

# Reducing delay in booking for antenatal care

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**SUMMARY.** *The study compared two schemes of booking for antenatal care: booking at a health centre by general practitioners in conjunction with a hospital consultant or booking in a hospital clinic by hospital staff. The health centre scheme reduced the proportion of women booking late at 16 or more weeks gestation from 44% to 11% and at 20 weeks or more from 28% to 6%. There was no improvement in delay in booking owing to late confirmation of pregnancy. The benefits of this scheme were due to improved attendance and reduced delays in booking among women who confirmed pregnancy before 16 weeks gestation.*

## Introduction

SEVERAL reports have now highlighted the characteristics of women attending late or sporadically for antenatal care. Many of these factors are associated with poor obstetric outcomes; for example, the women tend to be younger or of higher parity, are more often single, immigrants, from social classes 4 and 5 or unemployed and tend to have babies of lower mean birthweight than attenders.<sup>1-7</sup>

Patients,<sup>8</sup> hospitals,<sup>6</sup> and general practitioners<sup>9,10</sup> have each been charged with prime responsibility for delays in booking for antenatal care. Both the Maternity Services Advisory Committee<sup>11</sup> and the Report of the Royal College of Obstetricians and Gynaecologists (RCOG)<sup>12</sup> have stressed the need for integration of consultant and general practitioner care and administrative arrangements to eliminate delay.

This study describes how a system of booking based on general practitioner surgeries supported by a visiting consultant obstetrician affected delays in booking for antenatal care.

## Method

The study was based on the lists of two general practitioners working from a health centre in east London, in a borough with some of the worst social indices in Britain.<sup>13</sup> All 115 women whose pregnancies were confirmed and who delivered while registered with the practice in the two years 1982 and 1983 were included in the study.

Two methods of antenatal care booking are in operation at the health centre. The first entails booking at a hospital antenatal clinic after referral by the general practitioner. Further antenatal care is then usually shared between the hospital clinic and the general practitioners and community midwives working from the health centre.

The second method is health-centre based. The initial booking is made by the general practitioners and midwives, and then discussed with a consultant obstetrician who, since the end of

1982, has visited monthly. Further antenatal care is undertaken at the health centre in conjunction with the consultant, following the guidelines laid down by the RCOG.<sup>12</sup>

The date of confirmation of pregnancy by the general practitioner was noted. The date of booking was taken as the date on which objective recording of antenatal details commenced. These included such factors as weight, blood pressure and fundal height, as well as the details necessary for record administration and haematology. For patients opting for shared care, the date of the referral letter to hospital was noted. Weeks of gestation were calculated from the estimated gestational age at birth. The definition of delay was a booking which took place at 16 or more weeks gestation.

## Results

A total of 115 women were booked for antenatal care: 50 women were booked at a hospital and 65 at the health centre. Allocation to hospital or health centre was not randomized and was determined by maternal choice and the hospital consultant in any previous pregnancies.

### Characteristics of women

At booking, there were no significant differences between the women in the health centre or hospital groups in terms of the indices under study (Table 1).

Among women who confirmed their pregnancy before 16 weeks, there was some suggestion that those with three or more children were more likely to delay subsequent attendance at booking (chi-square = 4.62, 2 df, 0.05 < P < 0.1) (Table 2).

**Table 1.** Characteristics of women booking for antenatal care by place of booking.

	Health centre (n = 65)	Hospital (n = 50)
Mean weeks gestation at confirmation of pregnancy (± SEM)	9.4 (±0.6)	8.9 (±0.6)
Mean age in years (± SEM)	25.4 (±3.1)	23.8 (±3.4)
Number aged under 20 years	12	11
Mean parity (± SEM)	1.2 (±0.2)	1.2 (±0.2)
Number of nulliparas	22	19
Number with more than 3 children	7	8
Number 16 or more weeks at confirmation of pregnancy	7	3

n = number of women. SEM = standard error of mean.

**Table 2.** Delay in booking for antenatal care by parity among women who confirmed pregnancy before 16 weeks gestation.

	Parity			
	0	1-2	3+	Total
Booking not delayed	30	47	9	86
Booking delayed	5	9	5	19

### Health centre versus hospital booking

Table 3 shows that women booked at the health centre an average of 7.1 weeks earlier than at the hospital, although at confirma-

tion of pregnancy there had been no significant difference in gestation. The total delay for hospital booking averaged 9.0 weeks and for health centre booking 1.4 weeks ( $P < 0.05$ , student's  $t$ -test).

Of the 115 women 29 booked late; 10 of these confirmed their pregnancies late at 16 or more weeks gestation and 19 confirmed their pregnancies before 16 weeks but were subsequently delayed in attendance at booking.

Table 4 shows that booking at the health centre resulted in no reduction in the proportion of women who confirmed their pregnancies late. However, it eliminated the delay associated with referral, and there were no women who attended late after confirmation of pregnancy.

**Table 3.** Mean weeks of gestation at the time of confirmation of pregnancy, referral to hospital and booking for antenatal care by place of booking.

Place of booking	Mean weeks gestation ( $\pm$ SEM)		
	At confirmation of pregnancy	At referral to hospital	At booking
Health centre ( $n = 65$ )	9.4 ( $\pm 0.6$ )	—	10.8 ( $\pm 0.6$ )
Hospital ( $n = 50$ )	8.9 ( $\pm 0.6$ )	11.4 ( $\pm 0.7$ )	17.9 ( $\pm 1.0$ )*

\* $P < 0.05$  versus health centre.  $n$  = number of women.

**Table 4.** Type of delay by place of booking for women who booked late for antenatal care.

Place of booking	Number of women			
	Late confirmers	Late referrals	Late attenders	Total late bookers
Health centre ( $n = 65$ )	7	—	0	7
Hospital ( $n = 50$ )	3	5	14	22

$n$  = total number of women.

Overall, seven out of the 65 women booked at the health centre, and 22 out of the 50 women booked at hospital (44%), booked late at 16 or more weeks gestation ( $P < 0.001$ , chi-square test with continuity correction = 18.3, 1 df). Using 20 weeks or more as the index of late booking, 28% of hospital-booked women booked late compared with 6% of those booking at the health centre.

## Discussion

Booking for antenatal care at the health centre made a substantial impact on delay in booking owing to late referral and late attendance at booking after referral, but resulted in no reduction in delay owing to late confirmation of pregnancy. Nevertheless, the proportion of women booking at 16 weeks or more was reduced from 44% to 11%, and at 20 weeks or more from 28% to 6%.

While the study was unable to distinguish between delay caused by administration at the hospital, and delay owing to non-attendance by women for a hospital antenatal appointment, there is little doubt that health centre booking proved more efficient, particularly for women who had three or more children.

Repeated follow-up of non-attenders was essential for the success of the system, and required detailed record keeping and two to three hours per week of clerical time.

The problems of hospital-based antenatal care have been well-documented.<sup>14-16</sup> Where antenatal care has been based on general practice, continuity of care has improved,<sup>17</sup> as has patient satisfaction.<sup>18</sup> There is growing evidence that the integration of specialist and community staff based on general practice has improved both the experience of pregnancy and the outcome.<sup>19-21</sup>

In this study it has been shown that such a system is capable of reducing the mean delay in booking after confirmation of pregnancy from nine weeks, to less than two weeks, and ensuring that a group of women at potentially high risk receive prompt and comprehensive antenatal care.

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