Of all areas of health care, the maternity services have one of the longest histories of striving to improve safety standards and reduce loss and suffering, having carried out formal reviews of care for almost 100 years (see Appendix 3). However, it is only in the past 10 years that the health service has begun to examine safety more systematically, enabling reviews of the safety of maternity services to be set within a broader context, and providing a wider range of conceptual and practical possibilities for change and improvement.

A recurring theme in the submissions we received was that maternity services had not been given high priority in this drive for safety and had been largely bypassed by recent target-driven attempts to reform and improve NHS services. This perceived distinction between maternity and other NHS services may be reinforced both by the geographical separation of some maternity units from the rest of their trusts and by the seemingly self-contained nature of much of the business of maternity services.

In considering the safety of maternity services, we have deliberately sought to place them within a context of broader learning about safety from other areas of health care. Indeed, this report has drawn on many examples of good practice that might helpfully be transferred to the maternity services. However, we have included this chapter to highlight what have struck us as specific features of maternity care that have relevance to safety.

- **Pregnancy and birth are normal physiological processes, but the transition from routine to emergency can occur rapidly and unexpectedly.** Because pregnancy and childbirth do not normally involve ill health, the expectation of safety is particularly high and the obligation of the health care system to do no harm may be seen as an even higher imperative than normal. The issue of normality and intervention in childbirth is discussed more fully below.

- **Maternity services have to care for two (or sometimes more) lives, and when adverse events occur, the consequences, including lifelong disability for a child, can be particularly devastating.** This heightens the complexity, responsibility and risk involved in caring for each individual woman and her baby. In addition, the best interests of mother and baby may not always coincide, which can create conflict. It is important to recognise, for example, that a caesarean section carried out in the interests of the baby will inflict a surgical injury on the mother and that unnecessary caesareans inflict unnecessary risk.

- **Maternity care for each pregnant woman and her baby is delivered over a long period, often in many different settings and involving large numbers of clinicians,** making the maternity team a singularly complex entity. These issues are addressed more fully in Appendix 3.

- **The woman’s experience** is an important aspect of the service provided (Newburn
2006). Birth is a time of transition, and there is evidence that the experience of care may have profound positive or negative effects on mother, baby and family. This inquiry has chosen not to focus on the birth experience, but its importance must be acknowledged and this adds a further layer of complexity to decision-making processes about safe care.

- **Changing demands** from recent changes in the pregnant population have important implications for maternity services, which are discussed later in this chapter.

**Normality and intervention**

In many cases pregnancy and labour proceed to a good outcome, with no intervention needed apart from encouragement and support. Research suggests that when pregnancy and labour are uncomplicated, spontaneous vaginal delivery leads to the best outcomes for both mother and baby (Maternity Care Working Party 2007).

However, even though pregnancy and childbirth are normal physiological processes, there may still be some degree of risk for both mother and baby. Maternity care is, therefore, based on managing risk within a normal physiological process. Some problems can be detected and managed during pregnancy, which is why antenatal care is now routinely offered to pregnant women in most parts of the developed world. Others become apparent only during labour. When problems are detected, a range of medical interventions is available to reduce risk and secure a good outcome. However, as with all medical interventions, they also involve a degree of risk for the mother or baby or both. If a treatment or intervention that harms is given to a woman or baby, that itself constitutes unsafe care. Examples of some common interventions and some of the reasons why they may be undertaken, together with some of their associated risks of harm, are listed opposite in Table 2.

In recent years there has been a considerable rise in intervention rates in women giving birth, as shown in Figure 6, p 22.

Thresholds for referral to medical care and for the use of certain interventions have been agreed by all professional groups involved in maternity services, including, for example, National Institute for Health and Clinical Excellence (NICE) guidance on caesarean section (National Collaborating Centre for Women’s and Children’s Health 2004). However, the rise in the rate of caesarean sections has not been accompanied by improvements in maternal or neonatal outcomes; and the considerable variation between units suggests that a proportion of interventions being carried out are unnecessary and therefore not safest practice. The NHS Institute for Innovation and Improvement has recently been working with trusts with a view to reducing caesarean rates.

High caesarean section rates have been linked with a lack of consultant presence on labour wards (HCC 2005; Ontario Women’s Health Council 2000). Factors that are believed to reduce intervention rates in uncomplicated pregnancies include continuity of care and one-to-one support in labour, midwife-led care, and consultant review of the decision to perform caesarean section; other helpful factors include an appropriate environment for labour and avoiding such interventions as electronic fetal monitoring in labour when not indicated.
<table>
<thead>
<tr>
<th>Intervention</th>
<th>Rationale</th>
<th>Associated harms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Elective caesarean section</strong></td>
<td>For mother Factors identified pre-labour that put her at risk from a normal delivery (eg, previous section; placenta praevia)</td>
<td>For mother Increased surgical risks; longer recovery; increased risk of adverse outcomes in subsequent pregnancies; adverse impact on future fertility</td>
</tr>
<tr>
<td></td>
<td>For baby Factors identified pre-labour that put the baby at risk from a normal delivery (eg, congenital abnormalities; abnormal position)</td>
<td>For baby Increased respiratory morbidity</td>
</tr>
<tr>
<td><strong>Emergency caesarean section</strong></td>
<td>For mother Potentially dangerous complications (eg, placental abruption)</td>
<td>For mother Increased surgical risks; longer recovery time; increased risk of adverse outcomes in subsequent pregnancies; adverse impact on future fertility</td>
</tr>
<tr>
<td></td>
<td>For baby Concern about risk of asphyxia and subsequent death or brain damage if the labour is difficult or prolonged or the baby is already compromised</td>
<td>For baby Increased respiratory morbidity</td>
</tr>
<tr>
<td><strong>Assisted delivery</strong> (ventouse or forceps)</td>
<td>For mother For example, failure of labour to progress and maternal exhaustion</td>
<td>For mother For example, possible increased risk of perineal trauma</td>
</tr>
<tr>
<td></td>
<td>For baby Concern about risk of asphyxia and subsequent death or brain damage if the labour is difficult or prolonged or the baby is already compromised</td>
<td>For baby Traumatic injury to scalp and head and, rarely, intracranial haemorrhage</td>
</tr>
<tr>
<td><strong>Induction of labour</strong></td>
<td>For mother Pregnancy complications (eg, pre-eclampsia)</td>
<td>For mother Possibility of failed induction and hence delivery by caesarean section</td>
</tr>
<tr>
<td></td>
<td>For baby For example, pre-labour rupture of the membranes or prolonged pregnancy</td>
<td>For baby Increased risk of hyperstimulation of the uterus, causing fetal distress</td>
</tr>
<tr>
<td><strong>Augmentation of labour</strong></td>
<td>For mother Failure to progress in labour</td>
<td>For mother For example, possible increased risk of postpartum haemorrhage</td>
</tr>
<tr>
<td></td>
<td>For baby Concern about risk of asphyxia and subsequent death or brain damage if labour is prolonged. Concern about infection if labour is prolonged</td>
<td>For baby Increased risk of hyperstimulation of the uterus, causing fetal distress</td>
</tr>
<tr>
<td><strong>Epidural anaesthesia</strong></td>
<td>For mother Pain relief</td>
<td>For mother For example, urinary retention and fever in labour</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For mother and baby Possible higher rate of instrumental delivery</td>
</tr>
</tbody>
</table>
However, pregnancy and birth without obstetric intervention, though safe for many, is not possible for all mothers and babies, and reducing interventions should never be pursued to the detriment of safety. Promoting normality with an eye to safety requires a delicate balance; achieving this balance in day-to-day practice depends not just on good local organisation but on committed, confident midwives and doctors who can reliably manage risks, make appropriate clinical judgements for each situation and maintain good communication.

New demands from a changing population

ETHNICITY AND SOCIO-ECONOMIC FACTORS

It has long been known that rates of adverse outcome of pregnancy vary by socio-economic group and ethnic origin. The last three reports on maternal death have highlighted various socio-economic factors associated with maternal deaths, although the absence of similar data for all women made it impossible to calculate rates (Lewis et al 2001, 2004, 2007). These factors included: late booking or poor attendance at antenatal clinics; substance abuse; social exclusion; domestic violence and the fact that women from some minority ethnic groups and those without a partner are at increased risk.

These factors are associated with maternal mortality. However, because the data are not collected for all women, these factors cannot be shown to be correlated with maternal mortality let alone causally linked to maternal mortality. The list given includes heterogeneous factors (for example, late booking of antenatal appointments, domestic violence) and complex and contentious social categories (for example, being socially excluded). Also, the listing does not allow any evaluation of the distinct contribution of
each socio-economic factor, and as some of them are likely to be correlated (for example, women who abuse substances may also book late), this limits the conclusions that can be drawn.

Socio-demographic factors associated with stillbirth and neonatal death include socio-economic status, maternal age, country of birth and ethnicity. Mothers who are very young or in their late 30s or 40s are at higher risk than others of losing their babies. In 2006, the stillbirth rate for women under 20 was 5.9 per 1,000 total births and 8.6 for women aged 40 and over, compared with an overall rate for all women of 5.4 per 1,000 births.

In 2006, the infant mortality rate for babies born to women born in Pakistan was 9.4 per 1,000 live births and the rate for women born in the Caribbean was 8.8 per 1,000, compared with an overall rate for all births of 4.8 per 1,000 (ONS 2007).

Although it is important to meet the challenge of providing appropriate care for high-risk women, it is also necessary to acknowledge that providing safe maternity services means meeting the medical and social needs of all pregnant women. With that in mind, it is helpful to understand how changes in the population of England are giving rise to changing demands on maternity services.

**RISING BIRTH RATES**

Although both the birth rate and overall numbers of births had been declining up to 2003, both have risen since then and have continued to rise ahead of government projections. Provisional figures from the Office for National Statistics (ONS) show an average of 1.87 children per woman in 2006, compared with 1.63 in 2001 (see Figure 7, below).
This rise in the birth rate has occurred in most parts of England and Wales, but is particularly marked in inner city areas and some rural areas, where numbers of births are relatively small.

COUNTRY OF BIRTH AND MIGRATION

The number of live births to women born outside the United Kingdom increased by nearly 10 per cent between 2005 and 2006 (from 134,189 in 2005 to 146,944 in 2006), compared with a 2.1 per cent increase for women born in the United Kingdom (511,624 in 2005 to 522,627 in 2006) (ONS 2006 table 9.1).

There has been a corresponding increase in the proportion of overall births that are to women born outside the United Kingdom, from 16.5 per cent in 2001 to 21.9 per cent in 2006. Some of these women may have lived in the United Kingdom for many years; but others are recent migrants. Some may have language and communication difficulties as well as social and health problems – in a few cases even genital mutilation – with which maternity staff may be unfamiliar (Dorkenoo et al 2007), while others are native or highly competent speakers of English without greater than average social or health problems. Limitations in our national migration statistics make it difficult to know the precise extent to which recent migrants with greater language and health problems have contributed to the rising birth rate.

Age, health and lifestyle

Recent years have brought both positive and negative influences to bear on the health and lifestyles of women of childbearing age. One positive development was the decline in smoking in pregnancy (except among women under 20) between 2000 and 2005. Drinking in pregnancy has also declined (Information Centre 2007a).

On the other hand, rising rates of obesity mean that increasing numbers of women are less fit for pregnancy. Although there is no specific information about obesity in pregnancy, data from the Health Survey for England show a rise in body mass index (BMI) among women of all ages. By 2003, 2 per cent of women aged 16–24, 3 per cent of those aged 25–34 and 3.5 per cent of those aged 25–44 were morbidly obese with a BMI of 40 or more. The percentage of women defined as obese, with a BMI of 30 or more, was 13.1 for women aged 16–24, 18.1 for those aged 25–44 and 22.7 for those aged 35–44 (Information Centre for Health and Social Care 2006).

The trend towards older motherhood has persisted, leading to an increase in the proportion of women at risk of pregnancy complications and severe congenital anomalies. There has also been a rise in multiple birth rates, compounded by the use of ovarian stimulants and assisted reproduction by women with fertility problems.

At the same time, improved care for serious childhood illness, including cancer and congenital heart conditions, has permitted growing numbers of women to reach their childbearing years after surviving major health problems; and these women are more likely than other women to need additional care in pregnancy and labour. Less common conditions like tuberculosis are also on the rise and can pose a threat to women in pregnancy.

24 SAFE BIRTHS: EVERYBODY’S BUSINESS
We conclude that the maternity services face a challenge in caring for rising numbers of women and babies, of whom an increasing proportion may have a variety of problems. Providing safe maternity services means meeting the medical and social needs of all pregnant women.

TOWARDS SAFETY IN MATERNITY SERVICES

This chapter has identified a number of recent pressures on the maternity services, including:
- older motherhood
- problems caused by fertility treatment
- increased obesity
- survival of critical illness in childhood
- more surgical intervention
- the challenges presented by some forms of social and cultural diversity.

The fact that reductions in maternal and perinatal mortality have been achieved in spite of these pressures should be recognised as a major achievement.

Given these achievements, and a history of continuous concern with safety in the maternity services, it is reasonable to ask why this inquiry into the safety of maternity services is still needed. We identified three main reasons.
- Achieving and maintaining safety calls for a continual review of practice by individual clinicians, teams, organisations and the maternity services as a whole.
- Despite the overall safety of maternity services, the responses of professionals to our call for evidence identified a significant number of problems that make care less safe.
- The maternity services need to move away from seeing safety as primarily the responsibility of individual clinicians caring for particular patients and towards a wider concern with providing safe systems for all care.

Making this last shift means embedding safety awareness right across the maternity services. Those at every level – individual clinicians, teams, trust boards and national organisations – need to improve their awareness of safety issues and support safety reliably in their practice.

Safe teams are the key driver for improving safety. The next chapter looks at the core elements of safe team working: objectives, leadership and communication.

To function safely, teams also need safe staffing levels (Chapter 4); training for safety (Chapter 5); guidance to support safety (Chapter 6) and information to support safety (Chapter 7).

At a broader level, trust boards need to explicitly prioritise safety (Chapter 8), while national organisations must make sure their actions support rather than distract from safe practice (Chapter 9).