



THE IMPACT OF A PREGNANCY CONFIRMATION CLINIC ON THE COMMENCEMENT OF ANTENATAL CARE

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Objective. To introduce a pregnancy confirmation clinic as part of antenatal care and to determine whether this would alter the gestational age at which patients commence antenatal care.

Setting. Three municipal antenatal clinics in Atteridgeville and Central Pretoria.

Method. A pregnancy confirmation clinic was set up at three sites. At the clinic any woman wishing to confirm whether she was pregnant was offered a urine β -HCG test. If this test was positive, on-site testing for syphilis, anaemia and rhesus status, dipstick testing of the urine, clinical examination and ultrasound examination were performed. Women with abnormal test results were commenced on appropriate treatment immediately and women requiring further medical care or investigation were referred appropriately.

Results. The study recruited 382 women, 145 of whom were defaulters from contraception. Half of the women (191) had a positive pregnancy test. The mean presenting gestational age was 12 weeks 4 days (standard deviation 5 weeks, range 5 weeks - 25 weeks 2 days). Treatable conditions with the potential to influence pregnancy outcome were identified in 37 of the pregnant women (19.4%) Forty-three of the pregnant women intended to terminate the pregnancy.

Conclusion. It is possible to shift the commencement of antenatal care to an earlier gestational age.

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It is difficult to demonstrate conclusively that antenatal care improves pregnancy outcomes. Improved outcomes associated with patients who receive formal antenatal care might be related to a selection bias, namely that the patients who are at the lowest risk of adverse perinatal outcome avail themselves most often of antenatal care. It has been said that 'prenatal care

might be considered both an intervention and an indicator of maternal behaviour'.¹ On the other hand, it has been calculated that for every dollar spent on antenatal care for high-risk women, more than three dollars are saved.¹ In the local scenario, timely antenatal care opens the window of opportunity to combat avoidable causes of perinatal mortality and morbidity such as syphilis, bacteriuria and rhesus disease. In this paradigm, patients are encouraged to start antenatal care early in pregnancy. One of these encouragements has been the introduction of free antenatal care in South Africa. However, the majority of patients still commence formal antenatal care in the latter half of pregnancy despite the introduction of free antenatal care.² In Harare, a mass media campaign to encourage early booking of antenatal care failed to alter the time such of such 'booking'.³

A recent survey of antenatal patients in Pretoria has demonstrated that a large proportion of women who commence antenatal care after the first trimester have attended a medical practitioner early (i.e. in the first trimester) to confirm their pregnancy.⁴ If the diagnosis or confirmation of pregnancy is offered in antenatal clinics in an attractive manner, free of charge, and this is coupled with the initiation of antenatal care, then patients' current health behaviour could be exploited to initiate antenatal care much earlier.

This might have a beneficial effect on adverse outcomes such as low birth weight delivery or perinatal death. It may also reduce morbidity and mortality from early pregnancy complications such as ectopic pregnancy and the complications of unsafe second-trimester termination of pregnancy. It is unknown at this stage what effect such a policy would have on pregnancy outcomes and how it would be received from different quarters. The objective of the study was to confirm the potential for exploiting current patient behaviour in order to alter the gestational age at which women commence antenatal care.

METHODS

The study was a descriptive trial. Three antenatal clinics, namely Saulsville, Vembe and Folang, served as study sites, and all pregnant patients resident in the greater Atteridgeville area were included.

A pregnancy confirmation clinic was introduced at each of the antenatal clinics mentioned above. This was advertised in newspapers, on posters and with handbills in health care facilities (hospital and clinics) and centres of community activity (e.g. schools, churches, shops, taxi ranks, bus stops and railway stations). The message was that a pregnancy confirmation service, including ultrasound, was available at the clinics at certain times. The advertisements encouraged women to visit pregnancy confirmation clinics free of charge if they suspected pregnancy regardless of each woman's future plans for the pregnancy.



Each clinic was staffed by a research midwife who performed the screening history and blood and urine testing and a medical officer who performed the clinical and ultrasound examination and arranged any necessary referrals. The pregnancy confirmation clinic included a screening history and urine pregnancy test. If pregnancy was confirmed, then blood pressure testing, urine testing for proteinuria, nitrituria and glucosuria, serum on-site testing for rhesus status and syphilis serology, screening for anaemia by means of copper sulphate testing and an abdominal ultrasound were performed. A thermal print of the ultrasound image was given to the woman. Each woman was provided with an antenatal card on which the results of all the on-site tests were recorded. If indicated, treatment was prescribed for abnormal test results, and the woman was referred to the appropriate antenatal clinic according to her risk assessment.

If a woman was found to be pregnant but did not wish to continue the pregnancy, then she was referred to the pregnancy termination service at Kalafong Hospital. If a pregnancy complication was suspected on ultrasound or clinical examination (e.g. ectopic pregnancy or missed abortion), then the woman was referred to the gynaecological service at Kalafong Hospital, the urgency of referral depending on the nature of the complication.

The main outcome measure was the gestational age at presentation. Data were also collected on the presenting complaint of each woman, result of the pregnancy test, results of the on-site testing and suspected pregnancy complications and other gynaecological conditions.

All women attended the clinic voluntarily. Verbal consent was obtained from each woman for the data obtained from her visit to be used in the study. Approval was obtained from the University of Pretoria Ethics Committee.

STATISTICAL ANALYSIS

The mean gestational age of women in the study group was compared with that of women in a previous study.² This was done by means of Student's *t*-test for independent samples. The mean gestational age of those wishing to terminate their

pregnancy was compared with that of women wishing to continue. Student's *t*-test for independent samples was used.

A *P*-value of less than 0.05 was considered statistically significant. The analyses were done using Statistica Release 5, 1998 edition.

RESULTS

A total of 382 women were recruited into the study. The median age of women attending the pregnancy confirmation clinic was 24 years, with a range of 14 - 50 years. The median parity was 1 (range 0 - 8). One hundred and ninety-one women (50%) had a positive pregnancy test. The mean gestational age at presentation was 12 weeks 4 days (standard deviation (SD) 5 weeks, range 5 weeks - 25 weeks 2 days). This was a significant reduction from the commencement of antenatal care demonstrated in the health-seeking behaviour study⁴ ($P < 0.0001$). The presenting history of women attending the clinic is shown in Table I.

A total of 43 women wished to terminate their pregnancies. The mean gestational age in these cases was 10 weeks 1 day (range 5 - 18 weeks) compared with 13 weeks 1 day (range 5 weeks to 25 weeks 1 day) for women wishing to continue the pregnancy ($P < 0.005$). This comparison is demonstrated in Fig. 1. Of the women wishing to terminate their pregnancies, 12 (27.9%) had defaulted from their contraception.

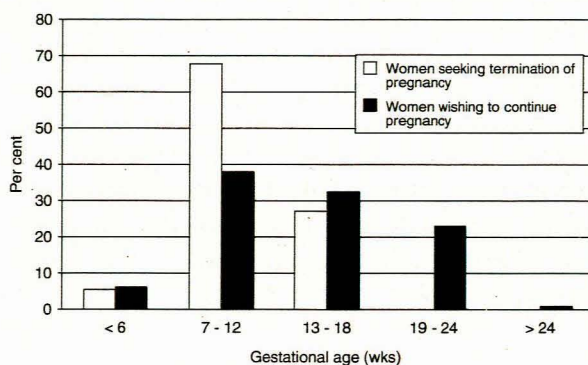


Fig. 1. Comparison of booking gestational age according to intentions for pregnancy.

Table I. Presenting history of women attending the pregnancy confirmation clinic

Presenting history	Number of women	Women with	
		positive pregnancy test (%)	negative pregnancy test (%)
Amenorrhoea	212	132 (62.3)	80 (37.7)
Default from contraception	145	54 (37.2)	91 (62.8)
Symptoms of pregnancy	14	2 (14.2)	12 (85.8)
Vaginal bleeding	2	1 (50.0)	1 (50.0)
Other	9	2 (22.2)	7 (77.8)



Table II. Abnormal on-site screening test results

Test result	Number of women with abnormal result
On-site rapid plasma reagin positive	12
Urine dipstix indicative of infection	14
Haemoglobin less than 10 g/dl	9
Hypertension	2
Rhesus negative	2

Thirty-seven pregnant women (19.4%) had abnormal screening tests. A breakdown of the abnormal test results is shown in Table II. The total number of abnormalities is greater than 37 as several women had abnormalities on more than one test.

Of the 191 women with a positive pregnancy test, 5 were referred to the gynaecology department at Kalafong Hospital, 3 with suspected ectopic pregnancy, 1 with an anembryonic pregnancy, and 1 with an adnexal mass for investigation. Forty-three women were referred to the pregnancy termination services and the remaining 143 to antenatal clinics. Of the 191 women who were not pregnant, 130 were referred for family planning advice, 8 to the gynaecology department at Kalafong Hospital for gynaecological problems, and 7 for assessment of infertility; the remaining 46 required no referral.

DISCUSSION

This study demonstrates that it is possible to shift the commencement of antenatal care to a much earlier gestational age by offering women a one-stop pregnancy confirmation and first visit clinic. In the group of women seen at this clinic, 19.4% had conditions that may have compromised pregnancy outcomes if the women had started antenatal care later in the pregnancy. If the women wishing to terminate their pregnancies are excluded, then among the remaining 148 women, 35 (23.6%) had abnormal screening test results. Syphilis, urinary tract infection, asymptomatic bacteriuria, anaemia and hypertension have all been shown to be associated with increased perinatal mortality. The early booking gestational age achieved in this study is an opportunity for early intervention to reduce perinatal risk factors in almost a quarter of gravidas. Because the women participating in this study were drawn from a widespread population and many did not intend to attend a hospital in Pretoria for their confinement, follow-up to determine the pregnancy outcomes was not possible. Although the primary outcome of earlier booking gestational age has been achieved,

this will be meaningless unless it translates into improved maternal and fetal outcomes.

In addition to achievement of the primary outcome, several other important observations were made during this study. A large number of women (145) attending the clinic had defaulted from their contraception, 54 of whom (37.2%) were pregnant. The type of contraception used and reasons for defaulting were not recorded. This area warrants further study.

The reception of the pregnancy confirmation clinic and the concepts embodied therein differed at different sites. One of the clinics welcomed the pregnancy confirmation clinic enthusiastically and on completion of the study staff requested that the clinic be instituted as a permanent service. Staff at another study site in a similar setting approached the investigators to ask them to stop the pregnancy confirmation clinic as they felt allowing women to book earlier increased their workload. The matter was discussed and it was explained that although women were commencing antenatal care earlier, this need not translate into a large increase in the number of antenatal visits. These midwives indicated that they still did not wish to continue with the pregnancy confirmation clinic as they would rather allow women to commence antenatal care later and devote more time to women arriving for the first time in late pregnancy and labour. These interactions highlight the important role that midwives and primary health care workers will play in any attempt to shift the paradigm and change established patterns of booking. The earlier booking gestational age was achieved by a change in the health system and not a change in patient behaviour. Women went early in the pregnancy to confirm whether they were pregnant, which concurs with the findings of previous studies. The behaviour of the health system in this study differs from standard practice in that a more comprehensive service was offered at the confirming visit. The first antenatal visit was brought to the patient instead of waiting for the patient to attend antenatal care.

CONCLUSION

It is possible to shift the commencement of antenatal care to an earlier gestational age. This was achieved by adapting the health system to make use of established patient behaviour patterns. The effect of earlier commencement of antenatal care on maternal and fetal outcomes will be tested in a follow-up study. Perceptions of midwives and primary health care workers towards commencement of antenatal care may have a significant impact on the gestational age at which women book.

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