indian (95% CIs) (N = 33)	White (95% CIs) (N = 8)	P-value ( $\chi^2$ test)
Proportion of cases	83.7% (81.0 - 86.3)	11.2% (9.1 - 13.6)	4% (2.7 - 5.6)	1% (0.4 - 2.0)	
Proportion in second trimester	40.6% (36.9 - 44.3)	30.7% (21.3 - 41.4)	12.5% (15.6 - 48.7)	30.3% (0.3 - 52.7)	0.083
Severity category					
Low	64.4% (60.7 - 68.1)	70.5% (59.7 - 79.7)	75.8% (57.7 - 88.9)	100% (63.1 - 100)	0.139
Middle	19.2% (16.2 - 22.3)	20.5% (12.6 - 30.4)	9.1% (1.9 - 24.3)		
High	16.4% (13.6 - 19.2)	9.1% (4.0 - 17.1)	15.2% (5.1 - 31.9)		
Findings on evacuation (not exclusive):	N = 610	N = 85	N = 33	N = 8	
Offensive products	19.9% (16.8 - 23.4)	9.4% (4.1 - 17.7)	18.2% (7.0 - 35.5)	—	0.065
Mechanical injury	4.3% (2.8 - 6.3)	2.4% (0.3 - 8.2)	—	—	0.484
Foreign body	1.4% (0.4 - 2.7)	—	—	—	0.693

collection to the centres. The vigour with which validation was pursued in this study contrasts markedly with that of most other hospital-based studies of abortion, where it is not even mentioned. The authors are confident that the findings reported in this paper err on the side of underestimation of the true incidence of incomplete abortion.

Ninety-one per cent of doctors asked the women whether they had ever used contraception before. Of those women for whom data were available, 53.5% reported that they had used contraception. Although South Africa's estimated contraceptive prevalence rate of 53%<sup>15</sup> is higher than those of other countries in the region, our findings suggest that as in other sub-Saharan African countries, ever-use of contraception is lower in abortion patients.<sup>16-18</sup> In a 1987 review of contraceptive practice in sub-Saharan Africa, Frank<sup>19</sup> shows that non-use of contraception is a result of lack of motivation rather than lack of availability, and depends largely on local beliefs and values. Further research and policy development are needed to improve women's access to and use of family planning services. A critical area to be emphasised is that of post-abortion family planning.

The age distribution of women admitted with incomplete abortions is similar to the age distribution of antenatal clinic attenders. The overall teenage pregnancy rate in South Africa is approximately 15%, and 15.3% of the women in this sample were < 21 years. Teenagers were, however, more likely to present with offensive products than were older women. This is similar to findings in a Kenyan study where 53% of septic abortions were in patients under age 20.<sup>20</sup>

Single women represented 66.8% of the sampled group. This very high figure may reflect the unusually low marriage rates in South Africa. The definition of 'single' was left to the interpretation of the participating doctors, so it is difficult to comment on this. Although the figures in this study were too small to draw any conclusions about maternal death risks, other studies in Zimbabwe<sup>21</sup> and Kenya<sup>22</sup> have shown that being single is a risk factor for both maternal and abortion-related deaths.

An unexpected finding in this study was the trimester status of the women being admitted. The study population comprised women admitted with an incomplete abortion up to 22 weeks' gestation. According to the clinical judgement of the admitting doctors, 38.7% were in the second trimester. The high proportion of second-trimester abortions has been recorded in other hospital-based African studies in Malawi (29%), Uganda (35.9%) and Zambia (29%).<sup>23</sup> Second-trimester abortions are more likely to have been induced than first-trimester ones, as spontaneous pregnancy loss in the second trimester is lower. Delay in procuring an abortion until the second trimester may be caused by delay in the diagnosis of pregnancy and/or delay in attempts to induce abortion. Some local anecdotes suggest that women will only attempt to induce an abortion when the uterus is larger. It is not possible to determine exactly the percentage of second-trimester abortions caused by interference; however, the findings suggest that it may be considerable. The observed inter-provincial variations in the proportion of cases in the second trimester cannot be explained by differences in, for example, the prevalence of biological causes of second-trimester

abortion, such as HIV or STD infections, or of twin pregnancies. In the former case one would expect second-trimester rates to be higher in areas such as KwaZulu-Natal, where these are more prevalent. This is not shown in the data.

Similarly, the relatively low proportion of first-trimester abortions raises questions about women's health-seeking behaviour in response to these. What is clear is that many women with first-trimester abortions do not seek help from hospitals. Reasons for this include acceptance of a heavy late period as a normal variant, with referral only if they become sick. Women may choose to present to clinics or to GPs, where they may be managed conservatively if no clinical complications exist. They may not choose to seek help through traditional facilities, but may opt instead to use other practitioners, such as traditional healers, to address their problems. Lastly, some women may die before receiving treatment. This group of women needs to be studied in more depth. If women are waiting for complications to occur before they present then a community education programme may influence at least this group of women who are having unsafe abortions.

In this study, 8% of women had definitely induced their abortions. Women who had objective evidence of interference, including mechanical injury or foreign bodies, or who reported having induced were included in this category. One of the three maternal deaths that resulted from illegal abortion was a 15-year-old girl; the others were aged 21 and 25 years respectively. While this statistic is not significant on its own, studies done elsewhere in Africa have shown that young women are over-represented among abortion deaths.<sup>22,24</sup> With a teenage pregnancy rate in South Africa of 330/1 000 women under age 19 years,<sup>25</sup> it is of concern that these same women are more likely to have illegal and unsafe abortions, with all the attendant morbidity thereof. All three women who died were black, according to South Africa's old race classification. Study of the variations in clinical findings by race reveals substantial differences between blacks and women of other races in the trimester at presentation, proportion of unsafe cases and proportions with offensive products or other evidence of interference; this suggests that blacks were much more likely to have complications. None of these differences reached statistical significance, but this was most probably due to the small number of women of other races in the study. The differences were probably a result of interracial differences in socio-economic circumstances.

The analysis of inter-provincial differences reveals significant differences in the number of cases per 100 000 women aged 14 - 64, in the proportion in the second trimester, in the proportion of cases in each severity category and in the proportion of cases with offensive products. Some of the variations were particularly striking: for example, the Western Cape has only 14.3% of admissions in the high-severity category and 3.8% in the middle-severity category, while the province with the highest unsafe abortion rate is Gauteng. In this province, 20.6% of admissions fall into the high-severity category and 22.7% into the middle-severity category. The high proportion in Gauteng may be explained by self-referral by women from other provinces or it may be due to the socio-economic circumstances of the population, as 30% of Gauteng's black

population currently live in shacks. The uncertainty in the lives of women living under these circumstances may cause them to resort to illegal abortions. In addition, women who have induced their abortions delay presenting to the health services because of fear of criminalisation.

Using these middle- and high-severity categories as indicators of unsafe abortion, it is estimated from these data that 12 847 women can be regarded as having had an unsafe abortion. The management of unsafe abortion places a considerable burden on health service resources<sup>10</sup> and on budgets.<sup>12</sup> In this study it was not possible to examine the long-term effects of unsafe abortions. These may be substantial and include chronic pelvic pain and infertility, with all their important social sequelae. It may also reflect a trend whereby women defer seeking medical care until they experience complications; this is also suggested by the low first-trimester admission rate.

In conclusion, although reliable statistics on the incidence of abortion are notoriously difficult to determine, this national hospital-based study has documented comprehensive data on the incidence of incomplete abortions in South African hospitals. It is a major concern that 34% of hospital admissions for incomplete abortions are for unsafe ones. This study shows that unsafe abortion in South Africa is a serious health problem that significantly strains overstretched health services and thus utilises significant amounts of the health budgets. This problem reflects inadequate use of contraception and problems with access to services after incomplete abortion. It also questions the appropriateness of current abortion legislation.

What is clear from the data collected is that several initiatives are required to intervene in the potentially preventable problem of unsafe abortion. Firstly, unplanned pregnancy should be minimised by the introduction of educational and services interventions, including a post-abortion care package that could increase contraceptive usage. Secondly, there should be a re-evaluation of the clinical management, including the introduction of appropriate technologies, so that access to services can be improved. Thirdly, the health education of women and communities about the risks of unsafe abortion practices and the importance of early referral to avoid complications need to be promoted. Prevention of unsafe abortion raises more complex questions.

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