

# Healthcare attendance patterns by pregnant women in Durban, South Africa

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## Abstract

### Background

High rates of perinatal mortality and morbidity and maternal mortality in South Africa remain a major problem. The Saving Mothers and Saving Babies Reports identified patient-related factors as possible causes. Among the patient-related factors was non-attendance, or attendance late in pregnancy, for antenatal care in public hospitals. It would appear that pregnant women confirm their pregnancies by visiting general practitioners, but do not attend antenatal care in the public sector. The aim of this study was to determine healthcare attendance patterns among pregnant women in Durban, South Africa.

### Methods

This was a descriptive study. Participants were recruited and categorised into “early booker”, “late booker” and “unbooked in labour” groups. All the participants were interviewed individually using a structured questionnaire.

### Results

The majority of participants presented for formal “booking” late in pregnancy; 47.9% “booked” at a gestational age of six months after the last menstrual period. Among the “early bookers”, the majority (94.4%) had confirmed their pregnancy by four months of amenorrhoea, and 60.6% of these confirmed their pregnancies within the public health sector. All the “early bookers” began antenatal care prior to the 20<sup>th</sup> week of gestation. A total of 66.9% of the “late bookers” and 66.7% of the “unbooked” women also had their pregnancies confirmed at four months amenorrhoea, but 49.0% of the “late bookers” and 59.8% of the “unbooked” women confirmed their pregnancies in the private health sector. The “late bookers” also showed a delay of two to three months between confirming the pregnancy and booking visits. Of the women in this study, 49% visited a general practitioner (GP) to confirm the pregnancy after two to four months of amenorrhoea. This figure rose to 53.0% if only the “late bookers” and the “unbooked” were analysed. Further, 35.3% visited a GP more than once, either for antenatal care or because of ill health.

### Conclusion

It is imperative for GPs to understand the role of antenatal care and to refer pregnant women appropriately.

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## BACKGROUND

High rates of perinatal mortality and morbidity in South Africa remain a major problem despite all preventative measures to reduce them. Thus far, an effort to stress the importance of antenatal care to pregnant women in South Africa has not been satisfactory.<sup>1,2</sup> A number of clinical audits have highlighted the problem of the "unbooked" woman as the commonest avoidable factor in both maternal and perinatal mortality and morbidity in the country.<sup>1,2</sup>

In the *Saving Babies* report, the avoidable factors for perinatal deaths were identified as follows: patient related (39.3%); health worker related (24.6%); and administrative (14%).<sup>2</sup> The lack of antenatal care, late initiation of antenatal care and infrequent attendance at antenatal clinics contributed to 20% of patient-related factors.<sup>2</sup> In the *Saving Mothers* report, avoidable factors in maternal deaths were missed opportunities and substandard areas of care.<sup>1</sup> Here also, patient-oriented factors contributed the most, viz. 48.8%.

Both reports indicate that the specific reasons for the lack of antenatal care attendance or for the delay in initiation of antenatal care are unknown. However, a study done in Johannesburg identified that pregnant women either do not attend or commence antenatal care late in their pregnancies.<sup>3</sup> The reasons identified included tardiness, still intended to book, unaware of pregnancy, attending a private doctor, too busy working or studying, fear of parents knowing of the pregnancy and negative attitudes of nursing staff towards adolescent pregnant women.<sup>3</sup> Another interesting reason stated was that of financial problems, despite the fact that antenatal care in the public sector has been provided free of charge in South Africa since 1995.<sup>3,4</sup>

It is well known that interventions may lead to changes in practice in healthcare behaviour. Jeffrey *et al.* conducted a study in Pretoria in which they showed that it is possible to shift the commencement of antenatal care to an earlier gestational age by a mere

change in the healthcare system, rather than by a change in patient behaviour, by commencing antenatal care at the visit when the pregnancy is confirmed.<sup>5</sup> Prior to this study, Mabale *et al.* showed that women in Atteridgeville, Pretoria confirmed their pregnancies early, i.e. by three months, on suspicion of pregnancy following the symptom of amenorrhoea.<sup>6</sup> Such studies have not been done in KwaZulu-Natal, which is a largely rural province. This study therefore aimed to establish the patterns of medical care in early pregnancy prior to attendance for antenatal care in public healthcare facilities, i.e. at the King Edward VIII Hospital (KEH) and its referring hospitals and clinics. It also aimed to test the hypothesis that women who are regarded as "unbooked" or "late bookers" are wrongly labelled, because they have actually received some form of antenatal care in the private sector prior to presenting for formal booking in the public sector but lack documentation as a form of "evidence".

**Table I:** Maternal socio-demographic characteristics according to booking status

	Early booker (<20/40)	Late booker (>20/40)	Unbooked (in labour)	Total	p value
	N (%)	N (%)	N (%)		
<b>Educational level</b>					0.10
Grade 1-7	4 (2.0)	13 (6.0)	16 (5.3)	33 (13.2)	
Grade 8-12	53 (20.5)	85 (36.6)	51 (20.5)	189 (77.6)	
Nil	0 (0)	4 (1.3)	0 (0)	4 (1.3)	
Tertiary	3 (1.0)	8 (4.0)	8 (3.0)	19 (8.0)	
<b>Employment status</b>					0.25
Not employed	39 (15.2)	55 (22.8)	34 (12.9)	128 (50.8)	
Scholar	6 (2.6)	25 (9.6)	13 (4.6)	44 (16.8)	
Self-employed	3 (1.0)	5 (2.0)	5 (1.7)	13 (4.6)	
Semi-skilled	6 (2.6)	20 (9.2)	16 (7.3)	42 (19.1)	
Skilled	6 (2.0)	5 (4.3)	7 (2.3)	18 (8.6)	
<b>Residential type</b>					0.17
Informal settlement	10 (3.3)	31 (10.2)	23 (7.8)	64 (21.1)	
Rural	2 (0.7)	12 (4.0)	10 (3.3)	24 (7.9)	
Suburb	18 (5.9)	33 (11.0)	18 (6.0)	69 (22.8)	
Township	41 (13.5)	69 (22.8)	36 (12.0)	146 (48.2)	
<b>Age (years)</b>					
Mean	25.7	26.2	26		
Median	24	25	25		
Range	17-39	16-41	15-44		

Individual p values were greater than the figures for each category given in the table.

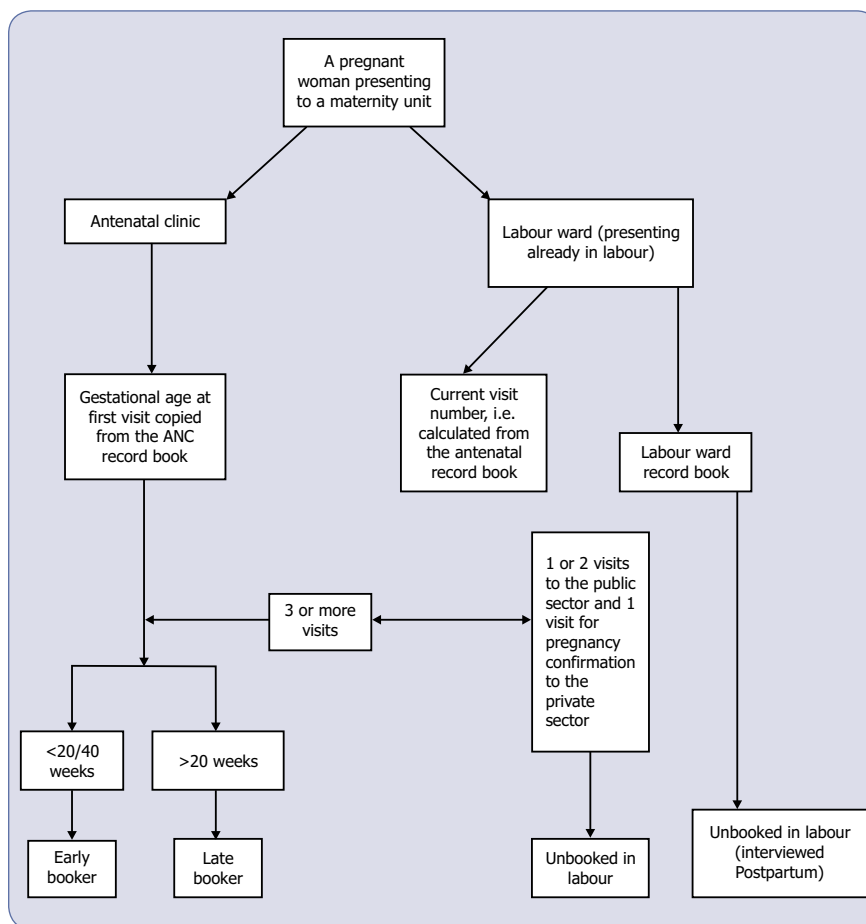
## METHODS

This was a descriptive study conducted over a one-year period. Permission to conduct the study was obtained from the heads of the various institutions concerned. The participants were chosen randomly when they presented either for antenatal care at the clinic or in labour to the labour ward in their respective institutions (see Table I). No randomisation method was used.

The study population was not controlled for any demographic variable, e.g. age or parity. However, each woman's socio-demographic details were obtained and entered as part of the data that was subsequently analysed. The only exclusion criteria applied were that of women who were too ill to be interviewed or those who declined to enter the study. The women were enrolled after giving their informed consent. The interviews were carried out in one of two sections of the maternity unit of the institution concerned (see Figure 1), viz. (a) the antenatal clinic when they presented for the first visit in the index pregnancy; or (b) the labour ward when they presented in labour. The antenatal record books of those who were interviewed in the antenatal clinic were used to record the gestational age at the time of the interview and the gestational age at the first visit to the public sector facility. The gestational age was calculated according to the biometry from the ultrasound scan, particularly if they had an 'early scan', or from the last menstrual period if they were certain of their 'dates'. The "booking" status was subsequently recorded as the gestational age at the first visit to the public sector facility. The women were then categorised as either (i) early booker (<20 weeks gestational age) or (ii) late booker (>20 weeks gestational age).

The above two categories were also applied to women who presented in labour. In addition, the number of antenatal visits to public sector facilities in the current pregnancy was also noted. If the woman had only attended once previously in the public sector, then the number of visits was recorded as one and she was placed in the third category, i.e. unbooked in labour. A woman who had visited a GP only, even if it was once for the purpose of confirming the pregnancy, and who then presented to the public sector for the first time when in labour, was also referred to as unbooked in labour. In order to increase the numbers of women in the latter category, the labour ward record book in which all the admissions are recorded was used to

Figure 1: Classification of women according to booking status



trace all the unbooked cases and they were subsequently interviewed in the postpartum period (see Figure 1). For the purposes of this study, confirmation of pregnancy refers to any investigation done in order to establish a positive pregnancy state. The unbooked patient was regarded as having attended a public sector hospital for antenatal care on two or more occasions.

## DATA COLLECTION AND STATISTICAL ANALYSIS

A structured questionnaire was utilised to obtain the participants' socio-demographic details, booking status, personal details, attitudes, medical conditions and system barriers to attendance. The data was subsequently captured in an Access database.

The main outcome measures were to establish when women confirm pregnancy, and the information they are given at the time of confirming the pregnancy. Further measures were to assess their knowledge about when to present themselves for formal booking after having confirmed the pregnancy and to find out when antenatal care was actually commenced. Secondary

outcome measures were to assess the availability and accessibility of antenatal healthcare facilities.

**Statistics:** Simple statistics were utilised and the results were presented as frequencies, percentages, means and median, where appropriate. The Kruskal-Wallis and the  $\chi^2$  tests were used for comparative data and a p value of < 0.05 was regarded as statistically significant.

## RESULTS

Over a period of a year, 303 women were enrolled in the study. Of these, 71(23.4%) were "early bookers", 145 (47.9%) were "late bookers" and 87 (28.7%) were "unbooked". No participants declined to enrol in the study.

### Socio-demographic data

The "booking" pattern was found not to be influenced by any of the socio-demographic factors, i.e. the level of education ( $p=0.16$ ) and employment ( $p=0.25$ ). In addition, there was no influence of age as assessed by the Kruskal-Wallis test. The mean age and median age

were similar in all three groups (see Table I).

### Booking status

Each variable entered was analysed according to the booking status, i.e. "early booker", "late booker" or "unbooked".

### Knowledge about when to book

When women were asked about when a pregnant woman should commence antenatal care, it was found that, in two of the groups, a large proportion did not know when to book, viz. the "early bookers" and the "late bookers"; 24 of 71 (33.3%) and 25 of 145 (36.4%) did not know when to book, respectively. On the other hand, 24 of 87 (28%) of the "unbooked" group did not know when to book for antenatal care. This question did not form part of the original questionnaire and only 81% of the study population was asked about their knowledge of when to book.

### Confirmation of pregnancy

Of the 71 "early bookers", 22 (30.9%) had confirmed their pregnancies two months following their last menstrual period. Forty-three (60.6%) confirmed their pregnancies in the public health sector and 25 (35.2%) did so by visiting a GP (see Table II).

Three women (4.2%) confirmed their pregnancies themselves on the basis of the physical changes associated with pregnancy.

Of 145 "late bookers", the majority (49%) had their pregnancies confirmed

by a GP and 47 (32.4%) confirmed their pregnancies in the public health sector. Twenty-five (17.2%) had their pregnancies confirmed by a family member.

The "unbooked" group largely confirmed their pregnancies at three months. Fifty-two (59.8%) confirmed with a GP, followed by 16 (18.4%) who confirmed in the public health sector and 14 (16.1%) who confirmed the pregnancy themselves at home. Three (3.4%) had their pregnancies identified by a relative. A subset of two (2.3%) never confirmed the pregnancy and in both bases it was due to denial of the pregnancy. Among the group who confirmed their pregnancies in the private health sector, the "early bookers" (22, or 87.5%), attended a GP only once, i.e. to confirm the pregnancy (see Table III).

Only 12.5% of the "early bookers" had repeat visits, i.e. attended more than once. In the majority of cases (66.7%), the reason for the repeat visits was to attend antenatal care (versus for ill health). Among the "late bookers", 38.9% consulted more than once. Those who visited a GP more than once did so either for continuation of antenatal care or for consultation for ill health. These two groupings each comprised 48%.

The "unbooked" group demonstrated a similar pattern to the latter, i.e. that the majority (64.7%) attended only once, to confirm the pregnancy. Those who consulted again did so for continuing antenatal care (61.1%).

### Booking antenatal care

The "early bookers" confirmed their

pregnancy equally at two months and at four months after the last menstrual period in 21 (29.6%) and 21 (30.1%), respectively. In total, 67 (94.4%) had confirmed their pregnancy by four months after the last menstrual period. There was a delay of two months between confirming the pregnancy and booking visits in 33 (46.5%) of the cases. However, these "early bookers" still booked early, namely by twenty weeks (20/40) of gestation, and hence qualified as "early bookers" according to the study's definition.

On the other hand, 89 (61.4%) of the "late bookers" booked at six months and there was an average delay of three months between confirming the pregnancy and actually commencing antenatal care.

Of the 87 in the "unbooked" group, 56 (64.4%) presented for the first time ever in the index pregnancy when they were already established in labour, versus 31 (35.6%) in whom this was the second visit in the index pregnancy (see Figure 2).

The women were asked to give reasons for the delay in the initiation of antenatal care, especially those who had confirmed their pregnancy timeously but fell into the "late booker" and "unbooked" categories. The most commonly cited reasons varied from "still early to book" to the fact that they had been attending antenatal care privately, inconvenient clinic hours, work-related reasons (either that they had concealed the pregnancy from their employers or were not allowed time

Table II: Pregnancy confirmation

Booking status	Relative N (%)	Private N (%)	Public N (%)	Myself N (%)	Not confirmed N (%)
Early	0 (0.0)	25 (35.2)	43 (60.6)	3 (4.2)	0 (0.0)
Late	2 (1.4)	71 (49.0)	47 (32.4)	25 (17.2)	0 (0.0)
Unbooked	3 (3.4)	52 (59.8)	16 (18.4)	14 (16.1)	2 (2.3)

Table III: Frequency of visits following pregnancy confirmation with the general practitioner

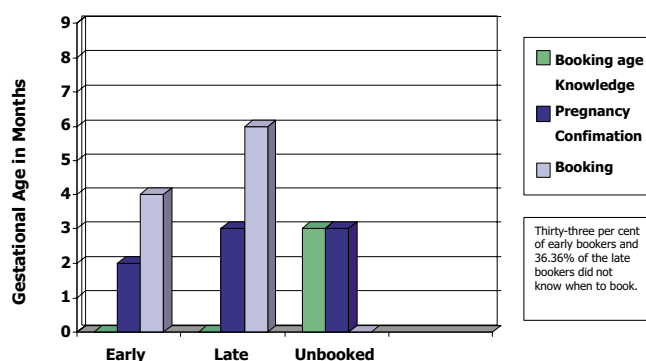
Booking status	N (%)	Frequency of visits (%)		Reason for repeat visit (%)	
		Once (%)	>Once (%)	Ill health (%)	ANC (%)
Early	25 (35.2)	22 (87.5)	3 (12.5)	1 (33.0)	2 (66.7)
Late	71 (49.0)	43 (61.1)	28 (38.9)	14 (48.0)	14 (48.0)
Unbooked	52 (59.8)	34 (64.7)	18 (35.3)	7 (38.9)	11 (61.1)

off work), and also that when they presented themselves for confirmation of the pregnancy they were not informed when to commence antenatal care. A significant number actually did not respond to this question (see Table IV).

### The accessibility and availability of antenatal healthcare facilities

The accessibility and availability of antenatal healthcare facilities were assessed as part of the secondary outcome measures and the main features were as follows: (i) most women (155; 51.2%) in the study lived within walking distance of the health facility, with their travelling time ranging from 10 to 60 minutes. Of those who needed to use public transport, i.e. either a taxi or a bus, the fare ranged from R3 to R16; (ii) five women (1.7%) had either not booked or booked late

**Figure 2:** Relationship between gestational age at pregnancy confirmation and time of booking antenatal care



**Table IV:** Reasons for delay in booking

	Early	Late	Unbooked	Total
Relocation to fall under clinic of preference	1			1
Still early		1		1
Vacation			1	1
Admitted with ill health		1	1	2
Afraid of midwives at the clinic		1	1	2
Anger with self		3	1	4
Attending GP because public said KEH won't admit her		1		1
Attending private		11	9	20
Awaiting booking appointment		3		3
Cannot afford private fees	2	1	1	4
Clinic advised when to book	3			3
Concealed from home	3	9	8	20
Concealed from work	1	3	2	6
Confirmed already in labour			1	1
Denial	5	5	10	20
Disabled, needs to be accompanied		1		1
Dislikes nearest clinic		3	1	4
Failed termination of pregnancy			1	1
False negative pregnancy test		1		1
Ill health	2	1	2	5
In jail, awaiting release		1		1
Inaccessible transport	1			1
Inconvenient hours	2	11	5	18
Irregular PVB in pregnancy	1	1	1	3
Long queues		2	1	3
Looking after ill relative		2	3	5
Lost ANC card			1	1
Marital discord		2	1	3
Mourning death of husband		1		1

N/A	33	21	7	61
New job	1			1
No birth certificate			1	1
No ID book		1		1
No reason given	3	11	1	15
No time off work		6	4	10
Not told when to book in private	1			1
No transport money		3	2	5
Not told by GP		1		1
Not told when to book in private	1	4	2	7
Not told where to book		1		1
Only book near your residence		2	1	3
Only need to have ultrasound scan		1	3	4
Only need to reserve bed for delivery		1		1
Only need to see doctor once during pregnancy			1	1
Privately advised when to book	2			2
Referred to private practice for ultrasound scan by local clinic	1	1		2
Relocated		3	3	6
Relocation to fall under clinic of preference		1		1
Still early	6	13	5	24
Turned back by clinics in town; dislikes Eku-phileni			1	1
Unaware of free antenatal care			1	1
Unhappy with public sector	1	1	1	3
Unsupportive spouse		3		3
Unwanted pregnancy		1	3	4
Vacation	1	5		6
<b>Total</b>	<b>71</b>	<b>145</b>	<b>87</b>	<b>303</b>



because of financial reasons; (iii) 72 (23.7%) found the antenatal clinic hours to be inconvenient; and (iv) 30 (10.2%) were not aware that antenatal care is free (which has been the case since 1995).

## DISCUSSION

This was a descriptive study that aimed to establish the antenatal care attendance patterns among women in early pregnancy in Durban, KwaZulu-Natal and to test the hypothesis that the women who are regarded as "unbooked" or "late bookers" are wrongly labelled, as they do seek some form of health care prior to presenting for formal booking in the public sector although they lack documentation/records as evidence for such. This hypothesis was proved correct, as 148 of the 303 women in the study (49.3%) had presented early in pregnancy to the private sector to confirm their pregnancy. This figure was 123 out of 232 (53.0%) when the "late bookers" and the "unbooked" were analysed.

Almost half of the participants in the study were "late bookers", i.e. they "booked" at six months on average. These findings were similar to those of the study done by Mabale *et al.* (1998) in Kalafong Hospital, Atteridgeville.<sup>6</sup> Pregnant women tend to confirm their pregnancy early, i.e. at three months, irrespective of their booking status, but subsequently commence antenatal care late, i.e. after twenty weeks of gestation.

In this study, demographic factors did not feature as typical barriers to the timely commencement of antenatal care or to the adequacy of care. This is similar to the findings of Gazmararian *et al.*, who also conducted their study in a predominantly lower socio-economic population.<sup>7</sup> The current study also does not indicate that there is a particular patient profile that characterises women who fall into a specific category in terms of booking status, which is contrary to the findings of Dawood and Buchmann, who reported that the "unbooked" women were characterised as being unmarried, smokers and unemployed.<sup>3</sup>

An interesting reason stated for not attending antenatal clinics in the public sector was that of financial problems, despite the fact that maternity care has been "free" since 1995.<sup>3,4</sup> However, the cost implications may not necessarily be attributable only to antenatal care attendance, but also to hidden costs of transport and loss of income on the day

of antenatal clinic attendance.<sup>8,9,10,11</sup> In our study, however, reasons for late or not booking showed significant overlap with those from the Dawood and Buchman study,<sup>3</sup> even though this was not an outcome measure of the study (see Table IV).

The accessibility and availability of antenatal healthcare facilities were assessed as part of the secondary outcome measures. From these findings it is evident that the accessibility and availability of antenatal care facilities do not contribute to the magnitude of inadequacy of antenatal care attendance.

Our study shows that a significant number of women (215; 71.0%) confirm their pregnancy early, i.e. by four months of amenorrhoea, with 148 (49.3%) confirming their pregnancy by visiting a GP. However, only a small proportion (27; 8.9%) actually "book" for antenatal care with a GP. Among those women who attend a GP more than once, only 30 out of 49 (61.2%) present with documentation of having received antenatal care. Moreover, the antenatal care offered may be inadequate, as basic antenatal investigations are not done. It is clear from this study that continuing medical education of GPs and other health personnel in the private sector is essential if the level of antenatal care across the health sector in South Africa is to be standardised.

This study had several limitations. The percentage of unbooked pregnant women cannot truly be used to reflect the percentage of "unbooked" women at King Edward Hospital, as the "unbooked" group was selected from labour ward record books (versus approaching any woman in the labour ward or antenatal clinic). The interviews were not carried out in private, thus the participants could not communicate without fear of being overheard and they were also easily distracted by their peers. One of the authors (SS) conducted all the interviews and, because she is a doctor, the patients might have been more inclined to give the answers they perceived were expected. Difficulties were also experienced in identifying the perfect time for conducting the interviews, especially in King Edward Hospital, as the patients are taken for health education before their consultation with the doctor. They consequently were interviewed late in the day and were no longer co-operative, especially because no incentive was provided for participation in the study.

## CONCLUDING COMMENTS

It is clear from this study that women from low socio-economic groups in Durban elect to confirm their pregnancy in the early stages of gestation by visiting a GP. The GP needs to update him/herself on the provision of basic antenatal care, provide proper documentation when referring antenatal patients, and consider initiating shared care with the public sector.

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