

Place and purpose of antenatal care:

Proposals for the Bellevue primary care midwifery pilot project

J O Gardosi

17 June 1999

CONTENTS:

Introduction.....	2
Background.....	3
Purpose of antenatal care.....	4
Needs of baby.....	4
Needs of mother.....	5
Mothers' perspective	6
Risk assessment	7
Levels of care and supervision	8
Recommendations	8
Maternity centres.....	9
Potential benefits.....	10
Conclusions.....	11
Next steps.....	11
Notes for discussion.....	12
References	14

Introduction

Maternity care has a duality which poses a unique challenge: how to supervise a normal, natural process with minimal interference, while maintaining an ability to predict and avoid an ever present potential for disaster. Perhaps more than in any other field, this is where standards, pathways and clinical governance is of utmost importance.

There have been increasing calls to examine the current provision of antenatal care and to agree on guidelines for assessment [1,2]. This preliminary discussion document aims to explore some principles of antenatal care from the perspective of Bellevue Medical Centre. Bellevue is committed to service developments under a primary care pilot scheme, and has an interest in establishing clear pathways and defining performance indicators which are suitable for audit.

Antepartum vs intrapartum

This paper focuses on the antepartum period. There are also changes afoot in intrapartum care, spurred on by recent CESDI reports which showed that most intrapartum deaths are potentially or probably avoidable, and that better protocols and training is required of those involved in intrapartum care. Recent initiatives such as the RCOG report on safer childbirth [3] aim to address these issues.

Background

Antenatal care is in flux. The Cumberlege Report [1] has proposed a more woman - oriented and community based approach, but implementation has been patchy. It is not the aim of this paper to evaluate these events, nor to criticise current procedures and patterns of care. However it is apparent that many discussions have taken place and pilot schemes put in place without clear sight of the purpose of antenatal care. Often there has been a tendency to define by negatives - what it should not be: e.g. not leading to too many unnecessary tests (e.g. scans) or interventions (e.g. Caesarean sections).

It would be accurate to state that there is little proof of the effectiveness of much of antenatal care as practised today. There has been a questioning of many time honoured procedures which have been adopted without proper validation - e.g. weighing mothers at antenatal visits. The prediction of problems has been difficult, and some query whether much of antenatal care is worthwhile [4]. There have also been searching questions as to the role of the obstetrician in routine antenatal care [5].

A major problem with evaluating procedures is that key outcomes are too rare to be readily amenable as performance indicators for audit [6]. For example, there have been studies of a reduction of the number of antenatal visits and claims that there is no difference in outcome [7]; but important but rare outcomes such as perinatal mortality would require much larger studies. Surrogate measures can be used for auditing clinical outcome [6,8], and additional emphasis placed on the audit of process.

Purpose of antenatal care

In the West Midlands, there has been valuable groundwork to define the current roles for hospital and community clinicians in antenatal care, and put them into the context of workable, evidence based guidelines [9]. It is proposed to extend these principles and to examine the requirements of a community based practice.

Any working definition needs to include both ‘patients’ for which the health care team has responsibility. My definition here is as follows: *Mother and Baby Oriented Antenatal Care aims to ensure the supervision of maternal and fetal well-being during pregnancy, making available all appropriate choices to fulfil optimal potential, and providing all necessary support and preparation for a high quality life after birth, with due respect for privacy and the least necessary interference.*

This purpose can be further defined by examining the needs of mother and baby and putting it into the context of current performance.

A. Needs of the baby:

1. Early recognition of fetal anomalies; consideration of treatment options with parents;
2. Screening for adequate fetal growth and well-being (fundal height, fetal movements, imaging, further tests);
3. Recognition of malpresentation - e.g. breech - in the last weeks of pregnancy
4. Assessment of fetal reserve; recognition of fetal distress to allow judicious timing of delivery from an unfavourable environment
5. Appropriate level of surveillance during labour and delivery in optimal condition

Current performance -

Epidemiological studies have shown strong links between fetal growth restriction and unexplained stillbirth [10,11]. Yet about 70% babies that are born small for their age are

not recognised as such with current strategies. There is evidence however that serial assessment in community clinics can lead to improvements [12].

B. Needs of the mother:

1. reassurance when things are going well;
2. early warning and counselling when they are not
3. continuity of care; easy access; customised to needs - e.g. language; leaflets
4. education
 - a. pregnancy: fetal anomaly tests; monitoring movements
 - b. diet; folate
 - c. advice re smoking
 - d. labour: birth plan; information re elective and emergency procedures
 - e. preparation for neonatal care incl breast feeding
4. screening tests: rubella, haemoglobin, blood group, anomaly tests (serology, scans)
5. detection of medical problems - hypertensive diseases, glucose intolerance

Current performance:

There are many different persons involved in antenatal care, duplication of effort and lack of integration, and communication is poor [2]. Despite (or perhaps because of) the lack of continuity, there is apparently little time to prepare the mother, or to deal with new issues as they arise.

Mothers' perspective

To get some consumer perspective, I conducted a brief and informal survey of mothers attending the Bellevue Medical Centre. I interviewed eight mothers during two child health surveillance clinics and asked them about their experiences during previous pregnancies, and what emphasis should be put in antenatal care. There was a range of backgrounds as relates to socio-economic group, ethnicity, experiences in pregnancies, and where they were seen (several had been patients of other GP practices). Nevertheless, some common, clear threads emerged which are relevant here:

1. The principal aim of antenatal visits was seen by mothers to be the reassurance that things are progressing as they should.
2. More and regular visits throughout pregnancy were universally preferred. Apart from reassurance, the advantage of additional visits was seen as a possibility to ask questions as they arise. In contrast to appointments at the hospital, the local practice was seen to be easy to get to and this was important. Several mothers said they did not know what to expect from a hospital visit under 'shared care'. Being able to see the same person was considered a true benefit.
3. The amount of education offered during pregnancy was mixed, e.g. as relates to information about labour, about diet or breast feeding. Many mothers did not have antenatal classes, and some who wanted and asked to go found the times inconvenient. Labour- and postnatal staff in the hospital were often seen to be too busy and even unfriendly.

Risk assessment

Many attempts have been made to institute risk scoring to determine the appropriate level of care. 'Low risk' is now considered to be suitable for care in the community, while intermediate or high risk is more often assigned to 'shared care' between community and hospital.

There are two fundamental problems with this concept. Firstly, while shared care seems to have little justification in low risk pregnancies [5], there is little proof that it is better than community led care even for complicated pregnancies [13].

Secondly, the system assumes that there is an efficient method for assessing and predicting the level of risk at the beginning of pregnancy. However, despite many attempts to devise a risk scoring system, predictive values have been poor [14]. A recent presentation of the Castle Vale Maternity Project has also shown that even when using a detailed and well-defined risk scoring system, there were frequent changes in the risk status of mothers, varying from 69% to only 37% being considered 'low risk' during different times in pregnancy.

Furthermore, most adverse outcome is not predicted. This is the case for both major components of perinatal mortality - stillbirth and neonatal death. As regards stillbirths, most (two thirds) are unexpected and 'unexplained' even after a post-mortem. We know that stillbirth is associated with preceding growth restriction [10] but the detection rates of babies with growth failure is poor. In fact, in pregnancies designated as 'low risk', the detection of smallness-for-gestational age is as low as 16% [15]. As regards neonatal deaths, many are associated with prematurity; but most preterm deliveries are unexpected and follow spontaneous labour, and there have been few inroads into prediction of premature birth through assessment of risk [16].

Levels of care and supervision

Recent studies [7,17,18] have investigated the effect of reducing the number of antenatal visits and have found them to be generally safe although the studies did not have sufficient power to look at the rare but important outcomes. Nevertheless, many mothers said they would prefer the more frequent visit schedule [7,19].

One justification for projects which look at reducing the number of visits is the assertion that more visits lead to more tests [7]. However organised serial assessment in the community can lead to *fewer* unnecessary referrals because the midwives were reassured that matters were progressing as they should, while the antenatal detection of SGA was almost doubled [20]. Less frequent visits with spot checks are less likely to make such predictions with confidence, and serial assessment is the only way to reliably check for fetal growth.

Recommendations

1. All pregnancies should be seen as potentially high risk from the perspective of the fetus. Until reliable screening tests for growth restriction are available, surveillance of the fetus requires frequent visits for adequate assessment. This should be centred on the community based antenatal clinic. Results of routine and special investigations - e.g. blood tests, scans - should be returned to the clinic, i.e. the community carers, via the patient held record.
2. Most pregnancies which are high risk because of maternal factors are likely to be *better* cared for in the community. High risk mothers require easy access and a stable relationship with their carers, reassurance, and regular reinforcement of health messages relating to e.g. smoking and breast feeding.
3. There is a need for easy access and a 'revolving door policy' for additional appointments to hospital where specialist assessment is required - e.g. the Maternal Fetal Medicine Unit.
4. Community midwifery & GP practices need to have a sufficient level of interest and training to fulfil a primary role in maternity services.
5. Performance indicators need to be established to measure the process and outcome - e.g. number of SGA babies detected antenatally and referred for appropriate investigation.

Maternity clubs or centres

There is evidence that midwife based care can be clinically effective [21] and can improve antenatal surveillance in the community [12]. If - as I am proposing - an efficient maternity service may require more visits rather than less, consideration should be given as to structure and function, i.e. where this would be located and how it should be run. One proposal would be to establish midwifery run antenatal clinic / parent craft / resource / drop in centres. The main purpose of such centres would be to cater for the primary needs of baby and mother, as defined above. The first visit would be done jointly by GP and midwife and include the physical examination. All routine follow up investigation would then be at the maternity centre, and include fundal height measurement, blood pressure, urinalysis, phlebotomy. In addition, unhurried antenatal education and support could be given, counselling for prenatal screening, advice re fetal movement monitoring, smoking, options regarding labour, breast feeding. etc. Mothers and their partners can informally drop in during the day or evening. Depending on the number of maternities, the centre could be open say twice a week from 10 a.m. to 8 p.m and run by two midwives, with attendance by other staff as needed - e.g. health visitors, ethnic community resource persons, social workers. They would work under joint supervision of GPs and senior community midwives.

Potential benefits:

1. Easy access, especially for mothers who are at high risk - e.g. young and/or single mothers; low income; ethnic minorities. NB - this would reverse the current distinction between high risk (hospital) and low risk (community): most high risk mothers are better served in the community! There would also be a likely reduction in non-attendance rates.
2. It would allow establishment of a nurturing 'culture' of antenatal care, which is particularly important in a multi-ethnic and/or low education level environment. Mothers can exchange information and establish mutual support networks.

Such improvements in the service would require:

- well trained community carers
- well defined pathways for rapid access to hospital for further assessment
- clear protocols for referral and clear channels of communication

Conclusion

This proposal seeks to look at antenatal care primarily from the perspective of the needs of the mother and of the baby. Risk prediction is poor, and all pregnancies are potentially high risk when seen from the perspective of the baby. Primary care has the potential of a better service not only for low risk mothers, but also those considered high risk, because of better access and ability to monitor progress and detect pathology by serial monitoring. A system of care is proposed which encourages frequent visits, is based on good training and has established pathways for referral.

References

1. Expert Maternity Group. Changing childbirth. Part I: Report of the Expert Maternity Group. *HMSO* 1993.
2. Audit Commission. First Class Delivery: Improving Maternity Services in England and Wales. London: Audit Commission, 1997.
3. RCOG. Towards Safer Childbirth: Minimum Standards for the Organisation of Labour Wards' - Report of a Joint Working Party. *RCOG Press* 1999.
4. Hall MH, Chng PK, MacGillivray. Is routine antenatal care worth while? *Lancet* 1980;**12**:78-81.
5. Tucker JS, Hall MH, Howie PW, et al. Should obstetricians see women with normal pregnancies? A multicentre, randomised controlled trial of routine antenatal care by general practitioners and midwives with shared care led by obstetricians. *BMJ* 1996;**312**:554-9.
6. Vause S, Maresh M. Indicators of quality of antenatal care: a pilot study. *Br J Obstet Gynaecol* 1999;**106**:197-205.
7. Sikorski J, Wilson J, Clement S, Das S, Smeeton N. A randomised controlled trial comparing two schedules of antenatal visits : the antenatal care project. *BMJ* 1996;**312**:546-553.
8. RCOG Clinical Audit Unit. Effective procedures in maternity care suitable for audit. London: RCOG, 1997.
9. Wyldes M, Settatee R. Community Antenatal Care Handbook: West Midlands Perinatal Audit, 1997.
10. Gardosi J, Mul T, Mongelli M, Fagan D. Analysis of birthweight and gestational age in antepartum stillbirths. *Br J Obstet Gynaecol* 1998;**105**:524-30.

11. Gardosi J, Francis A, Settatree R. Association between fetal growth restriction and unexplained stillbirth at term. *Am J Obstet Gynecol* 1999;**180**(1):S157.
12. Gardosi J, Francis A. Controlled trial of customised fundal height charts in screening for fetal growth restriction. *J Obstet Gynaecol* 1998;**18**(Suppl 1):57.
13. Fleissing A, Kroll D, McCarthy M. Is community-led maternity care a feasible option for women assessed at low risk and those with complicated pregnancies? *Midwifery* 1996;**12**(4):191-7.
14. Alexander S, Keirse M. Formal risk scoring during pregnancy. In: Chalmers I, Enkin M, Keirse M, eds. *Effective care in pregnancy and childbirth*. Oxford: Oxford University Press, 1987: 345-65.
15. Kean LH, Liu DT. Antenatal care as a screening tool for the detection of small for gestational age babies in the low risk population. *Journal of Obstetrics & Gynaecology* 1996;**16**:77-82.
16. Lumley J. The epidemiology of preterm birth. *Bailliere's Clinical Obstetris and Gynaecology* 1993;**7**(3):477-498.
17. Binstock MA, Walde-Tsadik G. Alternative prenatal care: impact of reduced visits frequency, focused visits and continuity of care. *Journal of Reproductive Medicine* 1995;**40**:507-12.
18. McDuffe RS, Beck R, Bischoff K, et al. Effect of frequency of prenatal care visits on perinatal outcome among low-risk women. *JAMA* 1996;**275**:847-51.
19. Neilson J. Antenatal care on trial: Pregnant women don't like minimalist packages. *BMJ* 1996;**312**:524-5.
20. Gardosi J, Francis A. Controlled trial of fundal height measurement plotted on customised antenatal growth charts. *Br J Obstet Gynaecol* 1999;**106**:309-17.
21. Turnbull D, Holmes A, Shields N, et al. Randomised controlled trial of efficacy of midwife managed care. *Lancet* 1996;**348**:213-8.