1 Labour and normal birth

Cathy Charles

Introduction

'Undisturbed birth . . . is the balance and involvement of an exquisitely complex and finely tuned orchestra of hormones' (Buckley, 2004a).

The most exciting activity of a midwife is assisting a woman in labour. The care and support of a midwife may well have a direct result on a woman's ability to labour and birth her baby. Every woman and each birthing experience is unique.

Many midwives manage excessive workloads and, particularly in hospitals, may be pressured by colleagues and policies into offering medicalised care. Yet the midwifery philosophy of helping women to work with their amazing bodies enables many women to have a safe pleasurable birth. Most good midwives find ways to provide good care, whatever the environment, and their example will be passed on to the colleagues and students with whom they work.

Some labours are inherently harder than others, despite all the best efforts of woman and midwife, and the midwife should be flexible and adaptable, accepting that it may be neither the midwife's nor the mother's fault if things do not go to plan. The aim is a healthy happy outcome, whatever the means.

This chapter aims to give an overview of the process of labour, but it is recognised that labour does not simplistically divide into distinct stages. It is a complex phenomenon of interdependent physical, hormonal and emotional changes, which can vary enormously between individual women. The limitation of the medical model undermines the importance of the midwife's observation and interpretation of a woman's behaviour.

Facts

- The National Service Framework recommends that women should have as normal a labour and birth as possible, and medical intervention should be used only when beneficial to mother and/or baby (Department of Health (DoH), 2004).
- Women should be offered the choice of birth at home, in a midwife-led unit or in an obstetric unit (National Institute for Health and Clinical Excellence (NICE), 2007). An obstetric unit may be advised for women with certain problems, but it remains their choice.
- Women should be offered one-to-one care in labour (NICE, 2007). The presence of a caring and supportive caregiver has been proved to shorten labour, reduce intervention and improve neonatal outcomes (Green *et al.*, 2000; Hodnett *et al.*, 2004).
- Women tend to rate midwifery support as positive, although a few midwives are regarded as 'off-hand', 'bossy' or 'unhelpful' (Redshaw *et al.*, 2007).
- A pleasurable labour can bring great joy but 5–6% mothers develop birth-related post-traumatic stress disorder (Kitzinger & Kitzinger, 2007).
- The attitude of the caregiver seems to be the most powerful influence on women's satisfaction in labour (NICE, 2007).

Signs that precede labour

Women often describe feeling restless and strange prior to going into labour, sometimes experiencing spurts of energy or undertaking 'nesting' activities (Burvill, 2002). Physical symptoms of prelabour may include:

- low backache and deep pelvic discomfort as the baby descends into the pelvis;
- upset stomach/diarrhoea;
- intermittent episodes of regular tightening for days or weeks prior to birth;
- loss of operculum ('show') usually clear or lightly bloodstained;
- increased vaginal leaking or 'cervical weep'; and
- spontaneous rupture of membranes (ROM) – usually unmistakeable, but sometimes less so, particularly if the head is well engaged (see Boxes 1.1 and 1.2 for diagnosis and management of ROM).

Box 1.1 Diagnosis of PROM.

Woman's history

- This is usually conclusive in itself (Walsh, 2001a).
- Clarify the time of loss and the appearance and approximate amount of fluid.

Observe the liquor

- The pad is usually soaked: if no liquor evident, ask the woman to walk around for an hour and check again.
- Liquor may be:
  - Clear, straw-coloured or pink: it should smell fresh.
  - Bloodstained: if mucoid contamination, this is probably a show – but perform CTG if you doubt this (NICE, 2007).
  - Offensive smelling: this may indicate infection.
  - Meconium-stained (green): a term baby may simply have passed meconium naturally, but always pay close attention to meconium. Light staining is less of a concern,

Box 1.1 (*Continued*)

but dark green or black colouring and/or thick and tenacious meconium means it is fresh, and this could be more serious. NICE (2007) advises continuous EFM for significant meconium and 'consider' continuous EFM for light staining, depending on the stage of labour, any other risks, volume of liquor and FHR.

Speculum examination

- If the history is unmistakable or the woman is in labour, there is no need for a speculum examination.
- Never perform a vaginal examination unless the woman is having regular strong contractions and there is a good reason to do so: it risks ascending infection.
- To perform:
  - Suggest that the woman lies down for a while to allow liquor to pool.
  - Lubricate the speculum and gently insert it: the mother may find that raising her bottom (on her fists or a pillow) allows easier and more comfortable access.
  - If no liquor visible, ask her to cough: liquor may then trickle through the cervix and collect in the speculum bill.
  - Amnisticks (nitrazine test) are no longer recommended due to high false positive rates.

Box 1.2 Management of PROM at term.

Await labour

The woman can await the onset of labour in the comfort of her home, away from potential infection and unnecessary interventions. There is no need to perform vaginal swabs (NICE, 2007).

Check temperature

Ask her to do this 4-hourly during waking hours (NICE, 2007).

Observe liquor

Observe liquor and report any change in colour or smell.

Listen to the fetal heart

Intermittent auscultation is fine: there is no need for a CTG unless meconium-stained liquor observed. Observe fetal activity.

General advice

- Suggest that the woman avoids sexual intercourse or putting anything into her vagina.
- Suggest that she wipes from front to back after having her bowels opened.
- Inform her that bathing or showering is not associated with any increase in infection.
- Advise her to report any reduced fetal movements, uterine tenderness, pyrexia or feverish symptoms.
- Ask her to come back after 24 hours if labour has not started.
- Tell her that 60% women go into labour within 24 hours.
  If no labour within 24 h (NICE, 2007)
- NICE advises induction of labour after 24 hours of PROM (see Chapter 18). The woman will then be advised to remain in hospital for 12 hours afterwards so that the baby can be observed.
- **If a woman chooses to wait longer**, continue as above and review every 24 hours.
- After birth observe asymptomatic babies (PROM > 24 hours) for 12 hours: at 1 hour, 2 hours and then 2-hourly for 10 hours: observe general well-being, chest movements and nasal flare, colour, tone, feeding temperature, heart rate and respiration. Ask the mother to report any concerns.

Not all women seek advice at this stage. For those who do, the midwife should act as a listener and reassure the woman that these prelabour signs are normal. Avoid using negative terms such as 'false labour'.

First stage of labour

Latent stage

Characteristics of latent stage

NICE (2007) describes this as:

'. . . a period of time, not necessarily continuous, when:
- there are painful contractions, and
- there is some cervical change, including cervical effacement and dilatation up to 4 cm'

Midwifery care in latent phase

Women may be excited and/or anxious. They will need a warm response and explicit information about what is happening to them. In very early labour they may need just verbal reassurance; they may make several phone calls.

While not offered everywhere, home assessment is preferable to hospital; it reduces analgesia use, labour augmentation and caesarean section (CS) and is therefore probably also cost-effective. Women report greater feelings of control and an improved birth experience (McNiven *et al*., 1998; Walsh, 2000a; Lauzon & Hodnett, 2002).

Some women experience a prolonged latent phase, which may be tiring and demoralising, requiring more support (see section 'Prolonged latent phase', Chapter 8). These women may undergo repeated visits/assessments and feel that something is going wrong. Most women however cope well.

- Always greet a woman warmly and make her feel special.
- Observe, listen and acknowledge her excitement. Her first contact with a midwife is important as it will establish trust.
- Be positive but realistic: many women, especially primigravidae, are overoptimistic about progress.
- Women whose first language is not English may need extra reassurance, careful explanations and sensitivity to personal and cultural preferences. A translator that the woman is comfortable with should have been arranged prior to labour, but this is sometimes not the case.
- If labour is not established, gently explain that she is not in strong labour yet and, if it is night time, suggest she attempts to go back to sleep, or at least tries to rest. During the day she should try to relax, try warm baths or distractions such as shopping, walking or watching a film.
- If the woman has sougth direct contact, then if all is well she should be left at home, or discharged home if in hospital, to establish in labour.
- Encourage her to eat and drink at not to focus on labour and coping techniques too early; instead she should try to get on with everyday life (Simkin & Ancheta, 2005).

Table 1.1 Baseline observations in labour.

Observation	Frequency	Significance
Blood pressure Normal range: Systolic: 100–140 mm Hg Diastolic: 60–90 mm Hg (Baston, 2001)	Tested at labour onset and then hourly (NICE, 2007)	Hypertension can be caused by: • Anxiety and pain • General anaesthesia • Pre-eclampsia Pre-eclampsia is defined as: • Diastolic BP $\geq$ 90 mm Hg on two or more occasions at least 4 hours apart • Diastolic BP $\geq$ 110 mm Hg on one occasion • Systolic >160 mm Hg or diastolic $\geq$ 110 mm Hg or a mean arterial pressure >125 mm Hg • BP $\geq$ 140/90 mm Hg with proteinuria ($\geq$2+) (see Chapter 19) Hypotension can be caused by: • An epidural/top-up • Aortocaval occlusion secondary to lying supine • Haemorrhage and hypovolaemic shock (see Chapter 15)
Pulse rate Normal range: 55–90 beats/min	Tested at labour onset and then hourly when checking the fetal heart (NICE, 2007)	Tachycardia $\geq$100 bpm can be caused by (Baston, 2001): • Anxiety, pain, hyperventilation • Dehydration, pyrexia • Exertion • Obstructed labour • Haemorrhage, anaemia and shock Bradycardia $\leq$55 bpm can be caused by: • Rest and relaxation • Injury and shock • Myocardial infarction
Temperature Normally 36–37°C	Tested at labour onset and then 4-hourly (NICE, 2007) or hourly if in birthing pool	Pyrexia >37°C can be caused by: • Infection • Epidural – usually low-grade pyrexia but rises with time • Dehydration • Overheated birth pool (see Chapter 7)

- The physical check includes the following:
  - **Baseline observations.** Blood pressure (BP), pulse and temperature (see Table 1.1).
  - **Urinalysis.** Testing a sample at labour onset is recommended by NICE (2007), although its helpfulness in a normotensive woman is debatable since vaginal secretions, e.g. liquor, often contaminate the sample and abnormal findings are often ignored.
  - **Abdominal palpation.** Ascertain fundal height, lie, presentation, position and engagement (see Fig. 1.1). Ask about fetal movements.
  - **Fetal heart (FH) auscultation**. Low-risk women should be offered intermittent auscultation. There is no place for a 'routine admission trace' for low-risk women (NICE, 2007) (see Chapter 3 for more detail).

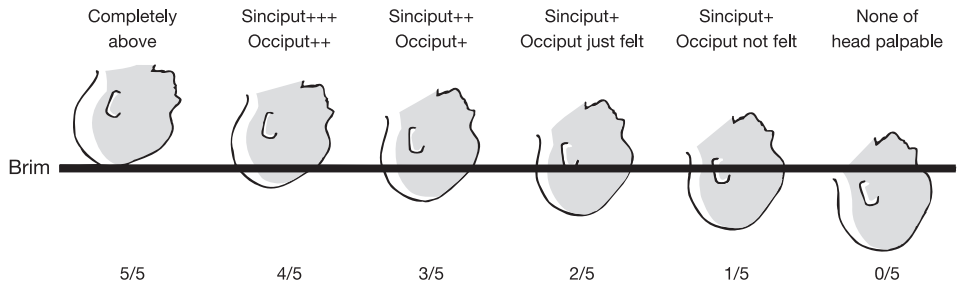

Fig. 1.1 Engagement of fetal head (fifths palpable).

- **Vaginal examination** (VE) is not usually warranted if contractions are <5 min apart and lasting >60 seconds unless the woman really wants one.
- **Ruptured membranes** (see Box 1.1 for diagnosis) are usually obvious. If the woman is contracting, there is no need to do anything other than note the history and observe the liquor. Do not perform a VE unless the woman really wants one and she is contracting strongly and regularly, due to risk of infection.

Prelabour rupture of the membranes at term

Some women experience prelabour rupture of the membranes (PROM) at term. There are some risks, including infection, cord prolapse and sometimes the iatrogenic consequences of intervention. However, most women with PROM will go into labour spontaneously and have a good outcome. For management see Box 1.2. Refer to Chapter 18 for more information.

Established first stage of labour

Characteristics of the established first stage

In early labour:

- The woman may eat, laugh and talk between contractions.
- Contractions become stronger and increasingly painful, 2–5 minutes apart lasting ≤60 seconds.
- The cervix is mid to anterior, soft, effaced (not always fully effaced in multiparous women) and >4 cm dilated.

As labour advances:

- The woman usually becomes quieter, behaves more instinctively, withdrawing as the primitive parts of the brain take over (Ockenden, 2001).
- During contractions she may become less mobile, holding someone/something during a contraction or stand legs astride and rock her hips. She may close her eyes and breathe heavily and rhythmically (Burvill, 2002), moaning or calling out during the most painful contractions.
- Talking may be brief, e.g. 'water' or 'back'. This is not the time for others to chat. Lemay (2000) echoes Dr Michel Odent's constant advice in advising midwives: 'the most important thing is *do not disturb the birthing woman*'. Midwives are usually adept

at reading cues. Others unfamiliar with labour behaviour, including her partner and students, may need guidance to avoid disturbing her, particularly during a contraction. Before auscultating the FH, first speak in a quiet voice or touch the woman's arm; do not always expect an answer.

Midwifery care in established first stage

The *Royal College of Midwives (RCM) Campaign for Normal Birth* (available at: www.rcmnormalbirth.org.uk) has produced eight top tips to enhance women's birth experience. These are listed over the page in Box 1.3.

- **Make sure your manner is warm.** Involve her partner. Clarify how they prefer to be addressed. Ideally, the woman will have already met her midwife antenatally. However this is not always possible. A good midwife, familiar or not, will quickly establish a good rapport. Kind words, a constant presence and appropriate touch are proven powerful analgesics.
- **Take a clear history.** Discuss previous pregnancies, labours and births: how does the woman feel about these? Ask about vaginal loss, 'show', time of onset of tightenings. Look for relevant risk factors.
- **Review the notes.** Check any ultrasound scans for placental location and dating or size estimation. Ensure you have a blood group and recent haemoglobin result. Check any allergies.
- **Offer continuous support.** Cochrane review (Hodnett *et al*., 2004) found that continuous support in labour:
  - reduces use of pharmacological analgesia including epidural;
  - makes a spontaneous birth more likely, with fewer instrumental deliveries and caesarean sections;
  - shortens labour; and
  - increases women's satisfaction with labour.

Supporting a woman and her partner in labour is an intense relationship, hour after hour, and can be physically and mentally demanding. Providing emotional support, monitoring labour and documenting care may mean that the midwife can hardly leave the woman's side. Involving the birth partner(s) or a doula can both support the midwife and enhance the quality of support the woman receives. There should be no restriction on the number of birth partners present, although be very sure that they are the people the mother really wants. Sometimes women accede to the desires of sisters or friends to be at the birth. Birth however is not a spectator sport: if they are chatting amongst themselves and not supporting the woman then the midwife may need to offer them some direction or tactfully suggest they leave the room.

- **"Listen to her" (RCM, 2005).** Talk through any birth plans early, while the woman is still able to concentrate. As labour progresses, observe her verbal and body language and tell her how well she is coping, offering simple clear information. Try not to leave her alone unless she wishes this.
- **"Build her a nest" (RCM, 2005).** In order to make the birth environment welcoming prepare the room before she arrives.
  - Mammals like warm dark places to nest, so keep it relaxed with low lighting.

- Remove unnecessary monitors/equipment.
- Noise, particularly other women giving birth, can be distressing; low music may help cut out such noise. Avoid placing a woman arriving in labour adjoining someone who is noisy.
- Keep interruptions to a minimum; always knock before entering a room and do not accept anyone else failing to do this.
- If there is a bed in the room, consider pushing it to the side so that it is not the centrepiece (National Childbirth Trust (NCT), 2003).

Box 1.3 Eight top tips for normal birth.

(1) Wait and see
The single practice most likely to help a woman have a normal birth is patience. In order to be able to let natural physiology take its own time, we have to be very confident of our own knowledge and experience.

(2) Build her a nest
Mammals try to find warm, secure, dark places to give birth – and human beings are no exception.

(3) Get her off the bed
Gravity is our greatest aid in giving birth, but for historical and cultural reasons (now obsolete) in this society we make women give birth on their backs. We need to help women understand and practise alternative positions antenatally, feel free to be mobile and try different positions during labour and birth.

(4) Justify intervention
Technology is wonderful, except where it gets in the way. We need to ask ourselves 'Is it really necessary?' And not to do it unless it is indicated.

(5) Listen to her
Women themselves are the best source of information about what they need. What we need to do is to get to know her, listen to her, understand her, talk to her and think about how we are contributing to her sense of achievement.

(6) Keep a diary
One of the best sources for learning is our own observations. Especially when we can look back at them and realise what we have learned and discovered since then. Write down what happened today: how you felt and what you learned.

(7) Trust your intuition
Intuition is the knowledge that comes from the multitude of perceptions that we make, which are too subtle to be noticed. With experience and reflection we can understand what these patterns are telling us – picking up and anticipating a woman's progress, needs and feelings.

(8) Be a role model
Our behaviour influences others – for better or worse. Midwifery really does need exemplars who can model the practices, behaviour and attitudes that facilitate normal birth. Start being a role model today.

RCM (2005).

- **Eating and drinking.** Women often want to eat in early (rarely later) labour. Offer her what she feels like, e.g. high-calorie snacks, fruit juice, tea, toast, cereal and

biscuits (Johnson *et al*., 2000). Drinking well will prevent dehydration, and a light diet is appropriate unless the woman has recently had opioids or is at higher risk of a general anaesthetic (NICE, 2007). Ensure her birth attendants eat too.

- **Basic observations (see Table 1.1).** There is a lack of evidence supporting many routine labour observations (Crowther *et al*., 2000; NICE, 2007), but NICE (2007) recommends hourly pulse (checked simultaneously with the fetal heart rate (FHR)) and BP, 4-hourly temperature. Consider hourly temperature if water birth (see Chapter 7).
- **Frequent micturition.** It should be encouraged, but urinalysis in labour is probably pointless. NICE (2007) recommends testing one sample at the onset of labour but the benefit is unclear as vaginal secretions and liquor commonly contaminate the sample and 'abnormal findings' are often, in practice, ignored.
- **Observe vaginal loss discreetly**, e.g. liquor, meconium, blood and offensive smell.
- **FH auscultation:** NICE (2007) recommends every 15 min for 1 min following a contraction. Midwives may disagree with this guidance that is based on consensus opinion rather than clear evidence of benefit and may choose to monitor less than every 15 min early in labour or, more frequently, at other times, e.g. following spontaneous rupture of the membranes or a VE. For more information see Chapter 3.

Assessing progress in labour

'. . . Justify intervention' (RCM, 2005).

Unless birth is imminent, most midwives undertake *abdominal palpation* when taking on a woman's care and, periodically thereafter, to ascertain the lie, position and presentation of the baby. Engagement is particularly helpful to monitor descent of the presenting part and thus labour progress (see Fig. 1.1). However some women may find this examination painful, particularly in advanced labour.

The assessment of progress can also be judged *observationally*: by the woman's contractions and her verbal and non-verbal response to them (Stuart, 2000; Burvill, 2002; see Table 1.2). Some midwives also observe the 'purple line', which may gradually extend from the anal margin up to the nape of the buttocks by full dilatation (Hobbs, 1998).

Vaginal examination and artificial rupture of the membranes

VEs in labour are an invasive, subjective intervention of unproven benefit (Crowther *et al*., 2000). However, they do remain the accepted method for assessing the progress of labour (see Chapter 2).

It can be difficult for woman to decline a VE or for the midwife to choose to perform one more selectively (i.e. when she/he feels one is best indicated). Even in low-risk births, midwives often feel pressured to adhere to guidelines which lack good evidence and have a medical bias.

NICE (2007) recommends the following:

- Four-hourly VEs in the first stage of labour.
- Cervical dilatation of 0.5 cm/hour as reasonable progress (Crowther *et al*., 2000; NICE, 2007).

Table 1.2 Contractions and women's typical behaviour.

	Cervical dilatation (cm)				
Criteria	0–3	3–4	4–7	7–9	9–10
Frequency of contractions	May be irregular and may sometimes stop; gradually increasing in frequency	2:10 min Increasingly regular, lasting 20–40 seconds	3:10 min Regular, lasting ≥60 seconds	3–4:10 min Regular, lasting ≥60 seconds	4–5:10 min Sometimes almost continuous, although can 'fade away' for a while in transition
Pain of contractions	Varying from painless/mild/ stronger	Becoming more painful but usually bearable		Increasingly painful	Often almost (sometimes completely) unbearable pain, although if in transitional stage may have some respite
Behaviour	Chatty, nervous, excited, able to make jokes and laugh; often able to talk through contractions; may use learned breathing techniques too early and need reminding to pace herself		Withdrawing more; deeper 'sighing' breathing; sense of humour fading	Becoming vocal: crying out with some contractions; may express irritation when touched	Appears withdrawn, in another world; may not reply or answer sharply; concentrating on breathing, which slows and deepens with a contraction; throaty grunting noises, crying out with expiration: may panic and express desperate ideas: 'I *can't do* this!'
Movement and posture	Mobile during contractions		Needing to stop and concentrate during contractions	Grasps abdomen and leans forward; may rock, curl toes	Less mobile, holding on to something during a contraction; often eyes closed, but may open wide in surprise with pushing urge

N.B. This is only a broad guide, intended to stimulate awareness of external signs. There is in reality no such thing as a 'typical labour' and women's behaviour will of course vary. Most women exhibit the above to some degree.

- A 4-hour rather than 2-hour action line on the partogram. This appears to reduce intervention for primigravidae with no adverse maternal or neonatal outcomes (Lavender *et al.*, 2006; NICE, 2007).
- In normally progressing labour, amniotomy should not be performed routinely (NICE, 2007). The decision should only be made in consultation with the woman,

Fig. 1.2 Hands on comfort: massage and touch.

when the evidence is discussed and the intervention justified and not minimised (RCM, 2005) (see also Chapter 2 for more on ARM).
(For more on partograms and assessing progress see Chapter 8.)

- *Document* all care on the partogram and in the notes, including any problems, interventions or referrals (for more on record keeping see Chapter 22).

Analgesia

Most midwives encourage natural and non-interventionist methods first, with pharmacological methods only if these methods are deemed insufficient. Pain is a complex phenomenon and a pain-free labour will not necessarily be more satisfying; working with women's pain rather than alleviating it underpins many midwives' practice (Downe, 2004).

The following is a brief overview.

Non-pharmacological analgesia

- **Massage and touch.** These can be powerful analgesics (Fig. 1.2), e.g. back rubbing, breathing and relaxation, massage and touch. These encourage pain-relieving endorphin release. Never underestimate the effect of being 'with woman'.
  Be sensitive. Labour can induce flashbacks for sexual abuse victims (see Chapter 2) and some women come from cultures where touching by strangers can feel invasive.
- **Distraction**, e.g. breathing patterns, music and television.
- **Position changes with aids.** These include beanbags, wedges, stools and birthing balls (e.g. Figs. 1.3 and 1.4).
- **Transcutaneous electrical nerve stimulation (TENS).** Despite conflicting opinions on effectiveness of TENS, including possible placebo effect, many women

Fig. 1.3 Kneeling forwards onto a pillow.

report that it provides good pain relief, especially in the first stage of labour (Johnson, 1997). There is no adverse effect on the mother or baby (Mainstone, 2004). However lack of substantial non-anecdotal evidence has led NICE (2007) to conclude, very controversially, that TENS should not be recommended in established labour.

- **Aromatherapy.** Only oils known to be safe in pregnancy should be used: some are contraindicated in pregnancy (Tiran, 2000). Continuous vaporisation may impede concentration and have adverse maternal effects (Tiran, 2006). Oils should be diluted, preferably to half the usual dilution in pregnancy. For a bath, adding the drops to milk prior to putting them in water helps them disperse.
- **Other methods, e.g. acupuncture/pressure, reflexology, shiatsu, yoga, hypnosis (including self-hypnosis), homeopathic and herbal remedies.** Normally only midwives trained in these specialist areas or qualified practitioners offer these therapies. Non-pharmacological methods are notoriously difficult to evaluate by standard research methods. Acupuncture and hypnosis are the only complementary therapies that have been clinically proved to work (Smith *et al.*, 2006; NICE, 2007).
- **Water.** Deep-water immersion has unique benefits (see Chapter 7). The opportunity to labour in water should be more widely adopted as part of routine care and is recommended by NICE (2007).

Pharmacological analgesia

- **Entonox (nitrous oxide).** This is possibly the most commonly used labour analgesic in the UK. There is little evidence on the effects of entonox on a mother or baby,

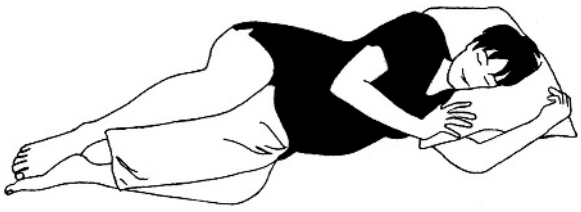

Fig. 1.4 Side lying.

and it is usually assumed that it is fairly safe. There are minor side effects, e.g. dry mouth or nausea, but entonox is quickly excreted from the woman's system and so the effects wear off rapidly if the woman stops using it. Long-term exposure risks are well documented, including the risk to pregnant staff with high labour ward workloads (Robertson, 2006).

- **Opioids, e.g. pethidine.** It is usually given intramuscularly but occasionally by patient-controlled analgesia. Antiemetics should be given prophylactically (NICE, 2007). Opioids can 'take the edge off' the pain for some women, inducing a feeling of well-being and allowing some rest. Many midwives will recount stories of anxious, scared women who on receiving pethidine fall into a doze and wake up fully dilated. Arguably, this 'emotional dystocia' (Simkin & Ancheta, 2005) can be addressed in other ways, e.g. good caring support. There are considerable doubts about effectiveness of opioid and concern about potential maternal, fetal and neonatal side effects. Opioids can cause maternal nausea, vomiting and hypotension (Elbourne & Wiseman, 2004). Some women feel disorientated and out of control.

  Neonatal side effects include respiratory depression (which may require injection of the antagonist **naloxone**), subdued behaviour patterns, including a lack of responsiveness to sights and sounds, drowsiness and impaired early breastfeeding (Elbourne & Wiseman, 2004; NICE, 2007). Babies of mothers receiving opiates in labour appear more likely to become addicted to opiates/amphetamines in later life (Jacobsen *et al.*, 1988, 1990; Nyberg *et al.*, 2000).
- **Regional anaesthesia** is used by around a third of UK women for birth (NHS Maternity Statistics, 2007) and aims to remove pain from the lower half of the body. It can take the form of an epidural, a spinal or a combination of both.
  - *Epidural anaesthesia* involves administration of local anaesthetic and/or opiates into the epidural space around the spinal column.
  - *Spinal anaesthesia* involves an opiate, and sometimes anaesthetic drug injected through the covering of the spinal cord, and is usually short acting.
  - *Combined epidural–spinal anaesthesia* appears no better than epidural alone (Simmons *et al.*, 2007), but it is rapid (NICE, 2007).

  Women should be informed about the implications for their labour before choosing regional anaesthesia (NICE, 2007). Whilst for many women regional anaesthesia may provide welcome relief from pain, regional anaesthetic drugs can cause pyrexia, leg weakness, poor mobility, longer labour, increased malposition, increased oxytocin augmentation and significant perineal trauma due to increased instrumental delivery (Leighton & Halpern, 2002; Lieberman & O'Donaghue, 2002; Howell, 2004). Opiates cross the placenta and can sedate the fetus: some studies have reported decreased mother–baby interaction and poorer breastfeeding rates following epidural anaesthesia (Buckley, 2004b).

  Care for a woman with regional anaesthesia includes:
  - intravenous (IV) access, hourly sensory block check and continual pain assessment;
  - BP monitoring every 5 min for 15 min, particularly following establishment of block and following bolus administration (top-up) (NICE, 2007);
  - continuous cardiotocography (CTG) for 30 min following establishment of block and following bolus administration (top up) (NICE, 2007);

- regular position changes and non-supine (NICE, 2007), side lying or all four position (this will depend on the block) (Downe, 2004) with attention to pressure areas;
- bladder care: regular (in and out catheter) or continuous bladder drainage; and
- avoidance of aortocaval compression.

See pharmacopoeia (Chapter 24) for more information.

Mobility and positions

'Get her off the bed' (RCM, 2005).

Midwives are the major influence on whether a woman is free to mobilise or not. Actively encouraging women to mobilise during childbirth is a fundamental component of good midwifery practice and is a safe, cost-effective way of reducing complications caused by restricted mobility and semi-recumbent postures (Gupta *et al*., 2004), as well as enriching the woman's birth experience.

Women's expectations of how to behave in labour, unfamiliar surroundings, the bed in the labour room, lack of privacy and the medical model of care, all inhibit mobility in labour. Many women spend their labour lying on their backs propped up by pillows or wedges. Most women labouring upright say they would do the same again, and those who remained supine would prefer to be upright for any subsequent labour and birth (MIDIRS, 2007). Evidence supports this choice.

However, one in five women still report that they were not enabled to choose the most comfortable position in labour (Redshaw *et al*., 2007).

> 'Think about how you can help the woman to adopt other positions in labour – observe what works and what doesn't, and review when and why these positions were most successful. Your knowledge of anatomy can also help you to understand how different positions aid the physiological processes (e.g., the curve of Carus)' (RCM, 2005).

Try to witness other midwives during deliveries or ask a colleague for support when the mother is giving birth in a non-supine position.

- Have you discussed with the woman in labour why it is important to mobilise in labour? By pointing out that labour is more likely to be shorter and less painful, you will give her 'permission' to move around freely and do what she feels is best for her.
- Women often get stuck on the bed following an examination or during electronic fetal monitoring (EFM). Suggest that she changes position or walks out to the toilet.
- Mind your back. A birth on a bed involves twisting, which is not the optimal position for your back. Any position where you face directly to the woman is better. You may need to kneel down or temporarily squat (Fig. 1.5) as the baby is born, depending on your own preference and on the mother's position (see second stage).

Transition

Towards the end of the first stage contractions may become almost continuous or, conversely, space out a little. Many women may have a sensation to bear down

during the peak of the contraction as the cervix approaches full dilatation. This stage may be the most painful and distressing. Labour stress hormones peak; this has a positive physiological effect in producing the surge of energy shortly needed to push (Odent, 1999; Buckley, 2004a). It can last a few contractions, but for some women it lasts much longer.

> 'The diagnosis of the transitional stage . . . is a far more women-centred and subjective skill . . . essentially a midwifery observation and as such is dependent on knowing the woman . . . and recognising any changes in her behaviour. Progress can thus be diagnosed without the need to resort to a VE' (Mander, 2002).

The woman experiencing the 'extreme pain' of transition has a decreased ability to listen or concentrate on anything but giving birth (Leap, 2000). She becomes honest in vocalising her needs and dislikes, 'unfettered by politeness'! This should not be misinterpreted as rejection or rudeness by the midwife or birth partner (Robertson, 1996).

Typical behaviour may include:

- distressed or panicky statements: 'I want to go home now', 'Get me a caesarean/epidural . . . ', 'I've changed my mind';
- non-verbal sounds: groaning or shouting, involuntary pushing sounds;
- body language: agitated, restless, toes curling, closed eyes due to intense concentration and pain (Leap, 2000);
- withdrawing from the activities and conversation of people around (Leap, 2000; Burvill, 2002);

Midwifery care in transition

Support birth partners. They can become tired, be stressed and want something done to help the woman. This common reaction sometimes leads to inappropriate analgesia, e.g. epidural (Mander, 2002), and then subsequent discovery of a fully dilated cervix. It can be a difficult situation for the midwife to judge.

Keep it calm. Change the dynamics if the women panics; e.g. suggest a walk to the toilet, a position change or focus on her breathing.

Avoid the temptation of VE. Unless the woman really wants it, VE is likely to yield disappointment: at this stage it is painful and the cervix is often 8–9 cm dilated (Lemay, 2000).

To push or not to push? Telling women that they must not push when they cannot stop themselves at the end of the first stage is unnecessary and distressing for the woman (Sleep *et al.*, 2000). The belief that pushing on an undilated cervix will cause an oedematous cervix is based on very limited old evidence (Perez-Botella & Downe, 2006). Remember however that a strong urge to push in earlier labour should alert the midwife to a possible problem e.g. fetal malposition (see Chapter 8).

Second stage of labour

This has traditionally been defined as the stage from full cervical dilation until the baby has been born. Usually, the actual time of onset of the second stage is uncertain

(Walsh, 2000b). There is much debate about the limitations of the medical definitions of labour as separate 'stages' which determine set care and rigid time frames, rather than care aimed at what the woman's body is doing. Long (2006) suggests that 'I would encourage others . . . to consider redefining the second stage, so that the emphasis is placed on descent and station of the presenting part instead of cervical dilation'.

Lemay (2000) describes the majority of a primigravida's pushing phase as 'shaping of the head' rather than 'descent of the head':

> 'Each expulsive sensation shapes the head of the baby to conform to the contours of the mother's pelvis. This can take time and . . . often . . . is erroneously interpreted as "lack of descent", "arrest" or "failure to progress". I tell mothers at this time, "It's normal to feel like the baby is stuck. The baby's head is elongating and getting shaped a little more with each sensation. It will suddenly feel like it has come down". This is exactly what happens.'

Characteristics of second stage

The woman may experience/exhibit the following:

- **Vomiting** often accompanied by involuntary pushing.
- **Show** or bright red vaginal loss.
- **Spontaneous rupture of the membranes** can occur at any time but often at full dilatation.
- **Slowing of the FH** (early deceleration) at the peak of a contraction; usually due to head compression (see Chapter 3).
- **'Purple line'.** Hobbs (1998) describes a line which gradually extends from the anus to the nape of the buttocks (just below the sacrococcygeal joint where the coccyx starts to curve inwards) relative to cervical dilatation. The line starts just above the anal margin at 0–2 cm dilatation. It does not rise in strict proportion: there is a longer gap between 4 and 7 cm than there is before and after. Hobbs suggests that when it reaches the nape of the buttocks, the woman is fully dilated. Checking the purple line can be quite invasive and is not appropriate for everyone.
- **Urge to push.** Powerful, expulsive contractions every 2–3 minute, lasting <60 seconds. Most women make a distinctive throaty expulsive sound at the peak of a contraction. Others may groan: 'I'm *push*ing!' This urge can precede full dilatation or occur some time afterwards.
- **Rectal pressure.** As the presenting part descends it exerts great pressure on the bowel. The woman often feels she needs to have her bowels opened and may do so.
- **External signs**, e.g. anal dilatation, bulging perineum, gaping vagina.

Midwifery care in second stage

Duration of second stage

The NICE (2007) guidelines are more flexible than previous national guidelines, although some challenge any second-stage time limit if there is progress and no fetal or maternal concern, claiming that there is no link between time per se and poor neonatal outcome (Sleep *et al*., 2000; Walsh, 2000b). There is some evidence that maternal

morbidity increases after 3 hours in second stage (Cheung *et al*., 2004) but there is known maternal morbidity with instrumental delivery (Sleep *et al*., 2000; Dupuis *et al.*, 2004).

It is disappointing that some hospitals still appear to have a 1-hour second-stage 'limit'. Rightly or wrongly, midwives have been known to 'fudge' VE results in the face of such restrictive policies, claiming that a woman has an anterior lip, to allow her more time without medical intervention.

NICE (2007) suggests the following:

- Perform a VE after an hour of 'active second stage' for nulliparous women, then artificial rupture of the membranes (ARM) if membranes intact and consider further analgesia.
- If no birth after 2 active hours (or after 1 hour for multiparous women), then obstetric review every 15 min as long as there are no concerns about fetal well-being and not to start oxytocin.
- Instrumental delivery after 3 hour of active pushing for a nulliparous woman and 2 hours for a multiparous woman (in the absence of fetal well-being concerns).

Vaginal examination. It has become the norm for full dilatation to be confirmed by VE. While it can be helpful, it is not always necessary, particularly if the external signs are evident or in multiparous women.

Monitoring the FH. As the baby descends with pushing, the FH can be difficult to locate and monitoring may feel invasive and uncomfortable. Early decelerations are more common in the second stage, sometimes becoming late decelerations or even an end-stage bradycardia (see Chapter 3).

In the second stage of labour, NICE (2007) recommends FHR auscultation every 5 minutes following a contraction.

Pushing

Bergstrom *et al*. (1997) ask, 'Why does the clinician's definition of second stage take precedent, regardless of what the woman's body is instinctively doing?'

Bergstrom *et al*. describe how midwives expend great energy, discouraging a woman from pushing prior to confirmation of full dilatation, and then coerce her into exaggerated active pushing once full dilatation is confirmed. As stated earlier, there is no evidence that cervical swelling occurs with premature pushing (Walsh, 2000b) and active pushing is thought to do more harm than good (see also Chapter 2, 'Anterior lip', p. 36).

Enable spontaneous involuntary pushing. Women simply push as they wish, most women take a short breath, hold their breath for $\leq$6 seconds as they bear down and then give an expiratory grunt (Thomson, 1995). They may give multiple short pushes with a contraction.

Push only when ready. Women naturally push as the contraction builds up and the urge is present. The earliest part of the contraction pulls the vagina taut, preventing it from being pushed down in front of the descending presenting part (Gee & Glynn, 1997).

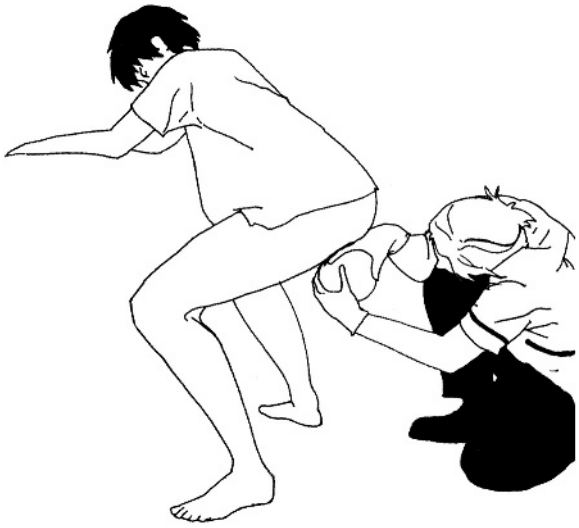

Fig. 1.5 Standing/hanging from a bed (second stage).

Forced pushing (valsalva). This is inadvisable in a normal birth as it involves directed, prolonged breath-holding and prolonged bearing down (Sleep *et al*., 2000), which can result in FH abnormalities, lower Apgars, perineal trauma, episiotomy and instrumental birth (Thomson, 1995; Sleep *et al.*, 2000). Pelvic dysfunction and urinary incontinence can also result from forced pushing (Schaffer *et al.*, 2005).

Try stopping pushing or even trying to 'suck the baby back in' for a few contractions if pushing feels ineffective: paradoxically (perhaps it is psychological), some women find that this increases their pushing urge (Lemay, 2000).

Pushing with an epidural. Many women do not experience a pushing urge and may need more direction. Delaying pushing for an hour or two (Roberts *et al*., 2004), allowing 3–4-hour second stage (NICE, 2007), may help achieve a normal delivery and avoid other complications (Simpson & James, 2005). Discontinuing the epidural can be distressing for the woman and does not increase the spontaneous birth rate (Torvaldsen *et al*., 2004). See Chapter 8 for ideas to improve the spontaneous birth rate in epidural.

Slow progress may be normal for that woman or the sign of problems (see Chapter 8).

Birthing positions. Squatting, kneeling or side lying, as opposed to lying semi-recumbent, increases the maximum pelvic outlet significantly. Gravity-enhancing upright positions (Figs. 1.1, 1.3, 1.5 and 1.6) appear to be less painful and may shorten the second stage compared with supine or lithotomy positions which increase fetal heart anomalies, dystocia, episiotomy and instrumental delivery (Gupta *et al.*, 2004; RCM, 2005). Side lying appears to reduce perineal trauma the most, while squatting may increase it (Shorten *et al.*, 2002; Bedwell, 2006). Blood loss appears higher following upright birth (Gupta *et al.*, 2004), but this may be due to the ease of measuring blood loss when upright. Upright positions may also benefit the perineum in making episiotomies difficult to perform (Albers *et al*., 2005): as a result there are more second-degree tears instead (Gupta *et al.*, 2004). Many women instinctively take up the position that feels right for them; encourage them to do so.

Fig. 1.6 Supported squat (second stage).

Verbal support. Speak soothingly, give simple explanations and praise the woman for doing so well. Insincere and overeffusive praise can sound false. Most midwives tend to instinctively know the right things to say and when to say them.

The birth

As the birth approaches the perineum bulges, the vagina gapes and the anus flattens. Often the woman opens her bowels when pushing. The presenting part becomes visible and advances with contractions. A surge of birth hormones, including oxytocin and catecholamines, known as the 'fetal ejection reflex' increases the energy needed to expel the baby (Odent, 2000). The woman may cry out as she feels the stretching, burning sensation of the stretching perineum. She may be immensely focused or, conversely, may panic, and writhe around maybe even resisting pushing because of the pain.

Low lighting and privacy. There is no justification for putting on bright fluorescent lights. They are harsh and institutional and may cause a stress reaction, inhibiting natural oxytocin production. Birthing mammals tend to prefer darker environments and need nests where they feel safe (Johnston, 2004). A light source near the perineum may reassure some midwives who wish to view the perineum, but continual staring and focusing on the perineum and/or the woman's face may put her under pressure and make her feel exposed. This can feel particularly voyeuristic for sexual abuse victims (Kitzinger, 1992). Also think of the baby: the transition from womb to outside world is likely to be quite a shock as it is, without a bright light shining into its eyes.

Reassurance. This can be a key moment where trust between midwife and woman staves off panic. A calm voice telling her she is nearly there, that she can do it, can help get her through this most challenging of episodes. Try to minimise noise: imagine the difference for the baby if it is born into a peaceful room, perhaps with its mother's or father's voice the first that it hears.

Noise. While it is important to protect the baby's ears from unnecessary noise, the one exception to this is the mother's need to sob, grunt, moan or even scream at the point of birth. This has been described as the 'song of labour' (RCM Campaign for Normal Birth website). There is a big difference between a woman's need to make a noise and the cacophony of shouting and exhorting that other birth supporters can sometimes create. This is not the time for a choir: let her sing her solo.

Having said this, Odent (1994) describes an indigenous Canadian people who assist a slow birth by gathering around the woman and suddenly shouting; the shock apparently triggers a fetal ejection reflex. While there is occasionally a place for an energy injection from onlookers, midwives need to be very skilled to avoid the woman feeling shrieked at by tense carers.

Warm/cold compresses may be soothing although there is conflicting evidence of their benefit, while **perineal massage in labour** is not helpful and NICE (2007) recommends avoiding it in the second stage. This is again for the woman to decide: some find any perineal touch excruciating now.

Episiotomy is performed much less often these days: down to 14% of UK births (NHS Maternity Statistics, 2007) with great local variation in practice. Some clinicians do none at all. It is justified only for suspected fetal compromise (Sleep *et al.*, 2000) or some instrumental deliveries (NICE, 2007). It should not be routinely offered for a previous third- or fourth-degree tear (NICE, 2007). Avoid in your impatience classifying an uncomplicated slow delivery as a 'rigid perineum' – this is rare. Even if you think the perineum is about to tear, there is more chance of an intact perineum if you wait and see. Cochrane review suggests that restrictive episiotomy causes less perineal trauma, less suturing and fewer complications, no difference for most pain measures or severe vaginal/perineal trauma, but there is an increased risk of anterior perineal trauma. The relative effects of midline compared with mediolateral episiotomy are unclear (Carroli & Belizan, 1999), although NICE (2007) recommends mediolateral, with tested effective analgesia (unless in an emergency).

Head awareness. It may be encouraging for the woman to touch her baby's head or watch in a mirror as she pushes. Some women appreciate this, while others absolutely do not want to touch or watch.

Slow birth. Controlled pushing of the crowning head between contractions appears to reduce perineal trauma (Albers *et al*., 2005): also a calm and relaxed atmosphere may help (Jackson, 2000). At the point of crowning some midwives encourage gentle shallow breaths and slow small pushes.

Hands on or poised? Whether midwives put hands on (flexing the head and guarding the perineum with the other hand) or off (both hands off but poised to gently prevent a baby emerging too rapidly) does not appear to significantly affect perineal trauma (McCandlish *et al*., 1998; Caroci & Riesco, 2006; NICE, 2007). Neither appears to do harm and so this is an individual decision.

Await restitution. While some babies deliver quickly, most await the next contraction for the shoulders to rotate. The baby's head will turn and the shoulders gently emerge. This final contraction may take $\geq$2 min to arrive. Beware of overdiagnosing shoulder

dystocia (see Chapter 16). Two minutes can seem like a long wait. Resist the urge to apply traction before the next contraction, as this contraction will enable rotation of the shoulders into the anteroposterior diameter before they can deliver. This final contraction may take ≥2 min to arrive.

Checking for cord. Opinion varies whether to routinely check for cord around the neck: it is often painful. Unless the baby seems slow to deliver, untangle any nuchal cord after the birth (Association of Radical Midwives (ARM), 2000). If the cord (not an impacted shoulder) genuinely seems to be preventing delivery then clamp and cut, but remember you have now removed the baby's oxygen supply; birth should be imminent to prevent neonatal compromise.

The moment of birth. Do not rush to deliver the body; perineal damage can occur with a shoulder or a hand. A gentle unhurried birth of the body is just as important as the head. The mother or father may wish to put their hands down as well and feel the baby birthing. The midwife should already have checked that the mother is happy to have her baby put straight into her arms for immediate skin-to-skin contact (see Box 1.4). Occasionally, parents are squeamish in advance about wet bloodstained babies, but the reality is usually quite different. Most women will reach out instinctively to their baby.

Box 1.4 Skin-to-skin contact.

Immediate skin-to-skin contact between mother and baby appears to

- Improve mother and baby interaction.
- Keep babies warmer.
- Make breastfeeding more likely and improves duration of breastfeeding.
- Probably improve the early relationship between mothers and babies (Moore *et al*., 2003).

CEMACH (2007) has identified failure to offer skin-to-skin contact and early breastfeeding as one reason why too many babies of diabetic mothers are admitted to neonatal intensive care unit.

Preterm babies appear to benefit too (see p. 177).

Remember. Some animals are known not to attach to their young unless they are able to lick and smell them immediately after birth (Buckley, 2004b).

Benefits of fathers offering skin-to-skin contact

- Fathers offering skin-to-skin contact to preterm babies felt earlier positive feelings towards them (Sullivan, 1999).
- Babies given skin-to-skin contact with their fathers following CS cry less and appear calmer (Erlandsson *et al*., 2007).

Third stage of labour

There are two options for assisting the third stage of labour: active or physiological (expectant) management. NICE (2007) recommends active management but states that women who request physiological management should be supported.

Physiological management is suitable if the woman has had a physiologically normal labour and birth (no epidural, no IV oxytocin). Wickham (1999) suggests that overall blood loss by 36 hours is similar with active or physiological management, and optimal birth blood loss is unknown; however, since active management reduces blood loss immediately following birth, it is advisable for anyone at significant risk of postpartum haemorrhage (PPH) (Prendiville *et al*., 2004).

Neither method appears to have any ill effects on the baby (Prendiville & Elbourne, 2000). Delayed cord clamping (occurring naturally with physiological management, but still achievable with active management) allows 20–50% increased blood flow to the baby (Prendiville & Elbourne, 2000), increasing neonatal haemoglobin and haematocrit without significantly increasing symptomatic polycythaemia or jaundice (Mercer, 2001; Hutton & Hassan, 2007). It may reduce fetomaternal transfusion, benefiting rhesus-negative women with rhesus-positive babies (Prendiville & Elbourne, 2000).

All midwives should be knowledgeable about both methods of third stage management. Some midwives lack experience and confidence of physiological third stage management, having assisted only a very few physiological third stages and never really learned what to do – and what, more importantly, not to do.

Physiological third stage (expectant management)

If the woman has had a positive birth followed by unhurried, quality contact with her newborn, this will facilitate oxytocin release (Odent, 1999), the hormone that stimulates uterine muscle contraction. Breastfeeding and/or nipple stimulation will also increase natural oxytocin. The woman may use her contractions, upright postures and maternal pushing efforts to aid placenta delivery, or it may just suddenly emerge.

Midwifery care for a physiological third stage

'Watchful waiting' – resist the urge to intervene.

Do not

- Administer an oxytocic.
- Palpate the uterus (fundal fiddling).
- Apply cord traction.
- Routinely clamp and cut the cord. Levy (1990) suggests clamping the baby's end of the cord and then cutting, leaving the maternal end of the cord free to bleed *only if* mother and baby have to be separated (e.g. the baby requires resuscitation or the mother wishes to move from a pool to a bed to deliver the placenta and the cord is short). If possible, wait until the cord has stopped pulsating so that the baby receives plenty of maternal blood, unless the situation is urgent.

Do

- Encourage skin-to-skin contact.
- Encourage breastfeeding to increase oxytocin levels. (Nipple self-stimulation can also help.)
- Wait a while (typically >20–30 min).

Watch blood loss and **observe for signs of separation**, e.g.:

- Cord lengthening
- Trickle of blood/passage of small clots
- The woman may groan, have a period-type ache or urge to push
- The placenta may be visible at the vagina

Assist the mother to an upright posture, e.g. kneeling, squatting or sitting: gravity will help her birth the placenta.

Push with a contraction as expulsive efforts are usually more effective then.

If the placenta does not emerge after several attempts, relax and wait a while before trying again. A quiet darkened room may reduce the woman's stress hormones and increase oxytocin production.

If the woman has tried pushing, utilising gravity, changing position, breastfeeding and passing urine, you may wish to check that the placenta has actually separated: a gentle VE may reveal the partially/totally separated placenta in the os or vagina.

If the placenta is slow, but there is no heavy bleeding, then encourage the baby to nuzzle and feed at the breast. Encourage the woman to relax . . . and try to do the same.

Most women (95%) deliver the placenta within 1 hour of physiological third stage (NICE, 2007), with multiparous women averaging 20 minutes (Begley, 1990). There is little good evidence to guide midwives in the safe time to wait for a placenta to deliver, as most PPH studies look only at active management. NICE (2007) recommends proceeding to active management (oxytocic+cord traction) after 1 hour, citing one study suggesting that PPH risk rises after 30 minutes and peaks at 75 minutes with both active and physiological management (Combs & Laros, 1991), but this old US data (i.e. 1976–1985) may not be applicable to current UK physiological management.

Active management of the third stage of labour

Active management usually achieves delivery of the placenta within around 10 minutes of birth. Initial blood loss is reduced (Prendiville *et al*., 2000).

- **Give a prophylactic oxytocic** with the delivery of the anterior shoulder or following birth. Oxytocic agents are listed in Chapter 24. Syntometrine is commonly used, although NICE (2007) recommends oxytocin (syntocinon) 10 IU IM as this appears to be as effective as syntometrine at preventing haemorrhage and reduces the likelihood of retained placenta.
- **Clamp and cut the cord.** This is often in practice done immediately, and NICE (2007) recommends this in the absence of substantive Western trials; however, delayed cord clamping for several minutes is shown to benefit the babies with anaemia in developing countries (NICE, 2007), with only a small rise in hyperbilirubinaemia. Further research is needed. If syntocinon has been given as NICE suggests, which may take >2 minutes to take effect through an intramuscular route, the benefits of early cord clamping are debatable. Surely until an oxytocic has started to take effect the cord should not be clamped: this would be mixing physiological and active management. NICE do not address this contradiction however, and midwives must make their own judgement on this issue.
- Cochrane review suggests **unclamping the maternal end** and allowing it to drain into a bowl may reduce the length of the third stage and possibly reduce the incidence of retained placenta (Soltani *et al.*, 2005).
- **Deliver the placenta by controlled cord traction.** Press the lower uterine area ('guard the uterus') with one hand while gently but firmly pulling the placenta with the other, typically several minutes after the administration of the oxytocic. Some midwives wait for placental separation first, i.e. a small gush of blood indicating that the placenta has sheared off the uterine wall.
- **Retained placenta.** NICE (2007) defines a 'prolonged third stage' as an undelivered placenta after 30 minutes of active management since PPH risk is increased after this time (see Chapter 15 for PPH management).

Possible third-stage problems (physiological or active management)

The placenta is delivered, but the membranes remain stuck:

- Suggest that the mother gives a few hearty coughs: this usually releases the membranes and they slide out.
- It is also possible to gently twist the placenta round and move it up and down, to coax them out (Davis, 1997).

Bleeding is heavy, gushing or continuous:

- Rub up a contraction.
- Administer oxytocic: local policy may apply. Syntocinon may be preferable to syntometrine/ergometrine if the placenta is still in situ as the latter cause the cervical os to close (Crafter, 2002) but ergometrine is faster acting; consider IV administration if giving syntocinon.
- Refer to Chapter 15 for PPH management.

Following delivery of the placenta

Check that the woman's uterus is well contracted and the blood loss normal. Examine the placenta (Fig. 1.7): some women are fascinated by their placenta and wish to watch this.

Fig. 1.7 The midwife should check that there are three vessels (two arteries and a vein): a chorion and an amnion. Observe for completeness and record any abnormalities.

After the birth

Immediately after the birth. Women's reactions vary enormously. Some may enjoy being congratulated: others are in their own new world at this point and simply do not know the midwife exists. Stand back: let her or her birth partner explore the baby to discover the sex; resist the urge to talk loudly or take control unless it is clear that guidance is wanted.

The baby. Babies are individuals too and may have had a hard birth. Some gaze calmly around: others cry pitifully and need lots of comfort. Mothers are known to use a particular high soothing voice to their newborn.

Babies are vulnerable to heat loss. Keep the baby snuggled up with its mother and/or birth partner for skin-to-skin contact for as long as they want. A warm hat and blanket over the outside of the mother and baby will keep them both warm. The World Health Organization (WHO) (1997) has suggested a list of actions to reduce neonatal hypothermia, known as the warm chain (see Box 1.5).

For babies needing **resuscitation** see Chapter 17.

For **examination of the newborn** see Chapter 5.

Breastfeeding. As with labour, it is important for midwives to 'sit on their hands' at this point: try to minimise interruption, giving the mother and baby space to explore each other. Most babies are very alert immediately after a natural birth. They will readily root towards the breast, nuzzle, lick and suckle when they are ready. The first hour after birth is a special time. Some animals are known not to attach to their young unless they are able to lick and smell them immediately after birth (Buckley, 2004b).

Examine the perineum for trauma when the woman is ready. Many will want this to be over as soon as possible so that they can relax and enjoy their baby (see Chapter 4).

Offer analgesia. Multigravid women, in particular, can experience strong afterpains, and all women are vulnerable to perineal and rectal pain, even with an intact perineum. Excessive perineal pain may indicate a haematoma (see Chapter 15).

Records. Carefully record the birth. Computer details are usually also required. This gives the opportunity for a psychological break for the midwife who may have been under intense pressure for some hours. Sensitive midwives will make the mother, not

Box 1.5 The warm chain.

(1) Warm delivery room
(2) Immediate drying
(3) Skin-to-skin contact
(4) Breastfeeding
(5) Bathing and weighing postponed
(6) Appropriate clothing and bedding
(7) Mother and baby together
(8) Warm transportation
(9) Warm resuscitation
(10) Training and awareness

WHO (1997).

the paperwork or their own tiredness, the priority. Most parents relish being left on their own to explore and enjoy their baby. Others may prefer to have a midwife hovering. Most of the paperwork can be done in the room and so be flexible.

Think about the birth partner. They can feel exhausted, overwhelmed and even traumatised by experiencing birth. Congratulate them on their support; show that you realise their needs are important. Remember they, like their partner, may need time later to recount their story.

Offer food and drink. There is nothing like the smell of tea and toast in the middle of the night to remind you a baby has been born.

Get her settled. The mother should not be hurried to have a bath or move to a fresh bed: some will feel the need to freshen up earlier than others. If the birth is at home, she can have all the time in the world. The 'routine' postbirth bath has become almost a ritual after birth for many midwives: many mothers (and babies) may enjoy the experience but some mothers may be too tired to want to move. It has been suggested that some shivery women may value being warmly wrapped and left for some time (Simkin & Ancheta, 2005): the cooling by evaporation that occurs following a bath may chill them further. Bathing should be optional, not routine practice.

Check that her pulse, temperature, BP and lochia are normal. Record when she has passed urine. On a busy labour ward there is often pressure to transfer the woman quickly to the postnatal area. Sometimes this is just habit, and midwives are pressured to rush even if the labour ward is quiet. Resist this coercion. Sometimes, however, it is necessary for the safety of other mothers who may need a birth room and the midwife's attention imminently. If this is necessary, consider continuing skin-to-skin contact by suggesting that the baby bathes with the mother if she wants a bath, or goes to the father for skin-to-skin contact, and/or tucks inside the mother's or father's clothes for further contact during transfer to the postnatal area. Enthusiastic midwives find innovative solutions.

Summary

Latent phase

- Ideally spent at home
- If PROM:
  - Check for infection: if infection, advises induction of labour with IV antibiotics
  - Wait 24 hours for labour to start: after this time NICE recommend IOL but some women will choose expectant management

Established first stage

- Continuous midwifery support is effective analgesia.
- Make her feel safe: build her a 'nest'.
- Encourage:
  - Mobilisation and position changes
  - Regular bladder emptying, eating and drinking
  - Natural coping methods

- Observe/monitor:
  - Basic vital signs
  - Contractions and her response to them
  - Progress and descent by palpation and VE (if required)
  - FHR intermittently unless concerns
- Avoid:
  - Unnecessary VEs/ARM/other interventions
  - Arbitrary time limits

Second stage

- Observe/monitor:
  - Descent by external signs, palpation and/or VE
  - FHR intermittently unless concerns
- Encourage:
  - Upright posture, non-directed pushing
  - Low lighting and privacy
  - Slow, gentle birth and skin-to-skin contact
- Avoid:
  - Episiotomy
  - Arbitrary time limits if all is well

Third stage

- Physiological management:
  - The woman should have had a normal labour and birth.
  - Leave the cord unclamped if possible (or cut and leave maternal end unclamped).
  - Encourage skin-to-skin contact and breastfeeding.
  - Monitor blood loss: observe for signs of separation. Hands off.
- Active management:
  - Give oxytocic: NICE recommends syntocinon 10 IU IM.
  - NICE recommends immediate cord clamping (but evidence is unclear).
  - Perform controlled cord traction with fundal guarding.

Useful contacts

Association for Improvements in the Maternity Services (AIMS) Helpline: 0870 765 1433. Website: www.aims.org.uk

Doulas UK Website: www.doula.org.uk

National Childbirth Trust (NCT) Enquiry line: 0870 444 8707. Website: www.nct-online.org

Nursing and Midwifery Council (NMC) Telephone: 020 7637 7181. Website: www.nmc-uk.org

Royal College of Midwives Website: www.rcm.org.uk

References

Albers, L., Sedler, K., Bedrick, E., Teaf, D. & Peralta, P. (2005) Midwifery care measures in the second stage of labour and reduction of genital tract trauma at birth: a randomised trial. *Journal of Midwifery and Women's Health* **50**, 563–72.

Association of Radical Midwives (ARM) (2000) Association of Radical Midwives Nettalk: checking for cord. *Midwifery Matters* **87**, 28–30.

Baston, H. (2001) Blood pressure measurement: midwifery basics. *The Practising Midwife* **4** (9), 10–14.

Bedwell, C. (2006) Are third degree tears unavoidable? The role of the midwife. *British Journal of Midwifery* **14** (9), 212.

Begley, C. (1990) A comparison of 'active' and 'physiological' management of the third stage of labour. *Midwifery* **63**, 3–17.

Bergstrom, L., Seedily, J., Schulman-Hull, L. *et al*. (1997) 'I gotta push. Please let me push!' Social interactions during the change from first stage to second stage of labour. *Birth* **24** (3), 173–80.

Buckley, S. (2004a) Undisturbed birth – nature's hormonal blueprint for safety, ease and ecstasy. *MIDIRS Midwifery Digest* **14** (2), 203–9.

Buckley, S. (2004b) What disturbs birth? *MIDIRS Midwifery Digest* **14** (3), 353–7.

Burvill, S. (2002) Midwifery diagnosis of labour onset. *British Journal of Midwifery* **10** (10), 600–5.

Caroci, A. & Riesco, M. (2006) A comparison of 'hands off' vs 'hands on' for decreasing perineal lacerations during birth. *Journal of Midwifery Women's Health* **51**, 106–11.

Carroli, G. & Belizan, J. (1999) Episiotomy for vaginal birth. *Cochrane Database of Systematic Reviews*, Issue 3, Art. No. CD000081. DOI: 10.1002/14651858.CD000081.

CEMACH (2007) *Diabetes in Pregnancy: Caring for the Baby After Birth. Findings of a National Enquiry. England, Wales and Northern Ireland*. CEMACH, London. Available at: www.cemach.org.uk (accessed March 2008).

Cheung, Y., Hopkins, I. & Caughey, A. (2004) How long is too long: does a prolonged second stage of labour in nulliparous women affect maternal and neonatal morbidity? *American Journal of Obstetrics and Gynaecology* **191**, 933–8.

Combs, C. & Laros, R., Jr (1991) Prolonged third stage of labor: morbidity and risk factors. *Obstetrics & Gynecology* **77** (6), 863–7.

Crafter, H. (2002) Intrapartum and primary postpartum haemorrhage. In *Emergencies Around Childbirth – A Handbook for Midwives* (Boyle, M., ed.), pp. 113–26. Radcliffe Medical Press, Oxford.

Crowther, C., Enkin, M., Keirse, M., & Brown, I. (2000) Monitoring progress in labor. In *A Guide to Effective Care in Pregnancy and Childbirth*, 3rd edn (Enkin, M., Keirse, M.J.N.C., Neilson, J., Crowther, C., Duley L., Hodnett, E. & Hofmeyr, J., eds), pp. 210–218. Oxford University Press, Oxford.

Davis, E. (1997) *Hearts and Hands: A Midwife's Guide to Pregnancy and Birth*, 3rd edn. Celestial Arts, Berkeley, California.

Department of Health (DoH) (2004) *National Service Framework for Children, Young People and Maternity Services*, pp. 27–9. Department of Health, London.

Downe, S. (ed.) (2004) *Normal Childbirth: Evidence and Debate*. Churchill Livingstone, Oxford.

Dupuis, O., Madelenat, P. & Rudigoz R. (2004) Faecal and unrinary incontinence and delivery: risk factors and prevention. *Gynaecology, Obstetrics and Fertility* **32**, 540–48.

Elbourne, D. & Wiseman, R.A. (2004) Types of intra-muscular opioids for maternal pain relief in labour. *Cochrane Database of Systematic Reviews*, Issue 1.

Erlandsson, K., Dsilna, A., Fagerberg, I. & Christensson, K. (2007) Skin-to-skin care with the father after caesarean birth and its effect on newborn crying and prefeeding behaviour. *Birth* **34** (2), 105–13.

Gee, H. & Glynn, M. (1997) The physiology and clinical management of labour. In *Essential Midwifery* (Henderson, C. & Jones, K., eds), pp. 171–202. Mosby, London.

Green, J., Renfrew, M. & Curtis, P. (2000) Continuity of carer: what matters to women? A review of the evidence. *Midwifery* **16** (3), 187–96.

Gupta, J., Hofmeyr, G. & Smyth, R. (2004) Position in the second stage of labour for women without epidural anaesthesia. *The Cochrane database of systematic reviews*, Issue 1.

Hobbs, L. (1998) Assessing cervical dilatation without VEs. *The Practising Midwife* **1** (11), 34–5.

Hodnett, E.D., Gates, S., Hofmeyr, G.J. & Sakala, C. (2004) Continuous support for women during childbirth (Cochrane Review). In *The Cochrane Library*, Issue 3.

Howell, C. (2004) Epidural versus non-epidural analgesia for pain relief in labour (Cochrane Review) In *Cochrane Library*, Issue 1.

Hutton, E.K. & Hassan, E.S. (2007) Late vs early clamping of the umbilical cord in full-term neonates: systematic review and meta-analysis of controlled trials. *JAMA* **297**, 1241–52.

Jackson, K. (2000) The bottom line: care of the perineum must be improved. *British Journal of Midwifery* **8** (10), 609–14.

Jacobsen, B., Nyberg, K., Eklund, G., Bygdeman, M. & Rydberg, U. (1988) Obstetric pain medication and eventual adult amphetamine addiction in offspring. *Acta Obstetrica et Gynecologica* **67**, 677–82.

Jacobsen, B., Nyberg, K., Gronbladh, L., Eklund, G., Bygdeman, M. & Rydberg, U. (1990) Opiate addiction in adult offspring through possible imprinting after obstetric treatment. *BMJ* **301** (6760), 1067–70.

Johnson, C., Keirse, M.J.N.C., Enkin, M. & Chalmers, I. (2000) Hospital practices – nutrition and hydration in labor. In *A Guide to Effective Care in Pregnancy and Childbirth*, 3rd edn (Enkin, M., Keirse, M.J.N.C., Neilson, J., Crowther, C., Duley L., Hodnett, E. & Hofmeyr, J., eds), pp. 255–66. Oxford University Press, Oxford.

Johnston, J. (2004) The nesting instinct. *Birth Matters Journal* **8**, 21–2.

Johnson, M. (1997) TENS in pain management. *British Journal of Midwifery* **5** (7), 400–5.

Kitzinger, C. & Kitzinger, S. (2007) Birth trauma: talking to women and the value of conversation analysis. *British Journal of Midwifery* **15** (5), 256–64.

Kitzinger, J.V. (1992) Counteracting, not re-enacting, the violation of women's bodies: the challenge for perinatal caregivers. *Birth* **19** (4), 219–22.

Lavender, T., Alfirevic, Z. & Walkinshaw, S. (2006) Effect of different partogram action lines on birth outcomes: a randomised controlled trial. *Obstetricas and Gynaecology* **108** (2), 295–302.

Lauzon, L. & Hodnett, E. (2002) Labour assessment programs to delay admission to labour wards (Cochrane Review). In *The Cochrane Library*, Issue 4. Update Software, Oxford.

Leap, N. (2000) Pain in labour. *MIDIRS Midwifery Digest* **10** (1), 49–53.

Leighton, B. & Halpern, S. (2002) The effects of epidural analgesia on labor, maternal and neonatal outcomes: a systematic review. *American Journal of Obstetrics and Gynaecology* **186**, 69–77.

Lemay, G. (2000) Pushing for first time moms. *Midwifery Today* **55**, 9–12.

Levy, V. (1990) The midwife's management of the third stage of labour. In *Intrapartum Care 1–1 A Research Based Approach* (Alexander, J., Levy, V. & Roch, S., eds), pp. 139–43. Macmillan, Basingstoke.

Lieberman, E. & O'Donaghue, C. (2002) Unintended effects of epidural analgesia in labour: a systematic review. *American Journal of Obstetrics and Gynaecology* **186**, 531–68.

Long, L. (2006) Redefining the second stage of labour could help to promote normal birth. *British Journal of Midwifery* **14**, 104–6.

Mainstone, A. (2004) TENS. *British Journal of Midwifery* **12** (9), 578–81.

Mander, R. (2002) The transitional stage – pain and control. *The Practising Midwife* **5** (1), 10–12.

McCandlish, R., Bower, U., van Asten, H., Berridge, G., Winter, C., Sames, L., Garcia, J., Renfrew, M. & Elbourne, D. (1998) A randomised controlled trial of care of the perineum during the second stage of normal labour (HOOP trial). *British Journal of Obstetrics and Gynaecology* **105**, 1262–72.

McNiven, P., Williams, J., Hodnett, E. & Kaufman, H.M. (1998) An early labour assessment program: a randomised controlled trial. *Birth* **25** (1), 5–10.

Mercer, J.C. (2001) Current best evidence: a review of the literature on umbilical cord clamping. *Journal of Midwifery and Women's Health* **46** (6), 402–14.

MIDIRS (2007) *Positions in Labour and Delivery*. Informed Choice Leaflet: Midwives Information and Resource Service, Bristol.

Moore, E., Anderson, G. & Bergman, N. (2003) Early skin-to-skin contact for mothers and their healthy newborn infants. *Cochrane Database of Systematic Reviews*, Issue 2.

National Childbirth Trust (NCT) (2003) *Creating a Better Birth Environment: An Audit Toolkit*. National Childbirth Trust, London.

National Institute for Health and Clinical Excellence (NICE) (2007) *Clinical Guideline 55: Intrapartum Care.* National Institute for Health and Clinical Excellence, London.

NHS Maternity Statistics 2005–2006 (2007) *The Information Centre.* Available at: www.ic.nhs.uk (accessed 3 March 2008).

Nyberg, K., Buka, S. & Lipsitt., L. (2000) Perinatal medication as a potential risk factor for adult drug abuse in a North American cohort. *Epidemiology* **11** (6), 715–16.

Ockenden, J. (2001) The hormonal dance of labour. *The Practising Midwife* **4** (6), 16–17.

Odent, M. (1994) *The Nature of Birthing and Breastfeeding.* Bergin and Garvey, Connecticut.

Odent, M. (1999) *The Scientification of Love*. Free Association Books, London.

Odent, M. (2000) Insights into pushing: the second stage as a disruption of the fetus ejection reflex. *Midwifery Today International Midwife* **55**, 12.

Perez-Botella, M. & Downe, S. (2006) Stories as evidence: the premature urge to push. *British Journal of Midwifery* **14** (11), 636–42.

Prendiville, W. & Elbourne, D. (2000) The third stage of labor. In *A Guide to Effective Care in Pregnancy and Childbirth*, 3rd edn (Enkin, M., Keirse, M.J.N.C., Neilson, J., Crowther, C., Duley L., Hodnett, E. & Hofmeyr, J., eds). Oxford University Press, Oxford.

Prendiville, W.J., Elbourne, D. & McDonald, S. (2004) Active versus expectant management in the third stage of labour. *Cochrane Database of Systematic Reviews*, Issue 1.

Redshaw, M., Rowe, R., Hockley, C. & Brocklehurst, P. (2007) *Recorded Delivery: The Findings from a National Survey of Women's Experience of Maternity Care*. National Perinatal Epidemiology Unit, Oxford. Available at: www.npeu.ox.ac.uk (accessed March 2008).

Roberts, C.L., Torvaldsen, S., Cameron, C.A. & Olive, E. (2004) Delayed versus early pushing in women with epidural analgesia: a systematic review and met-analysis. *British Journal of Obstetrics and Gynaecology* **111** (12), 1333–40.

Robertson, A. (1996) *Empowering Women: Teaching Active Birth in the 90s.* ACE Graphics, Camperdown, NSW, Australia.

Robertson, A. (2006) Nitrous oxide – no laughing matter. *MIDIRS Midwifery Digest* **16** (1), 123–8.

Royal College of Midwives (RCM) (2005) *Campaign for Normal Birth*. Royal College of Midwives, London. Available at: www.rcmnormalbirth.org.uk (accessed November 2007).

Schaffer, J., Bloom, S., Casey, B., McIntire, D., Nihira, M. & Leveno, K. (2005) A randomised trial of the effects of coached vs uncoached pushing during the second stage of labour on postpartum pelvic floor structure and function. *American Journal of Obstetrics and Gynaecology* **192**, 1692–6.

Shorten, A., Donsante, J. & Shorten, B. (2002) Birth position, accoucheur, and perineal outcomes: informing women about choices for vaginal birth. *Birth* **29** (1), 18–27.

Simkin, P. & Ancheta, R. (2005) *The Labor Progress Handbook*. Blackwell Science, Oxford.

Simmons, S.W., Cyna, A.M., Dennis, A.T. & Hughes, D. (2007) Combined spinal-epidural versus epidural analgesia in labour. *The Cochrane Database of Systematic Reviews*, Issue 3.

Simpson, K. & James, D. (2005) Effects of immediate vs delayed pushing during second stage on fetal well-being: a randomised controlled trial. *Nursing Research* **54**,149–57.

Sleep, J., Roberts, J. & Chalmers, I. (2000) The second stage of labor. In *A Guide to Effective Care in Pregnancy and Childbirth*, 3rd edn (Enkin, M., Keirse, M.J.N.C., Neilson, J., Crowther, C., Duley L., Hodnett, E. & Hofmeyr, J., eds), pp. 289–99. Oxford University Press, Oxford.

Smith, C.A., Collins, C.T., Cyna, A.M. & Crowther, C.A. (2006) Complementary and alternative therapies for pain management in labour. *Cochrane Database of Systematic Reviews*, Issue 4, Art. No. CD003521. DOI: 10.1002/14651858.CD003521.pub2.

Soltani, H., Dickinson, F. & Symonds, I. (2005) Placental cord drainage after spontaneous vaginal delivery as part of the management of the third stage of labour. *Cochrane Database of Systematic Reviews*, Issue 4, Art. No. CD004665. DOI: 10.1002/14651858.CD004665.pub2.

Stuart, C. (2000) Invasive actions in labour. Where have all the 'old tricks' gone? *The Practising Midwife* **3** (8), 30–33.

Sullivan, J.R. (1999) Development of father-infant attachment in fathers of preterm infants. *Neonatal Network* **18** (7), 33–9.

Thomson, A. (1995) Maternal behaviour during spontaneous and directed pushing in the second stage of labour. *Journal of Advanced Nursing* **22** (6), 1027–34.

Tiran, D. (2000) *Clinical Aromatherapy for Pregnancy and Childbirth*, 2nd edn. Churchill Livingstone, Edinburgh.

Tiran, D. (2006) Midwives responsibilities when caring for women using complementary therapies during labour. *MIDIRS Midwifery Digest* **16** (1), 77–8.

Torvaldsen, S., Roberts, C.L., Bell, J.C. & Raynes-Greenow, C.H. (2004) Discontinuation of epidural in labour for reducing the adverse delivery outcomes associated with epidural analgesia. *Cochrane Database of Systematic Reviews*, Issue 4, Art. No. CD004457. DOI: 10.1002/14651858.CD004457.pub2.

Walsh, D. (2000a) Evidence-based care. Part 3: assessing women's progress in labour. *British Journal of Midwifery* **8** (7), 449–57.

Walsh, D. (2000b) Evidence-based care. Part 6: limits on pushing and time in the second stage. *British Journal of Midwifery* **8** (10), 604–8.

Wickham, S. (1999) Further thoughts on the third stage. *Practising Midwife* **2** (10), 14–15.

World Health Organization (WHO) (1997) *Safe Motherhood: Thermal Protection of the Newborn: A Practical Guide.* World Health Organization, Geneva.