

SAFER CHILDBIRTH

Minimum Standards for the Organisation and Delivery of Care in Labour



Royal College of
OBSTETRICIANS *and*
GYNAECOLOGISTS



Royal College of
MIDWIVES



Royal College of
ANAESTHETISTS



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PAEDIATRICS *and* CHILD
HEALTH

October 2007

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Foreword

The impetus for this new report has come from a number of quarters. Much has changed in the National Health Service over the intervening 7 years since *Towards Safer Childbirth*¹ was published and there are continuing concerns about staffing levels from all the relevant professional groups. National audits and reviews of maternity services have continued to highlight poor outcomes related to multiprofessional working, staffing and training and the recent publication of the *Maternity Matters*² document discusses the potential for reconfiguration. It is therefore appropriate to review *Towards Safer Childbirth*¹ in the light of these issues and in anticipation of what the next few years will bring.

While, in general, we have used data and information originating in England, this report should be seen as being applicable to the whole of the UK because it deals with standards of care which should apply wherever a woman gives birth. One thing that seems certain is that the proposals contained in this document can only be achieved if there is a considerable expansion in numbers of both midwifery and medical staff concerned with the care of women in labour.

To this end, the Royal Colleges of Midwives, Obstetricians and Gynaecologists, Anaesthetists, and Paediatrics and Child Health have welcomed the opportunity to work together on this report which, we believe, clearly sets out our informed and considered views about the essential minimum staffing standards required to support women in labour and provide safe care for them and their babies.



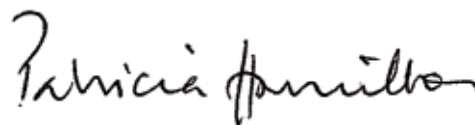
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Executive summary

- 1 Concerns from the Confidential Enquiry into Maternal and Child Health (CEMACH)³ and its predecessor organisations the Confidential Enquiry into Stillbirths and Deaths in Infancy (CESDI)⁴⁻⁶ and the Confidential Enquiry into Maternal Deaths (CEMD),⁷ have indicated the need for a fresh look at the organisation of care in labour. The requirements of Standards for Better Health⁸ and the recommendations arising from investigations conducted by the Healthcare Commission⁹⁻¹² have added to the breadth of this report, which also incorporates the aspirations of UK maternity service policies.^{8,13-16}
- 2 This report acknowledges:
 - the central role of midwives as autonomous practitioners of normal labour and birth, together with their role as partners with obstetricians, anaesthetists and paediatricians, in the care of women with complex and complicated labours
 - the importance of team working, as well the respective roles of midwives, obstetricians, anaesthetists, paediatricians, support staff and managers, as part of the local maternity care team
 - the increased involvement of consultant obstetricians on the labour ward in the care of women with complex or complicated pregnancies and in the supervision and education of medical staff.
- 3 This document considers a number of factors influencing staffing levels which have serious implications for the service. These include:
 - greater focus on woman-centred care
 - an extension to the midwife's teaching role with multidisciplinary staff
 - recruitment and retention crises in midwifery staffing
 - changes in the experience of medical staffing at junior level
 - demand for increasing consultant involvement in the labour ward.
- 4 It is important to match resources and facilities with workload. This document outlines minimum staffing and training requirements for midwives and doctors. Additional staff over and above this will be needed in specific situations.
- 5 A maternity network, which includes births at home, in midwifery units and in obstetric units, should have a common governance structure, including robust systems and clear guidelines for monitoring the safety, quality and performance of the maternity services and transfer arrangements within the network should problems arise.
- 6 A central theme is the need to improve communications between healthcare professionals and between professionals and women. Units should foster a team approach, based on mutual respect, a shared philosophy of care and a clear organisational structure for both midwives and medical staff, with explicit and transparent lines of communication.

- 7 This report provides healthcare planners, unit managers and clinical directors with guidelines on which to base realistic costing of the maternity service. Certain quality and clinical effectiveness issues have been identified, which include clinical supervision and statutory supervision of midwives, as well as basic and continuing training of all staff. Each provider will need to adapt the model suggested to achieve the standards in their own circumstances.
- 8 The organisation of care in labour in all settings should be reviewed and, if necessary, changes implemented to reflect the recommendations in this report. The adoption and implementation of the staffing standards, facilities and governance structures outlined below should help to ensure the best outcome for women and their babies regardless of the birth setting.
- 9 The outcome measures and standards described in this document should be audited and published as an annual report in line with best practice. The report should include an evaluation of women's views of their care and should inform the regular review of service provision and risk management policy. The annual report should be available to the public. Additionally, the Royal Colleges intend to audit the implementation of these standards in December 2009.

1 Introduction

1.1 The previous reports

- 1.1.1 *Towards Safer Childbirth*,¹ which followed an earlier report from the Royal College of Obstetricians and Gynaecologists (RCOG) on minimum standards of care in labour published in 1994,¹⁷ arose from continuing concerns in a number of areas about the quality of care that women and their babies were receiving during labour and birth. The RCOG had worrying evidence that, in some circumstances, consultant obstetricians did not see the labour ward as a part of their regular duties and so the care of women with potential or actual serious conditions fell below an acceptable standard. In parallel, the Royal College of Midwives (RCM) had voiced its serious concerns about the level of midwifery staffing and its impact on care. While adverse outcomes were often linked to overstretched staff, there were joint worries about training and experience in clinical decision making and the problem of inappropriate action in emergency situations.
- 1.1.2 An important consequence of *Towards Safer Childbirth*¹ was that consultant obstetricians accepted the labour ward as part of their regular responsibilities and their role was redefined. The establishment of the multidisciplinary Labour Ward Forum, with user representatives, became an accepted feature promoting an inclusive approach to developing guidelines and policies. The report also recognised the midwife's central role as an autonomous practitioner in the care of women in normal labour: so underpinning the principle of midwifery care.
- 1.1.3 A survey undertaken during the course of reviewing *Towards Safer Childbirth*¹ has generally confirmed that, of the units who responded, many had achieved most of the recommendations outlined in the original report (see Appendix 1). However, staffing levels remained a problem for many units.

1.2 Factors contributing to the need for a third report

- 1.2.1 Previous reports of the Confidential Enquiry into Stillbirths and Deaths in Infancy (CESDI)^{4,5} found suboptimal care in 75% of intrapartum-related deaths, caused mainly because of clinicians' failure to recognise a problem and take appropriate action. Poor communication was often an issue and it was suggested that midwives and doctors were not working together as an effective team. The 1994–96 report of the Confidential Enquiry into Maternal Deaths (CEMD)⁷ also raised concerns about levels of consultant obstetrician input.

- 1.2.2 CEMD and CESDI merged to form the Confidential Enquiry into Maternal and Child Health (CEMACH) in April 2003. Recent reports from CEMACH show little change in stillbirth rate since 1992 and intrapartum complications remain a significant cause of term neonatal deaths.¹⁸
- 1.2.3 The *Why Mothers Die* report for the 2000–02 triennium³ again highlighted aspects of substandard care in 50% of women who died. The findings were similar to previous reports: clinicians responded too late and inadequately to life-threatening situations such as severe hypertension or massive postpartum haemorrhage (PPH), midwives and junior obstetricians often did not recognise the signs of common medical conditions and in many cases it was noted that the consultant obstetrician had been involved in the woman's care too late. Support services, such as interpreting for women who did not speak English, were often inadequate and blood transfusion was sometimes problematic because of, for example, a lack of on-site blood transfusion facilities.
- 1.2.4 These findings were mirrored in *Project 27/28*, an enquiry by CESDI into the care of premature babies born at 27 and 28 weeks,⁶ which showed that clinicians failed to respond adequately to problems arising during labour or made inappropriate clinical decisions, in more than 10% of births. Again, a lack of consultant obstetrician involvement was noted in one in twelve of these high-risk pregnancies.
- 1.2.5 *Why Mothers Die*³ found a higher risk of maternal death in women from minority ethnic groups, women who were socially disadvantaged, poor attenders and women with a history of psychiatric illness. Unfortunately, there were frequent instances of poor communication between different professional groups (such as general practitioners, midwives, obstetricians, psychiatrists and social workers), which led to inappropriate management in a group of women at particularly high risk of medical and social problems. It was recognised in this report that midwives were key players who were the best placed to act as advocates for vulnerable women, to assess risk appropriately and to ensure that relevant members of the health and social services were involved at an early stage. The anecdotal evidence also highlights the lack of an agreed direct referral pathway from midwives to psychiatrists.
- 1.2.6 The Reform report¹⁹ concluded that midwife numbers expressed as whole time equivalents/birth have fallen slightly in the last 30 years in the NHS, despite a considerable expansion in the midwives' roles. Current staffing is below recommended levels and insufficient to provide one-to-one care. Table 1 illustrates that total midwife hours have fallen by 14% between 1994 and 2004.

Table 1. Number of working midwife hours/week in the UK (source: Statistical Analysis of the Register, Nursing and Midwifery Council, August 2005);²⁰ Assumptions: full time hours/week = 37.5; part-time median hours/week = 22.5

	1994	2004	Change	Percentage change
Full time hours/week	783 338	487 463	– 295 875	– 37.8
Part time hours/week	320 355	465 480	+ 145 125	+ 45.3
Total hours/week	1 103 693	952 943	– 150 750	– 13.7

- 1.2.7 In recent years, an increasing shortage of qualified midwives in the NHS has resulted in staffing numbers falling to critically low levels. The RCM annual survey of UK heads of midwifery service²¹ determined that almost 75% of maternity units were experiencing staffing shortages. The numbers leaving the profession have increased and only 26.5% of heads of midwifery believe that their funded midwifery establishment is adequate for the level of activity in their organisations. Year-on-year statistics, illustrated in Table 2, provide evidence of constant underfunding.

Table 2. Annual Survey of UK Heads of Midwifery Service²¹

QUESTION: IN YOUR VIEW, IS THE FUNDED MIDWIFERY ESTABLISHMENT ADEQUATE FOR THE LEVEL OF ACTIVITY UNDERTAKEN IN YOUR TRUST?			
Year	"Yes" (%)	"No" (%)	Responses (n)
2001	41.0	59.0	73
2002	29.0	71.0	101
2003	22.7	77.3	92
2004	33.3	66.6	86
2005	26.5	73.5	100

- 1.2.8 When units have applied the Birthrate Plus[®] planning tool (see Appendix 2) these shortages have been quantified resulting in capping of numbers of births in some units to contain the pressure on staff but there has been a significant shortfall in money made available to recruit, train and employ more midwives. The design and introduction of new roles such as maternity care assistants (see section 4.2) has been used to address the skill mix, enabling midwives to focus on activities for which they are uniquely qualified. A further factor adversely affecting midwifery staffing is the impact of maternity leave in a workforce consisting largely of women in the childbearing age group. The steady loss of qualified midwives from active service needs to be addressed and reversed.
- 1.2.9 Factors affecting the inadequate midwifery establishment such as changes in birth rates, social and demographic changes in the childbearing population and changes in intervention rates were also identified in the annual survey and these are listed in Appendix 3. Against a background of inadequate numbers of midwives, recent developments in the configuration of maternity services, to increase numbers of midwifery units and home births, have also had a major effect on the required staffing levels and skill mix of the workforce. Additionally, the increasing trend towards more high-risk and complex cases and higher levels of dependency, (for example, increased monitoring, antenatal screening and blood-borne virus screening) have placed extra demands on the staffing levels of acute labour wards.
- 1.2.10 Since the first report in 1994,¹⁷ the reduction of junior doctors hours as a consequence of the New Deal,²² has led to a steady loss of both the availability of junior doctors on the labour ward and their contribution to

service provision. The impact of Modernising Medical Careers on their training and experience remains to be seen. In addition, the shortened period of training, following the introduction of Calman training, means it is likely that the experience of specialty trainees on completion of training will be significantly less than that of pre-Calman senior registrars. As a result, consultant obstetricians face an increasing responsibility for service provision on the labour ward with fewer trainees needing greater supervision. These two issues, reduced junior doctors' hours and increased consultant obstetrician workload, magnify the problem of inadequate medical staffing of the labour ward.

- 1.2.11 Levels of consultant obstetrician staffing also allow no room for complacency, although evidence collected on RCOG hospital recognition accreditation visits indicates some improvement in cover.²³ Table 3 gives the numbers of fixed consultant obstetrician labour ward sessions for obstetric and co-located units of different sizes, showing the numbers of units in each category. Only a handful of very large units consistently achieved ten sessions (or 40 hours) of consultant obstetrician cover a week in 2005, the same as in 2002. The total number of units is almost unchanged and the number of units achieving ten sessions or more increased over this period by one-third, but still barely half of all units had reached ten sessions of consultant obstetrician cover a week by 2005. The anticipated expansion of the consultant obstetrician grade which began promisingly and reached 7% in 2004 has now slowed, although it seems clear from manpower calculations that the expansion must be sustained at the 2004 rate if adequate numbers of consultant obstetricians to deliver safe care are to be achieved.²⁴

Table 3. Fixed consultant obstetrician labour ward sessions by number of births (UK-wide)

No. of births/ year	2002						2005						
	Sessions/week (n)					10+ (%)	Sessions/week (n)					10+ (%)	10+ (% change)
	Total	<5	6-7	8-9	10+		Total	<5	6-7	8-9	10+		
<1000	17	13	1	2	1	5.9	17	15	0	1	1	5.9	0.0
1000-2000	59	33	6	3	17	28.8	51	21	5	6	19	37.3	+8.5
2001-3000	73	31	12	10	20	27.4	68	18	12	11	27	39.7	+12.3
3001-4000	48	12	3	9	24	50.0	58	5	5	11	37	63.8	+13.8
4001-6000	46	8	5	5	28	60.9	49	6	4	3	36	73.5	+12.6
> 6000	3	0	0	0	3	100.0	4	0	0	0	4	100.0	0.0
Total	246	97	27	29	93	37.8	247	65	26	32	124	50.2	+12.4

Changes in organisation of perinatal care: perinatal networks

- 1.2.12 The Department of Health report of the external working group on the provision of neonatal care (2003)²⁵ and the maternity standard of the National Service Framework for Children, Young People and Maternity Services (2004)¹³ both recommend that neonatal and maternity care is provided in networks. This discussion has been further developed in *Maternity Matters*.² Each network would have one or two specialist perinatal centres where

expertise is concentrated to provide care for complex pregnancies and for babies who are very small or sick. This focusing of resources and potential reconfiguration of services for complex pregnancies and small or sick neonates will result in the requirement for transfer of mothers to the appropriate units but will avoid transfers over excessive distances. There are additional requirements to be met at perinatal centres, over and above those required in this document. The Welsh Assembly Government plans to complete an acute services review, which includes service delivery for perinatal care, in 2007. NHS Quality Improvement Scotland and the RCOG in Scotland support regional managed clinical networks (MCNs) for the management of complex pregnancies.^{26,27}

Changing expectations and choice

- 1.2.13 The expected standards for maternity care across the UK have been defined in the Maternity Standard in the National Service Framework for Children, Young People and Maternity Services¹³ in 2004, the National Service Framework for Children, Young People and Maternity Services in Wales¹⁴ in 2005 and A Framework for Maternity Services in Scotland^{15,16} in 2001. These documents identify safety, normality, women's choice and involvement and a focus on wide accessibility as key elements of a high-quality service which should be community and midwifery based. The recent publication of *Maternity Matters*² confirms the importance of these factors.
- 1.2.14 NHS organisations in England are required to comply with Department of Health core standards, and from 2006/07 to make steady progress against developmental standards⁸ until they reach compliance, based on self-declaration by boards. This will be monitored by the Healthcare Commission as part of its annual health check of NHS organisations. *National Minimum Standards for Independent Healthcare*,²⁸ published in 2002, apply to independent maternity hospitals in England and are also monitored by the Healthcare Commission. These reforms offer great opportunities but the skills and knowledge to use them are in their infancy at all levels within the system.

Patient safety

- 1.2.15 There have been a number of developments that have emphasised the need throughout health services to improve outcomes by considering patient safety more carefully. The report *An Organisation With a Memory*²⁹ and the subsequent establishment of the National Patient Safety Agency (NPSA) demonstrate the national commitment to improve outcomes through the patient safety agenda. The Scottish Programme for Clinical Effectiveness in Reproductive Health has demonstrated that in intrapartum critical events direct consultant involvement on the labour ward can make a measurable difference.³⁰

Medical litigation

- 1.2.16 Maternity services are associated with far higher litigation costs than other services.³¹ This is reflected in the various arrangements for the development of risk management standards across the UK (Clinical Negligence Scheme for Trusts in England, Welsh Risk Pool, NHS Quality Improvement Scotland and Clinical Negligence and Other Risks Indemnity Schemes in Scotland).^{32–34}
- 1.2.17 Payments made (including amounts set aside for unresolved claims) by the NHS Litigation Authority (NHSLA) for obstetric related incidents over the period 1995–2005 totalled £1,513 million. The annual figures are shown in Table 4 (the figures are based on the year the incident is reported; as it can take several years for claims to be reported, the figures for years since 2002 are of limited value).

Table 4. Annual payments made (including amounts set aside for unresolved claims) by the NHS Litigation Authority for obstetric related incidents over the period 1995–2005 (based on the year the incident was reported)

Year	Payment total (£)
1996/97	93,370,713
1997/98	138,743,499
1998/99	144,013,680
1999/2000	213,649,822
2000/01	236,078,822
2001/02	269,441,033.

Improving safety, morale and team work

- 1.2.18 Some labour wards are exceedingly busy, often working at their limits in terms of staffing and equipment resources. When difficulties and poor outcomes arise, it is often related to a failure to recognise and act on the signs of impending clinical complications. While it is recognised that inadequate training and supervision may lead to the phenomenon of denial, an insidious increase in workload, fatigue and stress will also play a major role. Evidence from recent Healthcare Commission investigation reports^{9–12} suggested that a poor working relationship between healthcare professionals, including lack of support and possible bullying, can lead to dysfunctional teams. This, linked with a lack of a shared philosophy and vision, contributes to higher interventions and significant safety risks. Low morale can be exacerbated by staff shortages as shown by recent surveys.^{35–37} Strong leadership is essential to maintain morale and to improve team working.

Issues concerning commissioning maternity services

- 1.2.19 The current systems reform of the NHS in England is creating gaps in the quality of commissioning maternity services. The shift is from a crude model

of ‘block maternity contract’ with an acute NHS trust to contracting a maternity service for a local population within a managed clinical network. Primary care trusts (PCTs) now have increased options and more flexibility in commissioning services. Using a comprehensive needs assessment of the local maternity population, they can contract services from more than one provider, for the whole or part of the care pathway. Providers could range from acute hospital trusts, community trusts or alternative providers. The crucial element is the quality of contracting, guided by designated standards and best practice to inform, procure, evaluate and improve local service provision.

- 1.2.20 The 2005 White Paper on community care provision³⁸ supports the Children, Young Peoples and Maternity NSF^{13,14,16} in requiring maternity services to ensure the development of effective services that support both healthy and socially disadvantaged or excluded women and their families. The use of payment by results as a financial mechanism across the acute and community divide is still being developed and refined, particularly with reference to identifying and indicating higher resource levels for socially complex care and for care provided outside hospitals. Maternity service professionals, managers and commissioners also need to make maternity services highly visible locally in strategic planning to access funding from different and shared budgets. This should include maximising the public health contribution of maternity services to improving health and social outcomes. Maternity services have to learn to work with and be an integral part of local strategic partnerships and local area agreements within local authorities. The capacity to do this may affect the implementation of these safer childbirth standards. In Wales, the health strategy for the next 10 years is contained in *Designed for Life: Creating World Class Health and Social Care for Wales in the 21st Century*,³⁹ which commits to wholesale transformation of services.

2 Organisation

2.1 General principles

Communication

- 2.1.1 A good working relationship between the multidisciplinary team (midwives, medical, ancillary, managerial staff) and the women in their care is crucial to ensure optimal birth outcomes. This is best achieved with a team approach, based on mutual respect, a shared philosophy of care and a clear organisational structure for both midwives and medical staff with explicit and transparent lines of communication. Clear, accurate and respectful communication between all team members and each discipline is essential, as well as with women and their families.
- 2.1.2 The impact of inadequate communication has been highlighted clearly by the Healthcare Commission,⁹ which recommended that NHS trusts should ensure that there are effective systems of communication (information pathways) with PCTs and strategic health authorities on the quality of maternity services (through contracts and performance monitoring) including routine reporting of serious untoward incidents. Commissioners and trusts (including foundation trusts, which are bound by different requirements) should work together to engage with the local community and ensure that maternity services reflect the diverse needs of the population and are appropriately funded and resourced.⁴⁰

Leadership

- 2.1.3 Dynamic, clear leadership, together with the key staff identified below, is essential for effective working in all places of birth. While the type of leadership will vary according to the birth setting, in addition to senior management (head of midwifery services, clinical director, general manager), each acute birth setting should have a labour ward manager, lead consultant obstetrician, one or more consultant midwives for intrapartum care and midwife shift coordinators. These key professionals are needed to address the quality aspects of service delivery, including guideline development, setting and monitoring of standards, and other organisational issues. Each professional is accountable for the care they provide and the lead professional should be identified on the case notes to distinguish between midwifery or obstetric care. If there is a change in the lead professional during pregnancy or labour, this must be recorded, together with the reason. This is to ensure that both the woman and health professionals are clear which health professional is responsible for care planning and clinical decision making.

Risk management

- 2.1.4 The governance structure of obstetric and midwifery units, which has a remit to develop strategic policies and to implement evidence-based guidelines, must be defined and agreed within the units. One model which was proposed in *Towards Safer Childbirth*¹ was the labour ward forum; this is still effective and relevant for many labour wards, although other models may be equally suitable. As a minimum, the forum should meet every 3 months and should comprise the lead consultant obstetrician, a consultant midwife, the labour ward manager, an obstetric anaesthetist, a neonatal paediatrician, a risk manager, the supervisor of midwives, representatives from junior medical and midwifery staff and designated user representatives, such as from the maternity services liaison committee or Patient Advice and Liaison Services (PALS).

2.2 Safe practice and learning lessons: risk management

- 2.2.1 Good practice in terms of patient safety requires an organisational approach to the risk management process. Organisations should have in place robust arrangements to ensure, through clinical governance, that they are providing safe practice and learning lessons both from their own and others' practice. Central to this are risk management processes, including review of organisational culture, risk assessment, training, induction, guidelines, communication, audit and learning from adverse incidents, claims and complaints. Risk management should be overseen and coordinated by a maternity risk management group, chaired by a senior clinician (doctor or midwife) and with multidisciplinary representation, which should meet at least every 6 months. There should be multidisciplinary training in risk management.
- 2.2.2 There should be a proactive and continuous assessment of the risks within maternity units, together with a formal risk assessment at a minimum of 2-yearly intervals.³² A register of incidents drawn from the risk assessment process should be available and this should be a dynamic document acknowledging when action has been taken to reduce risk, as well as adding risks identified from assessments or analyses of reported incidents. The NPSA's *Seven Steps to Patient Safety*⁴¹ can provide a framework for maternity services to help them meet their clinical governance and risk management targets. It describes the steps that NHS organisations need to take to improve safety and provides a checklist to help organisations and departments plan their activities and measure performance in patient safety.
- 2.2.3 Systems need to be in place for the reporting of incidents, with specific advice for which incidents need to be reported. This advice should not be seen as all-inclusive, as other incidents often need consideration. The approach to incident reporting should be open and wide-reaching, with a preference for over, rather than under, reporting. NHS staff are expected to report incidents via their local risk management systems to ensure local learning takes place. All reported incidents relating to patient safety in England and Wales will be sent automatically to the NPSA to support national learning, with information relating to individuals (patients and staff) removed. Staff are also

encouraged to report patient safety incidents directly to the NPSA⁴² to support national learning.

- 2.2.4 When incidents have occurred, units need to consider the causes and consequences of the problems highlighted. There are a number of tools which can be used to identify the root cause of adverse events and all units should have staff trained in the use of these tools.⁴³ Timely analysis of the underlying problems with an appropriate action plan should be part of the process of learning lessons and implementing changes. There should be a written risk management policy including trigger incidents for risk-averse incident reporting.⁴⁴ There should also be regular audits of obstetric indicators, such as emergency caesarean section, and neonatal indicators, such as delayed or failed resuscitation.
- 2.2.5 Meetings to review adverse events should be seen as both educational and part of the risk management system. Good communication with all professionals involved in an event is an important mechanism for reducing the risk of the same adverse outcome recurring. Transparency should be observed with respect to the learning outcomes, through regular multidisciplinary meetings and generic feedback supported by both paper and electronic communication.
- 2.2.6 While many incident reviews will identify changes in practice and systems which are likely to improve outcomes without cost, some incidents will require extra resources. It is important that there is a mechanism for these issues to be considered, through a register of risks, or more urgently if clinically indicated. Trust boards need to be informed as they hold ultimate responsibility and will need to decide funding priorities.
- 2.2.7 It is important for practitioners to keep contemporary notes and accurately document events: date and time, printed name and signature, written in black ink.^{45,46} Appropriate abbreviations may only be used once the terminology has been written in full with the relevant abbreviation adjacent to it.
- 2.2.8 It is crucial, not only for medico-legal purposes but also for good clinical practice, to have in place systems to document and record clinical decisions and events. The archiving of all data, including out-of-date protocols, is absolutely vital. The careful storage of cardiocographs, partographs and anaesthetic records should be mandatory. One individual within the unit, preferably the risk manager, should be responsible for ensuring that appropriate methods are adopted.
- 2.2.9 The outcome measures and standards described in this document should be adopted, audited and published as an annual report in line with best practice. The report should include an evaluation of women's views of their care and should inform the regular review of service provision and risk management policy. The annual report should be available to the public.
- 2.2.10 Good levels of communication are essential, both between professionals and between professionals and women. As far as staff are concerned, it is important that employers ensure that their staff have both appropriate competence in English and good communication skills.

- 2.2.11 The practices of courteous introduction and the wearing of identity badges are essential and the general principles of good communication should be routine. Adequate facilities for communicating with non-English speakers and those with sensory impairments are important components of good care and should comply with the Disability Discrimination Act (amended 2005). Confirmation of the woman's understanding should always be sought, even with English speakers.
- 2.2.12 Interpreting and advocacy workers should ideally be available on a 24-hour basis and the individual woman's needs should be identified in the antenatal period. It is recognised that, with a wide range of ethnic minority groups and languages, this may be hard to achieve, particularly on a 24-hour basis, and that translating costs can be high. However, misunderstandings can increase risk in labour and lead, potentially, to litigation, so the provision of translators should be regarded as essential, irrespective of the cost. Telephone interpretation services should be considered and inexperienced translators or family members should not be used unless a professional interpreter cannot be accessed.
- 2.2.13 The need for appropriate midwifery staffing levels and for a consultant obstetrician presence on the labour ward have both been acknowledged in risk management standards. Units should develop plans to move to the levels of staffing discussed in section 5 of this document. In England, the Clinical Negligence Scheme for Trusts (CNST) has identified the importance of consultant obstetricians on the labour ward, and their Level 2 standard requires at least 40 hours of consultant cover during the working week on the labour ward.³² The CNST has identified a number of other standards applicable to the labour ward. Similar standards apply in Scotland and Wales and the Scottish Committee of the RCOG has published its proposals for service reconfiguration.²⁷
- 2.2.14 Units should have in place arrangements to ensure safe care when there are increases in demand or reduced levels of staffing. There should be an early warning system so that, if the unit is becoming busy, proactive intervention can reduce the need for it to 'close'. There should be an arrangement across districts within any one area to ensure that problems in one unit are not transferred to a neighbouring unit with just as many difficulties.
- 2.2.15 The increasing provision of choice in maternity care for women and the development of maternity networks linking providers to offer that choice, present challenges for maternity professionals to ensure that women are informed of the implications of their choices and that appropriate risk assessment takes place to balance choice with safety as set out in *Maternity Matters*.² Several birth options are available for women. They include planning birth at home, in a midwifery or an obstetric unit. Service guidelines must be customised to account for their relative proximity to an obstetric unit (see Appendix 2).
- 2.2.16 All places of birth operating within that network must have equivalent clinical governance frameworks to ensure best practice and safe service provision: multidisciplinary guidelines, risk management and audit, together

with resources such as personnel and equipment, training and education for professionals (promoting normality and the capability to deal with obstetric and neonatal emergencies), information and communication pathways for women and professionals.^{13,28,32,47-53} It is important that these organisational arrangements are established before developing any new service to achieve standards of safe practice.

- 2.2.17 There should be written multidisciplinary evidence-based clinical guidelines, which are accessible and reviewed every 3 years at each birth setting, for the management of both low- and high-risk conditions and births, including the birth, resuscitation and management of extremely preterm infants. These guidelines and risk assessment will support transparent communication with women and their families about their choice in place of birth, improving quality and safety of service. Guidelines should include:
- risk assessment, consultation and referrals
 - management of obstetric and neonatal emergencies
 - management of transfer of mother and/or baby to obstetric unit.
- 2.2.18 Women should be helped to make an informed choice of where they wish to give birth, following:
- Provision of comprehensive written information on the perceived benefits and risks of the different options of place of birth. It is vital that all women are given clear, accurate information so that they understand their decision and any inherent risks. It should be recognised that some women are unable to access information written in English due to literacy or language barriers, so interpreters should be engaged where required to ensure full understanding and dialogue.
 - A discussion should follow with the relevant professionals after the clinical risk assessment has been performed. This underpins the continuing involvement of the woman in her care throughout the antenatal period, allowing for review in late pregnancy, as well as at first attendance during labour.
- 2.2.19 Research is in progress on the comparative risk of different birth settings. However, when sharing information, it is essential that midwives and obstetricians clearly state the possible impact of the decision on the wellbeing of the woman and the baby if adverse events occur requiring transfer to hospital such as unexpected emergencies like shoulder dystocia and post-partum haemorrhage. This includes what can be done and any limitations, the likelihood of transfer and how long the transfer to hospital may take, given the local circumstances. In each birth setting, both relative benefits and risks should be discussed in the context of the woman's individual circumstances and her own wishes. In the hospital setting, this should include iatrogenic risks with any interventions such as hospital-acquired infection, increased episiotomy rates and hyperstimulation associated with oxytocin therapy. These discussions should be clearly documented and a continuing care plan for labour and birth made.
- 2.2.20 Women have the right to choose where to give birth.⁵⁰ If a woman chooses to give birth at home or in a midwifery unit contrary to advice from midwives and obstetricians, there needs to be clear documentation of the

information given. Her understanding should be clarified of the potential impact of managing complications in this setting and the potential consequences of any delay in access to hospital medical care for herself or her baby.⁴⁶ Midwives must support the woman by carefully planning her care, informing appropriate personnel such as paramedic crews and the supervisor of midwives, and ensuring that their own emergency skills are updated.

- 2.2.21 Women with high risk factors or potential complications should be offered and advised on a referral to a consultant obstetrician and advised to transfer to an obstetric unit if they so wish. Consultation, referral and transfer should be discussed with obstetricians, supervisors of midwives and neonatologists and a copy of the care plan should be shared with all relevant maternity care providers.
- 2.2.22 A certain proportion of women giving birth in out-of-hospital settings and/or their babies will need referral for specialist medical care and transfer to hospital for assessment and continuing care in labour, during birth or in the immediate postpartum period. This report endorses the recommended transfer arrangements set out in the CESDI 5th Report;⁵ specifically, transfers should be arranged at the earliest indications of developing complications and following a woman giving her informed consent for transfer. Hospital clinical staff should be forewarned of the transfer and the reason and the following should be implemented:
- A clear written and verbal summary of events and reason for transfer leading up to the decision to transfer the woman should be given, together with a provisional diagnosis of the problem. The discussion and explanation to the woman herself should be documented. The receiving unit should be fully appraised of the condition of the woman and her baby before transfer.
 - When women and babies are transferred into hospital with complications, the risk assessment should be discussed and form an integral part of the initial medical review undertaken by the most senior obstetrician present on the labour ward, either immediately if a life-threatening emergency exists or, in any case, within 30 minutes of admission.
 - The midwife who is responsible for the transfer, continues to care for the woman after transfer when this is possible.¹³
 - There should be written guidance for situations in which midwives consult with the paediatric team and criteria for the transfer of the baby into hospital.
 - If it is necessary to transfer the baby from home or to another hospital, arrangements should be made for the mother to accompany and stay with her baby whenever possible.
 - The original records of the woman and her baby should accompany them when they transfer.
 - There should be local agreements with the ambulance service on attendance at emergencies or when transfer is required.
- 2.2.23 The need for specialised care for a sick baby can often be anticipated before birth. In addition, in some cases the expertise of a fetomaternal medicine unit will be needed. There should be agreed written multiprofessional

arrangements within each network for the transfer of a woman with a high-risk pregnancy or her baby, to ensure that they are managed at a centre with appropriate obstetric and neonatal facilities. Response times for finalising arrangements and transferring the mother or baby should be agreed within the network. It is recognised that this will result in increased (appropriate) *in utero* transfers to the perinatal centres, whose staffing and facilities will need to be appropriate to the complexity and caseload.

- 2.2.24 Where the need for specialised care cannot be anticipated before birth or anticipated in sufficient time to arrange *in utero* transfer, after initial stabilisation a sick baby will require care in a neonatal unit.
- 2.2.25 For all transfers, clear verbal and written information should be given to parents, explaining the local arrangements and the particular indications for transfer which apply, with details of units to which transfer is likely.
- 2.2.26 Security is an issue of importance for staff, mothers and babies. A robust system must be in place for their protection. Babies born in hospital should be cared for in a secure environment to which access is restricted. An effective system of staff identification is essential. A robust and reliable baby security system should be enforced, such as baby tagging, closed-circuit television, alarmed mattresses. Strict criteria for the labelling and security of the newborn infant are essential. Babies born in hospitals or birth centres should be clearly identified as soon as possible after birth with two labels, each with their surname, date of birth and individualised hospital number. Twins and multiples must be clearly labelled by birth order. National guidance exists for the identification of all patients and must be followed.⁵⁴

3 Staffing roles

- 3.0.1 *Towards Safer Childbirth*¹ acknowledged the central role of the midwife as the expert autonomous practitioner in the care of women in normal labour, as well as the need for increased involvement of the consultant obstetrician in the labour ward in the care of women with complex or complicated pregnancies and in the supervision and education of medical staff. All professionals: midwives, obstetricians, anaesthetists and paediatricians, must work together to agreed protocols to optimise the outcome for both the mother and her baby, especially in complicated pregnancies.

3.1 Midwives

- 3.1.1 It is recognised that, regardless of the place of birth, women and their babies will be cared for by midwives. The role of the midwife, her function and scope of practice, is established in statute and cannot be delegated to anyone else. Midwives Rule 6 states: ‘your responsibility, and those of other health professionals, are inter-related and complementary. Each practitioner is accountable for her own practice’.⁵⁰ The midwife has a role in caring for all women in labour, irrespective of risk category or the type of unit in which she is practising.
- 3.1.2 Midwives’ expertise lies in the care of normal childbirth and in their diagnostic skills to identify deviations from the normal and to refer when indicated.^{50,55} This may be to an appropriately experienced midwife colleague (for example, consultant midwife) or to another experienced member of the multidisciplinary team.⁵⁰ When obstetric or other medical involvement is necessary, the midwife continues to be responsible for providing holistic support, maximising continuity of carer and promoting pregnancy and labour, as far as possible, as normal physiological processes.⁵⁵
- 3.1.3 The increase in caesarean section rates in the last 20 years has been attributed to so called ‘provider behaviour’, which includes differences in professional cultures, values, beliefs and in organisational systems.⁵⁶ There is concern that, in this changing environment, the skills associated with supporting physiological birth have been devalued, resulting in lowered confidence in midwifery practices. This has further contributed to the increase in caesarean section rates.⁵⁷ A concerted effort from organisations is required to recognise and facilitate the relevant skills and competences for midwives in each birth setting. There is emerging evidence that, since 2000, the role of the consultant midwife has made a positive impact in supporting the above goals.^{58–60}
- 3.1.4 Midwives are responsible for the immediate assessment of the baby after birth and for ensuring that babies are delivered in a safe, warm and clean

environment. Their role in the immediate period after birth encompasses the care of the newborn, with responsibility for newborn resuscitation (see below), the establishment of skin-to-skin contact, organisation of vitamin K prophylaxis and initiation of breastfeeding. Midwives are also responsible for alerting other team members, usually paediatricians, to potentially important aspects of the maternal or fetal history which may require urgent intervention (such as positive hepatitis serology, group B streptococcal carriage, fetal abnormality). Paediatric staff are responsible for arranging appropriate clinical management according to local protocols and guidelines (para 3.6.4).

- 3.1.5 The midwife or other professional who is responsible for the baby at birth also takes responsibility for accurate recording of key items, including weight, head circumference, Apgar scores and temperature. In many units, the midwife is the lead professional present to provide care for the baby during elective caesarean section. Increasingly, midwives are undertaking the full physical examination of newborns within 72 hours after birth, according to NICE and other guidance (see below). Where the midwife remains the lead professional caring for the baby, the skills required include the recognition of a failure to make an effective transition to extrauterine life and recognition of risk factors and early signs of neonatal complications including infection.^{61,62}
- 3.1.6 Within the changing demands of different birth environments, midwives are developing new competencies to maintain quality of service and continuity of care, such as ventouse and vaginal breech births. In larger units, especially those concerned with the management of high-risk labour, a core of midwives with additional skills concerned with management of complex obstetric problems is recommended as part of a high-risk team. Their role is to provide care for women with complications or who are critically ill, while maintaining the philosophy of midwifery care.
- 3.1.7 All midwives have a major role in teaching and mentoring student midwives and an expected role in teaching and mentoring junior doctors and medical students. It is essential that the midwifery establishment reflects this.
- 3.1.8 The head of midwifery services role combines the effective promotion of professional expertise in women and children's health, overarching responsibility for the operational and strategic general management, professional leadership and being an advocate for women.⁶³ Specific components include budgetary control, human resources, strategic planning, clinical governance and quality of midwifery care; this should be reflected in the organisational structure.
- 3.1.9 In *Towards Safer Childbirth*¹ we used the term 'clinical midwife lead'. This has been superseded by the term 'consultant midwife', which more accurately fulfils the clinical leadership role without managerial responsibilities. The consultant midwife, in conjunction with the lead consultant obstetrician, can provide the clinical leadership and support to ensure a quality service.

- 3.1.10 The consultant midwife's role is pertinent in every provider organisation, to promote normality in labour and to underpin provision of safe and effective care, as has been emphasised recently in *Maternity Matters*.² The capacity of this role to maximise normal outcomes in labour and to support midwives and medical staff in enhancing their skills in this area of practice is of such importance that the role should be embedded in every birth setting from home to high-technology units. Crucially, they act as an expert resource for clinical midwifery decision-making, including referral and transfer of care. The consultant midwife fulfils her expert role through:
- supporting and facilitating normal birth practice
 - acting as a role model and providing professional leadership
 - educating, training and developing staff in a multidisciplinary team
 - engaging in strategic planning and service development
 - undertaking audit, research and evaluation.
- 3.1.11 In organisations where the consultant midwife's role has been effectively realised, there is evidence of their influence and impact on normalising birth, reducing interventions such as vaginal birth after caesarean section clinics, reducing the caesarean section rates, and in making teamworking more effective and improving the culture.^{58,59,64-67}
- 3.1.12 A suggested role profile for a consultant midwife is given in Appendix 4.
- 3.1.13 The labour ward manager has a crucial role in the smooth and efficient management of the labour ward and in providing advice, support and guidance. This includes:
- resource management, ensuring that there is a supportive, positive environment that encourages learning and development of all staff
 - ensuring a quality service through evidence-based guidelines, a robust risk management framework, safe and effective resourcing of equipment and support systems for mentoring new and junior midwives and students. The minimum requirement for labour ward manager presence is one whole-time equivalent
- 3.1.14 To ensure 24-hour managerial cover, each labour ward must have a rota of experienced senior midwives as labour ward shift coordinators, supernumerary to the staffing numbers required for one-to-one care. Their role is pivotal in facilitating communication between professionals and in overseeing appropriate use of resources.
- 3.1.15 The supervisor of midwives has a statutory role, which is undertaken on behalf of the local supervising authority. A supervisor of midwives is an experienced midwife with additional training, who is able to contribute to the development of the maternity strategy as an advocate for women, midwives and the wider multiprofessional team. There should be one supervisor of midwives to every 15 midwives and her role is to protect the public through the safe provision of evidence-based midwifery care. Statutory supervision of midwives is an integral part of the clinical governance framework. Supervisors of midwives should be represented at all local maternity communication forums such as the maternity services liaison committee, risk management, perinatal audit meetings and the labour ward forum, and

should have a direct line of communication to strategic health authority and trust executives. A supervisor of midwives is available 24 hours a day and may be contacted by any member of the maternity team for support and guidance.

- 3.1.16 Student midwives are supernumerary to the midwifery establishment numbers but, as they provide direct care to women, under supervision and mentorship of midwives, their role in contributing to care cannot be overlooked.

3.2 Maternity care assistants

- 3.2.1 The contribution of maternity care assistants (MCAs) is maximised when they are appropriately trained, managed and supervised by midwives, while operating as an integral part of the maternity care team.⁶⁸ More recently, the Royal College of Midwives has supported further development of the role by publishing a preparation programme,⁶⁹ which sets out appropriate skills, competencies and methods of acquisition. Employers have a responsibility to ensure that the person undertaking roles instigated by them receives the accredited training for required competence.
- 3.2.2 The key principle in incorporating MCAs within the workforce skill mix is to complement not to substitute for midwives.
- 3.2.3 MCAs are expected to be active in assisting midwives to support women in labour, maintaining a safe and clean environment, assisting midwives and other professionals in their clinical practice and supporting parents with newborn care.^{69,70}
- 3.2.4 In the interest of improving quality of care, it is essential that the flexibility of this role is shaped by the needs of women in any birth setting. In a 'high-risk' labour ward environment they may require further training to undertake other roles such as 'scrub' role in obstetric theatre.⁷¹

3.3 Obstetricians

- 3.3.1 The role of the consultant obstetrician on the labour ward is to ensure a high standard of care for women and their babies with complex medical or obstetric needs and to be available for the acute, severe and often unpredictable life-threatening emergencies which are a feature of obstetric practice. There is some evidence linking the absence of consultants from the labour ward, for example during the night, with less favourable outcomes (see Appendix 5). It seems reasonable to conclude that, as for other areas of practice, greater consultant involvement will lead to better organisation and enhanced clinical decision making. In addition, because junior doctors are spending fewer hours on the labour ward, there is an increasing need both for support and supervision of trainees throughout the 24 hours.

- 3.3.2 All consultant obstetricians who work on the labour ward should:
- provide clinical leadership and lead by example
 - train and educate staff in a multidisciplinary team
 - ensure effective teamwork
 - develop and implement standards of obstetric practice and have a major role in risk management
 - bring experience to clinical diagnosis and opinion
 - audit the effectiveness of practice and modify it as required.
- 3.3.3 Labour ward activity must form an identified component of the consultant obstetrician's job plan and Section 4.2 outlines a scheme for required hours based on the numbers of births. The consultant obstetrician should be present on the labour ward and conduct procedures, labour ward rounds to include reviewing midwifery-led cases on referral and teaching, as appropriate. Outside the hours of consultant presence, we would expect as a minimum that there would be physical ward rounds at least twice daily during Saturdays, Sundays and bank holidays and once in the evenings. National Patient Safety Agency data seem to suggest that a higher percentage of severe incidents occurs from about 20.00 to 04.00 hours, probably when consultants are not present. The evening ward round, therefore, should be as late as possible, perhaps around 22.00 hours.
- 3.3.4 In the case of emergencies, anticipated difficult births, including caesarean sections or whenever the clinical situation gives cause for concern, the consultant obstetrician must be contacted and must attend the obstetric unit as required.
- 3.3.5 A system should be in place for senior consultants to support and mentor their more junior consultant colleagues.
- 3.3.6 The concept of a lead consultant obstetrician on the labour ward is important. Every NHS trust should identify a consultant obstetrician to fulfil this role or should arrange another model that achieves the same aim. This person, together with the consultant midwife and the labour ward manager, has overall responsibility for the organisation, standard setting and audit on the labour ward. A suggested role description for a lead consultant obstetrician is included in Appendix 6.

3.4 Junior obstetric staff

- 3.4.1 The implementation of the European Working Time Directive (EWTD) has meant the imposition of shorter working hours and the practice of shift working for most junior medical staff is now well established. The shift system itself can lead to fragmentation of patient care, although with proper organisation this can be minimised. The Postgraduate Medical Education and Training Board (PMETB) recommends well-organised handover arrangements ensuring continuity of patient care as one of the generic standards for training⁷² and the establishment of a formal handover 'half-hour' from one team to another has been suggested as a key step to improving continuity of care.⁷³ One mechanism for improving continuity at the

changeover of medical staff is the principle of a ‘baton bleep’ which is handed from one doctor to the next on-call.

- 3.4.2 A medical team has its own hierarchy, from trainee to consultant. As with all effective teams, each member must have a clear idea about their own role, with a clear chain of command. The composition of these teams, with regard to individual training needs and skill mix, would be the responsibility of the lead consultant obstetrician for the labour ward.
- 3.4.3 Until recently, junior staffing grades were divided into senior house officers (SHOs), incorporating both career trainees and GP trainees, and specialist registrars, divided into years 1–3 and 4–5. From August 2007, with the introduction of Modernising Medical Careers (MMC), there has been a major change to the structure of postgraduate training (Table 5). The training programme is moving to a competency-based rather than a time-based format. After completing a 2-year foundation programme, with the opportunity in the second year to undertake a 4-month attachment in women’s health, trainees will compete for a place on a specialist training programme. The programme will last for a minimum of 7 years (ST1 to ST7) and will incorporate both SHO and specialist registrar posts.

Table 5. Training grades before and after 2007

Pre-2007 training grades	2007 training grades
–	Foundation Year trainees
Senior House Officers	Specialty Trainees years 1–2 (basic)
Specialist Registrars years 1–3	Specialty Trainees years 3–5 (intermediate)
Specialist Registrars years 4–5	Specialty Trainees years 6–7 (advanced)

- 3.4.4 Trainees will enter the training programme with little or no experience and will be expected to be working on the middle grade rota after 2 years of basic training. While an individual’s level of experience needs to be taken into account when organising service cover, it must be recognised that these very junior trainees will need a great deal of intensive supervision and training to ensure that they have the relevant competencies to move into ST3 and on to the middle grade rota. While a good deal of their initial supervision and training will be from midwives, they will also need a high level of supervision and training from senior trainees and consultant obstetricians. They should not be placed in a position of providing service, particularly unsupervised, until they have demonstrated the necessary competencies.
- 3.4.5 When moving from ST2 to ST3, trainees will need to demonstrate that they have obtained the competencies required (as defined in the competency-based logbook) to work on the middle-grade rotas. These trainees will acquire further competencies in years ST3 to ST5 and the level of direct supervision that they require will decrease. However, given their relative lack of experience and the shortened training hours, consultant obstetricians will still be required to be present for a significant time during the day to provide

hands-on training and supervision. Additionally, they will increasingly need to be present at night to provide the supervision that these very junior trainees will require. A failure to recognise and plan for this by increasing consultant obstetrician expansion and making significant changes to current consultant job plans will leave labour wards vulnerable and consultant workloads intolerable. The competence of a trainee will be evident from their logbook and will need to be reviewed by their trainer at the start of an attachment in a new unit.

- 3.4.6 ST3–5 trainees should have sufficient experience and training to undertake some operative births and to perform basic decision making on the labour ward. In general, it would not be appropriate for them to undertake the training of ST1–2 trainees, since they themselves would only have a basic level of knowledge. Under certain circumstances, they may be considerably experienced, in which case they could be given additional responsibility. This will be evident from the individual's personal logbook, which should be reviewed by their trainer at the beginning of each attachment to a unit.
- 3.4.7 Senior trainees ST6 and ST7 will be capable of undertaking most operative procedures on the labour ward and performing routine decision making. Training in years 6 and 7 will be focused on the development of the special skills needed to undertake a specific consultant post in obstetrics and gynaecology. Those trainees hoping to obtain a consultant post with a specific obstetric interest will be undertaking advanced training in labour ward skills. They will work with decreasing levels of direct supervision and will be expected to assume increasing levels of responsibility commensurate with their competencies.

3.5 Anaesthetists

- 3.5.1 The role of anaesthetists in obstetrics has changed over the years, such that it is now unthinkable that they were once regarded as mere technicians to deliver anaesthesia for an emergency caesarean section and then leave the obstetric unit to fulfil duties elsewhere. Epidural analgesia during labour has become an expectation of many mothers and it is now used by almost one quarter of women.⁵⁸ Successive reports of the CEMD⁷ and CEMACH³ have emphasised the importance of anaesthetists as an integral part of the obstetric team and in the management of mothers who become seriously ill. Anaesthetists are involved in some way or another in the care of about 50% of the women who enter the obstetric labour ward.
- 3.5.2 Delivery of anaesthesia and analgesia is the mainstay of obstetric anaesthetic practice but it can only be done safely if the service is coordinated and organised. This requires a designated lead obstetric anaesthetist who takes responsibility for all aspects of the clinical service. This includes the production and updating of protocols and guidelines. In the last quarter of a century, the better organisation of anaesthetic services, increased consultant input, better training and equipment are thought to be important factors in the dramatic reduction in maternal deaths due to anaesthesia (which had been a leading cause of death in the UK).

- 3.5.3 Women should have choice over their pain relief in labour. This means having access to unbiased information, in an appropriate language and format when feasible, about all types of analgesia and anaesthesia available, including information about related complications. Guidelines should be available to obstetricians and midwives on conditions requiring antenatal referral to the anaesthetist, and a system should be in place to ensure referral happens in a timely fashion.
- 3.5.4 Delivery of anaesthesia itself can be from consultants, career grade staff and from trainees, all of whom need to be competent. It has been shown to be possible⁷⁴ to train staff other than doctors to insert epidurals but the need for an anaesthetist to be available to manage any complications means that it is only feasible to deliver obstetric anaesthesia services with medically trained anaesthetists present.
- 3.5.5 Obstetric anaesthesia is a core component of the curriculum for a Certificate of Completion of Training (CCT) in anaesthesia.⁷⁵ It therefore follows that training of anaesthetic trainees forms an important component of activity on the obstetric labour ward. Training of the obstetric anaesthetic consultants of the future involves training to a higher or advanced level.
- 3.5.6 The anaesthetic team's response time should be such that a caesarean section may be started within a time appropriate to the clinical condition. This requires all team members to be informed of the case appropriately.
- 3.5.7 When women choose epidural analgesia for pain relief in labour they should be able to receive it within a reasonable time. This means that obstetric units should be able to provide regional analgesia on request at all times. In such units the response time should not normally exceed 30 minutes and must be within 1 hour, except in exceptional circumstances. Women and commissioners should be aware of those units where the epidural service is limited.
- 3.5.8 As a target for best practice (because regional anaesthesia is safer than general anaesthesia for caesarean section) more than 95% women should receive regional anaesthesia for elective caesarean section and more than 85% women should receive regional anaesthesia for emergency caesarean section.
- 3.5.9 Safe anaesthesia requires the anaesthetist to be aware of all relevant factors and women need to be informed of the choices available to them. The anaesthetist's role extends into the early postoperative period in the management of pain and detection of any complications. Hence, all women requiring anaesthesia should be visited by an anaesthetist both before and after the procedure.
- 3.5.10 Safe anaesthesia and surgery depends on a safe operating environment. There should be a suitably-trained senior member of either nursing, midwifery or operating department practitioner staff who has overall responsibility for the safe running of obstetric theatres and ensures that current standards in all aspects of theatre work are met.

- 3.5.11 Women requiring anaesthesia have the right to the same standards of care as all surgical patients, including dedicated trained anaesthetic assistance.⁷⁶ All women requiring conduction or general anaesthesia should be seen and assessed by an anaesthetist before an elective procedure. Training of anaesthesia assistants must be to the standard defined by the Association of Anaesthetists of Great Britain and Ireland and NHS Education for Scotland.^{77,78} For the same reason, recovery staff must be trained to the level recommended for general recovery facilities.⁷⁹ All women must be observed on a one-to-one basis in recovery until they have gained airway control and cardiovascular stability, and are able to communicate. Trained recovery staff should be in constant attendance for at least 30 minutes after the procedure or until discharge criteria are met.
- 3.5.12 High-dependency care should be available on or near the labour ward, with appropriately trained staff. If this is unavailable women should be transferred to a general high-dependency unit in the same hospital.

3.6 Paediatricians

- 3.6.1 Successful stabilisation of the neonate requires the coordinated effort of midwives, doctors and nurses. The precise roles within the team will vary according to local circumstances where the baby is born⁸⁰ but, whenever possible, the mother and her baby should remain together. The members of staff expecting to stabilise the baby must check resuscitation equipment when called to the labour ward.
- 3.6.2 Minimum standards with respect to the immediate care of the newborn require that basic life support skills should be available wherever a baby is born, and this will be provided in the first instance by midwives (see Section 3.1.1).
- 3.6.3 In addition, in a hospital setting, the birth of a preterm, ill or congenitally abnormal baby may occur and, thus, there must be immediate, on-site availability of clinicians (doctors, advanced neonatal nurse practitioners or midwives) with advanced neonatal life support skills (including endotracheal intubation). The failure to provide this level of support may result in unfavourable outcomes and will fall below an acceptable standard of care. Paediatric staff must be competent in neonatal life support, as described in Section 4.4.
- 3.6.4 There should be written guidance for occasions when senior support should be requested by junior doctors and nurse practitioners attending births, preferably in advance of the birth. All paediatric staff must actively develop, be aware of and comply with protocols and guidelines for the following:
- the recognition of babies with potential compromise or medical problems and those who may require admission to neonatal or transitional care units
 - transfer arrangements, should it be necessary to transfer a baby to a neonatal intensive care unit, which should meet the appropriate standards;⁸¹ transfer arrangements should be agreed within the structure of perinatal clinical networks²⁵

- the resuscitation and management of extremely preterm infants; in critical situations where ethical issues regarding continued resuscitation of a very premature or congenitally abnormal baby arise, a senior doctor (usually a consultant) should be in attendance at the birth wherever possible.
- 3.6.5 Physical examination and screening of the newborn should be arranged according to the guidance in the NICE postnatal care guidelines,⁶¹ which refer to the World Health Organization recommendations and the recommendations in *Textbook of Neonatology*.⁸² The recommendations of the National Screening Committee should be followed.⁸³
- 3.6.6 When a baby requires transfer to another hospital, strenuous efforts should be made to ensure that mothers and their partners are aware of the reasons for transfer. Whenever possible, written information regarding the accepting unit must be supplied to parents at the referring unit.
- 3.6.7 Babies who are dying should have as much close contact as is possible with their families, who need extra support at this difficult time. Information must be given in an appropriate language and format and cultural and religious practices respected. Families should be given information on support groups, such as the Stillbirth and Neonatal Death Society.⁸⁴
- 3.6.8 Perinatal autopsy may yield important information for families, and autopsy should be discussed with parents by a senior member of the team.

3.7 Support personnel

- 3.7.1 It is essential that there are adequate support personnel to enhance the maternity team in any birth environment, particularly on the labour ward. Increasing activities requiring information input, generic admission and clerical duties in the labour ward environment demonstrate the need for a ward clerk or receptionist to be available at all times.
- 3.7.2 The housekeeping, portering and maintenance teams need to be accessible on-site within the labour ward environment, owing to rapid turnover in bed occupancy, high-technology environment and emergency service provision, to maintain the safety of services provided.

4 Staffing levels

- 4.0.1 The concerns about staffing levels expressed throughout this document are addressed in the following sections. We recognise that the recommendations within the document have very considerable financial implications for health service commissioners locally and nationally and for NHS trusts. However, it was the unanimous view of the Working Party that, in correcting the deficits that exist, it is vital that no one professional group benefits to the detriment of another. Individual trusts need to review their overall staffing levels against their service requirements and audit their staffing levels annually.

4.1 Midwifery staffing levels

- 4.1.1 It must be acknowledged that intrapartum care is provided in diverse birth settings, at home, in midwifery units and acute hospitals. Accordingly, the planning for staffing and skill mix levels needs to reflect the local model of care, case mix, the needs of women, their families and service design.⁸⁵ The totality of midwifery care has an impact on and implications for antenatal, intrapartum and postnatal provision within the acute sector, as well as in primary care and community settings. The need for continuous care means that labour ward staffing requirements cannot be considered in isolation or separated from the total establishment of the maternity service. Equally, staffing of the labour ward must not be at the expense of other areas of the maternity services, such as community midwifery.^{3,86} Where staffing deficits have been identified, a robust investment plan should be initiated to ensure equitable funding and resourcing.
- 4.1.2 Adequate midwifery staffing of all labour settings and the ability to sustain continuity of care is dependent on a number of factors, including the environment, case mix, models of care, policies and protocols and fluctuating demands: that is, the way 'in which the dependency of a woman in labour can change dramatically if emergencies arise'.⁸⁷
- 4.1.3 The annual RCM *Survey of Heads of Midwifery Services*²¹ highlighted how staff shortages compound the problem by:
- preventing midwives from attending mandatory training and continuous professional development opportunities
 - forcing midwives to spend a greater proportion of their time on clerical duties at the cost of direct care to mothers and babies
 - prejudicing any contingency plans for unexpected surges in the birth rate
 - compromising the level of clinical support and leadership available for less experienced staff and students.
 - increasing stress levels for midwives
 - negatively impacting on recruitment and retention.

- 4.1.4 It is known that inadequate staffing levels have an adverse impact on the quality of care and risk management⁹ and create a dependency on the use of bank and agency staff. These staff require greater induction and supervision to ensure that quality of care is maintained.
- 4.1.5 UK maternity service policies all state that maternity services should develop the capacity for every woman to have a designated midwife to provide care for her when in established labour for 100% of the time.¹³⁻¹⁶ In the last decade, the role of the midwife has expanded in response to various service demands, together with the impact of the EWTD on junior doctors and an expectation that midwives will fill the gaps. This has reduced the numbers available to provide direct care to women and babies.²¹
- 4.1.6 *Towards Safer Childbirth*¹ suggested that the number of midwives required to provide care in the clinical area was dependent on workload activity. Birthrate Plus[®] (BR+), an evidence-based workforce planning tool, is now used UK-wide (Appendix 2). The tool has been used for many years and, following refinement and detailed evaluation, it provides research based data on the make-up of the midwifery workforce required to provide care for a defined population of women in a specific care setting. The Department of Health in England and the other three government health departments have all endorsed the use of BR+ as the definitive workforce planning tool for midwifery services.
- 4.1.7 The underpinning principle of midwifery care in labour and the foundation of BR+ is that labouring women receive one-to-one individual care by midwives throughout established labour. This is vital if women are to receive the emotional support, information and advocacy they require. Its provision has proven benefits for the health and wellbeing of mother and child as well as enhancing maternal satisfaction.^{88,89}
- 4.1.8 The continuing BR+ evaluation of workforce planning uses clinical indicators to categorise women's needs and measure midwife time to meet these needs. Taking into account the local structures, it measures workload volume in relation to models of care, within recognised quality standards. The BR+ studies have provided a database from which it is possible to project staffing ratios for the total childbirth period and more recent analysis enables projection into intrapartum staffing ratios based on case mix and the annual number of births. Additionally, it recognises the complexities derived from local data and makes allowances for these, building on the midwifery skill mix.
- 4.1.9 Categorised according to birth setting and case mix, the figures in Table 6 take cognisance of the basic skill mix and models of care operating within the service, whether dedicated home birth services, community caseload, hospital core staff or a combination of these. The first two community settings: home birth and birth centres (the term 'community maternity unit' is used in Scotland and Northern Ireland), are defined as midwifery services with a case mix of healthy women with straightforward pregnancies. In rural areas with a low number of births, usually less than 30 a year, the centre may open for a birth and close when the woman returns home a few hours later. As there are fewer compounding factors, the midwife-to-woman ratios in these are the most straightforward.

Table 6. Midwifery staffing in varied birth settings based on case mix categories to provide the standard of one-to-one care in labour (adapted from Ball, 2006)⁸⁷

Setting	Birthrate Plus case mix category	Definition of category	Midwife-to-woman standard ratio	MCA to midwife ratio
Home	I & II	Low risk: midwifery care; 37–42 weeks of gestation, normal birth, no intervention, no epidural, good birth weight and Apgar	1 WTE midwife to 1 woman	1 MCA for team of 6 midwives
Birth centre	I & II	Low risk: midwifery care; 37–42 weeks of gestation, normal birth, no intervention, no epidural, good birth weight and Apgar	1 WTE midwife to 1 woman	1 MCA for team of 6 midwives
Obstetric unit based on case mix categories, not dependent on size or setting	I & II	Low risk: midwifery care; 37–42 weeks of gestation, normal birth, no intervention, no epidural, good birth weight and Apgar	1 WTE midwife to 1 woman	1 MCA for 6 midwives each shift to cover diverse duties (non-midwifery)
	III	Moderate degree of intervention: induction, fetal monitoring, instrumental birth, third degree tear, preterm birth	1.2 WTE midwives to 1 woman	1 MCA for 4 midwives each shift to cover diverse duties (non-midwifery)
	IV	Higher risk/higher choice or need; normal birth with epidural for pain relief, elective caesarean sections, post-birth complications	1.3 WTE midwives to 1 woman	1 MCA for 4 midwives each shift to cover diverse duties (non-midwifery)
	V	Highest risk including emergencies; emergency caesarean sections, medical or obstetric complications, multiple births, stillbirths, severe pregnancy-induced hypertension	1.4 WTE midwives to 1 woman	1 MCA for 4 midwives each shift to cover diverse duties (non-midwifery)

MCA = midwifery care assistant; WTE = whole-time equivalent

- 4.1.10 The small group practice/team midwifery model is most effective in the provision of a home birth service and other midwifery care settings, backed up by secondary and tertiary hospital services. An additional benefit of such a model is the provision of a supportive environment for midwives to develop their skills in providing care in all midwifery settings. The model also provides an ideal environment for student midwives to experience the full extent of the midwifery role and practice and the continuum of care, backed up by secondary/tertiary hospital services.
- 4.1.11 The advantages of the caseload model in addressing a more flexible use of midwives and the dilemma of the fluctuating intrapartum workload have been demonstrated.⁸⁶ When this pattern is implemented, the caseload midwife supplements the core staffing on labour ward, so providing flexibility.^{86,87}
- 4.1.12 To provide the level of one-to-one midwifery care throughout labour, the midwife-to-woman ratios must be determined by the case mix. Table 6 provides basic standards for midwife-to-woman in intrapartum care, for each setting in a table format. This is adapted from information on BR+ categories and evaluations, which are further explained in Appendix 2.
- 4.1.13 The minimum midwife-to-woman ratio is 1:28 for safe level of service to ensure the capacity to achieve one-to-one care in labour (BR+ evaluation data).^{89,90} The midwifery total care ratios for services with more complex case mix must be determined locally after case mix (social and clinical determinants) and external workload assessment is done, this may mean a lower midwife to woman ratio up to 1:25. The recommended total care ratios indicate the maximum number of women that a midwife can provide antenatal, intrapartum and postnatal care for within the service. This must not be confused with ratios to determine the total establishment figure, as it does not take account of midwives in other roles such as practice development, audit and risk management, breastfeeding adviser, antenatal screening coordinators and so on.^{19,90}
- 4.1.14 The midwife-to-woman standard ratios (Table 6) relate to intrapartum care provision and are derived from recognised evaluation data^{87,90} which reflect the increased activities associated with complex cases.
- 4.1.15 There are additional factors which exacerbate the need for extra staff. Some of these factors are related to professionals' clinical decision making and others are more related to service design. A significant contributory factor to labour ward workload is early labour admissions. The introduction of home assessment and admission triage can significantly reduce the burden of unnecessary admissions to the labour ward. Labour ward settings with the complexities of case mix and environment have a direct causal influence on the midwives to woman ratio, requiring more midwives. It must also be noted that any mergers of provider units will render previous staffing level assessments invalid as case mix, models of care and so on will change the profile.
- 4.1.16 Other factors and suggested actions for control are illustrated in Table 7.

Table 7. Additional factors impacting on staffing requirements and suggested actions (adapted from Ball, 2006)⁸⁷

Factor	Suggested action
Clinical policies:	
Intervention	Effective use of evidence-based guidelines and protocols
Monitoring	
Caesarean section (LSCS)	Audits
Induction, etc.	
Length of time on labour ward:	
Early transfers	First physical examination of newborn by midwife at home
No postnatal beds	Continuing evaluation of case mix Analysis of postnatal bed needs
Admissions:	
Self-referrals in early labour (category X in BR+)	Assessment at home
Initial antenatal assessment and treatment	Development of admission triage Maternity day unit open and staffed for a minimum of 12 hours
Postponed/failed inductions and LSCS	Policies and procedures for booking/scheduling inductions and LSCS
Readmissions post-delivery treatment	
In-utero, ex-utero transfers	National/Regional planning of services
Case mix:	
Numbers in category IV and V	Staffing skill mix strategy, e.g. staffing the high dependency areas
Acute ↔ birth centre overflow	Audit and monitoring of case mix
Gynaecological care	Agreed and planned caseload thresholds
Increased births because of:	
mergers/new service configurations in neighbouring maternity services or capping	Regional strategic planning for emergency closures involving commissioners of services Network communication Reassessment of staffing levels linked to merger

4.1.17 An important factor which affects labour ward staffing is the need for midwives to assist in the operating theatre. The midwife has a continuing role in the care of the woman and newborn in the theatre environment but should not be undertaking the ‘scrub’ role and we recommend that there should normally be a dedicated theatre team.

4.1.18 The current numbers of consultant midwives in post are low and there are many organisations which have not developed this post within their strategic framework to support normality, reduce medical intervention and caesarean section rates. To achieve maximum effect, it is important to have sufficient consultant midwives to achieve and sustain such quality outcome indicators. Furthermore, the numbers of posts are not reflective of the recent policy-led changes in service configurations.^{13–16,91}

4.1.19 Any increase in midwifery care should have shown a proportionate increase in the numbers of these posts. The feedback from existing consultant midwives makes it clear that, owing to the diversity of the workload, one whole-time equivalent (WTE) consultant midwife in larger obstetric labour wards is

wholly inadequate and that the presence of a consultant midwife on the obstetric labour ward may reduce the obstetric workload on the labour ward.⁶⁶ However, we believe it is essential that there is access to, or presence of, a consultant midwife in each birth setting.

We strongly recommend that:

- there should be one WTE consultant midwife for midwifery units (birth centres, midwifery units: freestanding or alongside)
- the appropriate ratio to move towards is one WTE consultant midwife to 900 women, based on 60% of women (total births/year) remaining at 'low risk' and under midwifery care. The larger obstetric labour ward will need to use a calculated ratio based on their case mix and volume. For example, in a unit with 3000 births/year, expected low-risk midwifery cases would be 1800 (60%), requiring two consultant midwives for normality in labour care.

4.2 Obstetrician staffing levels

- 4.2.1 The Clinical Negligence Scheme for Trusts adopted the standard of at least 40 hours of consultant obstetrician time during the working week on the labour ward which was proposed by *Towards Safer Childbirth*¹ in 1999. However, evidence from the RCOG Hospital Recognition Committee²³ shows that, although there had been an increase in the number of units having 40 hours of consultant obstetrician cover, only about 50% of the units in the UK with between 2500 and 4000 births a year met this standard.
- 4.2.2 The term consultant 'cover' used in *Towards Safer Childbirth*¹ should now be replaced by consultant 'presence'. A survey carried out for this report suggests that as few as 30% of those units claiming 40 hours cover actually have a consultant obstetrician present on the labour ward for this number of hours (see Appendix 1). In recognition of this, many units are moving towards 'consultant weeks'. During this week, the consultant obstetrician provides continuous daytime cover and has all other commitments cancelled. It is not satisfactory, for example, for a consultant obstetrician to be covering the labour ward while undertaking a routine gynaecological operating list. Furthermore, it is important that cover is prospective and allows for periods of leave.
- 4.2.3 Given the rather disappointing evidence on the progress made by units in improving their consultant obstetrician presence to date, it is clear that the implementation of the recommendations in this document is a challenge that will require a significant financial investment to ensure the necessary consultant expansion and also to guarantee that this major change in the working patterns of many senior medical staff is appropriately remunerated both in time and financially. However, we believe that it is now essential for all units with more than 2500 births a year to move to 40-hour consultant (or equivalent) presence and for those with 6000 or more births a year to have at least a 60-hour presence immediately. We recognise that the further suggestions raised in *The Future Role of the Consultant*,²⁴ although undoubtedly indicating a desirable timetable, were predicated on the basis of a substantial consultant expansion, without which no major changes will be possible.

However, this document strongly supports the aspirations set out in *The Future Role of the Consultant*.²⁴

- 4.2.4 *The Future Role of the Consultant*²⁴ has suggested that labour wards supporting large numbers of births (over 5000 a year) and/or a complex case load should be moving towards a 168-hour consultant-based service by 2010. The background to this recommendation is the recognition that the level of activity on the labour ward varies very little during a 24-hour period and that senior presence is therefore required for the totality of the working day, to support and train junior staff and to ensure high level decision making. From the obstetricians' point of view it is more protective for them if their commitment is formally recognised on a sessional basis and clearly reflected in their job plan.
- 4.2.5 It should be noted that these proposals relate simply to the increasing need for consultant time on the labour ward related to the numbers of births occurring within an individual unit. In reality, the issues are, or are likely to become, more complex. The number of births in a unit does not necessarily reflect the number of complex cases requiring consultant input. Further, reconfiguration of maternity care with the development of maternity networks may reduce the numbers of normal births within a unit whilst leaving the same number of complicated cases which will maintain a similar demand for consultant time. For these reasons, the calculations need to be interpreted carefully and with full regard to the local situation.
- 4.2.6 In obstetric units supporting relatively few births (less than 2500/year), a consultant continually present on the labour ward may be difficult to justify. However, this document strongly recommends 40 hours of consultant (or equivalent) obstetric presence and this should be mandatory if the unit accepts high-risk pregnancies. To ensure the best use of resources, both financially and in terms of manpower, individual units should perform a risk assessment exercise and should plan labour ward presence compatible with the needs of the unit. For rural and remote areas, there should be clearly defined criteria for the type of patients considered to be suitable to give birth in local units and transport arrangements agreed.
- 4.2.7 For obstetric units with 2500 or more births a year, Table 8, adapted from *The Future Role of the Consultant*,²⁴ indicates staff deployment required to provide safe care based on workload. The numbers of births in Table 8 provide a framework for local implementation. The terms low and high risk relate to referral patterns as discussed in Appendix 2.
- 4.2.8 For category A units, the arrangements for consultant staff will depend on local requirements. One of the consultants should have a particular responsibility for contributing towards the organisation and running of the labour ward (Section 3.3).
- 4.2.9 Most units in the UK have between 2500 and 4000 births a year (category B). We would concur with *The Future Role of the Consultant*²⁴ that they should reach 60 hours of consultant obstetrician presence by the end of 2009.

Table 8. Proposed obstetric staffing targets, 2007–2010 (adapted from *The Future Role of the Consultant*)²⁴

Category	Definition (births/year)	Consultant presence (year of adoption)			Specialist trainees (n)
		60-hour	98-hour	168-hour	
A	< 2500	Units to continually review staffing to ensure adequate based on local needs			1
B	2500–4000	2009	–	–	2
C1	4000–5000	2008	2009	–	3
C2	5000–6000	Immediate	2008	2010	
C3	> 6000	Immediate	Immediate if possible	2008	

- 4.2.10 When units have more than 4000 births a year, they should achieve the 60-hour target by the end of 2008 (Category C1) and for more than 5000 births a year (C2) by the end of 2007. We recognise that a further increase to 98 hours of presence will be a considerable manpower and financial challenge.
- 4.2.11 Those units with more than 6000 births a year should aim to reach full consultant obstetrician presence (168 hours of cover) by the end of 2008, although this also depends upon adequate consultant expansion.
- 4.2.12 A 24-hour consultant obstetrician-based service has major implications for consultants in terms of job plans, remuneration, office facilities on the labour ward, good living-in facilities and appropriate time off duty. The consultant obstetrician's contract does allow for precise calculations of consultant time and should be used as an effective tool, controlling consultant workload rather than increasing it. The crucial importance of life–work balance must be acknowledged if consultant obstetricians are to accept this very substantial change in their working pattern. Units planning to increase their consultant obstetrician presence should also ensure that all other resources are in place and that an assessment of cost effectiveness versus safety has been carried out.
- 4.2.13 In Table 8, for category A units, there should be a consultant obstetrician plus one specialist trainee, who should have at least 12 months' experience in obstetrics and gynaecology. In the larger units, the consultant obstetrician should be backed by two or three specialist trainees. These units will have a significant responsibility in both basic and advanced training in high-risk obstetric practice and the extent of junior cover will depend on workload and training opportunities. Protected time should be made available for consultant obstetricians to carry out their supervision and assessment duties. The decision on the seniority of the trainees will depend on regional training requirements.
- 4.2.14 There has been a concern that the increased presence of senior staff on the labour ward may be neither cost effective nor efficacious. There seems little doubt that a fully trained and experienced clinician will obtain better outcomes but it is less clear whether the continuous presence of such a

clinician will improve outcomes to the point where it becomes cost effective. However, there is increasing evidence from the literature, audit reports and data from both the NPSA and the NHSLA that this is likely to be the case (See Appendix 5).

- 4.2.15 It is vital that consultant obstetricians and their trusts do not see labour ward activities as additional roles and that they must form part of the consultant's agreed job plan and be reflected in their programmed activities. The changes are likely to have continuing implications for the overall cost of the service and, as discussed in *The Future Role of the Consultant*,²⁴ they can only be achieved with considerable expansion of consultant numbers. Consultant obstetricians could include other obstetricians who appear on the specialist register, such as locum consultant obstetricians, associate specialists or staff grades, but not in a leadership capacity. A possible model of working patterns is shown in Appendix 7. As stated above, these very substantial changes must not be detrimental to other healthcare professionals working in the maternity services.

4.3 Anaesthetist staffing levels

- 4.3.1 The roles of the anaesthetist (Section 3.5) recognise their integral part of the team and the need for 24-hour availability. Staffing levels need to recognise that emergencies happen frequently and often with rapidity, with a requirement to respond quickly in order to save mothers' or babies' lives. This means that in all but the smallest units the duty anaesthetist for obstetrics should not, in addition, be responsible for the intensive care unit or other anaesthetic duties. Much of obstetric anaesthetic practice is unplanned but, as well as timely response to emergencies, anaesthetic services also need to respond to elective operating such that it is not normally interrupted by emergencies.
- 4.3.2 In the same way that limited working hours have reduced the experience of obstetric trainees so it has for anaesthetic trainees. Concomitantly, the expectations of women have increased. The need for greater anaesthetic consultant presence has been recognised for some time such that there is consultant presence on the labour ward for at least 40 hours a week. Achieving this has been hampered by a paucity of suitably trained trainees. The situation in 2007 is such that there are more anaesthetists completing the CCT programme and applying for consultant posts. Failure to have sufficient consultant anaesthetists has been a clinical governance issue and is known to have resulted in higher anaesthetic complications. It is therefore time to implement the following recommendations, which have been in place since May 2005.
- 4.3.3 The recommendation in *Towards Safer Childbirth*¹ of a minimum of one fixed consultant session per 500 births is no longer adequate because of changes in workload, expectations/role and changes in workforce. The following is now expected:⁹²
- For any obstetric unit there should be ten consultant programmed activities or sessions per week, to allow full 'working hours' consultant cover.

- In addition to this, there should be a separate consultant anaesthetist for each formal elective caesarean section list.
- Tertiary referral units that are likely to have a higher than average proportion of women requiring high dependency care should have consultant time allocated for their care.
- Extra clinical time should be made available each week for antenatal referrals, especially when a formal clinic is provided.

4.3.4 Each consultant-led obstetric unit should have a lead obstetric anaesthetist with programmed activities or sessions which reflect both clinical activity and the associated administrative work that this entails. The lead obstetric anaesthetist should be responsible for the organisation and audit of the service, for maintaining and raising standards through provision of evidence-based guidelines, for providing anaesthetic input to the labour ward forum or equivalent multidisciplinary bodies and for training and risk management.

4.3.5 There must be a 'duty anaesthetist' immediately available for the obstetric unit 24 hours a day. This anaesthetist will normally have had more than 1 year of experience in anaesthesia and must have been assessed as being competent to undertake such duties.⁷⁵ The duty anaesthetist must have access to prompt advice and assistance from a designated consultant anaesthetist whenever required. Because of the high service demand for obstetric anaesthesia, many units will need to explore other means than solely trainees to provide a 24-hour service.

4.3.6 Life-threatening events can happen suddenly or unpredictably and require anaesthetists skilled in their management. The consultant anaesthetist on-call arrangements must ensure that help will be available when requested. In the absence of a dedicated rota for obstetric anaesthesia this may mean having an additional consultant anaesthetist on-call on a general rota.

4.3.7 In the busier units (more than 5000 births/year, an epidural rate over 35% and a caesarean section rate over 25%, plus tertiary referral centres with a high proportion of high-risk cases) it will be necessary to provide extra anaesthetic cover during periods of heavy workload in addition to the supervising consultant anaesthetist and the duty anaesthetist.

4.3.8 Rostering of anaesthetic trainees must allow for training in all modules including obstetric anaesthesia at basic, intermediate, higher and advanced levels. according to the needs of the trainee.

4.4 Paediatrician staffing levels

4.4.1 The on-site clinicians must have access to senior colleagues who have advanced skills for immediate advice and urgent attendance (within 10 minutes) when required. When general consultant paediatricians cover the labour ward, they must be trained and regularly assessed as competent in neonatal advanced life support through attendance at a recognised course.

- 4.4.2 Paediatric staffing relates to the size and case mix of the neonatal unit (which is not always directly related to the number of births). In addition to the standard for stabilisation of the baby described in Section 3.6, national standards exist for paediatric staffing.⁸¹
- 4.4.3 When an obstetric unit provides neonatal special care but is not intending to provide neonatal intensive or high-dependency neonatal care (level 1 unit), there should be:
- a designated link paediatrician for the labour ward and neonatal service, responsible for the clinical standards of care of newborn babies
 - consultant paediatricians: 24-hour availability of a consultant paediatrician (or equivalent non-consultant career-grade doctor) trained and assessed as competent in advanced neonatal life support, who can attend within 30 minutes
 - middle-grade doctors: 24-hour availability of resident doctors holding MRCPCH or equivalent, who have completed general professional training. These doctors should be trained and assessed as competent in advanced neonatal life support.
 - specialty trainees (STs) years 1–2 and advanced neonatal nurse practitioners (ANNPs): 24 hour cover by an ST1/2 or ANNP who is trained and assessed as competent in neonatal life support.
- 4.4.4 When an obstetric unit provides high-dependency and short-term intensive care but is not intending to provide intensive care (level 2 unit), in addition to the standard described above relating to a designated link paediatrician, there should be:
- consultant paediatricians: 24-hour availability of a consultant (or equivalent non-consultant career grade doctor) with neonatal training, who can attend within 30 minutes. In future those appointed to posts providing cover for a level 2 neonatal unit should have had at least 1 year of specialist training in a post or posts approved for neonatal training
 - middle grade doctors: 24-hour availability of resident doctors holding MRCPCH or equivalent, who have completed general professional training. If a paediatric service and a neonatal high-dependency service coexist, staffing arrangements should ensure the immediate availability to the labour ward of a professional competent to manage a neonatal emergency when the paediatric service is busy
 - STs years 1–2 and ANNPs: 24-hour cover by a ST1/2 or ANNP who is trained and assessed as competent in neonatal life support and whose only responsibility is to the neonatal and maternity services.
- 4.4.5 When continuing neonatal intensive care is provided (level 3 unit), in addition to the standard described above relating to a designated link paediatrician there should be:
- consultant paediatricians: 24-hour availability of consultants whose principal duties are to the neonatal service and who have had at least 2 years of specialist training in posts approved for neonatal training, who can attend within 30 minutes. All new appointees to such posts should have CCT in paediatrics (neonatal medicine)
 - middle grade doctors: 24-hour availability of resident doctors holding MRCPCH or equivalent, who have completed general professional

training and have experience equivalent to at least 1 year of 'core' higher specialist training in paediatrics, including 4 months of neonatology. These doctors should be available for the labour ward and neonatal unit at all times and not be required to cover any other service

- STs years 1–2 and ANNPs: 24-hour cover by a ST1/2 or ANNP who is trained and assessed as competent in neonatal life support and whose only responsibility is to the neonatal and maternity services; in large neonatal units, it will be necessary to have more than one SHO or ANNP on duty at all times.

4.5 Specialist medical cover, intensive care and high-dependency units

- 4.5.1 A multidisciplinary approach is essential. During labour, women with medical problems such as diabetes, heart disease, severe anaemia, sickle cell disease or psychiatric conditions, should have access to a consultant general physician or consultant psychiatrist with a particular interest in pregnancy and their medical condition. When no such specialist is available, guidelines should exist for the management of these medical disorders. Clear arrangements should be made to ensure adequate cover at all times. Obstetricians, anaesthetists, physicians, intensive care consultants and midwives should be part of the multidisciplinary team planning care for women with serious comorbidity. Elective admissions of women who are likely to need intensive or high dependency care should be prearranged, as this may require the cancellation of other booked intensive care admissions.⁸ In complex cases, a clear management plan, which has been discussed, if possible, with the woman, indicating the relevant personnel to be involved, should be displayed in the notes.
- 4.5.2 Prompt access to a high-dependency unit, intensive care unit and/or resuscitation facilities must be available. The extent to which these facilities are made available will depend on the workload, case mix and the local circumstances.
- 4.5.3 Women will occasionally develop serious problems during pregnancy and childbirth, with major organ failure, clotting disorders and severe haemorrhage. All obstetric units should be able to provide some high-dependency care, including cardiovascular monitoring, pulse oximetry and rapid transfusions of fluids or blood. The provision of specially trained staff and a suitably equipped area in the obstetric unit improves the care of women, while allowing for continued contact between mother and baby. Obstetric and midwifery staff should be competent in the management of general medical problems.
- 4.5.4 It is important that intensive care should start as soon as it is needed and is not delayed to wait for admission to an intensive unit. It is possible to provide the majority of immediate intensive care in an obstetric theatre. Early involvement of the intensive care consultant in the obstetric unit should allow for earlier, more effective use of advanced life support measures. Critical care

outreach teams provide support in stabilisation prior to transfer and on transfer back from an intensive care unit. Facilities for ventilation while awaiting transfer to an intensive care unit should be available.⁸

- 4.5.5 There must be clear local arrangements for the provision of emergency care, including guidelines for referral to intensive care and high-dependency units. The high-dependency unit may be a recovery room or a separate, dedicated area. Appropriately skilled midwifery, obstetric and anaesthetic staff should be available, together with all the necessary monitoring equipment including oximeters, capnographs and devices for measuring direct vascular pressure. The same documentation (charts, and so on) as used for standard intensive care units should be used.
- 4.5.6 Women who suffer catastrophic postnatal haemorrhage may often be helped by early interventional radiology. This can locate the source of the bleeding and in many cases the vessel can be embolised, with immediate improvement in the woman's condition. An interventional radiologist should be consulted whenever an emergency hysterectomy is under consideration. We realise that, owing to a shortage of suitably trained radiologists, it is not possible to provide full-time cover for interventional radiology in all obstetric units. However, given the potential to save the lives of women who have catastrophic postpartum bleeding, NHS trusts with labour wards should, where feasible, engage with their neighbouring trusts to discuss the formation of networks. The aim should be to provide an emergency interventional radiology service that is responsive to the needs of women wherever and whenever they arise.
- 4.5.7 The demand for intensive care and high-dependency units will depend on case mix and referral patterns. Nevertheless provision should probably be made for up to ten high-dependency cases/1000 births/year. It has been reported that about one intensive care admission will arise for every 1000 births.⁹³ There should be recognised routes of access to intensive care units in the same or other hospitals. Multidisciplinary guidelines should outline the local access to intensive care support, with guidance for staff on when to involve clinicians outside the maternity service, together with explicit guidance on equipment and personnel for safe transfer.^{32,94} Arrangements must be in place for small units to transfer women requiring intensive care to another hospital.
- 4.5.8 Networks should be in place to provide referral routes for women from low- to high-risk units for high dependency care. Low-risk units must have facilities for and staff trained in basic life support. The use of regional protocols with lists of trigger factors is recommended to promote consistency of care if a woman is transferred between hospitals and when junior staff rotate.⁹⁵
- 4.5.9 All obstetric, anaesthetic and midwifery staff should have training in cardiopulmonary resuscitation. This must include adaptations of technique which take the pregnancy into account, including the use of a wedge and perimortem caesarean section. The cardiac arrest team also must be aware of these and the location of and access to the maternity unit to avoid delay.

- 4.5.10 As far as midwifery cover for such units is concerned, it will be necessary to develop a core of midwives who have particular experience and expertise in the management of the critically ill woman. These midwives will be part of the midwifery establishment and the multidisciplinary team. The principle of one to one midwifery care also applies in the high-dependency environment and therefore the rota must ensure that there is at least one appropriately trained midwife to each woman requiring high-dependency care.
- 4.5.11 When an obstetric opinion is required, cover should ensure that sick women are not kept waiting. An opinion should be available as soon as required and not longer than 30 minutes. The doctor must be of adequate seniority to ensure that appropriate decisions about onward care are taken. There should be clear guidelines for junior staff concerning when more senior and/or multidisciplinary advice should be sought and for subsequent management. There must be adequate handover at all staff changes.
- 4.5.12 The management of obstetric patients requiring high-dependency care should be a multidisciplinary one, involving the obstetric, anaesthetic and midwifery teams. Whenever possible, all members of this team should review high-dependency patients together at all routine ward round visits. If this is not possible because of pressure of work, members of the team should make each other aware of the issues decided. Each team brings its own expertise and that of anaesthetists, involving assessment of cardiovascular and respiratory systems, provision of analgesia and fluid balance, should especially be harnessed.
- 4.5.13 Attendance on an Acute Life-Threatening Events Recognition and Treatment course (ALERT) or similar should be encouraged for obstetric staff and midwives. All obstetric and midwifery staff should have at least annual joint training in the management of massive haemorrhage and eclampsia. The core of midwives providing high-dependency care will require special training in intensive care and should be allotted time to attend regular updating courses.⁵⁰ Additional staff should have undergone as a minimum, in-house enhanced skills training to support this core. High-dependency care forms a significant part of anaesthetic training. Units should ensure that they have sufficient expertise in high-dependency care among their obstetric staff. This is included in subspecialty training in fetal and maternal medicine and management of labour ward and maternal medicine advanced training skills modules. A multidisciplinary programme on high-dependency care in obstetrics should be developed to widen access to training.
- 4.5.14 The Critical Care Minimum Dataset (CCMDS) should be used.⁹⁶ This will ensure that critical care in obstetrics is recognised and funded. There are no specific obstetric fields within this dataset, so the use of the voluntary Intensive Care National Audit and Research Centre (ICNARC) reporting system,⁹⁷ which does include these fields, should be encouraged in intensive care settings. An alternative would be to use the definitions used by the Scottish Confidential Audit of Severe Maternal Morbidity for local audit.⁹⁸

5 Education, training and continuing professional and practice development

5.1 Multiprofessional team training

- 5.1.1 Multiprofessional development and training should be undertaken by all who are involved in the care of the woman and her baby in complicated labour. They must undergo regular skills and drills to maintain competence in managing the following:
- cardiocography training (fetal surveillance)
 - cord prolapse
 - shoulder dystocia
 - vaginal breech birth
 - antepartum or severe postpartum haemorrhage
 - basic adult resuscitation
 - basic neonatal resuscitation
 - perineal suturing
 - third- and fourth-degree tears
 - recognition of the ill mother
 - recognition of the ill baby.
- 5.1.2 Records of all training must be maintained by the practitioners, managers, personnel and, where appropriate, midwifery supervisors.
- 5.1.3 New staff and those returning from a period of absence should undergo an induction programme and relevant training and on the job support to ensure their competence.
- 5.1.4 All professionals will require an understanding of team dynamics, which may require specific training.
- 5.1.5 Professionals with management responsibility will require management as well as clinical training.

5.2 Midwifery training

- 5.2.1 To be eligible to practise as a midwife, all midwives are required to be on the Nursing and Midwifery Council (NMC) Midwives part of the register and to complete an annual notification of intention to practise.⁵⁰ All midwives are familiar with the fact that they have to maintain and develop their knowledge, skills and competence for contemporary midwifery practice. Eligibility to practise as a midwife requires current registration with the NMC in accordance with Post Registration Education and Practice (PREP).⁹⁹ Midwives have had a statutory requirement to undertake continuing education since the 1936 Midwives Act. While it is the responsibility of individual midwives to ensure that they fulfil the obligations of the PREP, other statutory practices, such as the annual supervision interview, can be used to reflect on and guide the appropriate needs of their continuing professional development (CPD). Where a midwife changes her role or sphere of practice, she is required to assess her knowledge and skills and to take steps to rectify any deficit. This can be done in association with her supervisor.
- 5.2.2 The NMC confirms the employer's role in supporting and encouraging CPD, this being an integral part of clinical governance and good employment practices.⁹⁹ It is a major concern that access for training or further education is severely curtailed by financial restrictions and staffing levels.²¹ Therefore, only the annual mandatory training sessions, emergency drills and interpretation of cardiotocograms (CTGs), are supported by employer organisations and these needs are mostly defined by external agencies, such as CNST in England. Equal emphasis should be given to the varying knowledge, skills and competencies required to promote normal births and to provide safe care in any birth setting, reflecting appropriate strategic planning to maintain efficacy of the maternity team and the provision of quality care based on local needs. The minimum recommended mandatory training sessions, in addition to emergency drills and skills, should include intermittent auscultation of fetal heart and water birth. Midwives should maintain their competence in newborn resuscitation and recognition of the baby failing to make the normal transition to extrauterine life.
- 5.2.3 The drive by contemporary maternity policies to practise within an evidence-based clinical environment has highlighted the need for research and new knowledge management in midwifery practice. The development of career pathways in clinical midwifery (for example, the consultant midwife role) endorses a need for higher education within the profession. In parallel, the move of midwifery education into higher education institutes has enabled midwives to access academic programmes in a range of health-related subjects at different educational levels; for example, masters or doctoral studies. We encourage employers to support further educational needs, as well as training, for midwives to acquire and sustain clinical competence and expand professional leadership.¹⁰⁰

5.3 Obstetrician CPD

- 5.3.1 Regular updating of skills and feedback from specific labour incidents should be seen as part of CPD. An internal programme of CPD, which should include updating in the management of obstetric emergencies (including drills), intra-partum care including the interpretation of CTGs and the care of the sick mother, should be undertaken on a regular basis and no less than every year. In addition, consultant obstetricians should undertake an external course, such as Managing Obstetric Emergencies and Trauma (MOET), Advanced Life Support in Obstetrics (ALSO) or ALERT, and should be appropriately certified. We recognise that these requirements have considerable resource implications. Both internal and external programmes should apply to all consultant obstetricians and specialists who have labour ward responsibilities, including those who only cover out-of-hours.

5.4 Junior obstetric staff training

- 5.4.1 The training objectives of junior doctors are set out in the RCOG training curriculum and accompanying RCOG logbooks. Acquisition of practical skills can be difficult with the reduction in working hours demanded by the EWTD. This also causes problems in the continuity of patient care. In addition to learning new skills, trainees need to maintain those already acquired. Sufficient training programmes and courses must be available to ensure this. It is important to achieve a balance between new learning and the maintenance of former skills. Consultant obstetricians will have a major responsibility to ensure that their junior staff maintain the necessary knowledge and skills. With MMC, the unified training programmes will run from the foundation years through basic, core and advanced training to the award of the CCT.
- 5.4.2 Junior staff now have an accreditation process, which proceeds through the Calman training programme. From August 2007, all junior staff will be accredited through the new training programme developed under the auspices of MMC.

5.5 Anaesthetist training

- 5.5.1 There should be sufficient trainee/consultant anaesthetist contact time to ensure proper training and time to assess competence at basic, intermediate and advanced levels. This means that there needs to be sufficient numbers of trainees and consultant anaesthetists to allow both training and service delivery in obstetric anaesthesia.⁷⁵

5.6 Paediatrician training

- 5.6.1 Paediatricians must be trained and regularly assessed as competent in neonatal advanced life support through attendance at a recognised course. There should be documented evidence of this training maintained by the practitioners and their managers.

- 5.6.2 Paediatricians who are responsible for care of the newborn require training in neonatal medicine, including the recognition of the normal physiology of the newborn period and in how to recognise a baby who is failing to make a normal transition to extrauterine life. Levels of competency which are appropriate for trainees and consultants are defined by the Royal College of Paediatrics and Child Health, who also provide a syllabus for training in neonatal medicine.¹⁰¹
- 5.6.3 Consultant paediatricians who are expected to care for potentially sick or preterm babies (in any setting) should maintain their professional development in the care of newborn babies. This should include regular revalidation in newborn life support.

6 Facilities and equipment

6.1 The birth room

- 6.1.1 We recommend that every effort is made to improve the environment in which women give birth. The culture of the birth setting and attitude of staff are important factors contributing to the overall birth experience for women. All personnel, whether on the obstetric labour ward or the birth centre, should work together towards creating a friendly and relaxed atmosphere. Women, aided by their supporters, should be encouraged to do what feels right for them during the birth with health professionals respecting their wishes, wherever possible.
- 6.1.2 Facilities in all birth settings should be at an appropriate standard and take account of the woman's needs and the views of service users. User groups should be included in the planning of birth rooms. A disability group should subject all units to an access survey in order to ensure the requirements of the Disability Discrimination Act have been met. Facilities should be audited and reviewed at least every 2 years and plans made to rectify deficiencies within agreed timescales. The audit process should involve user groups and a user satisfaction survey.
- 6.1.3 A less clinical, non-threatening and more 'home-like' environment is less stressful for most women and this helps to create an atmosphere more conducive to the progress of the normal physiological birth process. Birth rooms should be large enough for women and their supporters to move around promoting mobility and the use of a variety of birth positions. Decoration should be 'home like' with pictures and posters on the walls. Ideally, there should be en-suite bathrooms and access to a birth pool is recommended.
- 6.1.4 Women feel more secure if they have control over their environment. This can be achieved by incorporating equipment for them to adjust the temperature and the lighting in the birth room. Facilities for watching television, playing music and making snacks and drinks should also be available.
- 6.1.5 The privacy and dignity of women should be considered paramount at all times. Thought should be given to protocols for entering the birth room by staff and interruptions should be kept to a minimum. Sound insulation could be considered for the benefit of women labouring simultaneously.

- 6.1.6 Facilities should be available to accommodate bereaved parents preferably so that all their care can be given in designated rooms from which they can be transferred to the community.
- 6.1.7 All birth rooms should have available suction equipment, oxygen and, if appropriate, anaesthetic gases.

6.2 Laboratory facilities

- 6.2.1 It is essential that, wherever women are giving birth in an obstetric unit, there should be adequate laboratory facilities, if not on site then within easy reach. Of particular importance is the availability of blood and blood products in case of major haemorrhage. Out-of-hours staffing may be difficult for many laboratories but it is essential that at least crossmatching services and blood clotting screens are readily available. Biochemistry facilities are also important and results of tests should be available to the clinician within no more than 2 hours of the blood sample being drawn. Tests which will be undertaken on an emergency basis should be agreed between the biochemistry department and clinicians. If possible there should be facilities for Gram staining and microscopic examination of specimens such as urine and amniotic fluid; microbiological culture should be available on a 24-hour basis.

6.3 Blood gas and pH analysers

- 6.3.1 The ability to assess fetal blood gases by modern, easily used equipment should be available in any unit undertaking continuous fetal heart rate monitoring. The two should not be separated. Ideally, the blood gas analyser should be able to measure pH, pO_2 and pCO_2 . The routine measurement of cord blood gases is essential for all caesarean sections or instrumental births in which fetal compromise is an indication for birth. Consideration should also be given to the measurement of cord blood gases following all births in which there have been concerns about the fetal heart rate trace.
- 6.3.2 Normal blood gas results from the analysis of paired arterial and venous umbilical cord blood samples, ideally taken using the 'double clamping' technique and analysed within 30 minutes of collection, provide powerful evidence against the presence of hypoxia of sufficient severity to cause brain damage during labour. Such data can be invaluable in any subsequent analysis of the case if there is an adverse neurological outcome for the baby, and is also important for ongoing education and audit.
- 6.3.3 Arterial blood gas analysis is also essential for the assessment of sick mothers.

6.4 Theatre

- 6.4.1 Operating theatres dedicated for obstetrics should be close to the birth unit or preferably within it. One theatre is probably sufficient for the birth of up to 4000 babies a year, although there is no specific evidence for this figure. A birth rate above this would require two operating theatres, so that simultaneous procedures could be performed. Larger units would also benefit from a second theatre to handle infected cases, such as hepatitis, HIV and sepsis. In most units, one of the birth rooms can serve as a ‘back-up’ operating theatre under extreme circumstances. All equipment must be appropriately maintained to ensure safe and effective function.

6.5 Equipment for fetal heart rate monitoring

- 6.5.1 Fetal heart rate monitoring forms an essential part of the intrapartum care of women in high-risk labour. The number of monitors required will depend on workload and case mix. Between two and four fetal heart rate monitors for every 1000 births a year in an obstetric unit is considered appropriate. Clear guidelines, as described in the NICE guidance on fetal heart rate monitoring, to help identify cases needing continuous fetal heart monitoring, should be used in light of evidence which suggests that ‘continuous fetal heart monitoring increases the likelihood of subsequent operative birth independently of other factors’.¹⁰² In the absence of risk factors, intermittent auscultation using a Pinard’s stethoscope or with hand-held Doppler device is the recommended method of fetal assessment. All equipment should be maintained in good working order.

6.6 Ultrasound equipment

- 6.6.1 Ultrasound should be available on the labour ward. This equipment should be capable of producing a good image and reliable measurements. An ultrasound examination during labour can be of vital importance, particularly for confirmation of presentation in obese women and those who are bleeding and when there are concerns about fetal condition. This equipment may be used by both medical and midwifery staff, but only when personnel are appropriately trained. All ultrasound equipment should comply with EEC/IEC/157 directives.

6.7 Anaesthetic and resuscitation equipment

- 6.7.1 Operating theatres, anaesthetic rooms and recovery rooms should contain equipment to recognised standards for anaesthesia, monitoring and resuscitation.¹⁰³ Anaesthesia should only be administered when there is an oxygen analyser (with alarms) available and devices to enable leaks, disconnections, rebreathing or over-pressure to be detected. Continuous monitoring of ventilation and cardiovascular status is essential. Minimum monitoring should include a pulse oximeter, electrocardiogram and capnograph and noninvasive blood pressure measurement. The ability to measure intravascular pressures

and body temperature should be available, together with peripheral nerve stimulation when neuromuscular blocking agents are administered. The use of emergency resuscitation equipment and cardiac arrest procedures should be displayed and visible to all. There should be regular training and refresher courses for all staff on at least an annual basis.^{104,105}

6.8 Intravenous therapy

- 6.8.1 Intravenous therapy should be provided through suitable infusion devices which are in good working order.¹⁰⁶ Where large volumes of blood are to be administered, an effective blood warming device should be used.

6.9 Equipment for stabilisation of the baby

- 6.9.1 Adequately checked, stocked and maintained equipment must be available for stabilisation of the neonate.^{48,80}

7 Recommended minimum standards

Standard 1: Organisation and documentation

The organisation has a robust and transparent clinical governance framework which is applicable to each birth setting.

- Comprehensive evidence-based guidelines and protocols for intrapartum care are agreed by the labour ward forum or equivalent, ratified by the maternity risk management group and reviewed at least every 3 years (paragraphs 2.1.4, 2.2.15–2.2.17).
- A maternity risk management group meets at least every 6 months (paragraph 2.2.1).
- There is a written risk management policy, including trigger incidents for risk and adverse incident reporting (paragraph 2.2.4).
- There is evidence of multiprofessional input in protocol and standard setting and in reviews of critical incidents (paragraph 2.2.5).
- Meetings involving all relevant professionals are held to review adverse events (paragraph 2.2.5).
- Past guidelines and protocols are dated and archived in case they are needed for reference at a later date (paragraphs 2.2.7–2.2.9).
- The standard of record keeping and storage of data is clear, rigorous and precise. All units have access to computerised documentation systems, using recognised and acceptable programmes (paragraphs 2.2.7–2.2.9).
- There is an evaluation of midwifery and obstetric care through continuous prospective audit to improve outcomes, which are published as an annual report (paragraphs 2.2.7–2.2.9).

Standard 2: Multidisciplinary working

Effective multidisciplinary working is essential to the efficient delivery of the service.

- Local multidisciplinary maternity care teams, comprising midwives, obstetricians, anaesthetists, paediatricians, support staff and managers, are established (paragraphs 2.1.1–2.1.2).
- A labour ward forum or equivalent meets at least every 3 months (paragraph 2.1.4).

Standard 3: Communication

Communication is a keystone of good clinical practice.

- There are effective systems of communication between all team members and each discipline, as well as with women and their families (paragraphs 2.1.1–2.1.2).
- Employers ensure that staff have both appropriate competence in English and good communication skills (paragraphs 2.2.10–2.2.12).

Standard 4: Staffing levels

Safe staffing levels of all professionals and support staff as recommended are maintained, reviewed and audited annually for each birth setting.

- Staffing levels are audited annually (Section 4).
- Midwifery staffing levels are calculated and implemented according to birth setting and case mix categories to provide the midwife-to-woman standard ratio in labour (1.0–1.4 WTE midwives to woman; Table 6) with immediate effect (paragraphs 4.1.7–4.1.14).
- The duration of prospective consultant obstetrician presence on the labour ward are in line with the recommendations in this document.

Note: Units should work towards the targets contained in *The Future Role of the Consultant*²³ and with immediate effect:

- units with more than 6000 births a year should provide 60 hours of consultant presence (paragraph 4.2.3)
- units with between 2500 and 6000 births a year or classed as high risk should provide at least 40 hours a week of consultant presence (paragraph 4.2.3)
- units with up to 2500 births a year are strongly recommended to have 40 hours of consultant obstetric presence but should conduct a risk assessment exercise to determine their individual requirements (paragraph 4.2.6).
- Junior obstetric staffing levels will depend on the training opportunities as defined in the trainee's logbook (paragraph 4.2.13).
- Junior medical staff (obstetricians, anaesthetists and paediatricians) of appropriate competence are immediately available on the labour ward (paragraph 4.2.13).
- A duty anaesthetist of appropriate competency and dedicated only to the labour ward must be immediately available (paragraph 4.3.5).
- Units providing neonatal care must be appraised against and meet BAPM staffing standards (paragraph 4.4.3).

Standard 5: Leadership

There are clear role profiles for clinical leadership promoting good practice and multiprofessional communication.

- All obstetric units must have a lead consultant obstetrician and a labour ward manager (paragraphs 2.1.3, 3.3.6).
- An experienced midwife (shift coordinator) is available for each shift on the labour ward (paragraphs 2.1.3, 3.1.14).

- All midwifery units must have one WTE consultant midwife (paragraph 4.1.19).
- All obstetric units must have one WTE consultant midwife to 900 low-risk women (paragraph 4.1.19).
- For obstetric units, there should be a lead obstetric anaesthetist in charge of anaesthetic services with sessions which reflect the clinical and administrative workload (paragraphs 3.5.2, 4.3.4).

Standard 6: Core responsibilities

- Women in established labour receive one-to-one care from a midwife (paragraphs 4.1.5, 4.1.7).
- Outside the recommended minimum 40 hours of consultant obstetrician presence, the consultant will conduct a physical ward round as appropriate at least twice a day during Saturdays, Sundays and bank holidays, with a physical round every evening, reviewing midwifery-led cases on referral (paragraphs 3.3.3–3.3.5).
- All women requiring conduction or general anaesthesia are seen and assessed by an anaesthetist before an elective procedure (paragraph 3.5.11).
- A professional (midwife, neonatal nurse, advanced neonatal nurse practitioner, paediatrician) trained and regularly assessed as competent in neonatal basic life support must be immediately available for all births, in any setting (paragraphs 3.6.1–3.6.3).

Standard 7: Emergencies and transfers

Each birth setting has protocols based on clinical, organisational and system needs.

- There are local agreements with the ambulance service on attendance at emergencies or when transfer is required (paragraph 2.2.22).
- Complicated births in obstetric units are attended by a consultant obstetrician (paragraphs 3.3.3–3.3.5).
- The consultant obstetrician must be contacted prior to emergency caesarean section and must be involved when a patient's condition gives rise for concern and attend as required (3.3.3–3.3.5).
- The anaesthetic team's response time is such that a caesarean section may be started within a time appropriate to the clinical condition (this requires all team members to be informed of the case appropriately) (paragraph 3.5.6).
- As a target for best practice (because regional anaesthesia is safer than general anaesthesia for caesarean section) more than 95% women should receive regional anaesthesia for elective caesarean section and more than 85% women should receive regional anaesthesia for emergency (paragraph 3.5.8).
- There must be 24-hour availability in obstetric units of senior paediatric colleagues who have advanced skills for immediate advice and urgent attendance, who will attend within 10 minutes (paragraph 4.4.1).
- There must be 24-hour availability in obstetric units within 30 minutes of a consultant paediatrician (or equivalent SAS grade) trained and assessed as competent in neonatal advanced life support (paragraphs 4.4.3–4.4.5).
- A consultant obstetrician should be available within 30 minutes outside the hours of consultant presence (paragraph 4.5.11).

Standard 8: Training and education

The organisation must ensure that all the professional staff have the opportunity and support for continuing professional development, including agreed mandatory education and training sessions.

- There should be adequate clinical support and supervision for newly qualified midwives, junior doctors and students (paragraphs 3.1.13, 3.3.3–3.3.5).
- Multiprofessional in-service education/training sessions should be mandatory and attendance documented (paragraph 5.1.1).
- A personal logbook of attendances should be kept and cross-referenced to midwives' and doctors' rotas, sickness and annual leave (paragraph 5.1.2).
- There should be provision for support of new staff entering the environment of the birth setting (paragraph 5.1.3).

Standard 9: Environment and facilities

Facilities in birth settings should be at an appropriate standard and take account of the woman's needs and the views of service users by being less clinical, non-threatening and more home like whenever possible.

- Facilities should be reviewed at least biannually and plans made to rectify deficiencies within agreed timescales (paragraph 6.1.2).
- The audit process should involve user groups and a user satisfaction survey (paragraph 6.1.2).
- Dedicated and appropriate facilities for bereaved parents should be available (6.1.6).

Standard 10: Outcomes

All birth settings should audit childbirth outcomes, evaluating annually linked clinical care, any changes or trends.

- Normal births without interventions.
- Inductions – indications, outcomes and success.
- Augmentation of labour.
- Percentage of labours lasting longer than 18 hours.
- Instrumental births, ventouse, rotational or non-rotational forceps.
- Third- and fourth-degree tears.
- Epidural rates, including dural taps.
- Failed maternal intubation.
- Total births.
- Elective caesarean section – incidence and indications.
- Emergency caesarean sections – incidence and indications.
- Intrapartum stillbirths.
- Apgar scores less than 7 at 5 minutes in babies below 37 weeks of gestation.
- Need for neonatal resuscitation of babies below 37 weeks of gestation.
- Admissions to a neonatal unit for babies weighing more than 2.5 kg.
- Incidence of primary postpartum haemorrhage.
- Maternal transfer to intensive care unit.

- Maternal transfers to other units.
- Transfers of babies to other units.
- Caesarean hysterectomy and other haemostatic methods.
- Percentage of complicated births attended by a consultant obstetrician.
- Breastfeeding rates at birth and discharge.
- Antenatal steroids prior to preterm birth.
- Maternal deaths.
- Neonatal deaths.
- Neonatal birth injury, such as Erb's palsy.
- Neonatal encephalopathy.

References

- 1 Royal College of Obstetricians and Gynaecologists, Royal College of Midwives. *Towards Safer Childbirth: Minimum Standards for the Organisation of Labour Wards*. London: RCOG Press; 1999.
- 2 Department of Health. *Maternity Matters: Choice, access and continuity of care in a safe service*. London: DH; 2007
[www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_073312].
- 3 Lewis G, editor. *Why Mothers Die 2000–2002: Sixth Report of the Confidential Enquiries into Maternal Deaths in the United Kingdom*. London: RCOG Press; 2004.
- 4 Confidential Enquiry into Stillbirths and Deaths in Infancy. *Fourth Annual Report, 1 January – 31 December 1995*. London: Maternal and Child Health Research Consortium; 1997.
- 5 Confidential Enquiry into Stillbirths and Deaths in Infancy. *Fifth Annual Report, 1 January – 31 December 1996*. London: Maternal and Child Health Research Consortium; 1998.
- 6 Confidential Enquiry into Stillbirths and Deaths in Infancy. *Project 27/28. An Enquiry into Quality of Care and its Effect on the Survival of Babies Born at 27–28 weeks*. London: TSO; 2003.
- 7 Department of Health. *Why Mothers Die. Report on Confidential Enquiries into Maternal Deaths in the United Kingdom 1994–1996*. London: TSO; 1998.
- 8 Department of Health. *Standards for Better Health*. London: Department of Health; 2003
[www.dh.gov.uk/assetRoot/04/13/29/91/04132991.pdf].
- 9 Healthcare Commission. *Review of Maternity Services Provided by North West London Hospitals NHS Trust*. London: Healthcare Commission; 2005
[www.healthcarecommission.org.uk/_db/_documents/04018499.pdf].
- 10 Commission for Health Improvement. *Investigation into Maternity Services Provided by Ashford and St Peter's Hospitals NHS Trust Report*. CHI: London; 2003
[www.healthcarecommission.org.uk/_db/_documents/04005345.pdf].
- 11 Healthcare Commission. *Investigation of the Maternity Service Provided by the Royal Wolverhampton Hospitals NHS Trust at New Cross Hospital*. London: Healthcare Commission; 2004
[www.healthcarecommission.org.uk/_db/_documents/04011738.pdf].
- 12 Healthcare Commission. *Investigation into 10 Maternal Deaths at, or Following Delivery at, Northwick Park Hospital, North West London Hospitals NHS Trust, Between April 2002 and April 2005*. London: Healthcare Commission; 2006
[www.healthcarecommission.org.uk/_db/_documents/Northwick_tagged.pdf].
- 13 Department of Health. *National Service Framework for Children, Young People and Maternity Services: Standard 11, Maternity Services*. London: Department of Health; 2004
[www.dh.gov.uk/assetRoot/04/09/05/23/04090523.pdf].
- 14 Welsh Assembly Children's Health and Social Care Directorate. *National Service Framework for Children, Young People and Maternity Services in Wales*. Cardiff: Welsh Assembly Government; 2005
[www.wales.nhs.uk/sites3/documents/441/EnglishNSF_amended_final.pdf].
- 15 Scottish Executive. *A Framework for Maternity Services in Scotland*. Edinburgh: Scottish Executive; 2001
[<http://www.scotland.gov.uk/library3/health/ffms-00.asp>].
- 16 Scottish Executive. *Expert Group on Acute Maternity Services: Reference Report*. Edinburgh: Scottish Executive; 2002. [www.scotland.gov.uk/Resource/Doc/47021/0013918.pdf].
- 17 Royal College of Obstetricians and Gynaecologists. *Report of the RCOG Working Party on Minimum Standards of Care in Labour*. London: RCOG; 1994.
- 18 Confidential Enquiry into Maternal and Child Health. *Perinatal Mortality 2005: England Wales and Northern Ireland*. London: CEMACH; 2007
[www.cemach.org.uk/PDN%202005%20Report%20from%20printers%20for%20press%20V2%20170407.pdf].

- 19 Bosanquet N, Ferry J, Lees C, Thornton J. *Maternity Services in the NHS*. Reform: London; 2005 [www.reform.co.uk/filestore/pdf/Maternity%20services%20in%20the%20NHS.pdf].
- 20 Nursing and Midwifery Council. Statistical Analysis of the Register, 1 April 2004 to 31 March 2005 [www.nmc-uk.org/aFrameDisplay.aspx?DocumentID=1658].
- 21 Royal College of Midwives. *RCM Annual Survey of UK Heads of Midwifery Service*. London: RCM; 2005.
- 22 NHS Management Executive. Hours of work of doctors in training; working arrangements of doctors and dentists in training. In: *Junior Doctors: the New Deal*. London: NHS Management Executive; 1991.
- 23 Information from Dr TA Mahmood FRCOG, Chairman of RCOG Hospital Recognition Committee.
- 24 Royal College of Obstetricians and Gynaecologists. *The Future Role of the Consultant: a working party report*. London: RCOG; 2005 [www.rcog.org.uk/resources/Public/pdf/future_role_consultant.pdf].
- 25 Neonatal Intensive Care Review. *Report of the Neonatal Intensive Care Services Review Group*. London: Department of Health; 2003 [www.dh.gov.uk/assetRoot/04/01/87/44/04018744.pdf].
- 26 NHS Quality Improvement Scotland. National overview: maternity services. 2007 [www.nhshealthquality.org/nhsqis/files/MATSERV_NOV_JAN07.pdf].
- 27 Scottish Committee of the Royal College of Obstetricians and Gynaecologists. *The Future of Obstetrics and Gynaecology in Scotland: Service Provision and Workforce Planning*. London: RCOG Press; 2005 [www.rcog.org.uk/resources/Public/pdf/rcog_obs_in_scotland.pdf].
- 28 Department of Health. *National Minimum Standards for Independent Healthcare*. London: Department of Health; 2002 [www.dh.gov.uk/assetRoot/04/07/83/67/04078367.pdf].
- 29 Department of Health. *An Organisation with a Memory: Report of an Expert Advisory Group on Learning from Adverse Events in the NHS*. London: TSO; 2000. [www.dh.gov.uk/assetRoot/04/08/89/48/04088948.pdf].
- 30 Kernaghan D, Penney G, Adamson L. *Scotland-wide Learning from Intrapartum Critical Events: Final Report Covering events in 2005*. Publication 28. Aberdeen: Scottish Programme for Clinical Effectiveness in Reproductive Health; 2006. [www.abdn.ac.uk/spcerh/publications/SLICE%202005%20(M&I).pdf].
- 31 Department of Health. *Making Amends: A Consultation Paper Setting Out Proposals for Reforming the Approach to Clinical Negligence in the NHS*. London: TSO; 2003. [www.dh.gov.uk/assetRoot/04/06/09/45/04060945.pdf].
- 32 National Health Service Litigation Authority. *Clinical Negligence Scheme for Trusts, Maternity. Clinical Risk Management Standards*. London: NHLA; 2007 [www.nhsla.com/NR/rdonlyres/F8184718-3AF9-400E-A3F3-5D9309E2AA72/0/CNSTMaternityClinicalRiskManagementStandardsApril2007website.pdf].
- 33 NHS Scotland. Clinical Negligence and Other Risks Indemnity Schemes (CNORIS) [www.cnoris.com].
- 34 NHS Quality Improvement Scotland (QIS). *Clinical Governance and Risk Management: Achieving Safe and Effective Patient-focused Care*. NHS Scotland; 2005 [www.nhshealthquality.org/nhsqis/files/DS%20Clinical%20Gov%20April%2005.pdf].
- 35 Royal College of Midwives. *Evidence to the Pay Review Body*. London: RCM; 2005 [www.rcn.org.uk/publications/pdf/Evidence.to.the.pay.review.body.(final).pdf].
- 36 Ball L, Curtis P, Kirkham M. *Why Do Midwives Leave?* London: Royal College of Midwives; 2002.
- 37 Curtis P, Ball L, Kirkham M. *Why do Midwives Leave? Talking to Managers*. Sheffield: University of Sheffield Women's Informed Childbearing and Health Research Group; 2003 [www.wich-research.group.shef.ac.uk/exec/final.pdf].
- 38 Department of Health. *White Paper Our Health, Our Care, Our Say: a new direction for community services*. London: Department of Health; 2006 [www.dh.gov.uk/assetRoot/04/12/76/28/04127628.pdf].
- 39 Welsh Assembly Government. *Designed for Life: Creating World Class Health and Social Care for Wales in the 21st Century*. Cardiff: WAG; 2005 [www.wales.nhs.uk/documents/created-for-life-e.pdf].
- 40 Department of Health. *Health Reform in England: Update and Commissioning Framework*. London: Department of Health; 2006 [www.dh.gov.uk/assetRoot/04/13/72/27/04137227.pdf].
- 41 National Patient Safety Agency. *Seven Steps to Patient Safety. The Full Reference Guide*. London: NPSA; 2004 [www.npsa.nhs.uk/health/resources/7steps?contentId=2664].

- 42 National Patient Safety Agency. National Reporting and Learning System eForm [www.npsa.nhs.uk/display?contentId=2389].
- 43 National Patient Safety Agency. *Root Cause Analysis Toolkit*. London: NPSA; 2004 [www.npsa.nhs.uk/health/resources/root_cause_analysis].
- 44 Royal College of Obstetricians and Gynaecologists. *Improving Patient Safety: Risk Management for Maternity and Gynaecology*. Clinical Governance Advice No. 2. London: RCOG; 2005.
- 45 Nursing and Midwifery Council. *Guidelines for Records and Records Keeping*. London: NMC; 2002.
- 46 Hardman L, Bates C. *RCM/Capsticks; Litigation: A risk management guide for midwives*. London: RCM Trust; 2005.
- 47 Royal College of Midwives. *Home Birth Hand Book: Volume 1: Promoting home birth*. London: RCM; 2002.
- 48 Royal College of Midwives. *Home Birth Hand Book: Volume 2: Practising home birth*. London: RCM; 2003.
- 49 Royal College of Midwives. *Vision 2000 into Practice: Birth Centres – Auditable Standards of Care*. No. 6. London: RCM; 2000.
- 50 Nursing and Midwifery Council. *Midwives Rules and Standards*. London: NMC; 2004 [www.nmc-uk.org/aFrameDisplay.aspx?DocumentID=169].
- 51 National Collaborating Centre for Women's and Children's Health guideline. *Caesarean Section*. Clinical Guideline. London: RCOG Press; 2004 [www.rcog.org.uk/resources/public/pdf/cs_section_full.pdf].
- 52 Demilew J. Homebirth in urban UK: Resource Pack. *MIDIRS Midwifery Digest* 2005;15(4, Supplement 2):S26–33.
- 53 Shribman S. *Making it Better: for Mother and Baby*. London: DH; 2007 [www.dh.gov.uk/assetRoot/04/14/29/48/04142948.pdf].
- 54 National Patient Safety Agency. *Safer Practice Notice 11*. London: NPSA; 2005 [www.npsa.nhs.uk/site/media/documents/1440_Safer_Patient_Identification_SPN.pdf].
- 55 Royal College of Midwives Position Paper 26 and Guidance Paper 26a . *Refocusing the Role of the Midwife*. London: RCM; 2006 [www.rcm.org.uk/info/docs/PP%2026%20Refocusing%20the%20role%20of%20the%20midwife.doc].
- 56 NHS Institute for Innovation and Improvement. *Delivering Quality and Value. Focus on Caesarean Section*. Nottingham: Prolog; 2006.
- 57 Royal College of Obstetricians and Gynaecologists Clinical Effectiveness Support Unit. *National Sentinel Caesarean Section Audit Report*. London: RCOG Press; 2001 [www.rcog.org.uk/resources/public/pdf/nscs_audit.pdf].
- 58 Rogers C, Littlehales C. Making choice a real option. *RCM Midwives Journal* 2006;9(6):242–3.
- 59 Clarke P. Leading the development of an ECV service. *RCM Midwives Journal* 2005;8(3):128–9.
- 60 Dunkley-Bent J. Maternal request for Caesarean section. *RCM Midwives Journal* 2005;8(6):274–5.
- 61 National Institute for Health and Clinical Evidence. *Routine Postnatal Care of Women and their Babies*. London: NICE; 2006 [www.nice.org.uk/page.aspx?o=CG37NICEguideline].
- 62 NHS Quality Improvement Scotland. *Best Practice Statement: Routine Examination of the Newborn*. Edinburgh: NHSQIS; 2004 [www.nhshealthquality.org/nhsqis/files/20219%20BPS_Newborn%20.pdf].
- 63 NHS Modernisation Agency. *Midwifery Leadership and Competency Model*, Manchester: The Leadership Centre; 2002.
- 64 Ackerman B. Making birth homely. *RCM Midwives Journal* 2004;7(1):38–40.
- 65 Ackerman B, Stephens L. Moving midwifery forward. *RCM Midwives Journal* 2004;7(5):196–7.
- 66 Warriner S, Haines A. Vaginal birth after caesarean: does more time influence the decision? *Br J Midwifery* 2007;15(1):21–3.
- 67 Sanders J, Moore C. *Midwifery Led Units Partnership Report July 2005 – June 2006*. Cardiff: Cardiff and Vale NHS Trust/Welsh Ambulance Trust; 2006.
- 68 Royal College of Midwives. *Maternity Care Assistants*. Position Statements 12. London: RCM; 2006 [www.rcm.org.uk/info/docs/HCAFinal%20ppc%20approved%20-%20revised.doc].
- 69 Royal College of Midwives. *Prepared to Care: a Fit for Purpose Programme. Preparation of Maternity Care Assistants*. London: RCM; 2004.

- 70 NHS Employers. *Maternity Support Workers: Enhancing the Work of the Maternity Team*. London: NHS Employers; 2005.
- 71 Sandall J, Manthorpe J, Mansfield A, Spencer L. *Support Workers in Maternity Services: a national scoping study of NHS Trusts providing maternity care in England. Final report*. London: Kings' College, 2007.
- 72 Postgraduate Medical Education and Training Board. *Generic Standards for Training*. London: PMETB; 2006 [www.pmetb.org.uk/fileadmin/user/Trainee_Survey/GenericStandardsForTrainingFinal05April06v2.pdf].
- 73 British Medical Association Junior Doctors Committee. *Safe Handover: Safe Patients – Guidance on clinical handover for clinicians and managers*. London: BMA; 2004 [www.bma.org.uk/ap.nsf/AttachmentsByTitle/PDFsafehandover/\$FILE/safehandover.pdf].
- 74 McCarrick T, Curran J, Bogod D, Harrington L, McCormick C, Shuttleworth P. Provision of epidural analgesia in labour by non-physicians: a pilot study. *Int J Obstet Anesth* 2004;13:S6.
- 75 Royal College of Anaesthetists. Basic competency in obstetric anaesthesia. In: *CCT in Anaesthesia*. London: Royal College of Anaesthetists; 2006.
- 76 NHS Quality Improvement Scotland. *Clinical Standards: Anaesthesia: care before, during and after anaesthesia*. Edinburgh: NHS Scotland; 2005 [www.nhshealthquality.org/nhsqis/files/Anaesthesia%20National%20Overview%20-%20Sept%202005.pdf].
- 77 Association of Anaesthetists of Great Britain and Ireland. *The Anaesthesia Team*. London: AAGBI; 2005 [www.aagbi.org/pdf/the_anaesthesia_team.pdf].
- 78 NHS Education for Scotland. *Core Competencies for Anaesthetic Assistants*. 2006.
- 79 Association of Anaesthetists of Great Britain and Ireland. *Immediate Postanaesthetic Recovery*. London: AAGBI; 2002 [www.aagbi.org/pdf/Postanaes2002.pdf].
- 80 Royal College of Obstetricians and Gynaecologists, Royal College of Paediatrics and Child Health. *Resuscitation of Babies at Birth. Report of Joint Committee*. London: BMJ Publishing; 1997.
- 81 British Association of Perinatal Medicine. *Standards for Hospitals Providing Neonatal Intensive and High Dependency Care*. 2nd ed. London: BAPM; 2001 [www.bapm.org/documents/publications/hosp_standards.pdf].
- 82 Examination of the Newborn. In: Rennie JM. *Robertson's Textbook of Neonatology*. 4th ed. Edinburgh: Churchill Livingstone; 2005.
- 83 National Screening Committee's Policy Positions July 2006 and estimated time frame for future consideration [www.nsc.nhs.uk/pdfs/policy_position_chart_july06%5B1%5D.pdf].
- 84 Stillbirth and Neonatal Death Society. *Pregnancy loss and the death of a baby: Guidelines for health professionals*. London: SANDS; 2007.
- 85 Nursing and Midwifery Council. Midwives and home birth. *NMC Circular 8-2006*. London: NMC; 2006 [www.nmc-uk.org/aFrameDisplay.aspx?DocumentID=1472].
- 86 Audit Commission. *First Class Delivery Improving Maternity Services in England and Wales*. London: Audit Commission; 1997.
- 87 Ball JA. *Factors Which Have Impact Upon Recruitment and Retention of Midwives Identified in Birthrate Plus Data From 54 Maternity Units in England in 2003/2004*. Nottingham: Birthrate Plus Consultancy Ltd; 2006.
- 88 McCourt C, Page L. *Report on the Evaluation of the One-to-One Midwifery*. London: Thames Valley University; 1996.
- 89 Green JM, Curtis P, Price H, Renfrew M. *Continuing to Care. The organisation of midwifery services in the UK: a structured review of the evidence*. Hale: Books for Midwives Press; 1998.
- 90 Ball JA, Bennett B, Washbrook M, Webster F. Birthrate Plus Programme: Further issues in deciding staffing needs *Br J Midwifery* 2003;11(7):416–19.
- 91 Secretary of State Alan Milburn speaking at the RCM Annual Conference, Torquay, May 2001.
- 92 Obstetric Anaesthetists Association, Association of Anaesthetists of Great Britain and Ireland. *Guidelines for Obstetric Anaesthetic Services 2*. Rev. ed. London: AAGBI; 2005 [www.aagbi.org/publications/guidelines/docs/obstetric05.pdf].
- 93 Cordingley JJ, Rubin AP. A survey of facilities for high risk women in consultant obstetric units. *Int J Obstet Anesth* 1997;6:156–60.
- 94 Intensive Care Society. *Guidelines for the transport of the critically ill adult*. London: ICS; 2002 [www.ics.ac.uk/icmprof/downloads/icstransport2002mem.pdf].

- 95 Tuffnell DJ, Jankowicz D, Lindow SW, Lyons G, Mason GC, Russell IF, *et al.* Yorkshire Obstetric Critical Care Group Outcomes of severe pre-eclampsia/eclampsia in Yorkshire 1999/2003. *BJOG* 2005;112(7):875–80.
- 96 Department of Health. The Critical Care Minimum Data Set (CCMDS) [www.dh.gov.uk/PolicyAndGuidance/OrganisationPolicy/EmergencyCare/ModernisingEmergencyCare/ModernisingEmergencyCareArticle/fs/en?CONTENT_ID=4126508&chk=KWFfjF].
- 97 Intensive Care National Audit & Research Centre (ICNARC) reporting system. [www.icnarc.org].
- 98 Penney G, Adamson L, Kernaghan D. *Scottish Confidential Audit of Severe Maternal Morbidity, 3rd Annual Report*. Aberdeen: Scottish Programme for Clinical Effectiveness in Reproductive Health; 2005 [www.abdn.ac.uk/spcerh/publications/SCASMM%202006%20M&I.pdf].
- 99 Nursing and Midwifery Council. *Employers and Prep: Information for employers of registered nurses and midwives about post-registration education and practice*. London: NMC; 2002.
- 100 Royal College of Midwives. *Valuing Practice: A Springboard for Midwifery Education; Strategy for Education*. London: RCM; 2003.
- 101 Royal College of Paediatrics and Child Health. *A Framework of Competences for Level 3 Training in Neonatal Medicine*. RCPCH: London; 2006 [www.rcpch.ac.uk/Training/Competency-Frameworks].
- 102 Royal College of Obstetricians and Gynaecologists. *The Use of Electronic Fetal Monitoring: the use and interpretation of cardiotocography in intrapartum fetal surveillance*. London: RCOG; 2001 [www.rcog.org.uk/index.asp?PageID=695].
- 103 British Paediatric Association *Neonatal Resuscitation. The Report of a BPA Working Party*. London: British Paediatric Association; 1993.
- 104 Royal College of Obstetricians and Gynaecologists, Royal College of Paediatrics and Child Health Joint Committee. *The Training Needs of Professionals Responsible for Resuscitation of Babies at Birth*. London: RCOG/RCPCH; 1998 [www.bapm.org/media/documents/publications/resus_training.pdf].
- 105 Royal College of Paediatrics and Child Health, Royal College of Obstetricians and Gynaecologists, Royal College of Midwives. *Joint Statement on Training and Maintenance of Skills for Professionals Responsible for Resuscitation of Babies at Birth*. London: RCPCH/RCOG/RCM; 2007 [www.rcog.org.uk/index.asp?PageID=1927].
- 106 National Patient Safety Agency. *Safer Practice Notice: Improving Infusion Device Safety*. London: NPSA; 2004 [www.npsa.nhs.uk/site/media/documents/525_npsa_saferpractice_summary.pdf].

Appendix 1 Progress towards implementing the recommendations of *Towards Safer Childbirth*

A survey was issued to all maternity units in England and Wales asking them to report their progress in implementing the recommendations contained in *Towards Safer Childbirth*.¹ Data were also received from CNST for English units only and are considered separately below.

108 of 175 surveys were returned, from 67 obstetric units, 29 co-located midwifery units and 11 stand-alone midwifery units (one unit did not answer this question). Forty-one of these units accepted tertiary referrals and 66 did not (again one did not answer). CNST had assessed 158 units, including two units which were awaiting their results.

Labour ward management

*Towards Safer Childbirth*¹ recommended that units should have a lead consultant obstetrician and clinical midwife manager. Responses to the survey were as follows:

	Completed surveys (n)	Yes (n)	No (n)	Don't know or no answer (n)	Compliant (%)
Named lead obstetrician?	96	95	1	0	99
Named clinical midwife manager?	108	102	6	0	94

For obstetricians, this excludes the 12 midwifery or 'unknown' units. CNST had reviewed all maternity services against these criteria by reviewing the job descriptions for the lead consultant and clinical midwife manager; 153 (97%) demonstrated compliance and received a full score; two (1%) maternity services were not compliant and received no score.

Labour ward forum

*Towards Safer Childbirth*¹ recommended that units should have a labour ward forum with specific membership and user representation. Responses to the survey were as follows:

	Completed surveys (n)	Yes (n)	No (n)	Don't know or no answer (n)	Compliant (%)
Multidisciplinary labour ward forum?	108	105	2	1	97
User representation?	105	95	10	0	90

The figures for user representation ignore the three units without a labour ward forum. CNST had reviewed all maternity services against this criterion; 46 (29%) demonstrated compliance and received a full score. A further 83 (53%) maternity services received a partial score for this criterion, demonstrating that, although they had a labour ward forum in place, they were not able to demonstrate attendance by the required membership. A further 27 (17%) of maternity services received no score: again, while these may have had a labour ward forum in place, attendance was poor.

Evidence-based guidelines

*Towards Safer Childbirth*¹ recommended that units should have a set of referenced, evidence-based guidelines, reviewed at least every 3 years, dated and archived. Responses to the survey were as follows:

	Completed surveys (n)	Yes (n)	No (n)	Don't know or no answer (n)	Compliant (%)
Set of referenced evidence-based guidelines?	108	108	0	0	100
Reviewed every 1–3 years?	108	107	1	0	99
Old ones dated and archived?	108	108	0	0	100

However, CNST had also reviewed all maternity services against this criterion (although CNST does not assess archiving); 117 (74%) maternity services were able to demonstrate that they had the required 27 guidelines in place, with a system for the development of the guidelines. A further 39 (25%) maternity services received a partial score as they did not have all 27 guidelines in place. The score achieved here ranged from 10 to 29, indicating that in some units there were as few as 10 of the required guidelines in place that were referenced and dated within the last 3 years.

Documentation and storage of data

*Towards Safer Childbirth*¹ recommended that units should have policies on this. CNST had reviewed all maternity services against the requirement to have in place a safe system for the storage of cardiotocograms and other machine-based recordings. Most (152 or 96%) maternity services achieved a score for this criterion. Only four (3%) maternity services were not awarded a score.

Staffing

*Towards Safer Childbirth*¹ recommended that units should have a minimum 40 hours of consultant obstetrician cover a week, with exceptions for units with less than 1000 births a year and those with low complication rates, together with 1.15 midwives for each woman in labour and a clinical midwife leader on each shift. Responses to the survey were as follows:

	Completed surveys (n)	All the time (n)	Most weeks (n)	Some weeks (n)	Never (n)	Don't know or no answer (n)	Compliant (%)
40-hour cover?	96	68	17	2	9	0	71
1.15 midwives?	108	29	59	15	2	3	27

	Completed surveys (n)	Yes (n)	No (n)	Don't know or no answer (n)	Compliant (%)
Clinical midwife leader on each shift?	108	103	3	2	95

Consultant obstetrician cover figures exclude the 12 midwifery and 'unknown' units. The survey also asked about the availability of the replacement if the regular consultant obstetrician was on leave. Responses were as follows:

	Replies	Onward	In hospital, no commitments	In hospital, with commitments	Away	No answer (n)	Compliant
How is 40 hours achieved?	88	26	15	44	1	2	30

These figures exclude the 12 midwifery or 'unknown' units and the eight who never achieve 40 hours of cover. CNST had reviewed the 78 maternity services assessed at level 2 and above against this criterion. Of those units, 70 (90%) received a full score and six (8%) a partial score. The partial score is awarded in recognition of those units which did not currently have in place 40 hours of consultant cover on their labour wards but were actively addressing this issue.

Communication

*Towards Safer Childbirth*¹ recommended that midwives and medical staff should be able to communicate and consult freely and appropriately. Responses to the survey were as follows:

	Completed surveys (n)	Yes (n)	No (n)	Don't know or no answer (n)	Compliant (%)
Communication policy in place?	108	103	2	3	95

CNST had reviewed all maternity services on whether there is an agreed mechanism for direct referral to a consultant by a midwife at all stages of care. Most (152 or 96%) maternity services received a full score, with only four units (3%) receiving no score.

Ward rounds

*Towards Safer Childbirth*¹ recommended that the on-call consultant obstetrician should do two ward rounds in the day and a telephone or physical round in the evening. Responses to the survey were as follows:

	Completed surveys (n)	Yes (n)	No (n)	Don't know or no answer (n)	Compliant (%)
Two ward rounds in the day?	96	75	21	0	78
Evening ward round?	96	85	9	2	89

These figures exclude the 12 midwifery or 'unknown' units.

Emergencies

*Towards Safer Childbirth*¹ recommended that the consultant obstetrician on-call should be contacted in the event of emergencies and complications. Responses to the survey were as follows:

	Completed surveys (n)	Yes (n)	No (n)	Don't know or no answer (n)	Compliant (%)
Consultant routinely contacted?	108	98	8	2	91

Multidisciplinary in-service training

*Towards Safer Childbirth*¹ recommended that 6-monthly sessions on high-risk labour and CTGs should be attended by all clinicians and a log of attendance should be kept. Responses to the survey were as follows:

	Completed surveys (<i>n</i>)	Yes (<i>n</i>)	No (<i>n</i>)	Don't know or no answer (<i>n</i>)	Compliant (%)
6-monthly training sessions?	108	106	1	1	98
Log of attendance?	108	107	1	0	99

Appendix 2 Birthrate and Birthrate Plus

Birthrate Workforce Planning Tool

In 1991, both the Royal College of Obstetricians and Gynaecologists and the Royal College of Midwives recommended the Birthrate[®] workforce planning tool to the House of Commons Select Committee on Maternity Care as a rational basis for assessing staffing needs in birth environments. This was the first evidence-based tool that had been developed to make statistical analysis of midwifery staffing requirements in maternity units.^{1,2} The Birthrate[®] tool had three main components: score system, midwife hours and staffing formula. However, this original planning tool has been improved upon and superseded by Birthrate Plus[®].³

Birthrate Plus Workforce Planning Tool

Birthrate Plus[®] has been used by the majority of maternity services across the UK and in many NHS trusts. The tool has been used for many years and, following refinement and detailed evaluation, provides detailed research-based data on the make-up of the midwifery workforce required to provide care for a defined population of women in a specific care setting. The Department of Health in England and the other three government health departments have all endorsed the use of Birthrate Plus[®] as the workforce planning tool for midwifery services. Birthrate Plus[®] has identified a shortage of midwives but there has been a significant shortfall in funding made available to recruit, train and employ more midwives.

This evidence-based tool has the capacity to:

- measure volume of workload by being able to show changes in the volume and intensity of workload demands
- be sensitive to models of care
- focus on client needs not midwife activity
- apply recognised quality standards (NICE) with local knowledge, quality initiatives and needs assessment
- recommend midwifery staffing requirements to inform staff deployment.

Integral to Birthrate Plus[®] is the classification of case mix by categories I–V:

Category I and II: **Low-risk midwifery care:** normal birth, no intervention, good birth weight and Apgar, no epidural.

Category III: **Moderate degree of intervention:** instrumental delivery, induction, fetal monitoring, third-degree tear, preterm.

- Category IV** **Higher-risk/higher choice or need:** normal birth with epidural for pain relief, elective caesarean sections, post-delivery complications, induction and instrumental tear, preterm birth.
- Category V** **Highest risk, including emergencies:** emergency caesarean sections, medical or obstetric complications, multiple births, stillbirths, severe pregnancy-induced hypertension.
- Other categories** Other events reflecting additional client needs are also recognised within the Birthrate Plus® evaluation; for example, antenatal admissions to obstetric labour ward.

Note: The term Birthrate Plus® is a registered trademark of Birthrate Plus Consultancy Ltd.

Appendix 3 Annual survey of UK heads of midwifery service

Changes impacting on midwifery staffing¹

	Factor Responses (n)			
	2002	2003	2004	2005
Changes in delivery rates	23	36	56	70
Levels of sickness/maternity leave	60	65	63	69
Impact of woman-centred care	73	56	48	59
Reduction in junior doctors hours	58	52	45	45
Social/demographic change	37	33	20	35
Changes in intervention rates*	n/a	n/a	n/a	28
Midwifery budget cuts	15	16	17	23
Other factors	51	57	54	49

* The RCM has recently expressed concern at the rising caesarean rate, which is now between 25% and 30% in some areas: a five-fold increase since 1970. The RCM believes that caesarean sections are unwanted, unnecessary and a financial strain on the NHS; they should be performed only as a medical necessity rather than as a matter of course

Reference

- 1 Royal College of Midwives. *RCM Annual Survey of UK Heads of Midwifery Service*. London: RCM; 2005.

Appendix 4 Suggested role profile for a consultant midwife with lead for normal childbirth

Working in close partnership with the lead consultant obstetrician, the labour ward manager, midwives and other medical staff, the consultant midwife has a specific role in leading on initiatives to promote normal childbirth. The consultant midwife role and expertise is pertinent to enhancing normal birth away from the labour ward in birth centres or at home, she or he will develop strategies to enable and lead this provision.

She or he will support and encourage midwives to look at birth as a normal life event within the context of a social model of health and wellness. This perspective includes the wider determinants of health, social, psychological issues and emotional support for women and their families, working across boundaries with different agencies at each birth setting.

The consultant midwife will:

- provide clinical leadership, facilitating practitioners to improve their evidence-based practice and maintain competence
- lead on the development and monitoring of practices that enhance the physiological process of labour and birth
- facilitate professional confidence in the normal birth process
- facilitate positive birth experience for women with complex needs or additional risk factors to ensure they have equal opportunity to experience processes supporting normality
- provide expert advice to midwives, doctors and commissioners
- support and guide the team
- actively contribute to strategic planning of services
- plan and implement innovative models of care
- be a mentor and role model for midwives to link theoretical concepts of normality to practice
- lead the implementation of midwifery research to enhance the body of midwifery knowledge
- actively participate in clinical audit and the development of evidence-based clinical standards of care; ensure that recommendations from NICE, CEMACH and the Royal Colleges are incorporated into local practice

- audit practice and service; evaluate maternity care and service provision and develop an appropriate service to meet the need of diverse groups (populations)
- share her (or his) expertise and act as a resource both internally and externally with health and social care.

Expert clinical practice

Expert clinical practice accounts for at least 50% of the role and it would be expected that the consultant midwife would work closely with the consultant obstetrician on the labour ward to develop a culture of promoting normal labour and birth by effective use of evidence and research. This extends to other birth and clinical care settings.

References

- 1 Ball JA. *Dependency Levels in Delivery Suites: Proceedings of the Research and the Midwife Conference*. 1988.
- 2 Ball JA. *Birthrate: A Method of Outcome Review and Manpower Planning in the Delivery Suite*. Leeds: Nuffield Institute for Health Services Studies, University of Leeds; 1989.
- 3 Ball JA, Washbrook M. *Birthrate Plus: a framework for workforce planning and decision-making for maternity services*. Hale, Cheshire: Books for Midwives; 1996.

Appendix 5 A consultant obstetrician-based service

A move towards a consultant obstetrician-based service would be expensive and would require a large increase in consultant obstetrician numbers. There is, however, a body of evidence accumulating which suggests that the quality of care that women receive is substandard and seriously affecting the outcomes for them and their babies. This, combined with a cohort of less-experienced middle-grade staff, demands the presence of a consultant obstetrician for increasing periods of time to supervise and teach trainees and to be available for the very acute and life-threatening emergency.

Increased obstetric interventions, evidence from national audits, increased infant mortality at night and evidence from the NHSLA all point to the need for an increased consultant obstetrician presence on the labour ward.

Obstetric intervention rates

It is well documented that interventions in labour are increasing and there is no evidence that outcomes for women or babies are improving. Doctors in training provide the majority of obstetric care on the labour wards and their relative lack of experience may lead to increased intervention rates.

There have been major epidemiological changes in how women give birth:

- more than one-third of women now experience some form of operative birth^{1,2}
- in the last 20 years, the caesarean section rate has increased from 10.4% in 1985 to 21.9% in 2002³
- the spontaneous vaginal birth rate has fallen from 75% to 67%.

Timings of severe fetal compromise events

New data from the NPSA⁴ suggest that severe fetal compromise events are more likely to occur between 20.00 to 04.00 hours, (outside the hours of consultant obstetrician cover for most units). This trend has been reported many times in the literature. Studies have looked at perinatal mortality in relation to time of birth and at asphyxia related deaths and the time of birth. A large epidemiological study from Switzerland considered 672,013 births and 5,764 deaths.⁵ There appeared to be a circadian rhythm to the perinatal mortality, possibly due to changes in staffing levels. Two other smaller studies have shown an increase in asphyxia related deaths in night time births and have raised concerns about the quality of care at night.^{6,7} A larger epidemiological study from Sweden examined 2 102 324 spontaneous live births and considered absolute and relative risk of infant mortality, early neonatal mortality and

early neonatal mortality related to asphyxia.⁸ All three of these outcome measures were higher in infants who were born during the night compared with those born during the day and the risk was much higher in preterm infants (Figure 1).

Another large population based cohort study of 694,888 singleton births concluded that, although infants of high-risk births were more often born during the daytime, infants born at night were at increased risk of early neonatal death (adjusted risk ratio = 1.28; 95% confidence limits 1.13–1.46).⁹ The authors concluded that additional skilled and experienced staff may need to be available to ensure safe births over 24 hours. Two studies by Gould *et.al.*^{10,11} looked at timing of neonatal death and found a 12% increase of neonatal deaths in early night births and a 16% increase in late night births. In their study caesarean section rates went down at night but mortality increased in those infants with vaginal birth. During the late evening only 12.7% of births were by caesarean section and there was only a trend towards increased mortality in infants born vaginally. However, in late-night births undertaken by caesarean section, there was a 32% increase in neonatal mortality (OR 1.32, 95% CI 1.19–1.47). The authors concluded that these findings may have been the result of a delayed or inadequately performed caesarean section, even though the procedure had been appropriate (Figure 2).

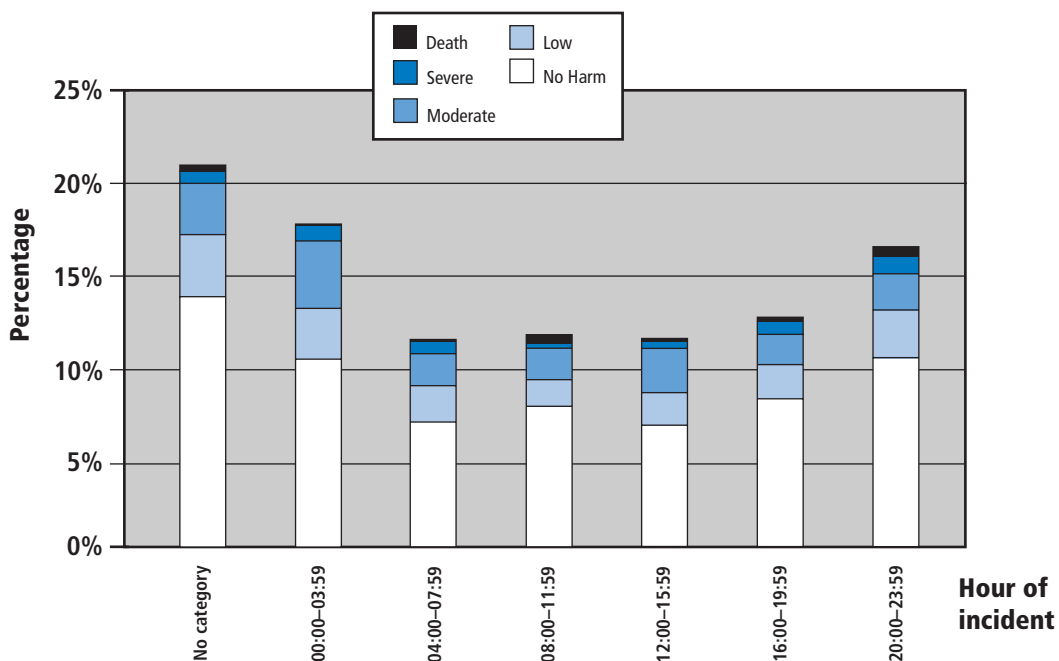


Figure 1 Fetal compromise incidents reported to NPSA (degree of harm by hour of incident)

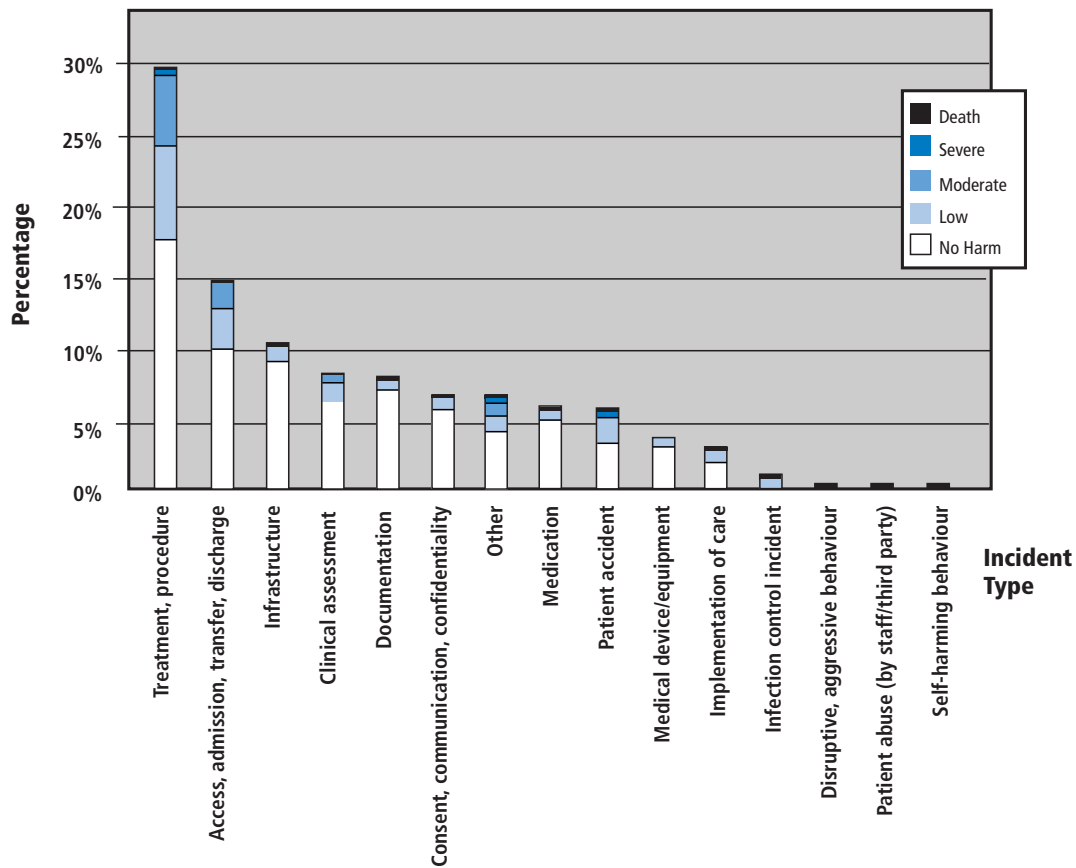


Figure 2 Maternity incidents reported to NPSA (degree of harm by incident type)

Supervision of trainees on the labour ward

Placing a consultant obstetrician on the labour ward allows for their immediate availability for the acute and often unpredictable emergency. The consultant obstetrician is also able to train and support junior medical staff. There is an emerging body of evidence supporting increased consultant supervision of junior trainees when they are undertaking complex obstetric manoeuvres.² At the British Maternal and Fetal Medicine Society meeting in 2006 there were four poster presentations looking at management of twins births,¹² quality of care in cases of intrapartum-related perinatal morbidity and mortality,¹³ indications for caesarean section¹⁴ and timing of birth related to obstetric practice and neonatal outcome.¹⁵ All four posters concluded that, to improve outcomes, there needs to be increased supervision of trainee medical staff. Murphy *et al.*² examined the maternal and neonatal morbidity associated with operative birth in the second stage of labour and demonstrated that operator experience was very important. Less experienced and unsupervised trainees had much higher rates of neonatal and maternal morbidity. O'Mahony *et al.*¹⁶ reviewed cases of fetal and neonatal deaths associated with cranial trauma reported to CESDI. When cranial trauma was observed, it was always associated with physical difficulty at birth and

the use of the ventouse or forceps. Poorly judged persistence with continued attempts at vaginal birth in the presence of failure to progress or signs of fetal compromise were the main contributory factors.

Confidential enquiries

It has been noted in paragraph 1.2.1 of the main report that CESDI found that most of the intrapartum deaths recorded had substandard care and in over 50% of these cases alternative management would have made a difference.

Medico-legal issues

The very high cost of litigation payments each year arising from obstetric complications has been noted in paragraphs 1.2.16 and 1.2.17 of the main report. The birth of a brain-damaged baby is not always the result of clinical error but a number of consistent factors contribute to those cases that do involve negligence. Evidence suggests that the following actions would substantially reduce risk in this area:

- improved staff supervision and training
- proper use of equipment to monitor labour
- better technique and diagnostic skills at birth.

A review of all 63 279 maternity patient safety incidents reported between December 2004 and June 2006 suggests that treatment procedures account for 29% of the incidents. Many of these relate to maternity ‘trigger list’ events and may not be patient safety incidents. Following these, the top six incident categories are (Figure 2):

- access, admission, transfer, discharge problems
- infrastructure (which includes staffing problems)
- clinical assessment
- documentation
- communication
- medication.

Other supporting evidence for 168-hour consultant obstetrician cover

The *Hospital at Night* study⁷ has highlighted the importance of making the hospital as safe by night as by day. The study clearly showed that in obstetrics, paediatrics, intensive care and acute medicine the level of activity is the same throughout the 24-hour period and therefore the cover required should be the same 24 hours a day, 7 days a week. Intensive specialties such as obstetrics will need to address the need for 24-hour-a-day experienced obstetric cover. One of the roles of consultants in obstetrics and gynaecology is to drive forward changes that facilitate the highest possible standards of care, and this initiative on the grounds of patient safety will need robust support from them.

References

- 1 NHS Scotland Information and Statistics Division, Scottish Programme for Clinical Effectiveness in Reproductive Health. *Operative Vaginal Delivery in Scotland: A 20 Year Overview*. Births in Scotland Series Volume 4. SP CERH Publication 18. Edinburgh: ISD; 2003.
- 2 Murphy DJ, Liebling RE, Patel R, Verity L, Swinger R. Cohort study of operative delivery in the second stage of labour and standard of obstetric care. *BJOG* 2003;110:610–15.
- 3 Royal College of Obstetricians and Gynaecologists. *Medical Workforce in Obstetrics and Gynaecology. Fourteenth Annual Report*. London: RCOG; 2003.
- 4 National Patient Safety Agency, 2006.
- 5 Ruffieux C, Marazzi A, Paccaud F. The circadian rhythm of the perinatal mortality rate in Switzerland. *Am J Epidemiol* 1992;135:936–52.
- 6 Stewart JH, Andrews J, Cartledge PHT. Numbers of deaths related to intrapartum asphyxia and timing of birth in all Wales perinatal survey, 1993–95. *BMJ* 1998;316:657–60.
- 7 Heller G, Misselwitz B, Schmidt S. Early neonatal mortality, asphyxia related deaths, and timing of low risk births in Hesse, Germany, 1990–98: observational study. *BMJ* 2000;321:274–5.
- 8 Luo ZC, Karlberg J. Timing of birth and infant and early neonatal mortality in Sweden 1973–95: longitudinal birth register study. *BMJ* 2001;323:1327–34.
- 9 Stephansson O, Dickman PW, Johansson AL, Kieler H, Cnattingius S. Time of birth and risk of intrapartum and early neonatal death. *Epidemiology* 2003;14:218–22.
- 10 Gould JB, Qin C, Chavez G. Time of birth and rise of neonatal death. *Obstet Gynecol* 2005;106:352–8.
- 11 Gould JB, Danielsen B, Korst LM, Phibbs R, Chance K, Main E, *et al*. Caesarean delivery rates and neonatal morbidity in a low risk population. *Obstet Gynecol* 2004;104:11–19.
- 12 Adjetey V, Keriakos RH, Nawar-Youseff M, Gagr N. Management of twin deliveries. A retrospective observational study in a teaching hospital. *J Obstet Gynecol* 2006;26 (Suppl.1):S65.
- 13 Kernaghan D, Penney GC. Quality of care in cases of intrapartum-related perinatal morbidity and mortality: a Scotland-wide audit. *J Obstet Gynecol* 2006;26 (Suppl.1):S70.
- 14 Gillham JC, Hughes SM. Indications for emergency caesarean section: can they all be justified. *J Obstet Gynecol* 2006;26 (Suppl.1) S77.
- 15 O'Donoghue K, Sheridan CP, O'Sullivan K, Greene RA, Higgins JR. Timing of birth related to obstetric practice and neonatal outcome. *J Obstet Gynecol* 2006; 26 (Suppl.1):S82.
- 16 O'Mahony F, Settaree R, Platt C, Johanson R. Review of singleton fetal and neonatal deaths associated with cranial trauma and cephalic delivery during a national intrapartum-related confidential enquiry. *BJOG* 2005;112:(5):619–26.
- 17 NHS Modernisation Agency. *Findings and Recommendations from the Hospital At Night Project*. London: NHSMA; 2005.

Appendix 6 Lead consultant obstetrician on the labour ward: suggested role description

Principal responsibilities

1. To provide strong professional leadership for all disciplines and to ensure, together with the consultant midwife for the labour ward, that guidance is available to all staff within the labour ward and that there is a focal point for doctors, both informally and formally.
2. To work with the consultant midwife to develop closer working patterns, guidelines, education and joint standards throughout the labour ward.
3. To communicate openly and consult extensively with clinicians, midwives and staff on developments within the labour ward.
4. To manage the performance of the labour ward, both in terms of the efficient and effective use of all resources and the development and maintenance of the highest standards of delivery of patient care.
5. To involve all staff in the development of patient services and harness their commitment to the achievement of agreed performance targets.
6. To promote an ethos within the labour ward of continuous learning and development, ensuring leadership and involvement in research, audit, education and training as appropriate.
7. To manage poor performance by obstetric consultants in line with trust procedures.
8. In liaison with the consultant midwife for the labour ward, risk manager and clinical governance lead, to take a lead role to ensure the delivery of the governance agenda for the directorate, including leading on serious untoward incident reviews. This should include:
 - ensuring that structures are in place in the labour ward to address the requirements of the governance and risk management strategies and to support and develop best clinical practice

- ensuring that there are clinical policies in place for all major obstetric emergencies and ratifying these policies
- participating in this role as a member of the labour ward forum and ensuring that decisions taken within this forum are translated into clinical practice on the ward; this may involve organisational change, teaching, training, changes in policy and communication
- ensuring that infection control policies and guidelines are implemented and monitored on the labour ward
- ensuring communication between the labour ward forum, the obstetric consultants meeting and the risk management forum to facilitate the implementation of change and improvement in the service
- facilitating the collection of perinatal statistics through local reporting and the mechanisms put in place by CEMACH and ensuring that these statistics are readily available
- ensuring that recommendations from CEMACH, NICE, the Healthcare Commission and the Royal Colleges are incorporated into local policies where appropriate
- facilitating skills drills and ensuring that remedial action is taken if shortcomings are identified during these drills.

General

This role description is an outline of the principal duties and responsibilities of the clinical lead for the labour ward and is not intended as an exhaustive list. The job may change over time to reflect the changing needs of the labour ward. Any variation will be agreed in advance between the post-holder and the clinical director as part of the continuing process of review and development.

The post-holder will liaise with the appropriate personnel, including the consultant midwife for the labour ward, senior midwifery staff, head of midwifery and clinical director for obstetrics.

Appendix 7 A model for consultant obstetrician presence in a medium-sized unit

This report urges units to ensure that labour wards are covered for a minimum of 40 hours, allowing for peak periods when up to 50% of the consultant obstetricians may be on annual leave during the summer time. To help to facilitate job planning, reorganisation of services and to develop robust systems, presented here is a model, based on a real example, of how a unit could be covered.

The unit has 3400 births a year, with a team of nine consultant obstetricians, organised in teams of two for each day to provide an in-house arrangement so that labour ward cover remains a priority.

	AM	PM
MONDAY	Dr A/Dr B	Dr A/Dr B
TUESDAY	Dr C/Dr D	Dr C/Dr D
WEDNESDAY	Dr E/Dr F	Dr E/Dr F
THURSDAY	Dr G/Dr H	Dr G/Dr H
FRIDAY	Dr I	On-call consultant obstetrician
SATURDAY	On-call consultant obstetrician	On-call consultant obstetrician
SUNDAY	On-call consultant obstetrician	On-call consultant obstetrician

There are no fixed commitments for the on-call consultant obstetrician on a Friday afternoon, as there are no clinics or theatres operational in the trust other than emergency operating.

Two consultant obstetricians are allocated to each day from Monday to Thursday. Holidays are arranged so that only one consultant obstetrician for each day is on leave, so one member of the team is always available to provide 24-hour on-call cover.

On Friday, a ninth consultant obstetrician provides cover until 13.00 hours. When Dr I is on leave, then cover for Friday morning is provided by Wednesday or Thursday teams, as they do not have any fixed duties.

The on-call commitment for the named consultant obstetrician starts at 13.00 on Friday and continues until Monday morning at 09.00 when the changeover takes place.

Although some consultant obstetricians do have fixed commitments following an on-call 24-hour commitment, the unit is in the process of reorganisation so that there is a 'programmed activity' identified as office duties following on-call commitments. So, if a consultant obstetrician is up after midnight they may not appear in the unit until 13.00 hours. This, of course, will happen on alternate weeks and would not compromise continuity of patient care.

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