Models of Antenatal Care

Guidelines	Level of Evidence	References
At, or prior to, their first antenatal visit all women should be provided with appropriate written information about the models of pregnancy care available to them (in terms of cost to women, continuity and transition from hospital to home and other information as women identify it).	IV	18
A description of the roles of the various carers may assist their decisions.	III-2	19
At each antenatal visit midwives and doctors should offer information, consistent advice, clear explanations, and provide women an opportunity to ask questions.	III IV	12,14,16,17,19 18
Women are more likely to be satisfied with antenatal care when they perceive midwives and doctors are kind, supportive, courteous, respectful and recognise their individual needs. Women should not be kept waiting for long periods or feel rushed through visits and investigations.	IV	18-20
Wherever possible, women should be offered continuity of care, including continuity of carer.	I	12
Midwifery and GP- led models of care are safe for low risk women.	I II III	10 3,4,6-11 5
Good Practice Notes		
Routinely involving obstetricians in the care of low risk women at scheduled times does not appear to improve perinatal outcomes compared with involving obstetricians when complications arise. Where possible, women should be sent or given written information on models of care prior to their first visit. This is due to the high volume of information that women are required to process and the decisions required at their first and second visits. Individual preferences regarding models of care should be established and discussed in the first two antenatal visits.	II	3
Women should be offered the option of carrying a copy of their antenatal record.	III	21

Aim

The aim of these guidelines is to assist midwives and doctors to advise women on models of care that are safe and satisfactory.

Evidence

Following the Victorian Birthing Services Review in 1990 the federal government recommended the development of antenatal care models that allowed greater:

- Continuity of care.
- Choice of GP or midwife carer.
- Ease of access to care.
- Involvement of women in decisions about care.
- Socially and culturally appropriate care.
- Shorter waiting times for antenatal appointments.
- An expanded role for midwives [1].

Since 1990 the Three Centres in Victoria have introduced new models of midwifery care, satellite clinics and expanded GP shared care. Women enrolled in midwifery or shared care models are required to see a hospital doctor between one and four times during pregnancy (with these visits usually scheduled at the first or second antenatal visit, and at 26, 36 and 41 weeks). The frequency of obstetric visits varies between hospitals and between models of care within hospitals.

In 1999 the Review of Shared Obstetric Care in Victoria identified women in this State:

- Have difficulty accessing information about the range of options and models of care available.
- Do not have information about models of care routinely distributed.
- Find one of the barriers to women accessing information about the range of options may be professional rivalries and sensitivities.
- Have difficulty obtaining accurate information about the costs they are likely to incur for investigations and appointments in various models of care [2].

Concerns expressed about women's safety with 'new' models of care has meant that innovations involving midwifery-led care are generally introduced as a trial or pilot study and regularly reviewed. The net result is a growing body of high level Australian evidence addressing[+] midwifery-led antenatal care in terms of safety, continuity, and satisfaction with care compared to standard care[++]. Unfortunately, there is not the same body of Australian evidence addressing GP-led care or combined care compared to standard care, though UK and Scottish trials establish the safety of GP shared care[3]. Evidence supports the conclusion that team midwifery, community-based collaborative care, shared care and birth centre care for low risk women integrated within existing services are clinically effective [4-10]. Team midwifery and collaborative care are likely to be safe and very satisfactory for women with moderate to high risk factors, though pooled data is required to properly assess effects on perinatal outcome[10].

In a randomised trial involving 1,000 women at Monash Medical Centre, Biro et al (Level II) compared team midwifery with heterogeneous 'standard' care for both high and low risk women. Standard care involved many different staff, whereas team midwifery emphasised continuity of carer. Data showed that 80 per cent of team midwifery patients were attended during labour by a midwife known to them compared with 0.3 per cent of standard care patients. Augmentation of labour, use of pethidine and epidurals, fetal monitoring and episiotomy rates were significantly reduced in the team midwifery group. Perineal tears were greater in number but more were unsutured. While there were fewer pre-term babies (2.4 per cent or 11 babies versus six per cent or 26 babies, OR 0.39) admitted to SCN, eight babies from the midwifery group were admitted for growth restriction. Other neonatal measures showed no differences. Five perinatal deaths occurred in the team care group and four in standard care[4].

A randomised trial of team midwifery involving 1,000 women at the Royal Women's Hospital found similar results. Team midwife care was associated with increased satisfaction and differences between groups were most notable for antenatal care. There were no differences between team midwife care and standard care in medical interventions or in women's emotional well-being as measured two months after the birth [9].

Homer, Davis and Brodie, et al. (Level II) randomised 1,089 women into 'standard' hospital based care at St George Hospital in Sydney and community-based collaborative care involving a small team of midwives and hospital obstetricians. The study emphasis was on continuity. They found a significant reduction in Caesarean rates, their primary outcome of interest (OR 0.6 CI 0.4-0.9). There were no other significant differences in labour or birth events or neonatal problems. The study was too small to detect differences in perinatal mortality. The authors

[+] Randomised controlled trials comparing models of care in the UK and Scandinavia are readily available. Despite the congruity of conclusions regarding the safety of midwifery and GP-led models, there are difficulties comparing trials internationally due to the heterogeneity of models and the variance in outcome measures/definitions used. Consequently the evidence used here is largely confined to Australian data.

[++] Standard care included the following models: shared GP and obstetrician care; shared care between community based midwives and hospital obstetric staff; hospital obstetric staff only; or hospital midwifery and obstetrician

conclude that team midwifery can reduce Caesarean rates for both low and high risk women and that their rate of perinatal mortality is comparable with other Australian data [7].

Waldenstrom and Turnbull analysed data from seven trials (n=9,148) not including the three above, comparing continuity of midwifery-led care to standard maternity care on an intention-to-treat basis found less use of obstetric interventions in the midwifery led groups. Caesarean section rates did not differ statistically. There was a significantly higher rate of perineal tears in the pooled midwifery groups, but no significant differences in maternal deaths, maternal complications or proportion of infants with Apgar score <7 at five minutes. Admission rates to NICU or special care baby units were also similar between the standard and intervention groups. However, the difference in perinatal deaths bordering on statistical significance (OR 1.60; 95 per cent CI 0.99 to 2.59) [10]. The authors called for further trials to elucidate whether this finding was true or false. Pooled data that includes the three Australian trials previously mentioned (n=3,089) is awaiting publication.

In Australia concerns over the safety of women in midwifery- or GP-led models of care has also led to the widespread practice of routine visits with an obstetrician at designated times. While there is no question women should see an obstetrician when complications are indicated, the value of routine obstetric visits for low risk women is debated. A Scottish multi-centre randomised trial involving 1,765 women compared routine antenatal care for low risk women by GPs and midwives in community settings (providing a care plan and protocols for managing complications) with obstetrician-led shared care. The authors cite five previous UK studies that found improvements in the community model for access to care, uptake of care, improved continuity of care and pregnancy outcomes at least as good as hospital obstetric care. In this trial women saw a specialist according to their individual needs, and not at a predefined routine visit. This study found similar gains, and that multiparous women in the midwifery and GP group had slightly fewer visits (Mean 10.6 visits versus 11.6 visits, CI=0.95). There was a similar level of satisfaction between intervention and control groups, but the significant difference lay in intervention participants getting on 'very well' with their main carer and preferring to see the same person each time. The results of the study indicate that women initially assessed at low risk of pregnancy complications may have little or no benefit from routine specialist antenatal visits [3].

Waldenstrom and Nilson's randomised controlled study compared birth centre care, where low risk women were referred to see a doctor for a medical indication only, with standard maternity care. Birth centre women made fewer antenatal visits, both to midwives and doctors, and had fewer antenatal tests. Both groups reported antenatal complications to the same level. There was no statistical difference in antenatal hospital admissions. There was less medical intervention used in the intra-partum and postnatal periods. Twenty per cent of women in both groups saw a doctor during the first two months following delivery for similar health problems. There was no statistical difference in hospital re-admissions. The authors concluded that birth centre care is effective in identifying significant maternal complications and as safe as standard maternity care for women [11].

Measuring satisfaction with antenatal care is difficult, not only as models of care are heterogeneous and measurement of satisfaction contentious but because the continuity of care characteristic of midwifery and GP-led models confounds the issue of satisfaction[7-10,12,13]. A Cochrane review of continuity of antenatal caregivers concluded that women who experienced continuity of care were more likely to be more satisfied with their level of care and caregivers,[12] though a Swedish trial suggested that continuity of carer is less important at a birth centre [11].

Surveys conducted with recent mothers (SRM) in Victoria during 1989, 1993 and 1999 provide Level IV evidence concerning satisfaction with care. Results underscore the need for women to be informed of their options regarding pregnancy care and the implications of each option in terms of cost, continuity and the transition from hospital to home. The 1989 SRM indicated that women attending public hospital clinics (standard care) were the least satisfied with antenatal care, and those attending private obstetricians were the most satisfied, with GP care intermediate. The follow-up survey in 1993 indicated women were most likely to be satisfied when antenatal care was provided by a private obstetrician, private GP or birth centre. Women in public GP care, who were largely from rural areas and more likely to have received 'quasi-private' care with their own GP, were an intermediately satisfied group. Fewer than half the women who attended a public clinic viewed their care as very good, and the expansion of shared care did not appear to have reduced waiting times and rushed appointments at public clinics. Women participating in shared care did not appear to find it a better option than public clinic care, though shared care programs vary considerably and some programs are likely to work better than others[14]. Satisfaction with antenatal care is generally low for women born outside Australia (even after taking account of their risk status and model of care), from low socioeconomic backgrounds and/or from a non-English speaking background. Local studies indicate more attention should to be given to reducing barriers to effective communication[15-17]. The 1999 survey results are unpublished at the time of writing, but data indicate that private obstetric care rates as most satisfactory for antenatal care, followed by birth centre care and

midwifery clinics. Public clinics were rated the least satisfactory for antenatal care.

The factors that increase satisfaction with pregnancy care are consistent across different countries and time periods. Continuity of care is strongly associated with satisfaction[12]. Level III and IV evidence indicates women value staff who:

- Exhibit qualities of courtesy, kindness, support, respect women as individuals and recognise individual needs.
- Offer information, provide clear explanations and facilitate questions.

Women are less satisfied where there is a lack of information about options for antenatal care, long waits for antenatal visits or rushed check-ups. Differences in satisfaction with different models of care are explicable in terms of the extent to which the above needs are satisfied within each model of care. Consistent information, a sense of control, involvement in decision-making, and confidence in clinical care has also been associated with increased satisfaction with pregnancy care in an Australian population as well as in other countries. [18-20]. A descriptive study of 200 Brisbane women enrolled in shared and standard care found that women who carry their own antenatal record felt more in control, had less difficultly talking to their doctor and rated satisfaction with care significantly higher than women in the standard care group [21]. While a reduced schedule of antenatal visits was associated with decreased satisfaction with care (or increased anxiety) in two UK trials [22,23], the researchers were unsure if this would hold over time and could not readily identify the women likely to be dissatisfied with a reduced schedule of visits [22]. The researchers concluded this finding indicated the importance of talking to women individually and, as far as possible, tailoring care to individual preferences [22,23].

*The term '**continuity of care**' may refer to any of the following situations:*

a) Women see the same care providers across different stages of antenatal, intrapartum and postnatal care.

b) Women have one-to-one care from a single practitioner during pregnancy and labour.

c) Women are cared for by a small number of care providers working together as a team with shared philosophy and guidelines for practice.

***Midwifery-led care** refers to models where midwives provide all or most antenatal care. These may or may not emphasise continuity of care. Midwifery led models of care include midwives clinics, team midwifery and birth centre care.*

*'**Standard or conventional care**' refers to the hospital antenatal clinics in which women see the doctor or midwife that is available at the time of their appointment. These doctors and midwives may be in training. Women may see similar care providers each visit if the particular hospital operates in this way. Likewise, women may be allocated to a particular unit or team. In some hospitals accredited community GPs provide some of the care.*

***GP-led care** refers to models where GPs provide all or most antenatal care either in private rooms or as part of hospital clinics. These models may or may not emphasise continuity of care.*

Methods of Search and Appraisal

I. Search on Defined Questions (March 2001)

A research team from the Department of Perinatal Medicine at the Royal Women's Hospital used the OVID interface to search Premedline and Medline, CINAHL, Best Evidence (Jan 1990 to Mar 2001) and the Cochrane Database (2001, Issue 1) to answer:

1. How do options of
   - Midwifery led care
   - GP-led care (shared care)
   - Obstetrician led care
   - Multidisciplinary/team/collaborative care

For women assessed as low risk at their first antenatal visit compare to conventional outpatient care, in terms of:

- Obstetric interventions
- Maternal and neonatal morbidity
- Perinatal mortality
- Satisfaction with care, and
- Cost-effectiveness?

2. Do routine visits to an obstetrician (at 14, 26 and 36 weeks gestation), compared with discretionary visits, for women initially assessed as low risk of obstetric complications, offer clinical benefits or increase satisfaction with care?

The team searched the bibliographies from articles retrieved for additional citations and hand-searched relevant, non-peer reviewed literature. The search retrieved 172 citations, from which 41 key citations were identified. These included three Level I systematic reviews, 16 Level II, 13 Level III 2, one Level III-3 and seven Level IV studies/documents. The coordinator searched grey literature and journals for additional evidence published between April and August 2001.

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