midwifery

Preparation for Practice

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MOSBY

ELSEVIER
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I have had a long-term involvement and affiliation with both New Zealand and Australia for many years, and have observed the transformative change created in midwifery over years with great respect for such brave, visionary, painstaking work.

The first chapter gives a clear analysis of the context and history of both countries and the nature of the change created. In New Zealand, what is described as a complete workforce redesign has resulted in cohesive change that is unparalleled in the world; in my view, New Zealand maternity services are one of the most progressive, with reform that is systematic, from both bottom up and top down, and wide scale. This reform has been, on the whole, midwife led.

The contrasts between Australia and New Zealand, their national and health service characteristics, are clearly drawn and analysed—introducing the important point that context will affect the way that we create change and the success of that change. Australia has more recently instituted a wide-scale reform of maternity, and contributes a high quality and high volume of the global academic and practice-based knowledge in midwifery.

This new edition emerges from these profound developments in midwifery in Australasia. It is a stunning book—comprehensive, deep and wide in its reach, and based on a clearly reflected cohesive set of values and philosophy of midwifery. The topics of each chapter, drawing on a sound evidence and knowledge base, encourage thinking and analysis and contribute to the creation of a new worldview.

Whilst the book is substantial, it is fresh and readable. The line diagrams marking each chapter are elegant, simple and beautiful. Midwifery: Preparation for Practice is a book for all midwives and all students of midwifery everywhere. We are all, given the expectations of fast-developing modern midwifery, always preparing for practice; this book is an essential tool.

‘Midwifery is concerned with the making of mothers’: this phrase takes us to the heart of the profession we are recreating. Such a purpose requires a wide, deep knowledge base, practice skills, and thoughtfulness. Midwifery: Preparation for Practice helps put us in the position for such work.

Professor Lesley Page CBE
President of the Royal College of Midwives; Visiting Professor, Florence Nightingale School of Nursing and Midwifery, King’s College London; Adjunct Professor, University of Technology, Sydney
The New Zealand and Australian Colleges of Midwives welcome this third edition of a wonderful midwifery textbook. This edition builds on its success by further refining and updating the profession’s growing knowledge base. Skillfully re-edited, by midwife editors with strong and longstanding involvement in both midwifery practice and education, the chapters have been rearranged and condensed to make the reader feel even more inspired by the professional developments and achievements since the first textbook was launched in 2006. This edition again brings together a team of midwives from both Australia and New Zealand who are leaders in their field and who share in these pages a wealth of knowledge and expertise in midwifery practice, education, research and regulation.

Yet the credentials of the authors, while impressive, are not the only reason that this book is a ‘must have’ for every student of midwifery and is strongly recommended for all midwives. This book’s unique contribution is its focus on both the universal principle that underpins midwifery philosophy and practice—that of partnership with women—and midwifery autonomy in practice. The midwifery partnership between a woman and midwife working together to achieve the best outcome for that mother and baby differentiates it from other models of care, where the healthcare professional assumes expertise over the mother. It is this point of difference that gives midwifery the body of knowledge called midwifery.

Drawing on midwifery partnership, this book approaches midwifery care from the perspective of a midwife as a primary healthcare practitioner, based in the community but interfacing with hospitals and specialists as necessary to meet the needs of individual women. It explores both autonomous practice and collaborative practice, and it was the first textbook to discuss midwifery practice in the context of community and primary health rather than hospital-based maternity services. New discussions on the law, human rights, sustainability and refugee women emphasise the continuing need for vigilant observation and adaptation from midwives if they are to build on and enhance further the practice of midwifery in meeting the diverse needs of increasingly complex communities.

Just as childbirth is far more than a physiological process, the art and science of midwifery is more than a study of the female human body and its reproductive powers. Like childbirth, midwifery occurs in a social, political and historical context that shapes the practice of midwifery in any given time and place. It is therefore essential that all midwives have a sound understanding of this context, and an awareness of how it may influence their own practice in providing care to women. This includes the increasing influence of risk and fear paradigms impacting on clinical practice. The discussions on risk underpin a lot of the issues facing midwifery today and are essential reading for those trying to understand what drives the risk industry.

This book provides a clear and accessible introduction to the historical and contemporary context of midwifery practice in Australia and New Zealand, and examines practice within the professional frameworks of the philosophy and standards of both the Australian and New Zealand Colleges of Midwives. It is a textbook full of essential knowledge for supporting and improving midwifery practice. It is this wisdom of the collective profession from both sides of the Tasman Sea that will sustain midwifery’s role as a guardian of normal birth and an advocate for woman-centred care.

Midwifery care in Australia and New Zealand is currently provided to women in very different maternity care systems. In Australia, most midwives work in public or private hospitals, providing professional care to women without the benefit of being able to get to know the women they care for in the main. However, times are changing in Australia and this edition documents the expansion of access to a known midwife in the country’s public maternity services, including the provision of public homebirth services. These reforms mark a new era in Australian midwifery practice.

Midwives in New Zealand, in contrast, have been free to practise in either hospitals or the community since 1990. All midwives have access to public funding for their professional services, have prescribing rights, and work in partnership with women and with each other if they choose to. This book provides a clear and accessible introduction to midwifery practice in Australia and New Zealand, and examines practice within the professional frameworks of the philosophy and standards of both the Australian and New Zealand Colleges of Midwives. It is a textbook full of essential knowledge for supporting and improving midwifery practice. It is this wisdom of the collective profession from both sides of the Tasman Sea that will sustain midwifery’s role as a guardian of normal birth and an advocate for woman-centred care.

In focusing on midwifery autonomy and midwifery partnership, this textbook reinforces for all midwives the achievements of women and midwives in giving birth to women and their whānau. It reminds us of what a struggle it was, and still is, to keep women central to the birthing process, and each chapter provides valuable knowledge and guidance to both experienced and new midwives that will help to ensure that midwifery continues to keep women and their babies safely at the centre of practice decisions. It has strengthened the emphasis on the need for midwives to be very mindful of cultural considerations when caring for Māori, Aboriginal and/or Torres Strait Islander women and families. Cultural competency is well described in this new edition and as such it adds significant...
power to the midwifery knowledge base in our respective nations.
For all the differences between maternity services in these two countries, this textbook confirms that midwifery remains universally constant, and guided by the same theoretical and practice knowledge and skills that combine to make midwifery such a vital profession for women and babies. The commonalities far outweigh the differences, and this edition further enriches with up-to-date and relevant information aimed at supporting all midwives to practise autonomously and ever with an eye on the needs of the women for whom they care.

Ann Kinnear
Chief Executive Officer, Australian College of Midwives

Karen Guilliland
Chief Executive, New Zealand College of Midwives
chapter 23

Working with women in pregnancy

Celia Grigg

CHAPTER OVERVIEW

This chapter discusses antenatal care within the context of autonomous midwifery practice. It provides a broad overview of the issues of antenatal care, and considers some of the core technical components of clinical practice. Where possible, this discussion is based on reviewed research, in order to promote evidence-informed midwifery practice. The dearth of published research that meaningfully addresses midwifery questions is an ongoing problem in this regard. The chapter establishes a framework for understanding the way of doing things, as much as it provides instruction on what to do. As such, it seeks to interpret routine care with reference to the following set of guiding principles, which are fundamental for midwives working within the midwifery model:

- partnerships with women—women-centred, negotiated relationships
- continuity of care in the holistic process of pregnancy, birth and early parenting
- support and empowerment of childbearing women
- promotion of holistic wellness
- assessment and screening, which includes risk identification, knowledge / understanding and choices
- information sharing as a two-way process
- promotion of active, informed decision making by women
- health promotion and education within an appropriate ‘adult learning’ approach.

In this chapter, antenatal care is discussed within a broad practice model of midwife-led continuity of care. While this model characterises New Zealand’s midwifery and maternity services, it is also becoming increasingly available in Australia and is the model to which the Australian midwifery profession aspires. The key components of routine antenatal care are identified using the New Zealand College of Midwives ‘decision points’ as a framework (New Zealand College of Midwives [NZCOM], 2008). Some of these components are further developed in the explanatory sections that follow. The decision points refer to relevant issues raised in other chapters of this book, and readers are also referred to other reading and research activity where appropriate. Notwithstanding the model of care in which a midwife may practise, the aspects of antenatal care described in this chapter are applicable to any setting.

Of necessity, this chapter discusses antenatal care as a discrete entity, and it may be tempting to consider it as such. However, antenatal care is but a small part of a woman’s experience of the broader process of pregnancy, and cannot be separated from childbearing as a holistic process, which includes pregnancy, birth and the postnatal period. Further, the meaning and effect of antenatal care are totally dependent on the individual woman and her personal context.
Learning outcomes

Learning outcomes for this chapter are:

1. To discuss the organisation and form of antenatal care within the context of the midwifery model.
2. To illustrate a way in which evidence may be used to inform midwifery practice.
3. To describe the essential components of antenatal care.
4. To explain the purpose and process of the initial contact and booking visits.
5. To describe and explain the concept of ‘decision points’ as a framework for organising care.
6. To discuss the history and processes of establishing the estimated due date.
7. To list and describe routine antenatal blood screening, blood pressure and urine screening tests.
8. To explain the purpose and process of abdominal palpation of pregnant women.
9. To describe the assessment and significance of fetal movements.
10. To explain the nature and provision of antenatal education and exercise programs in pregnancy.
11. To discuss some of the physiological changes of pregnancy, with specific reference to nausea and vomiting, constipation and heartburn.
INTRODUCTION: WHAT IS ANTENATAL CARE?

Defining antenatal care as a conceptual entity, or even in terms of a list of discrete clinical components, is difficult. Definitions of antenatal care can vary markedly, depending on one's beliefs or understanding of the childbearing process; be it from a midwifery or a medical perspective. The underpinning assumptions of these perspectives have been discussed in Chapter 3, but it is important to recognise how the midwife's perspective will influence the aims, scope and content of the antenatal care she provides, and the way in which she provides this care.

From a midwifery perspective, antenatal care is not an independent entity—it is an integral part of the whole childbearing experience. It usually represents the beginning of the journey that midwives and women will make together, which includes the time before, during and after the birth of the baby. For midwives working from a midwifery model, it is a time of forming and building a relationship with each woman and those who are important to her. It is a time when a partnership is negotiated, roles and responsibilities are identified, information is shared, options are discussed, and choices are made and supported. It is also a time when notions of wellness and normality within the context of pregnancy are supported and promoted (Brown et al., 2014; Sword et al., 2012).

Each woman and each midwife bring their respective knowledge and expertise together in this new relationship. A woman brings her knowledge of her past and present physical wellness (and that of her family), her personal, social, emotional and cultural realities, her experiences of pregnancy (present and sometimes previous), and her plans for her birth and mothering. A midwife brings her knowledge of the childbearing process, supports its normality, identifies risks, and shares information that enables the woman to make informed decisions throughout.

However, much of what constitutes contemporary antenatal care throughout the world remains strongly rooted in the ‘medical’ model within which it developed. Widespread, institutionalised, routine antenatal care began less than 80 years ago, as a mass-screening program, with the aim of reducing maternal and perinatal mortality. Via the births brought ‘pregnancy’ under medical supervision and control for the first time in human history (Wagner, 1994). The history and politics of antenatal care will not be discussed here. They are well articulated by many authors, such as Oakley (1984), Strong (2000), Katz Rothman (1989), Domnison (1988) and, in New Zealand, Donley (1998).

What is of significance in this context are the beliefs and assumptions that continue to underpin the structure and content of various aspects of antenatal care. Traditionally, and in many contemporary contexts, antenatal care consists of a prescribed set of acts based around the clinical monitoring and screening of all pregnant women, regardless of their health or risk status. This establishment of routine antenatal care was based on the notion that pregnancy is a state of pathology, rather than of normal physiology. Oakley (1984) argues that ‘the most characteristic aspect of modern antenatal care is the clinical insistence on the probability of pathology in all childbearing’ (p 2). Over the past 80 years, technological advances have brought an ever-increasing array of screening tests and treatments, ‘most often … without proper scientific evaluation and concrete evidence of benefit’ (Villar et al., 2001, p 2), although ‘few of the procedures commonly undertaken have a major impact on morbidity or mortality, and some may have no effect’ (Villar et al., 2001, p 2). Further, some have been found to cause physical, emotional or social harm (Wagner, 1994). Hall (2001, p 1546) contends that there are ‘remarkably few antenatal measures [which] are known to be effective: these are screening for and prevention of [some] infections; prevention, detection and treatment of immaturity; detection of malpresentations so that external cephalic version can be offered; and detection, investigation, and treatment of pregnancy hypertension’. These measures clearly illustrate the scope of antenatal care from a medical perspective, and the outcomes of value that are expected from it.

Some might argue that routine antenatal care fails to meet reasonable expectations of its relevance and effectiveness. If this is indeed the case, then it may be possible to mount a case to abandon it. However, such a proposition would be inappropriate from a midwifery point of view. Maternal and perinatal morbidity and mortality are not the only outcome measures of value. There is substantial evidence that midwifery-provided continuity of care has beneficial effects on other outcome measures, such as reduced anxiety, a greater sense of control (Oakley, 1992), reduced use of drugs for pain relief in labour, reduced likelihood of spontaneous or induced labour, and reduced maternal and perinatal morbidity or mortality, and some may have no effect’ (Wagner, 1994). The key point here is that antenatal care is a process that consists of more than just a series of medical tests and monitoring procedures. While some of these tests may form part of the process, in the midwifery context they are not of themselves the essence of antenatal care—that is, they do not define it. Midwives need to claim and promote the potential of holistic midwifery care, and put this potential into practice in their work. For midwives, antenatal care is fundamentally about a relationship between two actively participating individuals (and the woman’s support people), who bring their respective expertise together and work to maximise the health and wellbeing of the woman and her unborn child, and to prepare for labour, birth and parenting. From the midwifery perspective, the term ‘routine antenatal care’ is perhaps a misnomer, as there is no such thing as a ‘routine’ woman. Every woman is different, and each of her pregnancy experiences is unique.

ORGANISATION OF CARE

The provision of antenatal care in Australia and New Zealand has traditionally been based on a medically defined, controlled and provided system of assessment, screening and
monitoring of pregnant women, which was initiated in
Britain and established in the 1920s (Hall, 2001).

In Australia this remains largely unchanged, although there are increasing examples of alternative models (Reiger, 2001; Tracy, 2005). In particular, the new legislation introduced into Federal Parliament on 23 June 2009 by Health Minister Nicola Roxon has extended access to the Pharmaceutical Benefits Scheme (PBS) and the Medicare Benefits Schedule, thereby enabling midwives to provide antenatal care in the community under their own responsibility. The legislative changes will open up the possibility of midwifery models of care as alternatives to the mainstream maternity care systems. Under the new arrangements, midwives wishing to provide care under Medicare and prescribe certain medicines under the PBS will need to demonstrate that they meet certain eligibility requirements and that they have collaborative arrangements in place, including appropriate referral pathways with hospitals and doctors to ensure that women receive coordinated care and the appropriate expertise and treatment as the clinical need arises.

Auscultation of baby’s heart with electronic hand-held Sonicaid.

(Reproduced with the permission of the New Zealand College of Midwives.)

In New Zealand, legislation enabling an alternative organisation of care was introduced in 1990, which enabled women to choose, and midwives to provide, full and complete maternity care for well women without referral or deferral to doctors. The regulatory framework within which this occurs is currently referred to as ‘Section 88’ of the Primary Maternity Services Notice (Ministry of Health, 2007) (see Box 1.1). Today, antenatal care in New Zealand is founded on the concept of a primary caregiver, known as a lead maternity carer (LMC), providing the majority of care and organising referral when care is outside the scope of practice of the LMC. (See Ch 1 for detailed discussion on the role and scope of LMCs in New Zealand.)

CHAPTER 23 WORKING WITH WOMEN IN PREGNANCY

The antenatal visit

Antenatal visits are the main mechanism for the provision of antenatal care. They are negotiated and agreed upon between the woman and the midwife, and occur at prearranged times and locations, and at regular intervals throughout the woman’s pregnancy. They are multidimensional and include several components, such as information sharing, assessment and screening, active decision making, and health promotion and education. Aspects of these dimensions will be illustrated and discussed throughout this chapter.

The number and timing of visits follow a pattern, which was established when the concept of antenatal care was introduced in the 1920s (Candy et al., 2003). This traditional pattern of antenatal visits—a weekly from booking until 28 weeks gestation, fortnightly until 36 weeks and weekly until birth—remains the standard of antenatal care today in Australia and New Zealand. This format has no particular scientific, medical, social or midwifery foundation, and has recently been the subject of debate and challenge. This challenge arose from the concept of ‘evidence-based practice’ and has led to the evaluation of this aspect of antenatal care (Enkin et al., 2000).

Determining the ‘optimal’ number of visits in routine antenatal care is extremely difficult. This is due to the complexity of the process of pregnancy itself, the diversity of childbearing women, and the context-bound, multidimensional nature of antenatal care in general (Strong, 2000). Attempts to specify a particular number of visits have been based on research that measures only biomedical outcomes, such as incidence rates of preeclampsia, low birth weight, urinary tract infections, postpartum anaemia and perinatal mortality, although some studies have surveyed maternal satisfaction (Candy et al., 2003; Carroli et al., 2001; Petrou et al., 2003; Villar et al., 2001). Current recommendations, based on these studies and other similar research, are for a schedule with a reduced number of antenatal visits. The British National Institute of Clinical Excellence (NICE) guidelines (2008) recommend, for well women, 10 visits for those having their first baby (primiparas) and seven for those having their second or subsequent baby (multiparas). The new Australian antenatal care clinical practice guideline (AHMAC, 2012) precedes the same recommendation with the statement ‘determine the schedule of antenatal visits based on the individual woman’s needs’ (p 32). It is notable, however, that a reduction in women’s satisfaction with fewer visits, as reported in research that studied this issue, has been minimised and largely ignored in these guidelines. Arguably, this illustrates the continuing dominance of the medical model as the foundation of contemporary antenatal care.

Issues concerning the length and location of antenatal visits are context bound in the same way as those associated with the number of visits, and the alternative options offered are equally constrained within sociopolitical limits. In the New Zealand model, the woman and midwife negotiate the length and location of visits, with each party making her respective personal and practice choices clear prior to any agreement to work together. Although there is no set optimal length for visits, enough time needs to be
set aside to include discussion, assessment, decision making and documentation of the issues, such as those included in the ‘decision point’ framework set out in this chapter. The time taken for visits will vary according to the practice styles of individual midwives, differences in the needs and personalities of women, the stage of the woman’s pregnancy, and her health status.

It is also important that the location of visits be one in which both the woman and the midwife feel relaxed and comfortable, and be available at the time most convenient to them. It needs to be safe, both personally and culturally, and afford appropriate privacy. The ideal location will be accessible and have appropriate facilities. If possible, it is valuable for the midwife to provide some of the antenatal care in the woman’s home. This may help to alter the traditional power balance between care provider and receiver, and also provides valuable insight for the midwife into the woman’s personal and social context.

**Midwifery Practice Scenario**

When I arrived at the woman’s home, I was surprised to find an ashtray in every room—including the toilet! She had told me previously that no one who lived in the house smoked. She hadn’t mentioned that her grandmother, who lived close by, spent most of her time at her house, and smoked heavily. It was a delicate situation, with family relationships at stake, and required the full duration of the pregnancy to support the woman in negotiating smoke-free spaces in her own home. Visiting her at home and meeting her family gave me valuable insight into how to support the woman in making changes that would have a positive impact on her own health and that of her baby, without fracturing family relationships.

**Summary points:**

- **the antenatal visit**
  - Negotiate frequency, location and length of visits.
  - Visits should be multidimensional and include:
    - information sharing
    - assessment and screening
    - active decision making
    - health promotion
    - education.
- Antenatal visits are more than biomedical surveillance.

**INITIAL CONTACT**

Initial contact between a pregnant woman and a midwife is generally by phone. This call may simply be little more than an enquiry about the availability of the midwife. It may, however, evolve into a process of establishing more substantial contact between the two, either as a continuation of the phone call, or at a face-to-face meeting. This will represent the first meaningful exchange between the midwife and the pregnant woman. It is an opportunity for the woman to gain a first impression of the midwife—what she sounds like, her ways of practice and her availability. For the midwife, it is an opportunity to help the woman clarify what she is seeking, to share information about how she practises, and to talk about the choices that are open to the woman.

There is no common understanding about the nature of this contact, in terms of what it involves, or what its outcomes are expected to be. Women perceive its purpose in different ways. Some women are better informed about the process of arranging their care than others, and are very clear about what they want. Others have no clear understanding about the process or what will come out of it. It is the midwife’s obligation to assist the woman through this initial contact by providing a framework for understanding the exchange, and a pathway through it.

Likewise, there is no standard terminology for or description of this initial contact. It may be referred to as the ‘options’ or ‘check-out’ visit or contact (to ‘check out’ meaning to gain a first impression or initial understanding of a person or a situation), and many midwives will have their own term for it. It is not the same thing as a ‘booking’ visit. The key feature differentiating this contact from a booking is that, during the initial contact process, the woman and midwife share information that will enable a decision to be made about whether they will work together. The booking visit, by contrast, occurs as a result of that decision having been made.

There is also no standard format for the process itself. Although individual midwives will perceive and prioritise its various stages and content differently, it needs to include certain elements in order to be meaningful to childbearing women. For women having their first baby, the system and process are new and unknown. They will often require specific information from the midwife, and will frequently be dependent upon guidance from her; they often don’t know what they need to know, in order to make an informed decision. It is the midwife’s role to facilitate informed decision making by women, which includes the choices they make regarding their caregiver. (For a list of questions that women should have answered by a prospective caregiver see Box 23.1.)

The overall intention of this process is to identify the level of compatibility between the woman and her potential midwife, in order to determine whether they can establish a constructive working relationship. Without this, effective communication can be difficult, which can lead to a breakdown in the relationship between them, and in turn create the potential for a negative impact on social or clinical outcomes. Compatibility needs to occur at three levels: the interpersonal, the professional and the practical.

**The interpersonal level**

Each woman and midwife pair needs to feel that there is a comfortable personal connection between them. This is first and foremost a professional relationship, and not one based on shared personal experiences or a common background. The interpersonal dynamic is about a sense of relaxation...
CHAPTER 23 WORKING WITH WOMEN IN PREGNANCY

BOX 23.1 QUESTIONS TO ASK A MIDWIFE

**Pregnancy**
- Are you a member of the Australian/New Zealand College of Midwives?
- Is your practice reviewed through the College Standards Review process? (New Zealand)
- How many women do you ‘book’ each month?
- Who is your back-up midwife? How do you work together?
- When will I meet her? Will I have the opportunity to get to know her?
- If I require consultation with an obstetrician or other specialist, what are my options?
- Under what circumstances would my care be transferred to hospital staff?
- Where do you provide antenatal visits?
- Between visits, are you available for me to phone for advice?
- Do you work with or refer to other healthcare professionals or support groups?
- What are your beliefs about pregnancy and birth?

**Labour and birth**
- Do you offer home birth? Do you have access to small birthing centres in the area?
- To which hospitals do you have access?
- What birthing options do you offer (e.g. water birth)?
- Do you come to my home when I am in labour?
- In labour, if I need care from an obstetrician, how will it be arranged?
- If this happens, what role will you play in my care?
- Under what circumstances would my care be transferred to hospital staff?
- If my labour is long, who will relieve you and provide my care?

**After the birth**
- How often do you visit after the birth?
- If I need or choose to be in hospital after the birth, will you visit me there?
- What will your role be and what care will you provide, in that situation?
- For how many weeks do you provide care?
- Between visits, are you available for me to phone for advice?
- Do you work with or refer to other healthcare professionals or support groups?
- What are your beliefs about breastfeeding?

(Source: Adapted from the New Zealand College of Midwives pamphlet, ‘Questions to ask when you choose a midwife’ [n.d.])

and trust, and the ability to speak a social ‘language’ that the other feels comfortable with and understands. Different midwives will suit different women, and sometimes this initial discussion will result in a decision not to work together. This may be due to character and personality variables, about which we should not be surprised. The process is about establishing an effective human relationship (even if it is professional in nature), and so it should not be regarded as a sign of failure that a woman chooses not to work with a particular midwife.

Cultural factors are also key aspects of compatibility. It is important for women to have the opportunity to evaluate the cultural awareness and sensitivity of a midwife, and be confident that the midwife will be able to be an advocate for her culture-specific needs or desires.

The professional level
There is variation in the context and scope of practice among midwives. This variation is due in part to differences in belief and understanding of the nature of pregnancy, birth and parenting, and reflects the midwifery philosophy that underpins their practice. Midwives may also feel more or less comfortable in a range of settings. Some work comfortably with women in an obstetric setting, whereas others are most comfortable in the primary, community or home-birth context. The way in which midwives practise professionally will vary according to these beliefs as well as their levels of experience, personal confidence and comfort zones, and their skills or knowledge base.

There is also variation among women in their views, beliefs and understandings of the nature of pregnancy, birth and parenting. This will influence the expectations they have and the priorities they set for the type of care their midwife will provide. For example, before choosing a caregiver, a woman planning a home birth will want to know whether her choice will fit within the scope of practice of, and be genuinely supported by, her midwife.

The practical level
There are a number of practical details of care that will need to be discussed. The first of these is the availability of the midwife to provide care for the woman’s pregnancy, birth and postnatal period. This is focused on the estimated due date (EDD).

It is appropriate for midwives to inform women about arrangements for back-up when they are unavailable to
provide care, such as during regular time off or illness, or when they are with another woman. In some practices, midwives work together in loose ‘partnerships’, and arrangements may or may not be made for women to meet their back-up midwives; in others, visits with the back-up midwife are an integral part of the care. There is also a moral obligation on midwives to inform women about their plans for holidays during the period of care.

A second major issue is the time and place of antenatal care. Women and midwives need to identify whether they can organise antenatal visits at a time and place that suits. This is affected by the context in which care is provided, and by the personal choices made by individual midwives. Some midwives provide clinic-based antenatal care on set days of the week. Others may negotiate with women to visit their homes for some or all of the antenatal care.

Midwifery Practice Scenario

When Ana and I first met, she was 8 weeks pregnant with her first child. She told me of her plan to have an elective caesarean section; she came from a country that offered this option to all women. When asked why she feared vaginal birth so much, she recounted stories of traumatic vaginal births of women she knew. None of these were normal births. I informed her that one of my professional boundaries was to decline to work with women planning a caesarean section with no clinical indication. We talked through my reasoning. Our initial visit ended with the option of us working together on the basis of planning a normal birth, or her choosing to work with someone else. The following week she attended her prearranged appointment with an obstetrician and, after considering her options, called me to ask me to provide her maternity care. We began a journey together which eventually included a normal birth.

Summary points: initial contact

- The main purpose is to establish an equitable two-way partnership between the woman and the midwife:
  - both are active decision makers and negotiate their respective roles and responsibilities
  - both need the opportunity to make choices about whether or not they will work together.
- The midwife begins learning about:
  - the plans, beliefs and concerns the woman has about her pregnancy, childbirth and postnatal care
  - her social, cultural and physical history and context
  - issues that may make it inappropriate for her to provide care, such as when a woman has specific social or cultural needs, or an underlying medical condition that requires care and knowledge that is beyond the midwife’s personal scope of practice.
- The woman learns about:
  - the midwife’s personal beliefs regarding childbirth
  - her scope of practice
  - her professional boundaries
  - the practical arrangements that may affect the woman’s choice of caregiver
  - the midwife’s personality and practice, and decides whether she can trust the midwife to provide the kind of care that she wants.
- This process should function as a positive screening process for both the woman and the midwife.
- Each has the right to choose to work with the other.
- Both woman and midwife share information, and actively participate and make decisions in a negotiated partnership.

THE BOOKING VISIT

The booking visit is, essentially, the beginning of the care relationship between the midwife and the woman and her family. It is an important part of the whole context of midwifery care, and of the antenatal care component in particular. It occurs early in the pregnancy and at the woman’s home where possible, and includes the midwife, the woman, and Whomever else she chooses to have with her—partner, mother, sister or friend. The purpose of this visit is to formalise the arrangements for care, and to establish a foundation for the partnership. In other words, it is about defining the nature of the relationship between the woman and the midwife, and the context and meaning of antenatal care for both of them. It will:

- have a holistic focus
- be a two-way process of information sharing and decision making
- review the past, identify the present and plan the future
- include the identification of health, known ill-health, and risk markers for potential ill-health, for the woman or her baby
- include practical arrangements of care, in terms of frequency, time and place.

The booking visit happens as a result of a decision being made by the woman and midwife to work together. At this point, they will have already spoken by phone, and may have met, and will know a little about each other. If the initial contact or ‘check-out’ visit was not done face to face, it is preferable that the booking visit be held off until they have had an opportunity to meet. Alternately, the visit could begin as a check-out opportunity for both, with a clearly identified end point for the meeting, in order to give some time and space for the woman to consider whether or not she would like to work with that midwife. If both are comfortable with each other, they may decide to begin the relationship formally at that point.

The booking visit represents the beginning of a shared journey. It is the beginning of a relationship that will last for about 10 months (in the first instance), and encompass a special, powerful and life-changing period for the woman and her family. It is a time when many personal and private
Maternity: midwifery and obstetric

- Gravida—number of pregnancies (includes living children, miscarriage, termination of pregnancy, ectopic pregnancy, stillbirth, neonatal death)
- Parity—number of babies born at or beyond 20 weeks, preterm (<37 weeks), post-term (>42 weeks)
- Contraceptive history
- Past pregnancy/pregnancies—date, place, pregnancy complications, labour spontaneous/induced, gestation, labour complications (e.g. PPH), outcome, name, sex, weight, breast/switch feeding, postnatal complications, social/economic/cultural issues
- Other

Risk markers

- Chronic hypertension—genetic hypertension or pre eclampsia (degree), gestational diabetes
- Multiple pregnancy—congenital abnormalities, antenatal anaemia (Hb <105)
- Preterm birth (<37 weeks)—small baby (IUGR/SGA), APH
- Post-term birth (>42 weeks)—large baby (>4500 g), shoulder dystocia
- Assisted birth (forceps/ventouse)—lower-segment caesarean section, vaginal birth after caesarean section, postpartum haemorrhage (>1000 mL or treated)
- RH sensitisation/ABO incompatibility—perinatal infection
- Antenatal or perinatal depression/psychosis
- Other

Medical

- Essential hypertension, diabetes, heart disease
- Asthma, TB/pulmonary disease, thyroid disease
- Neurological disorder (epilepsy), musculoskeletal disease
- Renal/urinary tract disorder
- Haematology disorder, liver disease, digestive disorder
- STI, infertility, cervical abnormality/treatment
- Polycystic ovaries, fibroids, endometriosis
- Allergies, infections, vaginal/urinary tract abnormality/treatment
- HIV status risk (high/low; routine screening offer)
- MRSA risk (high/low)
- TB risk (high/low)
- Medical examination
- Surgery (what, when, complications)
- Blood transfusion
- Physical, sexual, psychological abuse
- Female genital mutilation/female circumcision
- Vitamin D deficiency
- Thromboembolism
- Haemoglobinopathies
- Other

Mental health

- Depression, anxiety, eating disorder, other +/− treated
- Family health
- Maternal—diabetes, hypertension/preeclampsia, multiple pregnancy, asthma, intellectual disability, haemoglobinopathy, allergies, mental ill-health, other
- Mental health
- Congenital abnormalities (maternal and/or paternal)—chromosomal, limb deformity, metabolic, neural tube defect, cardiac defect, cleft palate, dislocated hip(s), severe infant morbidity, SIDS/SUDI, other

ABO=ABO blood group; APH=antepartum haemorrhage; Hb=haemoglobin level; HIV=human immunodeficiency virus; IUGR=intratraline growth restriction; MRSA=meticillin-resistant Staphylococcus aureus; Rh=rhesus factor; SGA=small for gestational age; SIDS=sudden infant death syndrome; STI=sexually transmitted infection; SUDI=sudden unexpected death in infancy; TB=tuberculosis.

for maternal heart sounds in asymptomatic women with no cardiac history is unnecessary, and that neither formal breast examination nor routine pelvic examination is appropriate (Kean & Chan, 2007). The NICE (2008) guidelines do not address the issue of cardiac examination, but support the recommendation against routine breast and pelvic assessments. In contrast, Frye (1998) recommends a full medical examination including the above checks and details such as assessment of lymph nodes, reflexes, mouth, eyes and lungs, in addition to the ‘vital signs’. It is debatable whether such an examination is indicated, or within the scope of midwifery practice. Certainly, midwives generally work with well women, and should have sound knowledge of normal anatomy, physiology and organ and hormone function as well as being able to recognise signs of dysfunction, but a routine full examination may be both inappropriate and outside the midwifery scope of practice. To date, there is limited evidence available that addresses this issue to any significant degree. It is important to distinguish between something that is offered routinely and something that is offered in response to risk markers. For example, offering vaginal swabs as a screening test routinely is not currently recommended, but screening may well be indicated for a woman with a history of unsafe sex practice and/or...
BOX 23.3 CURRENT HEALTH REVIEW

Physical
- General health
- Any underlying/ongoing health concerns
- Medical examination (as appropriate)
- Cervical smear screen—if/when (indicated now?)
- Any sign of current infection (review re STI)
- BP, pulse, MSU (for dipstick culture if not NAD)
- Height (cm), weight (kg), calculate BMI
- Diet (details), exercise (details)
- Smoking (what, how much, readiness to reduce/stop)
- Alcohol, drugs (what, how much, readiness to reduce/stop)
- Safety from violence (if woman alone, or wait until the next visit or arrange another time. Ask all women.)
- Medications and supplements (details), folic acid

Emotional/psychological
- General health, psychological wellbeing
- Feelings about pregnancy and having a baby
- Planned/unplanned and welcome/unwelcome pregnancy

Social
- Autonomy, support, resources, employment, community ‘belonging’ or isolated
- Is there a current relationship—partner, husband? Is it stable and supportive?

Cultural
- Identity, integration/isolation, support, resources, needs
- Safety issues

Spiritual
- Any spiritual and/or religious beliefs that may influence needs, choices or care options

Current pregnancy: establish EDD
- LMP (sure/unsure), known conception date
- EDD (consider 283-day option)
- Positive pregnancy test
- Menstrual cycle—regular/irregular/frequency, contraception, last cycle and menstruation normal (Y/N, details)

BMI = body mass index; BP = blood pressure; EDD = estimated due date; LMP = last menstrual period; MSU = midstream urine sample; STI = sexually transmitted infection.

Chlamydia infection. In such cases it is appropriate to discuss the option of carrying out a diagnostic test to identify whether there is a current infection, along with issues of self-care, and the potential risks from such an infection to the woman’s health and wellbeing and that of her baby.

Planning the future
Working through the relevant aspects of the woman’s past and present health status enables a foundation to be established, which facilitates effective planning for the future care of the woman. The midwife and the woman are now in a position to make decisions about the relevance or appropriateness of particular screening or diagnostic tests, and to determine whether there is a need for referral for specialist consultation. This may be to any one or a number of specialists, such as an obstetrician, dietitian, physiotherapist, psychiatrist, sexual health specialist or geneticist. They are also in a position to make decisions about those other matters that are outlined in Decision point 1 (see Box 23.4).

Miscarriage, antepartum haemorrhage (APH), premature rupture of membranes (PROM), premature labour, placental abruption, and low-birth-weight babies. There is a definite correlation between DV and concurrent child abuse. DV screening is a tool for exposing the hidden. Midwives are in a unique and privileged position, as they walk beside women at such a pinnacle transition in their lives. Remember that leaving a DV relationship is a process, and you don’t know at which point a woman is at; but every single time you ask a woman directly, have a conversation about DV, offer non-judgmental support and appropriate referral to specialist agencies, you are making a momentous difference to women suffering and surviving DV.

(Source: Clarke, 2009.)
Midwifery Practice Scenario

‘Maria’, a woman from South America of strong religious faith, had unexpectedly become pregnant by ‘Tom’, a Kiwi man, which led to a rapid wedding. She worked part-time, had no family in New Zealand and did not drive. Tom shared care for his school-aged son from a previous relationship. He attended almost all antenatal visits, sitting in physical contact with Maria most of the time, overtly expressing his adoration of her. Family violence screening was carried out in the second trimester, at a rare visit when Maria was alone. No violence was disclosed.

Antenatally Maria often contacted the midwife with discomfort or pain. She experienced repeated thrush infections, some ‘fainting episodes’, significant pain from uterine fibroids, sacroiliac pain, headaches and constipation, suspected urinary tract infections and an episode of vaginal herpes lesions.

One afternoon, when Maria was at about 30 weeks gestation, Tom phoned the midwife asking if Maria had called, as she had ‘stormed out of the house after an argument, in her typical fiery South American manner, saying she was bleeding and going to the hospital’. He told the midwife that she was not bleeding, just angry, and that there was nothing to be concerned about regarding the wellbeing of the woman or their baby. Maria didn’t go to the hospital or call the midwife. The midwife accepted Tom’s assurances and didn’t follow up and check on the wellbeing of the woman. The incident was not mentioned at the next antenatal visit.

All of the family struggled to adjust postnatally, following a clinically necessary caesarean section birth. Tom reported that Maria was stressed and anxious, and struggling with caring for herself and their baby. At 3 weeks postpartum the midwife was called to see Maria on a Saturday evening, when Tom was out. Maria’s left breast was reddened and very tender. After assessment, when it was clear that there was trauma to the breast that was not caused by a breast infection, the woman eventually disclosed that the redness, and developing bruising, had been caused by Tom’s knee as he held her down during a fight 2 days earlier. Following the midwife’s appropriate response to this injury, a further three episodes of physical violence during pregnancy were then disclosed, including Maria having had her head held under the water in a bath for a prolonged period as ‘punishment’ for a misdemeanor. Tom’s son had also witnessed this violence.

The woman had not felt able to disclose the violence previously, partly because she accepted her husband’s version of previous violence as being her own fault, and partly because she had defended herself and hit him back sometimes. She had not previously recognised Tom’s refusal to shop for groceries and withholding of food money from her as family violence. The midwife was very pleased to have attended a workshop on family violence just the weekend prior to this incident. She felt equipped to use the phrases she had learned and provide appropriate information and support for the woman, in a way that she had not previously. Ongoing counselling and support was arranged for Maria from the Women’s Refuge, her GP, and a home-help agency, and Tom and the family were to attend counselling. No further violence occurred prior to discharge from maternity care at 6 weeks postpartum. Maria chose to stay with Tom.

Questions

1 Describe the cues for potential family violence during the antenatal period. Consider:
   • Tom’s overattentive behaviour and close physical contact during visits as potentially overprotective rather than adoring
   • the frequent contact with the midwife reporting numerous types of physical pain and discomfort
   • the episode when Maria left the house telling Tom she was bleeding and threatening to contact the hospital or midwife.

2 How might you, as Maria’s midwife, have responded to those cues? Consider:
   • arranging an antenatal visit alone with Maria for family violence screening (you might need to call her at work and generate a reason for the visit)
   • discussing all types of family violence, including non-physical, and their unacceptability
   • recording Maria’s work hours and contact details, including an alternative postal address, and storing them separately from Maria’s maternity notes
   • providing written information for Maria (including a small card with emergency contact numbers that could be hidden in a shoe, possibly sent to her work address)
   • reassuring Maria that she can call you at any time and you will help her get support from appropriate agencies, and that she is not to blame for the violence.

Decision Points

Decision points are a significant new initiative in the organisation of antenatal care. They provide a systematic framework for organising care, and are articulated in the New Zealand College of Midwives’ Midwives’ Handbook for Practice (NZCOM, 2008). A modified and expanded version of these decision points has been developed for this chapter, a key theme of which is a holistic midwifery approach to antenatal care.

The following decision points are based on eight time frames, which are loosely tied to gestation periods through the course of pregnancy (Boxes 23.4–23.11). They consist of four categories of cues that provide a guiding form and
CHAPTER 23 WORKING WITH WOMEN IN PREGNANCY

• palpation—hands-on learning, identification and assessment
• fetal movement (FM)
• antenatal education
• exercise in pregnancy
• physiological changes of pregnancy.

Details of the issues identified in the decision points but not covered in this chapter are covered in other chapters (see Index).

EXPLANATORY SECTIONS

Estimated due date (EDD)

Although EDD has traditionally referred to the ‘expected date for delivery’, it is not here. Here EDD refers to an ‘estimated due date’. This term is both more accurate a description and more midwifery friendly. Midwives do not expect women to give birth on this date, rightly so, with...
CRITICAL THINKING EXERCISE

Jenny is pregnant. She is not sure when her baby is due. The first day of her LMP was 15 February 2014. She has a regular cycle, which lasts 5 days, every 30 days.

1. Calculate the EDD using three different pregnancy calculators.
2. Calculate the EDD manually using Naegle’s rule.
3. Calculate the EDD using the computer software mentioned in the text.
4. Compare the EDDs from each method, and consider the implications of any potential variation.
5. What information would you share with Jenny regarding her EDD?

- ask about the normal cycle—length and regularity
- ask about contraceptive use prior to conception
- use Naegle’s rule or the pregnancy calculator to get an EDD (consider using LMP plus 283 days for a 28-day cycle)
- discuss variability and expectations regarding the actual timing of the birth
- review pregnancy signs, symptoms and experiences and compare with estimated dating
- ask if they can palpate the woman’s abdomen to compare uterine size with dates
- consider the option of a scan, if the woman has no idea of LMP or timing of conception, and date-specific screening is to be undertaken, or if her uterine size is significantly mismatched with EDD on palpation.

Routine antenatal blood screening

The use of blood tests as a screening tool is routine in antenatal care, although there is variation in the tests included or offered between states and countries (Hunt & Lumley, 2002; Australian Three Centres Consensus Guidelines on Antenatal Care Project [TCCGAGP], 2001). Currently, both Australia and New Zealand have the following tests offered routinely:

- blood group and rhesus factor
- rhesus and ABO antibodies
- complete/full blood count (CBC/FBC)
- syphilis
- hepatitis B
- rubella antibodies
- human immunodeficiency virus (HIV)
- gestational diabetes mellitus (GDM)
- Down syndrome and other conditions (first-trimester maternal serum screening in combination with nuchal translucency scan, or second-trimester maternal serum screening).

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- hepatitis B
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- human immunodeficiency virus (HIV)
- gestational diabetes mellitus (GDM)
- Down syndrome and other conditions (first-trimester maternal serum screening in combination with nuchal translucency scan, or second-trimester maternal serum screening).

CLINICAL POINT

- In Australia, anti-D (Rh, D immunoglobulin) is offered prophylactically at 28 and 34 weeks gestation to women with rhesus-negative blood groups, and also after any potentially sensitising events.
- In New Zealand, anti-D is offered only after any potentially sensitising events.

For further discussion on anti-D and rhesus sensitisation, see Chapter 22.

CRITICAL THINKING EXERCISE

Mai is 14 weeks pregnant with her first child when she first seeks maternity care. She is 24 years old, and a recent immigrant of West African ethnic origin. She and her partner Ahut are well educated and have good English-language skills.

1. What tests would be carried out if you ordered ‘routine’ initial blood screening for Mai?
2. Describe what is being tested, and its potential significance.
3. What additional blood screening tests might you consider discussing with Mai and Ahut, and what information would inform this discussion?
4. What written information is available for them in your region, on either ‘routine’ or ‘additional’ blood tests?

For detailed discussion on the conditions being screened for, see Frye (1998). The issues of the nature of screening itself, informed choice and the politics regarding antenatal screening are addressed in Chapter 22 of this book and elsewhere, for example Grimes and Schulz (2002), Oats (2000), Searle (1997) and Strong (2000). Debate continues over the appropriateness of universal versus risk-based screening, and opt-in versus opt-out, for the following conditions:

- hepatitis C (HCV)
- chlamydia
- haemoglobinopathies (e.g. sickle cell and thalassaemia)
- cytomegalovirus (CMV)
- tuberculosis (TB).

See Chapter 22 for discussion on these conditions and contemporary screening options offered. Gates (2004) addresses some of the political issues involved, as do Parker et al. (2002) and Santalähni et al. (1998). (See also Box 23.12 for additional resources for perinatal infections.)

RESEARCH ACTIVITY

Syphilis

1. What is it? How is it transmitted?
2. What are the stages, and what distinguishes them?
3. At which stage does it spread into the bloodstream?
4. How is it treated?
5. Why is it an issue for pregnant women?
**BOX 23.12 ADDITIONAL RESOURCE**

**Perinatal infections**

**Iron levels, measures and supplementation**
In the context of routine antenatal care, the midwife uses the red cell results from the complete blood count (CBC) primarily as part of the process of screening for iron-deficiency anaemia (IDA). Potential signs and symptoms of anaemia include tiredness, dizziness, pallor, glositis and koilonychia (Coggins, 2001; Jordan, 2010). Anaemia is potentially a significant threat to the health and wellbeing of women and their babies. For example, women who can result in lowered immunity, postnatal depression, and difficulty with lactation, and for babies it can contribute to premature birth, low birth weight, reduced neonatal iron stores and impaired cognitive and psychomotor development (Crowther, 2010; Milman, 2012; WHO, 2001). (IDA is the most common cause of anaemia, with folate, vitamin B12, haemoglobinopathy and haemolytic anaemia as minor causes (Milman, 2008). Physiological changes induced by pregnancy may expose underlying anaemia, or it may develop during pregnancy. Haemoglobin (Hb) levels have traditionally been used as a primary measure of anaemia, as ‘about 70% of iron in the body is in haemoglobin’ (Jordan, 2010, p 250). There is ongoing debate over the appropriate reference ranges for Hb during pregnancy, the boundaries between physiological changes and pathological changes requiring intervention in the form of supplementation, and whether routine supplementation is appropriate (Peña-Rosas et al., 2012; WHO, 2011a). ‘Currently, there are no WHO recommendations on the use of different haemoglobin cut-off points for anaemia by trimester’ (WHO, 2011a, p 3). Despite this debate, Hb remains the routine screening test recommended for IDA by the Australian and British guidelines (AHMAC, 2012; NICE, 2010).

More recently there has been an increased focus on ‘iron deficiency’ (ID), where a woman has low iron stores but not anaemia. The measure used most commonly to detect this is serum ferritin (SF), which is being advocated as the best single marker of iron status in pregnancy, with its use in combination with Hb advocated (Milman, 2006; Pasricha et al., 2010; Walsh et al., 2011; WHO, 2011a). However, parameters are not yet clearly established for pregnancy-specific reference ranges, normal physiological changes in serum ferritin and their clinical significance (Chandler, 2008; Milman, 2006; Pasricha et al., 2010; Walsh et al., 2011; WHO, 2011b).

There is no debate regarding the routine offer of screening of women for anaemia—it is recommended universally (Pasricha, 2012). Midwives may consider either routinely or selectively offering to check the SF level (along with the Hb) for women more likely to have ID or develop IDA—for example, those who have a history of heavy menses or postpartum haemorrhage, recent blood donation, short time between pregnancies, multiple pregnancy, vegetarian or poor nutrition diet, low socioeconomic status or indigenous women (Pasricha et al., 2010).

There is debate regarding the routine offer of iron supplementation in developed countries (Milman, 2012). The AHMAC and NICE guidelines recommend against routine iron supplementation (AHMAC, 2012; NICE, 2010). This is supported by research indicating that iron supplementation for women with Hb levels >135 g / L may contribute to morbidity associated with high Hb levels (Ziaei et al., 2007). Furthermore, Ziaei et al. (2008) more recently found that iron supplementation in pregnant women with Hb >132 g / L reduced serum levels of copper and zinc. At issue here is the distinction between normal physiology and pathology. Supplementation with iron, or anything else, should be done with care and with cognizance of the indications for its use and its potential effect on the physiology of pregnancy and on the sometimes-delicate balances that exist within the human body. ‘More is better’ does not apply in this context (Milman, 2012). (For further discussion on anaemia and related issues, see Ch 21 for details of dietary options and Ch 35 for pharmacological options.)

The red-cell values of a CBC may also signal haemoglobinopathies such as thalassaemia and sickle-cell anaemia, which require further testing and specialist care. Ethnicities with greater incidence of particular haemoglobinopathies are various, but include Māori and Pacific Islanders, as well as Asian, African, Mediterranean and Transcaucasian peoples (see Box 23.13 for additional information resources, and Ch 22).

**Routine blood pressure screening**
Blood pressure measurement and monitoring is a core feature of routine antenatal care. Blood pressure (BP) may be defined as ‘the force exerted against the arterial walls when the heart pumps’, and ‘the blood pressure reading is a reflection of how hard the heart must work to adequately circulate the blood’ (Frye, 1998, p 420). Taking blood pressure is essentially a screening test for hypertension, and careful measurement is important as the technique used can
In the contemporary Australasian context, this group of women may well represent the majority of the total childbearing population, yet only a fraction of the actual total will develop PE, and the majority of women in every one of the above groups will remain well and go on to give birth to a healthy baby. Although we cannot predict or prevent the development of PE, current routine antenatal BP screening does help identify some women who may be showing signs or experiencing symptoms that signal the need for closer monitoring or diagnostic testing; this may facilitate detection of PE prior to its causing morbidity or mortality (Enkin et al., 2000).

The distinction between isolated hypertension (be it chronic or gestational) and PE is an important one, with many more women having hypertension than those who go on to develop PE. ‘Chronic hypertension and mild or moderate pregnancy-induced hypertension carry little risk to the mother or the fetus, unless severe hypertension, preeclampsia, or eclampsia ensue’ (Enkin et al., 2000, p 123).

Midwives have an important role in sharing information with women about the symptoms of PE, such as severe headaches, visual disturbances (not caused by postural hypotension), epigastric pain (not heartburn), or sudden marked swelling of the face, hands and feet. This information needs to be presented in a way that enables women to recognise and respond to symptoms appropriately, rather than frightening them into a hypersensitive state of anxiety. It is important that midwives and women maintain a sense of perspective regarding the actual incidence of this condition as it is rare, affecting less than 5% of the childbearing population.

CRITICAL THINKING EXERCISE

1 Take the blood pressure (BP) of a fellow student, using two different types of sphygmomanometer (and also trying different cuff sizes), and compare the readings. Using the same sphygmomanometer, compare the BP readings of the same woman with her lying down and sitting up, and on different arms.
2 What are the implications of any differences found for the accurate measurement of BP in the antenatal care of pregnant women?

RESEARCH ACTIVITY

Identifying blood pressure values
1 Who was Korotkoff?
2 What are Korotkoff sounds?
3 How many are there?
4 Which ones are used during pregnancy?

Urine screening is offered routinely throughout pregnancy, although there is variation in both the method and markers used, and no consensus about what constitutes best practice. The aim of urine screening is the detection of proteinuria (as a marker for PE and urinary tract infection) and glycosuria (as a marker for gestational diabetes). Some practitioners also screen for asymptomatic bacteriuria early in pregnancy, using a microscopy and culture test. The dipstick urinalysis used routinely at every antenatal visit is easy to use, gives immediate results that are assessed by the midwife and is markedly cheaper than laboratory microscopy and culture. Unfortunately, it has consistently been found to have poor sensitivity and predictive value for all of the variables it is used to test (see reviews: AHMAC, 2012; NICE, 2008; Smaill & Vazquez, 2007; Waugh et al., 2004).

Screening for proteinuria as a marker for preeclampsia

It is routine practice for midwives to ask women to pass urine at every antenatal visit, and to use a dipstick to assess the level of protein present, as part of the diagnosis of PE. There is mounting evidence, however, that calls into question the accuracy of this test. A review of dipstick detection of proteinuria by Waugh et al. (2004) concluded that ‘significant proteinuria, with point-of-care urine dipstick analysis, cannot be accurately detected or excluded at the 1+ threshold and is not recommended for diagnosing PE. Further research is necessary to determine the prediction of proteinuria using ‘higher dipstick thresholds’ (p 776). The Australasian Society for the Study of Hypertension in Pregnancy states that ‘dipstick testing for proteinuria is a screening test only, with very high false positive rates’ (Brown et al., 2000, p 4). It recommends that ‘all hypertensive pregnant women with any level of positive dipstick proteinuria should be … confirmed with either: a 24-hour urine collection ≥300 mg/day [an abnormal level] or a spot urine protein/creatinine ratio ≥2.30 mg protein/ mmol creatinine [an abnormal level]. Urinary tract infection [UTI] should also be excluded.’ Clearly, a single midstream urine (MSU) sample for the protein/creatinine ratio and culture is likely to be chosen by women over the 24-hour urine collection option. A protein/creatinine dipstick measure is currently being developed, although assessing its sensitivity and predictive accuracy is expected to take some time (Waugh et al., 2004).

Given that ‘hypertension or proteinuria may be absent in … 38% of patients with eclampsia’ (Airoldi & Weinstein, 2007, p 119), use of dipstick screening for proteinuria remains appropriate as a first-level screening test. The SOMANZ guidelines for the management of hypertensive disorders of pregnancy state that ‘in practice, dipstick readings of ‘nil’ or ‘trace’ are unlikely to be significant’ (Low et al., 2009, p 5). If there is ≥1+ of dipstick proteinuria, follow-up testing that includes urine culture should be undertaken to identify the level of proteinuria, the protein/creatinine ratio and to exclude urinary tract infection (see below).

Screening for asymptomatic bacteriuria

Proteinuria on dipstick is also used to screen for asymptomatic bacteriuria in routine antenatal care, although some practitioners use dipsticks with additional measures for blood, leucocytes and nitrates for this purpose. The aim of screening is to identify those with asymptomatic bacteriuria and to offer (prophylactic) antibiotic treatment to reduce the incidence of pyelonephritis. Asymptomatic bacteriuria
Critical Thinking Exercise
Marama is a well woman who is 32 years old. She is 10 weeks pregnant with her fifth pregnancy, and has two children.

1. What urine screening tests would you consider offering Marama?
2. Is there any further information you might seek from Marama that might influence the kinds of tests you discuss and offer her?
3. What are you screening for with routine urine tests?
4. Could you discuss the purpose and reliability of urine screening tests and their results with Marama?

Summary points
- Dipstick screening for proteinuria is an important first-line test.
- Dipstick screening for GDM or asymptomatic bacteriuria is less clearly useful.
- Consider the whole clinical and personal context of the woman.

Palpation: hands-on learning, identification and assessment
Palpation, or examination by touch, is a process of the ‘hands-on’ identification and assessment of the position, growth and wellbeing of the baby. It is an integral part of every antenatal visit, and is an acquired and highly valued midwifery skill. Each midwife has her own style, with the whole process being more than the sum of the parts described here. The process involves the gathering of small pieces of information, using the senses of hearing, seeing and touching, to put together an invisible four-dimensional ‘puzzle’. It is also a significant time for two-way sharing of information. It is important for the midwife to discuss her plans with the woman, to explain the reasons for doing the examination, and to acknowledge the limitations of palpation (Enkin et al., 2000). She must seek the woman’s consent, leaving open the option for her to decline, and check out any personal and cultural safety issues surrounding this intimate and exposing experience. The midwife asks about and listens to the woman’s experience of her baby’s growth and the nature and pattern of movements, and listens to the baby’s heartbeat. She looks at the size and shape of the woman’s abdomen, and notes her responses to palpation and to the baby’s movements. The midwife uses touch to estimate the size and position of the baby, and its response to contact and voice. She also assesses the fluid volume and may identify other unexpected findings such as uterine fibroids. Observation and hands-on practice are the best way to learn the art and skill of effective palpation.

Context and preparation
The context within which the palpation occurs is a significant feature of the process. The comfort, privacy and safety of the physical environment are as important as meaningful communication between the midwife and the woman. The midwife should strive to ensure that the environment is appropriate, which will include a comfortable place on which the woman can lie down. This may be the floor (if in the woman’s home), or a bed or sofa (couch) that is firm, wide and low enough to be used with comfort.

Equipment
The midwife should ensure that she has the necessary equipment for the palpation. This includes:
- Pinard stethoscope and (possibly) Doppler ultrasound, conductive gel, tissues
- Watch with a second hand
- Privacy / modesty sheet
- Tape measure (if appropriate).

Preparation
Prior to the palpation, the midwife should:
- Have clean, warm hands (and short fingernails)
- Affirm the woman’s active role in the process
- Caution her, if the palpation is occurring in later stages of pregnancy, about the possibility of hypotension while lying on her back
- Ensure that the woman’s privacy and modesty are protected and respected.

In preparation for the palpation, the woman should:
- Be encouraged to empty her bladder
- Lie down on her back, with her abdomen exposed or accessible for palpation
- Be comfortable, with her head supported and perhaps her knees bent, with or without support under them.

During the palpation, the midwife should:
- Take care not to focus exclusively on the woman’s abdomen—maintain frequent verbal and eye contact
- Abdominal palpation  
  (Reproduced with the permission of the New Zealand College of Midwives.)
the volume of liquor, and the size and shape of the woman. Assessing growth using fundal height, by landmark or measurement, is vulnerable to subjectivity and variability in technique between assessments and assessors. The record in detecting babies small for gestational age (SGA) or with fetal growth restriction / intrauterine growth restriction (FGR / IUGR) using abdominal palpation or measurement of fundal height (without customised charts, see below) is variable (Morse et al., 2009). However, the currently available routine screening alternatives have not yet proved significantly better (Gribbin & James, 2006). For example, routine ultrasound assessing growth, amniotic fluid volume (AFV) and Doppler blood flow also have low predictive accuracy to date (Brisker et al., 2008; Haws et al., 2009; NICE, 2008), although when scans are requested following clinical assessment suggestive of SGA / IUGR ‘inadequate fetal growth detected by ultrasound is associated with an increased risk of low birth weight and poor neonatal outcome’ (NICE, 2008). Babies that are SGA (IUGR or constitutionally small) are known to have high rates of morbidity and mortality (PMMRC, 2012; Wright et al., 2006). In 2010 in New Zealand, SGA was a factor in 40% of perinatal deaths of babies, 44% of stillbirths and 25% of neonatal deaths (all >24 weeks gestation), with growth restriction not suspected for 50% of SGA stillbirths and 33% of neonatal deaths (PMMRC, 2012). These babies’ deaths present an ongoing challenge for midwives.

The two methods of fundal assessment are described and discussed below.

• ‘Landmark’-guided fundal height assessment is well-established practice, and is included in possibly every midwifery text. The ‘landmarks’ used are the symphysis pubis, umbilicus and xiphisternum (Fig 23-3). The growth of the fundus is expected to approximate this pattern, although there is variability between women and babies, as described above. McGeown (2001) notes that ‘there is no scientific foundation for the use of the umbilicus as a landmark to indicate a specific gestational age, i.e. umbilicus = 22/24/26 weeks gestation, dependent on which text one reads’ (p 191). The traditional evidence regarding the reliability of fundal height assessment is mixed, with landmark assessments the least accurate (Morse et al., 2009). Despite the lack of supporting evidence, landmark assessment is used in practice as a guide for initial rough approximation; it should not be used in isolation.

• Measurement of the fundal height is also common practice, and is recommended from 26–8 weeks gestation, at 2–3-weekly intervals (Morse et al., 2009). Fundal height measurement is taken using the
of the presenting part. The second technique (known as Pawlik’s manoeuvre) uses one hand, with the heel of your hand beginning resting on the pubic bone and the thumb and fingers extended to reach either side of the presenting part (Fig 23-9). The head feels hard on both sides, while the buttocks are irregular and soft on one or both sides. If the head is very well down in the pelvis it may not be palpable, and the shoulder can feel like the buttocks, so it is worth rechecking the upper fetal pole.

Once the presenting part is identified, the next step is to assess its descent into the woman’s pelvis. When palpating, you need also to assess the mobility of the presenting part (usually the head). If it is immobile, you need to assess the shape of the part that you can feel, considering whether it is broadening or narrowing from the top of the pubic bone. You are judging how much of the head has gone in by how much of it is left above the pubic bone, and expressing it in fifths (Fig 23-10). For example, if the head is immobile but broadening as you track its shape towards the torso, it may be one-fifth or two-fifths into the pelvis. It is defined as ‘engaged’ once the broadest part (the biparietal diameter) has descended below the pelvic rim. When documenting the descent, clearly note whether you are recording that which is palpable or that which has descended (i.e. ‘two-fifths up’ or ‘three-fifths down’).

There are other measures of the baby’s position, which note the angle, ‘flexion’ or ‘attitude’ of the head, but they are not usually significant in the context of antenatal care (Frye, 1998). Of potential significance for a primiparous woman is whether the baby’s head is engaged by 40 weeks. If it is not, the possibility of cephalopelvic disproportion (CPD) should be considered and discussed with the woman. Non-engagement for a primiparous is not definitive of CPD and evidence to date shows that pelvic assessment or changed management, such as early induction of labour, does not improve outcomes (Enkin et al., 2000).

### Reflective Thinking Exercise

1. How would you feel about exposing your abdomen for a healthcare professional to examine and touch?
2. What would help you feel more comfortable about undergoing such a procedure?
3. How might your understanding of this experience affect the way you palpate women?

#### 5. Listening or auscultation

**Purpose:** Listening to the baby’s heart rate (HR) serves to identify whether the baby is alive, which is of great clinical significance. Interestingly, the NICE guidelines (2008) suggest that, as it is unlikely to have any ‘predictive value’, routine listening is not recommended (p 277). Arguably, it does not have to have predictive value to be worthwhile. It identifies the most important clinical state—whether the baby is alive or not—which has profound clinical and personal meaning and value for pregnant women and their families, particularly those who have miscarried previously.
• those run by autonomous individuals offering private classes.

At the classroom level, the providers of AE vary greatly, with trained childbirth educators, health workers and midwives being the main leaders or facilitators. There is also considerable variation in the level and nature of training within and between these groups. Many classes have additional input from other healthcare professionals or special-interest consumer groups, such as physiotherapists, lactation consultants or La Leche League leaders, doctors, psychologists, or those who have recently given birth. Traditionally, these classes have been used by white, middle- and upper-middle-class heterosexual couples having their first child, and not by indigenous peoples, teenagers, low-income single women or those from ethnic minorities or other socially marginalised groups (Lunley, 1993; Redman et al., 1991).

What are the objectives of antenatal education, and how is it evaluated?

There is ongoing debate regarding the objectives, role, scope and potential impact of AE. A commonly expressed aim is to build women’s confidence in their ability to give birth and care for their babies (Nolan, 1999). It may also serve to build personal and social relationships, and develop shared experiences. These aims are not always realised, however, and research has identified numerous discrepancies between theory and practice in AE. These include differences between the experiences and perceptions of women and those of providers, in terms of needs, desired outcomes, and the role and efficacy of AE overall (Nolan, 1999, 2008a, 2008b, 2008c; Svensson et al., 2006; Wiener, 2002).

Involving the family in antenatal care
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Addressing the potential impact of AE, a recent literature review identified ten studies that evaluated the effect of antenatal education on labour and birth, and normal birth in particular (Ferguson et al., 2013). It found conflicting results, with some AE programs appearing to have positive effects (fewer ‘false’ labour admissions, less anxiety and greater partner involvement) and others negative ones (greater incidence of induction of labour and use of epidurals).

Evaluation of antenatal education beyond internal ‘satisfaction’ surveys or informal feedback is rare and potentially difficult (Gagnon & Sandall, 2007; Ministry of Health, 2012; Nolan, 2008a, 2008b, 2008c). ‘Because of their complex, often disparate goals and ideologies, one cannot make general statements about the effects of antenatal classes as if they were a single entity’ (Enkin et al., 2000, p 24).

What is the role of the LMC midwife in antenatal education?

At the generic level, antenatal education is a core midwifery role. Throughout the antenatal period, the midwife gets to know the woman and her supporters, and learns about her knowledge base and the beliefs, fears, plans and dreams she has about childbirth and caring for a baby. It is the midwife’s role to share her beliefs in the woman’s ability and in the process of childbirth. It is also her role to participate in health promotion and the preparation of the woman for birth and early parenting.

In relation to antenatal education classes, it is the midwife’s role to inform women of the options available to them, and to discuss the various formats, content and underpinning philosophies of these. In order to do this, midwives should familiarise themselves with the local programs on offer. Midwives need to work with women for whom existing programs are inappropriate, to facilitate them accessing information and support that is more suited to their needs. (See Box 23.15 for additional resources for antenatal education.)

CRITICAL THINKING EXERCISE

Peter and Sue are in their mid thirties, Summer is 18 years old, and Aaliya and Hamsa are Somali refugees with fairly good English-language skills. All are having their first babies.

1 What antenatal education options are available in your region for these families?
2 What is the format, content and aim of the classes that are offered?
3 Who runs them, at both organisational and classroom levels?
4 How might you work with these families in order to see if any of the classes available might meet their needs?

BOX 23.15 ADDITIONAL RESOURCES

History and politics of antenatal education
• Oakley (1984)
• Nolan (1999, 2000)
• Robertson (2001, 2004)
Exercise in pregnancy

Exercise in pregnancy has different meanings for different people. For some, it means gentle stretching exercises done as preparation for labour and birth, and is sometimes incorporated into group antenatal education (Brayshaw, 2003). For others, it means recreational sport or general physical fitness, in the form of aerobic exercise such as swimming, cycling, walking or team sports (Kramer & McDonald, 2006).

There is an increasing body of research that identifies exercise in pregnancy as improving or maintaining the health of women and their babies, benefiting physical, psychological, social and clinical health, and having more benefits and fewer ‘safety’ issues and contraindications than previously thought (Mudd et al., 2012; Nascimento et al., 2012; Zavorsky & Longo, 2011).

Historically, beliefs about exercise in pregnancy have varied with the social, cultural and political context of the time, with ‘advice for physical activity reflect[ing] activities and behaviour deemed to be socially acceptable’ (Rankin et al., 2000, p 764). Arguably, this continues today. Although caregivers have been advising women about appropriate exercise in pregnancy for centuries (Rankin et al., 2000), our knowledge about its psychological and physiological effects is still limited (Da Costa & Ireland, 2013; Gaston & Cramp, 2011; Kane, 2006).

Medical literature has focused on the physiological aspects of exercise (see reviews Kramer & McDonald, 2006). The Cochrane review concludes that ‘regular aerobic exercise during pregnancy appears to improve (or maintain) physical fitness. Available data are insufficient to infer important risks or benefits for the mother or infant’ (Kramer & McDonald, 2006, p 2). ‘Aerobic exercise’ is defined by these reviewers as ‘physical activity that stimulates a person’s breathing and blood circulation’ (p 1). Evidence with regard to the effect of frequent (≥ 5 times/week) and vigorous exercise is contradictory, with some research finding an association with low birth weight and shorter gestations, and others finding no significant differences in outcomes measured between groups of women who exercise in this way and those who exercise moderately (Wolfe & Weissgerber, 2003). Considerable research on this issue is difficult, given the many confounding variables involved, which include underlying wellness and fitness levels, physiological and psychological changes induced by pregnancy, and the potential bias within any group of women who agree to participate in research on exercise.

Midwifery literature has explored some of the psychological and social aspects of exercise. For example, Clarke and Gross (2004) and Symons Downs and Hausenblas (2004) found that:

- the most common exercise belief was that exercise improves mood
- physical limitations (e.g. nausea) obstructed participation in exercise.

The attitudes, beliefs and behaviours women have about exercise are rooted within their personal, social and cultural context, and cannot be addressed in isolation. Understanding more about the barriers and motivators for women is an important step for midwives (Da Costa & Ireland, 2013; Gaston & Cramp, 2011; Haakstad et al., 2013; Leiferman et al., 2011). As with any other issue of health promotion, a complex process is involved, and requires midwives to work in partnership with women and use effective communication, support and affirmation skills (Crafter, 1997).

**Reflective Thinking Exercise**

1. What are your personal beliefs about physical exercise?
2. How might these influence the way in which you discuss the place of exercise during pregnancy with pregnant women?
3. Spend some time talking with pregnant women and practitioners about their beliefs and behaviours with regard to the place of exercise during pregnancy.
4. Consider potential barriers and motivators for women regarding exercise/physical activity.

Physiological changes of pregnancy

Pregnancy brings about many changes within a woman’s body (see Ch 20). Almost all of these physiological changes are experienced as unwelcome and unpleasant, and some are very distressing and debilitating (Box 23.16). They are commonly referred to as ‘minor’ discomforts or disturbances, which does not reflect the impact that some of these conditions have on many women and their families. The fact that they are common, natural and not ‘pathological’, and generally resolve as spontaneously as they arise, appears to contribute to the dismissal or minimisation of them by many caregivers.

There are marked differences in the incidence and severity of these changes, both between different women and for the same woman during different pregnancies. There are also significant variations in the experiences, perceptions and responses of women to the changes caused by pregnancy. The sociocultural context within which women (and midwives) live also influences the way in which they respond. Arguably, in contemporary Western society, there is a lower tolerance for discomfort or pain among many, and an increased expectation that the negative aspects of physiological changes can be alleviated (without risk to the health of woman or baby), whether by the use of ‘medicated’ pharmacological remedies or by ‘alternative’ remedies. Further, contemporary lifestyles including diet, exercise and work patterns (paid and unpaid)
BOX 23.16 PHYSIOLOGICAL CHANGES OF PREGNANCY

Circulatory—related to changes in blood vessels or lymph system:
- oedema
- carpal tunnel
- fainting and dizziness
- palpitations
- varicose veins—leg, vulval or anal (haemorrhoids)
- bleeding gums or nose

Muscle and ligament:
- leg cramps
- ‘ligament’ pain (abdominal)
- back pain
- sciatica
- symphysis pubis dysfunction
- incontinence
- uterine cramps—‘irritable’ uterus, Braxton Hicks contractions

Digestive:
- nausea and vomiting
- constipation
- heartburn and indigestion
- ptyalism
- bloating and excessive ‘wind’
- diarrhoea

Breast—tenderness, growth, colour and size of areola, ‘leaking’

Vagina—increased discharge, pH (thrus susceptibility)

Urinary—frequency, urinary tract dilation, shortening (UTI susceptibility)

Sleep—pattern, nature, insomnia, dreams

Nose—congestion, bleeds, hay fever

Hair—growth on skin (abdomen, face), loss from head

Skin—itching, pregnancy rash (PUPPP), acne, chloasma, linea nigra, stretch marks

Dietary—hypersensitivity to taste and/or smell, pica, appetite and metabolism changes

Sexuality—libido changes

Emotional—volatility and mood swings

Headaches and/or migraines

Tiredness/fatigue increased (first and third trimesters)

PUPPP = pruritic urticarial papules and plaques of pregnancy; UTI = urinary tract infection.

may exacerbate these changes, and changing these factors can be difficult during pregnancy. Unfortunately, the very nature of physiological changes as expressions of the normal physiology of pregnancy makes them difficult to resolve with ‘treatment’ of any type. The focus is therefore on understanding the physiology and minimising the discomfort of these changes.

Responses to physiological changes vary widely, and a vast array of ‘therapies’ are used by women today. They include herbal medicine, homoeopathy, acupuncture/acupressure, osteopathy, aromatherapy, reflexology, massage, Reiki, hypnotherapy, Bach flower remedies, shiatsu and ‘conventional’ Western medicine. Additionally, there are numerous dietary and exercise approaches advocated by various healthcare professionals and lay people. Among them are those who advocate strongly for their particular therapies (both conventional and alternative), but evidence to date is very limited as to the efficacy and safety of many interventions for the alleviation of pain or discomfort caused by these changes. It is beyond the scope of this chapter to include a description or an evaluation of the range of therapeutic options for the physiological changes to be discussed, beyond the brief exemplar given on nausea and vomiting. (See Box 23.17 for additional resources for physiological changes in pregnancy.)

All interventions, including ‘conventional’ and ‘alternative’ medicines or remedies, should be treated with due respect and caution when being considered as treatments for physiological changes. (See the section on nausea and vomiting below.) It should not be assumed that because something is ‘natural’ or ‘alternative’ it is therefore any safer, of lower risk or more effective than ‘conventional’ options. It is appropriate for midwives to review carefully the available evidence regarding the safety and efficacy of any intervention option they offer women. Midwives should recognise the limits of their knowledge and training and, when discussing options and alternatives, be able to refer on to those who are trained, accredited and accountable within their own profession when these therapies are outside their scope of practice.

When women describe discomfort or pain they are experiencing, midwives must take care to differentiate
between physiological and pathological symptoms. For example:

- vomiting may be physiological or pathological, and caused either by bacterial or viral infection or by hyperemesis
- indigestion needs to be distinguished from epigastric or chest (cardiac) pain
- normal physiological increase in vaginal discharge needs to be differentiated from infections such as Chlamydia or thrush.

The physiological changes listed in Box 23.16 are the most common, and three of these will be discussed briefly here, as limited space does not permit a discussion of each and every one.

**Nausea and vomiting (morning sickness)**

Nausea and vomiting is a common, very unpleasant, yet not well-understood condition of pregnancy (see also Chs 20 and 37). ‘Nausea is the conscious recognition of sub-conscious excitation of the vomiting centre or an area close to it in the medulla. Vomiting is a complex series of movements which rids the gut of its contents when any part of it is irritated or distended’ (Jordan, 2010, p 131). While it is associated with raised levels of human chorionic gonadotrophin (hCG) hormone and changes in blood sugar levels, variability in incidence, severity and response to treatments are indicative of a multifactorial state. Box 23.18 is a summary of a range of statistics on the occurrence and severity of nausea and vomiting. These statistics have been sourced from Chandra et al. (2003), Frye (1998), Matthews et al. (2010), NICE (2008) and Wood et al. (2013).

Nausea and vomiting occurs predominantly in the first trimester. It is notoriously difficult to treat, in part because of the potentially greater harm that treatment poses to the baby during this critical developmental time, compared with other periods of pregnancy. Many treatments have been tried, including pharmaceuticals, herbal and homeopathic preparations as well as dietary, lifestyle and non-medicinal options such as acupuncture and acupressure. Unfortunately, the latest Cochrane review found a lack of clear and consistent evidence for any evaluated treatments—both pharmaceutical and non-pharmaceutical (Matthews et al., 2010). It states: ‘it is not possible at present to identify, with confidence, safe and effective interventions for nausea and vomiting in early pregnancy’ (p 19). Despite this, a wide variety of drugs are prescribed as antiemetics, with the current most commonly used dopamine antagonists, antihistamines, and vitamin supplements (Jordan, 2010). The history of conventional pharmaceutical medications for nausea and vomiting is notably marked by the tragic consequences of the use of the drug thalidomide, which caused severe limb defects in babies (Frye, 1998).

This situation illustrates the point that the widespread use of medications should not be interpreted as proof of sound evidence of safety or efficacy. For example, the NICE guidelines (2008) state that the commonly prescribed drug metoclopramide (an antihistamine) ‘has insufficient data on safety to be recommended as a first-line agent, though no evidence of association with malformation has been reported’ (p 107). Vitamin B6 (pyridoxine) has also recently been introduced as a treatment for nausea and vomiting and, once again, evidence of its safety or efficacy is limited and not robust (Matthews et al., 2010). Questions regarding safety levels and potential toxicity at high doses are unresolved, with 10 mg/day set as the safe upper limit by the Committee on Toxicity of Foods in the United Kingdom, and doses of ‘25–75 mg up to three times daily’ used in the research trials (NICE, 2008).

It is also appropriate to be cautious about the use of alternative herbal medications. An example of this is ginger (Zingiber officinale), which is currently popular, but for which there is inconsistent evidence supporting its efficacy (Ding et al., 2013; Matthews et al., 2010), variable dosage recommendations and increasing concerns regarding its safe use (Tiran, 2012). Despite its long tradition as a remedy for sickness including NVP, ginger’s pharmacological action is not yet fully understood (Tiran, 2012). It has the potential to act as an anticoagulant, hypotensive, hypoglycaemic and a cholagoguic (stimulating bile secretion), and to interact with other medications such as sedatives, hypnotics, antacids and iron (Tiran, 2012). It is important that midwives treat this as a medication and regard it with due caution. As the maximal safe dose and length of treatment is not established, the use of ginger as a medication in capsule form should be approached with caution; it may cause unforeseen problems owing to the increased dosage
that capsules facilitate, above that which might have been ingested traditionally in its natural state as fresh root ginger, eaten or taken in a tea. The Australian guideline suggests a 1000 mg maximum daily dose of ginger (AHMAC, 2012), whereas Tiran (2012) reports European and North American guidelines recommending up to 2000 mg/day as a safe dosage (both suggest divided doses of 250 mg). Ding et al. (2013, p e29) identify the dosage of various forms of ginger, with the equivalent of 1000 mg, as:

- 1 teaspoon of freshly grated root ginger
- 2 mL of ginger liquid extract
- 4 cups of prepackaged ginger tea
- 4 cups of fresh ginger tea (half a teaspoon of freshly grated ginger infused for 5–10 min)
- 2 pieces of crystallized ginger.

Ginger biscuits, ale and syrups are not recommended owing to their high sugar or alcohol content (Tiran, 2012). Further research is required on both conventional and herbal treatments for nausea and vomiting (Fejzo et al., 2013; Matthews et al., 2010; NICE, 2010; Tiran, 2012).

Alternative intervention for the treatment of nausea and vomiting, in the form of acupressure (to the Pericardium-6 ‘Neiguan’ point on the wrist), is showing promising results in most trials (NICE, 2008), and its ‘chemical-free’ nature arguably makes it a lower-risk option. Each of the alternative forms of therapy mentioned in the introduction earlier offer therapeutic options for nausea and vomiting that women may wish to consider, and midwives need to be able to make referrals as appropriate for the woman concerned.

Self-help responses to nausea and vomiting include lifestyle and dietary changes, which may provide some relief from this sometimes debilitating condition that is recognised as having the potential to impact significantly on women’s lives (Wood et al., 2013). Although the evidence base for many of these is limited or non-existent, they are the most widely accepted recommendations (Matthews et al., 2010; Wills & Forster, 2008). They include the following, sourced from the Auckland Home Birth Association (1993), Baskas (1998), Chandra et al. (2003), Frye (1998) and Jamil and Evennett (2000):

- increase rest periods
- minimise work and home stressors
- eat carbohydrate (and wait 20 minutes) before getting out of bed in the morning
- eat protein before going to bed, or if up during the night
- do low-energy/impact exercise, such as walking or yoga, after eating
- have regular small snacks of high protein and unprocessed carbohydrate (2–3-hourly)
- avoid refined, fried and spicy foods
- eat foods rich in B-group vitamins
- eat five to six small ’meals’ a day, rather than three large ones
- increase fluid (water, milk or juice) intake
- reduce coffee and tea intake if >3 cups per day.

**Constipation**

Constipation is difficult to define, but ‘is present when a person strains to defecate and has infrequent bowel movements with no underlying cause’ (Jordan, 2010, p 271). Normal patterns for bowel movements vary significantly between women, and have been defined as anything from three per day to one every 3 days (Jordan, 2002). It is therefore not the frequency of bowel motion per se, but the discomfort and difficulty in passing one that is more significant in defining constipation. Constipation may also cause headaches, bloating, abdominal pain and impaired appetite (Jordan, 2010).

Constipation is caused by hormonal changes (which result in slowed bowel motility and changes in absorption patterns), changes in food and fluid intake (volumes, times and types) and, for some, by reduced rates of exercise (Frye, 1998; Walsh, 2001). Constipation is common during pregnancy. It is difficult to establish incidence rates, owing to disclosure issues for women and to other confounding variables, such as the effects of routine from supplementation, at the time the reviewed research was carried out (NICE, 2008).

Dietary and lifestyle changes are the primary response to constipation during pregnancy. Both herbal and pharmaceutical laxatives should be used as a short-term (1–2 weeks) last resort when dietary changes are made, as they can cause flora, fluid and electrolyte imbalances in the bowel and reduced gut motility and absorption of nutrients (Jordan, 2010).

Dietary changes include increased fibre intake, such as grains (whole or bran form), beans, nuts and seeds and dried fruits. Fresh fruit and vegetables are an excellent source of fibre and have the advantage of providing both fibre and fluid together, as well as valuable nutrients. As most fibre absorbs fluid during digestion, it is important that women increase both fibre and fluid intake, as otherwise the increased intake of some types of fibre can aggravate rather than resolve constipation. Fluid intake is very important. There is no ‘right’ number of cups of fluid to have each day, but if a woman is constipated she is unlikely to be having enough fluid, either in foods or in liquid form. It is important that women drink plenty of fluid daily and not just when constipated. Prunes and kiwifruit, as fruit or juice, are excellent, but many women do not like or have access to them. Tea and coffee worsen constipation by acting as diuretics so that fluid is passed out as urine, not leaving enough in the intestine to keep the stool soft. The midwife should work individually with women, acknowledging their personal, social and cultural context, to find high-fibre foods and appropriate fluids that they might include in their diet. Regular consumption of these foods and fluids is important, rather than in response to constipation, as the bowel works best in a regular pattern or routine.

It is also worthwhile discussing issues of bowel motion pattern and technique with women. During pregnancy it may take longer to pass a motion, owing to slowed peristaltic action. It is important for a woman to take note of her body’s natural urge to go to the toilet when it occurs and not put it off or hold on, as it may be some hours or the next day before another urge occurs, and by then more fluid has been absorbed from the faecal mass and greater...
compaction has occurred. If a woman has lost the natural regular urge to pass a bowel motion, she should be encouraged to make a regular time each day for trying—after meals being the best time, given the natural peristalsis that occurs with the intake of food. Positioning on the toilet and pushing technique can also affect ease or speed of passing a motion. Women should:

- sit on the toilet with knees higher than their hips (a foot stool helps)
- have their legs hip-width apart
- lean forward with forearms resting on their knees (leaning back to push presses the stool against the posterior vaginal wall/ pelvic floor and tenses the pelvic floor, when relaxation is needed)
- keep their back fairly straight, not rolled over
- let their tummy drop forward
- with the first push (using diaphragm), lift their heels and feel widening of the waist
- breathe out and push/grunt, relax, breathe deeply and try again
- try not to strain with prolonged pushes
- allow time for the peristaltic action, if it does not come
- try massaging their abdomen in a clockwise direction, starting at the right hip (possible until about 20 weeks gestation).

Heartburn (or gastro-oesophageal reflux) is a common experience for pregnant women, with different research citing third-trimester incidence rates of between 60 and 87% (NICE, 2008). It is a very unpleasant condition in which stomach acid enter's the lower oesophagus, causing a ‘burning sensation’ in the chest or back of the throat (Frye, 1998). It is caused by hormonal changes that slow gastric motility and promote sphincter relaxation, and physical pressure from the growing uterus (Jordan, 2002). It tends to worsen as pregnancy progresses (Dowswell & Neilson, 2008) and can cause major physical discomfort for women. It can interfere with content and pattern of eating, interfere physical activity and sleeping, and result in considerable emotional and psychological distress for some women.

Numerous self-help measures for the relief of heartburn are listed below. Some will appeal to or work for one woman but not another, and some women find that something that helps initially may become ineffective as pregnancy progresses. Self-help measures for heartburn include the following:

- identifying foods that cause heartburn and avoiding them
- avoiding fried, fatty or spiced foods (for some women, bread causes heartburn)
- avoiding coffee, tea, alcohol and cigarettes, all of which worsen heartburn
- chewing food thoroughly and eating slowly
- eating apple, pineapple, papaya or kiwifruit with meals, as they have digestive enzymes that speed the breaking down and digestion of food
- eating four to six small meals a day, rather than three large ones (dividing the main meal onto two small plates and eating the second portion later or the next day reduces ‘snack food’ intake)
- eating the last meal of the day at least 2 hours before bedtime
- drinking plenty of fluid, but not with meals (they dilute digestive juices; wait 30 minutes)
- drinking milk or eating yoghurt (alkaline)
- drinking orange juice (acidic)
- chewing raw almonds or cashew nuts.

Other non-food-related strategies may include:

- checking posture, especially while sitting—slouching will worsen heartburn
- trying exercises that stretch the upper torso while sitting or standing (not lying)
- staying upright for 2 hours after eating—walking may help
- sleeping with the upper body elevated, with bricks under the bed legs, or several pillows (Balaskas, 1998; Frye, 1998, Jamil & Evennett, 2000).

There are numerous herbal remedies available, in addition to the options from all the other therapies described earlier. There are also a number of medicated pharmaceutical options, which have varying levels of efficacy, and are variously supported by evidence (Jordan, 2010).

**RESEARCH ACTIVITY**

List 10 physiological changes associated with pregnancy, and identify the following:

- the nature of the condition
- the cause (if known)
- its incidence (frequency and timing during pregnancy)
- its natural course and resolution
- the potential for pathology
- relevant self-help measures.

**REFLECTIVE THINKING EXERCISE**

1. Consider the potential impact of physiological changes on the physical, psychological and social lives of pregnant women.
2. Identify your own scope of practice regarding interventions for treating or managing the physiological changes associated with pregnancy.
3. Identify referral options for ‘out-of-scope’ treatments.
This chapter has sought to provide an introduction to the care of pregnant women. It has presented an overview of the purpose and provision of antenatal care within the context of the midwifery model. A primary aim of the chapter has been to outline the key components of antenatal care, and describe a framework for organising these components in a relatively systematic and coherent way. These components include:

- the nature and process of establishing a relationship with a pregnant woman and her support people
- the principles involved in and assisting or supporting a woman to make appropriate decisions regarding her pregnancy, and developing an individualised and effective care plan
- the assessment and monitoring of the health and wellbeing of a pregnant woman and her baby.

A framework of eight decision points has been presented, which comprise a set of four categories of cues, including information sharing, screening and assessment, decision making, and health promotion and information. They are intended to prompt the midwife to consider the holistic nature of antenatal care. While this framework strives to provide a clear structure to antenatal care, it is intended to act primarily as a set of cues for the midwife rather than a strict prescription. The partnership between a pregnant woman and her midwife is a unique one, and it is incumbent on the midwife to facilitate an effective process that meets the woman’s individual needs and reflects her personal reality.

The chapter has also discussed some of the knowledge and skills a midwife might apply in the provision of antenatal care. These include:

- establishing an estimated due date
- abdominal palpation
- blood pressure measurement
- routine blood and urine screening options
- describing the nature and significance of fetal movements
- antenatal education and exercise during pregnancy
- the concept of physiological changes associated with pregnancy, and issues related to the management of them.

A second objective of the chapter has been to argue for, and model the use of, reviewed research to promote evidence-informed midwifery in the provision of antenatal care. Much of what has traditionally been included in routine antenatal care has been based on anecdote and happenstance, rather than clear evidence that supports or refutes these practices. A good deal of the research reviewed to date either does not address issues of concern to midwives and childbearing women or is weak, or is primarily applicable to the type of antenatal care that is provided within the medical model. This has limited the extent to which the concept of evidence-based practice has been applied within this chapter. It is to be hoped that, in the future, midwives will be able to use evidence to inform their practice within the context of the midwifery model of care.

**review questions**

1. What methods for establishing estimated date of delivery (EDD) are used in your region?
2. What antenatal blood tests are considered to be ‘routine’ in your region, and what are the ‘normal’ reference ranges for them?
3. Describe the physical, personal, social and emotional implications of positive blood screening tests for pregnant women and their families.
4. What are the contemporary diagnostic criteria for preeclampsia?
5. What are the essential components of measuring blood pressure?
6. What are the basic palpation techniques, and what information can be gained from abdominal palpation in antenatal care?
7. How might midwives help women to experience palpation positively?
8. What is the significance of fetal movements over the course of a woman’s pregnancy, and how might a woman and her midwife monitor these?
9. What antenatal education and/or exercise classes are available in your region?
10. What place does exercise have in influencing the emotional and physical wellbeing of pregnant women, and what impact might social, personal or cultural factors have on exercise patterns?